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INFLUENCES OF NEW TECHNOLOGIES TO CAPACITY BUILDING (with focus on K-Link)

Master Thesis

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I declare that I have worked on this thesis independently,
using only the primary and secondary sources listed in the bibliography.

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INTRODUCTION

In the last seven decades the international community has strived to build or develop capacities in order to achieve socio-economic development. Their focus on this approach had over the decades come in spurts. The beginning of 21st century marked another spurt of activity concerning this approach but this time the principles based on the lessons learned have emerged. If the new principles will support sustainable capacity building is yet unclear. However, one fact is clear – technical cooperation and other forms of capacity building and development have consumed substantial funds over the past decades, but only a few countries have progressed and many other countries have produced limited or negligible results for developing sustainable country capacity. And at the lower levels, i.e. organizational and individual, the results are a little more positive, but it is clear that that capacity building and development still continues to be a major challenge. And if (new) technology is added to the mix (understand implementation) the process of change becomes volatile risk. Therefore is imperative to understand all the concepts and their pitfalls in-depth so the technologies could become facilitators of the change process instead of one of the barriers. There is no doubt that capacity building and development is one of the most important concepts of foreign aid. But what capacity really means? Why it should be supported by (new) technologies? The answer to these questions and many others are part of this thesis. However, I will answer the last question – Because all of us currently live in the knowledge and digital era and its main characteristic are new technologies. The need to communicate and to posses valuable information are two of many characteristics that mark this era. The knowledge is a power. Hence who possesses knowledge has the key to capacity building and development, because who possesses knowledge has all improvement in hand. As change is process of learning and change is key to improvement and innovation.

The topic I have chosen for my Master Thesis is following: *Influences of new technologies to capacity building (with focus on K-Link)* and the aim of the research is *to find out how new technologies (K-Link) influence capacity building of the involved actors*.

The theoretical part introduces the issues, as reflected in studies and publications investigating the importance of capacity building and development in foreign aid, and the influence of new technologies on the process of change. The practical part of this thesis summarizes the methodology and the results of qualitative research, which focuses on the influence of K-Link (new technologies) on capacity building in Central Asia. Most of the resources in the theoretical part are English specialized publications, articles and applied researches from internet databases EBSCO and JSTOR and official publications of international aid organizations and institutions.

THEORETICAL PART

Theoretical part of this thesis contains capacity building and development, its complicated definition, historical overview of its role from the 1950s, and several examples of different approaches. Knowledge about and connection between this concept in and the concept of new technologies in the process of perpetual change is fundamental for understanding the theoretical part of this thesis.

1. Capacity, Capacity Building and Capacity Development

In the recent years, there has been a renewed growth of interest in capacity building and capacity development. The well-know 2005 Paris Declaration on Aid Effectiveness has committed many countries, various major aid and development organizations and institutions to the recognised five core principles for effective domestic and international resources for development management. The Accra Agenda for Action in September 2008 has further strengthened and deepened the implementation of the Paris Declaration, while confirming capacity building and development as a fundamental ingredient of development effectiveness (OECD, 2008, pp. 1-3). And all the papers and publications that followed support the renewed focus on capacity building and development in the current digital and knowledge era.

This chapter presents the various definitions of capacity, capacity building and capacity development, its core issues and multi-dimensional nature that confirm that capacity building and development is a long-term and never-ending process. For better understanding of the current issues concerning capacity building and development this chapter also describes the decades' long history, spurts of renewed interest over the years, lessons learned and several different approaches to capacity building and development.

1.1. Definition of, Capacity, Capacity Building and Capacity Development

"Capacity development is one of the defining ideas (new approach) *within contemporary international development. This stems from the conviction and experience that addressing social, economic and environmental issues calls for greater capabilities everywhere in society: in individual human capital, in communities, groups, organizations, sectors and institutions"* (Fukuda-Parr, Lopes and Malik, 2002, p. 1).

When a new concept or approach appears in the aid /development related focus it is scrutinized from all angles in order to describe it and is also subjected to endless debate. The almost infinite varieties of definitions available are result of substantial interest made by well known international aid organizations, such as the International Development Research Centre, the United Nations Development Programme, the World Bank etc. Each organization's or institution's politics, position and view are reflected in their definition of capacity building and development. This diversity is actually very important for it indicates that the frameworks used are up for discussion thus suggesting the nonexistence of a monolithic 'truth', and asking for constant questioning and testing (Ubels, Acquaye-Baddoo and Fowler, 2010, p. 3).

As was ascertained in the previous paragraph, in the aid landscape can be found numerous different definitions of capacity building and capacity development. However, when generalized there are basically two ways of looking at the concept. The first one is broader and more integrated **perspective very closely related to nation building process**. The second one could be called **change management process** as it is focusing on specific, perhaps not connected, organizational or societal areas in need of reform. This approach makes it easier for a donor to discover which area should his project be targeting, e.g. human resource development, chosen public organization, governance, policy advocacy etc. However, this approach could be insufficient to produce the expected results; it could even be counter-productive if some vital issues are not catered for at the same time. If the approach devises more than management tools and technocratic frameworks only then it could be really effective. The important issues are stated in the United Nations Development Programme's definition:

"the capacity building is the process by which individuals, groups, organizations, institutions and societies increase their abilities to: 1) perform core functions, solve problems, and define and achieve objectives; and 2) understand and deal with their development needs in a broad context and in a sustainable manner" (Panday, 2002, pp. 68-69).

Based on the understanding that capacity building and development efforts need to be considered from **holistic** systems **perspective**, the perspective that at different levels recognises the inter-linkage and (group) dynamics among various actors and issues, as part of one large unit rather than as loosely connected factors, almost all recent definitions share three features (Baser, 2000, pp. 2-4):

A)   The capacity building and development **includes several levels** (individual, organisational, network/sectoral and the overall enabling environment);

B)   That is highly **important to understand the context** in which the capacity building and development take place; and

C)   In order to achieve success in capacity building and development process **the efforts must respond to the relationship among these inter-connected levels.**

According to Ubels, Acquaye-Baddoo and Fowler (2010, pp. 5-6) there are three viewpoints shaping the opinions of the interested organizations and institutions. The first one is that **capacity is all about concrete results and impact**. The second view ascertains that **capacity is a 'living phenomenon'**. And the last one is that **capacity is relational and thus also political** for we all are creating politics or influenced by it. In essence, they do not see the capacity building and development as vague even though some definitions might be, but as systematic approach that is linked to real life and its results, lives an active and meaningful life and demonstrate confidence and representation in determining its own future, and interacts with its environment, influencing and being influenced. *"Capacity is the ability of a human system to perform, sustain itself and self-renew"* (Ubels, Acquaye-Baddoo and Fowler, 2010, p. 4).

Now that it was determined what are the basics of capacity building and development I would like to present you with several definitions of it. Some

of them are similar others not but it only depicts the view of the person, organization or institution and their position at the moment when it was written. As was said earlier the concept of capacity building and development is malleable, is being improved with every new definition for there does not exist one a monolithic 'truth'.

Turay (2001, p. 159) writes it well: *"I understand capacity building as a process through which people of a given society are motivated to transform their physical, socioeconomic, cultural, political, and spiritual environments for their own well-being and the advancement of their society. Capacity* building *is about empowering people to take control of their lives. It enables people to rediscover their strengths and limitations, and the opportunities to develop their fullest potential. The process enables people to build self-confidence and self-respect, and to improve the quality of their lives, utilizing their own resources, both human and nonhuman. Capacity building provides opportunities for local organizations to establish networks at both local and international levels. Capacity building is also a process of creating opportunities for people to be creative and imaginative, to dream, and to be able to live their dreams."*

There of course exist shorter definitions but the shorter the sentence is the more complicated ideas are behind every word and the more is susceptible to misunderstanding. Bellow you can find several examples:

- "Capacity development (CD) is a change process internal to organisations and people. CD is the 'process whereby people, organisations and society as a whole unleash, strengthen, create, adapt, and maintain capacity over time" (EC, 2010, p. 9).
- "Capacity development refers to the approaches, strategies and methodologies used by developing country, and/or external stakeholders, to improve performance at the individual, organizational, network/sector or broader system level " (Bolger for SIDA, 2000, p. 2).
- Morgan (1998, p. 8) defines capacity building as *"organisational and technical abilities, relationships and values that enable countries, organisations, groups and individuals at any level of society to carry out functions and achieve their development objective over time".*

- "Capacity building is the process whereby people, organizations, and society as a whole unleash, strengthen, create, adapt, and maintain capacity over time" (OECD/DAC, 2008, p. 145).

- *"Capacity development is the process whereby individuals, groups, and organisations enhance their abilities to mobilize and use resources in order to achieve their objectives on a sustainable basis. Efforts to strengthen abilities of individuals, groups, and organisations can comprise a combination of (i) human skills development; (ii) changes in organisations and networks; and (iii) changes in governance/institutional context"* (Hambly and Sarapura f6r FAO-IFAD-ILO, 2009, p. 2).

Capacity building and development could be also defined as an **empowerment**, emphasising the notion of power, encompassing the ability, skills and will to initiate, organize, plan, budget, monitor, undertake, monitor and evaluate project activities (Tandon, 1995, p. 83). Thus capacity building and development approach should help men and women to identify the constraints they experience and find appropriate means leading to strengthening their ability to overcome the causes of their exclusion and suffering. Capacity development and building are related to the individuals, groups and institutions as well as to organizational and societal levels with aim is to become self-empowered and self-reliant in order to bring positive changes to people's lives and bring them together with public action (Eade, 1997, p. 24).

It was ascertained that capacity building and development is a holistic endogenous approach or process that empowers individuals, organizations and society to utilize more effectively their skills, abilities and resources, in other words it enhances their capacities. **Capacity** is the result of this process and is defined as an ability or aptitude of people, organisations and society as a whole to manage their affairs successfully (UNESCO, 2011, p. 15). Capacity also refers to the conditions that must be in place, e.g. knowledge, competence, institutional frameworks etc., in order to make development feasible (Bolger for SIDA, 2000, p. 2). An entity, e.g. an organization, which possesses capacity, has the ability to function as a resilient, strategic and autonomous subject (Kaplan, 1999, p. 20). Capacity comprises of two components - competencies and capabilities. *Capabilities* are defined as specific abilities of the organizational (sub-)system; it is the skill to carry something out. *Competencies* on

the other hand, are the specific abilities of individuals, the qualification, the strength and talent to perform a function or task. Both mentioned smaller subcomponents of capacity interact in complex ways and form the base and contribute to the overall capacity of a system (Fukuda-Parr, Lopes and Malik, 2002, p. 4). Thus it could be said that capacity is everything from performing a given task or functioning successfully to the effectiveness, productivity, authority and resources which go with it. Implying that if capacity building and development is about strengthening the abilities (capacities) then it is about transformation and change. Capacity, then, combines material as well psychological material factors and is both subjective and fundamental (UNESCO, 2011, p. 15).

What capacities are mostly in need of strengthening?

First capacities needing development are those concerning material resources or **hard capacities**, which include technologies, financial resources, infrastructure, information systems and personnel). Second are so called soft capacities, e.g. interaction and cooperation competences, strategic management capabilities etc. In the aid and development environment is in particular important to strengthen **adaptive capacities**, for example abilities and competencies that encourage to learn from experience and to adapt to changes, as well as **operational capacities**, e.g. abilities and competencies cultivating regulation of relations, coping with upcoming tasks, solving problems and supporting values (ADA, 2011, p. 6).

Capacity of one or more individuals, organisations etc. is an element in a wider system. Based on this it could be said that these entities operate in a context with which they are embedded and inside which they interact. Thus the development of their capacities does not happen independently on the said specific context (EC, 2011, p. 9-10). When the developed capacities are in use (are performing) they are producing something and the final product (output) when sold (introduced to the system), has an impact in the wider system. E.g. soap (output) was produced if it is demanded and used properly it leads to improved hygiene (outcome) and thus improves health (impact). However, the road between capacity and impact is long one and more complicated than described, for all steps are influenced by other factors. And these external factors along with demand determinate whether and how capacity develops, even though the capacity building and development is an internal process.

1.2.   *Capacity Building and Development: Conceptual Framework*

During the years various definitions and frameworks for capacity building and development as an approach to development have emerged. Some of the definitions can be found in the first subchapter and while they have their differences, almost all of them underline the importance of the context, where the capacity strengthening should be supported. They also agree that the capacity building and development occurs within multidimensional, multilevel systems of which every individual entity has relationships with other entities thus they are influencing each other. For example, it was agreed on that the performance of an organization is shaped as much by factors originating from the enabling environment (e.g. customs, laws, regulations etc.) as by organization's internal forces (skills, leadership, relationships etc.), which are formed by the individuals creating the organizations (Bolger, 2000, p. 3). Thus when the capacity building and development is involved it needs to be considered from **systems perspective**, appreciating the inter-relationships and dynamics among various actors and issues in multiple dimensions.

Generally, the capacity building and development is a larger concept – it does not solely refer to gaining particular skills – but also to the capability to use them effectively. So this approach is not merely about structures of employment, but also about the social capital and all the possible reasons why people start taking part in civic action. The twenty-first century view heavily contrasts with the previous beliefs that all was required for the poorer countries to move forward was to teach them skills through technical cooperation, reduce market distortions and slim down their public administrations. These external actions may have helped to balance country budgets in short term, but on the other hand tended to erode local markets and local capacity (Fukuda-Parr, Lopes and Malik, 2002, p. 9).

Based on experience and agreement Blagescu and Young (2006, pp. 4-5) describe the existence of four levels of capacity[1] representing level of analysis and possible entry

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[1] Some other frameworks describe the existence of three or even five level of capacity. UNDP framework form 1997 suggests dimensions at the micro, meso and macro levels, and their 2008 framework speaks about the same dimensions just under other names – enabling environment, organizational and individual level. On the other hand

levels – individual, organizational, sectoral/network and the enabling environment. Their approach suggests that the capacity building and development should focus on already existing systems and improve them, rather than build new ones if it is not necessary. Through this dynamic process the networks of actors seek to enhance their performing abilities with both their own initiative and outsider support.

1) The Enabling Environment

This capacity level represents the broader context within which over a long term the development process takes place and is sometimes also called the societal or institutional level. When mentioning the enabling environment UNDP (2008, p. 9) has in mind: the institutional framework (policies, rules and norms), the power structure and its influence (governing mandates), values, priorities, modes of operation, and culture in the concerned country or region. And these mentioned factors and forces in the enabling environment create either constrains or incentives, or possibly mix of both. For example, high levels of corruption, inadequate policies, or lack legitimacy in certain country can be considered as very disabling environment that would hinder many actions taken in order to strengthen the capacity. On the other hand, effective policies, stable economic environment and low levels of corruption can enable the possibility of success. Generally, it could be said that the attempts to build or develop capacities on this level take considerable length of time and are quite complicated because of the diversity and scope of the addressed issues. While most of the initiatives will not focus on this level they will need to take into consideration and be sensitive to factors at this level for they can have negative or positive impact at the capacity building and development initiatives on the other levels (Bolger, 2000, p. 3).

2) The Sector/Network Level

Very popular level with major donor agencies to focus their investments and programmes is the level of sectors or sub-sectors. Even though the existence of this level reflects the emphasis on coherent sector policies, strategies and effective coordination within and across sectors, this sector is in many cases included in the enabling environment level. Capacity building and development initiatives at this

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Hildebrand and Grindle (1994) describe five dimensions of capacity – human resources, organizational, task network, public sector institutional context and the action environment.

level mostly focus on themes, e.g. poverty reduction, whole-sector or subsector policy reforms, improvement of coordination and service not only among institutional actors. The usage of the word network implicates the importance of cooperation both across as well as within sectors. Attempts to change at this level pose challenges such as lack of coordination, lack of organisational capacity, and competing organisational priorities. On the other hand, successful capacity building and development at this level can significantly assist in creating synergies and promoting more effective use of already existing capacities (Bolger, 2000, p. 4; Blagescu and Young, 2006, p. 5).

3) The Organizational Level

Capacity assessments are mostly conducted at this level because organizations provide the framework for individuals to work and act together in order to achieve common goal. This level focuses on organizational processes, structures, management problems and resources. Traditionally, organizations have been used as the point of entry because of existing linkage between organizations and the institutions at the sectoral or enabling environment level (UNDP, 2008, p. 10). Capacity building and development initiatives at this level usually focus on promoting synergies among organizations and sometimes they also try to contribute to change at the sectoral or enabling environment level, e.g. promotion of new approaches and policies based on innovative practices of one or more organizations, more effective integration of activities within the sector (Bolger, 2000, p. 4).

4) The Individual Level

This level enables individuals to enter on a continuous process of learning – starting building on already existing knowledge and skills, and updating as well extending these capacities in new directions that come along with appearing opportunities (Fukuda-Parr, Lopes and Malik, 2002, p. 9). At this level the capacity and development building initiatives refer to individuals as social and organizational actors, e.g. small holder farmers, planners, water engineers etc. Their abilities and skills are strengthened to contribute to the realization of initiative objectives within broader framework (organizational one or higher). However, often the capacity building and development initiatives focus only on training of individuals without paying adequate attention to broader processes of empowerment (i.e. organizational or enabling

environment issues). Experiences of the past decade suggest that this type of projects have in many cases limited benefit (Blagescu and Young, 2006, p. 4).

All of these capacity levels are mutually interdependent. If one of them is the only one pursued then the whole capacity building and development becomes contorted and inefficient. Thus if working in this framework, it is highly important to mind the links among capacity levels and also think in multi-dimensional terms. It is needed to so all the opportunities and constraints as well as their potential impact on one another at all mentioned levels, could be assessed and determined in order to prepare the most appropriate intervention. To prepare such intervention (Ubels, van Klinken and Visser, 2010, p. 177) that should be able to stimulate and support the endogenous change process known as capacity building or development, every organization should fulfil the following five conditions. 1) Establish adequate time for experimentation and creation of realistic new practices, document them and spread the real-life experiences; 2) Understand the power and politics, work with them constructively in order to shift their dynamic logics and accountability; 3) Prepare responsive and flexible capacity-development support to local actors (i.e. not only training), with highlighted attention to multi-actor engagement and facilitation of (societal) dynamics change; 4) Watch very closely the changing dynamics and working practices between hierarchical levels, particularly planning procedures, budgeting and repayment, as well as communication and information flows; 5) Engage representatives of local actors to accelerate the horizontal spreading of the new practices and values.

1.3. *Background and Modern History of Capacity Building and Development*

Capacity building, used synonymously with capacity development, institutional development, organizational development, and institution building, is in some ways as old as development cooperation itself. The old-time slogans, such as "teaching man to fish" or "helping people to help themselves", point directly at capacity building, in the fist example also for self-sufficiency (Smillie, 2001, p. 8).

Throughout history, there have been numerous examples of countries turning to foreign lands and resources for assistance. In the 18th century, Russia imported

technology and experts from Western Europe for its own modernisation. In Meiji era (the second half of the 19th century) Japan did the same. After the World War II, the destroyed Europe was slowly rebuilt with the help of American technical aid and capital called Marshall Plan. However, this post-war technical cooperation has altered the history. After the Second World War and the start of the decolonization period, the aid era arrived and the concept of 'gap-filling' became enshrined in development theory, to the degree that aid became synonymous with development (Browne, 1990, p. 12). The successful implementation of the Marshall Plan started new view that dominated development thinking for several decades: *the main drivers of socio-economic development are capital and 'know how'*. Thus official concept of capacity building originates in the 1950s and 1960s, as basis for the idea of equipping developing countries with public sector institutions, their gradual strengthening, with a substantial emphasis on human resource development (training, scholarships and education). **Technical cooperation** is this era's instrument for institution building, it is aimed to fill perceived institutional or skill gaps with knowledge transfer from North to South (OECD DAC, 2006, p. 11).

Donors and implementing agencies have only belatedly recognized the weakness of capacity building usually known as technical cooperation or technical assistance. It was basically an effort designed and implemented by outsiders that judged what local people did or did not know and what they required (Smillie, 2001, p. 8). This approach totally lacked critical component – *country ownership and leadership in capacity development*. For several years, they tremendously overestimated development cooperation's ability to build capacity without the commitment of concerned country.

Thus by the 1980s, the institutional development gained several new features. Government ceased to be the main player when the private sector and NGOs had been added to the mix. The institutional development became a longer-term process of restructuring and institutional change with focus on **adaptability, people-centred development, sector perspectives and the sustainability issue**. Even though the awareness of the importance of countries' capacity enhancement grew in the international community the local demand for it was weak. Thus this approach resulted in implanting externally-derived models without serious efforts to adapt them to local circumstances and cultures (OECD DAC, 2006, p. 11 and Smillie, 2001, p. 9).

Nearly decade later, the international community observed that instead of improving the development process or reducing poverty, capacity building had in many cases improved the abilities of predatory governments to build their capacity to 'milk' their own people, and their foreign patrons. This experience confirmed that the capacity building would be ineffective as long as it was not a part of the endogenous process, the local process starting from within. These critiques were included in the approaches that appeared throughout the 1990s, the decade of *renewed emphasis on participatory development and empowerment* (Smillie, 2001, p. 9-10). The donors consolidated their own experience, the OECD DAC (2006, p. 11-12) agreed on its **Principles for Effective Aid** at the beginning of the 1990s, then continued with its effort to define the new paradigm based on ownership and partnership in the development of capacities in the development cooperation papers and initiatives. This holistic effort mostly culminated and consolidated in the new consensus between donors and developing countries stating that capacity development is primarily the responsibility of partner countries, with donors playing a supportive role. Mentioned consensus was confirmed in two recent initiatives **The Paris Declarations on Aid Alignment and Harmonisation** (2005) and **The Accra Agenda for Action** (2008). Moreover, all the process was facilitated and supported by the rise of the information and communication technologies (ICT) and the improved access to the Internet in the developing world (OECD, 2011, pp. 2-3).

In 2005 at the Second High Level Forum on Aid Effectiveness it was recognised that aid /development cooperation could and should be producing better results. Thus the Paris Declaration - the practical, action-oriented roadmap to improve the quality of aid and its impact on development – came into existence. Based on five central principles (OECD, 2008, p. 3-8) the Paris Declaration gave a series of specific implementation measures and also established a monitoring system in order to assess progress and ensure that donors and recipients hold each other accountable for their commitments. The five fundamental principles are listed bellow:

(1) *Ownership* – developing countries set their own strategies, objectives and goals for their future development;

(2) *Alignment* – donor countries align behind these objectives while using local systems, skills and experience;

(3) *Harmonisation* – donor countries coordinate and share information among themselves in order to avoid duplication;

(4) *Managing for Results* – the focus of developing and donor countries should be concentrated on results; and

(5) *Mutual Accountability* – both partners the countries/organizations as well as the donors are accountable for development results.

The Paris Declaration was in 2008 followed by the **Accra Agenda for Action** (AAA), which was confirmed by even greater number and wider diversity of stakeholders. The AAA both strengthened and deepened the implementation of the Paris Declaration while monitoring the progress and calling for greater partnership between different parties working on aid and development. The whole Paris Declaration and its follow-up AAA revolves around the capacity development – the aim is to build the countries' ability to manage their own future (OECD, 2011, pp. 1-2).

In the United Nations the 1990s debate culminated in 2000 United Nations Millennium Declaration and establishment of the eight Millennium Development Goals (MDGs). All United Nations members' states and several international organizations committed themselves to help achieve the following MDGs by the end of 2015:

(1) to halve the extreme poverty and hunger,

(2) to achieve universal primary education,

(3) promote gender equality and empower women,

(4) to reduce child mortality,

(5) to improve maternal health,

(6) to combat HIV/AIDS, malaria, and other diseases,

(7) to ensure environmental sustainability, and

(8) to develop a global partnership for development.

All above mentioned goals have their own targets and measure systems that should have helped with the achievement of the MDGs. Even though the deadline did not yet pass, the international community is aware of the fact that all the countries will not achieve all the goals (UN, 2013, pp. 1-2). The one of the critical missing factors in current efforts to meet the Millennium Development Goals and other international and national development targets is an adequate country capacity. It is not the only one

missing – the capacity of individuals, organizations and civil societies to transform, in order to reach their development objectives – are either lacking or inadequate as well.

The last few pages very briefly described the decades lasting effort of international community to build or develop capacities in order to achieve socio-economic development. Technical cooperation and other forms of capacity building/development have consumed substantial funds over the past several decades. Only a few countries have progressed, the donor efforts in many other countries have produced limited or negligible results for developing sustainable country capacity (Eade, 1997, pp. 101-145). Based on this contrast between the priority and the difficulty of meeting it, it could be said that capacity development still continues to be a major challenge. For better understanding of the development of capacity building approaches please see the table bellow.

Table 1 Historical overview of capacity development/ building

Name	Decade	Approaches for capacity building
Institution building	1950s and 1960s	Establishing public sector institutions Training and education in Northern universities Individual organisations targeting Models transplantation from the North
Development and institution strengthening and development	1960s and 1970s	Strengthening public sector institutions Still focus on individual organisations and training in the North New tools to improve performance
Management and administration in development	1970s	Focus on previously neglected target groups Improvement of delivery systems and public programmes
Development of human resources	1970s and 1980s	People-centred development Focus on sectors: education, health and population
New institutionalism	1980s and 1990s	Focus on sector level (government, NGO and private sector) Networking, exogenous environment, and economic behaviour Issues of sustainability
Capacity development	Late 1980s and 1990s	Mainstreamed as 'the best way to do development' Focus on local ownership and participatory approaches Renewed technical cooperation
Capacity development/ focus on knowledge networks	2000s till present day	Rise of ICT-based knowledge networks Participation is centrepiece of capacity building approaches Systemic approach and expansion of complex systems Needs assessment/analysis in order to tailor-make the approaches Focus on donor coordination, continuous learning, adaptation, long-term sustainability and management for results

Source: Adapted from Blagescu and Young (2006).

1.4. Capacity Building and Development: Lessons Learned

During the seven long decades, during which the capacity building as a concept was shaping itself, the international aid and development community learned enough lessons on what to avoid and what to pursue to fill a quite voluminous book. Some of them I would like to describe in this subchapter.

There are some of the most important lessons about capacity building and development (Panday, 2002, p. 74). Firstly, capacity is an indigenous phenomenon and its development has always been mostly an indigenous process. Secondly, capacity building and development is in essence peculiar and is fundamentally determined by local context so it resists nonflexible and blueprinted approaches. Thirdly, capacity building and development comes about as a result of interactions among different actors at different levels. That is the reason why most of the successful economies have accentuated the use of national resources, not foreign aid, for capacity-building and development in general. Building domestic capacity is the only way how to achieve the currently popular sustainability. However, this is not possible, if the **concept of sustainability** itself comes from the foreign sources (aid), for there is more to development than aid and its management, and more to aid than its financing role. William Easterly (2001, pp. 285-290) in his book analyzes different economic models that did not lead to growth in developing countries. Most of the previous approaches did not take in account the basic principle of economics - **people respond to incentives** – and if they are right, the growth occurs. And also he states that particularly in developing countries, the interventions that provide skills, knowledge, education and technology are fundamental for long-term growth. Though these incentives need to be regulated, because if not, they tend to concentrate where they already exist (i.e. making the poor poorer and the rich richer).

From the beginnings it has been recognized that external partners can only provide support, they cannot do what the country's dedicated people and committed leadership must do **on their own** – **create ownership for it can not be bought**. However, this recognition was not always complied with. Thus in many countries the individuals and institutions have lost their capacity to understand their own reality and to analyse it be. They become donor-dependent not only for financing but also

for their routine functions. Ownership is about empowerment. This gain obtained by local struggles and increased self-confidence is not something that is given to people Lopes, 2002, p.130). Together with ownership, the concept of **partnership** is becoming important part of the aid and development debate. These two approaches can be mutually supportive but also inconsistent if not understood and applied properly. A true partnership (Eade, 1997, p. 48-49; Panday, 2002, pp. 74-77) is based on equality, mutuality, and trust. However, if we look at the relationship between Northern donors and Southern recipients, the relationship is characterised by inequality and also by a degree of mistrust for the Southern "project partner" seeks approval and reports to its funder. And about mutuality – the Northern donors have all the power – to chose the Southern counterpart, to decide etc. – if they were to be real partners they would have to mutually responsible and have the same rights, have a vote in the discussion. And when the Southern counterpart becomes a partner, he will become part of the discussion and the whole process of decision-making – he becomes part of the system and if he is the part of the system, he feels the responsibility for it – he has an ownership of the system.

Furthermore, capacity building and development is continual (CRDA, 1995, p. 9). There do not exist one off workshops to solve the particular problem, for the attitudes and behaviour within an organization or system form its vision and stance. For example it is unconductive to train the employees when the vision of the organization is unclear, its structure confusing and its culture adverse. "*It does not help to secure resources when the organisation is not equipped to carry out its tasks. It does not help to develop information management systems when the basic organisational attitude is one which rejects learning through monitoring and evaluation in favour of frantic activity*".

Eade (1997, p. 32-33) in her book very briefly and clearly summarized what capacity building and development is definitely not. Her findings are stated bellow.

- Capacity-building is not just a means to an end but an end in itself.
- Capacity-building does not mean weakening the state.
- Capacity-building should not create dependency.

- Capacity-building is not a separate activity: it is not something to be done instead of supporting or implementing education or health programmes, but as integral part of it.

- Capacity-building is not merely concerned with financial sustainability: although it should enhance sustainable financial self-reliance, its goal should be broader.

Almost all of the aid and development practitioners know the classic cliché, attributed to Confucius (CDRA, 1995, p. 2): "Give a man a fish, feed him for a day; teach him how to fish, feed him for a lifetime". This stereotyped saying has two complex implications. The first one is the fact that it does not help to teach people to fish when they are denied equal access to the resource base. And the second one that one is more intractable. What if those major aid and developing organizations and agencies who claim to do the teaching do not know how to fish? **Can the major agencies, the NGOs, the donors etc. honestly assert that they have achieved the level of capacity in their own organisations?** This is legitimate question: Have they really mastered what they teach (i.e. to organize themselves to achieve meaningful impact)?

It does seem that they have not. All the major agencies, the NGOs, the donors etc. do have their own issues. Maybe the variety of capacity building and development theories shows their avoidance of the capacity's omnipresence, even on their tables. Maybe the real issue that is being avoided is genuine accountability or maybe not.

1.5. *Examples of Different Approaches and Practices Used for Capacity Building and Development*

For capacity building and development there are no blueprints. This nonexistence is probably due to the fact that the capacity building or development processes tend to be more complex and unpredictable than is in most cases assumed. Throughout the years almost every organization and institution has gone through various attempts how to describe and especially measure building or developing of capacities. Some of them were more successful others less but at the end each organization or institution

has formed its own unique approach. In the following part I would like to focus on different approaches and definitions given to process of building capacities by diverse organizations or institutions. Capacity building is in a way is a process of learning, a formation process of creating the predisposition for a specific ability. These abilities vary with each organization's objective and the different level they focus on yet that does not mean that the general methods are dissimilar.

1.5.1. European Centre's for Development Policy Management (ECDPM) "5C" Approach

ECDPM (2014) is a "think and do tank" established as an independent foundation in 1986. Its goal is to: share policy analysis and information to European and developing world's audiences, provide practical and custom made policy research and independent advice, facilitate policy dialogue amongst international actors in development, and support capacity and institutional development for government and non-governmental organisations.

From ECDPM point of view the capacity development has shifted focus from implementation of small projects with skill enhancement or organisational strengthening objectives, to projects aspiring to build modern states in sometimes very unstable environments. Thus in these circumstances, the technocratic approaches and formal planning models are not really appropriate. These situations ask for approaches that are more experimental and adaptive (Roberts, 2013, pp. 12-13).

Both the developing countries and the international community need to recognise capacity as more than a means to an end, but as a legitimate end in itself. Because every country needs effective systems such as institutions and organisations in order to survive and prosper. Nowadays the systems' poor performance is mostly associated with lack of capacity though what capacity is lacking is often misidentified. The lacking capacity is usually ascribed to shortage of resources, e.g. insufficient number of staff, new technology etc. For that reason the ECDPM (2008, p. 4) proposes to look through complementary lens beyond the formal capacities to identify other factors that drive organisational and system behaviour. Thus it identifies five integral core capabilities ("5C") enabling systems or organisations to perform effectively and survive:

(1) **to commit and engage**: includes volition, empowerment, motivation, attitude, confidence,

   (2) **to carry out technical, service delivery & logistical tasks**: are the core functions directed at the implementation of mandated goals,

   (3) **to relate and attract resources & support: manage relationships**: is defined as resource mobilisation, networking, legitimacy building, protecting space,

   (4) **to adapt and self-renew**: learning, strategising, adaptation, repositioning, managing change, and

   (5) **to balance coherence and diversity**: encourage innovation and stability, control fragmentation, manage complexity, balance capability mix.

Moreover this five core capabilities need to be supported by: a stakeholder collective motivation and commitment, an effective leadership, ownership on all institution's or organization's levels, a custom-fit and creative approach, and emphasise learning and adaptation (ECDPM, 2008, pp. 2-8).

1.5.2. United Nations Development Programme's (UNDP) Capacity Assessment Framework

UNDP is one of the United Nation's subsidiaries with goal to achieve the eradication of poverty, and the reduction of inequalities and exclusion. The programme tries to achieve its goal through helping countries to develop institutional capabilities, policies, partnering abilities, leadership skills and build resilience. United Nations Development Programme is one of the leading organizations and agencies on the field of aid and development thus its network links and coordinates global and national efforts to reach the MDG, and shapes the frameworks for disaster risk reduction, sustainable development and climate change for the next 15 years. It could be said that UNDP is funded by voluntary contribution from member nations (UNDP, 2014).

To support process, in which individuals, organizations and societies obtain, strengthen and maintain the capabilities, is required to identify what key capacities already exist and what other capacities may be needed to reach the goal. The UNDP Capacity Assessment Framework does not offer a blueprint, but serves as a starting

point for capacity assessment. Their framework has three dimensions (UNDP, 2008, pp. 2-14):

A) **Points of entry**: From UNDP point of view capacity resides on three levels – the individual, the organizational, and the enabling environment – and each of them can be the point of entry for a capacity assessment. All the capacity levels are mutually reinforcing, thus most of the capacity assessments will span more than one level although the entry point itself is defined at one particular level.

B) **Core issues**: could be described as both the most common capacity issues encountered across sectors and capacity levels and the areas where most of the changes will happen. The four core issues are following: 1) institutional arrangements; 2) leadership; 3) knowledge; and 4) accountability. These issues are the most common problematic areas but they should be amended based on the needs of the client and the situation.

C) **Functional and technical capacities**: Technical capacities are capacities that are linked to particular areas of expertise in specific sectors or topics (e.g. HIV/AIDS, climate change, natural resources etc.). Functional capacities on the other hand are the following key capacities: 1) to engage stakeholders; 2) to assess a situation and define a vision and mandate; 3) to formulate policies and strategies; 4) to budget, manage and implement; and 5) to evaluate.

UNDP conducts capacity assessment on three steps. At first they prepare design while asking capacity for why, for whom and for what. Then they conduct capacity assessment (collecting and summarizing data) and at the end they interpret results. Comparing the results with desired capacities determines the level of effort required to bridge the gap (UNDP, 2008, p. 3).

1.5.3. Overseas Development Institute's (ODI) RAPID Programme

The Overseas Development Institute (ODI) is the UK's leading independent think tank on international development and humanitarian issues working in both developing and developed countries. The institute provides consultancy, policy advice, high-quality

research and tailored training in order to reduce poverty, alleviate suffering and achieve sustainable livelihoods in developing countries. Registered as charity, ODI is supported by grants and donations from the private sector, governments, foundations, non-governmental organisations, multilateral agencies and academia (ODI, 2014).

Research and Policy in Development (RAPID) programme at the Overseas Development Institute (ODI) emerged in 2007 as a response to the demand of funders to support and inform about development and poverty reduction goals by research-based evidence. Even though the programme recognizes the three capacity levels (i.e. individual, organizational and environment system), for the type of funding they have, it has mostly focused on individual and organizational levels. RAPID supports developing the capacity of individuals and organisations who want to influence their country policies using the programme's research capacity. RAPID's approach to capacity building and development works on eight core themes through six main activities. The eight themes emerged as result of long-term research and practice trials using two main business models: the partnership programme and contract-driven work, while deliberately trying to evolve a more decentralised structure. Chronologically listed RAPID's themes are the following:

1) **Policy entrepreneurship** – people or teams equipped with the skills and 'know-how', develop and implement strategies to bring about policy change;
2) **Research communications improvement**;
3) **Knowledge management** tools for NGOs interested in capturing, storing and sharing knowledge for lessons learning;
4) **Outcome Mapping** – creation of community platform 'international cooperation' practitioners to share practices and lessons learned;
5) **RAPID Outcome Mapping Approach (ROMA)** – application of Outcome Mapping experiences and lessons learned into practical approach;
6) **Monitoring and evaluation innovative tools**;
7) **Network development and facilitation**; and
8) **Organisational and project management**.

As every organization or institution taking part in the aid and development landscape ODI has set of development activities through which the themes are realized: research and systematic learning, toolkits, 'how to' guides and manuals, dissemination

of their research and advice, workshops, mentoring and communities of practice (Mendizabal, Datta and Young, 2011, pp. 1-7).

One of ODI's most used approach for planning and identifying the results of RAPID programme is the **RAPID Outcome Mapping Approach** (ROMA). The circular iterative mapping process helps a team or program define stakeholders, desired behaviour changes, and appropriate strategies to achieve these changes. Then ROMA assists in the analysis of internal capacity to effect change, in the establishment of monitoring and learning frameworks, and in mapping the political context. The application of this approach helped ODI to develop and test more tools to continue exploring how best manage the knowledge results within complex systems (Roberts, 2013, p. 19).

Is widely considered that capacity building and development has various definitions, contains different approaches and even after seven decades of experience the international organizations and institutions are still trying to implement it effectively and efficiently. The only question is if the renewed efforts will be successful. However, in this case only time can say.

2. New Technologies

Even though a technology itself is nothing new and is probably older than or as old as the humankind that does not mean that there are not new inventions or at least innovations. Humans in principle are "lazy animals" and these inventions and innovations help us to make our lives easier, to have more free time, to learn more about the world we live in. Every invention or innovation is followed by another either as continuation of the previous invention or totally different one in an opposite field of study. New technologies are the emerging technologies, the ones that were thought impossible few years in the past, the ones that are not a norm in current word, and the ones that nobody is really sure if all their potential is used properly (Miller, Michalski and Stevens, 1998, pp. 7-10).

In this chapter I would like to focus on defining both technology and new technologies; the technological evolution theory that summarizes all historical eras with very simple but very explicit approach; the six types of technology which include ICT (information and communication technology); and at last but not the least, I would like to present you ICT as a tool for sector (economy) development.

2.1. Definition and Evolution of Technology

Czech philosopher Radovan Richta (Harringhton, 2012, p. 24) defines technology as "*a material* entity *created by the application of mental and physical effort to nature in order to achieve some value*". Thus he implies that there is intent in technology creation, an intent that is rarely the officially mentioned one. Every technology allows humankind to perceive another area that was not visible till then. Hence one innovation leads to another while being affected by the available resources and the current level of scientific development. Looking from system perspective – every technological change affects and is affected by politics, economics and particular society's cultural traditions. It is a force for economic growth and basis for new inventions, political and military power, and technological evolution.

According to Richta's (1966, pp. 13-22) **technological evolution theory**, the technology evolves in three stages: tools, machine and automation. All three stages are types of the fundamental types of technology and all three continue to be widely used – a toothbrush, a car, a computer programme. This evolution follows two trends: the replacement of physical labour with more efficient labour, and the greater degree of control over one's natural environment, including the ability to transform raw materials into more complex and malleable products.

The technology is almost as old as mankind. With the emergence of humankind's rational faculty and its need to survive and success came the necessary inventions and the first stage: **the tool**. Generally it could be said that a tool provides a mechanical advantage in accomplishing a physical task for it decreases the need of brute force. During the several million years of its history not only mankind but other animals as well, started to use primitive tools made from natural resources (e.g. rock, wood, bone etc.). With time the tools became more complex, such as a plough, arrow, hammer etc., and were upgraded to animal-powered tools such as the plough and the bull. Every functioning new tool has increased the productivity in some area, e.g. agriculture, and has facilitated things impossible to accomplish with only human body alone.

The second technological stage is **the machine**, particularly a powered machine, such as computer, light, car etc. It is an upgraded tool substituting the element of human physical effort while its only requirement from humans is to control its function. The expansion of machines is closely connected with the industrial revolution and the invention of a steam engine even though some types of machines, e.g. windmills, existed long time before it. This stage has both allowed to tremendously exceed limitations of one's bodies and increased the productivity several folds in many areas.

The automation is the final stage of technological evolution. This self-acting machine does not require human control; this element is removed with an automatic algorithm. The automation examples are following: pacemakers, digital watches, computer programs, and automatic telephone switches. This stage should be the culmination of technological evolution – at this time the society has the ability to achieve all the material values that are technologically possible and desirable by mental effort. Thus this is implying both that intellectual labour will become

increasingly more and important than physical labour ant that current society is in technological evolution.

Currently, there is strong focus and competition in the area of technological development of wireless digital telecommunication systems and networks in order to support development across many fields. As a result, the demand for mobile phones and portable computers has been increasing (Amornkitpinyo and Wannapiroon, 2015, p. 2091). Rapid technological developments have not only facilitated information exchange but at the same time also increased the dependence of society on information technology. As the Internet continues to mature, new forms of media have begun to emerge. One of the **new technologies** are currently very popular online learning technologies. These technologies use the Internet to access learning materials; to interact with and obtain support from other learners and instructor in order to acquire knowledge. Higher education and other institutions have mostly embedded the online learning in their own curriculums for they realized the benefit of self-paced learning while at the same time reducing the costs (Farahat, 2012, p. 95). There exist other information technologies and according to Tsan-Hwan and I-Ching (2014, p. 167) they play an important role in an organization's operation for nearly more than half of the capital of an enterprise's operating expenses is invested in them.

So it could be said that the popularity of the new technologies and the dependence on them is one of their main characteristics along with their life-facilitating properties.

2.2. Types of Technology

After exploring the technology types and their development over more than a quarter of a century Blackhurst (2001, pp. 169-171) developed a brand view to technology that is helping place various approaches into perspective. The following six types are recognized:

1. **Technology of teaching** – this technology refers to instructional approaches. Such approaches are very systematically designed and applied in very precise ways. They include well-defined objectives, precise instructional procedures based upon the capacities that students are required to acquire,

sequenced units of instruction, a high degree of teacher activity, high levels of student involvement, liberal use of incentives, and careful monitoring of student performance.

2. **Instructional technology** – is a tool for the delivery of instructions. It is described as a systematic way of designing, carrying out, and evaluating the total process of learning and teaching in terms of specific objectives, learning and communication while using a combination of human and nonhuman resources to bring about more effective instruction. Typical examples of instructional technology could be computer assisted instruction, videos etc.

3. **Assistive technology** – uses various types of services and tools that are designed to help disabled people to function in the society. Its aim is to (a) assist them in learning, (b) make the environment more accessible, (c) enable them to compete in the workplace, (d) enhance their independence, or (e) otherwise improve their quality of life. Examples rate from mechanical, electronic, and microprocessor-based equipment to specialized instructional materials and services.

4. **Medical technology** – is one of the fields that is making constant advances – performing technology-based complicated surgical procedures, using pacemakers and other medical technologies to support damaged internal organs, using prosthetic limbs, hip and knee implants etc. Medical technology keeps people alive and in addition it enables them to fully participate in school, community, and work activities.

5. **Technology productivity tools** – are computer hardware, software, and other related systems that enable humans to work more effectively and efficiently. For example, computer software can be used to store and rapidly retrieve information, edit text material, weather forecasting etc.

6. **Information (and communication) technology (ICT)** – is defined as a diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information. ICTs include the Internet, computer and telephones. The new digital ICTs are not single technologies but combinations of hardware, software, media, and delivery systems (Blurton, 1999, p. 1-2). ICT use has been skyrocketing in the last years, thus it could be said that ICT are playing a central role in society

at large. The spread of ICT utilization has increased the rate of globalisation for they are causing rapid transformations in all areas of life due to the fact that ICTs bring about new forms of learning which transcend the limitations of older methods, such as print and television (Wang, 2010, pp. 311-315). However, to successfully use this technology one needs technical knowledge and other soft capacities in order that the user does not lose the motivation when the technical issues arise.

2.3. ICT as a Tool for Sector (Economy) Development

This subchapter presents a conceptual model for ICT (information and communication technology) for economic (sector) development based on Complex Adaptive System (CAS) theory.

A CAS is defined as a system that displays an evolving structure, which changes and reorganizes its components in order to adapt to the surroundings. Based on this definition it could be stated that **the development process is a complex adaptive system** for its behaviour to a large extent reflects the interactions between elements. As the elements interact they learn, change, adapt, evolve and reconstruct in response to internal and external inputs. In this non-linear system the causality can only be understood by analyzing the complexity of interconnections among the points of influence in the system. The se points – contact degree, information flow rate, level of anxiety inhibition and difference in the degree of power – describe the relationships, dynamic structures and processes, boundaries, differences in power levels and underlying rules (Gupta and Anish, 2009, pp. 1-2).

The theoretical model treats economic development in organizations, firms, communities of practice as CASs. Its framework takes into account how the variables identified by the different theories (e.g. Amartya Sen's capability approach, learning and knowledge theories, social capital theories, institutional change theory, cluster theory etc.) interact, influence and change each other as well to the external factors. Mentioned model presents a methodological solution for strategic management scholars to analyse the extent of importance of the strategic flexibility organizations or enterprises in a system. Because every organization or enterprise is part of **inter-**

organizational networks in the form of business associations, labour unions, civic associations, welfare organizations, research consortiums etc. for a reason (e.g. to pool resources and share administrative costs, training, provide market information etc.). These networks are kept together by **social capital** (i.e. generalized trust, anticipation of reciprocity, agreed social norms, participatory and transparent decision making and leader accountability). And social capital is a **foundation for economic (sector) development**. Because the system continually revises itself and adapts to changing circumstances or changing behaviour of the elements, it has the ability to learn. This **learning facility** allows growth and development of different elements within the system. Thus it implies that **knowledge interventions** and activities are part of the social relationships' dynamic that results in self re-organization of knowledge and integration (Mindila, Rodrigues, Mcormick and Mwangi, 2013, pp. 25-26).

The theoretical model conceptualizes ICTs as interventions at influence points in a CAS and captures their role in structural transformation. This ICT for economic development model contributes to the wide search for appropriate methodologies on how to use ICT for development.

Currently the new technologies are very important because in many cases they form the basis and sometimes the media for a change at all three levels. Therefore the following chapter concerning change processes will also focus on a change in connection with new technologies.

3.   Addressing and Leading Change

Since the mid-1990s a number of significant developments in ICT have impacted profoundly the whole society and marked the beginning of the knowledge society. At the beginning of the twenty-first century these ICT developments started to become more commonly used in the developing countries as well. Thus the knowledge society has become globalized. These new developments included: easier access to World Wide Web; development in multimedia technology, the increasing variety of personal computing tools, the availability of high-quality wireless access; and the decreasing cost of good quality computers (Gurr, 2004, pp.113-114). The everyday advances in ICT are creating new spaces, so called cyberspaces, for men and women to live in. They spend increasingly more time in it, for the company Intranets and Internet store there all the relevant information and for their ability to bend space and time in order to achieve faster and more effective communication. Our society is globally changing into knowledge society, somewhere the changes already started, somewhere they almost finished and somewhere are yet to start (Wang, 2012, pp. xiv-xv). This implies that there is a need for adaptation to this change within individuals, organizations, society, and across their relationship networks. Skills, experience and capacities are necessary to succeed in this digital environment. However, the situations in this new informational age change faster than people think, thus there is a need for constant update, the incessant need for new capacities or capacity upgrade.

This chapter describes the definition of change, its degrees, conditions when a change is likely to happen, and how technology influences the process of change.

3.1. Definition of Change

The law of natural selection describes the importance of change, for change is necessary process for survival: bend or break, adapt (change) or die. As was described in the previous paragraph – the basis for our society has changed and is still changing. So to "survive", to success and to live in this "new world" is important to respond to the transformation. How? That is up to every one of us.

Change is defined as "*a never ending process of readjustment and re-adaptation*" that humans behaviourally respond to. It may be either external, such as tsunami or society's change, or internal, for example person's decision to become vegetarian. Although in most cases the internal change's roots are responses to the outside change of circumstances. Within a system change occurs at three levels: the system as a whole, a group, and the individual. Moreover technology adds another dimension to the process of change for it contains new skills and specific new sphere (Farmer, 2012, p. 12).

According to Hall and Hord (2011b, p. 53) there is another definition of change from different angle: "*Change is learning. It's as simple and complex as that*". This definition could be perceived from two points: 1) learning means you adjusting to change, and 2) change means you are adjusting your learning. Either way there is a process of learning and adapting. And according to Hohn (1998, p. 2) there are four types or degrees of change and the greater degree of change, the more difficult is to make the change happen.

1. **Change by exception** is a specific change that is an exception to the rule to one's knowledge or belief system.
2. **Incremental change** is gradual collection of small changes that occur before one becomes aware of it.
3. **Pendulum change** results in exchanging one extreme point of view for its total opposite that is extreme as well, e.g. the hawk turns into a dove etc.
4. **Paradigm change** is when an entity fundamentally rethinks its presumptions. Discordant information is considered and then integrated and new ways of thinking emerge.

If we consider that all humans form a complex inhomogeneous collection of agents that interact with each other and also with its environment, then they all are part of a **complex adaptive system**. That implies that if a person is influenced by group of others he will probably change his view, but at the same time if a person has very strong view or his is supported by snowball effect, the person's view can at the end influence e.g. organizational change. In one word the process of change is very complicated and its outcome depends on a series of variables that differ based on the level the change occurs on (Gupta and Anish, 2009, pp. 1-2).

3.2. When is Change likely to happen?

One of the conditions for process of change is that at least **two entities are involved**. At the individual level it is a person and some outside stimulus. For example if person is confronted with information that conflicts with one's existing belief system, the potential for change exists. On a group level (e.g. a community, institution etc.) conflict or imbalance between different actors can result in change on different levels – a technological, socio-economic, cultural level, or the social change could be result of natural forces influence, e.g. tsunami, landslide, earthquake etc. (Farmer, 2012, p. 12). Humans are group entities; they want to belong hence if the group's norms are changing, people will more likely change as well. Their change could be eased by incentives and compelling reasons for change. On the other hand if the change is coerced on unprepared entity, this entity in most cases returns to its previous type of behaviours when the coercion disappears (Yılmaz and Kılıçoğlu, 2013, p. 19).

Change depends on external or internal stimuli that interact with the boundaries on the concerned level. The following conditions (Ely, 1999, pp. 302-303) should exist or be created in the environment in order to facilitate change:

1) **Dissatisfaction with the status quo** – people are dissatisfied with existing methods, product or programs, they perceive the need to change their environment. If the cause of dissatisfaction is identified and understood, it could help to ease the change.

2) **Sufficient knowledge and skills** – the implementing actors need to have necessary knowledge and skills hence there is need for training in order to succeed with the innovation change.

3) **Availability of resources** – all things required to make implementation work, such as hardware, software, teaching materials, financial backing etc.

4) **Availability of time** – the adoption of the innovation takes time. Thus the implementers must have time to learn, adapt, integrate, and reflect on what they are doing.

5) **Rewards or incentives –** to engage people to change and to encourage their performance.

6) **Participation** – encouragement of all actors to participate in decision-making,

7) **Commitment** – all implementers should make visible continuing commitment of their efforts and time to the ongoing innovation.

8) **Leadership** – includes the availability of support thorough the whole process because leadership is about coping with change. And on leadership with addition to the implementing actor's effort and internal motivation is depending success or failure of the innovation.

The conditions of change could be also optimized by providing clear instructions, providing opportunities for practice, helping relationships, modelling and reinforcing changed behaviour (Farmer, 2012, p. 13).

On the other hand, there exist certain barriers to the change that need to be addressed for the innovation to happen. Whenever the change is expected, resistance emerges, particularly if the change is seen as unnecessary and misdirected. It is perfect opportunity to evaluate the reasons for change and also address the reasons for resistance which are mostly due to pressure, stress and uncertainty. The resistance factors can be divided into four dimensions – cultural, organizational, social and individual and can appear in three categories (Yılmaz and Kılıçoğlu, 2013, p. 16):

A) *Blind resistance* – is caused mostly by fear and intolerance to change in general due to the fact that unknown is being discomforting.

B) *Political resistance* – entities are convinced that they will lose something of value when the change is implemented, such as loss of status, size of budget, base of power, position etc.

C) *Ideological resistance* – the proposed change is perceived as something entirely in conflict with beliefs, philosophy or religion.

Based on the three categories the root causes for reasons for resistance could be identified as following: habit, economy implications, selective perception, inconvenience or loss of freedom, interference with need fulfilment, fear of the unknown, knowledge and skill weakening, security in the past, threats to power or influence, limited resources and organizational structure. Depending on the particular situation each of the root causes could be overcame by different degree of education, communication, involvement, support, manipulation or even coercion (Yılmaz and Kılıçoğlu, 2013, pp. 17-19; Schuler, 2003, pp. 1-4). The long-term outcome depends on (Farmer, 2012, p. 25): the readiness of the entity, knowledge of the context, how committed is the leadership and entity itself, how is the change perceived, if the entity has resources and capacity to support the change, if the logical and emotional factors support the change, as well as the integration of right incentives and factors insuring integration and sustainability.

3.3. How Does Technology Influence the Process of Change?

Change may happen as a direct reaction to an action – change of circumstances or a life-changing experience – but in most cases change is an intentional process with goal to improve something. Change can occur at several levels: individual, organizational and social. But if we are considering a change form system perspective then it is obvious that at whichever level the change occurs it will influence the whole system. The degree of change is given by the depth of new behaviour penetration into the system. And for many years technology has been the major driving force for change (Farmer, 2012, pp. 15-20). However, that does not mean that the following models and principles can be used only in change process connected to technology. Quite the contrary they are quite universal.

3.3.1.　Concerns-Based Adoption Model (CBAM)

The new technologies, especially ICTs (information and communication technologies), have arrived in comparison with others quite recently. That raises the question of why and how they are tried, adopted, and used. Because implementing a technology that is not willingly accepted and used, exhaust resources and wastes time and money. Hence the user acceptance of a new information system is considered the essential factor that determines the success or failure of this system (Farahat, 2012, p. 95).

Gene Hall for the first time in 1979 (pp. 203-207) proposed the concerns-based approach to facilitate technology integration or change in schools. The approach contains conceptual framework for change and proposes principles for effective change implementation. His model is build around basic assumption – an organization does not change until the individuals within it change. Therefore the change process needs to first focus on the individuals within the system. Hence the model comprises of three diagnostic dimensions and each of them focuses on different points of view in the change process. The dimensions are following: (1) **levels of use** measures how easily individuals are using the innovation; (2) **stages of concern** measures the individual's feelings about an innovation; and (3) **innovation configurations** measures how the innovation looks like and how faithfully is being used compared to the original design.

"*…successful change begins and ends with understanding the importance of implementation constructs and dynamics*" (Hall and Hord, 2011a, p. xxiii).

As was mentioned before current innovations and new technologies add another dimension to the process. The changes they bring with them are complex, subtle, and more sophisticated than people think, so the gaps are likely to be deep and wide. Gene Hall and Shirley Hord (2011b, p. 53) symbolically describe it "*as if implementers were expected to back up, get a running start, and leap across the Grand Canyon*". Attempting to jump across these gaps will probably result in injury and failure. Each gap or chasm between the current practices and the new ones is different but every one of them needs bridge to connect the two practices. In order for change to be successful an **Implementation Bridge** is necessary. Each Implementation Bridge like the real

bridges requires varying lengths, degrees of stability, and combinations of supports. The Implementation Bridge is a metaphor for moving from the less advanced or earlier stages to the later or more advanced stages of the three diagnostic dimensions of the Concerns-Based Adoption Model. Hence by assessing how far across the bridge each participant, group, organization etc. has gone, informs the change leaders of the corresponding needs of each participant (i.e. individual, group or system).

Before I start to describe in detail each of the evidence-based constructs that can be used alone or in various combinations to measure the progress made or as tool to plan the next step, I would like to present you the Principles of Change (Hord and Hall, 2011a, p. 2-30):

1. **Change is a process not an event**. – The process of change takes time, therefore all the necessary steps, such as grief over the lost comfortable and familiar ways of doing things etc., can occur. The changes in education take 3-5 years to implement, so more complex innovations (like technology integration) will likely take even more time.

2. **There are significant differences in what is entailed in development and implementation of an innovation**. – Development addresses the issues involved in adopting the innovation at its respective sites. Implementation on the other hand addresses the steps and actions around learning to use the innovation. In many cases is customary to invest heavily in the development and ignore the fact that implementation requires equal investment of resources.

3. **An organization does not change until the individuals within it change**. – Organizations adopt change, individuals implement it. The real barrier to change are the individuals most reluctant or slow to adapt, thus the leaders of the change should come up with incentives in order to facilitate the process.

4. **Innovations come in different sizes**. – Innovations can be products, or processes, or both and be implemented on small- or large-scale.

5. **Interventions are the key to the success of the change process**. – Intervention is regular short conversation between bosses/principals/leaders

and staff. Its goal is to reassure the staff that they have not been abandoned after the initial rollout of the innovation.

6. **Although both top-down and bottom-up change can work, a horizontal perspective is the best.** – Implementation of horizontal change requires trust and trust is mostly short in supply. Leaders of change can facilitate trust by helping people at all points to understand the whole system and by helping them to focus on doing their job well.

7. **Administrator leadership is essential to long-term change success**. – For change to be successful in long-term is necessary that the administrators (top management) support and secure the necessary infrastructure changes.

8. **Mandates can work** if they are accompanied by continuing communication, ongoing learning, on-site coaching, and time for implementation.

9. **The building** (school) **is the primary unit for change**. – The building is the primary unit for analysis; hence the implementation of technology integration should be focused on building level. And if it is successful it will ensure implementation at district/regional level.

10. **Facilitation change is a team effort**. – Strong administrative leadership is critical to successful change efforts but it must be supported by staff team.

11. **Appropriate interventions reduce resistance to change**. – Taking into account the principles of change and the different stages of acceptance, the leaders should be able to intervene appropriately and in the right time.

12. **The context influences the process of change**. – Two dimensions affect individual and organizational change processes: (1) people factors that include attitudes, beliefs, values, relationships and norms; and (2) physical features, e.g. size and arrangement of the facility, resources, structures, policies and schedules that shape people's work. Based on the two factors there is only one rule – that change in beliefs must precede a change in behaviour. Thus is important for staff to reflect collectively on its work and asses the results.

The first dimension of CBAM addresses the **Stages of Concern**, which are identified as the personal/affective aspects of change. This array of feelings, worries, preoccupations etc., is important to understand because if these personal aspects are not addressed, it can lead to resistance or even rejection of the innovation. Hall and Hord

(2011b, p. 55) set of stages of concern that can increase or decrease in intensity as a change process unfolds. The following concerns should be anticipated and addressed in the implementation plan that can last several years.

1. *Awareness* – First stage is characterized by none or little concern because participants know the change is approaching but it does not concerns them yet. At this point is appropriate time to organize meeting or workshop.

2. *Informational* – Participants receive information and have general knowledge about the innovation. This stage is characteristic by one-way communication and at this point a new standard could be explained or online database might be introduced.

3. *Personal* – At this stage participants are concerned with themselves and their ability to use the innovation, therefore the communication becomes two-way. The leaders of change should can assist with immediate benefits showing and provide just-in-time training based on participant's perceived needs.

4. *Management* – Participants try to fit new information into their practice. This stage could be facilitated by helping the participants to identify appropriate application of the innovation within their present practice and by creating schedules, developing webpage etc.

5. *Consequence* – The fifth stage is characteristic by participant' questioning of the return of time and effort. They fine-tune the use of the innovation and either embrace it if it improves their lives or abandon if it does not. Leaders should support this critical analysis and suggest alternative strategies when appropriate.

6. *Collaboration* – Participants are interested in working with others to improve the benefits and impact. Examples of activities could be department websites, program reviews etc.

7. *Refocusing* – At this final stage participants become experts who instruct others and are making or considering making major modifications to the innovation or replacing it completely (Farmer, 2010. pp. 21-22).

Innovation Configurations (Hall and Hord, 2011b, p. 55-56) describe how innovation looks like in practice. Each implementer is different hence this dimension explores the various new practices in diverse organizations carried out by different implementers. Each combination of these variations results in a different Innovation Configuration — what the innovation looks like in practice. Thus Innovation Configurations is a way to describe and contrast in different implemented forms of an innovation.

The third dimension – **Levels of Use** describes a set of behavioural profiles that distinguish different approaches to using an innovation, specifically, to the extent to which individuals are implementing new practices. The levels of use correspond with stages of concern. The first three stages, non-user, orientation and preparation, are non-user stages at which the participants are either preparing themselves for the change or are ignoring it. The other profiles following the first three are all user profiles. From the lowest level of use to the highest the user profiles are the following: mechanical, routine, refinement, integration and renewal (Hall and Hord, 2011b, pp. 56).

3.3.2. Characteristics Influencing Adoption of Technologies

There are many cultural, ethical, political, economic and resource issues that impact the adoption of technology. And according to Sales (2009, p. 1668) STORCS approach is very appropriate when applied to technology intervention. STORCS is an acronym for a set of characteristics that must be evaluated favourably before an innovation has sufficient appeal to reach a given level of adoption. Although the mentioned categories of characteristics may be independent of each other, or may have an influence on each other, they do not have hierarchical relationship. The point is that the more characteristics are present, the greater is the likelihood an innovation will be successfully adopted. Leaders of change should consider the participant responses to each of the questions listed in the STORCS approach. Trainings and workshops should help participants understand and answer positively to these questions.

The categories of characteristics of the STORCS approach can be found on the following page:

Table 2 Extended STORC approach to adoption of an innovation

	Category	Characteristic
S	Simplicity	Is the innovation easy to understand, maintain and use? Can it be easily explained to others?
T	Trialability	Can the innovation be tried out on a limited basis? Can the decision to adopt be revised?
O	Observability	Are the results of the innovation visible to others, so that they can see how it works and observe the consequences?
R	Relative Advantage	Are the results of the innovation seen as better than that which it replaces? Is the innovation more economical, more socially prestigious, more convenient, and/or more satisfying?
C	Compatibility	Is the innovation consistent with the values, past experiences, and needs of the potential adopters?
S	Support	Is there enough support to do this? Is there enough time, energy, money, and resources to ensure the project success? Is there also administrative and political support for the project?

Source: Adapted from Sales (2009, p. 1668) as presented by Wilson et al., 2001

When adopting technologies is important to accommodate the unique needs of each individual, at least in general and to recognize that change is an on-going process not a single event. Change leaders should engage each participant in change in activities that move them from their current level of understanding in each of the following domains (Sales, 2009, pp. 1670-1671):

1. **Readiness for change;**
2. **Comfort with online technologies;**
3. **Design** – e.g. design of interface;
4. **Development** – creation of supportive materials, software etc.
5. **Facilitation** – strategies for coping, feedback etc.
6. **Legal and ethical issues** – laws, regulations, procedures and associated consequences.

The process of change is beautiful and "scary" at the same time. All the domains, stages and characteristics of change were mapped and invented to reduce people's fear and uncertainty and to facilitate the process of change. It gives people a feeling of control during the process therefore it reassures them that everything is all right – because change is necessary in order to innovate, succeed and survive.

4. K-Link

The previous chapters' important points should connect themselves in this part. For K-Link is a project of change management in sector of natural resources management and climate change, it is using adapted technology form that could be roughly called mix of ICT and knowledge management. This project tries to support the development of capacities while developing the economic sector of natural resource management and climate change. K-Link is all about change, capacity building and development, new technologies and sector development in the context of former Soviet Union states in Central Asia.

This chapter aims to present the contextual information of Central Asia as basis for K-Link implementation and possible capacity building. Then it focus on the history of K-Link's emergence, description of its phases and main types of service.

4.1. Contextual information

All five Central Asian states along with Azerbaijan were one of the poorest in the former Soviet Union. And when they became unexpectedly independent in 1991, they faced three large negative shocks: the end of central planning, the dissolution of the Soviet Union system, and hyperinflation. At first the shock in all Central Asian countries caused the fall of output, and increased their poverty and inequality but each country faced it differently. The newly independent states emerged from the USSR with similar economic systems and some similarity in economic structure. However, by the twenty-first century their economies differentiated but not their political systems, for all of them had established super-presidential systems with concentrated power and weak legislatures. Kazakhstan's and Turkmenistan's growth were powered by high energy prices for their oil and gas reserves till the financial crisis in 2008. But Turkmenistan did not grow as quickly as Kazakhstan because his economic growth was hindered by poor policies. Meanwhile, Uzbekistan's regulated economy and policy of import-substitution produced low economic growth. The more market-friendly, but resource-poor and landlocked, economies of the Kyrgyzstan and Tajikistan fared even

worse – Kyrgyzstan because of low acceptation of economic changes and Tajikistan due to the consequences of civil war (Pomfret, 2010, pp. 14-15).

The level of economic growth in Central Asian countries also proportionally reflects the number of Internet users. In Kazakhstan, an upper-middle-income economy, a little more than half (54.2%) of the population is using Internet. On the other hand Turkmenistan, another upper-middle-income economy, has very low (9.5%) Internet users' penetration rate. This fact is probably caused by restrictive policy in the country. The second country that has the highest percentage of Internet users is lower-middle income Uzbekistan (40.8%) who is closely followed by Kyrgyzstan (38.7%) another lower-middle income country. Tajikistan, the only low-income economy in the Central Asia has Internet users' penetration rate only 16.6%. According to Internet World Stats (2014, p. 3), the number of Internet users in Central Asia has increased more than hundred fold between 2000 and 2014. Similarly, the penetration rate has increased but unequally, in some countries 10% in others almost 40% (IWS, 2014, p. 2). The Global Information Technology Report (Dutta, Geiger and Lanvin, 2015, p. 8) ranks Tajikistan 62nd, Kazakhstan 69th and Kyrgyzstan 111th out of 143 countries in terms the capacity for innovation (to what extent do companies/organizations have the capacity to innovate). And the same report ranks them 90th, 74th and 119th respectively in terms of impact of ICTs on new services and products (to what extent does ICT enable new business models). Unfortunately data for Uzbekistan and Turkmenistan were not included in the report.

Based on this information it could be stated that (1) although the Internet penetration rate is not in all states as high as it could be, it is growing steadily, (2) in all states there is better capacity for innovation as well as for impact of ICTs on new services and products than in one fourth of other countries in the world. Hence this situation can be used as a basis for usage of new technologies (ICTs etc.) for capacity building in Central Asia.

According to Rondelli, 2014, pp. 8-9) all actors (i.e. researchers, NGOs and institutions) in Central Asia have difficulties accessing knowledge, for even after years of study part of the existing data still escapes their attention. And (reflected) knowledge (e.g. best practices) itself contains the ability to change the learning (to develop capacities) of individuals, groups or society as a whole. Therefore a Knowledge

Management approach (i.e. K-Link) to academic-practitioner and practitioner-practitioner collaboration is clearly the most effective way in order to bridge the research-practice and practice-practice gap that is hindering the development of efficient problem-solving strategies.

4.2. Emergence of K-Link

Knowledge Link (K-Link) story even though not overly long one is a little bit complicated. However, in the last few years there are some constants: SIRIS Academic as the implementer, and GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH) as the contractor under the umbrella of EU FLERMONECA programme.

GIZ is the implementer of the EU FLERMONECA Project that has two overall objectives – to enhance regional cooperation between Central Asian countries, and between Central Asian countries and the EU in the following fields: (1) Forrest law enforcement and governance, (2) Ecosystem Restoration in Central Asia, and (3) Environmental Monitoring in Central Asia. To ensure that innovations and best practices generated by FLERMONECA, relevant projects and organizations, are properly documented, stored and accessible, GIZ decided to start the creation of Knowledge Hub. Thus on November 12, 2012 GIZ and MRSI (University's of Central Asia Research Institute) signed agreement to host all material produced by GIZ on MRSI's newly launched MRSI Knowledge Hub. Therefore from November 2012 to May 2013 a Content Management System was created for MRSI Knowledge Management Hub. The contents were uploaded to the system from February to April 2013. However, in April 2013 division of MRSI responsible for the MRSI Knowledge Hub was closed due to budget cuts so the uploading of contents stopped. At this moment GIZ was considering its options because it knew that the Knowledge Hub could not continue as it was and with the same collaborating institution. One of the main problems between the two partners was lack of common understanding and strategy, for example in following fields – copyright and sharing policies, absence of Knowledge extraction architecture, lack of tagging etc. (SIRIS Academic, 2013, pp. 5-15),

On behalf of GIZ and under the EU FLERMONECA Project, SIRIS Academic has been contracted for the study if the options for designing and developing "Natural Resources Management Knowledge HUB 2.0 (K-Link 0)". Their two main tasks within period from January to May 2014 were: (1) in-depth analysis of the state-of-art on knowledge management services, solutions and needs in Central Asia, and (2) definition of a proof of concept that should confirm the technical feasibility of an information system that is sensitive to the complexity of information management and sharing as well as to the end user's needs. The outcome of the study and the functioning proof of concept have been presented in a workshop held in Bishkek at the end of March 2014 at the presence of stakeholders and donors (Rondelli, 2014, pp. 5-6).

SIRIS Academic, the current implementer of K-Link, is an international consulting company that specializes in providing original and innovative solutions to organizational and strategic challenges with strong expertise in Higher Education and Research. The company provides quantitative and qualitative approaches in following areas: Change Management, Quality review and strategy development, Mergers / advisory services for excellence clusters creation and Organizational Management and process moderation. SIRIS Academic also provides both technical components for knowledge engineering solutions, as well as strategic expertise (i.e. situation assessment, implementation of various processes, monitoring and evaluation and capacity building). All previously mentioned services have been provided to their diverse clientele, such as international organizations, public institutions and ministries, Public and Private Universities, and international and national associations (Rondelli, 2014, pp. 2-4).

As the proof of concept, the assessment of users' needs and definition of services based on them were successful the SIRIS Academic's contract was extended to include the following phases of development and implementation of K-Link (previously known as KHUB 2.0) (SIRIS Academic, 2024, p. 4).

4.3.   Phases of K-Link

K-Link is by far the only Knowledge Management approach in Central Asia but the others, mostly scattered small platforms, are not really integrated or interlinked, do not have common standards and are dependent on donor funding. In reflexion to the users' needs and the feedback to the pilot, K-Link does not aim to create a central hub or to propose common standards but exactly the opposite. K-Link simply aims to:

(1)   Identify successful existing Natural Resources platforms;

(2)   Develop tools which will facilitate the exchange and sharing of knowledge across platforms while respecting documents ownership and without imposing single organizational model; and

(3)   Help organizations without an existing platform to create and manage their data in a more integrated manner (SIRIS Academic, 2014, p. 3).

The proof of concept intended to demonstrate the technical feasibility and the consistency of services offered with the assessed users' needs. And it was the basis for the oncoming phases. The development of K-Link was divided into three following phases:

1.   **K-Link Generation** (**Pilot**): The first step has been realization meaning to move from proof of concept to the development of a pilot. By pilot is understood − a workable and usable K-Link installation that provides the services demonstrated in the proof of concept and is tested by few selected institutions. The Pilot stage was proved from September to November and has involved three following Kyrgyz institutions: the NGO named Camp Alatoo, the University of Central Asia's Mountain Societies Research Institute and the Kyrgyz State Agency for Environmental Protection and Forestry (SIRIS Academic, 2014b, p. 2).

2.   **K-Link Incubation (Enhanced Pilot)**: K-Link is currently implementing its enhanced version, broadening its network (welcomes new members), actively involving local software companies so they could be trained in the development of K-Link components and maintenance, and to defining a roadmap for the K-Link sustainability and capacity development. Based on the experiences from the Pilot phase K-Link had to specify the overall

integration process of more institutions, namely assessment, agreement, development and delivery. The Regional Environmental Centre for Central Asia (CAREC), the International Center for Agricultural Research in the Dry Areas (ICARDA) and EcoMuseum are the institutions that are in process of integration (2014c, pp. 5, 7-8)

3. **K-Link Independency**: It is a future phase that marks the time when K-Link becomes sustainable – it will not be dependent on donor funding. When this phase is achieved the management of K-Link will be delegated to local institutions (SIRIS Academic, 2014, pp. 38-39).

4.4.   Main Services

K-Link provides its users several types of services: five basic services and two enhanced (i.e. effective presentation – visualization – of search results and navigation memories).

4.4.1.   Basic Services

K-Link provides basic services, which are the following (SIRIS Academic, 2014d, pp. 12-15):

- *Add Documents* – at any time content managers of a given institution can add new documents that will be indexed by the K-Link search services.

- *Select Document Visibility* – content manager is required to select visibility (sharing restrictions) of each added document. Private documents can be accessed only by the members belonging to the organization from which document came. Restricted document shares with public only summary and indexes. Constrained document is accessible only to selected users and public document is accessible to all.

- *Remove Documents* – at any time the content manager can remove the documents added by his/her organization.

- *Local Search* – is a full-text search on private documents of a given organization or institution.

- *Global Search* – is also full-text search but on public documents of all organizations and institutions connected to K-Link.

4.4.2. Enhanced Service – Effective Presentation of Search Results

The results of a search, either global or local, are normally listed as items ordered by different parameters. This enhanced service uses data visualization techniques so the search performed could be visualized on a map according to specific location, region etc. In this case documents could be seen on the map as icons that are placed in different locations. The density of icons on the map indicates all the documents that relate to a specific location. The retrieval of the necessary document is easy the user just needs to click on the icon to download it (SIRIS Academic, 2014d, p. 9).

4.4.3. Enhanced Service – Navigation Memories

This service can be provided only for registered users for it stores information about the usage preferences in order to improve the user experience. Navigation Memories are the trigger that provides search insights to the current user. The added advantage, besides the possibility to customize the searches and visualize selected past searches, is that one or more Navigation Memories could be shared with other users thus creating social communities with the same interests or goals. The main aim is to provide K-Link end-users with a logbook for collecting, organizing, retrieving and sharing chronology paths (SIRIS Academic, 2014d, p. 10).

4.5. K-Link's Sustainability and Capacity Building

K-Link is a project that aims at connecting different institutions (i.e. NGOs, private sector, state institutions, donors, research/academic institutions) through the orchestration of existing digital resources management systems. Sustainability is a major challenge for all projects that include implementation or application of informational technologies (i.e. ICTs). And Central Asia is a perfect example of failed initiatives. However, K-Link has been from the beginning based on the needs and perceived gaps in the Central Asian business market. K-Link proposes socio-

technical approach for sustainability and capacity building model with two major lines of argument:

1. **Capacity building is supported through technology application**: because K-Link fulfils end users' core needs. It improves the capacities of individuals that are used to improve the processes in organizations so the organizations could more effectively achieve their own goals. For the previous mentioned reason is assumed that the organizations would want to continue with this beneficial process.

2. **Capacity building is supported through technology development**: K-Link involves local software houses that are acquiring new software skills (capacities) during the technology development. The newly acquired skills should help them to find new clients because the level of software knowledge in Central Asia is lower than in West. And also thanks to their involvement in K-Link the software houses gain new clients that will need continuous maintenance of the K-Link software (SIRIS Academic, 2014e, p. 2, 8-9).

K-Link itself is an innovative approach to capacity building and development in connection with information and communication technologies. It combines many concepts that are in many cases misunderstood or not used effectively. However, if this approach succeeds it can become the basis for similar future approaches.

5. Conclusion of the Theoretical Part

In the theoretical part I focused on three different but interconnected concepts, namely capacity building and development, new technologies and process of change. At the end of the theoretical part these concepts unite themselves in a new approach called K-Link. All the previously mentioned concepts and their implications were studied in order to better understand the practical part of this thesis.

Capacity building and development plays important role in the current approaches to foreign aid. The concept of capacity seems difficult to capture hence is in some source called vague, thus its perceived vagueness and complicated history are the reasons for the existence of various definitions and approaches. It could even be said that every organization and institution has its own "patented" approach, but one need to realize there are no blueprints for capacity building and development, for each initiative requires different approach. The concept of capacity is not vague it is just so deeply ingrained in people themselves and that is the reason why it is so very difficult to capture. For that one needs to look from outside, for that is better if the capacity building and development initiative is done in cooperation with external agents.

In the last decades very popular (new) technologies are one of the most used mediums to develop or build capacities. The only problem is that (new) technologies bring into the process other issues specific only to them. Therefore the process of change, the process of learning, adaptation and "rearrangement" becomes more complex. So complex that without real and in-depth assessment most of the initiatives are deemed to fail. Because the process of change does not only concern one level or one individual, it influences the whole system. That means event the implementers of a change will learn or experience something new and as consequence they need to adapt (change) or they themselves will become barriers to change as a whole.

The most important is not whether the organizations consider capacity building and development concept as vague or that the (new) technologies add more issues to the process, but that the organizations implement the initiative right. That means effectively, efficiently, in cooperation with the locals while respecting the context and with a clear goal.

PRACTICAL PART

In this part I used following essential resources in order to describe the methodological part of this thesis: Jan Hendl's Qualitative Research: Basic Methods and Applications (2005), Qualitative Research in Educational Sciences from the authors Švaříček and Šeďová (2010) and Qualitative Approach and Methods in Psychological Research from Michael Miovský (2006).

6. Influences of New Technologies (K-Link) to Capacity Building

6.1. Research Question

"*Research is the process of creating new knowledge. It is a systematic and carefully planned activity that is motivated by an effort to answer research questions asked and contribute to the development of the field* "(Hendl, 2005 p. 30).

The aim of this research is confronting the issue of the new technologies' influences to capacity building. Based on this broader perspective I defined the research question: *In what way K-Link as a new technology influences the capacity of the involved actors?* In the theoretical part was presented the role of new technologies in the process of change, thus in the process of capacity building and development. Moreover, the most important highlights and basic information concerning K-Link Project was summarized. The theoretical part of this thesis provides a holistic view on the capacity building and development in connection with new technologies and as a part of change process. It is important basis for further work on this research topic.

Based on my experience with acquiring new skills as part of game process or in a way that facilitates the whole process of learning, is very interesting to observe the process in different context and with actors that were influenced by the foreign aid machinery.

6.2. Research Objective

Because I had the opportunity to meet with several professionals that are working on various parts of the implementation of K-Link, I determined subsequent research objective: *find out how the professionals involved in the project perceive the influence, K-Link as a technology has to capacity building of the involved actors.*

According to Švaříček and Šeďová (2010, p. 63, 2005) there exist three basic types of research objectives that I therefore also applied to the presented research.

1. **Intellectual objective**: This goal is associated with how research contributes to deepen expert knowledge about a particular subject in a chosen field. Capacity building and development plays a significant role in international aid landscape. Many organizations and institutions use one or more chosen approaches to achieve their (and their partner's) goals and every more often they use technology to facilitate or make the processes in a system more efficient. Moreover, many graduates of international humanitarian and social work and other similar programmes will work in some of these organizations and therefore is important to have at least a basic orientation in this concept and its potential pitfalls. Although this research geographically focused only on one country, many characteristics may be also similar in other contexts;

2. **Practical objective**: Sustainability and with it connected capacity building is an integral part of the project objective thus reflexion and contemplation about is part of daily routine. But a view from the outsider's point of view and new research findings can be meaningful addition to their own approach.

3. **Personal objective**: I myself in my work experienced a number of challenges that are connected to capacity building, such as the need for readiness to accept the changes (capacity building), the necessity to work in teams in order to better implement the change etc. As I professionally would like to focus on the process of learning (i.e. capacity building and change), it is vital to understand the possible pitfalls on one side and on the other well-proven approaches so one has something to rely on.

6.3. *Methodological Approach*

In this section I will deal with the methodological approach. Jeřábek (1993, p. 12) refers to the methodology as "*a set of rules specifying the procedures to be possible to explain or validate it*."

6.3.1. Selection of Research Sample and an Overview of the Respondents

The research is constructed to be a qualitative one and according to Miovský (2006, p. 128) it is based on the fact that this method is never pre-determined and that it changes during the course of the research. He also summarizes the basic requirements and characteristics for selection of research sample in qualitative research. In accordance to his book in order to get saturated data is necessary that the selection of research sample responds to the objectives of research. Thus to fulfil the research goal, I used the method of convenience sampling combined with a simple purposive sampling. The first of these methods in order to obtain respondents uses the opportunities that arise during the implementation of the research. The second one is one of the most used methods in qualitative research. It deliberately chooses a quality or state as a key criterion for a selection of respondents (Miovský, 2006, p. 134-136). When finding appropriate respondents, I had to flexibly react to the opportunities that I encountered during a random encounter with some international staff working, which are the main characteristics of selecting respondents with a simple purposive sampling method. Respondents were chosen deliberately, and had to meet the following criteria: they had to have a contract with the implementing firm or with some international institution or NGOs in Central Asia and they were involved in the K-Link project. The criteria that were not taken into account are: how long they were involved into the project, the number of years of experience, gender, or what type of position they occupy. The respondents of this research are listed in the table bellow along with corresponding numbers and work position. The names of respondents and organizations are not stated in order to preserve their anonymity.

Table 3 Research respondents

	Sex	Work position
K1	male	Project Coordinator

K2	male	Consultant
K3	female	Project Administrator
K4	male	ICT Consultant
K5	male	Project Overviewer

6.3.2.   Method and the process of data collection

"*Data collection methods are specific procedures for exploring certain phenomena. Researchers use them to investigate and represent: how people interpret and create social reality*" (Švaříček, Šeďová, 2007, p. 142).

As a first method of data collection for this research, I chose an expert interview. According to Reichel (2009, p. 137) expert is the bearer of professional and qualified information. Given this thesis' the research objectives as experts are considered workers of firms, organizations and institutions who have an experience with K-Link project in Central Asia. An interview can be further divided into several phases but the transitions between them are not entirely clear. The phases are following: preparatory and introductory part of the interview; the rise and consolidation of contact; the core of the interview; and conclusion and termination (Miovský, 2006, pp. 165-170).

As a second method of data collection, I chose a focus group, which is presented as one of the most progressive qualitative methods for data collection (Šebek and Hoffmanová, 2010, p. 32, according to Miovský, 2006). It is a research tool for acquiring information to selected topic from groups that are characterized by shared characteristics or interests. According (Šebek and Hoffmanová, 2010, p. 33, according to Fern, 1982, p. 1) focus group is a method that is linked to the concepts of flexibility and creativity – it is used for the important group interactivity value, for the fact that most of the people are more open in a group, the formation of hypotheses, testing of the opinions, attitudes, values, and new ideas.

The central phase of both methods of data collection goal was to focus on thematic areas connected to the research objective. To acquire more specific information in this part the respondents were encouraged to share practical examples. The thematic areas were the following: (1) collaboration (networking and management

of relationships, (2) new skills acquisition, (3) business opportunities, (4) improvement of organizations' inner processes, and (5) perceived pitfalls and threats.

Data collection took place from October to December and at turn of March and April in Spain as a series of expert interviews and one focus group session that confirmed already existing findings. All data collection methods were recorded and then transferred to paper form. All sessions were conducted in English and I was taking notes during every one of them.

6.3.3. Method of Processing Collected Data

Based on series of interviews' and focus groups' paper records and notes that I made during the sessions, I collected valuable material that needed to be further processed. There are many ways how can the qualitative data be further analysed. For the purpose of this research, according to Miovský (2006, pp. 221-222) I chose the clusters forming method. The fundamental principle of this method is based on a comparison of the data and their categorization, thereby creation of a new facts. By using this method is possible to group various statements and arguments into groups based on their similarities. This creates a certain thematic categories, which group together the repeating statements concerning some specific phenomenon. Particular categories can be created on the basis of overlaps in topic/theme, time or place. In my paper records I then sought statements with similarities that could belong to one of the categories. In my research I have dealt with many thematic overlaps. Some of the statements at first sight belonged to one category but after further analysis it could have also belonged to another.

6.4. Influences of K-Link (New Technologies) to Capacity Building – Content Analysis

This part strives to align the collected data according to their thematic clusters and their meaning in connection the theoretical part of this thesis.

6.4.1. Collaboration (Networking and Management of Relationships)

Respondents of this research have a contract with the implementing firm or with some international institution or NGOs in Central Asia and they are involved in the K-Link project. The collaboration between not only the local organizations and institutions is important because has the potential to support the sustainability of the project. One of the most important proclaimed characteristic of K-Link is the facilitation of the sharing knowledge between different organizations and institutions connected to it. (K1) *"There are two ways for using K-Link tool by organizations. Certain organizations need K-Link in order to support their information and document management (for instance Camp Alatoo, CAREC, Ecomuseum), while others see it as a way for dissemination of results of their work/projects (ICARDA as an example.) And here also comes the answer to the question of difference between K-Link and Google, where K-Link is a tool for dissemination of results."* The possibility of sharing the knowledge between the organizations and possibly with broader public can become an example and incentive. (K3) *"WOCAT is working on better working platform and consulting with GIZ about involvement in the future and we want to propose K-Link as solution to the 7 bilion USD PPCR programme on climate resilience in Tajikistan."*

The system itself is based on the collaboration of all servers connected to K-Link that allows fault tolerance (K4*) "Part of the core system* (software) *has copies off other institutions' indexes. It is resilient that means if the server of organization a crashes its indexes stay in other institutions and can provide you with information."* And the system itself (software) is based on the orchestration of the existing servers' data between themselves. (K4) *"There is no need to centralize any information one platform because K-Link is based on even distribution of the content that needs at least month for testing the system and 15 days for feedback."* Networking is along with the services provided part of the K-Link experience. (K2) *"The end users' needs are being provided for in the form of taking part in the knowledge network and being provided by information management and sharing services."* K-Link is still looking for critical mass of users to obtain long-term sustainability. (K1) *"The open access of the documents may encourage other institutions to join the K-Link, thus providing new shared data and document."* And (K4) *"There is future possibility we are working on of external*

software houses or Universities involving themselves in the analysis and development of new components to be plugged into K-Link." K-Link aims to enhance the possibilities in networking with other organizations as well. Currently still (K2) *"external cooperation processes are based on personal contacts. Overaly the use technology for the support of cooperative work processes with external partners remains limited for many organizations."*

The importance of one agent to facilitate and balance the needs of the end-users and the contractor who is obliged to donors is very important and very hard work. (K5) *"SIRIS is in the middle kind of mediator, it is discovering the needs after the official end of the project and project manager is trying to ascertain them and then suggest the technology in agreement to Paris Declaration. GIZ wants us to use the top down approach – you need this system – so now be happy with it."* Good contacts with the government could on one hand support the project but on the other hand the government agencies could be used to different approach connected to the foreign aid. (K1) *"State Agency does not want to sign the Memorandum of Understanding they have lots of interests and want something back because they were spoiled by the gifts from other managers of projects."* And at the very end one of the respondents adds that the contact is supportive but based on previous experience some implementing agencies and contractors do not want the official institutions taking part in the K-Link project. (K2) *"GIZ is not really interested in institutions taking part in the project."*

6.4.2. Acquisition of New Skills

Every agent taking part in the project that is indeed a process of change needs to adapt its own attitudes and expectations while gaining something new in return, be it skills, experience or new view. (K5) *"Development cooperation is bigger market than higher education; we started it as project to improve cash flow. And now we are learning important things, we develop capacities; we are changing the pessimistic view of the people in SIRIS"* (on development cooperation). It could be said that in this particular case K-Link as a tool (new technology) is the intended media for overall capacity development in the natural resources management field in Central Asia in order to achieve its sustainability. (K1) *"I see the K-Link technology as kind of Trojan horse to carry out capacity building and promote sustainability. It is Knowledge transfer using the K-Link initiative as a trigger for capacity development by actively*

involving Central Asian software companies and Technological University with the aim to build technical and consultancy skills, such as change management and organizational facilitation."

The process of new skills learning is not only supported by workshops and consultations with involved actors but is also supported by developing supportive materials that should develop skills needed to use K-Link and facilitate the whole change process. (K4) *"We are developing an e-learning course. It has been designed so to cope with two main tasks: the first one is to arrange a user manual and the other is approach for supporting the capacity development and knowledge transfer process."* This learning and adaptation is backed by the technical fact that the system is developed as easy to use and easy to integrate into existing processes in the organizations. (K2) *"The system has an easy implementation. There is no big extra work necessary for installing the system. It is easy to be integrated so there is no need to develop a new platform."*

Learning is part of the process of change and as customary the first ones to reflect on the necessary alterations for future are the agents who implement is because they had more time to process the whole concept and its implications. And also because when one is teaching and explaining the changes one is learning by reflecting the issues. (K5) *"The client is not a user – SIRIS is in the middle – next time SIRIS is just mediator. And next time we do it in partnership with software house, not developing our own system. Follow up will be more according to SIRIS terms."* The involved software houses that are one of the sustainability pillars of the project are learning new skills while being part of the project and at the same time they are gaining comparative advantage to succeed in the Central Asian market. (K2) *"By working on the K-Link development, local software houses may enrich their competencies in cloud computing and remote document management services in its development, deployment and maintenance."*

6.4.3.   Business Opportunities

Even though the demand for IT services in Central Asia is growing the demand connected to better access to the Internet is not being met and there is a perceived gap in holistic socio-technical approach, a mix between organizational development and IT

services. (K3) *"I don't know of someone who works in the middle between management and IT world. Because IT consultancies in Central Asia provide mostly IT services, and sometimes only a mix of IT and Management/organizational support services simultaneously."* (K2) *"I assume lack of high quality organizational / knowledge management skills locally and interest of technological companies in the project for profit."*

In the future after the conclusion of the second K-Link phase the software houses that will be necessary for the implementation of the third phase. They are in the process of learning new skills thus extending their portfolio and gaining comparative advantage compared to the other on the market. (K1) *"Aim is focus on business. Using leverage on the Central Asian software companies' so they focus their core businesses on providing hosting and remote storage space services to stakeholders."* And after the software companies will successfully provide the services to stakeholders they would be able to sell their enhanced services to private companies. (K1) *"The business model is to transform the initiative in a way that is extending markets and business opportunities for the involved stakeholders, from private sector in climate resilience management to software companies and telecom."* Anther future business possibility is in development of K-Link plug-ins in order to accommodate the needs of particular organization. (K4) *"External software houses or Universities may be involved in the analysis and development of new Components to be plugged into K-Link."*

6.4.4.   Improvement of Organizations' Inner Processes

As was mentioned before K-Link offers two main improvements that are offered to the stakeholders. (K1) *"There're two ways for using K-Link tool by organizations. Certain organizations need K-Link in order to support their information and document management (for instance Camp Alatoo, CAREC, Ecomuseum), while others see it as a way for dissemination of results of their work/projects (ICARDA as an example.)"* When mentioning the information and document management one has in mind the organizational development, the process of making the inner organization's workings more efficient, more accessible. (K2) *"The system improves internal organizational management: This should be emphasized."* Because (K3) *"There are many difficulties in accessing and sharing documents, for instance even taking the time wasted on searching necessary documents. And when writing reports, there are usually*

several versions at the same time, the tracking is really hard, as well as it is an issue where to store that report." Moreover, to the internal content management K-Link supports grass-root approaches and facilitates work in general. (K5) *"K-Link is also aimed at enhancing the bottom-up approaches. It also has a distributory approach, and is a technology that is aimed to support and enhance organizations' projects aligned to their work."*

For technological project to work some basic technical requirements must be met. However, with technology getting older every day the issues emerge more often. (K4) *"How can we deal with vulnerability of CAREC? It wasn't updated since 2006 so is easily hackable."* On the other hand the system is easy to update, supports organizations' innovative approaches and is open to individualization. (K4) *"The system may be extended with additional features developed by external companies, following Institution needs. Nothing stops to develop features or services only to institutions that paid for it. That is paid for the implementation and feature study. Think to KLINK as a pluggable platform where new components may be added by Institutions."* One simple principle that underlines is the following. (K1) *"If they share data, it is win-win situation. They improve their internal processes, for instance improvement of project writing."*

6.4.5. Perceived Pitfalls and Threats

This by comparison the most extensive and most mentioned thematic area. The reason may be the simple fact that people often forget their small achievements and focus more on the emerged issues or the phase of implementation. The phase that is uncovering all the hidden issues, expectations, that compels stakeholders to face their hidden fears and to confront all the "bad" habits that were inherited from previously implemented foreign aid projects. Unfortunately, the pitfalls have several layers of previously mentioned possibilities thus it was not possible to clearly divide them further.

The first pitfalls are the issues connected to the expectations and inherited, meaning customary ways of doing things. For example GIZ's expectations are in contrast with the project aim but this is quite common issue that emerges from the need to attests the results and that the money was efficiently spent. (K5) *"GIZ needs to fulfil*

the numbers." For that reason *"GIZ wants: 1) clear statement from participation institutions that they are happy with the system and use them, 2) prove the ownership is with the locals."* GIZ needs to fulfil the expectations of its government so they would be the happiest if it could work as follows: (K1) *"use the top down approach"* with the reasoning *"you need this system and now be happy with it."* And with their attitude are connected the issues of the customary way of doing things. (K3) *"For instance ICARDA nobody at the high level signed the MoU"* because they are expecting something different *"please GIZ give us money for you to build us a software".* The same expectation has the governmental institution: (K1) *"State Agency doesn't want to sign the Memorandum of Understanding because hey have lot of interests and want something back." "They are used to it, for instance the previous project manager gave them a jeep."*

The second major pitfalls are the issues related to ownership, previous experience with different platforms and the language of the document that in many cases reflects the language of the donor. (K2) *"The problems are copyright issues, approval and ownership related issues. Sometimes documents are in English, and they limit non-English speakers to access them… for instance farmers don't have access."* From previously mentioned issues arises the problem of knowledge pooling and sharing. (K1) *"Problem is with institutions mainly with State Agency, ICARDA and CAREC and their jealousy over the data and information. That's matter of money, culture – why should I provide for free."*(K3) *Camp Alatoo is sceptical about the private companies willing to share their documents with others, wondering what the benefit for them from sharing would be."* That leads to the real threat that may or may not be realized. (K4) *"The distributed nature of K-Link may be threatened by the Institutions not wanting to share their resources, not only documents, but also power and network: this will put on the risk the entire K -Link infrastructure." "Institutions could be just using K-Link for private features without sharing documents that must be avoided."* As the project started in Kyrgyzstan and should have spread from the country outwards, the ownership should be the Kyrgyz. How ever that did not happen for (K2) *"The project is currently only initiated by non-Kyrgyz. It might be helpful to have clearly as part of the initiating team local organizations."*

The third group, are the technical features that are connected with one or more different issues. (K4) *"We agreed with visualization integration (GIS) but there's problem with technical integration of map and lack of working version in Russian."* Even though the Internet coverage in Central Asia is rising the infrastructure is still lacking and this may influence the usage of K-Link. (K1) *"Infrastructure, the coverage of internet connection is a weakness."*

Due to the many-layered project and all issues that need diversification there is lack of proper communication between all the implementing members. (K4) *"Basic plan of work communication is needed."* In addition to previously mentioned issues there are threats that could totally destroy the project. Most of them are typical for foreign aid interventions: (K2) *"Limit of financing"*, (K3) *"Lack of critical mass"*, the sustainability of the business model will prove faulty, (K1) *"The gap between services and competences. The lack in software competences needed to maintain the system."* And the previously mentioned jealousy over the data will cause the organizations to waste perfect opportunity to improve themselves and their working environment. (K1) *"The gap between stakeholders and their needs cause by the stakeholders' resistance in sharing and the low awareness in the relevancy of information management issues implied by their organizational needs."*

7. Discussion

My research objective was to find out how the professionals involved in the project perceive the influence of K-Link, as a technology, has to capacity building of the involved actors. I achieved this objective by using expert interview and focus group with worker that had a contract with the implementing firm or with some international institution or NGOs in Central Asia and they were involved in the K-Link project. Based on five criterions I set I analyzed the influence of K-Link as a new technology to capacity building.

The first criterion was the collaboration, networking and management of relationships. The respondents mentioned several issues that influence the capacity building, they are the following: that K-Link itself is collaborating with different organizations, most of the contact are personal and not transferable, SIRIS is the mediator between all the levels and groups, there is gap between the government and the rest that does not support high-degree of collaboration, and that collaboration depends on the willingness of the actors. Hence it could be said that collaboration can facilitate capacity building but if it lacks willingness and openness it can become barrier.

The second criterion was new skills acquisition. The results how those skills are learned for the process of implementation and introduction of the information and data management system forced the actors to adapt and learn soft and hard skills. The actors were not forced externally they forced themselves because they knew that the change was needed and the process of change was helped by the fact that the implementation was quite easy. The adoption of new skills is facilitated by the e-learning course that is supporting the capacity development on the personal level. And in time the changes at personal level will influence the organizational level.

The third criterion was the possibility of business opportunities. This part is still in progress and is supporting the filling of gap on the Central Asian market – the need for socio-technical consulting. The involved software houses are learning the technical skills and making new clients at the same time. Because when they have the necessary skill set they will support the stakeholders in their goals and as well use their extended portfolio as comparative advantage at broader market.

The fourth criterion was the improvement of organizations' inner processes, which is one of the main aims of K-Link. The data management system improves the stakeholders' efficiency, saves time, aligns their work and distributes results, thus making PR for the concerned organization. In addition to it K-Link offers the possibility for customary extensions, so the organizations can adjust the system to their own needs.

The last but not the least criterion was concerning the perceived pitfalls and threats. The positive outcome is that part of the stakeholders realize them and is working to overcome them. The pitfalls came in multilayered groups that could be divided as follows: expectations and customary approaches, ownership; language and jealousy; technical issues; communication and possible threats.

If I compare my results with other studies it could be said that the first rule of employment of a technology across cultures with success, is to adapt it to the unique elements of its market. Because culture influences individual values and affects behaviour. And in addition to cultural differences, prior research has shown that people at different stages of technology adoption exhibit different behaviours (Ashraf, Narongsak, and Seigyoung, 2014, p.69). It seems that K-Link was adapted to the local culture but probably not all of his parts. The total adoption would however, be impossible if the technology would have been developed in the West. Values, attitudes and approaches reflect our inner culture that is partially influenced by the culture we were born to and our later experiences.

In the last few decades knowledge has become the basis for much economic activity and the source of a firm's competitiveness. ICT technology has enabled the codification of massive amount of knowledge easier and cheaper diffusion of it. (Fukuda-Parr and Hill, 2002 p. 187). This is the aim in Central Asia as well but how the project will fare only time will tell.

Research across cultures has shown that consumers in different cultures have different expectations of what makes technology trustworthy. Moreover, because of the unique nature of knowledge technology, that means consumers cannot touch or feel the product, it is perceived as risky. This perceived uncertainty highlights the importance of trust in technology adoption. Ashraf, Narongsak, and Seigyoung (2014, p.71) argue that

a lack of trust actually reduces stakeholders perceptions of control over online transactions and their confidence, thereby creating a barrier to technology adoption.

Currently global values that are penetrating developing countries are creating niche opportunities for them. As example could serve the India's success in exploiting the ICT and ICT-enabled outsourcing markets (Fukuda-Parr and Hill, 2002 p. 189). Generally it could be said that technology adds another dimension to the change process. It can serve as focal point for deciding whether to embrace or resist change. Only the stakeholders' attitudes and technical skill issues con decide. Every change process, even he one involving technology requires positive group perception, reinforcement and personal support to facilitate the process. The organization as a whole needs to have the capacity to enable people to experience technology successfully and incorporate into their existing practices to improve results (Farmer, 2013, p. 25).

The creation of Klink as a knowledge network and community of practice has enabled knowledge-sharing and capacity-building. The issue is following – ICTs allow collection, storage and access to explicit knowledge that has been codified but do not allow the access to knowledge that remains tacit, embodied in individuals and institutions. According to Kuramoto and Sagasti (2002 p. 196) *such knowledge is "sticky" in that it is hard to pass it from one person to another".*

An important context variable is the leadership in the change. And there is an importance of supportive leadership in the change process. Some literature states that leader is the "key agent for change" (Farmer, 2013, p. 23). But it does not have to be truth I perceive as key for change a leadership not a single leader. The clear goal and close team that facilitate the process of change have bigger change of success than one sole leader and "bunch" of disagreeable stakeholders.

CONCLUSION

The aim of this thesis was to find out in what way the new technologies, namely K-Link, influence the process of capacity building. This aim was achieved in the theoretical part, where I found out that in the last years the new technologies are used as one of the main tools for capacity building. Capacity building and development as an approach is not a new invention but one that re-emerges again and again. The last time this approach emerged was in the 1990s and from that time the capacity building and development approach stays more or less in the focus of all foreign aid organizations and institutions. The last re-emergence of the capacity building and development concept was significantly helped by invention of new technologies that allowed more efficient tracking of results and evaluation. Capacity building and development stay in the focus along with other aid initiatives for one reason that is facilitated by the new technologies. Thanks to these technologies the time and space is perceived as a smaller, the historically distant regions became almost our neighbours. In the practical part of my thesis I focused on the tricky nature of capacity building in the mix with the risky but effective new technologies. My objective was to find out how the professionals involved in the project perceive the influence of K-Link, as a technology, has to capacity building of the involved actors. I achieved my goal through content analysis of expert interviews and of one focus group, in which I found five following thematic areas that influence capacity building.

The first one was collaboration, networking and management of relationships, the second one was the new skills acquisition, the third one possible business opportunities, the fourth one the improvement of organizations' inner processes, and the last one the perceived pitfalls and threats. Each of them comprised of several other issues that are described more in detail in the previous chapter.

Confrontation of literature with my results showed that the perceived issues are not unheard of. Most of them are part of the process of change that can take between three to five years and in case of technologies even more.

Both the theoretical and the practical part of this thesis show that there is a need to pursue the capacity building supported by new technologies in the aid context. However, there is a need to use more holistic approach for all individuals, organizations

and states are part of one complex adaptive system. That has one unchanging rule – every action (change) creates reaction in the whole system. And for the change process to be successful there is need to follow several principles mentioned in the chapter 3.3.1 in combination with approaches mentioned in this thesis. I am aware that this mix of technology and capacity building is very volatile and new approach, hence I would recommend everyone who would like to involve oneself in this approach to do his own research on the rules and definitely adapt his or hers method to the local context.

References

ADA (2011). *Manual Capacity Development: Guidelines for Implementing Strategic Approaches and Methods in ADC*. Vienna: Austrian Development Agency.

Barelka, A. J. and Walinski, J. R. (2013). Content Acceptance Model and New Media Technologies. *Journal of Computer Information Systems*. Spring 2013, pp. 56-64.

Baser, H. (2000). *Planning and Implementation of SWAPs: An Overview Issues Paper*., Quebec: SIDA.

Blackhurts, A. E. (2001). Designing Technology Professional Development Programs. In Woodwart, J. and Cuban, L. (Eds.). *Technology, curriculum, and professional development: adapting schools to meet the needs of students with disabilities*. Washington D.C.: Corwin Press.

Blagescu, M. and Young, J. (2006). *Capacity Development for Policy Advocacy: Current thinking and approaches among agencies supporting Civil Society Organisations*. London: Overseas Development Institute.

Blurton, C. (1999). *UNESCO's World Communication and Information Report: New Directions of ICT-Use in Education* [online]. Available at: <http://www.unesco.org/education/lwf/dl/edict.pdf> [Accessed 4 June 2015].

Bolger, J. (2000) 'Capacity Development: Why, What and How'. *Capacity Development Occasional Series* 1(1). Gatineau: SIDA.

Browne, S. (1990). *Foreign Aid in Practice*. London: Pinter Publisher.

CDRA (1995). *Capacity building: Myth or reality? Community Development Resource Association Annual Report 1994/95*. Woodstock, South Africa: CDRA.

Dutta, S., Geiger, T. and Lanvin, B. (2015). *The Global Information Technology Report 2015 ICTs for Inclusive Growth*. Geneva: World Economic Forum.

Eade, D. (1997). *Capacity-Building: An Approach to People-Centred Development*. Oxford: Odtam.

Easterly, W. (2001). *The Elusive Quest for Growth: Economists' Adventures and Misadventures in the Tropics*. Cambridge: MIT Press.

EC (2011). *ToolKit for Capacity Development*. Luxemburg: Office for Official Publications of the European Communities.

ECDPM (2008). *Capacity Change and Performance: Insights and Implications for Development Cooperation* [online]. Available at: < http://ecdpm.org/wp-content/uploads/PMB-21-Capacity-Change-Performance-Insights-Implications-Development-Cooperation-December-2008.pdf> [Accessed 26 May 2015].

Ely, D. P. (1999). New perspectives on the implementation of educational technology innovation. *Journal of Research on Computing in Education*, v. 23, 298-305.

Farahat, T. (2012). Applying the Technology Acceptance Model to Online Learning in the Egyptian Universities. *Procedia - Social and Behavioral Science*. 64 (2012), pp. 95-104.

Farmer, L. (2012). Addressing and Leading Change. In WANG, C. V. (Ed.). *Technology and its impact on educational leadership: innovation and change* (pp. 11-28). Hershey, PA: Information Science Reference.

Fukuda-Parr, S., Lopes, C., Malik, K. (Eds.) (2002). *Capacity for Development: New Solutions to Old Problems*. London and Sterling: Earthscan Publications.

Fukuda-Parr, S. and Hill, R. (2002). The network age: Creating new models of technical cooperation. In Fukuda-Parr, S., Lopes, C., Malik, K. (pp. 185-202). *Capacity for Development: New Solutions to Old Problems*. London and Sterling: Earthscan Publications.

Gupta, A. and Anish, S. (2009*). Insights from Complexity Theory: Understanding Organizations Better* [online]. Available at: < http://tejas.iimb.ac.in/articles/12.php> [Accessed 4 June 2015].

Gurr, D. (2004). ICT, Leadership in Education and E-Leadership. *Discourse: Studies in the Cultural Politics of Education*. 25 (1), pp. 113-124.

Hall, G. (1979). The concerns-based approach to facilitating change. *Educational Horizons*, 57(4), 202-208.

Hall, G.E. and Hord, S.M. (2011a). *Implementing change: Patterns, principles, and potholes* (3rd ed.). Upper Saddle River, NJ: Pearson.

Hall, G.E. and Hord, S.M. (2011b). Implementation: Learning builds the bridge between research and practice. *Journal of Staff Development*. Vol. 32, No. 4, pp. 53-57.

Hambly, H. and Sarapura, S. (2009). *Ensuring gender equality in capacity development – opportunities for rural employment and sustainable development* [online]. Available at: <http://www.focusintl.com/GD092-%20Ensuring%20gender%20equality%20in%20capacity%20development%20-%20Rural%20employment%20and%20sustainable%20Development.pdf> [Accessed 25 May 2015].

Harrington, J. (2014). *e-Study Guide for: Technology and Society*. Canada: Content Technologies.

Hendl, J (2005). *Kvalitativní výzkum: Základní metody a aplikace*. Praha: Portál.

Hohn, M. (1998). Why is change so hard? *Focus on Basics*. 2(C), 1-6.

Jeffries, I. (2005). *The Caucasus and Central Asian Republics at the Turn of the Twenty-first Century: A guide to the economies in transition* (2nd ed.). London and New York: Routlege.

Jeřábek, H. (1993). *Úvod do sociologického výzkumu*. Praha: Karolinum.

Kaplan, A. (1999) *The Developing of Capacity*. Cape Town: Community Development Resource Association.

Kuramoto, J. and Sagasti, F. (2002). Integrating local and global knowledge, technology and production systems: Challenges for technical cooperation. In Fukuda-Parr, S., Lopes, C., Malik, K. (pp. 203-229). *Capacity for Development: New Solutions to Old Problems*. London and Sterling: Earthscan Publications.

LaFond, A. and Brown, L. (2003). A Guide to Monitoring and Evaluation of CapacityBuilding: Interventions in the Health Sector in Developing Countries. *Chapel Hill: MEASURE Evaluation Manual Series*, Carolina Population Center, UNC.

Lopes, C. (2002). Should we mind the gap? In Fukuda-Parr, S., Lopes, C., Malik, K. (Eds.). *Capacity for Development: New Solutions to Old Problems* (pp.121-146). London and Sterling: Earthscan Publications.

Loucks-Horsley, S. (1996). Professional Development for Science Education: A Critical and Immediate Challenge. In Bybee, R. (Ed.), *National Standards & the Science Curriculum*. Dubuque, Iowa: Kendall/Hunt Publishing Company.

Mendizabal, E., Datta, A. and Young, J. (2011). *Background Note: Developing capacities for better research uptake: the experience of ODI's Research and Policy in Development programme* [online]. Available at: <http://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/7524.pdf> [Accessed 1 June 2015].

Miller, R., Michalski, W. and Stevens, B. (1998). The Promises and Period of 21st Century Technology: An Overview of the Issues. In OECD. 2*1st Century Technologies: Promises and Period of a Dynamic Future*. Paris: OECD.

Miovský, M. (2006). *Kvalitativní přístup a metody v psychologickém výzkumu*. Praha: Grada.

Mindila A. N, Rodrigues A.J, MCormick D. and Mwangi, D.W. (2013). A Conceptual Model for ICT for Economic Development Using Complex Adaptive System Approach: Case of a Micro and Small Enterprise (MSE). *Association: International Journal of Computing and ICT Research*, Vol. 7 Issue 2, pp. 23-47.

OECD (2006). *DAC Guidelines and Reference Series Applying Strategic Environmental Assessment: Good Practice Guidance for Development Co-operation*. Paris: OECD.

OECD (2008): *The Paris Declaration on Aid Effectiveness and the Accra Agenda for Action. OECD* [online]. Available at: <http://www.oecd.org/dac/effectiveness/34428351.pdf> [Accessed 4 June 2015].

OECD (2011). *Paris Declaration and Accra Agenda for Action.* [online] OECD.org. Available at: <http://www.oecd.org/dac/effectiveness/parisdeclarationandaccraagendaforaction.htm> [Accessed 24 May 2015].

OECD DAC (2006). *The Challenge of Capacity Development: Working Towards Good Practice* [online]. Available at: <http://www.gsdrc.org/docs/open/CC110.pdf> [Accessed 23 May 2015].

Panday, D. R. (2002). *Technical cooperation and institutional capacity-building for development: Back to the basics*. In Fukuda-Parr, S., Lopes, C., Malik, K. (Eds.). Capacity for Development: New Solutions to Old Problems (pp.61-84). London and Sterling: Earthscan Publications.

Pomfret, R. (2006). *The Central Asian Economies since Independence*. Princeton, NJ: Princeton University Press.

Pomfret, R. (2010). *Working Paper No. 2010/53: Central Asia after Two Decades of Independente* [online]. Available at: <http://core.ac.uk/download/pdf/6300324.pdf> [Accessed 4 May 2015].

Reichel, J. (2009). *Kapitoly metodologie sociálních výzkumů*. Praha: Grada.

Richta, R. (1966). *Civilizace na rozcestí - společenské a lidské souvislosti vědecko-technické revoluce*. Praha: nakladatelství Svoboda.

Rondelli, B. (2014). *Technical Offer: Regional NRM ZA – K-LINK ,11.2238.1-006.00*. Barcelona: SIRIS Academic.

Roberts, D. (2013). *Managing Knowledge Results: An Exploration of the Systems and Practices of Development Agencies*. Washington: World Bank Institute.

Sales, G. C. (2009). Preparing Teachers to Teach Online. In Rogers, P.L., Berg, G. A., Boettcher, J., Howard, C., Justice, L., Schenk, K. D. (Eds.). *Encyclopaedia of Distance Learning* (2nd ed.), (pp. 1665-1672). Hershey, New York: Idea Group Inc (IGI).

Schuler, A. J. (2003). *Overcoming Resistance to Change: Top Ten Reasons for Change Resistance* [online]. Available at: <http://uthscsa.edu/gme/documents/chiefres/Change%20Leadership/Overcoming%20Resistance%20to%20Change.pdf> [Accessed 6 June 2015].

SIRIS Academic (2013). *MSRI Knowledge Hub: assessment and recommendations*. Barcelona: SIRIS Academic.

SIRIS Academic (2014). *K-Link: Report on Users' Requirement Analysis*. Barcelona: SIRIS Academic.

SIRIS Academic (2014b). *Enhanced Pilot Technical Report*. Barcelona: SIRIS Academic.

SIRIS Academic (2014c). *Extended User Analysis Report*. Barcelona: SIRIS Academic.

SIRIS Academic (2014d). *K-LINK – Basic Pilot: Users' Requirements Analysis*. Barcelona: SIRIS Academic.

SIRIS Academic (2014e). *Sustainability and Capacity Building Model Report*. Barcelona: SIRIS Academic.

Smillie, I. (2001). Capacity Building and the Humanitarian Enterprise. In Smillie, I. (Ed.), *Patronage or Partnership: Local Capacity Building in Humanitarian Crises* (pp. 7-24). Bloomfield: Kumarian Press.

Smillie, I. (2001). *Patronage or Partnership: Local Capacity Building in Humanitarian Crises*. Bloomfield: Kumarian Press.

Šebek, L. and Hoffmanová, J. (2010). Metoda focus group a možnosti jejího využití v kinantropickém výzkumu. *Tělesná kultura*, 2010, 33(2), pp. 30–49.

Švaříček, R. and Šedová, K. (2010). *Kvalitativní výzkum v pedagogických vědách*. Praha: Portál.

Tandon, Y.ADF (1995). *Sustainable Development and Persons with Disabilities: The Process of Self-Empowerment.* [online]. Available at: < http://www.adf.gov/SD&PWDch9.htm> [Accessed 28 May 2015].

Tsan-Hwan, L. and I-Ching, L. (2014). Factors for Information Technology Acceptance: Willingness and Adoption in Logistice Industry from Supply Chain Perspectives. *International Journal of Electronic Business Management*. Vol. 12 No. 3, pp. 167-177.

Turay, T. M. (2001). Sierra Leone: Peacebuilding in Purgatory. In Smillie, I. (Ed.), Patronage or Partnership: Local Capacity Building in Humanitarian Crises (pp.157-175). Bloomfield: Kumarian Press.
Ubels, J., Acquaye-Baddoo, N. and Fowler, A. (Eds.) (2010). *Capacity Development in Practice*. London, Washington, DC: Earthscan Publications.

Ubels, J., Fowler, A. and Acquaye-Baddoo, N. (2010). A Resource Volume on Capacity Development. In Ubels, J., Acquaye-Baddoo, N. and Fowler, A. (Eds.). *Capacity Development in Practice* (pp. 1-8). London, Washington, DC: Earthscan Publications.

Ubels, J., van Klinken, R. and Visser, H. (2010). Bridging the Micro–Macro Gap: Gaining Capacity by Connecting Levels of Development Action. In Ubels, J., Acquaye-Baddoo, N. and Fowler, A. (Eds.). *Capacity Development in Practice* (pp. 167-179). London, Washington, DC: Earthscan Publications.

UNDP (2008). *Capacity Assessment: PRACTICE NOTE*. New York: UNDP.

UNESCO (2011). *Capacity Development for Education for All*. Paris: UNESCO.

Walter, H. (2007). *Capacity Development, Institutional Change and Theory of Change: What do we mean and where are the linkages A Conceptual background paper* [online]. Available at: <http://portals.wi.wur.nl/files/docs/successfailuredevelopment/Walters_CapacityDevelopmentConceptPaperFIN.pdf> [Accessed 29 May 2015].

WANG, C. V. (2012). *Technology and its impact on educational leadership: innovation and change*. Hershey, PA: Information Science Reference.

Woodwart, J. and Cuban, L. (2001). *Technology, curriculum, and professional development: adapting schools to meet the needs of students with disabilities*. Washington D.C.: Corwin Press.

Yılmaz, D. and Kılıçoğlu, G. (2013). Resistance to change and ways of reducing resistance in educational organizations. *European Journal of Research on Education*, 1(1), 14-21.

Internet Sources

ECDPM (2014): *About ECDPM* [online]. Available at: <http://ecdpm.org/about-ecdpm/> [Accessed 26 May 2015].

IWS (2014). *Internet World Stats*. [online]. Available at: <http://www.internetworldstats.com/stats.htm/> [Accessed 12 May 2015].

ODI (2014): *About ODI* [online]. Available at: <http://www.odi.org/about> [Accessed 28 May 2015].

UN (2013): *Millennium Development Goals and Beyond 2015* [online]. Available at: <http://www.un.org/millenniumgoals/bkgd.shtml> [Accessed 24 May 2015].

UNDP (2014): *About us* [online]. Available at: <http://www.undp.org/content/undp/en/home/operations/about_us.html> [Accessed 30 May 2015].