ICT4D in GHANA

The role of conferencing projects for cultural exchange and development

D-thesis (Masters Thesis)
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Abstract

As part of this research study, an in-depth analysis of a live video conferencing project based in Ghana was carried out, in order to determine whether this is a sustainable area where Information Communication Technology (ICT) can have an impact on communication for development. We also wanted to better understand whether live video conferencing is a viable way to go forward with Information Communication Technology for Development (ICT4D) and, if so, what benefits it has to offer. To complement the study, we also looked at two other NGOs that are also using similar technology and have a purpose similar to the WPD live video-conference program, which is to create a space for knowledge and cultural exchange with the help of ICT. The additional programs will add a complementary comparative dimension to the analysis of the case study of WPD. It is important to have these two projects in mind since they use two vastly different methods and can provide a reflective understanding on how WPD can move forward as they are in a transitional phase and are currently exploring different ways to develop the project, mainly involving changes in management structure and technology. We studied the WPD project with the complementary information from the other two projects from an academic perspective to document and analyze the outcomes in order to determine which good practices are available when undertaking similar initiatives.

From a theoretical perspective, we as researchers analyze the projects using research related to participatory communication, the public sphere, and the digital divide. From a practical perspective, we again examine issues related to the digital divide and the growing influence of communications technologies companies due to public-private partnerships.
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Thesis Outline

Research Question:

How can Information Communication Technology (ICT) video conferencing projects in Ghana be a useful tool in achieving sustainable development, knowledge, and cultural exchange, and what can they tell us about the current state of efforts involving ICT projects with similar purposes?

These questions will be analyzed by an evaluation of a US 501 Non-Governmental Organisation (NGO) which undertakes development project work in Ghana. The NGO is called World Partners for Development (WPD), and its live videoconference program has the purpose of creating cultural exchange and awareness. We will explore how the project can continue in a more sustainable direction by evaluating its alternatives and by studying the positive and negative aspects of the technology choices used by WPD. The analysis of WPD’s video-conference project activities will be supplemented with information from two supplementary ICT video-conference projects, O’ia’da and Voicing Ideas.

Preface

From the World Summit on the Information Society (WSIS) conference in Tunis, Africa, 2005, Kofi Annan addressed the audience with his vision of an information society that could implement ICT in novel ways, which would not only benefit a fortunate few, but also all social classes worldwide. He continued by saying, “Most of all, it must generate new momentum towards developing the economies and societies of poor countries and transforming the lives of poor people…. The time has come to move beyond broad discussions of the digital divide. By now, we know what the problems are. We must now get down to the specifics of implementation and set out ways to foster and expand digital opportunities” (UN.org, 2005). As we present this project work, we are aware that the role of ICT in development and the concept of Information Communication Technologies for Development (ICT4D) can be greatly debated. We will present arguments and information from both sides but only as a reference to frame the field where our project lies. Two of the most debated concepts under the ICT4D umbrella are the digital divide and public-private partnerships pushing ICT4D. We present the digital divide as a given and something that needs to be addressed for any of the projects we worked with to
fulfill their full potential. The efforts we present which have been undertaken to decrease the divide are ones we feel are of relevance to our project work and, furthermore, have the potential to affect the projects we studied, both positively and negatively, so they do need to be addressed. The same manner of thinking goes for how we treat public-private partnerships within ICT4D. We found this to be one of the most hotly contested concepts among researchers, organizations, and the corporations themselves. Therefore, we have tried to present the discourse around this topic simply to inform the reader of the arguments being made. We feel this is necessary due to the strong partnership one of the projects we studied has with a large telecommunications cooperation.

The second issue which we believe should be clarified here is that of sustainability. As we have stated, one of our main goals was to come up with a sustainable solution for one of our projects which we worked on to continue using. This clarification is needed due to the fact that sustainably is currently of concern everywhere, from development projects to urban rejuvenation projects and in many places in between. Robert Kates (2009) makes note of this when questioning the very definition of sustainable development stating it draws its resonance and its creativity from its ambiguity. Because of this, we feel that we must be clear about the fact that we have chosen the simple definition of sustainability. That definition which we have developed to define sustainability in this research paper is ‘sustainable by using low cost software and hardware which are widely available to the general public, are reliable, and facilitate cultural exchange and create awareness’. We arrived at this definition by boiling down the somewhat standard definition of sustainable development given by the Brundtland Commission in 1987 which is “to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs” (Kates, 2009). We feel that it is important to point this fact out in the beginning of our work because, as Kates noted, this definition can be seen as wide open and interpreted in many different ways (Ibid). For us, it is simply how can the projects which we focus on in this study work in a way that provides benefits for the participants today while laying a solid foundation for what the projects can be used to develop and to continue to create benefits for future participants.

We also feel that it is important for us to clarify our roles in the Voicing Ideas project along with our involvement with Social Scientists Without Borders (SSWB). SSWB is a small NGO created for students looking for practical research projects. We, as students, have been involved in this organization and through this have worked with other organizations in a supporting role on small projects. Our contributions have ranged from providing research which could be presented to possible donors and investors to creating marketing material with the intent of generating greater awareness for certain
projects, such as highlighting the dangers of kerosene lanterns and the benefits of solar lights.

Along with our involvement with SSWB, we helped initiate the Voicing Ideas (VI) project as a way to test some of the theories presented in the Communication for Development master program. As we mention in the main work, this project was carried out on a very small scale, with no funding, simply to give us an idea of how feasible it was to use the type of technology we chose to carry out a live video-conference. Because of the small-scale nature of this project and the small part it played in our research, we are confident that we have remained impartial throughout the study. This is also because the main goal of our research project is not to determine whether or not these types of projects deliver the benefits they intend to produce, but is to determine how a live video conferencing project can be managed in a sustainable way, while maintaining a high level of participant involvement.

1. Introduction

1.1 Background

In our project work, we studied a project from World Partners for Development (WPD) involving ICT that emphasizes culture awareness mainly through live video conferencing. The main case study will be focused on past videoconference sessions that WPD has held. As a complementary analysis, we will compare the WPD project with two similar projects in order to promote a better understanding of how the WPD project can develop in a more sustainable way and gain a wider insight to what these types of projects have to offer to the communication for development field. All three projects are facilitated by NGOs and have an overall goal of creating better culture awareness and exchange of knowledge on an international level. Although all three projects have similar ambitions, there are key differences that affect the quality of the exchanges, the effectiveness, and sustainability. One of these projects is O’ia’da, based in Ghana, which relies on a partnership with a large international telecommunications company. Through this partnership O’ia’da receives both hardware, in the form of computers and flat-screen TV’s, and licenses to software, enabling them to run the necessary programs. The other project is Voicing Ideas, run by the NGO Social Scientists Without Borders (SSWB) based in Sweden, which uses free software such as Skype in order to make the video-conferences more accessible and mobile. We provide a more detailed description of each project later in this work along with a map of their headquarters and main communications routes in Appendix A. It is important to have these two projects in mind as they
use two vastly different methods and can provide a reflective understanding on how WPD, the main project in this case, can move forward in a transitional phase while currently exploring different ways to develop the project. These transitions mainly involve changes in management structure and technology. We studied the WPD project with the complementary information from the other two projects from an academic perspective to document and analyze the outcomes in order to determine some good practices available when undertaking similar initiatives.

The two researchers in this project are Patrik Jonasson, a native of Sweden, and Jake Hunter, originally from the United States and now living in Sweden. Before entering into this project in March 2011, we had worked together for about a year, since January 2010, with our involvement in SSWB. The main motivation for us to collaborate on the final project work for Communication for Development was that we are both interested in telecommunications in ICT for development, and given our joint interest, we wanted to collaborate on the thesis project since it would give us insight into what is necessary to implement a project based on information gathered during the program. The hope was that this experience would translate in to a greater rate of success on all future projects.

Both researchers were offered an opportunity to conduct field research through the SIDA funded Minor Field Studies grants. A pre-requisite for the field study was to have a contact with an organization working in the relevant field of our thesis research. Through our work in SSWB, we had pre-established contact with World Partners for Development (WPD), an organization in Ghana. We, therefore, chose to use WPD as our primary case analysis for this thesis, and through WPD, we were able to be in contact with the other case example, the organization O’ia’da. Since O’ia’da was doing similar ICT4D project work, we thought our research could be complemented with research from their project operations. This was how the findings from the O’ia’da project came to be included here in our project work.

Although both researchers were offered funding to complete the field research, Patrik Jonasson was the only researcher to travel to Ghana. In all capacities as researcher in the field in Ghana, Patrik was a participant researcher, looking objectively at the activities of the case study organization as a participant, as opposed to going to Ghana in the capacity of a member of SSWB. This participant-researcher approach was intended to reduce the impact of any bias or non-independent findings in the field, and this goal was achieved. The field trip presented a great opportunity to observe what is actually happening in the field of ICT for development and provided an ideal way to collect the first-hand
findings presented in this thesis.

This study comprised of how ICT is used for the different cultural exchange projects in Ghana to interact with other parts of the world. The technical communication difficulties and the barriers such as socio-cultural perceptions that inhibit the ability of people to communicate for development were also explored and analyzed. Factors which we anticipated encountering which would affect the projects were cultural sensitivities and problems with mobile and Internet technology, such as phone reception and access costs. Some of the theoretical aspects we used in the analysis are different forms of communication such as synchronous, asynchronous and participatory communication, along with issues of ICT4D and sustainability. Ghana could be seen as a nation which has been put forward as a developing country that is investing in ICT technology as an important part of the developing strategy and is thus an interesting location to study ICT projects in. Ghana has taken an aggressive approach to incorporating ICT usage in many aspects of society such as development, government, and education. One example of this is the adoption of the Ghana Integrated ICT for Accelerated Development Policy which was announced in 2003 and developed to help Ghana become a middle income country by 2020 with the help of ICT (Adowa, 2007).

1.2 Plan

The main project we are basing our study on is the Global Video Exchange project (GVE) conducted by World Partners for Development (WPD). As we have mentioned, the project and the organization are going through a transition phase where software and hardware facilities are being reviewed as well as a re-organization of the management structure related to the project. This was a motivation for us to connect the WPD transition phase with our study of communication for development to offer possible solutions based on both academic theory and our findings from a field study. During this field study, we had the opportunity to interview and conduct surveys with former participants of their project. The study should give us the chance to understand the reality of the situation on the ground in Ghana, or in our case, discover what is needed to run a successful video conferencing project as practitioners. It is a special type of direct observation where the researcher is not passive in the observations but is actively taking a part in the event (Yin, 2009).

To get a better understanding of how to best help WPD develop their GVE project and for us to gain a
wider perspective of similar projects that are using live video or audio in Ghana, we chose to explore two similar projects, Voicing Ideas (VI) and O’ia’dá’s Akoma Ntoso Cultural Centers (ANCC) which have similar goals which we refer to as O’ia’dá throughout the work. Though both projects use live video conferencing to encourage information exchange, they are carried out in two different ways. For example, VI uses free or low-cost software in order to include as many people as possible and make the platform as accessible as possible. However, because of the low-cost aspect of this project, the quality of the sessions is very dependent on many outside factors such as Internet bandwidth and hardware capabilities and even in some instances the weather. Conversely, the O’ia’dá project is in partnership with a large telecommunication company that provides both state of the art software and hardware to conduct sessions that very rarely are affected by outside factors. The drawback with this structure is that it can only be conducted from one place because it is not based on a mobile platform such as Skype and requires specific equipment. It is also only available to a limited number of people and is largely dependent on corporate sponsorship.

By having data from three similar projects which have different structures, ambitions, and financial backing, we hope to obtain a perspective of the current state and future potential for these types of projects and to determine what it will take to develop a project that is sustainable by using low cost software and hardware which is widely available to the general public, reliable, and facilitates cultural exchange and creates awareness.

The choice to study these types of projects was inspired by our involvement with Communication for Development which led us to explore how the concept of distance learning and internet collaboration could be applied in a broader form using transnational video-conferences. Interactive communication over the internet is one of the building blocks of the communication for development program, and a key piece to this block is the live video lectures. Since these videos are a one-to-many interaction, most of the interactive communication is done through a chat function. As we began to explore how this idea was being used outside a formal education structure, we found several examples of projects where people were being brought together through a many-to-many concept; such is the case with WPD. This concept has been on the rise lately with the development of free open-source software that makes these sessions more affordable and possible to be carried out by small organizations (Bizor, 2011). Through our research we came in contact with WPD which has been implementing a many-to-many live video project since 2007. This concept has clearly been a success in the example of the communication
for development program with the program being active for over ten years, so for us it was an interesting way to see if it was possible to implement the idea in a minimalistic fashion.

In more practical terms, many projects we worked on with SSWB often required us to collaborate with other partners over the internet, often using Skype to discuss further plans and work distribution. This involved both live video and voice exchanges which let us get a first-hand look at the benefits ICT had to offer regarding ease of communication over long distances. These experiences further fueled our curiosity to explore how ICT could be used to bring people together and how it could be implemented as a form of communication for development.

1.2.1 The Projects

For a map of all projects’ headquarters and their main interaction countries see Appendix A. The projects are World Partners for Development’s Global Video Exchange most often referred to as WPD, Social Scientist Without Borders’ Voicing Ideas project most often referred to as VI and O’iá’dá’s ANCC’s Live Video Conferencing Project most often referred to as O’iá’dá

World Partners for Development’s Global Video Exchange

The Global Video Exchange program, conducted by WPD, links primary and secondary schools from Canada, the United States, and Ghana together to discuss topics that range from global politics to games and sports. According to the World Partners for Development website (2011), “Since 2007, WPD has pioneered school and youth organization linkage to enable students and community members to engage in meaningful educational programs or projects with peers in their country and around the globe. This creates a gateway for global information sharing which promotes learning and understanding.” WPD states that they are “committed to using new interactive communication technologies like video conferencing and teleconferencing to connect young people from around the world to learn about and discuss the global issues that affect their everyday lives” (http://www.wpdprojects.org/GlobalEx.html). WPD has its headquarters in Pokuase, Ghana, with another main office located in the United States. They are mainly funded through donations and in the past have relied on discounted prices for software subscriptions and hardware donations to conduct their ICT projects.
In February 2011, SSWB initiated the Voicing Ideas project, which uses live video and voice conferences, to serve as a platform for cultural exchange and knowledge sharing (http://sswb-international.org/current-projects/voicing-ideas/). The VI project provides a practical platform to explore many of the ICT4D concepts such as participatory communication, the public sphere, and the digital divide. This case gives us a firsthand look at some of the obstacles present when attempting to implement such things as participatory communication and how these affect an actual project. This is a project that is designed to be implemented on a small-scale basis by small NGOs or community groups with the help of new technology such as the Internet and mobile technology.

In a few trial sessions of videoconferences which have been conducted by SSWB, there were participants from the United States, Portugal, Ireland, and Ghana. The videoconferences covered such topics as social entrepreneurship, knowledge management, civil society in Africa, and potential benefits of e-learning. During these sessions an SSWB member acted mainly as a facilitator with other members observing the interactions between the participants. After the discussion concerning the session topic ended, there would be an informal discussion with the participants about their overall impressions about the session, what they think worked and did not, and suggestions for improvements in upcoming sessions. As Heeks (2008) states, the divide often created in these types of projects between the designer and user is something that needs to be bridged in order for the project to be sustainable, which was the inspiration for the informal chats. The project does not receive or rely on any funding which is one of the criteria to see if it is feasible at a very low or no cost. This is based on the belief that large private sector firms and NGOs are not willing to risk the large scale use of resources in order to implement a major ICT4D project. Rather, they will opt to do what they can with what is available to mitigate risk, as proposed by Heeks (2008). SSWB also sees this small scale implementation as a way to make the project accessible to a wider audience, and the low cost software it takes to run one of these projects is what is available.

*O’ia’da’s ANCC’s Live Video Conferencing Project*

The final project we observed is ANCC’s live video conferencing project conducted by O’ia’da. Their mission statement states, “The ANCC is currently connecting students in the U.S. and Africa by utilizing
our 21st century telepresence educational centers. The primary goal of the ANCC is to increase student test scores, decrease drop-out rates, and to reduce the achievement gap of schools. We utilize state of the art videoconferencing technology to connect students with students in Africa. Through “LIVE” face to face educational and cultural exchanges, students become excited about learning” (http://www.oidaintl.org/index.htm). From reading the ANCC’s mission statement about their objectives for the project, it is evident that they use several innovative methods when conducting their sessions in order to use IT for development by creating communication dialogues between students. This includes taking students and participants in the United States on a virtual trip to Ghana in order to find out more about the culture and how different aspects of the society function. To make the experience seem as life-like as possible, they use state of the art equipment such as flat-screen plasma TVs, digital surround sound, and special effects such as green screens. Unlike the previous two projects, ANCC has a strong corporate partnership with Polycom, a large telecommunication company that provides the equipment, both hardware and software necessary to carry out the project using the technology. Using the Polycom software, ANCC is able to take students in the US on virtual tours of old slave quarters to discuss colonization issues, and it also has a ‘What’s Poppin’ hour which is a virtual roundtable where students discuss current games, music, and movies which are popular in their respective countries. By mixing serious subjects such as the slave trade with a more casual one such as popular music, they try to create an educational platform for the students while still relating to them with something more personal (http://www.oidaintl.org/index.htm). In general this project is the most advanced in terms of technology which can be attributed to the partnership with Polycom. Polycom describes themselves as a “global leader in unified communications (UC) solutions” by providing video and voice conferencing solutions to companies throughout the world. According to their corporate homepage they employ 3,200 people, operate in over 40 countries and had a 2010 revenue of USD $1.2 billion (http://www.polycom.eu/company/about_us/corporate.html). They also claim a commitment to corporate social responsibility by publishing, that in 2007, they donated over USD $350,000 in funds and equipment to charitable and nonprofit organizations around the world (http://www.polycom.eu/global/documents/company/about_us/plcm_corr_soc_resp.pdf). As the management members of the ANCC project state, the success of their project would not be possible without the help of Polycom.
1.3 Fieldwork

In order to carry out some of the observations, surveys, and interviews, one member of the research team (Patrik Jonasson), traveled to Ghana from June 2011 to August 2011 as part of an SIDA Minor Field Studies grant. He stayed there for two months, and during this time, along with the aforementioned data collections, Patrik participated in WPD conference sessions. Conducting this participant observation, provided him with an opportunity to better understand how these sessions are received on the ground in Ghana, and to discover what changes need to be made in order for these types of projects to be more successful. During the sessions a member of WPD served as the main facilitator in Ghana, and Patrik observed how the participants interacted with each other during the session along with the interaction with other participants in Sweden. WPD also assisted in the field-research by facilitating contact with former participants in their videoconference projects to conduct retrospective analyses and surveys.

1.4 Relevance of Topic

With the rise of globalization, individuals and groups from different cultures are coming into contact with each other more frequently, whether it is through politics, business, tourism, or migration. This is what Pieterse (2004) refers to as wider and deeper human rendezvous outside the economics realm, which he states is particularly relevant in relation to culture. Generally globalization refers to the interconnectedness between economics, people, and cultures on a global scale. Eriksen (2007) identifies three dimensions of globalization as increased trade and economic activity, faster and denser communication networks, and increased tensions between and within culture groups. In our work we are most focused on the latter two but acknowledge the significance of economic globalization in the form of the private telecommunications sector in terms of expanding the reach ICT. One thing that both Eriksen and Pieterse agree on is that technology is shaping globalization. Furthermore, according to Eriksen (2007) there are more tourists, business travelers, refugees, and migrants than ever before, and boundaries that seemed to be firm, such as national borders and geographical distances, are now much weaker. Based on this thinking, we can conclude that human beings are interacting with many different cultures in their everyday life. In order to make these interactions more beneficial and to ease tensions, whether it is in politics, education, or personal life, a greater sense of cultural awareness and
understanding is needed.

As Barker (1997) points out, due to globalization and electronic reproduction, culture is delivered to people through TV, radio, internet, and other forms, and this means that the desire to explore new cultures has dwindled. Without having a desire for activity to seek out different cultures people most likely are going to accept what is given to them. ICT projects such as live video conferencing attempt to re-work the idea that culture is simply being delivered electronically in a one-way fashion. They enable the participants to actively discover and explore intricacies of a new culture themselves. This was evident in the O’ia’da ANCC project such as the virtual tours of Ghana using the live video technology. This is relevant because in our study all three of the projects place a great deal of emphasis on building cultural awareness, celebrating cultural diversity, and creating cultural exchange. This is an area where we believe these types of projects can play a significant role in.

This means that individuals and groups can have a greater control over what type of information is passed on about them. This can in turn create a more informed picture of their culture and how it fits into the globalized world. In projects such as the ones we focus on in our research, the participants are directly creating the content and publishing it for the global community to explore. This creates a very personal picture of their culture.

1.5 Development and ICT

Development, according to Unwin (2009), usually involves the concepts of growth and progress; thus technology and economy are important components of development. Though opinions of what constitutes effective development vary within the development discipline, even among the UN agencies there are differences in opinion (McLaughlin, 2005). When we consider ICT’s role in development, we must look at how ICT can contribute to economic growth by enabling less fortunate and marginalized people learn to transform their situations for the better. This is then related to the access of information required for the people in need and the possibility to communicate with other people and turn this information into economic benefit. Unwin (2009) acknowledges that technology has been used by the elites throughout history to keep their higher status, and this means that the neutrality of technology and the digital divide can be questioned. However, it is not ruled out
that ICT can indeed help the marginalized and poor to better their livelihood.

### 1.6 ICT and the Digital Divide

Of course, development through ICT will not be possible without bridging aspects of the digital divide. Simply put, the digital divide can be summed up by those who have reliable and easy access to ICT and those who don’t (Sorj, 2005). One example of this is the fact that in Manhattan there are more Internet providers than on the entire continent of Africa (Pieterse, 2005). With this divide in place, one factor for the success of a project is whether or not the information even reaches the intended participants. This divide is not only a technology problem because, as Pieterse points out with the help of Wade, “Cheap books are a great boon, but giving illiterate people cheap books does not solve illiteracy” (Wade 2002, p.443 in Pieterse 2005, p.13). A second factor is that the information which is made available is presented in such a way that it is easy to access and understand.

One way the technology problem is being addressed is through the efforts of some private companies looking to get a head start on the market share in emerging markets, along with NGOs, and multilateral organizations such as the United Nations. As Adowa (2007) states, “Ghana has responded to the ICT challenge”. He uses as an example that in 2003, the country announced the Ghana Integrated ICT for Accelerated Development Policy, developed to help Ghana become a middle income country by 2020 with the help of ICT. The objectives of the policy are to be carried out by an array of research institutes, government ministries, and private agencies (Adowa, 2007). Perhaps it is the duty of the private companies to make sure the information reaches the individuals and the NGOs and multilaterals to ensure that it can be easily retrieved and understood.

### 1.7 Ghana's ICT Capabilities

According to the International Telecommunications Union (ITU), when it comes to Internet subscribers in Africa, Ghana ranks high on the list, with only South Africa and northern African countries having a higher subscription rate, along with Nigeria and Togo in Western Africa (http://www.itu.int/ITU-D/ict/). Unwin (2009) writes that the web, indeed, can help people obtain a share in information across the
world and thus can create an opportunity for people to access information that could be of importance for generating knowledge and development. The web is therefore a tool that is powerful for democratization and opening up for information sharing. The internet has also been proven useful for income generation as well as entrepreneurship (Best, 2009).

However according to a 2005 report on E-readiness conducted by the United Nations (UN), Ghana has improvements to be made in order to reach its ICT goals and take advantage of the growing trend in internet usage. The report pointed out that Ghana had significant short comings in its implementation of ICT projects and lacked consistency when executing these projects. From these findings, a UN ICT task force developed a national ICT initiative in education policy that was meant to help Ghana meet its ICT in educational goals. Unfortunately the results have been somewhat disappointing. As shown by the following table, Ghana has fallen several places among the 191 countries since 2005. This does not necessarily mean that Ghana is going backwards; it just shows that other countries are adapting faster in order to achieve a higher level of e-readiness.

E-Governance Readiness 2005

Country World Rank Index 2005

Bangladesh....................................................162
Brazil..........................................................33
Ghana.........................................................133
Malaysia......................................................43
Namibia.......................................................111
Rwanda.......................................................143
Sweden......................................................3

Ghana

2008............................................................138
2010............................................................147

The problem with the advancement of e-readiness and ICT projects could lie in the lofty expectations and support this area has created within a development context. As Ghana researchers Adwoa and Kwopong (2007) suggest, all the support given to ICT4D has created “turf battles” among research centers, governmental ministries, and private agencies all vying for a piece of the action which has a tendency to lead to duplication and waste. They list the National Initiative concerning the ICT and Education and Training, the African Information Society Initiative (AISI), and the Science and Technology Policy Research Institute as three examples of organizations that are set up to work with ICT4D but often end up competing against each other for resources. Adwoa (2007) states that even though there is a national policy, and organizations have been created to increase the presence of ICT use in the country, the majority of local governments only dedicate approximately 10% of their budget to the advancements of ICT. So the desire for an increased presence of ICT does not always translate into ‘political will’ by the policy makers making the budgets. Unfortunately, this affects the accessibility of smaller NGOs and community groups as well.

As previously mentioned by Adowa (2007), where political efforts are coming up short in driving ICT projects, NGO’s bilateral and multi-lateral donor agencies are trying to pick up the slack. This is mostly being done through pushing ICT education in schools and by supplying hardware such as personal computers for students to receive needed practical experience with technology (Mfum-Mensah, 2003). However, bypassing the government often means that the rural areas get bypassed as well. This is because most of the infrastructure needed to facilitate these projects is located in urban areas, and since large scale improvements to technology infrastructures are not in the budget of NGO’s, they have to make use of what they can, and this is often in and around urban areas. According to Heeks (2009), large private sector firms and NGOs are not willing to risk the large scale use of resources in order to implement a major ICT4D project. Rather, they will opt to do what they can with what is available to mitigate risk. What this means is that although the problem of the digital divide is being addressed on a global level, within Ghana the risk is that inequality will be increased between rural and urban areas. In the study this is important because of the desire for WPD to make their video sessions as accessible as possible in all regions in Ghana, and this means moving away from the large cities to rural areas which currently do not have the IT infrastructures such as internet connections in place.

Another area that seems to be driving improvements in both Ghana’s ICT infrastructure and capabilities
is the private sector. Projects such as the West Africa Cable System (WACS), which was funded in large part by telecommunications giants such as MTN, Neotel, Vodacom and others, set out to connect Ghana to the rest of the world through a high speed underwater cable that stretches from United Kingdom to South Africa. The cable has 15 landing points along the west coast of Africa including the capital of Ghana, Accra. It is expected come online in 2012 and should greatly increase the capabilities of ICT projects in Accra and hopefully in rural Ghana as well (Malakata, 2011). Along with the WACS, and adding to the competition for market share in Ghana, is the African Coast to Europe (ACE) under water cable system. This system is very similar in size to the WACS but offers more connections along the African coast and in most part is funded by French telecommunication companies (Orange, 2010). These systems are designed to support present and future internet, e-commerce, video, data and voice services. This is in line with the desire of the UN that at least 60 percent of West Africa will have access to affordable communication by 2015 (Malakata, 2011). The competition from the rival companies should keep the services affordable, and the increased number of landing points should allow access to those who previously did not have it. With cheaper services and greater reach, the possibilities for more people to share information should increase.

As the power of Ghana as an emerging market economy grows, it is likely that so will the desire of these large telecommunications companies to take advantage of this opportunity, and theoretically, this could spread to the public sector, NGOs and other civil society actors. This is what Heeks (2008) refers to as passive diffusion, something that has risen from private firm’s search for profits and hesitations for those in the development field to take on projects that require a large-scale hardware and software roll out. As he states, previous ventures into this areas such as telecenter projects have not produced the benefits hoped and are currently “reserved only for the brave and foolish” (Heeks, 2008).

Along with these improvements to infrastructure, as we witnessed, telecommunication companies such as Polycom are willing to donate equipment that can be used for such things as video and voice conferencing with the knowledge that this will likely reflect positively in their Corporate Social Responsibility (CSR) reports and to the general population as an act of good will. Similarly, programs like Vodafone’s, another international telecommunication company with a presence in Ghana, World of Difference as well as their V school booth project aim to use the companies reach, technology, and commitment to CSR to address not only communication problems but also larger social problems such
as poverty and environmental degradation as well. They state, “we will strive to make it possible for all people in the countries in which we operate to have access to communications through the V School booth project, as well as lower tariffs for the disabled and elderly” (Corporate responsible, Vodafone). Furthermore, they hope “to increase by five times the number of mobile-to-mobile connections which have a positive impact on carbon dioxide reduction, by March 2013” (Corporate responsible, Vodafone). These types of CSR initiatives can also be seen as a positive side effect to the private sector’s interest in countries such as Ghana as we saw with advanced capabilities of the O’ia’da project.

However according to some, this relationship between the public and private sector is considered shaky at best and is something that needs to be looked at critically in order not to get caught up in the potential. According to Pieterse, “ICT4D is a strategic part of ICT expansion: ICT4D is digital capitalism looking South—to growing middle classes, rising educational levels, vast cheap labor pools, and yet difficult regulatory environments. It is about market expansion and converting unused capacity into business assets on the premise that new technology is the gateway to hope” (2004, p.19). He goes on to cite examples of how in the past, specifically in the United States, telecommunications companies have been indifferent about digital equality in practice but are happy to bring it up as something that they are working toward in marketing campaigns. He refers to this as ‘market led development’ and is something he sees as a risk with the current state of telecommunications companies’ growing influence in ICT4D (Pieterse, 2004).

Providing another perspective to the role of the private sector pushing the concept of ICT4D, Lisa McLaughlin takes a deeper look in to an agreement between Cisco Systems and the UN. According to McLaughlin these public-private partnerships come from corporations looking to boost their CSR policies or their roles as a corporate citizen and by doing this have increased their influence in many public sector environments all the way from the UN down to localized institutions such as public schools and community centers (McLaughlin, 2004). She states, “It seems unquestionable that corporations are calling many of the shots and reaping enormous benefits from public-private partnerships”(2004, p 58). This of course can be seen as a problem on many levels, but the most striking one is that the two factions are fundamentally different, and this can cause the concerns of the public actor being pushed to the side in order to fulfill the wishes of the corporation. This opinion is also shared by Leye (2007) who uses a similar agreement between UNESCO and Microsoft to come to a similar conclusion. As both Nwakanma (2005) and Leye (2007) explain, the civil society is often the weakest actor in multi-stakeholder partnerships and is often relegated to the role of critic in the eyes of governments and
private sectors. This is mainly due to inequalities in funding. Lovnik states, “Following the growth of private-sector involvement in public infrastructure projects across the globe, corporate investments have often become a substitute for public funding formerly provided by intergovernmental agencies, international aid organizations, and governments” (2005, p 10). With private sector actors such as large info-corporations announcing themselves as “partners for development,” they have been able to crowd out other forms of public sector alternatives while looking for their own commercial benefits. This is an important perspective for us to keep in mind based on the fact that much of the success of the O’ia’da’s projects can be due to their partnership with Polycom.

1.8 Mobility and ICT

According to the International Telecommunications Union (ITU) data in 2006, the mobile phone subscribers per 100 habitants are between 21 to 40 in Ghana, Nigeria, and Cote De Ivoire which is higher than many other parts of Africa. Only South Africa and the northern Africa region have a higher subscription ratio (http://www.itu.int/ITU-D/ict/). Best (2009) states that the spread of mobile phones has been unparalleled even to that of previous communication technologies in the past. The increased number of mobile phones, this means that it is not only possible to access the web through a computer but also through the mobile phone. “The African mobile Internet market continues to grow dramatically, staying slightly behind the Middle East (fastest-growing region), with pages viewed having increased by 422% between April 2008 to April 2009” (http://smartphone.biz-news.com/news/2009/10/26/0003).

2. Methodology

During the field trip in Ghana, participants of the ICT projects were interviewed and surveyed to collect the data for this thesis. Some of the interviewees were past participants, and some were participants of current projects. Research was collected via group and individual interviews which are included in Appendix B, and data was also collected through written surveys as included in Appendix C. At the Shalom Secondary College where WPD had conducted their conferences in the past, a total of five
interviewees were used in data collection: the group was comprised of two observing teachers and three graduated students (NB: All student participants had by now graduated from the college so only those whom we could locate were contacted and questioned for the interviews). The WPD coordinator in Ghana was interviewed twice about the experience of the WPD sessions. Evaluation surveys were conducted with fifteen students after the WPD session using the alternative low-cost web-based platform from Victoria College, and seven students were interviewed on their past-experiences with WPD sessions. The ICT survey was distributed to ten students at Victoria College who completed the surveys. Four students from the Golden Sky Academy were also interviewed about their past experiences with the ICT program, and nine students in the Golden Sky Academy class were given written surveys about ICT4D which they completed.

The participants from O’ia’da were interviewed in an informal group discussion format, with guided questions being given by the researcher. At the same time, demonstrations were provided from the O’ia’da team to show how the ICT software technology is actually used. During this demonstration, two people from the USA participated by answering interview questions (informal discussion). Direct interviews were conducted with the ICT coordinator at O’ia’da. Five people were part of the group interview, answering questions individually. To complement this research, a further interview was conducted with a former ICT Service Quality worker, Pierre Johnson.

2.1 Scientific Method

The research method used for the paper is primarily based on a case study research model. The primary case study material was collected from interviewing past participants and management members from the WPD videoconference project which has been running since 2007. To complement the case study, the O’ia’da and SSWB data is used as these NGOs also have been conducting live video sessions in the past. Case study methodology, according to Yin (2009), is very appropriate to problem questions which are asking “how” and “why.” Questions containing these elements are usually more explanatory and often demand for case studies and experiments to be used in the research method. In our project work, the “how” and the “why” elements were used in the problem questions, and thus the case study approach offered the most appropriate method along with the nature of the data collected. In conducting the case study, the aim is to better analyze the video-conference approach in light of the
WPD program, in order to gain knowledge about the sociocultural phenomena of cross-cultural communication interaction in learning and understanding. The limitation of the case study is the risk of generalizing the result, but our aim is more to give an indication of the specific cases in this more qualitative approach.

A strength, according to Yin (2009), is that having a variety of sources for the data collection process provides better evidence of the phenomena and its impacts. This is relevant as in the data collection process, both interviews and surveys were also used as well as complementary data collection from other video conferencing programs in the nonprofit sector, specifically from the facilitators of O’ia’da and SSWB video conferencing programs. One source that we used for data collection for the case study is interviews which Yin (2009) believes to be appropriate when the cases are about human behavioral events. In the case of WPD, a total of 13 interviews were conducted between June and July, while in Ghana, with a total of 16 persons interviewed. All of the interviews were conducted in English. One person, Martin, was interviewed twice due to his position as coordinator. The questionnaire for semi-structured interviews is included as Annex A.

The WPD video-conference program was first assessed by surveying the students who had been participating in previous video-conference sessions with WPD. The research data was gathered from the students which comprised the research sample for the WPD case study. Three major schools were chosen as these were the participating institutes in the WPD video-conference sessions: Golden Sky Academy, Victoria College Secondary School, and Theocracy Senior High School. Here also, the students who had not previously participated in the conference sessions were given a chance to complete surveys to write down their opinions on cultural and knowledge exchange for development in ICT. This provided some interesting insight because as, we learned, many of the students were taught about ICT in school but had never participated in a project actually utilizing the technology. The survey guide is included as Appendix C.

According to Yin (2009), interviews as a source of data collection are very important. The two levels mentioned for a creditable case interview are to take into account the so called line of inquiry and the hospitable and friendly open ended questions that perhaps are perceived as less confronting and non-threatening (2009). The interviews and surveys were conducted in a semi-structured manner with open ended questions as Yin suggests, but also a few close ended questions were included. The survey initially was constructed with the purpose of determining the perceptions of ICT in knowledge interaction but was on some occasions also used as a line of inquiry as a protocol with the more open ended questions
utilized to gain further insight from interviewees that have extended experience in ICT for the evaluation. “The in-depth interview,” says Yin (2009), “can actually take place over a certain time period and thus does not only have to be restricted to a one time interview event.” This would make the key interviewees more like informants rather than being seen as respondents and, therefore, are very important to the case study research. This is important considering that the field study occurred over a time period of two months. This is a technique that allows the researcher to go much deeper with the subject and the time period supplies data of greater detail (Cottle, 1998). This in-depth interview method was used on some occasions in order to see the progress of the projects where some participants are chosen to evaluate their experiences on various occasions.

In regard to the effectiveness and accuracy as well as the ethical implications of the collection compiled from interviews, a voice recorder was used in the interviews when it was approved by the interviewees. Yin (2009) says that recording devices can be used if preferred and gives a chance to accurately refer to the voice recording at a later stage. However, it is important for ethical implications that it is approved by the interviewee. Also, it is important that the recording device is not creating unnecessary distractions from the interview. It is also pointed out that using a recorder should not replace good listening. Due to technical issues as well, the recorder was not used on all occasions even if it was approved by the persons being interviewed. The consent of the people participating in the study was well considered as was the consent to their names being used in the study.

The direct observation approach is another source for collecting data for the case study says Yin (2009). This is another important source of evidence used in order to gather information and is used to collect data through live cross-cultural interactions of case studies. By having a chance to see the live interaction from both the participants in Ghana as well as in Sweden, we were given better insight to the participatory communication during some of the live conference sessions. By having a chance to assess and observe the environment and the environmental circumstances, we gained additional insight into the cross-cultural communication phenomena. Observations can also prove to be a valuable method used to obtain data from participants while they are participating in the project. This is important because, although interviews and surveys are excellent ways to gather data, this data can only help when making predictions about certain behavior or trying to understand a behavior after it has occurred. Alternatively, by conducting actual observations, the information received from the surveys and interviews can either be confirmed or discrepancies can be discovered which may indicate a need for further research, and with observations the researcher is, for the most part, only receiving
information rather than soliciting it from tools such as interviews and surveys (Cottle, 1998).

Yin (2009) mentions the participant-observational mode as a special type of direct observation where the researcher is not passive in the observations but is actively taking a part in the event. This could be, for example, when acting as a functional staff member in an organizational setting. Again we see this as similar to our role when sitting in sessions and sometimes asking and answering questions. We considered this mode of observation as an appropriate mode of evidence and data collection since we had the opportunity to take part in the live conference sessions both in Sweden and Ghana. It is believed that rather than merely being passive observers this will bring about an actual experience of the participatory communication and understanding of the cross-cultural interaction for better understanding. Yin (2009) says that the participant-observation gives the chance to see the reality of the situation from the insider perspective instead of being passively observant. Naturally, this could lead to certain tradeoffs since a more rigorous discipline is required in order to keep the objective side of the observation while seeing things from the inside perspective. By not always taking the role as the participant-observer, the researcher can better analyze and correlate the data with passive observations of the live conferences. By also taking an active pragmatic role in some aspects of the research, i.e. being involved in the video-conference project, we are aware it might create questions in regard to reliability and validity. However, according to Whitehead, depending on the assumption of the researcher looking at knowledge formation as something “out there” to be discovered is not something that is related to the use of the action oriented part of the research (Whitehead & McNiff, 2006). Following this assumption, we as researchers are not taking the approach and assuming that the researcher is separate from the situation, but at times is also a part of the situation, thus being involved in the meaning and knowledge creation.

2.1.1 Primary Data collection from WPD

At the Golden Sky Academy in Ghana, five students who had participated in the video-conference sessions were still enrolled at the school and were available to be interviewed. They were interviewed with semi-structured questions, and they were given mostly open-ended questions to answer. The interview questions are included as Appendix B. The students were allowed to answer some of the questions in writing, and as a complementary method, semi-structured surveys were handed out to all the students in the class allowing them to express their opinions about the practicality of ICT and its effectiveness in knowledge and cultural exchange. The survey is included as Appendix C.
secondary school in Ghana, Victoria College, a total of seven participants of the WPD video-conference session were also interviewed in a similar manner as at Golden Sky Academy. The students who had participated were identified and then interviewed by answering semi-structured interview questions. The questionnaire is included as Appendix B. Many open-ended questions were included and the students had a chance to express some of their opinions in writing. The participants were four people who had participated in the WPD video-conference sessions and were still present at the school. Also, surveys were given to the whole class to answer with a few open-ended questions in general about their opinions of the usefulness of in ICT relation to knowledge and cultural exchange and development.

The senior class students were also taking part in a direct audio conference session conducted with members of SSWB in Sweden with the use of available equipment. The students then were given a few questions about their experience and their views on the conference session’s usefulness for cultural and knowledge exchange. The questions are included as Appendix B. This provided an opportunity for the researchers also to directly observe the session, and the students could then evaluate their experience of this alternative ICT technology approach.

The senior students from the Theocracy senior high school were also interviewed. The questionnaire is included as Appendix C. Students were interviewed with semi-structured questions. In addition, two supervisors who had been following the students during the sessions were expressing their opinions of the video-conference sessions with WPD since they were primarily observers in the sessions.

2.1.2 Primary Data collection from O’ia’da

For O’ia’da, the ICT coordinator was interviewed along with three participating members of the organization. At the same time, the possibility was given to us to use the actual equipment. This presented the opportunity to observe the quality and the usefulness of the equipment as five persons were convening an informal conference session in Ghana with two people participating from the United States of America. All participants answered questions about their experience and stated their opinions during the conference session. O’ia’da coordinators were given the opportunity to express their opinions of their effectiveness in their sessions and what potential the ICT equipment had for knowledge and cultural exchange. The type of technology was similar to the equipment that the WPD had for their sessions, which gave an insight into how the WPD equipment and experience was from the technical point of view since WPD no longer had access to their old equipment facility. Since this was an informal meeting, no official interviews were conducted, but all participants were aware that the information
would be used in a research project.

2.2 Limitations

Due to the fact that some of the subjects interviewed had participated in the WPD sessions as long as three years ago, this arguably made the memories and reflections less vivid for some of the interviewed students in comparison to the details which might have been available if surveys had been conducted directly after the session. Nonetheless, this provided the opportunity to evaluate the long term effect and retention of the experience and what knowledge the students had retained from the session instead.

While in Ghana, a session was held by the researchers and WPD with a new type of internet equipment which WPD was considering adopting. The sessions involved students who were involved with other WPD projects. It was a chance for students to be given a fresh impression of the process, and as researchers, we could observe their reactions to the conference session. Also, it provided us with an opportunity to evaluate the alternative technology that WPD was considering using for students in the future. Unfortunately because of some difficulties with internet bandwidth limitations, only the audio exchange was feasible, but nonetheless, it provided valuable data collection for the case study of WPD. Furthermore, many of the last year students of the programs were no longer in the school and could not be interviewed. This meant that only the people that had been part of the WPD video-conference program who were still enrolled in the schools were interviewed. In addition, the time restrictions of students going on holiday and having their final exams made the interview process more difficult. Unfortunately there were no opportunities given to interview the students at O’ia’da due to time restrictions and school vacations, but as an alternative, the moderators, ICT coordinators, and the people working at O’ia’da were interviewed.

3. Theoretical Framework

As part of our theoretical framework, we are exploring several concepts related to both communication and development that will help us get a better understanding of what needs to be done to have a
sustainable ICT project from a theoretical point of view. We will later use these same theories in our analyses to help determine where the projects stand in terms of sustainability and what potential there is to be explored. Our idea to look at the projects from a sustainability perspective will give us some insight into the probability these projects have to accomplish their own goals and objectives. Since each project is set up differently with different goals in place, it is impossible to determine if one project is successful based on one set of criteria. Therefore, we feel it is best to look at the likelihood the project has to continue to operate under the current set of circumstances and will use several sustainability indicators to help us judge this.

3.1 Communication

For any ICT project to be interactive, a participatory platform needs to be established where communication for development can take place. Also, several aspects of communication need to be understood in relation to these projects with one aspect being the depth of communication. When defining communication, Unwin states, “communication is a dynamic process that involves both producers and recipients” (2009, p.47). For this communication to be participatory, both the producer and the recipient need to understand what is expected from them and have a good idea of what they intend to gain from the interaction. For ICT projects such as the ones we studied, this understanding takes place from having a clear mission statement, well-defined goals, and transparent process.

Waisbord (2005) mentions the importance of participation when generating and distributing information for participatory citizenship. He contends it is in the public sphere that norms and values are questioned and also where wishes of the people can be put forward. In open conference sessions, it might enable participants to take a role of actively questioning and sharing information with other people.

Buckley in Unwin (2009, p. 61) goes deeper by saying that it is through communication that identity can be expressed. Communication underlies a sense of community creation and a sense of belonging along with finding out differences and similarities of those involved. Again in the projects we studied, most often the participants are coming from different parts of the world, and the differences can be great and the similarities hard to spot. That is why it is so important for both the producer and recipient to have a clear understanding of the communication process in order to create the sense of community and belonging.
3.1.1 Top Down working with Bottom Up (Participatory) Communication

In order to engage both the producer and the recipient, it is also important to understand where the need to communicate comes from. Unwin (2009) says that top down and bottom up approaches vary in information and communication needs. The need for top down is more supply led, with the ‘top’ having control of the information, and the bottom up approach is more empowerment driven. Depending on the context and purpose, top down and bottom up communication approaches could vary in effectiveness, where top down communication is more to push out information from a supply perspective, and the bottom up communication process more involves people in a participatory manner, thus more involving the direct demand element. Although different in their means, both can be effective in obtaining objectives that differ from one another (Greiner, 2009). This would mean that in development communication, depending on the objectives, the communication approach might vary in order to effectively fulfill the overall objectives. With both methods needing the other to function, there is an increased understanding that the two forms need to be integrated to understand their role in development issues (Waisbord, 2005). Unwin (2009) acknowledges that depending on the assumptions of the actors, the choice of communication will vary. He states that when providing information in a top-down manner, the economic growth model is often used as the framework rather than the human development people-centered approach that is more connected to the bottom-up communication approach. It is often an expert/ignorant relation between sender and receiver. In the human development approach, the people’s perceived need is more put into focus, as they are not seen merely as ignorant receivers who need to be persuaded but actually have an active part in the communication process. Greiner uses the term infusion to describe this process (2009). She uses the case of Scenarios in Africa as an example of this. Participants are encouraged to enter a contest to create posters to raise awareness for preventing HIV/Aids. With the perceived beneficiaries becoming the producers of the content, their actual needs and concerns are more likely to generate engagement from the surrounding community. Instead of the “top” diffusing the information to the uniformed masses, the information is presented to the “top” by way of infusion (2009). We see this concept of infusion playing a key role in the success of the live video-conferences by encouraging the participants to actively take part in the content creation of each session.

Unwin (2009) says that the focus on the dissemination of information in development communication is one reason for ICT4D initiative failure. Instead more focus should be in enabling partnerships, and the empowerment of the beneficiaries should take an active part in the communication process. Unwin
(2009) emphasizes the multidimensional interaction that development communication actually is when involving many stakeholders. According to Unwin (2009), when many stakeholders are involved, it takes creativity to convey the intended messages in the more complex communication sphere. This was observed in the innovative use of the technology by the O’ia’da project and their virtual tours of Ghana.

As Servaes notes, the traditional method of introducing a development strategy tended to follow a standard pattern of using mass media in the following way: “informing the population about projects, illustrating the advantages of these projects, and recommending that they be supported” (2005, p.95). Although this method might have its benefits, he states that thinking is moving more in a participatory method. Many in the field are realizing that, even though mass media are important in spreading awareness of new possibilities and practices, ultimately decisions on whether or not to support these projects are going to be made through personal communication on a small scale level. According to Jacobsen, this is how communication works it ways through the community, through the region, and ultimately up to a national level. Servaes (2005, p.94) views the aforementioned method of diffusion or top-down approach as limited, and it leaves important voices out while a more participatory and active involvement in the communication process can accelerate development. “The most developed form of participation is self-management. This principle implies the right to participation in the planning and production of media content” (Servaes, 2005, p.95). This is similar to the ICT projects where the participants had liberal influence on the content that was covered and in constructing the overall goals of the project. This was seen to be the case in in several examples from the video-conference program where the students are equal communication actors, both listening and trying to understand issues on each side.

For many ICT projects to be successful and to realize their potential, participation must play a major role, both with communication and culture. Waisbord (2004) states that it is indisputable that the issues of participatory citizenship is, and should be, central to development efforts. This, of course, needs to be done in ways in which the participation yields the most benefits and is well thought out. For example, one cannot say that a single method of participation should be universally applied without giving any considerations to certain factors that might limit participation such as government, culture, or socio-economic restriction. Even if a project works well in one country or region it, might not in another where it does not have the proper support.
3.1.2 Synchronous vs. Asynchronous Communication

Unwin (2009) says that ICT has helped increase possibilities of synchronous communication over great distance with many users at the same time. In the past, being together at the same place at the same time was the only way to have synchronous communication. With ICT however, it is now possible to be at different places in different time zones and still have synchronous communication. Although asynchronous communication is still dominating in e-learning more synchronous communication possibilities such as chat rooms and instant messaging are becoming available (Unwin, 2009). With new ICT, Unwin (2009) illustrates that the time delay which was unavoidable in the past with asynchronous communication has now shortened the delay of sent message and received messages. With SMS and emails, distance and time has, therefore, almost ‘diminished’ when it comes to asynchronous communication.

3.1.3 Public Sphere

Jacobson (2004) links participatory communication to the public sphere when participants engage in action oriented to understanding which, through debate and public discussion, calls into question existing norms and introduces new proposals that reflect the attitudes and wishes of the people. According to Jacobson (2004), the public sphere connects the communicative action of interpersonal and small groups to villages, district, and national levels. Unwin (2009) says that Habermas is emphasizing the public sphere where the public can meet and be actively involved in the political process that ultimately can affect its future in a positive manner. The potential of new ICT, when it comes to expanding the public sphere, can be seen according to him in the potential of wikis, blogs, and other types of trans-global communities. It has still not been realized to the fullest potential, however, but the possibility for benefits is increasing. New ICT has the potential of democratizing knowledge. Information can be stored, shared, and captured for relatively low cost (Unwin, 2009). Given that the public sphere is where people can share and capture knowledge, Unwin (2009) says mobile technology can arguably be an area better looked into when conducting knowledge exchange conference sessions as it can reach a wider audience, other than people who have personal access to computers or who are fortunate to be part of videoconference sessions conducted by NGOs.
3.2 Success Factors In ICT Projects

Unwin (2009, p.70) mentions that for ICT4D projects to work there should be a need for a service; it should be reliable and accessible and cost efficient. Finally, the usability is of importance for the people who are using the service, as they should find that there is a relevance to the communication material. It is often on one of these factors that ICT4D projects fall short, and in many instances this leads to their being unsuccessful or unsustainable.

3.2.1 Sustainability

Although there has been a great expectation for ICT4D, there is still an issue with sustainability of many of the programs. Unwin (2009) says that there is a gap in continuously monitoring and evaluating ICT4D programs in order to clearly be able to judge the success rate. This gap can be attributed to that fact that many times the project owner is not a local entity and attempts to run the projects from afar. According to Pieterse, “digital projects sponsored by foreign aid and implemented by NGOs display the usual dilemmas of alternative development; most projects are not locally owned and not sustainable and fold when the funding runs out” (2005, p.21).

In order for the success rate of these types of projects to be increased, different variables need to be addressed, and the project needs to be divided into key areas. Victoria Tino (2003) argues that four key areas of sustainability need to be understood in order for this increase in success of ICT projects to take place: That they are socially, economically, politically, and technologically sustainable.

Social sustainability refers to the fact that all stakeholders in the community need to be engaged and fully understand the benefits and risk the project has to offer. This can be done by educating the general public about the projects’ overall objectives, who is to benefit from them, and what needs to happen in order for these benefits to occur (Tino, 2003).

Economic sustainability deals with looking at the long-term cost of a project. Many ICT projects require a continuous stream of money in order to keep subscriptions and software up to date along with regular upkeep on hardware needed to facilitate the project. Also, multiple channels of funding need to be secured in case some funders decide not to follow through with the project (Tino, 2003).

Political sustainability covers the engagement and involvement of policy makers, implementers, and leaders (Tino 2003). Again everyone must be on board with the project in order for it to be sustainable.
and understand the extent of the long-term commitment which needs to be made in order for the project to succeed.

Finally, technological sustainability involves choosing equipment that will be viable in the long term (Tino, 2003). This level is practically difficult to achieve because of the rapid changes in information communication equipment and the sometimes limited choices of the project managers. The second problem refers to the fact when the equipment is donated to the project, managers must often times make it work for them regardless of whether or not it was designed to do so.

Of course with any ICT project to be sustainable, as Unwin (2009) says, it is important that there is a need that should be addressed in ICT projects. It is important to understand the actual needs of the people (Unwin, 2009). Furthermore, Unwin (2009) stresses the importance of ICT4D projects being in the interest of the marginalized people in question when being implemented. Many times, according to Unwin (2009), ICT4D projects fail because they are not taking into consideration the practical needs of the marginalized people. It should be noted, however, that differences can occur depending on cultural, ethnic, and gender factors which can influence the practical need for information and communication (Unwin, 2009). As we have previously stated, we define sustainability by using low cost software and hardware that is widely available to the general public, is reliable, and facilitates the goals of the project creators.

This particular aspect of the sustainability model is something that diverts some special attention because it is often the most difficult to attain and unique to ICT projects. For most other development projects, the political, social, and economical sustainability is something project managers struggle with attaining. Adding the technical aspects of sustainability to this further complicates the formula’s need for success. What makes this aspect of sustainability hard to achieve, is the fact that it is constantly changing and advances are happening at a very rapid pace. According to Unwin (2009) many different technological solutions exist and many more are constantly being developed. This means that a best practice or a one size fits all solution is not recommended, because what works in one region will not necessarily translate to another region. Unwin (2009) again references the rapid changes associated with the tech industry and the push within by the large actors to make their competitors’ products obsolete. Also adding to this is our personal experience and how low-cost and free online voice and video chat capabilities are evolving. Since we began this project study both Google and Facebook have introduced free video chat platforms. Having the backing of two very large internet companies with
their online competency in tow, immediately makes their presence notable and something that can advance the capabilities of the field.

Another aspect to consider regarding economic sustainability is the cost to the individual, but as Unwin (2009) argues if the benefits created by the ICT project are something the participants see as essential, the issue of cost is something that can be overcome. Unwin (2009) uses the rapid rise of mobile phones in Africa (see Appendix D) as an example of something that once seemed like a luxury item that has been adopted by the mainstream public and cost is something that has been absorbed by peoples existing budgets. “If initiatives are truly focused on delivering people’s needs in a cost-effective and appropriate way, they will automatically be sustainable because people will be willing to pay for them. The very rapid increase in mobile telephony in Africa, for example, clearly indicate that people’s needs for communication are being met in an appropriate and effective ways” (Unwin, 2009, p.365).

3.2.2 NGOs

The projects analyses in this thesis are facilitated by NGOs, and that is why it is important to look at them from a theoretical perspective to get a better understanding of their role in this process. According to Parnwell (2002) in Unwin (2009, p.11), NGOs have some advantages over state institutions in a sense that they are more flexible and adaptable in providing development on a grassroots level. Also, NGOs tend to have a faster and more flexible decision making processes with much autonomy. Usually the costs can be lower due to a large voluntary workforce that NGOs are working with. The use of ICT is seen by many NGOs as a communication tool that is of relatively low cost (Pieterse, 2005). The other side of NGOs is that they are not always very organized and can be seen as a relative weak actor in a partnership with many stakeholders. The dependency of external funds for activities can also be a hindrance for effectiveness (Nwakanma, 2005).
4. Analysis

4.1 Communication

4.1.1 Communication Issues with Video-conferences

As we mentioned earlier, communication is very dynamic and has a great depth to it. On the surface, Unwin (2009) states, communication involves all our senses and in face-to-face communication nonverbal cues can account for 50 percent of the message. He adds that the voice characteristics account for 40 percent and content only 10 percent. Thus, it is important in the video-conference sessions to look into the aspects of the communication process used by the case studies.

It is important to create as few interruptions as possible in the communication process as it appeared according to many of Ghanaian students. A number of students who had previously participated in the WPD sessions from Ghana commented on how disorganized it seemed on the American side because new participants were constantly arriving late. Martin, one of the management members of WPD, also commented on the distractions caused by people coming and going throughout the sessions and stated that the video footage of persons moving in and out of view was, therefore, at times a distraction from the discussions taking place. Thus, one could argue that video can be a source of negative distraction rather than an enhancement for the communication if it is not used properly and not tested and organized before the sessions.

As we found at times in sessions that were observed, if the internet bandwidth was not strong enough to accommodate both sound and visual in the video-conference, it could lead to the video interfering with sound quality. Thus, at those times when bandwidth is not the best, it might be appropriate to stop the video stream after the initial visual viewing in order to have clearer sound to improve the communication. Having video streaming is of benefit as it makes the video-conference experience much more personal, and when the video quality is strong, it allows participants to gage one another’s body and facial expressions. However, when the video quality reduces the communication quality, the overall experience of participants might be improved by removing the video stream entirely. Therefore, when using ICT technology, there are some aspects related to the technical equipment that can affect the success in the communication process. In the interview with Pierre Johnson, a former ICT professional
who has been working on service quality of ICT, he said that he believes that one should work with the technology resources that are available in the best manner, and sometimes less can be better. This means at times it is beneficial to turn off the video, as WPD did, if the visuals were not synced with the audio, since it creates distractions both consciously and/or unconsciously. Also, Johnson mentioned that sometimes cutting down on the video was a good idea if it was not clear or if it was competing with the audio.

As previously mentioned, the voice quality is said to stand for 40 percent of the communication message; thus, the quality of the audio is often more important than the video. According to Unwin (2009), in a face-to-face interaction, the nonverbal cues are important for the message, and he argues that it amounts to up to 50 percent, but if the video quality is not clear, as many of the students stated, then those micro facial expressions can be less evident if it is not high definition video which requires excellent bandwidth and equipment which is why it can be more important to focus on achieving high sound quality.

In the case of the session over the internet that WPD and VI conducted together, due to the very low bandwidth of the internet connection in Ghana, it was decided that the video streaming was not to be used at all. This was to ensure that the sound quality was clear, and in-depth conversations could take place without the interruption of freezing audio or video. Pierre Johnson stated that when people are using communication in form of video streaming, one might behave a bit differently and not pay a great amount of attention to looking into the camera when speaking, and this then leads to normal visual cues not always working as well over videoconferencing as it does in face-to-face conversation.

Pierre Johnson sees using the use of asynchronous communication as a positive aspect to enhance the conversation message, such as sending a storyboard for the upcoming videoconference session which outlines the basic structure and topics via email beforehand and also perhaps using the chat function while the session is occurring to clarify the messages. A few students indicated that they would have liked a chat function to clarify what was said at times.

O’ia’da’s idea when working with younger students is to make learning fun and interesting. Members were able to use their state of the art equipment to have as few technical disturbances as possible. During this study it was found that they were just starting to use green screen technology as a next step to further the goal of edutainment exchange sessions. However, at times there were issues, as no technology system is flawless, and weather conditions can have some effect on the connection, but
sessions were never canceled due to technical difficulties.

As Unwin (2009) says, communication is of great importance for identity creation, as well as finding similarities and differences amongst people. Judging from the data gathered by the students who had participated in the WPD videoconference programs in the past, it appeared that they had a better view of how peers in other countries actually were behaving and thus arguably had a better glimpse into the culture of the international participants, which also has the effect of making participants self-reflect on their own cultural identities. This was one of the important aspects that O’ia’da was emphasizing in their videoconference program. They thought that it was important for the participants in Ghana to better understand how the “actual” culture in America was, instead of how it was portrayed in the media or in the imagination. At the same time, this has the result of allowing the Ghanaian participants to reflect on their own culture and cultural identity. It was important, as they said at O’ia’da, that Americans also got a better or more authentic view of how people in Africa conducted their daily lives, and this was achieved by projecting the richness of culture of Africa that is often neglected in the mainstream media. Representatives of O’ia’da said that some of the participants from the United States actually believed that people in Africa still lived in trees, and they were surprised to hear cars driving outside the window. Ebow from O’ia’da stated that before participating in an ANCC video-conference, the participants from the United States were asked if they wanted to go to Ghana and Africa; few were positive about it. However, after the video-conference sessions, the majority were more positive about going to Ghana and other places in Africa. Therefore, one could argue that the video-conference programs functioned as well as an alternative media to better show a more authentic picture from what is often projected by the mainstream media which often focuses on political and economic problems facing the African continent. This was also what the people at O’ia’da in Ghana and the US were saying by expressing the desire to “dispel the myth about Africa and Africans.” Many people of African descent have not been recognized for their development and contribution to human civilization Kwabena Nyamekye at O’ia’da explained.

In the session conducted by WPD on the topic of ‘race’ and the 2008 election when Barack Obama was running for the US Presidency, it appeared that many students felt the need to better discuss and understand relevant topics, such as skin color, an awareness that seemed to be a part of their identity. Knowing that Obama was elected President also seemed to have a positive effect on some students’ confidence and identity. One student, 20 year old Paulina, stated, “I experienced that most European
countries are full of white people and that blacks are few, and mixed up with them. And again some blacks have married the whites and given birth to black Africans such as Obama.”

The people at O’ia’da were also saying that initially the questions asked by the students were very much ‘teacher questions’ and not so personal and emphasized more the differences of what? However later on in the sessions, as people became more relaxed and personal, they started to talk about things both the Americans and the Ghanaians have in common and appreciate, such as music, sports, and video games.

4.1.2 Knowledge Sharing

We also found that communication had the potential to create knowledge sharing. Knowledge is defined as information put in understanding by Unwin (2009), and knowledge creation was an important part of the video-conference sessions as relevant topics were discussed from the different cultural perspectives. One could argue that the cultural aspect of knowledge is indeed important to better address development and being able to put outside generated information and knowledge into the local cultural perspective to make it relevant and sustainable. Many of the students commented on how beneficial it was to learn about others’ cultures and what was happening outside Ghana and the African continent.

Delvin, 14 years old, expressed in regard to the videoconference session that “It was so nice. It helped me know more about the world” and “ICT is good for communication and also helps to get into contact with others.” Other students had similar comments, expressing what they felt about exchanging information with other students. Fourteen year old Joy wanted “to know ongoing things about other countries” and said that “It is interesting to know about other countries.”

On the other hand, there might be a lack of critical digital literacy skills about the information that one can get from the Internet. One student Marian, 17 years old, expressed, “We log on to Google and our questions are answered.” Some younger students were also expressing similar ideas about ICT like David, 12 years old, who said, “Mobiles/Internet are good for development so in case you need or want to request something, you can call or browse.”

The critical aspects of the internet and information often seemed to have come from the moral
education in school. For example, one student Jakob, 20 years old, talked about the negative side of new ICT saying that it leads to “increased corruption in our country due to technology and also Facebook.” Elizabeth, 17 years old, stated, “Internet helps us to watch Christianity films that influence our life positively but also pornographic, demonic films which affect our lives negatively.”

4.1.3 Top Down and Bottom Up Communication

As Unwin (2009) says it is important in communication to use the appropriate communication strategy that will fulfill the objective. In the case of WPD, the articulated objective with the video-conference program was to give the opportunity for people in Ghana who cannot travel or participate in global education and cultural programs to be able to do so by using ICT teleconference technology. Its purpose was “to connect young people from around the world so they could learn about and discuss the global issues that affect their everyday lives” (WPD website). Thus, the needs of the participants are put into focus, and as Unwin (2009) states in the human development approach, the participants are not seen merely as receivers who need to be persuaded but are becoming an active part in the communication. Certainly the instructions were put forward by the moderators in a top-down manner in the form of simple guidelines for how to best be heard during the conference. Suggestions included adjusting the position of the microphone, speaking loudly and clearly, and trying to simplify the speech for better understanding. Also, quite a few students were not used to the accent or certain words that varied when the Americans were speaking, and on occasions the moderators had to reformulate or repeat for the students in Ghana. Apart from giving these instructions to the students in a top-down communication manner, the bottom-up or participatory communication approach was used as the students were later to direct the discussions to topics they were interested in such as sports, games, and music.

In the case of O’ia’da, it seemed that there was more focus on what Servaes (2005) would call self-management where students can be a part in the production of the content. This could be the case also, depending on the content of sessions. The WPD sessions seemed to be more planned in advance, perhaps also due to less access to the conference facilities, whereas O’ia’da had more chance to experiment and let the students be more active in the content generation. The sending out of pre-formulated conference storyboards was less used by O’ia’da than WPD, and this could be due to the fact that O’ia’da had superior equipment and could improvise more knowing that the message would still get across.
4.1.4 Cultural Communication

It appeared that many students were interested in learning more about how peers from other cultures were living their everyday lives and their views on various subjects. One could argue that it is important in the human development approach to better understand oneself in relation to “others.” One student Delvin, 14 years old, said that to communicate with others “makes me ask questions and makes me know more about other countries.” Albert, 19 years old, expressed that “It helps us to learn about the culture of other countries which helps us improve upon our culture in our communities.” Gifty, 18 years old, stated, “I learnt that cultures in some ethnic groups are good and some are bad.”

It was evident in the sessions observed that the level of participation of the students varied, but those who did attend generated good discussions and covered interesting topics that could only be discussed in this type of setting. For instance, some of the girls in Ghana were very interested in how girls and women dressed in Sweden. This is a subject which can be related to how girls are seen and see themselves in the eyes of others but something that is likely not to be covered in a traditional learning setting. Also as Michel, a graduate student from the Theocracy Senior High School who took part in the videoconference program noted, it was the first time that they had an interaction with “the whites”. By introducing these students to new cultures, even virtually, they will arguably be better prepared when these situations arise in real life and, depending on the context, will not be overwhelmed by the situation and to being exposed to other cultures. One student, 20 year old Sarah, said, “Through ICT we are able to talk to people in other countries and have information about visiting their countries.” This statement goes along with what WPD had for its vision about the videoconference project. Of course, one could argue that it is not possible to really get to know another’s culture over a virtual environment, but at least an introduction can be given and lessons learned through the inter-cultural discussions.

4.1.5 Synchronous Communication

ICT and video-conference platforms have enabled people to communicate in a synchronous manner where location and distance are of little importance (Unwin, 2009). The only thing that had to be timed when holding conferences between different time zones was to consider the time differences. This was, as it seemed, more catered to the American desire to choose to implement the video-conferences as
being a part of their normal school hours or just slightly after school finished. On the Ghanaian side, the students were more likely to participate as a part of the after school activities. Depending on the quality of the connection, the options of real time feedback could vary, but in most cases it remained synchronous with instant feedback in discussions created.

4.1.6 Asynchronous Communication

As mentioned before, it is important to use the relevant communication strategy for the objective (Unwin, 2009). Although video-conference ICT is mainly based on synchronous communication, it was noted by representatives from WPD that asynchronous communication was also used when the questions were sent out beforehand to the students. Many students commented that it was beneficial to get the storyboard guidance questions before the video-conference commenced in order to be able to prepare and reflect on the questions and to discover information on the topics in preparation before the session. On one video-conference occasion, the questions were not sent out or not received by the students beforehand. In the interviews with the students, they stated that they would have appreciated to get the storyboard questions beforehand. Pierre Johnson who was interviewed for this study emphasized the importance of using synchronous and asynchronous communication together and to mold it according to the appropriate circumstances. Thus the combination between the asynchronous communication and synchronous could be used as complementary communication strategies in the ICT video-conference programs.

4.2 Success Factors in ICT Projects

4.2.1 Sustainability

As stated in the theory, this thesis uses the four key factors we identified earlier by Tino (2003): the social, economic, political, and technological, to compare and contrast the likelihood of these projects having a sustainable future.

As Tino (2003) explains in order for a project to be socially sustainable, all stakeholders in the community need to be engaged and fully understand the benefits and risks the project has to offer. For
this to take place, an educational process needs to be undertaken and stakeholders should have access to information regarding the wellbeing of the project. As witnessed in Ghana, many of the schools had ICT education programs in place. This was also true of the schools that had not yet received the technical equipment necessary to actually implement what they were teaching or had very limited access to it. This commitment to in-class programs that teach the benefits of ICT shows that projects have the potential to have a sustainable future, but the greater community outside the school also needs to embrace ICT and be able to take part in this educational process. The widespread acceptance of mobile technology such as mobile phones and SMS campaigns could be one area that can be used to carry out educational programs regarding ICT projects. This is based on the fact that many in the community are already utilizing ICT through their mobile phones and embracing ICT4D programs that use these same technologies such as Frontline SMS (http://www.frontlinesms.com/about-us/history-and-support).

Economic sustainability is based on long-term costs of these projects, such as updating software subscriptions and regular maintenance and upkeep of technical equipment. This can be seen as one of the most difficult aspects of sustainability, especially for projects such as the ones which this thesis focuses on. For instance, the O’IA’DA project utilizes the most state-of-art equipment and software while conducting there sessions. While this makes for a high quality experience, it rests heavily on the continued partnership with Polycom, the corporate sponsor of the project. Without this strong partnership, the likelihood of sustainability decreases dramatically, as we saw with the WPD project. When WPD’s discounted ICT subscription ran out, they were unable to continue to carry on with regular sessions and were forced to turn most of their attention and resources to obtaining a software platform that was within their price range but which also provided all the capabilities necessary to carry out quality voice and video-conferences. It is because of these economic concerns that it is arguably good to also consider the usage of more low cost or free software such as Skype and Google chat to carry out sessions.

When referring to political sustainability it is important to have the backing of all levels of government, including local, regional, and national, as these are the policy development bodies that can decide whether ICT infrastructure will be prioritized. This seems to be the case in Ghana, as mentioned by Adowa (2007), with politicians constantly speaking highly of the potential of ICT and how it can create a pathway which can help lead the youth of Ghana to a productive future. The hope now is that for these
projects to have a sustainable future all of this talk will translate into improvements in such things as technological infrastructure that will help ICT projects grow and develop.

Technological sustainability is very closely related to these types of projects and again refers to choosing equipment that has long term usability. This is often difficult due to the before mentioned economic restraints facing these projects. As Tino (2003) points out, many times equipment is donated to ICT projects that is not necessarily designed for those purposes, and the project managers must make use of what they have. As witnessed in Ghana when visiting schools many times, the computers were not connected to the Internet and lacked the capacity to be.

When interviewing the participants in Ghana about their views on ICT4D, the overall reaction was very positive but perhaps the digital literacy of actually being able to use ICT for sustainable development could be questioned. This is due to the equipment possibly not necessarily being used to its fullest capacity, perhaps due to the lack of digital literacy and knowledge of how to best take advantage of ICT for development purposes on a personal as well as on a societal level.

4.2.2 NGOs

As with the three projects referred to in this thesis, most video conferencing projects are not feasible to be conducted by individuals and must rely on an outside source of support such as NGOs or corporate sponsorships in these cases. As mentioned by Parnwell in Unwin (2002, p.11), there are some flexibility and adaptability advantages to having NGOs providing development projects related to ICT. As mentioned, the cost can be lower due to the volunteering workforce, for example, but it can also result in disorganisation and dependence on external funds (Nwakanma 2005). This seems to resonate with the observation of the O’ia’da and WPD NGOs as they have the flexibility but also suffer because sometimes resources are not available; this often leads to less efficiency in carrying out the programs. In the case of O’ia’da, they did get the backing and infrastructure support from Polycom which provided the equipment for the videoconference sessions, and it has made it possible for them to carry out their programs in a reliable, professional manner. As for the WPD, due to lack of equipment and no full-time staff or workers in Ghana, to concentrate on the video-conference program it has, for the moment, led the NGO to adapt to another strategy of using a software based solution and conduct the session with a different target group, for instance with other NGOs and individuals and not as before with only students.
4.3 Development In ICT Capabilities

Unwin (2009) sees technology and ICT as having potential for development but is also aware that technology is not neutral, and thus, there is historically a power element in the equation. Examples of this were seen in the schools around Accra. As the headmistress at the Golden Sky Academy, Emma stated that mostly the private schools and urban schools are the only ones that can afford computers and hands-on ICT programs. This, of course, reinforces the divide between the schools with more money and the schools with fewer financial resources. Computers are also less common outside cities, and it seems that it may be quite some time before ICT4D projects, specifically those using the Internet, are able to make any progress in the rural communities.

However, by utilizing more accessible technology such as mobile phones and other open source software, a greater audience can arguably use ICT to have the potential to engage more actively in the public sphere. The videoconference programs can give an indication of the potential and what aspects might be important. As many social networking sites such as Google Plus and Facebook are trying to implement more videoconference features into their design, it might open up the way for more people to engage in video-conference sessions without the help of NGOs. However still in many parts of Ghana, the Internet technology and computers with reliable internet connection are not available for a majority of people, which means that it might prove hard to be part of videoconference sessions without the help of NGOs or private sector involvement that takes the initiative to moderate videoconference sessions. Though mobile phones are more accessible ICT tools rather than computers, they are still not widely used in conference sessions for people who do not work for big corporations. Thus, there is arguably a bigger opportunity for using mobile phones in ICT4D in its current state in developing countries such as Ghana.

In the Voicing Ideas project, the area of using mobile phones to conduct conference sessions was showing good potential, but when it comes to conducting lengthy sessions in Ghana, the cost per minute is still very high which makes it hard to conduct frequent sessions with people over mobile phones. However, as rates goes down, use of mobile phones might become a feasible alternative to conduct cultural and learning exchange.

With the growing access to mobile technology, future opportunities might develop. Empowerment is seen as an important factor of development according to Unwin (2009), and many students felt that ICT
gave them some sense of empowerment and choice, but also a few noted that ICT was not the answer by itself for development. Some students expressed their view on ICT and its role on development. Twenty- year-old Quartey stated, “We thank God for giving man knowledge to manufacture ICT for the benefits of everybody, both old and young students.” Similarly, Mary, 21 years old, stated, “We are now in the global village world; everything is about computers that makes work easier and faster which can help up the development process.” But again not everyone has access to the internet and ICT. A nineteen year old student named Emestina said, “Although I have not got much access to ICT, the theory has helped me know that messages and other things can be done using ICT.” Thus a lot of ICT teaching was done in theory and not so much in practice. This also meant that outside the schools and NGOs students had limited access to the internet.

The presence of ICT4D was perceived by many as important, but among the younger students there was an awareness, either through the education or their own beliefs, that ICT was not the only answer for development. Emefa, 14 years old, said, “We should know how to use made-in-Ghana goods.” Delvin, 14 years old, expressed, “We have to eat what we grow and invent many things that can help our country.” These were among the other things such as invention, production of goods and services, foreign exchange, tolerance, education and patience that were mentioned by the students as what they thought was needed for development in Ghana other than ICT.

Among the older students from the senior high school, one student, 20 years old, commented, “Formerly, we said that money answered it all, but now it is ICT which answered it all.” Another student, Sarah, also 20 years old, stated, “Glory be to God for giving man the ability to manufacture ICT for more information for the improvement of humans.”

Overall, the video-conference sessions were well perceived by the majority of people. There was a general sense of wanting to learn more about ICT along with learning about others cultures and sharing knowledge that was of interest to their own sense of personal development and identity. ICT can, therefore, arguably be used as a tool for better informal learning and exchange of knowledge and information. In the end, however, it is up to the people in Ghana who will decide on the importance it will have and on its impact on their desired development.
5. Conclusion

As Kofi Annan stated at the World Summit on the Information Society and together with the research findings in this thesis, the opinion of many important actors affiliated with development, is that ICT has the power to transform many aspects of society, particularly in developing countries such as Ghana. It also echoes the call to stop simply discussing and to start implementing and get to action. However, it could also be seen as an example of the benefits of ICT being evaluated before the projects have even been implemented. The fact remains that the digital divide is still present, and it affected all the projects analysed in this thesis in various ways.

Whilst this thesis does not conclude that the digital divide needs to be fixed before these projects can be implemented, it is, however, an issue that needs to be present in the minds of those wishing to develop ICT projects for development purposes. In the overall umbrella of ICT4D, it could be a case of trying to walk before crawling. The telecommunication companies such as Cisco and Polycom, which we refer to in our report, are among the largest worldwide transnational corporations and, in general, operate within the realm of the ‘state of the art’ in terms of ICT. With these types of companies now wanting to get more involved in development, we can understand how hard it would be not to get carried away by their advanced technologies, expertise in the ICT field, and large budgets. However, it should be noted that a partnership with one of these companies also has the potential to exclude certain parts of a population. That is also why it is important to cultivate smaller and more low-cost projects that may not have the unlimited potential of the bigger ones but are concerned with those who do not have the economical means to be future customers of these companies.

One can argue that it is entirely possible to have a video conferencing project in Ghana that can be carried out in a more sustainable way by our definition. This would mean not having to rely on a partnership with a private telecommunication company or reliable funding, but to do this it will ultimately come down more to the willingness of the participants than the capabilities of the technologies. If one of these live video conferencing programs is going to be successful and be open to as many participants as possible, the facilitators are going to have to do much more work in order to engage each participant. They are also going to have to be willing to put up with disruptions with connections and equipment problems or to have a risk management plan in place, such as resorting to audio connection only, in order to deal with the disruptions. However, if the desire is to create a truly
open platform for the participants, those are just some of the many hardships that come with it for now, based on capabilities of the technology available to the larger proportion of the population in places like Ghana. This is, of course, in contrast to having all of the hardware and software donated and simply having to push a button to be connected the world. However, those with adequate connections also face limitations in the form of who can participate in the projects, what influence the donors have on the project, and the possibility that this could result in a dependent development. It is made evident from the interviews with student participants of video-conference sessions in Ghana that there is the perception that ICT is important in understanding and learning about other cultures, which in turn plays a role in their own pride in their culture and identity, as they share their way of life through ICT with their international participants. ICT, therefore, can potentially function as an alternative source of information in contrast to the perceptions that the mainstream media creates about certain cultures and national groups.

After concluding this exploration of the possibilities of video-conference systems to be used in development, one can argue that there are many benefits to be had from the implementation of ICT projects in communication for development work. However, more consideration needs to be given to those who are intended to benefit from these projects. From the projects focused on, the range of benefits and numbers of people who can benefit can vary greatly, depending on how the project is implemented. Going forward, one can say that in order for a video-conference project such as WPD’s to be sustainable, the quality of the sessions should improve in order for the conversation to develop into something meaningful, but they must also continue to be participant driven or with the good balance of bottom up communication and top down supporting pedagogical leadership. This means keeping the cost of the projects down as much as possible in order to eliminate having to rely on external actors for the livelihood of the project. The good news is that the capabilities of free and open source ICT software may improve the chances of the benefits reaching a greater public. However, at this stage, organisers such as NGOs might still have to continue to play an important part in order to facilitate the conference sessions and create the meaningful pedagogical frameworks to create knowledge exchanging communication sessions with participants from all over the world which can benefit development.
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Appendix A

Map of the three main countries, the United States of America, Ghana, and Sweden, where the projects were active.

*Indicates where the projects main area of operation was. While both O’ai’da and WPD have offices in the U.S. they are head quartered in Ghana. The colored lines indicate the main pathways of interaction.
Appendix B

*Verbal Interview Questions*

Interview 1 (Preliminary Interview Guidance Questions)

- What was the subject in the conference?
- When did it take place?
- How did you experience it?
- What have you learnt from it?
- How do you use ICT?
- What can ICT be good for?

Interview 2 (Secondary Interview Guidance Questions)

- Tell about the conference in your own words?
- What negative aspects did you encounter with the conference?
- What positive aspects did you encounter with the conference?
- How do you see ICT and its importance for development?
- Suggestion of improvement and topics for upcoming conferences?
Appendix C

*Written Survey Questionnaire*

**Survey 1  (Preliminary Survey)**

- How do you use ICT?
- Do you feel more empowered by new ICT?
- Does ICT fulfil your needs in what way? If not, why not?
- Does ICT give you access to the information you need? If so, in what way?
- Has new ICT affected your life for the better?
- How do you think ICT can be good for development?
- What do you think is most important for communicating and learning?

**Survey 2  (Secondary Survey)**

- How do you get information? Internet, Television, Mobile, Word of Mouth?
- Do you use the Internet? How often?
- If you do use the internet for what purposes do you use it for?
- In what way do you think ICT is good for development? (Mobile/Internet?)
- What do you think is needed for development in Ghana?
- Are you interested to communicate with other people from other countries? (Rank from 1-5 with 5 being highest desire)
- What would you like to exchange information about?
- Why these topics?
- What is most important for you when communicating?
- How do you learn best?
Appendix D

Key ICT indicators for the ITU/RDT regions (totals and penetration rates)

<table>
<thead>
<tr>
<th></th>
<th>(millions)</th>
<th>Per 100 Inhabitants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed telephone lines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Africa</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Arab States</td>
<td>30</td>
<td>33</td>
</tr>
<tr>
<td>Asia &amp; Pacific</td>
<td>569</td>
<td>577</td>
</tr>
<tr>
<td>CIS</td>
<td>64</td>
<td>69</td>
</tr>
<tr>
<td>Europe</td>
<td>273</td>
<td>273</td>
</tr>
<tr>
<td>The Americas</td>
<td>291</td>
<td>284</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>(millions)</th>
<th>Per 100 Inhabitants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile cellular subscriptions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Africa</td>
<td>87</td>
<td>129</td>
</tr>
<tr>
<td>Arab States</td>
<td>85</td>
<td>126</td>
</tr>
<tr>
<td>Asia &amp; Pacific</td>
<td>1166</td>
<td>1398</td>
</tr>
<tr>
<td>CIS</td>
<td>166</td>
<td>227</td>
</tr>
<tr>
<td>Europe</td>
<td>550</td>
<td>610</td>
</tr>
<tr>
<td>The Americas</td>
<td>459</td>
<td>533</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>(millions)</th>
<th>Per 100 Inhabitants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active mobile broadband subscriptions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Africa</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Arab States</td>
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<td>Asia &amp; Pacific</td>
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<td>Europe</td>
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<tr>
<td>The Americas</td>
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</tbody>
</table>


These graphs are an indication of the rate in which the presences of technologies is increasing in Africa compared with other regions of the world. While Africa still lags behind in every category, the percentage rate in which the presence is increasing, particularly with Mobile cellular subscriptions is an indication of the momentum this field is growing.
Appendix E

Researchers roles and personal reflections and division of labour

Jake Hunter – Personal Reflection

As previously mentioned, I was not able to accompany Patrik to Ghana because of both personal and professional circumstances that were unavoidable, and therefore my role was more of a desktop researcher in the project work. Although it was unfortunate that I could not travel to Ghana we felt it was not something that would greatly be a detriment to the project. While Patrik was away I was able to stay in Sweden and continue to focus on the theoretical part of the project. This allowed me to gain a deeper understanding of this aspect of the project work and how it was related to the data that was gathered in the field. Also it provided a bit of an outside eye for Patrik while he was in the field in Ghana.

The general process we followed was that after he would attend a session or conduct an interview, he would send me his field notes and I would read through them and organize them in accordance to certain areas we wanted to focus on. I would also provide him with my interpretation of the data and let him know that he was on the right track. Also by communicating predominantly through Skype, the same technology some of the projects were using, we were able to get a firsthand feel of the capabilities this technology had.

When Patrik returned to Sweden we got together and went through the field data again both with our first impressions to see what ideas we shared and what areas we disagreed on. This gave us both a unique perspective on the data and informed us better what it meant to our overall work.

On a personal level for me much of the motivation to do the project work jointly was that I felt it would be good for SSWB, the organization we were involved with, and give us an idea of what it is like to undertake a long term research project where one must collaborate with others to achieve the goals of the project. After working through this process for the past year I realize now that this might not have been the best idea and something taking on in a moment of short sidedness. Though Patrik and I had worked together before, it was always in a volunteer capacity, with other members of our group and on short term projects that were not on the same scale or as demanding as our project work, the scale this the project made it a new and unique experience for us. For me, I find that when working as a volunteer, most times deadlines are more flexible as one is working in their spare time and usually this means putting personal obligations ahead of volunteer commitments, which is usually acceptable. When
working on something such as this project, the deadlines and requirements are more strict, when working in a joint capacity like we did this means both of us needed to coordinate our personal obligations with what was required of us to complete the project work, unfortunately this was not always the case and made for several bumps along the way. However we hope that through the combined effort it made for well-rounded project work that was a combination of both of our perspectives on the subject.

Patrik Jonasson – Personal Reflection

This thesis research and writing process has provided an opportunity to take the knowledge from the Communication for Development Masters Programme and to see how in reality, ICT4D can be used in Ghana. Being a recipient of a Minor Field Studies grant through SIDA was a fantastic opportunity to learn about doing field research and the challenges to development. Not only was the field trip in Ghana a great chance to learn about research on the field and the development sector, but on a personal level, it was a wonderful opportunity also. The people that I met along the way and the interactions with the students was a most humbling experience. The hospitality and warm acceptance by the people that I encountered during the research trip was fantastic. The direct challenges did not become apparent until on the field, where sometimes the operational, structural and health circumstances pose some difficulty in the effectiveness of the data gathering. Getting a hold of past participants, and interviewing students during which I was not previously aware was their examination period, and that many of the previous participants had already graduated posed issues which limited the sampling for collection of research data. When I arrived in Ghana I realized that things were not always as one imagines when it comes to the management of these projects, and therefore I had to be more flexible in my research collection.

On a more practical level with the thesis, having just one research partner conducting the field research did pose some difficulties in that we were unable to share the direct experience and the first hand understanding of the development situation in Ghana and how ICT4D is working on a practical level along with all of its challenges. Despite these challenges, having at least one thesis partner conducting first-hand research adds much value to a research project.

Although in theory it is of benefit to collaborate together with a partner in the thesis writing project, practically, it poses difficulties with combining different schedules and time frames. We have encountered this challenge in this thesis-writing project not only in the field research trip but in writing
the final report afterwards where we both had the challenges of work commitments, personal commitments and thesis-writing demands. In the end however, I hope that the final outcome gives some contribution to the field of ICT4D in regards to video-conference systems and the opportunities for cultural exchange.

**Division of Labour**

To elaborate on the division of labor between the two researchers, as stated in the main text, it was Patrik who traveled to Ghana to complete the data collection. This involved conducting the interviews and distributing the surveys that were used to collect the information to conduct the thesis analysis. While Patrik was in Ghana he was able to transcribe his field notes into a Google document where Jake would have immediate access. Using this process Jake was able to make a quick read of the original data, do a brief sort to categorize it and make a preliminary analysis to help determine where more information was needed. Jake and Patrik were also able to communicate using Skype and SMS in order to stay informed on how the data collection was progressing. Jake was also able to join Patrik and members of the WPD team via Skype on two separate occasions in order to get a better idea of the situation in the field in Ghana.

In terms of constructing the final project work Jake took the lead in formulating the introduction and framing the problem in the field of communication for development. At the same time, Patrik took the lead work with the methodology and categorizing and analysing the final data. For the theory section Patrik focused on the various aspects of communication that were used in the final analysis whilst Jake focused on detailing the aspects of sustainability that are necessary for a successful ICT project. Both researchers worked together to finalize the analysis and come to a conclusion which combined the relevant theory, data and findings to form the conclusion that is presented in response to the initial research question that drove this project work.

Also throughout the process Jake was the main contact with the thesis supervisor Florencia Enghel along with staying in contact with the teachers in charge of the process to assure that all of the requirements were met and important dates were followed in order to complete the work on time.

Throughout the process of the project work was divided as evenly as possible. However a work of this nature conducted over a period of one year had inevitable times when personal situations arose that
required compromises to be made and the work load responsibility shifted between one partner to the other and back again. However in the end this thesis is a collaborative effort the combined work of both partners.