

**Networking Postwar Lebanon:
A System Analysis Model of Re-Building a Shared Knowledge Society**

Ann-Margaret Salem

Thesis
submitted to the Faculty of Graduate and Postdoctoral Studies
in partial fulfillment of the requirements for the
M.A. in Communication

Department of Communication

Faculty of Arts

University of Ottawa

© Ann-Margaret Salem, Ottawa, Canada, 2011

Abstract

This thesis examines the reconstruction of Lebanon following the war with Israel in the summer of 2006. Based on Stehr's notion of the contemporary global economy (1994), the thesis offers a comprehensive account of how Lebanon used a global network to rebuild its infrastructure following the war and questions if the country is able to integrate fundamental elements of a knowledge-based society to participate in a worldwide economy and ensure future prosperity. Drawing on Luhmann's social system's theory (2002), the importance of shared objectives in collaborative projects and the recent importance of sustainable development theory in international relations, the thesis explores the communication practices used to organize this large-scale project. The study utilizes a qualitative research design with a macroscopic conceptual approach to offer a general understanding of the different systems that cooperate to aid in the reconstruction efforts. In-depth interviews are conducted with ten key informants, combined with the analysis of governmental reports, to identify significant investments offered by the international community and the different objectives of those involved in the project. A model illustrates the dynamics of these interactions, and helps to identify the areas most important to the country's knowledge society. The protection of the country's democratic system is identified as the overarching and shared objective of all those who contributed to the reconstruction of Lebanon, a value that is of great significance to a knowledge-based society.

Acknowledgements

First and foremost, I would like to thank my parents, Khalil and Margo, and sisters, Rola and Nicole, for the support and inspiration they provided me throughout my university studies, particularly during the process of completing this thesis.

I am especially grateful to my nephew, Owen, and niece, Marissa, who provided much needed distractions during the writing process.

I would like to thank my spouse, Charles, for his support and ability to keep me focused.

Finally, I would like to express my sincere appreciation to my thesis director, Professor Eid, for his guidance throughout my graduate studies.

Table of Contents

Abstract	ii
Acknowledgements	iii
Table of Contents	iv
Table of Figures	vi
Chapter 1 – Introduction	7
Preface	7
Research Purpose	9
Thesis Overview	12
Chapter 2 – Literature Review	16
Plato, Kant and Mannheim on Knowledge	17
Knowledge Society	22
Social Systems Theory	27
Networking	30
Technology and Social Change	32
Lebanon: A Case Study	37
Socio-political Context	37
Social Change and Development	42
The State of ICTs	44
Lebanon as a Knowledge Society	48
Chapter 3 – Methodology	51
Key Concepts	54
Research Design	56
Research Questions	60
Data Collection	61
Sampling	61
In-depth Interviews	64

Chapter 4 – Findings and Discussion.....	70
Positioning	70
International Communication	74
International Aide and Development	77
Governmental Policies	83
Education and Expertise	85
Technology	87
Lebanon’s Knowledge Society: A Model.....	94
Discussion	102
Chapter 5 – Conclusion.....	114
Significant Findings	114
Limitations and Implications	117
Thesis Summary.....	119
Bibliography	123
Appendix A: CIDA’s contribution to the humanitarian assistance and post-conflict recovery.....	129

Table of Figures

Figure 1: Third Generation Activity Theory.....	31
Figure 2: Thematic areas of improvement for IDRC project.....	47
Figure 3: Model of Lebanon's Knowledge Society	95

Chapter 1 – Introduction

Preface

In the summer of 2006, a 21 year old Canadian, accompanied by her sister, visits her family in Lebanon. Upon arrival, the pair enjoy being reunited with grandparents, aunts, uncles and a barrage of cousins, exploring the historical touristic sites, attending wedding parties, enjoying days by the Mediterranean Sea and nights in restaurants and nightclubs. After a 16-year lapse since her last visit to her parent's homeland, she is quickly surprised at her almost immediate sense of belonging and admiration for the lifestyle, values and landscape of the *pays des cèdres*. For the two young Canadians, however, they find that the youth of Lebanon are very similar to those they know in North America. They learn the same things in school and largely participate in Western social networking websites (The Economist, 2009:11-12). Much like in Canada, their media play an integral role in the formation of public opinion and the many outlets within the country are free to express a divers array of opinions (United Nations Development Program, 2009a: 183). The country's structure itself is not too foreign to the girls; political structures are based on concepts of democracy and the government is concerned with the same social issues as the West (The World Bank Group, 2007). It seems to the girls that Lebanon, much like themselves, has a dual identity, split between Western views and Arab traditions.

On July 12, while dinning on the patio of a restaurant in the nightlife hotspot of Taboura, a projector transmitting the nightly national news show reflects the image of a broadcast journalist announcing that two Israeli soldiers have been captured by the Lebanese military at the southern border of the country. Moments later, it is specified that it was in fact members of the Hezbollah militia who captured the soldiers after being

engaged in a confrontation at the border. Those in the women's company acknowledge the news, but do not really find anything out of the ordinary in this story. After all, they explain to their young Canadian visitors, this kind of altercation always happens at the border, which has been a disputed territory since the civil war of the 1970's (Feki & de Fiquelmont, 2008).

The next day, two days before their planned departure back home to Canada, the girls prepare to attend a breakfast at a family member's home in the suburbs of Beirut, Baabda, as they hear unusual sounds outside, sounds that most Canadians will luckily only hear at the movies. Soon sirens are heard across the entire city and they learn that the Hariri International Airport, the only usable one in the country, has been bombed. Moments after, it is announced that this was an attack enforced by the Israeli military in retaliation for the abduction of their soldiers (Fadda-Conrey, 2010: 160). After the initial shock, the family convinces the girls that this is nothing to be too worried about, and heads off to breakfast making sure to avoid driving too close to the nearby airport so that their Western guest do not have to be subjected to first-hand images of the destruction caused by war.

After a very large meal, which they have become accustomed to by now, the young ladies get a call from their panic stricken parents in Canada, where the news of the Israeli attack has already reached. They urge their daughters to go stay with their paternal family members in the northern regions, away from the dangers of the country's capital. They spend the next week in constant contact with their parents and their eldest sister by telephone and email. From Canada, the family is able to provide the girls with information from the embassy and Canadian government, information that is unavailable

within the country. Soon after, the girls took part in the largest evacuation ever undertaken by their government, and on July 22, were finally home (Government of Canada, 2010).

A few days after her arrival, the young lady is surprised at the feelings of guilt and despair she feels for leaving behind the large family she had come to feel so close to during her visit. She cannot find comfort in the family she has come home to, since the fear they had to endure during her absence exhausted them to a point of avoiding any conversation that could remind them of the ordeal. She becomes increasingly interested in watching and reading news from national and international sources that are covering the events surrounding the war and is always shocked to hear about roads, bridges and buildings familiar to her that have been destroyed. Fearing that the lack of possible routes in, out, and within the country that have been made unusable due to damage would affect the safety and well-being of her family, she constantly enquires about their situation. Soon after her return, she is utterly amazed at the speed of repair of the main routes, bridges and tunnels, which ensured the transportation of food and medication to the entire population. Thus, this leads her to enquire how it was possible for such a small country to have the resources needed to do such repairs in a short period of time, a country she thought would likely be crippled by such devastation.

Research Purpose

Lebanon is a small middle-eastern country that is bordered by the Mediterranean coastline in the west, by Syria in the north and the east, and by Israel in the south. As a democratic republic, its political system is founded on the values of democracy and is

based on the separation of executive, legislative and judicial powers (Embassy of Lebanon, 2009). It has an estimated population of over 4 million people and the Lebanese population living outside of Lebanon is much greater at an estimated 14 million individuals (Central Intelligence Agency, 2009). This large Diaspora is mainly accredited to the wave of immigration that resulted from the civil war that plagued the country from 1975 to 1990 and the stark dip in living standards that it caused (Maalouf, 2008).

The country has 7 major universities, many colleges and a strong public and private elementary and secondary school system. Arabic, French and English are taught in all levels of education and all three languages are commonly spoken within the country (Embassy of Lebanon, 2009). Lebanon considers itself to be at the forefront of the technological revolution and Internet use, as it has the fourth largest number of Internet users in the region, following the much denser populated United Arab Emirates, Saudi Arabia and Egypt (Ibid).

While considering these sociological characteristics, Lebanon is an interesting subject of study because of its unique duality between Western and Arab norms. It is the only secular oriented democracy in the Middle East, as ascribed in the country's constitution, and has strong ideological ties with the Western world (Feki & de Ficquelmont, 2008). Furthermore, it has a large nationalist population that has been living outside of the country for generations and who maintain close ties with their homeland (Maalouf, 2008). However, it remains an Arab country with strong cultural traditions and ties to the rest of the Arab world.

During the months, and eventually years following the 2006 war, the international community stepped in to help Lebanon rebuild itself once more. Unlike other countries in

the region and in parts of the world, that are considered developing nations, where the financing and manpower needed to undertake such a task are lacking, schools, hospitals, buildings, roads, bridges and tunnels were rebuilt relatively quickly. However, a country's infrastructure is not the only variable that needs to be considered to ensure its future prosperity or to ensure it does not revert back to a pre-developmental status. Other social, political and economical issues must be addressed and taken into consideration in the country's redevelopment plans to keep abreast current worldwide governance practices. With the recent changes that are brought about by globalization and technological advancements, a society must focus on knowledge and expertise in order to compete in a global economy. One questions Lebanon's ability to do so during its vulnerable position following the war. Also, for a country like Lebanon that has strong ties to the Western world and shares many of the same democratic values, one wonders what priorities take precedence during this time; will the country focus on rebuilding based on a Western view that focus on technological integration or on more traditional Arab values?

Although many scholars and journalists have written articles and reports about the 2006 war against Lebanon and its worldwide effects, there is a lack of analysis on how the country has organized and managed its reconstruction. Even more rare are articles that focus on the methods of communications that facilitate this undertaking. Finally, there is a lack of discussion around the uniqueness and effect of the country's duality between Western views and Arab traditionalism in the articles that analyze the country and the aftermath of the 2006 war. Therefore, this thesis attempts to bridge this gap and offer a comprehensive account of how Lebanon was able to rebuild its infrastructure

following the war and if the country is able to focus on supporting elements integral to a knowledge-based society in order to participate in a worldwide economy and ensure future prosperity.

It is argued in this thesis that a country's knowledge economy is the most important area of focus if a country wishes to play a role in the current social evolution that is caused by globalization and post-industrial economic structures. The purpose of this study is therefore to determine how Lebanon has organized its reconstruction efforts, and questions if it has made its integration into the knowledge-based economy a priority during its reconstruction period after the 2006 war with Israel.

Thesis Overview

The next chapter, Literature Review, is dedicated to identifying the epistemological root of the notion of knowledge and its importance in questions of governance and social organization, such as elaborated by Plato, Kant and Mannheim. This is followed by theories presented by authors Danielle Bell (1973), Nico Stehr (1994) and Peter Drucker (1992) regarding the emergence of the post-industrial society and the importance of the production of knowledge for society and the economy. Nico Stehr and Richard V. Ericson (1992) as well as Dominique Foray (2004) discuss the role of the codification of knowledge for organizations in a competitive environment and the use of technology to disseminate and store it throughout organizations. Furthermore, Danielle Jacques (2002) and Manuel Castells (2007) explain the new social roles allocated to new technologies and their affect on the citizen's relationship with the state. Additionally, Arjun Appadurai

(1949) explains the dynamics of globalization and the relocation of people, who are referred to as Diasporas.

Following a reflection on knowledge as a basis for economic exchange and social organization, and its impacts on the use of technology, Niklas Luhmann's social systems theory and his concept of autopoiesis is explored (2002; 2005). Luhmann's work is an integral part of this thesis because it provides a clear understanding of the network configuration of organizations, which he analyzes in terms of social systems and their interrelation with other systems as well as the use of communication as a basis for rebuilding and reorganizing knowledge and expertise.

Following this line of thought, more contemporary theories of networks and technology as tools to create and share knowledge and expertise are explored. The Third-Generation Activity Theory, as elaborated by Somya Joshi, Michael Barrett, Geoff Walsham, and Sam Cappleman (2007), is used to explain the dynamics that come into play when multiple systems interact to cooperate on an international project.

Since the redevelopment of Lebanon was an international collaborative effort, the relevance of the international sustainable development model, as presented by Jean-Paul Lafrance (2006), is discussed. The importance of education and empowerment of local populations upheld by this model is also discussed.

Finally, a brief socio-political background of Lebanon is presented to contextualize the specificities and unique characteristics that have a direct effect on the country's ability to integrate and participate in a worldwide post-industrial knowledge society. An overview of its level of technological integration and connectivity with other

Arab nations is also assessed to provide the necessary knowledge of the country's capabilities in the field of new technologies.

Based on this literature review, the methodology necessary to identify Lebanon's ability to focus its reconstruction efforts on ensuring integration into a knowledge-based society is developed in Chapter 3. A qualitative research design is used to identify the organizations that have been involved in projects related specifically to areas that benefit the country's knowledge society after the 2006 war and to understand this phenomenon from the perspective of the individuals who have experience in the topic. Government and ICT policy makers as well as civil society activists who have experience in projects related to Lebanon are approached to participate in this study. This chapter ends with a brief discussion of the ethical issues considered during this study's data collection.

In Chapter 4, Findings and Discussion, the information gathered through empirical research is compiled to present a comprehensive account of the different programs, policies and investments that have been enforced in the country since the war in 2006 by different international actors. The goals and objectives of many important organizations are identified, specifically those of the Lebanese, Canadian and American governments and their arm-length groups. The Lebanese Diaspora is identified as one of the most influential groups advocating and working towards rebuilding the country. The affect of the projects implemented in Lebanon as a result of the reconstruction is analyzed against the criteria needed for a country to be able to participate in a worldwide knowledge-based economy.

The information provided by the interviewees allows the researcher to develop a model that illustrates the components that comprise Lebanon's reconstruction efforts in

relation to the characteristics of a knowledge-based society. This model includes relevant elements that are in interaction in the country's collaborative network. Subsequently, the patterns and methods of communication between these organizations are examined to identify mechanisms that facilitate Lebanon's participation in a knowledge society. The model illustrates the different systems involved in the reconstruction efforts along with their modes of interaction as well as identifies the specific dynamics that were in interaction during the reconstruction of Lebanon after the 2006 war with Israel. This model helps us understand how different international actors were able to work towards achieving a common goal while focusing on their own unique goals.

Finally, Chapter 5 presents a summary of the significant findings, core conclusion and most important contributions to knowledge in the field of communication that this thesis offers. Based on this information and in light of the purpose of the study, the implications of a knowledge-based society and its influence of the project of rebuilding Lebanon after the 2006 war are revisited. The limitations associated with the possibility of generalization of the research study and the challenges faced during the data collection and analyses are conferred and topics of future researches this study gives way to are discussed. Finally, a summary of the thesis is presented.

Chapter 2 – Literature Review

The rapid progress and sophistication of information and communication technologies (ICTs) has played a leading role in the development of globalization. The globalization phenomenon, which is characterized by an economic process that is organized on an international level, breaks down national barriers and amplifies the production and circulation of information between all societies (Vickers, 1997: 197). New technologies change our modes of production, influence the evolution of our society and facilitate the development of new knowledge-based economies. Over the past two decades, ICTs have changed the way we use information. It is now digitalized; it is interactive and takes new forms, such as multimedia (Cornu, 2005: 28). This digitalized information is more accessible and is available in much larger quantities than past methods of storage and distribution of information. Recent changes in the use and importance of ICTs in society have also seen information become an economic good (Ibid). Although this information society is an interesting and current term to describe contemporary culture, there is one important notion that it does not take into account: innovation (Ibid: 29). The circulation and dissemination of information are found in the definitions of both information and knowledge-based society, but innovation is the key to our human and social lives and is a distinct characteristic of the contemporary changes associated with globalization (Ibid). In this current context, knowledge has become a tool of power as well as a kind of commodity that ensures the wealth of an organization (Stehr, 1994: 10). Individuals who are considered experts in their field of specialization are expected to produce and exchange knowledge through the use of networks to benefit their local surroundings, whether they are organizational or societal (Ibid).

The interdependent nature of this knowledge-based economy further manifests itself when a country faces a crisis situation. During the period of reconstruction that followed the war on Lebanon during the summer of 2006, the international community collaborated with the local Lebanese government to offer billions of dollars in grants and soft loans to finance infrastructure reconstruction projects across the country and in a very short period of time (Guillot, 2008). However, for Lebanon to participate in a global economy, its knowledge based institutions and experts need to have the technological and political capabilities to produce and share information at an international scale.

This thesis analyzes and describes different factors and elements that would allow Lebanon to rebuild its infrastructure while focusing on integrating characteristics of the shared knowledge society with the help of an international network, since the Israeli war in 2006. It serves as a design of the modes of organization and communication within Lebanon and identifies the areas needing improvements to ensure integration to the international knowledge society.

In order to understand the importance of knowledge for the economic, political and social prosperity of a nation, one must understand the meaning and function of knowledge for the individual and the society. The examination of theories pertaining to the organization of social structure permits the understanding of the role communication plays in the establishment of a society based on knowledge and expertise.

Plato, Kant and Mannheim on Knowledge

Many authors have written about knowledge and its impact on society. However, it is important to distinguish some of the first philosophers and theorists who discuss the role

of knowledge as a catalyst for change in society as well as initiate debates that lead to contemporary understanding of social structures. Among those who have contributed to the understanding of a knowledge-based society are Plato, Kant and Mannheim.

The notion of knowledge itself was not always viewed as a commodity but was considered a means for understanding the world. According to Plato's writings, it is imperative to search beyond our senses to have access to reality. In his allegory of the cave, Plato attests that to acquire knowledge of Ideals, one must use reason to refuse false information provided by appearances (Martel, 1989: 32). He explains that Truth is found in a transcendent autonomous universe of ideas acquired by reason and that Truth allows us to understand the material world in which we live (Ibid: 33). He also explains that education does not grant access to the world of Ideals because the information provided through education is already within each human. We each have the ability to access this world by turning our souls towards the light of knowledge (Ibid: 37).

In Book 9 of the *Republic*, Plato distinguishes three types of individuals: the lover of money, the lover of honor, and the lover of knowledge, the latter being referred to as "the philosopher" (Schiller, 1991: 484). For each of these individuals, the satisfaction of a particular desire provides them with a different sense of happiness based on the different types of pleasures each one feels. The satisfaction of these desires is accomplished by achieving what each of these individuals perceives as being their good. For the philosopher it is the dialectic, or methods of reasoning and discussion, directed towards the *form* of good that satisfies his desire. For the lover of honor, it is use of scientific knowledge towards the *figure* of good; and for the lover of money it is the use of folk wisdom directed towards the *mode* of good. According to Plato, the only true good is

found in the realm of *forms*, therefore only the philosopher experiences true satisfaction and true happiness. Through education and law, the philosopher is able to construct and maintain an ideal State, called *Kallipolis*, where everyone who participates experiences true happiness (Ibid, 1991). In essence, the empirical world is an imitation of the realm of the *forms* (Smith, 1981: 107). For the lover of money and of honor, they can only attempt to grasp what is good through the use of folk wisdom and the adherence to institutions of scientific reasoning, respectively (Schiller, 1991: 484). The term philosopher-king stems from this reasoning, as Plato considers that the philosophers must be the rulers of the state because they are the only people who hold true knowledge. The virtue of the philosopher-king resides in that he possesses the knowledge of the realm of *forms* that can be applied to rule a state (Smith, 1981: 107). However, as author Jerome Schiller argues, members of *Kallipolis* cannot truly be happy because the philosopher-king dictates their actions. Hence, they are not free (Ibid: 485).

In his *Critic of Pure Reason*, Immanuel Kant (1781) follows the same line of thinking to explain his theory of knowledge. He explains that there are three ways to psychologically represent reality: meaning, believing, and knowing (Nassehi, 2004: 440). According to him, knowing (or knowledge) is the only mode that is both objectively and subjectively adequate for mentally representing reality (Ibid: 441). According to his philosophy, reason, which is a pure idea that is already present in one's psyche, is the source of advanced-knowledge. To gain access to this knowledge, one must be able to neglect ideas that have been acquired through observations and experience of the material world (Palmer, 1992: 13-15).

Kant goes on to redefine Plato's Ideals, which he explains to be independent to sense and experience (Palmer, 1992: 68). For him, the goal of philosophers is to acquire real knowledge by going beyond experience through reason. Furthermore, Kant confirms Plato's vision that the State should be governed by a philosopher-ruler who uses Reason and pure Ideals as a basis for laws to "maximize freedom under law" (Ibid: 68). In science, reason allows for a connection between disciplines on a single principle, which Kant refers to as a system. In this system, each science can offer parts of knowledge that contribute to an organized discipline permitting scientists to identify missing pieces of information that would constitute a complete understanding of the world. (Ibid: 104). These ideals can be associated with our current social and financial structure based on production and diffusion of knowledge as well as the valorization of expertise.

Karl Mannheim is an important contributor to the field of sociology with his theory of the "sociology of knowledge" (Kecskemeti, 1972: 1). Mannheim's work flourished from a revolutionary climate that swept across the generation of German and Central European academics after the First World War; a utopian climate that looked to break old traditions and find new, more complete ways of studying the world (Ibid: 1972). According to Mannheim, to properly study subjects in the field of social sciences and history, the researcher must be able to immerse himself in the values and beliefs of the specific period and culture he is studying in order to understand and accurately find the truth behind a phenomenon. Consequently, the researcher must also abandon the values and beliefs that are normative in his present time and culture (Ibid). This philosophical theory is referred to as *historicism*, which entails a complete relativism when studying a past age, and is one of the foundations of Mannheim's sociology of

knowledge (Ibid, 1972). Contrary to concepts studied in natural sciences and mathematics that acquire new concepts that inherently replace old ones if they are no longer valid, cultural productions each contain their own validity as they correspond to the period in which they are produced (Ibid).

Mannheim adopts a structural approach to his sociological theory of knowledge, which means he explains a phenomenon by positioning it within the larger system of which it is a part. For him, to analyze information from a logical standpoint, systematization must be used to place the concept in the entire “framework of the mental sphere” (Kecskemeti, 1972: 9) in which it belong and from which it gains its meaning. Subsequently, Mannheim does not believe that epistemology is an autonomous discipline that can distinguish truth from pretence, but simply an arrangement of knowledge that can outline the origin of a specific science. For him, the only true fundamental sciences that can be used to identify epistemology are psychology, logic and ontology (or metaphysics) (Ibid: 11). Even so, “according to historicism, the most important thing about the work of the human mind is that it can be dated: we cannot understand them except by relating them to the period in which they originated” (Ibid: 22).

In his analysis of the sociology of knowledge, he comments that the educational system of his industrial era does not correspond to the social reality of the time. The teaching of abstract principles in the classroom does not prepare the youth to succeed in a highly industrialized society, and therefore, does not meet the needs of historical and cultural specificities (Kecskemeti, 1972: 26). According to him, education must prepare men to participate and transform the social reality in a way to improve society. Thus, it is the knowledge acquired by education that enables man to make full use of his potential

and freedom. In the words of Paul Kecskemeti: “Mannheim’s sociology of knowledge leads us to a strange conclusion: the demonstration of the dependence of thought on social reality serves to open a road to freedom” (Ibid: 27).

Knowledge Society

As knowledge has always been a social function, scholars are now examining its role as a catalyst for new economic structures (Stehr, 1994: 14). In one of the first books on the subject *The Coming of Post-Industrial Society* (1973), Daniel Bell analyzes the emergence of a post-industrial society where production of knowledge has become central to societal organization as well as a fundamental resource. According to Bell, knowledge is of importance in our society because it increases innovation through research and development as well as the interrelation of science and technology. Furthermore, economic components such as Gross National Product and level of employment are engaged by knowledge fields (Stehr & Ericson, 1992: 7). However, this so-called post-industrial society does not eliminate the need or the existence of industries; it simply indicates the authority of knowledge over all sectors (Ibid: 8).

According to Radovan Richta (1969), the beginning of this knowledge society can be linked to the scientific and technological revolution of the 1950s (Stehr, 1994: 8). During this revolution and throughout the decades, the social significance of science has infiltrated into most spheres of society (Ibid: 8).

Although many authors refer to the evolution towards a knowledge-based world economy as ongoing, author Peter F. Drucker argues that the economy has already changed and we have been well into a knowledge-based economy for decades and this is

especially apparent in the U.S. and Japan (1992: 257). According to Drucker, three fundamental changes have occurred: the uncoupling of the primary-product economy and that of the industrial economy; the uncoupling of the industrial economy and levels of employment; and the shift from trade-based economy to the importance of capital movements (Ibid).

Firstly, the price of raw material and natural resources seems to have almost no impact on the industrial economy. Whereas the primary-product sector used to have a central role in all economies around the world, especially that of developing countries, we now see that prices and production levels in the manufacturing sector are scantily dependent on the price of raw materials. For decades, there has been virtually no increases in the price of raw materials, with the exception of petroleum, but that of manufactured goods continue to increase (Ibid: 259). There is a shift to less material-intensive products and processes due in part to the importance of new high-technology industries that use a fraction of the raw materials needed in heavy- industry. Semi-conductor microchips, fiberglass cables and even energy efficient machinery use less material to be created and use less energy to function (Ibid: 261).

Secondly, Drucker explains that the de-industrialization that accompanies the move towards increased manufacturing production means a decrease of blue-collar and labor-intensive employment (Drucker, 1992: 263). Advancements in robotization and automation have placed economic importance on knowledge and capital. Research, development and testing of highly specialized products, such as telecommunications and pharmaceuticals are central parts of the manufacturing economy and their production is undertaken by machines, which are also products of knowledge (Ibid: 265).

As the author explains, “knowledge workers have already become the centre of gravity of the labor force” in developed countries (Drucker, 1992: 266). These workers are valuable to their employers as they grant the possibility of not only exporting products, but also services (Ibid: 267). The infrastructure required to produce these services, including educational institutions, is far beyond the reach of poorer countries and favors the resurgence of small to medium-size companies (Ibid: 265-268). Smaller companies are able to offer more specialized training to employees, encourage a more complete understanding of the production process and offer more personalized customer service. These values have seen a resurgence of entrepreneurship in developed countries and a greater success of smaller companies (Ibid).

Therefore, the price of raw material, which used to be the livelihood of developing countries, will not likely see any major increases. Manufactured goods, including information, education and health care as well as high-tech devices, both require high levels of expertise in their creation and production, continue to gain value and become the primary source of revenue for all countries, but especially those who are most engaged in the knowledge-based economy like the U.S. and Japan (Drucker, 1992: 261).

The third major change is brought about with the emergence of a “symbol” economy, such as exchange rates, credit flows and capital movement, and its contrast with “real” economy, based on the production of goods and services (Drucker, 1992: 268). Although both economies are present, but have become less tightly interdependent; the movement of capital takes precedence to the trade of goods and services in the new world economy. Therefore, countries invest in foreign economies and purchase foreign

dollars to avoid domestic economic problem or to profit from foreign success. Economies are therefore further intertwined and national economy has taken a back seat to the world economy (Ibid: 275).

As the knowledge society and its values have developed, knowledge has become a central aspect for companies wishing to remain competitive in this environment.

Organizations use technology to codify experience and knowledge to disseminate and store it throughout the organization (Stehr & Ericson, 1992: 9). They increasingly depend on creativity and information to produce knowledge, and therefore increase wealth.

Individuals who have expertise in specific fields are important assets to organizations and benefit from a level of authority credited to their specialized knowledge (Stehr, 1994: 10).

However, the notion of expertise contains its own dilemma; when an individual within an organization possesses tacit knowledge, a form of knowledge that is associated with personal experience and know-how, how can it remain within the organization and be transferred to other members? According to Dominique Foray (2004), tacit knowledge can be made explicit to facilitate its transfer by using the composition, the delivery and the use of a script, much like a set of successive rules or actions that demonstrate the appropriate steps to follow to achieve the desired results. Accordingly, there are three main forms of producing and delivering this script: demonstration from the expert to the learner; codification in which the knowledge of the expert is inscribed in a medium using a script and sometimes the modeling of the tacit knowledge; and filming and recording the demonstration offered by expert (Foray, 2004:72-73). When tacit knowledge is considered a good and is accorded a certain value for the organization for which it is

beneficial, its codification is essential to ensure its transfer to future generations and to be able to manipulate and transform the knowledge to meet future needs (Ibid, 2004).

The importance of knowledge for the economical prosperity of societies has also resulted in changes in the field of international relations and aid. Since 1975, sustainable development has been the most popular trend in international development. According to this method, changes must be made in three realms if a development project is to produce its desired long-term affects: that of the participants, the methods used and the goals (Lafrance, 2006: 20). In order to successfully accomplish a sustainable development project, the information used to create it must come from the local population with the help of non-governmental organizations (NGOs) that represent the needs and interests of the population. Therefore, interactions between the different members involved must be participative and based on endogenous norms. In doing so, it is the knowledge and know-how of the local population that play the most important role in this process, hence the importance of the circulation of information within a network of experts. (Ibid: 21).

The sustainable development model promotes the negotiation of goals between local and foreign members in order to reach a consensus about a necessary plan of action. The local population must be involved in the initial stages of the projects, which include defining the problems and the major priorities, as well as being involved in all subsequent stages (Lafrance, 2006: 21).

The involvement of local citizens and local organizations allows contributors to train local citizens and give them the necessary tools to ensure continuous positive effects of their financial subsidies. Unlike outdated development models that create a dependency between “third-world” countries and donor countries, the sustainable

development model ensures the empowerment of local populations (Renaud & Rico de Sotelo, 2006: 38-40).

For sustainable development practitioners, the Internet can be used as an international communications tool that can facilitate the sharing of knowledge between research groups, as an educational tool, as a source for alternative information and allows online governance practices (Lafrance, 2006: 25). Furthermore, the transversal communication between local, public and private sectors needed to create sustainable strategies in the field of international development requires a network style of organization that is in no way hierarchical. This allows for open and free communication between all involved spheres as well as for fast circulation of information (Caisse des dépôts, 2003: 34).

Following this reflection on knowledge as a basis for economic exchange and social organization, certain theories allow for the examination of knowledge in its application to contemporary organizations. Niklas Luhmann's social systems theories along with the Third Generation's Activity Theory offer interesting perspectives on ways to analyze and understand the role of communication in social structures and their interactions with others.

Social Systems Theory

In order to understand how organizations can systematize their work in a knowledge economy based on expertise, it is important to understand how different components of organizations interact. Niklas Luhmann's transdisciplinary theory of social systems is based on the concept of autopoiesis, a concept that originates from the field of biology

and which he has applied to the field of sociology. Developed by the Chilean biologists Humberto Maturana and Francisco Varela, the concept of autopoiesis refers to the self-reproductive ability of all living systems (Seidl, 2005: 22). Therefore an autopoietic system is one that can reproduce its elements from within, much like plant cells that can reproduce broken stems through their own internal operations (Ibid: 21). According to this notion, autopoietic systems are considered “operatively closed” since operations that occur within the system cannot escape, nor can outside operations enter the system (Ibid). However, systems interact, exchange and are dependent on their environment. For example, a plant depends on the water provided by its environment to grow. This is referred to as the “interactional openness” of a system to its environment (Ibid). The operational closure is referred to by Luhmann as self-reference and is what makes the reproductive ability of systems possible (Luhmann, 2005: 64). This self-referential closure is explained in more detail below. These two characteristics of autopoietic systems are also true when used to describe the concept of cognition, for ideas are constructions of the operations of the cognitive system and do not reflect external realities (Ibid: 23). For Luhmann, the operations of the environment do not directly affect the system, but rather create perturbations in a system that can activate internal operations, an occurrence he refers to as “trigger-causality” (Ibid).

For Luhmann, social systems, which can be societies, organizations or interactions, are considered autopoietic because they can reproduce themselves on the basis of communication (Seidl, 2005: 21). This element can be associated with Stehr’s idea of the importance of codification to store and distribute information throughout an organization, which would allow the recreation of the culture and practices associated

with a specific domain of expertise. According to Luhmann's model, elements that compose a system exist only if they are used in conjunction with other elements of the system in order to function as a network (Ibid: 27). This is explained by Luhmann when he quotes Maturana (1981) in saying that "autopoietic systems '...are defined as unities, as networks of productions of components, that reclusively, through their interactions, generate and realize the network that produces them and constitutes ... the boundaries of the network as components that participate in the realization of the network'" (Luhmann, 2005: 66). This is also the case for communication, which Luhmann considers is comprised of three components: information, utterance, and understanding (Seidl, 2005: 28). A fourth component comes into play if there is continuous communication within a social system: acceptance or rejection of communication. This element becomes part of the next communication event as it leads to a selection of one of the two choices. In this line of thinking, Luhmann explains that communication exists through a network of communications that re-produce communications (Ibid: 30).

This communication process, which is composed of information, utterance and understanding, must be recreated for each specific situation but must refer to the result of previous communications within the system. At the same time, the process must also refer to the possibilities to which acceptance and rejection of a communication may lead. Systems must refer to past elements of the communication process; either using a synthesis of the entire process or elements comprised in either components of information, utterance or understanding to serve as a basis for future communications (Luhmann, 2002). Thus, communication operations require self-reference and are

contained specifically within the system. They are not part of the environment. This process is on-going and is the basis for autopoietic progression (Luhmann, 2002: 161).

For Luhmann, the three components of communication —information, utterance, and understanding—are not to be considered as linear acts or building blocks needing assemblage by an individual in order to be successful. Communication, like a thought, is not a closed unit. It exists only because it refers to other communication possibilities. Communication refers itself to other possibilities of communication and therefore creates connections that allow it to continue to operate or to recreate itself. Therefore, the limit of communication possibilities and connections is also the limit of the system and establishes its parameters (Ferrarese, 2007).

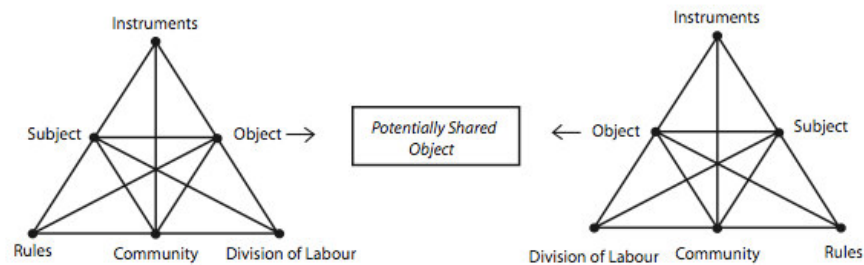
Networking

The contemporary use of networks in a knowledge based economy poses many theoretical complexities to the communication networks theorized by Luhmann. The rapid development of ICTs has allowed individuals to participate in cyber-communities, which bring together experts from different fields of specialization using new technologies (Barni, 2003: 13). This mode of organization allows companies and governments to have access to a pool of experts from different areas of specialization along with their information, as well as the ability to undertake multidisciplinary projects. It also provides the ability to form and rapidly transform groups to meet the needs of an ever-changing global market. Moreover, it offers around the clock service to international clients as well as lowering costs associated with travel (Tan, 2007: i). This mode of organization blurs national and organizational boundaries and gives way to networks of

shared knowledge (Bommes & Tacke, 2005: 282). How is it possible then to analyze a system organized in a network configuration if it is interacting with many different systems and each interaction being dependent on the specific situation that the system is facing?

The Third-Generation Activity Theory, elaborated by Joshi, Barrett, Walsham, and Cappleman (2007), explains the dynamics that come into play when multiple systems interact to cooperate on international projects (see *Figure 1*). The element that links each system is referred to as the “object”. The “object” of each system represents the goals and motivations of the team or organization. In the case of a collaborative project, the shared “object” must be negotiated by all groups involved. All constitutive elements can be different from one system to another; however, if all members do not agree upon the “object”, the result can lead to frustrations, conflicts, and the inability to meet deadlines. Therefore, it is not the use of shared instruments (or technologies) that facilitates communication, but rather their appropriate use in a given context (Joshi, Barrett, Walsham & Cappleman, 2007). Hence, an emphasis should be made on the ability of ICTs to construct shared goals and understanding of the project at hand.

Figure 1: Third Generation Activity Theory



Technology and Social Change

The changes incurred by the rapid development of technology has not only affected the way we do business, it has also greatly influenced our culture and society. Technology, whether primitive or sophisticated, has always exercised a great deal of influence on the societies that utilize them. Technologies are human creations and technological change is therefore considered a human process. They are tools created by human knowledge that allow us to shape our relationship with nature and to transcend our physical limitation (Volti, 2006:4). They help shape the way humans analyze the world around them and can even dictate the way a society is organized and operates (Volti, 2006). It is argued that the greatest influence that the new technological revolution has had on our society is how it has altered social structures of power and has made it easier to share information with different communities around the world.

According to Daniel Jacques (2002), in our contemporary knowledge based society, power is disassociated from the state's political sphere and replaced by new technologies that allow a direct democracy with citizens (2002: 44). Therefore, technology has become the ultimate tool for public administration and for the unification of cultural differences by dissolving traditional power (Ibid: 46). According to the author, this victory of liberal democracy, which can be characterized by globalization, respects the humanitarian rights of all those involved by reducing the manifestations of tradition and allowing market exchanges and sharing of information in a tolerant and egalitarian environment (Ibid: 47). A revolution is necessary in order to break with past ways of thinking and facilitate the integration of a new order of governance based on equal distribution of goods and of rights (Ibid: 54). This modern society is held up by

supranational institutions that transcend national borders and virtual communities, and assist in the sharing of information and knowledge. This would eventually accomplish a utopian society of universal happiness (Ibid: 58-63).

According to Manuel Castells (2007), access to Internet through WiFi and WiMax networks helps create and develop networked communities based on interactive horizontal communication, that Castell refers to as “mass self-communication” (2007: 239). By appropriating new forms of communication such as blogs, podcasts, and wikis; the opinions and ideals of individuals are diffused through different venues allowing people from different parts of the world to build on-line communities and connect based on common views.

The growing popularity of this type of communication has forced society to recognize the role of Internet-based communication in the social production of meaning and socialization. At the same time, the power to shape and construct the mind has been the foundation for politics based on socialized communication; most politicians understand the importance of their participation is mass communication to influence opinion. Thus, the power relations between those who wish to participate in the socialization of the population, mainly institutionalized power, are largely played out in the field of communication (Castells, 2007). However, as Castells explains, this does not mean that political power is in the hands of the mass media. In the current 24-hour news media context where both the media and politicians must constantly provide news content, the media must remain credible in the eyes of its audience, especially in this highly competitive environment (Ibid: 241-242). Therefore, messaging aimed at shaping the minds of audiences must be tailored to fit certain criteria that ensure it is picked up by

the media and conveyed effectively by it. Therefore, the media are in fact spaces of power making (Ibid). Thus, the emergence of mass self-communication has allowed individuals as well as groups to convey their own messages and respond to the messages transmitted through the mainstream media on their own terms. Hence, the development of self-communication technology is the result of a culture that encourages individual autonomy, much like that advocated by the sustainable development model. As an illustration to this point, Castells cites his own empirical research conducted in the Catalan society that shows “the more an individual has a project of autonomy (personal, professional, socio-political, communicative), the more she uses the Internet” (Ibid: 249).

Much like Daniel Jacques, Castells explains that mass self-communication allows individuals to confront established institutions of power and puts forward a platform for alternative social movements and rebellion (Castells, 2007: 249). The development of this new form of communication is indicative of a societal shift towards a more individualistic society and a culture that “emphasizes individual autonomy” over the collectivity (Ibid). Similar to Jacques, Castells explains how the public sphere was built around the nation-state in industrial society. However, with the expansion of globalization and ICTs, national borders have disappeared and have increased both global governance and resistance to a nation’s legitimacy. According to him, mass media has become the legitimate arena for the public sphere (Ibid: 258). Ingrid Volkmer (2003) also explains how the emergence of the role of communication as the public sphere is rooted in the development of global communication networks built around mass media. He explains that political legitimacy is replaced by communication framing, what Castells refers to as political socialization through the control of mass media (Ibid: 258).

Furthermore, another author offers an explanation of how these new modes of communication effect the individual's interaction with nations and institutions of power in a world defined not only of blurred borders, but also by constant migration. In his book *Modernity at Large* (1996), Arjun Appadurai defends the theory of modernity as a rupture between past and present and explains how media and migration are the two defining characteristics of the contemporary break with the past and have a major joint effect on the modern work of imagination. According to Appadurai, electronic media has transformed the world of communication, including traditional media, because they offer new ways of constructing the imagined world and imagined identities (and self-identities) (1996). Images are transported at a much faster rate, and because of the mass migration of populations, these images are often met by viewers who are also in constant movement. Therefore, not only are the images deterritorialized, but the audience and their imaginations are as well (Appadurai, 1996: 4). Since content created in a specific state can be transported and viewed by citizens anywhere in the world, there is a creation of a "diasporic public sphere" (Ibid: 4), a place that allows immigrants to remain rooted in their homeland without the physical restraints. Not only do immigrants have access to content in their native language and culture, but citizens from other parts of the world can also have access and appropriate this content. This public space further diminishes the importance of a nation-state and its institutionalized powers (Ibid, 1996).

As Appadurai explains, immigration has become more and more frequent in modern society, as mass populations migrate to offer themselves and their families better living conditions. Along with their cultural baggage, these Diasporas bring a world of imagination, which includes memories of the past and hopes for the future. This imagined

space, as the author puts it, “are characters for new social projects” (Appadurai, 1996: 6). The major difference between the migration of the past and that of the modern world, lies in the effects of mass media’s ability to convey messages and imagery that often influence an immigrant’s decision to move away from or return to a country of origin (Ibid, 1996).

There are many reasons why historically there has been large numbers of migration of population from the Middle East, the most predominant being the search for better living standards in times of war and financial turmoil. Many scholars study the relationship between nationality, ethnicity and religion in an attempt to better understand the postcolonial Arab world. However the notion of place is often omitted from these studies (Khater, 2005). The large emigrated Arab population means that there are individuals around the world who share and identify themselves with the same nationalist, ethnic and religious standards that are used to qualify the Arab community within the Arab world. These individuals also play important roles as channels that transmit influence from their new countries into the Middle East and also transform the internal culture by bringing their traditional heritage to their new countries (Ibid). According to author Akram Fouad Khater (2005), the links that exist between the emigrated population and those still residing in the Middle East create a supranational community that is not bounded by the limits of national borders, a notion that is seldom considered in post-colonial scholarship (300). In order to maintain these links with their homeland, Arab diasporic communities seek channels of communication to help them maintain ties and remain informed about local information. This is only possible with the use of common means of communication and media (Schumann, 2004). As such, Author Christopher Schumann (2004) explains that public communication, in which identities,

goals and interests can be discussed, is essential to the “empowerment” of the Arab community (306-307).

Lebanon: A Case Study

Before attempting to describe the way in which the technological evolution has changed the Lebanese society and its relationship to its expatriates, it is necessary to consider its historical, political and economical context.

Socio-political Context

Much like the other countries of its region, Lebanon was created from an arbitrary division of a larger territory, conducted by the ruling powers after the First and Second World Wars. As a result, Lebanon is a mosaic of religions and communities that have made the country to be known as a small-scaled model of the Middle East as a whole (Feki & de Ficqelmont, 2008: 25). For decades, the various regional actors have had an important influence on the country’s activities and prosperity: Syria has long considered Lebanon to be one of its provinces and has only recently pulled out its military troops; Iran wishes to export its Islamic revolution to the only laic Arab country in the Middle East through its funding and support of Hezbollah; Palestinian exiles wish to use its territory to fight Israel with the arms supplied by Syria; and Israel has engaged the country in war in order to secure its northern border. With all these regional and international pressures and while addressing its own internal ambiguities, the country’s government is often paralyzed (Ibid: 26).

Historically, France has been the first and remains one of the major investors in Lebanon’s economy as well as its society, by creating and maintaining a large network of

educational institutions around the country. The traditional Christian Maronite majority of Lebanon that France has always protected made the countries natural allies. Mainly, France viewed Lebanon and Syria as a strategic diplomatic hub to secure a zone of influence in the event of a confrontation with Arab opponents (Feki & de Ficqelmont, 2008: 39-40). Through France's economic involvement in the country's catholic educational institutions, the Maronite community has known a greater number of immigration to Western countries, especially to France. It has also known a demographic transition; lower level of childbirth and high mortality, causing this population to diminish to a point where it is no longer the demographic majority. The Shi'a Muslim community is presently the religious majority in the country, and they remain the most impoverished and most affected by the Israeli-Palestinian conflict in Lebanon (Ibid: 53).

The large number of emigration, especially of the Christian population, has created a large Lebanese Diaspora that is more numerous abroad as it is among the population still living in their native country. This Diaspora is not only present in France, but also in other Arab countries, South America and North America (Feki & de Ficqelmont, 2008: 48). As author Walid Maalouf explains, this Diaspora can be divided into two distinct categories: those who emigrated during the first wave between 1840 and 1950, and those who emigrated after 1974. Those from the earlier wave are considered completely assimilated into their new communities and maintain no financial or parental ties to their former residence. However, they maintain a strong cultural identity linked to their Lebanese heritage and are the perfect advocates for a free and independent Lebanon, ideals that a large number of them are able to campaign for in their positions of influence in their new countries (Ibid). The second wave of emigrants is mostly comprised of

educated and financially stable individuals. They remain profoundly attached to their native country both physically and financially. In addition to the money provided by their frequent visits, they contribute financial investments, and own businesses that provide jobs to those still living in the country. The author believes that this portion of the Diaspora will return to their country of origin once stability is restored (Ibid). Since the early 1900, a Lebanese nationalism has been the product of the efforts of the international Lebanese community who called for the intellectual and moral development of the Lebanese people to ensure their material well-being as well as the union and fraternity between all the diverse communities within the country (Feki & de Ficqelmont, 2008: 48). The American Lebanese natives have become one of the largest contributors to the country's economic investments as well as holding political clout within their native country (Ibid: 54-55).

In 1943, the National Pact was adopted to establish the division of power between the different confessional Lebanese communities. According to this pact, it is agreed that the position of the President of the Republic is assumed by a Maronite Christian, the position of Prime Minister (also known as the Government Leader) is held by a Sunni Muslim, the President of the National Assembly is always reserved for a Shi'a Muslim, and the Deputy House Speaker is a Christian-Orthodox. This apportionment is intended to diminish the risk of civil war and clashes between the different confessional groups within Lebanon. The Pact also included an agreement that the Christians would renounce any protection offered by France and the West and that the Muslims would abandon any ambition to annex Lebanon to a larger pan-Arab Syrian state (Feki & de Ficqelmont, 2008: 40-41). Although national censuses are barred to avoid inter-community tension, it

is evaluated that today the Shi'a Muslim are the majority in the country at about 32% of the national population, followed by the Maronite Christians at 25%, and finally the Sunni community at 21% (without mentioning the smaller minorities of Christians and the Druze community) (Ibid: 46). Since the current population is not appropriately represented in the confessional division of political power, these traditional positions are challenged, especially since they are in no way upheld by the Lebanese constitution. However, many attribute Lebanon's ability to maintain a democratic system to this practice (Ibid: 2008).

The Palestinian and Israel presence in Lebanon, along with the deeply fractioned communities that sided with one of the actors during their conflict, led to a violent civil war that spanned from 1975 to 1989. Due to high death rates and the millions of displaced people, this war has cost the country its position as a dominant economic force in the region (Feki & de Ficqelmont, 2008: 70). The re-emergence of this conflict, which reached a boiling point on July 12th, 2006, allowed international actors to involve themselves in the local issues and side themselves based on the country's confessional divisions (Ibid: 61). With the support of the United States of America, Israel embarked on a 33-day attack on Hezbollah. This attack was widely viewed as a way of indirectly confronting Iran, who offers funding to Hezbollah and is an emerging nuclear force. Unlike the civil war, this confrontation was not based on internal incongruities (Ibid: 28). Since the war, Lebanon has suffered an economic slowdown but is still considered to have a developed banking sector and a modern economy (Ibid: 55).

As author Carol N. Fadda-Conrey explains, the terrorist attacks of 9/11 and the subsequent war in Iraq turned the media's attention towards mostly negative and

derogatory portrayals of Arabs and Muslims. As a result there has been a shift in the Western attitude towards Arabs, their culture and their various cultural productions, which results in racist and misinformed representation of them in the media (2010). Immediately following the start of the 2006 war in Lebanon, referred to by many as “The Summer 2006 Siege of Lebanon”, the Diaspora community began using shared channels of communication to get information about their families in the country and to share personal experiences in the form of letters to the editor in major newspapers, blogs, emails and online journals (Ibid). The country was filled with tourists of Lebanese and non-Lebanese decent as the summer of 2006 was predicted as the most successful touristic season since the end of the civil war. Therefore, there was a higher than usual number of expatriate first-hand experiences of the war and an overwhelming need for those trapped in the country to communicate their experience with their friends and families (Ibid). This community was able to transform the mostly negative Western-based understanding of Arab identity and culture while influencing the international community and their local governments to help the Lebanese cause and try to put an end to the war they deemed inhumane (Ibid: 162). This observation leads to a challenging question; would the local Lebanese population have been able to have the same impact on the international community through their own means of communication to the world? How influential was the Diaspora community on the actions of the international community after the 2006 war?

During a press conference on the subject of the 2006 War on Lebanon, the then French President, Jacques Chirac, noted that all countries and communities involved in the conflict are responsible for the destruction of Lebanon’s infrastructure and

socioeconomic situation. He states: “En effet, tous les acteurs parties aux conflits ont ravagé le Liban depuis plus d’un demi-siècle, dont le peuple libanais lui-même, sont responsables des échecs qu’a connus le Liban depuis son indépendance” (Feki & de Ficqelmont, 2008: 26-27). The international involvement of other countries, through its government or Diaspora, in the internal functioning of the country should therefore also result in their involvement during the period of reconstruction.

Social Change and Development

The issues of social change and international development are important in understanding the defining characteristics of a country like Lebanon. In a 2002 report by the United Nations Development Program (UNDP), the state of human development in the Arab world was assessed by describing and analyzing the economic, demographic, social and political conditions of the region (UNDP, 2002a). In this report, development is understood as being the reinforcement and expansion of individual freedom (Ibid). Moreover, there is a clear distinction made between economic growth and development in the same sense that is detailed by the followers of a sustainable development model. Instead of drawing on exclusively economic aspects of development, the Alternative Human Development Index (AHDI) is based on six aspects that gauge a country’s level of social development: life expectancy, average level of educational, level of freedom, gender empowerment, Internet host per capita, and level CO² emissions (Ibid). As such, improvements to health systems as well as environmental conditions enable individuals’ capabilities. These capabilities are further supported through the reduction of unemployment and poverty levels through educational reform and improvements to access to information via modern resources, such as Internet (Baroudi, 2004: 134). The

abilities to build on human capabilities, to use ICTs, to improve upon technological developments and to engage in R&D projects facilitate a country's progression towards a knowledge society (UNDP, 2002a: 64). Although disparities between countries are acknowledged in this report, globalization is identified as being one of the major challenges of development in the region (UNDP, 2002a). However, the authors of this report state that a pan-Arab partnerships and economic integration into the global market is the best way to address this challenge and that of human development (Baroudi, 2004: 132). Furthermore, political reform is identified as an effective way to deal with the challenges of globalization, as it sets the proper institutional parameters in which local populations can flourish politically, economically and intellectually (Ibid). Interestingly, the 2009 edition of the Arab Human Development Report focused primarily on security; either national or that of natural resources (UNPD, 2009b). This is mostly due to the increase in international wars waged on Arab soil, especially in Iraq. However, a call for political reform towards more democratic states is deemed important for human development in the region (Ibid).

In a 2002 study by the UNDP on the status of human development specifically in Lebanon, the country seemed well positioned to face the challenges of globalization compared to its neighbors. The authors of the report claim that Lebanon is a potential leader in the field of technology, has high levels of human skills and high levels of literacy and education (UNDP, 2002b). Because the report defines globalization as a “process integrating economy, technology, culture and governance across national borders [that] shrinks time and space and blurs national borders” (UNDP, 2002b: 18), it recognizes that Lebanon has been involved in earlier forms of globalization and has

gained high levels of educational, historic, linguistic and organizational exchanges with other countries. This has proven to benefit the country greatly. However, the report cautions that if there is not a strong national strategy to manage the integration into the current form of globalization, the country may face a brain-drain similar to that faced during the last civil war when skilled and competent minds emigrated to safer territories (Ibid).

In contrast to the report on the development of the Arab world in general, the 2009 report on Lebanon's national human development status focuses primarily on the importance of restoring and conserving democratic values of citizenship as they pertain to the relationship between the population and the state (UNDP, 2009a). Not only are democratic values important for Lebanon's political stability, but these values are also needed to maintain a peaceful relationship between different religious groups that reside in the country. As such, the report recommends that the country's educational system promote learning about the democratic process and instill a sense of responsibility in students towards their fellow citizens (Ibid).

The State of ICTs

According to Kamel Touati (2008), a high level of implementation and assimilation of ICTs by local populations is important to the development of Arab countries to reduce the gap between them and Western countries, especially those of the Organisation for Economic Co-operation and Development (OECD). Economic gaps are mostly caused by social and political reasons; however, ICTs could be used as catalysts to socio-economic development and allow these countries to compete in the global market and participate in

international debates. Touati shows that the level of integration of new technologies, such as the Internet and mobile telephones, is much greater in Lebanon than in most other Middle-Eastern countries and that their users are mostly young urbanites who have a graduate level education. Lebanon's case is partly due to projects initiated by French universities who have been seeking to establish research groups lead by local Lebanese scholars. These types of projects promote the development of ICTs in the Middle-East, a region that suffers from the lowest level of financing in the area of Research and Development (Touati, 2008). Touati not only shows the importance of ICTs for development in the Middle-East and the empowerment of its population, but also that the technology to engage in virtual work groups is available in Lebanon and can be mobilized by local experts. It is also important to note that ICTs can produce technological capital, which enables the distribution of knowledge capital. By facilitating the circulation of knowledge and know-how, ICTs can help create positive "spillovers" into other sectors of society, which can lead to economic and cultural improvements (Zhang & Lee, 2007: 65).

Concerning communication management by network pertaining to Lebanon, the International Development Research Centre (IDRC) developed a project in 2007 called *Information and Communication Technologies for Development in the Middle East* (ICT4D-ME). The IDRC is a Canadian Crown corporation created to promote the use of science and technology in developing countries to help find practical, long-term solutions to their social, economic, and environmental problems. Their main goal is to create local research communities to assist in securing healthier, more equitable, and more prosperous societies (IDRC, n.d.a).

The first phase of the ICT4D-ME project was applied to five participating countries: Jordan, Lebanon, Palestine (West Bank and Gaza), Syria and Yemen. The goal of this project is to promote the use of ICTs as a means to support human, social and economic development in a region facing important economic and political challenges. Though the level of integration of new technologies is different in these five countries, they each face the same essential challenge, which is to build a knowledge society to help improve human, social, and economic development. Participants' main priority is to ensure inclusive and universal access to information and knowledge as well as offer training on the use of new technologies to all citizens, especially women. This project ensures that local citizens play a central role in development projects, in addition to the ability to circulate information through partnerships between universities, research institutions, the private sector, and local associations. The IDRC states that the project "seeks to contribute to the emergence of an inclusive knowledge society by building the capacity for applied research, and by promoting the creation and sharing of knowledge on the use of ICT for human, social, and economic development" (IDRC, n.d.a). According to the IDRC:

recent Arab Human Development reports highlighted some deficits hindering the human, social and economic development of the Arab countries. A knowledge deficit, in terms of acquisition, promotion or diffusion; lack of transparency and good governance; non-inclusive participation of members of the society; employability of the youth; and weak research capacity. In order to build a knowledge society through the use of ICTs, the five identified countries will need to improve the execution of their ICT strategies.

(IDRC, n.d.a)

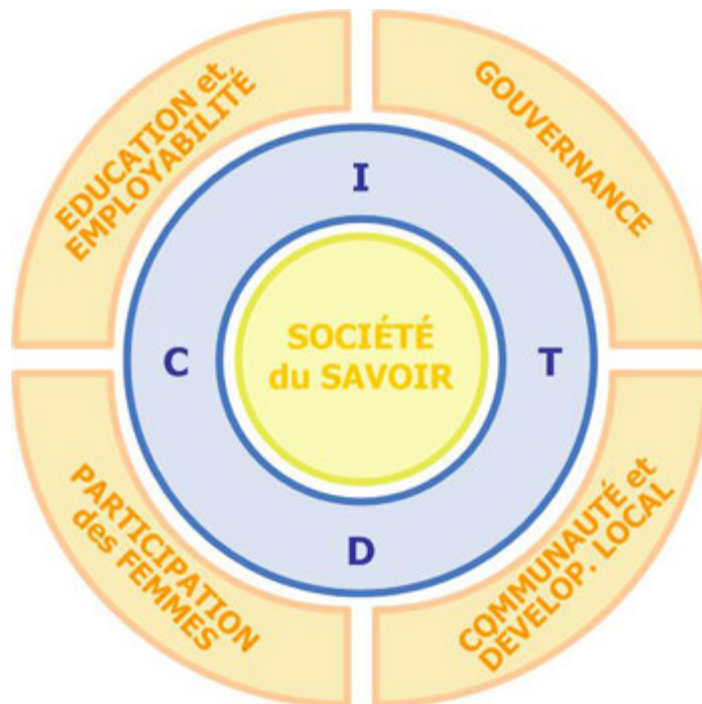
In order to contribute to the development of a shared knowledge society within and between these five countries, the IDRC has contributed a total of \$3.1 million CAD over five years to finance projects in the main areas identified as deficient for the development

of these countries' knowledge societies: "1) Education and Employability; 2) Women Participation; 3) Governance; and 4) Community and Local Development" (Ibid). In order to help these countries improve their overall level of social, economic and political development and capacity to engage in a global knowledge based economy, the four following goals have been identified:

- Build a network of researchers that create knowledge and inform on linkages between ICT enhanced education and employability.
- Build evidence and inform interested stakeholders on the role of ICTs in the development of women participation in the economic and political spheres.
- Build research capacity to identify, monitor and evaluate transparent processes aiming to increase the participation of all stakeholders in the development of an inclusive knowledge society.
- Develop and promote adapted ICT tools, strategies and policies to accelerate local development and enhance the delivery of social services to communities (IDRC, n.d.a).

Figure 2 illustrates thematic areas that the IDRC wishes to improve with its project.

Figure 2: Thematic areas of improvement for IDRC project



Lebanon as a Knowledge Society

If we consider these findings in light of the IDRC project and Lebanon's current level of integration of new technologies, it is possible to consider that the ICT4D-ME project is an effective way to develop Lebanon's knowledge society. The promotion of a sustainable development strategy is accomplished by first ensuring that the local population is taught to use the technology used by other knowledge based societies, and by promoting the inclusive and participatory involvement of knowledge producers into a network which facilitates the sharing of information and innovation. By involving many countries from the same region all needing to improve their ability to create and sustain a knowledge based society, the IDRC project ensures countries are able to implement programs tailored to their specific regional needs and helps them become self-sufficient since they can rely on the expertise and cooperation of neighboring countries facing the same challenges. Also, the project promotes the codification of the knowledge and information produced and circulated between participating countries by providing training and financing for the technological equipment necessary to participate in the knowledge society. This ensures long-term benefits of resulting programs through an autopoietic system of conservation and retrieval of information. As long as Lebanon's educational system offers students training on ICTs, future generations will be equipped to build on past experiences that will further develop the country's knowledge society.

However, to analyze the way communication is managed in a network configuration during an international effort to reconstruct a country after a war, it is important to use a model that allow one to incorporate many organizational structures that would otherwise be totally independent. The Third-Generation Activity Theory, as

elaborated by Joshi, Barrett, Walsham and Cappleman, serves as a reference to help identify the important components of a cooperative project, such as that of the reconstruction of Lebanon after the 2006 war. Therefore, the information provided by these authors will help serve as a basis for the model that will illustrate the different components and actors involved in the project of rebuilding Lebanon. The notion of a shared objective that is integral to the third-generation activity theory is a major point of inquiry for the elaboration of a new model.

As Plato once envisioned, the importance of knowledge and those who master its specific application is still a value that is sought after in individuals who are chosen to govern, whether it be a state or an organization. The development of ICTs has made it easier for a government to engage in discussions with its citizens, share information and help organizations communicate with others to improve communication within its own parameters. The increased need for shared information is further accentuated in the context of a knowledge-based society and the interrelation between otherwise independent systems is increased. Autopoiesis is an important concept in this context because it shows how communication as a means of sharing experience and knowledge is a way to allow ideas to be passed on to different generations so that they are not lost with the originators or the experts. Knowledge is therefore built upon previous knowledge and an organization can reorganize itself to meet the demands of a specific environment without losing vital information.

This concept can be applied to Lebanon to analyze its ability to build a knowledge society after a turbulent event like the war. By analyzing the country as a social system and exploring its structure, it is possible to dissect elements constituting its knowledge

economy and modes of organization as a society as well as evaluate the level of technological integration required to participate in the knowledge society. Luhmann's conception of a network configuration seems to have predicted the importance of ICTs and the use of virtual teams working together in a knowledge-based society. The use of this concept will allow the components mobilized during the reconstruction of Lebanon as well as their modes of communication to be understood.

As discussed in this chapter, the new knowledge based economy is one that is based on the production and distribution of knowledge. In this context, new ICTs must be mobilized to ensure both the codification of knowledge so that it can be conserved within an organization and also to communicate efficiently and effectively with the global market that is part of this new economy (Stehr & Ericson, 1992; Foray, 2004). This new mode of organization has changed traditional ways of thinking and of working and has shifted the centre of power away from national government and towards the individuals in society (Castells, 2007 & Jacques, 2002). Luhmann's social systems theory has provided insight into the role of communication in the organization and interaction of systems (Seidl, 2005), and the Third Generation Activity Theory has provided a basis on which it is possible to illustrate the dynamics of these interactions (Joshi, Barrett, Walsham & Cappleman, 2007). These theories are the basis upon which it is possible to understand the importance of building the knowledge society in Lebanon, and provide a guideline upon which to elaborate an appropriate methodology.

Chapter 3 – Methodology

The previous chapter recounts social, political, and financial changes brought about by the evolution from the industrial society to the post-industrial worldwide economy based on the production and distribution of knowledge. It explains how these changes have affected organizations and the needs they create to be able to participate in this global market. By identifying all the organizations as systems involved in the larger network that is globalization, we are able to understand the interconnected nature of this new economy and the role communication plays in the transfer of knowledge. Systems must be aware of the skills required to have a voice in this international network, including education, technological know-how and expertise.

After discussing the importance of knowledge in a contemporary social, political, and economic context, it is necessary to examine the country's ability to identify itself as a knowledge society. Lebanon has many institutions that facilitate the participation in a knowledge-based economy; e.g. universities, international project funding, and inter-organizational research groups (Touati, 2008). However, it is difficult to determine if the government is providing adequate attention to the production and distribution of knowledge following a war that exhausted most of the country's resources. The purpose of this study is to determine how Lebanon used its networks to rebuild its infrastructure while ensuring that it is evolving towards a knowledge-based society and to determine if the country has the ability to successfully participate in this global economy. To begin to offer an answer to this question it is necessary to position the priorities of the country's reconstruction project by distinguishing the objectives of the organizations involved in the reconstruction of the country after the 2006 war.

Luhmann's social systems theory allows us to consider institutions and states as living organism reliant on and interrelated to its components. Based on this theory, we rely on the premise that a system such as a State must store its information in all its components to be able to retrieve this information in case of destruction. For Lebanon, this imagery can be related to war, where certain components of the system, such as governmental institutions, telecommunications networks or even physical buildings containing information can be paralyzed or destroyed during a war. This research attempts to locate the various places information can be stored in order to be recreated and shared following a state of paralysis. In the specific case of the system that is Lebanon, it is necessary to examine the core organizations that help organize the society and that are likely to store useful information for the society, such as the governmental structure, the educational institutions and institutions of civil society.

Based on Stehr's work on the post-industrial knowledge-based society, it is possible to state that this society focuses primarily on the education and development of sector specific expertise to ensure the prosperity and importance of a system, especially in the interrelated and interdependent globalized context. Therefore, to be compared against knowledge society criteria, a system must have the institutions in place to ensure the education and training of its citizens. This focus on expertise concurs with the latest international relations model aimed at improving the standards of living of communities through the empowerment of its citizens. The following data collection methods and analysis therefore aim to identify any particular institutions and programs that foster this potential. In order to do so, the educational institutions, both public and private are examined in light of the importance of expertise needed in the post-industrial society.

Training provided by organizations in new technologies and highly specialized fields are therefore of particular interest, especially if they allow the country to better communicate with the greater global society.

It is of equal value to consider the importance of networks in this new structure of society that is both rooted in knowledge and dependant of global partnerships. Networks not only represent the interrelation of systems that communicate with each other through various channels, they are also representative of the new ICTs that these relationships depend on to be efficient. Various systems can be connected through networks, thus creating a web of relationships; even otherwise opposing systems can come to be interrelated due to similar objectives or projects. In the case of the present subject of the reconstruction of Lebanon, we are attempting to identify the many systems that have an interest in helping the reconstruction of Lebanon, be they governmental, non-profit organizations, or diasporic communities around the world. Therefore, the relationship between the different systems involved in the project of rebuilding Lebanon is assessed and analyzed in light of the need the country faces to participate in the global knowledge-based society. Identifying the major objective of the systems involved allow us to identify the reasons they are involved and how they are contributing, if at all, to rebuilding the country as a knowledge-based society.

The following chapter outlines the methodology used to collect the information needed to identify Lebanon's ability to participate in a worldwide knowledge-based economy since the war in 2006. It begins by defining key concepts used to achieve the purpose of the study, then describes the research design, develops the research questions,

offers a description of the way in which modeling is used in the study, outlines the data collection methods including the sampling strategy, and presents ethical considerations.

Key Concepts

Many of the concepts and notions presented in the previous chapter help explain the subject at hand. However, it is crucial to provide relevant understandings of the key concepts presented in this thesis. The purpose of this study is to determine how Lebanon has been able to use its networks to build a knowledge-based society and to determine whether the country is able to participate in this global economy. In doing so, the key concepts of this study are understood as follows:

- *Knowledge*: As a basis of the knowledge society, knowledge is the true and exhaustive understanding of how the world works. Much like Plato, Kant and Mannheim theorized, knowledge is the intense exploration of a notion until it is understood in its functions and effects. Thus the importance of expertise.
- *Expertise*: Once an individual has a true and practical understanding of a notion, he or she can be considered an expert. Experts possess the knowledge that is sought through exploration of a notion, whether it be scientific or simply for practical use in everyday activities.
- *Information*: Information is often linked to knowledge. In contrast to the knowledge society, the term information society is often used to refer to the contemporary Western society where information is easily available to all thanks to the development of technology and electronic media (Dean; 2001). However, possessing information does not mean that one possesses knowledge. Information

can be considered a unit of knowledge; the raw material that is used to create knowledge.

- *International Aid:* International aid is the financial and non-financial contributions offered by the international community towards helping a cause. Aid is often provided to countries that face devastation, whether caused by natural disasters such as earthquakes or hurricanes or by war. International aid is often the catalyst for change during massive reconstruction efforts. Countries that have the means to help others are expected to contribute by offering aid to the country in need as an act of humanity.
- *Development:* development is often linked to international aid as it is the action of one country helping a less financially independent country become more financially and socially stable and influential on the world stage (Lafrance, 2006). The sustainable development model that is the prevailing method used by the international community today helps countries achieve this new state in a way that allows them to be more autonomous and self-sufficient in their governance.
- *Diaspora:* Diaspora refers to the individuals who have emigrated outside of their country of origin. As it is explained by Appadurai (1996) and Maalouf (2008), these individuals have strong emotional, financial and political ties to their country of origin and continue to influence the internal functioning of their homelands after they have departed.
- *System:* A system, as it is elaborated by author Niklas Luhmann, is a society, an organization or an interaction that can be compared to a living organism. It grows, has a specific function and is influenced by its environment. Systems are

considered autopoietic because they can reproduce themselves on the basis of communication (Seidl, 2005: 21).

- *Network*: A network is the complex interrelation of human and social interactions. It can be compared to a web where every knot can be associated to an individual or an organization. Networks are a useful way of analyzing interactions because they help to understand how certain components are indirectly linked to one another. In contemporary society, it is often used to explain the method of organization of cyber-communities (Barni, 2003).

Research Design

The qualitative research design is interested in examining cases of social life in great detail and to present authentic representations of phenomena based on an issue's specific socio-historical context (Newman, 2007a). For the qualitative researcher, data is collected and analyzed to offer a detailed and rich descriptive account of social events as they are experienced by the individuals involved. In this logic, understanding and making sense of social events is the main objective, and not to establish linear causal links. (Chevrier, 2004: 77).

By identifying the main objectives of the organizations involved in the reconstruction efforts in Lebanon since the 2006 war, it is possible to identify the main priorities of the country itself during the reconstruction process. By examining the main areas of investment from the international community as well as those of the country itself, the country's interests in the fields of development and reconstruction are better understood. In order to have a better understanding the main priorities of those involved

in the reconstruction of Lebanon, it is necessary to gather first-hand information from those involved in this project, and to try to reconstruct the complicated interrelated web of cooperation involved in such a project. It is through the personal and professional experience of individuals, who have an understanding of Lebanon's unique socio-historical context, that it is possible to evaluate Lebanon's ability to participate in an international knowledge economy. Therefore, a qualitative methodology offers appropriate tools to seek the information required to answer the main research question.

Inductive reasoning is used in conducting this qualitative research, as the research begins with specific observations developed towards more broad ideas such as general hypothesis (Bonneville, Grosjean & Lagacé, 2007: 156). In qualitative research, the nonlinear research path takes precedence as it allows the researcher to move back and forth and sideways between the different steps of research, meaning that insight into a subject is reached by collecting data, analyzing and repeating these steps if new paths are encountered (Newman, 2007a: 178). This enables the researcher to use the information provided during data collection to direct the next steps in the research, whether that is to consult new authors or to ask different questions to future participants.

This thesis project is also considered exploratory because there are not many research studies (if any) that have explored the specific case of Lebanon as a knowledge-based society, especially ones using a system analysis model to understand the complex interrelations of social structures within the country. It can also be considered a descriptive research as it attempts to describe and schematize the country's knowledge system and networking relationships (Bonneville, Grosjean & Lagacé, 2007: 32).

The personal and professional experience of informants in relation to the reconstruction of Lebanon is used to understand how the large-scale project was organized, who was involved and how the different systems interacted during the process. A model illustrating this dynamic helps to visualize existing relationships and helps identify the main objective of those involved in the project. Therefore this thesis focuses on a macroscopic conceptual level. As such, the unit of research incorporates many different elements that influence the society that is studied (McLeod & Tichenor, 2007: 14).

As with most qualitative researches that use case-oriented approaches (Newman, 2007a), this thesis uses a case study approach by focusing on the particular event of the reconstruction of Lebanon after the 2006 war. Case studies are most often used when a researcher wants to study a social event in its socio-historical context where the local environment and history can explain the studied phenomenon (Bonneville, Grosjean & Lagacé, 2007: 169). Case studies are appropriate when a researcher wishes to study a particular event for a particular country that has highly contextualized issues (Gauthier, 2004:133). However, a case study need not be limited to a particular country, location or population. It is a valuable methodological approach when analyzing a particular decisional process or an international crisis or project (Roy, 2004).

In order to analyze the state of Lebanon's interest and ability to make the production and distribution of knowledge a priority following Israel's war on the country in 2006, it is imperative to reconstruct the components that allow the country to function as a system and in relation to other systems. It is then possible to examine its modes of communication as facilitators to the reproduction of shared knowledge. To do so, it

would be beneficial to develop a model that illustrates the components that comprise Lebanon's knowledge system. Following the insight provided by the informants, the relationships between the systems involved are represented in the form of a model. This model includes relevant elements interacting in the country's knowledge network, including the government, the private sector, universities, the scientific community, non-governmental organizations, the Lebanese community living outside of Lebanon, and so on. Subsequently, the patterns and methods of communication between these organizations are examined to identify mechanisms that facilitate Lebanon's participation in a knowledge society. The Third-Generation Activity Theory offers an interesting starting point to build a model that may illustrate the elements in interaction during a collaborative project. The shared objective promoted in this theory serves as an important area of investigation to identify how the project of rebuilding Lebanon was organized. In a project as complex and large scale as the reconstruction of Lebanon's shared knowledge society, the model has a much larger number of systems in interaction.

Models are representations of real objects and/ or situations that help illustrate the relationship between cause and effect (Eid, 2008: 247). Furthermore, models are defined as a research strategy that provides insight to the world by way of simplification (Ibid). By using fundamental models in addition to the Third Generation Activity Theory, it is possible to develop a system analysis model that describes the different mechanisms as well as the environment that has been mobilized to help reconstruct Lebanon. In addition, the Third-Generation Activity Theory assists in identifying the elements allowing Lebanon to re-build a shared knowledge society with the help of an international network, since the Israeli war in 2006. This model is based on the data collected from

official documents and through the answers provided by the interviewees. Identifying the main objective of the investments made by the different systems involved in the project helps identify the relationship between Lebanon and these systems.

In order to build a model such as the one described above, all aspects related to the construction and development of a knowledge-based society is examined and the relationships and modes of communication used between all these components are the subject of in-depth analysis, in light of Lebanon's specific social context. This creates a better understanding of Lebanon's society as well as its potential in a knowledge-based economy.

Research Questions

After Israel's war against Lebanon, the country was able to rapidly rebuild its infrastructure thanks to international donations and loans. However, it is unclear whether or not Lebanon focused on rebuilding its economic and social structure in a way that ensures its integration into a worldwide knowledge-based economy. To examine whether or not the country has made this a priority, the concepts explored in the previous chapter provided guides to investigate this topic in greater detail. These concepts set the parameter of the research.

In order to identify these important indicators and assess Lebanon's state of progress in the field of the knowledge-based society, many different factors are assessed. The following general research questions orient the study towards finding out if the country has the necessary programs and investments in place to participate in this type of global economy:

- R.Q.1. What investments were made in the fields of education, technology and professional training since the 2006 war?
- R.Q.2. What organizations are involved in the reconstruction efforts?
- R.Q.3 What are the main objectives of those who are involved in the reconstruction efforts and how do they interact with the other parties involved?
- R.Q.4. Do the Lebanese citizens have access to the technological tools necessary to be involved and have a voice on the international stage?

Data Collection

In order to better understand the ways in which Lebanon participates in the production and distribution of knowledge, it is useful to examine the priorities of those involved in its reconstruction efforts since the 2006 war. A qualitative research design is used to identify the organizations involved in projects specifically related to enhancing the country's knowledge society after the 2006 war. Also the qualitative research design provides an understanding of this phenomenon from the perspective of the individuals who are experienced in the topic explored. This method concurs with Karl Mannheim's theory of historicism that explains that a researcher must be able to immerse himself in the values and beliefs of the specific culture he is studying in order to understand and accurately find the truth behind a phenomenon. (Kecskemeti, 1972).

Sampling

Government and ICT policy makers as well as civil society activists who have experience in projects related to Lebanon have been asked to participate in this study. In order to

retrieve the necessary first-hand information, in-depth interviews are administered. The information provided allows the researcher to identify the relationship between the different components of the system and understand how they communicate. Also, qualitative information is collected through relevant sources such as public documents, and reports from Lebanese universities, government departments or private sectors, which contain information on the distribution of knowledge through cooperative projects. These documents are considered secondary sources because they are data collected by the organizations contacted to participate in the study for their own reports. The data are then reinterpreted by the researcher in the context of the research questions at hand (Turgeon & Bernatchez, 2004).

A non-probability sampling strategy is used to conduct interviews with relevant sources and to identify relevant information from official documents. Snowball sampling is often used in conjunction with purposive sampling, such as in the case of the present research. In the context of a qualitative research concerned with first-hand experience with a specific social event, a purposive sampling strategy allows the researcher to intentionally select participants most suitable and helpful to the study (Jackson, Gillis & Verberg, 2007: 429). Snowball sampling is also called network or chain referral sampling because it is a method used by researchers when trying to identify components in a network of interconnected individuals or organizations (Neuman, 2007b: 349). This strategy is also a good way to ensure the subject at hand is analyzed within a particular social structure therefore providing a highly contextual reading (Beaud, 2004: 226). A snowball sampling technique is used to allow the experts to refer the researcher to other experts who may have useful contributions to the topic (Neuman, 2007b: 349). In many

cases, these referrals are instrumental in securing further interviews. This sampling strategy also gives the researcher a greater understanding of the system studied because it further delineates the network of experts that are interconnected through the system. In many cases, the interviewee identifies other organizations to the researcher that were not previously considered, especially private companies and non-governmental associations. In addition, many of the interviewees share documents drafted by their organizations, which provide important information that further facilitates the understanding of the complex subject.

Within the literature found in the previous chapter of this thesis, organizations are identified as being most relevant in terms of involvement in projects related to the reconstruction of Lebanon, because they are either referred to in or are the authors of pertinent articles and books that deal with the subject. Naturally, the organizations that authored relevant sources are primarily governmental or arms-length groups. The websites of these and the other identified organizations are browsed over to find if they are involved in projects related to Lebanon's knowledge society, based on the concepts and notions explored in the Literature Review, such as investments in new ICTs, training in expertise or sustainable social development. Those showing involvement in these areas within Lebanon were contacted. The first correspondences exchanged are with the Department of Foreign Affairs and International Trade Canada (DFAIT), the Canadian International Development Agency (CIDA), the World Bank, the Embassy of Lebanon in Ottawa, the Embassy of Canada in Lebanon, the International Development Research Centre (IDRC), the International Monetary Fund (IMF), the Organization for Economic Co-operation and Development (OECD) and several Lebanese universities, including the

American University of Beirut. By searching through these organization's directories, individuals were identified as being possible participants, based either on their position (i.e. heads of divisions dedicated to Middle-Eastern relations) or by the availability of their email address. Many requests were sent to general inquiries addresses asking the organization to forward the request to the appropriate contact. Those who accepted the request to participate in the study tended to be specialized informants who had a high-level understanding of the dynamics in play within the country. Their areas of specialization include politics, economy, education, technology and international development and each offer a personal account of their point of view or experience of post 2006 war projects.

In-depth Interviews

Data are collected by conducting in-depth interviews with government and ICT policy makers as well as with civil society activist using semi-structured interview guidelines. Interviews are verbal exchanges with a participant who voluntarily wishes to share his or her knowledge or expertise with the researcher. They provide valuable contributions to a study when a researcher is interested in the personal experience of the participant. The participant and the researcher conjointly build an understanding of the phenomenon at hand. The verbal interactions are loosely directed by the researcher and are primarily led by the rhythm and interest of the participant. The researcher may probe certain ideas brought about by the participant to achieve the co-construction of meaning (Savoie-Zajc, 2004). A semi-structured interview guideline maintains that, while each main point is addressed, the researcher is able to probe issues seemingly important to the respondent

and ask for further specification for certain responses. (Neuman, 2007c: 402). Interview questions are adapted to address each informant's area of expertise. In the case that an informant is located in a different country, open-ended questions related to the questions in the interview guidelines are sent to the interviewees electronically. In some cases, the informant agreed to a telephone interview. Each interview is conducted at a time and place requested by the informant. The interview usually lasts one hour and, in some cases, follow-ups are maintained by emails to facilitate the electronic exchange of official documents and reports referred to during the interview.

Those interviewed are able to share a complete view of the complex web of interrelated organizations that took part in the project of rebuilding a knowledge-based society in Lebanon. The interviews with specialist in various fields create a general overview of the systems in interaction and enable the conceptualization of a representational model of Lebanon's reconstruction project. Many of the interviewees are Canadians or Americans of Lebanese or Arabic decent who occupy positions of influence surrounding issues of international aid or development in Lebanon. These interviewees offer information that is essential in achieving a complete understanding of the different dynamics of the reconstruction of Lebanon. They are therefore referred to as informants, because through dialogue with the researcher, they actively participate in the researcher's understanding of the subject and enable the co-construction of the meaning of the events that took place (Jackson, Gillis & Verberg, 2007: 428). These specialists all have experience working on projects related to the reconstruction of Lebanon but also have a personal interest in studying and understanding how other organizations are involved.

They also embody a historical and cultural understanding of the subject at hand, which is much richer than any information found in documents.

The term “saturation” refers to the point at which the information acquired during data collection becomes repetitive and confirms previously collected data (Jackson, Gillis & Verberg, 2007:431). The information provided by the informants often reiterates itself or is confirmed by other interviewees as well as the official governmental documents consulted by the researcher. Because the information provided by the participants is repeated in the documents used to collect data, it can be said that saturation occurred after conducting the ten interviews.

Although no name is attributed to the information provided by the informants in the next chapter, listing the names of those interviewed in this section does not ensure confidentiality. Because they each represent distinct areas of specialization, the information they provide can be linked to their professional title, and because their names can provide clues to their nationality or country of residence, the names of the informants are not provided at all. However, the professional titles of the government and ICT policy makers and civil society activist participating in this study are the following:

- First Secretary and Chargé d’Affaires, Embassy of Lebanon, Ottawa, Canada;
- Deputy Chief of Mission, Embassy of Lebanon, Washington D.C., United States of America;
- Director of the Middle East Technical Assistance Center (Metac), International Monetary Fund (IMF), Beirut, Lebanon;

- Diplomat, former US representative at the United Nations and former Director of Public Diplomacy for Middle Eastern & MEPI Affairs, U.S. Agency for International Development, Washington, DC, United States of America;
- Program Analyst, Europe, Middle East and Maghreb Directorate, Canadian International Development Agency (CIDA), Gatineau (Quebec), Canada;
- Director, Middle East Division, Department of Foreign Affairs and International Trade (DFAIT), Ottawa, Canada;
- VP Innovative Solutions, Intelligent Decisions Inc., Washington D.C., United States of America;
- Advisor, Inconet Data Management, Beirut, Lebanon;
- President of Syrian Canadian Club, Ottawa, Canada; and
- Program Manager, Advanced Technology Systems Company, Arlington, Virginia, United States of America

Empirical data is compared and related to the ideas elaborated in the Literature review to offer an in-depth analysis of the current situation. The links between concepts studied and the analysis of data creates theoretical relationships that facilitate the understanding of the relations existing between elements of the model (Eid & Lagacé, 2007: 100-101).

The exchanges with the different informants varies according to their area of specialization, all conversations revolve around the main objectives and investments made for the project of rebuilding Lebanon after the 2006 war. Some informants are able to provide statistical data illustrating the main areas of financial aid provided by the international community while others are able to identify historical and cultural links between the organizations and individuals involved in rebuilding the country and the

areas of social and economical development after the war. Adjustments to the line of questioning are made in consideration to the area of expertise of an informant and level of familiarity with the cultural context. For example, the questions discussed with members of Canadian governmental ministries focus on the role of the Canadian government in the reconstruction of Lebanon from their own perspective. Lebanese governmental policy questions are omitted, as this is not an area of expertise for the interviewee.

In order to gain a better understanding of the reconstruction of Lebanon the main themes for the interviews are as follows:

- Who was involved in rebuilding Lebanon: this includes questions about the role of organizations during the project of the reconstruction of Lebanon, the main objective of the interviewee's organization and the nature of their collaboration with any other organizations.
- What were the main investments and areas of investments: this section concentrates on the investments made towards the reconstruction of Lebanon by the different organizations involved, including the Lebanese Diaspora, the Lebanese government and international governments. Questions also concern the different social and economical benefits of these investments to evaluate Lebanon's ability to focus on the production and distribution of knowledge.
- What is the role of technology and ICTs: these questions concentrate on investments made in Lebanon in the field of ICTs, the levels of training for certain demographic groups in the country and the use of technologies during the reconstruction efforts.

The University of Ottawa Research Board granted ethical clearance to the researcher and this permission to conduct the in-depth interviews was provided on December 8, 2009. Interviews therefore began in December 2009 and the tenth and final interview is conducted June 2010. Consent forms are provided to participants at the time they are contacted and asked to participate in the study. The consent form describes the purpose of the study, the guarantee of confidentiality, and describes the way the information is used and published in the future. The answers provided by the interviewee are used only by the researcher and are not shared with a third party. As previously described in the sampling strategy, no identifying information is attributed to the responses of the informants in the research paper. Informants are notified that they can abstain from answering any question deemed unnerving and can choose to withdraw from the study at any moment.

Chapter 4 – Findings and Discussion

This chapter presents the various programs, projects, and investments undertaken in Lebanon since the 2006 war in fields related to the country's knowledge economy. The previous chapter describes how the information is gathered by conducting interviews with informants from governmental and ICT policy makers and civil society activists. After analyzing the data gathered from the informants, the theories and notions developed in the Literature review provoke a discussion based on how the reconstruction initiatives in Lebanon have contributed to rebuilding the country while focusing on its evolution towards a knowledge society.

Positioning

Based on the notions explained in the literature review, certain factors have prevailed as important areas of research in order to determine how Lebanon has organized its reconstruction efforts, and to question whether the country has made its integration into the knowledge-based economy a priority during its reconstruction period after the 2006 war with Israel.

As discussed in Chapter 2, the social and economic changes caused by the development of technology have placed economic importance on knowledge and products of knowledge (Drucker, 1992). Manufactured goods, including information, education and health care as well as high-tech devices, require high levels of work force expertise, gain value and become the primary source of revenue for countries, especially those who are most engaged in the knowledge-based economy (Drucker, 1992: 261).

Therefore, individuals who have expertise in specific fields are important assets to organizations and benefit from a level of authority credited to their specialized knowledge (Stehr, 1994: 10).

As the knowledge society and its values have developed, knowledge has become a central aspect in organizations. They increasingly depend on creativity and information to produce knowledge, and increase wealth and they must use technology to codify experience and knowledge to disseminate and store it throughout the organization (Stehr & Ericson, 1992: 9). For sustainable development practitioners, the Internet can be used as an international communications tool that can facilitate the sharing of knowledge between research groups, as an educational tool, as a source for alternative information and allows online governance practices (Lafrance, 2006: 25). Furthermore, the rapid development of ICTs has allowed individuals to participate in cyber-communities, which bring together experts from different fields of specialization using new technologies (Barni, 2003: 13). This mode of organization blurs national and organizational boundaries and gives way to networks of shared knowledge (Bommes & Tacke, 2005: 282).

Therefore, we will explore the level of implementation of ICTs, the use of codification, as well as the level of accessibility of the Internet in Lebanon to better understand the country's ability to be considered a knowledge-based society and to understand the effect of technology on the other aspects of the country's knowledge society. We will also investigate the country's investments in expertise and ability to strengthen of its pool of knowledge.

According to Manuel Castells (2007), access to Internet helps create and develop networked communities based on interactive horizontal communication, that Castell

refers to as “mass self-communication” (2007: 239). By appropriating new forms of communication such as blogs, podcasts, and wikis; the opinions and ideals of individuals are diffused through different venues allowing people from different parts of the world to build on-line communities and connect based on common views. This type of communication will be examined as a means of social production of meaning and socialization and as a way to influence the actions of the international community after the war.

Furthermore, the importance of a diasporic community on the functioning of a country like Lebanon was introduced in Chapter 2. As explained by author Manuel Castells, the ability to transport content across borders with the help of new technologies and online networks creates a “diasporic public sphere” (Castells: 2007, 4), a place that allows immigrants to remain rooted in their homeland without physical restraints. Not only do immigrants have access to content in their native language and culture, but citizens from other parts of the world can also have access and appropriate this content. This public space further diminishes the importance of a nation-state and its institutionalized powers (Ibid, 1996).

As explained by author Akram Fouad Khater (2005), individuals play important roles as channels that transmit influence from their new countries into the Middle East and transform the internal culture by bringing their traditional heritage to their new countries. The links that exist between the emigrated population and those still residing in the Middle East create a supranational community that is not bounded by the limits of national borders, a notion that is seldom considered in post-colonial scholarship (Khater:

2005, 300). The role of the Lebanese Diaspora in the reconstruction of Lebanon will therefore be examined as a force of influence on the country's internal functioning.

The research questions identified in the previous chapter focus on major areas identified as important to a knowledge-based society. The information gathered during in-depth interviews with ten governmental and ICT policy makers and civil society activists is divided into the following major areas of interest: the role of international communication, international aid and development initiatives established during the reconstruction period, governmental policies developed during that period, the role of education and expertise within the country, and the role and development of technology in the Lebanese society after the 2006 war. Understanding the progress of each of these areas during the reconstruction period helps provide a better understanding of the priorities of the organizations involved and to determine Lebanon's ability to participate in a worldwide knowledge-based society.

Building on the notions reiterated above, the examination of the international communication involved in the project of rebuilding the country will help to identify the ways in which the country itself set the priorities of its reconstruction. It will also help to identify the ways in which it manages channels of communication with the international community as well as determine whether or not proponents engaged in a sustainable development model of offering aid to the country. Moreover, identifying the areas in which the international community directed its contribution to the reconstruction of the country as well as identifying the governmental policies that ensued this aid will also help to determine the priorities that have been established by the involved parties during reconstruction efforts. An examination of the investments and initiatives focused in the

fields of education and building of expertise will also help determine the country's level of consciousness of the factors important to the ability to participate in a knowledge society. Finally, an exploration of the level of integration of new technologies in different facets of the Lebanese society will help to determine whether or not the Lebanese population has the tools necessary to be empowered and have a voice within their country and on an international stage.

These five aspects delineate the areas of focus in the project of rebuilding the country after the 2006 war and, in the same stroke, help to identify the components of Lebanon's knowledge society. The following section will discuss each of the factors that contribute to rebuilding Lebanon's knowledge society in detail.

International Communication

As one respondent makes clear, Lebanon is trying to ensure it remains a contributor to the international dialogue by keeping its channels of communication open to other countries and participating in as many international forums as possible, whether that be by organizing fairs, international expositions in partnership with other countries, or by hosting sporting events. For example, the 6th annual *Jeux de la Francophonie* was held in Lebanon in 2009. The event attracted 52 countries and 3000 athletes from around the francophone world. The informants states that Lebanon has also recently been invited to become a member of the United Nations Security Council, which allows it to voice its opinion on international policies.

Based on the direct experience of several of the informants, international partners communicate with the local organizations mainly by telephone, conference calls and by

emails during the organization and execution of projects directly related to the reconstruction of Lebanon. More elaborate technological systems such as shareware or online discussion groups are not identified as favored tools for the lack of knowledge of how they can be used by all parties involved. However, projects are not said to be slowed by the lack of face-to-face meetings, as the local government and other organizations are familiar with using other channels when communicating with their international counterparts. Much like North Americans, the Lebanese governmental officials and business people are used to doing business by BlackBerry, smart phones and laptops, and in many different languages, as expressed by one informant.

According to another source, Lebanon's unique position as a gateway to the rest of the middle-eastern world allows it to receive investments and benefits from the presence of Western companies that would otherwise have no interest in the country. As the respondent explains, Arab business people representing rich countries, such as Saudi-Arabia and Kuwait are known to have a particular appreciation for doing business in Lebanon. This is in part due to the country's hospitality towards outsiders, in accordance to its historical status as a touristic hotspot in the region. The country is also known for having much milder weather compared to the heat of the desert, especially in the summer months. It is not unusual for Lebanon, especially Beirut, to be considered home to these businessmen and their families during a long period of the year. The informant also explains that many foreign Arab businesses have firms, divisions, and buildings located in Beirut. Western companies who want to do business or develop partnerships with these businesses have an interest in implanting themselves in Beirut. Finally, the informant explains that the ability to do business in English, French and Arabic make Lebanon a

favorable meeting point for Western and Middle Eastern companies to come together. Therefore, its touristic industry is a unique quality in the region and facilitates its involvement in the contemporary economy by welcoming investors and new technology firms.

Secondary data does show that, after the 2006 war, a relatively large proportion of the Lebanese population is comprised of non-resident or occasional residents. In fact, 58 859 people out of the 3 670 616 people surveyed by the Central Administration of Statistics are temporary residents of the country (Central Administration of Statistics, 2007). According to a study conducted by the International Monetary Fund, Lebanon's large banking system is highly dependent upon short-term transactions from non-residents, such as tourists and businessmen (International Monetary Fund, 2010:5). The study also indicates that the country's volume of goods and services exports have grown by almost 15% between 2005 and 2009 and that this volume has seen an average 6% increase over the past 20 years (Ibid: 11). According to the study, the tourism industry has been predominantly dynamic, accounting for a third of growing numbers of service exports (Ibid). However, according to the Lebanese embassy in Washington, D.C., Lebanon's main trading partners in 2006 were not only Arab countries. Saudi Arabia does account for 6% of the country's exports and 3% of imports, while Kuwait and Jordan both account for 4% of exports, without figuring amongst important contributors to the country's imports (Embassy of Lebanon, n.d.). In fact, Switzerland is the principal importer of Lebanese goods and services, accounting for 20% of exports. The United States is the main exporter to Lebanon, with an 11% share of the country's imports (Ibid).

International Aid and Development

Immediately following the 2006 war, the international community offers the Lebanese government a great deal of financial aid, according to the interviewed informants. At the International Conference for Support of Lebanon, also known as Paris III, the government unveils its Reconstruction, Recovery and Reform Program, which is very well received by the international donor community, who pledged US\$7,6 billion in financial support over five years to finance governmental programs as well as a series of projects that include the help of private sector partners (The World Bank Group, 2007). The programs and projects are aimed at rebuilding the infrastructure as well as stimulating the country's economic growth and to support the reforms already underway by the Government in the areas of the energy sector, the business environment, and social protection. By financing the country's projects at a time of political turmoil, the international community shows its support to the Government's resolve to resume its plans for reform and modernization while reaffirming their confidence in Lebanon's resilience and ability to overcome challenges (Ibid).

The Lebanese community within the country also contributes greatly to the reconstruction efforts. According to one informant, civilian professionals such as engineers, architects and medical physicians volunteer in their area of expertise. National banks donate money to assist in the removal of debris and the repair of necessary infrastructure. According to a study undertaken by Lebanon's Central Administration of Statistics, the primary source of in-kind aid provided during or immediately following the war is provided by political parties (Central Administration of Statistics, 2007b: 317). Secondly, aid is provided by higher relief councils and thirdly through government

organizations. However, a significant number of people identified receiving aid from relatives residing in Lebanon, at 2.2%, comparatively to those who receive aid from relatives not residing in Lebanon, at 0.4% of those who provided the data (Ibid).

Another informant explains that immediately following the end of the 2006 war, the main objective of the Lebanese government is to ensure the areas hit the hardest by the confrontation receive the fastest relief possible. According to the mandate of the project on which the informant worked on, the initial goal of the government is not to improve their standards of living, but to restore a normal life to its citizens by ensuring access food, water and medical attention.

According to one of the respondents, the main role undertaken but the Lebanese Diaspora is to organize fundraisers and to send the collected funds back to Lebanon, either in the form of currency or as purchased medications for wounded civilians. Some groups organize fundraisers as ways to make important purchases for Lebanon. For example, one NGO is able to purchase several ambulances from Canada and ship them to Lebanon. These kinds of investments help save lives and maintain a level of organization within the country. Other groups send money to rebuild schools, hospitals, and specific apartment complexes or businesses in their native communities.

Many expatriates' main objectives immediately following the war is to secure assistance and relief to their families living in Lebanon. According to the personal experience of some of the informants, many Lebanese natives living outside of the country and occupying positions of influence in their adoptive countries lobby the international community to invest in reconstruction projects and to make the rehabilitation of Lebanon a priority in their foreign affairs mandate. The international

communities with large population of Lebanese descendents use this as an opportunity to showcase their solidarity and compassion towards the country.

However, according to one informant, many governments find it difficult to immediately offer support to the Lebanese citizens for fear of their actions being interpreted as condemnation of Israel's actions. As such, these countries do not immediately offer support to the Lebanese government to avoid negatively affecting their relations with Israel. Countries like the U.S. use the opportunity to reiterate their disapproval of Hezbollah and lobby the international community to enforce their disarmament. This further complicates internal decision-making due to Hezbollah's level of involvement in the dispute and in parliament, especially since some locals accredit victory to Hezbollah and its leader (Buccianti-Barakat, 2007). One informant found that the countries that do not immediately offer aid or express their sympathy for the deaths and the destruction caused by the war face harsh criticism by their Lebanese and Arab communities, not to mention their native citizens. Based on the informant's observations, the Lebanese Diaspora and members of the general population take it upon themselves to organize mass public protests demanding the support of local governments to end the war, maintain a ceasefire and to recognize Israel's actions as an iniquitous attack.

As for the international community, many informants describe that their immediate response was to send financial aid to the Lebanese Central Bank, to send and finance humanitarian aid and to send experts in the different fields needed to rebuild the country and to address the most pressing issues after the war, such as infrastructure and medical help. One informant suggests that most of these efforts aim to reduce suffering and improve the living conditions of the entire Lebanese population.

For the United States of America, their objective is to support the Lebanese government and state institutions, including the army, internal security forces, the Lebanese treasurer, etc. This effort is viewed by one informant as a way to help promote democracy, independence, prosperity and security of the state while supporting a central authority, capable of exerting its sovereignty and control over the entire Lebanese territory. Based on one informant's experience, the Lebanese embassy in Washington aims to mobilize the U.S. authorities, including the administration and the Congress, other expatriates, the media and NGOs to rally to their cause that is to provide assistance to the populations most affected by the destruction and to gather the largest amount of sympathy and support for their compatriots.

In response to the 2006 conflict, Canada initially commits \$30.5 million for humanitarian relief and post-conflict recovery and stabilization. In 2007, Canada pledges an additional amount of up to \$20 million over three years to assist the country in advancing economic and social reforms, with a focus on democratic governance and private sector development. This brings the total of Canada's contribution to Lebanon since 2006 to over \$50 million (Personal communication, April 25, 2010).

The role of the Canadian International Development Agency (CIDA) is to support humanitarian assistance and post-conflict recovery in Lebanon. In 2006, CIDA contributes \$20.5 million out of the \$30.5 million donation. The Department of Foreign Affairs and International Trade (DFAIT) provides the remaining \$10 million for stabilization efforts. Canada offers assistance through multilateral agencies and international or Canadian NGOs. These include various UN agencies such as the United Nations Development Programme (UNDP), the United Nations Children's Fund

(UNICEF), the United Nations Mine Action Service (UNMAS), the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), and other such as the International Labour Organization (ILO), the World Bank, the International Committee of the Red Cross (ICRC), the International Federation of Red Cross and Red Crescent Societies (IFRC), the Oxford Committee for Famine Relief (OXFAM) Quebec, the International Development Research Centre (IDRC), the Digital Opportunity Trust (DOT), World Vision and Save the Children (Personal communication, April 25, 2010).

According to one informant, CIDA's primary response to international crises is to provide financial support to organizations that make up the international humanitarian system. These organizations ensure that the basic human needs of disaster and conflict-affected people, such as physical security, food, water, health care, and shelter, are met. In this sense, CIDA's response to the 2006 conflict in Lebanon is not different from what is usually done in other post-conflict situations. CIDA's Program in Lebanon aims to reduce economic disparities, increase stability and sustainable development in Lebanon for the Lebanese and for Palestinian refugees. The CIDA Program focuses on supporting projects in the following sectors:

- democratic governance (reform);
- income-generation and livelihoods;
- humanitarian assistance for people affected by conflicts, including Palestinian refugees (Personal communication, April 25, 2010).

In accordance with its mandate, DFAIT concentrates its efforts on the political aspects of the crisis: managing their diplomatic relations with Lebanon, its neighbors, and international partners. This involves many international conferences, meetings,

conference calls and ongoing communication. In August of 2006, the Government of Canada announces the creation of a \$25 million Lebanon Relief Fund (LRF) for the implementation of the UN Security Council Resolution 1701. CIDA is the lead on development activities and manages projects financed through the LRF, which will be completed in 2012 with the assistance of DFAIT's Stabilization and Reconstruction Task Force (Personal communication, Mai 5, 2010).

As outlined in Annex A, CIDA is responsible for most of the Canadian government's financial contributions to the reconstruction of Lebanon. The main objective of both CIDA and DFAIT is to respond to the needs of the Lebanese people and facilitate the stabilization of the country, both economically and politically.

When asked what the main and shared purpose of those involved in these efforts is, a popular and surprising response excluded the mention of restoring Lebanon's financial or infrastructural prosperity, but is rather the conservation of democracy. Lebanon is home to 18 distinct communities and, as such, many nations are linked to these communities and confessions. It is in their interest to support their fellow members and ensure their safety and the safety of the only laic democracy in the Arab world, to continue to serve as a model for other nations and to continue being a cooperative link to the rest of the Arab world.

Other interviewees mention that many countries and communities have a financial interest in investing in Lebanon's infrastructure and public services, whether as a way to take advantage of the low cost of real estate after the war in order to open businesses, offices or hotels, or to maintain a form of economic control over the country. One interviewee mentions that some international communities offer to pledge large amounts

of money with certain conditions that would require political and confessional coalitions the local government is unable to accept. According to the informant, this form of conditional aid is well known in the Arab political world, however, these types of pledges cannot be accepted due to the precarious position of the local government and the confessional restraints outlined in the 1943 National Pact that limits the power of outsiders within the Lebanese political system, especially when based on confessional divisions (Feki & de Ficqelmont, 2008: 40-41).

Governmental Policies

Lebanon has no “heavy industry”, meaning it does not produce metals, minerals, oils or any derivative products produced from these raw materials (Babcock, 1981). However, it has many post-industrial international sectors still thriving despite the economic post-war lull, such as its banking, insurance and fashion sectors. Thanks to its prudent banking policies, Lebanon has been able to avoid the effects of the recent worldwide economic downturn that gravely affected the more industrialized countries members to the G8 and G20. According to the International Monetary Fund, “Lebanon’s banks weathered the global crisis well, thanks to relatively conservative funding and assets structures, which reflect prudent banking regulations and supervision” (International Monetary Fund, 2010: 6).

According to one informant, after the war and during the reconstruction period, the Lebanese government signs a partnership agreement with the European Union (EU) to improve the quality and competitiveness of their products and to encourage further importation and exportation of products by lowering duty fees. Consequently the local

government, in partnership with the EU, imposes a value added tax (VTA) to reinforce the state's revenues.

Other measures are taken by the Lebanese government to improve its position in a worldwide market, such as its inclusion in the World Trade Organization (WTO), the creation of a commission to fight against money laundering, and the signing of the Basel Accords (international banking supervision agreements) to help set banking standards to meet international requirements, as well as establish agricultural norms to prohibit the excessive use of pesticides. One informant explains that these initiatives allow the country to engage in financial and political relations with other developed countries.

To demonstrate the country's ability to move forward after the war, the Government of Lebanon uses investments provided through the Paris III Conference to validate its commitment towards increased inclusiveness, transparency and government accountability. It does so by establishing a clear process that allows the government to take ownership of reform programs and distribute responsibilities among its public institutions (The World Bank Group, 2007: 3). Since the country formerly relied primarily on private, confessional-based social assistance, its reform agenda concentrated on improving social safety nets for all its citizens, especially its poor and vulnerable population. In doing so, the Ministry of Public Health began providing limited health insurance to those not eligible for coverage otherwise (Ibid, 2007). In 2009, many initiatives outlined during the Paris III Conference were achieved in the healthcare fields, including providing healthcare cards to 80 healthcare centers as well as expanding IT infrastructures to many centers to increase records management and improve services (Ministry of Finance, 2009).

Education and Expertise

One source explains that Lebanon is historically known to valorize the education of youth. Its universities have long-standing reputations in the region and are known as the “brain producers” of the Middle East. Young adults are encouraged to pursue higher education and a number of state-run scholarships are automatically offered to the best performing students. According to the informant, neighboring oil-producing richer countries have a habit of recruiting Lebanese business, engineering, economy and law graduates to join their companies. Lebanon’s historical integration of the French language to almost all of its educational sectors, and the new addition of English as a supplementary essential language, make its graduates useful tools in its participation to a worldwide cooperative economy.

According to the secondary data provided by Lebanon’s Central Administration of Statistics, 10 745 people out of the 3 670 616 people surveyed are permanent residents living outside of the country for educational or professional reasons (Central Administration of Statistics, 2007). Moreover, 18 915 people are considered to only be occasional residents due to the war (Ibid). Thus, these individuals either cannot work or study or maintain an acceptable standard of living because of the war and must relocate during difficult time, but still consider Lebanon home. However, the reason these people are not of permanent residency, whether they are in the country for school or for business, is not specified.

Following the support from the Paris III conference, Lebanon’s Ministry of Education and Higher Education implemented in 2009 an Education Management

Information System (EMIS) that helps document, organize and update information about students records (Ministry of Finance, 2009). The government has also eliminated registration fees to public schools and provides free textbooks to students (Ibid: 6).

CIDA's global program, the Canadian Francophonie Scholarship Program (CFSP), offers new educational opportunity for the youth of Lebanon. The objective of the CFSP is to finance higher education for nationals of developing countries who are members of La Francophonie. It helps to build institutional capacities and to strengthen Canada's ties to these countries (Personal communication, April 25, 2010).

In addition, CIDA has a scholarship fund for Palestinian women, which assists women from Palestinian refugee communities in Lebanon to pursue undergraduate university degrees and develop their professional and management skills in fields such as business, engineering, biology and science. After completing their studies in Lebanon, these women are expected to become income-earners and play leadership roles in the Palestinian community. Ideally, they are able to contribute to the development of their community by strengthening its capacity to manage and sustain itself. Since the year 2000, more than 200 students have been awarded scholarships through the program (Personal communication, April 25, 2010).

According to one respondent, improvement and modernization is needed in other domains to ensure Lebanon is recognized as a knowledge-based society, such as its agricultural sector. One way to achieve this is to provide farmers with the expertise needed to sell their products more efficiently. Based on the respondent's experience, important steps are taken to ensure this sector's evolution. Financed by non-governmental organizations, local YMCAs organize workshops and reach out to farmers who sell

produce at local markets. One way of allowing them to be more self-sufficient is to teach farmers how to dehydrate and package their unsold produce in an appealing and marketable way to increase profits and avoid wasted harvests.

Since the Paris III Conference, the Ministry of Economy and Trade of Lebanon fortified its intellectual Property Protection office and launched a series of training and awareness sessions on the topic of copyright as a way of improving the business environment. Other measures to improve business operation with the international community include drafting laws on standardization and technical regulations (Ministry of Finance, 2009).

One respondent focuses on Lebanon's historical ties to knowledge and education, explaining that Lebanon has always been home to many world renowned philosophers, writers and journalists who contribute to worldwide discussions and raise awareness on Lebanese and Arab causes and their distinct identity. As with their Phoenician predecessors and the creation of the modern alphabet, the Lebanese people continue spreading knowledge to their region and the world with the means they possess.

Technology

As mentioned in Chapter 1, Lebanon has 7 major universities, many colleges and a strong public and private elementary and secondary school system (Embassy of Lebanon, 2009). Lebanon considers itself to be at the forefront of the technological revolution and Internet use, as it has the fourth largest number of Internet users in the region, following the much denser populated United Arab Emirates, Saudi Arabia and Egypt (Ibid). Most informants indicated that it was due to this developed educational system and the level of

implementation of its ICT networks that a large population has access to new technologies. They indicated that those who use these technologies most are high school and university students, researchers, governmental ministries and most urban communities. One interviewee noted that most urban households now have at least one computer and one smart phone. This interviewee also mentioned that youth and college students are very proficient with ICTs, follow Western trends and have high levels of activity on social networks and that they find ways to use these technologies to advance their education. Unfortunately, the lack of access to power lines and Internet networks equates to rural communities not usually having access to these technologies.

As presented in Chapter 2, author Kamel Touati (2008) shows that the level of integration of new technologies, such as the Internet and mobile telephones, is much greater in Lebanon than in most other Middle Eastern countries and that their users are mostly young urbanites who have a graduate level education. In fact, Touati explains that Internet in Lebanon has an important level of penetration at 19.5% (Ibid: 266). In 2005, Lebanon was among the Arab countries that had one of the highest levels of integration of cellular phones at 15.6%, a number that has no doubt increased along with the global trend (Ibid: 267). Furthermore, Lebanon is listed as one of the Middle Eastern countries with the largest number of Internet providers, with 22 companies that offer the service, following only Egypt, Saudi-Arabia and Algeria (Ibid: 268). Lebanon's case is partly due to projects initiated by French universities who have been seeking to establish research groups lead by local Lebanese scholars. These types of projects promote the development of ICTs in the Middle East, a region that suffers from the lowest level of financing in the area of Research and Development (Touati, 2008).

As another informant explains, the country has recently tried to codify information to make it more readily available to Internet users inside and outside of the country. For example, the State has introduced an electronic government system that provides information and forms at one time only available by visiting the different governmental offices located in the capital. The informant explains that this system not only simplifies bureaucratic tasks, it also minimizes possible investors' time and effort.

One expert indicated that another expansion in Lebanon's investments in technology is the development of a modern training center for civil aviation pilots. This investment in aviation informatics programs was made in the hopes for Lebanon to become a regional educational hub in the field. By doing so, the country can produce highly specialized experts in aviation, saves in foreign expenses to train its local pilots, and attracts clients wishing to acquire this knowledge and expertise.

The expert explains that more recently, the Lebanese government and foreign investors have planned to build an international conference center for technology, which could attract international delegates and businesses and encourage and facilitate the upgrading of the country's Internet infrastructure. This type of large-scale project is preceded by smaller projects related to the preparation of infrastructure and the training of locals to build and maintain the center. The informant expressed that local businesses are already increasing their exposure through the use of ICTs, including the Internet and creating web pages.

The Lebanese Ministry of Finance is also taking a step towards the digitalization of data by introducing electronic tax payments and showing noticeable progress in the reform of administration and management of revenue. The Ministry also automated the

manifests and customs declarations of the country's borders, international airport, and ports with the exception of the Beirut Port (Ministry of Finance, 2009).

One respondent mentions that there is a need to ensure technology is available and affordable to the entire population of the country. This could be achieved by participating in the creation of computer programs and creating computer assembly centers.

Through CIDA's investments in OXFAM-Québec, Canada has invested over \$3 million in the Economic Rehabilitation of Vulnerable Populations in Lebanon project. This project aims to help vulnerable groups severely affected by the conflict to recover their livelihoods and improve their living conditions. More specifically, it supports rural women and men owners of micro-businesses. During the Paris III conference, CIDA allocated \$20 million to assist in social and economic reform. They allocated over \$3 million of this investment to the Digital Opportunity Trust (DOT) income generation through the Information and Communication Technology Project. This project aims to train 1,230 members of vulnerable groups and owners of micro/small enterprises to use ICTs to increase employment and generate income. They also allocated \$2 million to the World Bank's National Poverty Targeting Program project that aims at developing a database to identify the poorest households in Lebanon, and enables the government to better target their social safety net programs to assist those in need (Personal communication, April 25, 2010).

One American company, Cisco, made investments in Lebanon through its Partnership Organization to contribute to the country's economic growth and development. In January 2007, the Partnership announces it will focus on five key areas of investment to stimulate economic growth in the country: "connected

communities/connected government; workforce training and education; job creation/private sector revival; information communication technology infrastructure; and relief and response” (Al Saqqa, 2007).

The partnership has launched online community access points in local Lebanese villages and towns to connect communities to their government and to the rest of the world as well as to deliver online governmental and social services. It offers job training and internships to Lebanese youth by placing hundreds of qualified interns in leading companies and governmental agencies across the world. It is stimulating growth in the country’s private sectors, such as the technology, tourism, banking, agribusiness, health care and manufacturing sectors. The Partnership is modernizing the country’s ICT infrastructure and is installing wireless network in some parts of the country to make high-speed Internet more accessible and less costly to the population. In addition the Partnership is modernizing existing systems used in hospitals, schools and community centers. Finally, the Partnership works in concert with NGOs such as Habitat for Humanity and UNICEF to rebuild homes, schools and workforce training programs in the areas directly affected by the war (Al Saqqa, 2007).

Furthermore, the Investment Development Authority of Lebanon (IDAL) attracts many international projects that improved the telecommunication sector after the war. IDAL is a public Agency that is responsible for promoting investments in Lebanon from international companies and assisting investors interested in Lebanese market opportunities (Embassy of Lebanon, n.d.). IDAL advertises the successful projects it managed following the war, including the Ericsson Global Service Delivery Center in Sin el-Fil that provides technology services to telecom providers, as well as providing

specialized jobs to locals (Investment Development Authority of Lebanon, n.d.).

According to IDAL, “the Center hopes to attract other companies providing similar services, and thus contribute to boosting the competitiveness of Lebanon in the area of technology and telecom” (Ibid). In addition, the UTRIX project involves a US \$ 2 million investment in the technology sector to build a factory to produce, sell and export veterinary drugs (Ibid). In 2006, IDA helped Cedarcom introduce a mobile Broadband wireless access network in Lebanon. The service consists of a small portable card and a subscription that keeps users connected to the internet or to their corporate network (Ibid).

As presented earlier, author Carol N. Fadda-Conrey found that immediately following the start of the 2006 war in Lebanon, the Diaspora begin using shared channels of communication to receive information about their families in the country and to share personal experiences in the form of letters to the editor in major newspapers, blogs, emails and online journals (2010). This community is able to transform the mostly negative Western-based understanding of Arab identity and culture while influencing the international community and their local governments to help the Lebanese cause and try to put an end to the war they deemed inhumane (Ibid: 162).

As presented in Fadda-Conrey’s article, blogs written by Lebanese nationals living within and outside of Lebanon fuel many online debates and provided a platform for discussion and the sharing of personal experiences of the war. Many bloggers who write about first hand experiences of war and who provide commentary about the political implications of the war become widely read and circulated in the online world (2010: 164). As the author explains, the role in shaping the public’s perception of the war

and ultimately gaining support of a cause lies in the bloggers ability to disseminate information with an immediate reception by a large public (2010: 163). Fadda-Conrey mentions blog posting by such writers as Rasha Salti, who provides day-to-day postings of first-hand experiences of war that would otherwise be ignored by mainstream media. In one posting, she calls for her readers to make heard their discontent with the war: “If you want to see a replay of the 1948 expulsion of peasants under fire, tune in to Lebanon. If you don't, scream your outrage and make sure some things are NOT acceptable” (2006).

In addition to the individual bloggers who write about the war, multiple writers who want to share their experiences of the war, opinions or simply to circulate information about the situation in Lebanon used existing forums or created new ones. For example, the Lebanon Blogger Forum features contributions from 26 bloggers who wrote about the war or who commented on other postings, along with the comments provided by the general public, as well as links to many other blogs that are related to Lebanese content. Throughout the war, bloggers post original articles and newspaper clippings, photos, caricatures, poems and videos about the war. One blogger often used the forum to show by means of satellite imaging his exact location, while another posts account numbers that readers can use to contribute to relief effort (Lebanon Blogger Forum: 2006).

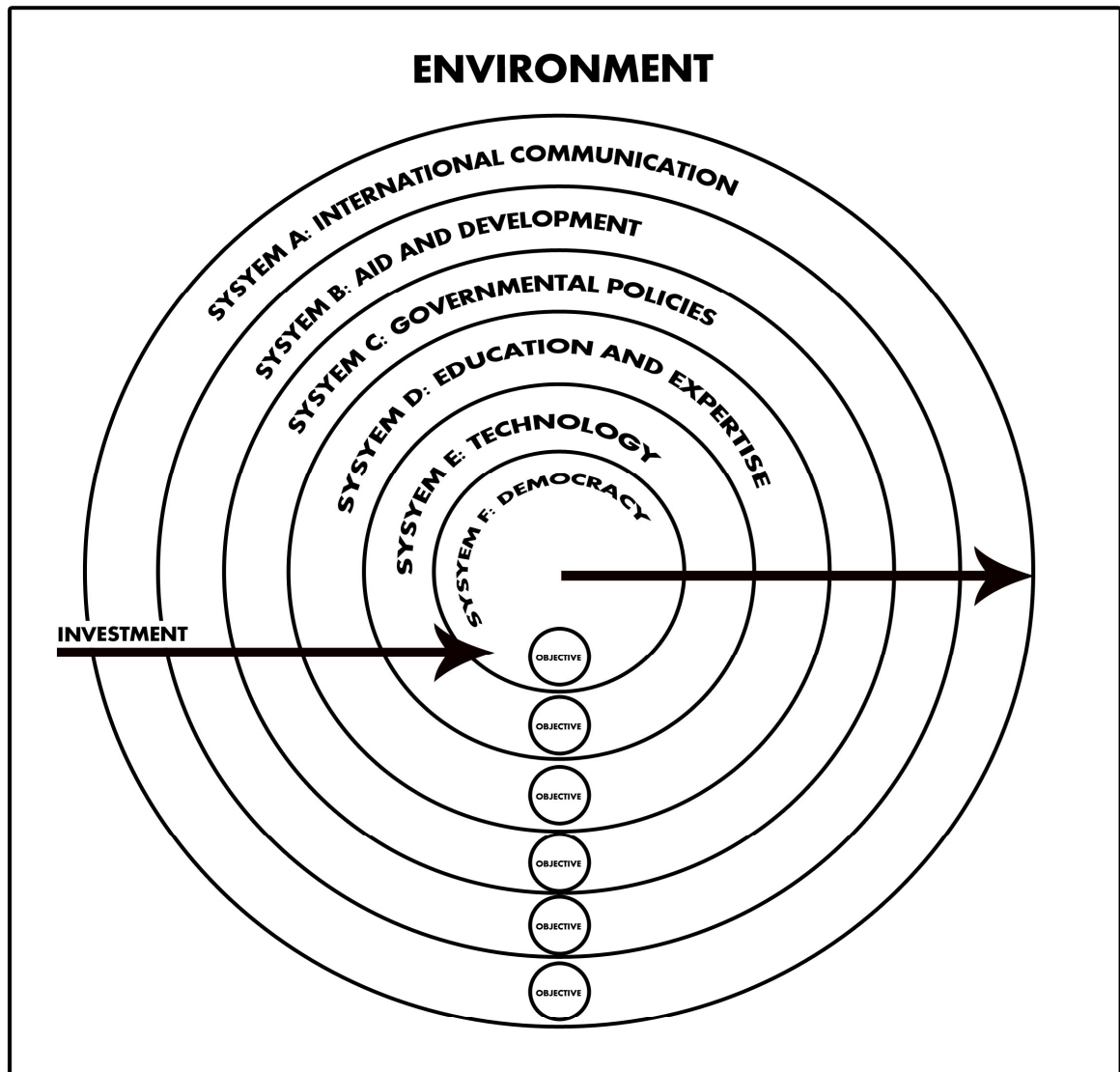
Furthermore, many expatriates use technology as a means to invest funds into the country or as a way to interact with locals still living in Lebanon. One example of this is the UNDP online initiative called LIVE LEBANON, launched in 2009. The goal of the initiative is to engage Lebanese expatriate and to encourage them to reinstate their ties

with the country and to support its local development (LIVE LEBANON, n.d.). The main means of gaining support to this initiative is to use social media platforms, such as Facebook and Twitter to recruit donators and fundraiser hosts for events that raise money for local developmental projects (Ibid).

Lebanon's Knowledge Society: A Model

In an effort to represent Lebanon's knowledge society in relation to the international collaboration that followed the 2006 hostilities and subsequent reconstruction efforts, *Figure 3* offers an illustration of the main components of this large project.

Figure3: Model of Lebanon's Knowledge Society



The model above offers a visual illustration of the dynamics involved in the large-scale project of the reconstruction of Lebanon. Luhmann's theory allows us to view each system as a living organism in which each component of the system, or cell, contains all the information needed for this system to be organized and healthy. The different systems

involved interact through communication practice and are able to organize their relationship through communication. As explained in the Literature review, the different possibilities that result from communication delineate the parameters of a system and its influence on other organisms.

As presented in Chapter 2, Luhmann considers social systems to be autopoietic because they can reproduce themselves on the basis of communication (Seidl, 2005: 21). According to Luhmann's model, elements that compose a system exist only if they are used in conjunction with other elements of the system in order to function as a network (Ibid: 27). Communication refers itself to other possibilities of communication and therefore creates connections that allow it to continue to operate or to recreate itself. Just as the limit of communication possibilities and connections is also the limit of the system and establishes its parameters for Luhmann, so the limits of the model presented in the following section refer to the network of communication practiced by those involved in this specific project.

As also explained in Chapter 2, autopoietic systems are considered "operatively closed" since operations that occur within the system cannot escape, nor can outside operations enter the system. However, systems interact, exchange and are dependent on their environment, which is referred to as the "interactional openness"(Seidl, 2005: 22). The operational closure is referred to by Luhmann as self-reference and is what makes the reproductive ability of systems possible (Luhmann, 2005: 64). For Luhmann, the operations of the environment do not directly affect the system, but rather create perturbations in a system that can activate internal operations, an occurrence he refers to as "trigger-causality" (Ibid).

Therefore, the model above represents the systems that comprise Lebanon as a knowledge society, which are dependent on its communication with the Diaspora. Therefore, the Diaspora, although living outside of the country, is maintained within the limits of the system as a whole. This Diaspora has an important influence on the system's environment, which creates perturbations that activate internal operations in the system itself.

In this case, we can identify that the communication possibilities that interconnect the different systems involved are created and made possible by the Lebanese Diaspora, for it is only through their interest to remain connected with their homeland that they ensure open communication with other countries.

As we have learnt, the investments that are received by Lebanon are used, directly or indirectly, in an effort to maintain and reinforce the country's democratic system and the ideal of democracy in the Middle East. Even if certain international investments are made to reach mostly self-serving goals, such as building hotels to house guest that are wanted business partners, the ultimate effects on the country are positive for the local communities and aid in maintaining order and democracy. Projects such as the one provided in this example create jobs and inject funds into local communities that in turn use these funds for education and the creation of new infrastructure. This will continue to be true as long as the country continues to give significance to the values related to education, democracy and improved living conditions for its citizens.

As illustrated in *Figure 3*, the researcher has identified 6 major areas of focus that are integral parts of the reconstruction project of Lebanon: international communication, the aid provided by the international community and the development efforts pursued in

Lebanon, the governmental policies and reforms that were undertaken through these developmental goals, the international and local investments made in the field of education and in the development of expertise, investments in technology and finally, the main objective of the project of reconstruction which is the maintenance of the country's democracy.

The areas that receive investment, whether financial or intellectual, represent the important components of Lebanon as a society. In this specific case, they represent components that are important to Lebanon as a knowledge society and as a country in reconstruction. Alone, each component contributes to maintaining an organized society. As a whole, these components are the representation of a contemporary society that strives to be knowledge-based.

The cell that represents Lebanon as a whole is contained within a larger parameter that is the environment. The environment contains different organisms that interact with Lebanon during the reconstruction period: the international community. The arrows represent the investments and contributions that enter the system from other organisms that are located in the external environment. These contributions can come from any location within the environment and during the reconstruction period that followed the 2006 war, there would have been many lines passing through the organism at the same time, and from all directions. The arrow that appears to the right in *Figure 3* is therefore a linear representation of the major contributions invested by Western countries, who are the main contributors identified by the informants. These contributions are invested into different systems within the cell. However, these contributions not only have an impact on the specific area of investment they target, but also on the other systems contained

within the larger organism. Much like the system's ability to reproduce itself, the exchange of information between the different layers is made possible through communication practices. The arrow that appears to the left-hand side of the model represents this ripple effect caused by a contribution to a particular system and the consequent transfer of information throughout the interrelated systems.

The order of the layers of systems as represented in *Figure 3* is also of importance. As each system has an effect on the others, the largest layer enfolds the others because of its scope. The international communication system, *System A*, is larger than the others because it deals with a larger number of actors than other sections. International communication entails the system's interactions with the outside world as well as the policies and priorities it sets forth on the world stage. Since it is the face of the system as it pertains to the international community, it also represents and identifies the internal priorities of the system, therefore influencing all the other systems.

System B represents the aid and development received by the country during the reconstruction period. As explained in the previous section of this chapter, funding is not only received to help the country rebuild its destroyed roads and buildings, but also to invest in its social reform programs and social services. The contributions of the international community, including that of the Diaspora, help to create innovative programs that seek to strengthen Lebanon's educational system and offer important opportunities for the development of education and expertise. This is also why this system is larger than those of *Governmental Policies* and *Education and Expertise*, as it has a direct effect on them.

System C represents the governmental policies elaborated by the local government and in collaboration with the international community through international conference, such as the Paris III. In all societies, governmental policies set the agenda for other important social matters, such as health care and education; therefore, this system encloses the smaller systems of education, expertise and technology. It is also smaller than the two previous ones because international communication and international aid and development surely have an influence on the nation's governmental policies. As we have seen in the analysis, Canada and other Western countries have a great deal of influence on Lebanon's internal governmental policies by determining the areas that receive funding through international aid and financial contributions.

The country seems to be determined to improve its educational system, represented in the model as *System D*. Reconstruction activities and investments strive to offer a higher level of expertise to the country's professionals and to invest in the field of technology, all while making its market an enticing area for investors. All of these efforts ensure the prosperity of the country's social systems and a higher standard of living for the population, all of which help stabilize the country's internal conflicts and avoid a renewed civil war.

System E represents the state of the country's field of technology. Investments in the field of new technology, combined with the existing high level of accessibility and use, help the country stay at an advantageous position on the world stage. Investments in the field of technology and ensuring that local businesses, government and educational institutions have the ability to use these technologies to increase their efficiency and accessibility help the country participate in matters of global interest and compete with

other small countries in a globalized market. Furthermore, governmental policies and reforms established since the 2006 war focus on the codification of information as well as the development of information management systems to better record information and better serve the population. This new push towards digital record management in the fields of education, health care and social assistance helps the local government to better serve the needs of its citizens by providing information about the population to the government. In turn, this information helps the government identify the needs of its population, while helping to better direct its communication with them.

Finally, as the Third-Generation Activity Theory demonstrates, when many systems are interacting on a same project, the most important factor for success is a shared objective. As we have seen by gathering first hand information from our informants, all the systems involved in the reconstruction of Lebanon mentioned by our informants did share the same ultimate objective: to maintain Lebanon's democratic system. That is why the core system in the model is *Democracy*. Even if their personal motives or objectives are very different; i.e. gain from low cost of real-estate, maintain a neutral territory to do business, show solidarity with citizens of Lebanese descent, etc., all systems involved in the reconstruction efforts need Lebanon to remain a democratic and non-religious state in order to accomplish their personal goals. Therefore, the contributions are dependent on the system of origin's personal interest in Lebanon. However, if this investment does not contribute to the safeguarding of Lebanon's secular democracy, it will disturb the balance between the internal and external objectives for this project. Based on the Third-Generation Activity Theory, the result would lead to the

inability to successfully accomplish the project of rebuilding the country and would cause subsequent problem in the diplomatic relations between the systems involved.

Discussion

Niklas Luhmann's transdisciplinary theory of social systems, based on the concept of autopoiesis, allows us to perceive organizations as living organism that can reproduce their elements from within, much like how plant cells can reproduce broken stems through their own internal operations (Seidl, 2005). According to this notion, since different systems interact, exchange and are dependent on their environment, changes in the environment create perturbations in a system that can activate internal operations, or "trigger-causality", which in turn activate the system's autopoietic capabilities (Ibid). For Luhmann, these social systems reproduce themselves on the basis of communication (Ibid: 21). This element can be associated with Stehr and Foray's discussions on the importance of codification to store and distribute information throughout an organization, which allows the recreation of the culture and practices associated with a specific domain of expertise. Therefore, by considering Lebanon as an autopoietic system, we are able to identify the different components (or systems) that are important to the prosperity of the country and consider that the country is able to rebuild its society with the memory and knowledge contained in each of its systems. The data collected strives to identify the elements that facilitate the reconstruction of a country based on the autopoietic concept, such as the use of technology to store and share information.

In addition to the model above that illustrates the different components in interaction during the project of re-building Lebanon after the 2006 war, answers to the

research questions posed in the previous chapter, provided by the data collected, help to reach the purpose of the study; determining Lebanon's ability to integrate into a worldwide knowledge economy.

The first question ponders *what investments were made in the field of education, technology and professional training since the 2006 war?* Based on the data collected, it is apparent that many investments were made in these fields. The informants confirm that the international community and the local government made important investments towards their improvement and evolution. Through these investments, emphasis continues to be placed on education at all levels and new technology infrastructure and training are at the centre of many post-war projects.

All these factors speak to Lebanon's ability to be a player in the global knowledge economy. Maintaining its educational system and professional training as a priority and trying to create world-class information and communication technology infrastructures, along with the systems in place that allow these assets to be preserved and shared, shows a desire and capability to compete in a worldwide global economy, although at a small scale. Considering Lebanon's size and historical and contemporary devastating conflicts, that is quite encouraging. One could argue that, barring any future destruction, Lebanon is on its way to become a major contributor to the worldwide knowledge economy. Though the country's government is greatly polarized and this often results in political standstills, as was the case in the months following the end of the 2006 war, the improvements in the population's standards of living help please the masses and help avoid any threats or loss of faith to its democratic system. As the only democratic and secular government in the Middle East, the international community benefits from

economic and political partnerships that Lebanon has to offer to the Western world and other Arab countries. As the authors Feki and de Ficquelmont explain: “Pays à la fois démocratique et non islamique entouré de puissances principalement musulmanes et autoritaires, le Liban est une exception arabe” (2008: 33). The country’s status as a political exception in the region makes it a natural partner to Western governments and an important gateway to the rest of the Middle East. Even though these countries may have their own motives or objectives for their contributions to the reconstruction of Lebanon, such as the possible future financial profits, property ownerships, or gained expertise, their contributions ultimately benefit Lebanon’s objective: to protect its democracy. The data collected indicate that Lebanon is focusing on ensuring the country’s integration into a worldwide knowledge based economy, by investing in the areas of education, technology and local expertise, all the while allowing its financial system to adapt to the needs of a globalized economy.

The second question asks *what organizations are involved in the reconstruction efforts?* In the first section of this chapter, many governmental and non-governmental organizations are identified for taking part in projects related to the reconstruction efforts, for contributing financial aid towards the country’s reconstruction or for investing in projects that aim at rehabilitating different sectors within the country. Those identified were mainly the ones identified by the informants or during the initial research of the subject. Most of these organizations have close ties to the western countries, based on the personal contacts the informants have with these entities. It was not possible to identify or to discuss all the organizations that were directly involved in this project, especially in the context of this research. It is conferred that these organization mainly interact during

international summits, such as the Paris III conference, or through the countries embassies to discuss matters pertaining their involvement in the reconstruction of Lebanon.

More importantly, question 3 inquires *What are the main objectives of those involved in the reconstruction of Lebanon and how they interact with the other parties involved?* Leaning upon Luhmann's autopoietic social systems theory, the communication practices used by each country in relation to their specific projects with Lebanon are what allow the country to organize the core objective of maintaining its democratic system. These practices also allow the system to reorganize its efforts following a change in the environment, such as an international conflict. This specific project of rebuilding Lebanon after the 2006 war is a good example of the use of communication to appeal to the international community. Lebanon relied primarily on historical allies to help its cause to rebuild the country, and to do it at a Western standard, which focused on contemporary financial and social practices. The international community used this project as a way to show its continued support for the country and to show its confidence in the country's ability to maintain a strong presence in the Arab world.

In the model represented in *Figure 3*, *System F* represents the main objectives of those involved in the reconstruction of Lebanon following the 2006 war, which was maintaining a democratic society. It is appropriate for this important system to be at the core of the model, as this characteristic is imperative to the maintenance of Lebanon's peaceful existence and is also the core of each of its internal debates. Furthermore, the

destabilization of Lebanon's democracy would effect and alter each of its other systems, especially its relationship with the outside environment and its Western and Arab allies.

Furthermore, the local Lebanese government has made some steps to ensure it is able to compete in a global market. As presented in Chapter 2, author Peter Drucker (1992) explains that countries that are participating in the new global economy focus on reducing the amount of labor-intensive employment and increasing their ability to produce knowledge and expertise-based goods and services, with an emphasis on entrepreneurship. With the help of the contributions invested by the international community, the country has started to ensure that its local businesses have the resources to rely on more advanced technologies and that the local professionals have the appropriate training to support these businesses. The local government has also made economic alliances, through such agreements as the Basel Accords and inclusion to the WTO, that ensure the country's ability to participate in global partnerships and to make it an enticing location for foreign investments.

The data collected shows that the reform programs in the fields of health, education and social security are focused on the digitalization of information in order to better store important data about the country's citizens and to offer better services to the entire population. In doing so, the country is ensuring a better retention and sharing of important information. In the case of a future national crisis, the demographic information now made available to the government through the institutionalization of these digital databases is readily available. This will help the government prioritize its tasks during reconstruction periods, such as targeting the most vulnerable population in receiving aid and primary services.

The fourth question asks *Do the Lebanese citizens have access to the technological tools necessary to be involved and have a voice on the international stage?*

Though technology is relatively developed in Lebanon compared to other Arab states, there seems to be an increase in values and practices associated with knowledge based societies, but not in the contemporary sense that focuses mostly on digitalization and codification. Plato prescribes that those who possess knowledge must guide society, the state and its citizens. Aligned with this school of thought, Lebanon focuses more on the fundamental values of a knowledge society, where knowledge itself is of value; producible, exportable and used as a commodity. It must be noted that Lebanon has historically placed importance on knowledge and education and continues to ensure its presence on the world stage by relying on this common thread with the developed world. Furthermore, its Diaspora ensures that education remains a priority within the country and a defining characteristic of Lebanon to the rest of the world.

The technological developments implemented in the country, especially those related to education and professional training, are consistent with the sustainable development model of international relations because they allow its citizens to improve their standard of living and communicate more effectively with their government. The many projects discussed in the data collection section of this chapter, such as the development of ICT infrastructure, the digitalization of government services and professional development programs all show the government's dedication to directing the country and its citizens to a more technologically advanced state. These improvements facilitate the country's ability to participate in international debates and keep up with latest economic and social global trends.

As presented in the Literature review, Appadurai explains that access to ICTs allows the formation of a “diasporic public sphere” (1996: 4), a place that allows immigrants to remain rooted in their homeland and to have access to content in their native language and culture. This connection with their homeland also enables this Diaspora to engage in local social projects from anywhere in the world (Ibid). As confirmed by author Carol Fadda-Conrey (2010), the Lebanese Diaspora was able to use shared channels of communication to communicate with citizens in Lebanon and obtain information about their situation. Furthermore, the individuals who were visiting the country when the war started use these channels to inform the world about their experience of war and to ask for international support to end the war and help the country overcome the devastation. After collecting data from the informants, it is further apparent that the use of technology, especially as a link between citizens within and outside the country, helped ensure the participation of the international community in the project of rebuilding Lebanon and to focus on projects related to improving the country’s social services and maintaining strong ties with the developed world.

As explained by Manuel Castells’ notion of “mass self-communication” (2007: 239), the Lebanese Diaspora and local citizens’ appropriation of the new forms of communication, as presented by author Carol Fadda-Conrey, were used to express their opinions and share life experiences, enabling the creation of on-line communities to further appeal to the international community’s compassion and support for reconstruction projects. Furthermore, the appropriation of these forms of communication offers a platform from which the Lebanese community can express its needs and opinions

about matters that will affect the country and maintain open channels of communication with the outside world.

The ability to use technologies to support a network of human relationships and to influence the international community's actions enabled Lebanon's Diaspora to contribute to the reconstruction of Lebanon. Although living outside of the country, the Diaspora's investments and direct influence on the objective contained within the systems make them an important part of Lebanon as a system and as a knowledge society. They are an integral part of the Lebanese society and of each of the systems represented in the model.

Furthermore, with the help of projects like the IDRC's ICT4D-ME and the DOT project funded by CIDA, locals are receiving training and tools that allow them to use ICTs to improve efficiency and modernize their business practices. These types of projects also help support regional networks that enable the quick exchange and sharing of information and expertise, and further stimulation empowerment and regional autonomy.

Furthermore, the international community facilitates Lebanon's integration into the knowledge society. As explained in the UNDP Arab Human Development Report, the abilities to build on human capabilities, to use ICTs, to improve upon technological developments and to engage in R&D projects facilitate a country's progression towards a knowledge society (2002a: 64). Many projects undertaken by the international community since the 2006 war focus on these aspects. Contributors as well as the local government concentrate their efforts on improving access to education, professional and specialized training, as well as the development of ICT infrastructure and online

government services. However, there exists a lack in the country's ability to engage in research and development projects at the same level as more technologically advanced countries such as the U.S. and Japan.

Through the research conducted and the data collected, Lebanon's Diaspora has emerged as integral to most projects related to the country's evolution and prosperity. Due to the strong presence of Lebanese Diaspora in the international diplomatic efforts to provide aid and policy setting, the country is able to push towards more modern standards of development in the field of knowledge building and maintaining a standard of living that is comparable to that of developed countries. Because Lebanon strongly valorizes knowledge, culture and arts, it has been able to maintain education, especially that of the youth and women, as a priority throughout reconstruction efforts.

Data has shown that the Diaspora living outside of Lebanon is responsible for most aid efforts provided to the country as well as being responsible for the policy setting during international summits and projects aimed at maintaining the country's prosperity. Furthermore, because the Diaspora is involved in close partnerships with the local government and its economic assistance, it has a major influence on internal national policy setting. As such, the Diaspora provides Western views and strives to maintain Western standards within Lebanon.

A reoccurring theme among Lebanese informants was a view of "barbaric" or primitive modes of conducting business when it comes to political matters, a view likely inherited from years of civil war between religious and political factions within Lebanon and neighboring countries. The intent of the Lebanese Diaspora is to restore and maintain more civil democratic and non-confessional political practices.

The international aid and support offered by communities and governments worldwide demonstrates Lebanon's place of importance and the international community's refusal to let the country slip back into an underdeveloped state. In this sense, the country's uniqueness makes for an interesting research topic. We have seen that in a highly religiously controlled region, Lebanon's liberal democratic system makes it an important ally to the Western world, and its large Diaspora does not allow the world to forget their small country.

When analyzing this information with the help of a model that illustrates the interconnectivity of those involved in these projects, it is further possible to assess Lebanon's status as a knowledge society following its reconstruction efforts. In *Figure 3*, each area of focus makes up a layer of the larger cell that is Lebanon's knowledge society. The larger cell represents Lebanon as a whole and as a system composed of sub-systems that can be extracted and analyzed as independent systems. Each section is considered to be a system because they are areas of social organization that contain their own institutions, history and particular communication practices. Each system must have the appropriate levels of information storage in order to retrieve the information needed in the event of loss of information. Likewise, each system must contain information about the other systems within the larger whole. This autopoietic organization will not only help locate missing information, but also help adjust the priorities and objectives of the system as a whole. For example, if information contained in *System C* regarding governmental priorities deals primarily with building international partnerships and reducing taxes on trade with other countries, then the educational priorities contained within *System D* will deal with helping students learn about the benefits of free trade and

international business, just as priorities in the fields of technology or development will also focus on facilitating international business partnerships.

Each investment, whether specifically intended for education, telecommunication infrastructure or the banking system, helped the country to reach its main goal, which is to maintain its democratic system, and it uses this core value to direct all projects related to its reconstruction. Each area that has received investments has been tied into the larger goal of maintaining the democratic system. This is illustrated in the model where the cells of Lebanon's system are centered around the main objective that is democracy and the main objective influences all the other systems within the country, illustrated by an arrow that starts at the core system and finishes at the limit of the last system. This was made apparent by studying effort to introduce major social reforms through the investments and programs elaborated during the Paris III conference. Most investments that resulted from this international conference focused on areas that are widely supported by sustainable development advocates, such as investing in education and professional training for youth, women and vulnerable populations. By promoting training and education, investors are ensuring that the population has the know-how required to continue to improve their own living standards and have the ability to pass these skills on to future generations so that the same investments will not have to be provide by outside sources in the future. It also ensures that the local populations can tailor these investments to fit their own unique needs and cultural requirements.

However, this information does lead one to inquire as to what improvements need to be brought about to ensure Lebanon is able to have a prosperous knowledge-based economy. When asked weather or not Lebanon will be able to rebuild itself based on a

model of a knowledge-based society, most interviewees answered in a very diplomatic way, stating that it should be possible sometime in the future. Others, familiar with the cultural mindset unique to Lebanon, mentioned that religious and confessional divisions within the country, and their manifestations during the allocation of rights and services to citizens, need to be addressed and abolished before the country can move towards a more modern and “civilized” model. They mentioned that the freedom and empowerment that came from education and the use of technology as a means for expression were limited to the restraints delineated by political and diplomatic confessional divisions. Furthermore, the level of political involvement of outside governments in the country's everyday activities prohibits the country from having complete freedom and autonomy over its internal projects. Again, limiting confessional divisions within parliament was identified as a way to free the country from invasive meddling from other countries and focus on improving its position on the international stage.

One day Lebanon may become a world leader in the fields of science and technology and export innovative creations to the world, but most interviewees believe that the country will not be able to overcome any economical, social or cultural roadblocks until it is able to detach itself from its historic confessional political boundaries and truly be identifiable as an undisputed free democracy. For now, this researcher is content to qualify the country as having taken the right steps towards maintaining and encouraging its knowledge economy after an event that would likely have caused other less supported nations to only address the more fundamental areas of safety, shelter and nutrition.

Chapter 5 – Conclusion

Significant Findings

This thesis offers a unique perspective on the link between knowledge, technology, communication and international development. Its purpose was to examine how Lebanon used a network of international partners to rebuild itself after a devastating war and to question if it took the opportunity to rebuild its society based on a contemporary configuration of a global economy. Starting with the premise that there is a shift towards a more globalized world where all countries are socially, culturally and economically interdependent, the research aims to discover if Lebanon is able to have a place of importance in this context.

As discussed throughout the second chapter, the evolution of technology in the past few decades has changed its role in society. It has evolved from a simple tool used to explore the world to a catalyst that facilitates the access and transfer of knowledge. Technology also facilitates the production of knowledge and allows all citizens to gain access to information and to power.

After studying these concepts in light of the reconstruction of Lebanon, it was determined that technology was used as a way to facilitate the reconstruction of the country by offering the ability to share information and shape public opinion. Technology was also identified as an area of focus when it came time to offer financial contributions and aid to help rebuild the country beyond its infrastructure. Most programs and projects that resulted in efforts to help the country get back to a functional state have some component of technological advancements: either to help codify important information

about the citizens, to offer more services to the population and to small businesses or to improve the education and level of professional expertise in the nation.

From a communication perspective, the project of rebuilding a nation after a war can focus on many different aspects. In this case, the focus was to examine how different organizations interact in a large-scale collaborative project and to inquire about how they communicate. Technology is not identified as the most important factor in this network's ability to communicate. It is rather human relations and the sense of belonging that compelled different organizations to get involved and ensured the successful accomplishment of common goals. However, the state of technology in Lebanon provides many opportunities for its citizens to use technology to further their expertise and for political and social empowerment.

The use of Luhmann's social system's theory and his concept of autopoiesis to analyze the dynamics in play during a project of rebuilding a country after a war is a unique contribution to the study of Lebanon as a society. Luhmann's work provides a clear understanding of the network configuration of organizations, which he analyzes in terms of social systems and their interrelation with other systems as well as the use of communication as a basis for re-building and re-organizing knowledge and expertise. Luhmann's pragmatic view of communication and its role in an organization help to understand the effects and possibilities that communication can offer to a system in reorganization and offer a somewhat simplistic way of dissecting its components.

The elaboration of a model to identify the important contributors to Lebanon's project of reconstruction allows us to identify the most important areas of investments for many of the countries involved in this project. These areas are primarily identified as

technology, education, social services and infrastructure. The main objectives of those involved do not necessarily focus on rebuilding Lebanon based on knowledge society criteria, but all investments contribute to this finality. Collecting information from many important sources allows us to identify the main common goal of those involved in these efforts, which is to maintain Lebanon's democracy.

The identification of the importance of democracy in Lebanon's international relations and internal stability is considered to be significant because it allows us to consider this important aspect when studying the country in all other contexts. The notion of democracy must be at the core of any analysis of the country and of its relationship with the international community.

Furthermore, the model can be used to contextualize most other issues related to Lebanon and to serve as a guide for future studies about the country because it offers an illustration of its social structures, especially in relation to other countries. Although simple in nature, the model offers an organized perspective and explication of the society, its priorities and its processes.

The importance of the Lebanese Diaspora is revealed in this study. They are not only strong advocates for the Lebanese heritage throughout the world, but are also important links from the West and import contemporary ideals that are upheld by other democratic societies. Had it not been for their strong cultural and emotional ties to the country, Lebanon's interests would not have been lobbied in governments around the world and the project of rebuilding would have likely been much different and much less effective. As Walid Maalouf mentions in his 2008 article:

Depuis la Phénicie jusqu'au Liban moderne en passant par le Mont-Liban des dynasties Fakheddine et Chehab, il a toujours existé un rapport fascinant entre

la diaspora et le Liban. À travers l'histoire, ceux qui ont quitté le Liban ne l'ont jamais abandonné et n'ont jamais permis à la communauté internationale de l'abandonner aux loups. Avec l'aide des Libanais du Liban et des Libanais de l'étranger, le Liban restera à jamais libanais.

The project of the reconstruction of Lebanon cannot be considered to have been done completely to the model of a knowledge-based society. Mostly caused by the country's inability to forgo its confessional political divisions, the project of evolving into a knowledge-based society and adopting a knowledge-based economy does not seem likely in the near future for Lebanon. However, the social, economical and political understanding accomplished by this study allows us to identify the areas that need to be reformed before Lebanon can be considered an equal actor on the world stage. The data collected also provides a comprehensive account of the international efforts to rebuild Lebanon after the 2006 conflict with Israel and the complicated relationships that exist in this large network. This understanding can be used in future projects that seek to understand the events that took place immediately following the historic occurrence. The use of concepts such as those elaborated in Luhmann's social systems theory and its focus on the use of ICTs gives this study a unique perspective that contributes to the advancement of knowledge in the field of communication.

Limitations and Implications

Although there were 10 completed interviews with high-level informants, most individuals approached to participate in this study did not answer the researcher's request to participate. Others referred the email request to colleagues, who did not acknowledge receipt of the request. It is apparent that people of Lebanese or Arab origins, with

advanced knowledge of the country's current social development state, were more inclined to answer the questionnaire. After contacting several key Canadian organizations on several occasions without success, the interview guideline was adapted to reflect only a Canadian governmental perspective, and excluded questions related to specific initiatives within Lebanon. The answers provided were more of an official governmental response than a first-hand account of individuals' experience, but were useful nevertheless.

This study does not claim to have accounted for every aspect needing to be studied to fully understand the complicated networks or relationships that exist during the reconstruction project. It attempts to have a broad scope in order to have an as complete overview as possible of the reconstruction efforts while considering that the reader has limited knowledge of the country and its cultural distinctiveness. A more extensive research covering every international institution involved in this project would be possible in a longer study.

The choice of the authors used in the theoretical framework of the thesis leads to limitations during the analysis. Luhmann's social system's theory, being very theoretical in nature, does not lead to a fully operational model when it is used to understand a phenomenon that is anchored in reality. It does not take into account certain aspects that are important to understanding the case of Lebanon, such as historical events and political factions. However, it helps to skim the surface to better understand the role of communication in a social system and its relationships with its environment.

It is the researcher's hope that this study serves as a guide to understand the state of Lebanon's societal development, its importance as a bridge between the Western and

Arab world and its potential of becoming an important actor in the global arena. Its strong advocacy for democracy in a very turbulent time speaks to the humanity of the project of the reconstruction of Lebanon and its importance as a model to other war-torn countries.

Also, a study focusing primarily on the use of social networking websites, the Internet and other advanced technologies, such as smart phones, and ways in which these technologies have changed citizens' views on the confessional political divisions in Lebanon would be an interesting area of focus in the future.

Thesis Summary

The present thesis strives to identify the most important determining characteristics of a Lebanese knowledge-based society. Starting with the initial inspiration, which is a small country's ability to rebuild its infrastructure after a devastating war, it proceeds to examine why and how the world was willing to lend a helping hand.

Firstly, it is important to identify the importance of knowledge historically to grasp its current position in modern society. With the explanations provided by the work of Nico Stehr (1992; 1994), this thesis is deeply rooted in the belief that the most important change to our globalized society is the shift from a consumer-based economy to a knowledge-based economy, where the production and distribution of knowledge through expertise is key to a system's prosperity.

Following this, the work of Niklas Luhmann's transdisciplinary theory of social systems is examined. Luhmann introduces the concept of autopoiesis, and allows us to perceive organizations as living organism having the ability to rebuild themselves through the storage of information in all of its components (Seidl, 2005). For Luhmann,

these social systems can reproduce themselves on the basis of communication (Ibid: 21). This element is associated with Stehr and Foray's theories of the importance of codification as a means of storing and distributing information throughout an organization. Codification allows the recreation of culture and practices associated with a specific domain of expertise.

By viewing each organization as a living system, we envision the globalized world as a network of cells each exercising a certain amount of influence on the others. The cells are in constant communication, much like living organisms. Furthermore, this network configuration not only becomes a model of the interrelated nature of our globalized economy, networks become important ways of doing business through the use of ICTs. We have seen that by using networks supported by technologies to cooperate on projects, national and organizational boundaries are blurred and give way to networks of shared knowledge (Bommes & Tacke, 2005: 282).

In a globalized world networks where experts meet using technological venues to cooperate on common projects, the position of the nation-state is transformed and power is transferred to technologically-inclined citizens. As discussed by authors Appadurai (1996), Jacques (2002) and Castells (2007), new media and the technologies supporting them change the way citizens receive and send information thereby shifting power away from the nation-state into the hands of their population. International development models have adjusted to account for these changes and consider that local population must be involved in the initial and all subsequent stages of international development projects (Lafrance, 2006: 21). Furthermore, the transversal communication between local, public and private sectors needed to create sustainable strategies requires a network

style of organization. This allows open and free communication between the spheres involved as well as for fast circulation of information (Caisse des dépôts, 2003: 34).

In-depth interviews were used to collect data from government and ICT policy makers as well as civil society activists from around the world who have experience in projects related to the reconstruction of Lebanon since the 2006 war. Based on the Literature review, a qualitative research design was used to identify the organizations that have been involved in projects related specifically to areas that benefit the country's knowledge society after the 2006 war and to understand this phenomenon from the perspective of the individuals who have experience in the topic explored. Therefore, the data collected offers a specific view of the project of rebuilding Lebanon. Since these informants are located in different countries, such as Canada, the US and Lebanon, they offer unique perspectives that are representative of Lebanon's eclectic culture and large Diaspora.

The information they provided opened an interesting discussion about the different systems that have an effect on Lebanon's knowledge society, such as its relations with the international community, the nature of the aid it receives from this community, the priorities of its governmental policies, its educational system and investment in expertise, its level of technological advancement and integration as well as the importance of its democratic system.

All these aspect are presented in a model that illustrates the interrelated nature of these systems and how they interact in a global context. This model helps to identify the country's modes of organization and of communication with the outside world.

The Lebanese Diaspora is identified as the most important contributor to Lebanon's ability to rebuild itself after the 2006 war, and is also accredited for the direction of the social, technological, financial and political projects that ensued during this period. To reiterate the words of author and American diplomat Walid Maalouf, the Lebanese Diaspora has the potential to lead their native country to a renaissance (2008). Therefore, with the help of its Diaspora, the country did focus its reconstruction efforts towards values and projects that facilitate its integration into a worldwide knowledge economy, but it still needs to focus on important political and social reform before taking a place of power on the world stage.

Bibliography

- Al Saqqa, Mohammed. (2007, May 19). *Cisco Saudi GM affirms Cisco's commitment to Lebanon*, [Press release]. Riyadh: Cisco Systems.
- Appadurai, Arjun. (1996). *Modernity at Large. Cultural Dimensions of Globalization*. Minneapolis: University of Minnesota Press.
- Babcock, Philip. (Ed.) (1981). Webster's third new international dictionary of the English language, unabridged. Springfield: G. & C. Merriam Co.
- Barni, Myriam. (2003). *Manager une équipe à distance*, Paris: Éditions d'Organisation.
- Baroudi, Sami E. (2004). The 2002 Arab human development report: implications for democracy. *Middle East Policy*, 6(1). 132-141.
- Beaud, Jean-Pierre. (2004). L'échantillonnage. In Benoît Gauthier (Ed.), *Recherche sociale. De la problématique à la collecte de données*. (pp. 211-242). Sainte-Foy : Presses de l'Université du Québec.
- Bell, Daniel. (1976). *Vers la société post-industrielle*, Paris: R. Laffont.
- Boily, Lise. (2009). Codification et industries culturelles : un espace de créativité et d'innovations. *Management International / International Management / Gestion International*, 13, 101-111.
- Bommes, Michael., & Tacke, Veronika. (2005). Luhmann's systems theory and network theory. In David Seild and Kai Helge Becker (Eds.), *Niklas Luhmann and organization studies* (pp. 282-304). Herndon: Copenhagen Business School Press.
- Bonneville, Luc, Grosjean, Sylvie & Lagacé, Martine. (2007). *Introduction à la recherche en communication*, Montréal, Éditions Gaëtan Morin.
- Buccianti-Barakat, Liliane. (2007). Il était une fois un 12 juillet 2006 à Beyrouth. *Hérodote*, 1(124), 39-50.
- La Caisse des depots. (2003). *Travail, réseaux et territoires. Repenser le télétravail?* La documentation Française, Paris.
- Castells, Manuel. (2007). Communication, power and counter-power in the network society. *International Journal of Communication*, 1, 238-266.
- Central Administration of Statistics. (2007-a). *Demographic and social statistics: Population*. Retrieved April 29, 2011 from http://www.cas.gov.lb/index.php?option=com_content&view=article&id=52&Itemid=27

- Central Administration of Statistics. (2007-b). *Demographic and social statistics: Internal aid*. Retrieved April 29, 2011 from http://www.cas.gov.lb/index.php?option=com_content&view=article&id=52&Itemid=27
- Central Intelligence Agency. (2009). *The world factbook*. Retrieved August 12, 2010 from <https://www.cia.gov/library/publications/the-world-factbook/geos/le.html>.
- Chevrier, Jacques, (2004). La spécification de la problématique. In Benoît Gauthier (Ed.), *Recherche sociale. De la problématique à la collecte de données*. (pp. 51-84). Sainte-Foy : Presses de l'Université du Québec.
- Cornu, Bernard, (2005). Collective intelligence and capacity building in a networked society. In Tom J. van Weert & Hogeschool van Utrecht (Eds.), *Education and the Knowledge Society. Information technology supporting human development*. (pp. 27-34). Boston: Kluwer Academic Publishers.
- Dean, Jodi. (2001). From Technocracy to technoculture. *Theory & Event* 5(1). Retrieved on June 14, 2009 from Project Muse Database.
- Dgroups. (n.d.). *Development through dialogue*. Retrieved November 6, 2008, from <http://www.dgroups.org>.
- Drucker, Peter F. (1992). The changed world economy. In Nico Stehr and Richard V. Ericson (Eds.), *The culture and power of knowledge. Inquiries into contemporary societies*. (pp.257-277). Berlin:Walter de Gruyter.
- Eid, Mahmoud. (2008). *Interweavement. International media ethics and rational decision-making*. Toronto: Custom Publishing.
- Eid, Mahmoud & Lagacé, Martine. (Eds.). (2007). *Communication research methods: Quantitative and qualitative approaches*. Boston: Pearson Publishing.
- Embassy of Lebanon. (n.d.). *Technology*. Retrieved February 19, 2009 from <http://lebanonembassy.ca/eng/index.html>.
- Embassy of Lebanon. (n.d.).*Business Opportunities*. Retrieved April 22, 2011 from http://www.lebanonembassyus.org/bus_opportunities/business.html.
- Fadda-Conrey, Carol N. (2010). Writing memories of the present alternative narratives about 2006 Israeli war on Lebanon. *College Literature* 37 (1), 159-173.
- Feki, Masri, & de Ficquelmont, Arnaud. (2008). *Géopolitique du liban. Constats et enjeux*. France: Studyrana Perspectives.
- Ferrarese, Estelle. (2007). *Niklas Luhmann, une introduction*. Paris: La Découverte.
- Foray, Dominique. (2004). *Economics of Knowledge*. Cambridge: MIT Press.

- Gauthier, Benoît. (2004). La structure de la prevue. In Benoît Gauthier (Ed.), *Recherche sociale. De la problématique à la collecte de données*. (pp. 129-158). Sainte-Foy : Presses de l'Université du Québec.
- Government of Canada. (2010, July). *Canada-Lebanon relations*. Retrieved September, 2010, from http://www.canadainternational.gc.ca/lebanon-liban/bilateral_relations_bilaterales/index.aspx?lang=eng
- Guillot, Fabien. (2008). Villes détruites, villes construites : Réflexion sur les stratégies politiques et militaires à partir de l'exemple des conflits israélo-arabes (Liban, Israël, Palestine), *Politique et Sociétés*, 27(1), pp.55-79.
- IDRC. (n.d.a). About IDRC, Retrieved on February 17, 2009, from http://www.idrc.ca/en/ev-8513-201-1-DO_TOPIC.html.
- IDRC. (n.d.a) TIC-D au Moyen Orient. Retrieved on February 17, 2009, from http://www.idrc.ca/fr/ev-110429-201-1-DO_TOPIC.html.
- International Monetary Fund. (2010, October). *Lebanon: Staff report for the 2010 Article IV Consultation*. Retrieved April 19, 2011, from <http://www.imf.org/external/pubs/cat/longres.cfm?sk=24261.0>
- Investment Development Authority of Lebanon. (n.d). *Success Stories. Investment Projects*. Retrieved on Mai 15, 2011, from <http://www.idal.com.lb/Betz.aspx>
- Jackson, Winston., Gillis, Angela., & Verberg, Norine. (2007). In Mahmoud Eid & Martine Lagacé. (Eds.), *Communication research methods: Quantitative and qualitative approaches* (pp.423-462). Boston: Pearson Publishing.
- Jacques, Daniel. (2002). *La révolution technique, Essai sur le devoir d'humanité*, Montréal : Boréal.
- Joshi, Somya., Barrett, Michael., Walsham, Geoff., & Cappleman, Sam. (2007). Balancing local knowledge within global organisations through computer based systems : An activity theory approach. *Journal of Global Management*, 15(3), 1-19.
- Kecskemeti, Paul (Ed.). (1972). *Essays on the sociology of knowledge*. London: Routledge & Kegan Paul Ltd.
- Khater, Akram Fouad. (2005). Becoming Syrian in America: A global geography of ethnicity and nation. *Diaspora: A journal of transnational studies*. 14(2). 299-331.
- Lafrance, Jean-Paul. (2006). Cinquante ans d'histoire du développement international selon trois grands paradigmes de communication. In Jean-Paul Lafrance (Ed.), *Place et rôle de la communication dans le développement international* (pp.10-28). Québec : Presse de l'Université du Québec.

- Lebanon Blogger Forum. (2006). *Archives - July 2006*. Retrieved on April 28, 2011, from http://lebanonheartblogs.blogspot.com/2006_07_01_archive.html
- Live Lebanon. (n.d.). *About us*. Retrieved on May 15, 2011, from <http://www.livelebanon.net/AboutUs.aspx>
- Luhmann, Niklas. (2002). *Theories of distinction. redescribing the descriptions of modernity*. Stanford: Stanford University Press.
- Luhmann, Niklas. (2005). The autopoiesis of social systems. In David Seild and Kai Helge Becker (Eds.), *Niklas Luhmann and organization studies* (pp.64-82). Herndon: Copenhagen Business School Press.
- Maalouf, Walid. (2008, March 18). Le rôle de la diaspora dans un nouveau Liban. *L'Orient de jour*. Retrieved on June 12, 2010, from <http://www.walidmaalouf.com/Articles/LOrient le Jour 18 mars 2008.html>
- Martel, Donald. (1989). *Conscience et engagement*. Montreal: Chenelière/McGraw-hill.
- McLeod, Douglas M., & Tichenor, Phillip J. (2007). The logic of social and behavioral science. In Mahmoud Eid & Martine Lagacé. (Eds.), *Communication research methods: Quantitative and qualitative approaches* (pp.1-16). Boston: Pearson Publishing.
- Ministry of Finance, Republic of Lebanon. (31 December 2009). *International Conference for support to Lebanon-Paris III. Eleventh progress report*.
- Mucchielli, Alex. (2006). Place de la systémique des communication dans les diverses systémiques. *Revue internationale de psychosociologie*. 1(7). 11-61.
- Nassehi, Armin. (2004). What do we know about knowledge? An essay on the knowledge society. *Canadian Journal of Sociology*, 29(3), 439-449.
- Neuman, Lawrence W. (2007a). Qualitative and quantitative research designs. In Mahmoud Eid & Martine Lagacé. (Eds.), *Communication research methods: Quantitative and qualitative approaches* (pp.175-204). Boston: Pearson Publishing.
- Neuman, Lawrence W. (2007b). Qualitative and quantitative sampling. In Mahmoud Eid & Martine Lagacé. (Eds.), *Communication research methods: Quantitative and qualitative approaches* (pp.345-350). Boston: Pearson Publishing.
- Neuman, Lawrence W. (2007c). Survey research. In Mahmoud Eid & Martine Lagacé. (Eds.), *Communication research methods: Quantitative and qualitative approaches* (pp.373-414). Boston: Pearson Publishing.
- Palmer, Humphrey. (1992). *Kant's critique of pure reason*. New-York: The Edwin Mellen Press.

- Renaud, Lise., & Rico de Sotelo, Carmen. (2006) Communication pour la santé, De multiples approches théoriques. In Jean-Paul Lafrance (Ed.), *Place et rôle de la communication dans le développement international* (pp.32-43). Québec : Presse de l'Université du Québec.
- Roy, Simon N. (2004). L'étude de cas. In Benoît Gauthier (Ed.), *Recherche sociale. De la problématique à la collecte de données*. (pp. 51-84). Sainte-Foy : Presses de l'Université du Québec.
- Salti, Rasha. (2006, July 28). *Lebanon Siege: Day 5*. Retrieved April 28, 2011, from <http://rashasalti.blogspot.com/2006/07/lebanon-siege-day-5.html>
- Savoie-Zajc, Lorraine. (2004). L'entrevue semi-dirigée. In Benoît Gauthier (Ed.), *Recherche sociale. De la problématique à la collecte de données*. (pp. 51-84). Sainte-Foy : Presses de l'Université du Québec.
- Schumann, Christoph. (2004). Political "articulation" in the Diaspora: media, language, and "dialogue" in the case of Arab-Americans. *Diaspora: A journal of transnational studies*. 13(2). 307-330.
- Seidl, David. (2005). The basic concepts of Luhmann's social systems. In David Seidl and Kai Helge Becker (Eds.), *Niklas Luhmann and organization studies* (pp. 21-53). Herndon: Copenhagen Business School Press.
- Schiller, Jerome. (1991). Philosopher-kings: The argument of Plato's Republic. *Journal of the history of philosophy*, 29(3), 483-486.
- Smith, Nicholas. (1981). The structure of Plato's philosophy. *Journal of history of philosophy*, 19 (1), 105-108.
- Stehr, Nico. (1994). *Knowledge societies*. London: Sage Publications.
- Stehr, Nico., & Ericson, Richard V. (Eds). (1992). *The culture and power of knowledge. Inquiries into contemporary societies*. Berlin: Walter de Gruyter.
- Stehr, Nico. (2002). *Knowledge and economic conduct: The social foundations of the modern economy*. Toronto: University of Toronto Press.
- Tan, Bernard C.Y. (2007). Leveraging virtual communities for global competitiveness. *Journal of Global Information Management*, 15(3), i-iv.
- Turgeon, Jean., & Bernatchez, Jean. (2004). In Benoît Gauthier (Ed.), *Recherche sociale. De la problématique à la collecte de données*. (pp. 431-468). Sainte-Foy : Presses de l'Université du Québec.
- Touati, Kamel. (2008). Les technologies de l'information et de la communication (TIC) : une chance pour le développement du monde arabe. *Géographie, Économie, Société*, 10, 263-284.

- United Nations Development Programme. (2002a). *Arab human development report. Creating opportunities for future generations*. New York: United Nations Publications.
- United Nations Development Programme. (2002b). *National human development report. Lebanon 2001-2002. Globalisation, towards a Lebanese Agenda*. Beirut: United Nations Publications.
- United Nations Development Programme. (2009a). *National human development report. Lebanon 2008-2009. Towards a citizen's state*. New York: United Nations Publications.
- United Nations Development Programme. (2009b). *Arab human development report. Challenges to human security in the Arab countries*. New York: United Nations Publications.
- Vickers, Jill. (1997). *Reinventing political science. A feminist approach*. Halifax : Fernwood Publishing.
- Volti, Rudi. (2006). *Society and technological change*. New York: Worth Publishers.
- Waking from its sleep. A special report on the Arab world. (2009, July 25). *The Economist*. 3-16.
- The World Bank Group. (Second Quarter 2007). *Lebanon quarterly update*. Retrieved December 13, 2009, from http://www-wds.worldbank.org/external/default/main?pagePK=64193027&piPK=64187937&theSitePK=523679&menuPK=64187510&searchMenuPK=64187283&theSitePK=523679&entityID=000333038_20080609061551&searchMenuPK=64187283&theSitePK=523679
- Zhang, Juan Juan., & Sang-Yong, Tom Lee. (2007). A time series analysis of international ICT spillover. *Journal of Global Information Management*, 15(4), 64-78.
- Zhang, Dongsong., & Lowry, Paul Benjamin. (2008). Issues, limitations, and opportunities in cross-cultural research on collaborative software in information systems. *Journal of Global Information Management*, 16(1), 61-92.

Appendix A:

CIDA's contribution to the humanitarian assistance and post-conflict recovery

CIDA's \$20.5 million contribution to the humanitarian assistance and post-conflict recovery was allocated as follows:

IMPLEMENTING ORGANIZATION	PROJECT TITLE	DESCRIPTION	BUDGET FORECAST	START	END
World Food Program (WFP), United Nations Children's Fund (UNICEF), World Health Organization (WHO), United Nations High Commission for Refugees (UNHCR), United Nations Office for the Coordination of Humanitarian Affairs (OCHA)	Response to UN humanitarian appeal	In response to the UN appeal for humanitarian assistance resulting from the 2006 conflict, Canada pledged \$5m through CIDA to be disbursed as follows: - \$1.75m to WFP: \$1m for emergency food assistance and \$.75m for the logistics operations. - \$1.5m to UNICEF and WHO: \$.75m for primary health care services, and \$.75m to UNICEF only for adequate water and sanitation support to southern areas affected. - \$1m for UNHCR for emergency assistance to internally displaced persons and refugees. - \$.5m for the establishment of a UN Joint Logistics Centre for logistics coordination and support for the humanitarian activities. - \$.25m to OCHA to coordinate the humanitarian response.	5,000,000	2006	2007
International Committee of the Red Cross (ICRC)	Emergency Assistance for Lebanon	In response to ICRC appeal, the project aims to provide assistance to ease the plight of families displaced by the fighting or blocked in villages isolated by destroyed road networks and mobilize relief supplies for up to 10,000 families.	500,000	2006	2006
ICRC	Additional response to ICRC	The aim is assisting the civilian population (with a focus on water, food, drugs, restoring power, and landmine/UXO awareness) in villages, and ensuring that all wounded are evacuated and bodies recovered that were inaccessible during the fighting.	3,000,000	2006	2006
International Federation of Red Cross and Red Crescent Societies (IFRC)	Humanitarian Assistance to Lebanese Refugees	The IFRC appeal is to support the National Red Crescent in its efforts to assist Lebanese evacuees and affected populations in Lebanon and neighbouring countries. Activities include watsan, provision of non-food items, health and psychosocial support, and disaster management to alleviate suffering of those affected by the conflict.	1,000,000	2006	2006
World Vision	Lebanon Humanitarian Response Program	This project aimed at improving the health of conflict-affected people through the provision of potable water, sanitation and hygiene for 8,500 individuals in southern Beirut and a corridor between Marjayon and Rmaysh in south Lebanon.	500,000	2006	2006

Save the Children	Humanitarian Aid	This project aimed at providing health care (medicine and landmine/ unexploded ordnance awareness), essential support kits to families, as well as safe spaces, psychosocial support and education to children.	500,000	2006	2007
United Nations Mine Action Service (UNMAS)	Emergency Mine Action	This project aimed at preventing civilian casualties and providing humanitarian assistance and facilitating freedom of movement through mine/ unexploded ordnance awareness and safety training.	1,250,000	2006	2007
Canadian International Demining Corps	Mine Risk Education	This project aimed at conducting community-based mine risk education in areas impacted by the conflict, in order to mitigate the number of casualties being sustained by Lebanese civilians.	209,340	2006	2007
United Nations Mine Action Service (UNMAS)	Lebanon Support for Humanitarian Clearance Operations along the Blue Line	This project aimed at contributing to the wider peace process in the region through clearance of previously unauthorized areas adjacent to the Blue Line. This mitigated the impact of these minefields on the civilian population, thereby allowing access to arable land and revitalizing agricultural and subsequent long-term development activities for the affected communities.	1,000,000	2008	2009
United Nations Development Program (UNDP)	UNDP Early Recovery	This project aimed at supporting two activities: 1) emergency oil spill clean-up and 2) recovery of fishermen's livelihoods by providing nets and engines and repairing damaged boats for around 3,000 fishermen.	2,000,000	2006	2008
United Nations Relief and Works Agency (UNRWA)	Emergency Assistance for Palestinian Refugees in Lebanon	CIDA responded to this appeal aimed at providing food aid, housing, and basic equipment (mattresses, blankets, cooking equipment, etc.) to Palestinian refugees affected by the conflict.	500,000	2006	2008
Various local non-governmental organizations	Canada Funds for Local Initiatives (CFLI)	The CFLI aimed at providing assistance to conflict-affected populations by funding projects implemented by local non-governmental organizations.	1,400,000	2006	2008
OXFAM-Québec	Economic Rehabilitation of Vulnerable Populations in Lebanon	This project aimed at helping vulnerable groups severely affected by the conflict to recover their livelihoods and improve their living conditions. It supported rural women and men owners of micro-businesses.	3,075,000	2007	2009
United Nations Development Program (UNDP)	Oil Spill Waste Management	This project aimed at removing the oil spill waste from the shores and relocating it to temporary storage sites in order to complete the first-level management of the oil spill waste clean-up. This included proper sorting, packaging, and labeling of the waste and the preparation and protection of the temporary storage sites.	566,000	2008	2009
TOTAL			\$20,500,340		

In addition, CIDA pledged up to \$20 million at the International Conference in Support of Lebanon (Paris III) in January 2007 to assist the country in advancing economic and social reforms. CIDA programming was largely focused in the area of democratic governance, with secondary interventions in job creation and income generation. Funding was allocated as follows:

IMPLEMENTING ORGANIZATION	TITLE	DESCRIPTION	BUDGET FORECAST	START	END
Oxfam-Québec	Canadian Fund for Social Development	This project aimed at funding small projects proposed by local organizations to assist the least fortunate in Lebanese society, particularly refugees, women and unemployed youth.	3,464,354	2007	2009
Various local non-governmental organizations	Canada Fund for Local Initiatives (CFLI)	The CFLI aims at supporting small projects proposed and implemented by local organizations in Lebanon.	1,200,000	2007	2010
United Nations Relief and Works Agency (UNRWA)	Response to Nahr el-Bared Emergency Appeals	CIDA's responded to two urgent appeals to provide emergency relief to the displaced Palestinian refugees from Nahr el-Bared camp during and immediately after the events of the summer 2007.	2,600,000	2007	2008
World Bank	Socio-economic Impact Assessment and Recovery Plan	This project aimed at conducting a socioeconomic impact assessment and developing a recovery plan for the Nahr el-Bared refugee camp and surrounding areas.	200,000	2008	2008
Digital Opportunity Trust (DOT)	Income generation through Information and Communication Technology (ICT)	This project aims at training 1,230 members of vulnerable groups and owners of micro/small enterprises to use information and communication technology to increase employment and generate income.	750,000	2008	2010
International Labour Organization (ILO)	Public Employment Services	This project aims at assisting the National Employment Authority in developing systems to provide productive employment for Lebanese populations.	2,800,000	2008	2012
International Development and Research Center (IDRC)	Capacity Building of the Lebanese-Palestinian Dialogue Committee (LPDC)	This project aims at strengthening the capacity of the LPDC to develop and implement a comprehensive policy on the Palestinian refugee issue, leading to improvements in their living conditions.	1,683,064	2008	2012
World Bank	National Poverty Targeting Program	This project aims at developing a database that identifies the poorest households in Lebanon, and enabling the government to better target their social safety net programs to assist them.	2,000,000	2009	2011