ICT for Development and Self-serving International Agencies: No Free Lunch Even in a Shattered Tropical Paradise

Completed Research Paper

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Abstract

Previous studies in the area of information and communication technology for development (ICT4D) have identified various factors in trying to explain why most ICT4D are failed endeavors. These factors range from technical, social/cultural to include international politics around aid to developing countries. This paper presents findings relevant to the presence of international agencies in ICT4D projects. It was found that, when an ICT4D technology was introduced with the purpose of serving donors' interests, they will provide all the necessary supports only to the extent where their interests are being served. Here, the presence of the international agencies have had detrimental impacts/outcomes to ICT4D project, resulting in the technology to be severely underused, lack of ownership by the local-actors, data discrepancies, and poor system maintenance. Eventually, these factors prevented the technology from being used to its fullest potentials as a tool to support efficient and effective operations within the host institution.

Keywords

ICT4D, E-government, Donor Institutions, Negative outcomes, Timor-Leste.

Introduction

It has been well reported that most information and communication technologies for development (ICT4D) projects implementation in less developed countries (LDCs) have been characterised by high failure rates (Gunawong et al. 2017; IEG 2011; Avgerou 2008; Walsham et al. 2006; Heeks 2003; UNDESA 2003; Heeks 2002).

The ICT4D literature has also identified many contributing factors to the above high failure rates both technical and non-technical. For instance, the existence of design-reality gap (Heeks 2002; Masiero 2016), or the presence of heterogeneous actors with different backgrounds and interests (national agenda or international politics) (Ciborra 2005; Ciborra et al. 2005), with different culture (Walsham et al. 1999) or even competing rationalities (Avgerou 2000).

One particular factor related to our research interest is the presence of heterogeneous actors involved and its subsequent impacts on ICT4D projects. It can be argued that, heterogeneous actors with different/conflicting interests may present challenges beyond technical difficulties to include challenges around social/cultural/political aspects of ICT4D (Ciborra 2005; Walsham 1993).

In the context of this particular study, the potential participants are the decision makers, vendors, donor institutions and the users. Their actions as well as their perception, perspective and assumptions will be influenced by "their interpretation of reality, their shared and contested sense of the world, [which] create complex interacting context within which the information system, as a human artifact, is drawn on and used to create or reinforce meaning" (p. 5).

Apart from potential challenges related to the local actors, the fact that majority of ICT4D implementation in LDCs are donor funded projects (in some instances involving multi-national enterprises), brings in foreign entities as key-actors into the implementation process of ICT4D: the donor institutions, international agencies and vendors. Examples of common ICT4D donors and international institutions are: the United States Agency for International Development (USAID), United Nations Development Program (UNDP), the Asian Development Bank (ADB) and the World Bank (WB).

The foreign international institutions with financial resources, solid and sound technical expertise and extensive experiences in other LDCs, may bring their interests, their perceptions, perspectives and assumptions into the host country during the ICT4D implementation process. They may try to introduce and deploy 'standards' and 'best practices' from outside world, to promote and advance their agenda of 'democratization' (Nixon 2006), or even more, to exercise "control" over the host country as reported by Ciborra (2005) based on an e-government project in Jordan.

The other potential foreign actor is the vendor. They may also bring their perceptions and interests during the ICT4D implementation process (Heeks 2002; Heeks 2003). As a result, the ICT4D systems may be designed and developed with assumptions, which may not be valid in the underdeveloped world as discussed by Avgerou (2000). Once these assumptions are embedded in the technology, it would be required that the host institution may need to undergo organisational and social changes to facilitate successful system implementation.

Consequently, throughout the ICT4D project implementation process, the potential key actors may try to advance and/or protect their interests (Allen et al. 1979) as argued by Andersen et al. (2010, p. 124): "if people or organisational units are affected by the project, or assume that they will be affected, they will tend to take action to change the course of the project to fit their own purposes." Particularly when the actors involved have vested interests in preventing IS from being implemented. As such, it can be anticipated that throughout the project implementation process, tensions between the key-actors may occur (Kenny 2013) and some actors may become a major obstacle to ICT4D system implementation and/or use (Imran & Gregor 2011).

A more recent review of ICT4D literature by Da Silva et al. (2016) supported the above considerations by pointing to the existence of various factors related to the presence of heterogeneous actors in ICT4D projects. These identified factors are influential to the ICT4D project success or failure (Da Silva et al. 2016):

(1) Political/institutional related factors such as sponsorship/lack of sponsorship, misalignment of goals or interests between involved actors, and asymmetric relationships between actors.

(2) Financial/economic related factors such as lack of trust and preferential relationship.

(3) Technological related factors such as lack of technical capacity and (lack of) user involvement.

(4) Cultural/social related factors such as organisational/national culture, vested interest, and dysfunctional relationships.

(5) Environmental related factors such as awareness/lack awareness of environmental impacts.

Using the above identified factors as the research background and initial consideration according to the grounded theory methodology (GTM), this research is guided by the main question of: how the heterogeneous actors involved in an ICT4D project influence the final project outcomes?

This paper presents the findings from the Alpha project (pseudonym) implementation in the education sector in Timor-Leste; a beautiful half-island country situated in the South-East Asian region, between Indonesia and Australia. Timor-Leste is one of the newest countries in the 21st century and also one of the least-developed countries in the world. This Alpha project was implemented at a Timorese government ministry with the help of two United Nations (UN) agencies operating in the country, Delta and Epsilon (pseudonyms). Initially, the technology was developed by international individual consultants recruited by the two UN agencies.

Research Methodology, Data Collection and Analysis

This research was conducted using exploratory approach adhering to the principles of Grounded Theory Methodology (GTM) (Glaser et al. 1967; Glaser 1978; Glaser 1998), more specifically its applications in the area of information systems (Fernández et al. 2005; Fernández et al. 2011).

Initial data were collected from publicly available information sources such as the websites of the Government of Timor-Leste and other international institutions. Before the case was selected, informal meetings were held with contacts within the ministry.

During the fieldwork period (mid-May to end of June 2013), 15 formal interviews were conducted covering different key actors related to the Alpha project implementation and use such as:

- current and former mid and high level officials

- current and former officials engaged with the system development and enhancement

- officials from the involved donor institutions.

One written interview was conducted with a participant who was living outside Timor-Leste. Apart from the interviews, 24 formal and informal meeting observations were conducted, including informal conversations with the officials on the ground. Furthermore, 82 project-related documents (sample reports, correspondence, vacancy announcement, strategic plans, work plan, presentations and others) were also collected to increase understanding of the project implementation process. From the interviews and observations, 146 pages of transcriptions were produced; data were analysed according to the grounded theory methodology (GTM) facilitated by the use of ATLAS.ti software.

The analysis process involves coding (open coding and substantive coding), sorting and facilitated by the memoing technique (Glaser et al. 1967; Glaser 1978; Glaser 1998) and also by the use of manual techniques such as mind-maps, diagrams and charts.

Initially, the open coding process was employed to identify main concepts and their properties; once the main concepts were identified or emerged, the subsequent data collection and analysis were then conducted with the focus on these emerged concepts (the substantive coding process) (Glaser et al. 1967; Glaser 1978; Glaser 1998).

Research Findings

The main findings presented in this paper are focused around a core finding emerged from the data analysis process: Alpha key-actors worked to deliver an IS technology with a mere objective to produce statistical data needed by the donor institutions.

This donor driven system implementation explains why the host institution has no ownership over the system and how this situation further complicates system use. As such, the e-government technology has been implemented to function as a mere data production unit. The following sections describe the findings emerged from this case study.

Alpha Project Background

Alpha was first implemented at the ministry with the support of Delta, one of the UN agencies operating in Timor-Leste. The system was implemented as part of the effort to redevelop the education sector from the ground level just after the widespread destruction of the territory, following the 1999 UN sponsored referendum in Timor-Leste. It was implemented during the emergency response period in 1999–2002 with external financial support because at the time, Timor-Leste was solely depended on foreign donations to run the country.

A former minister of Alpha shared his recollection of his effort around that time:

> *At the time … after [the] referendum in 1999, practically everything was destroyed, the data as well, it was nothing available … everything was burned down … in around [the] end of 1999 and [in] early 2000, when we restarted to open the schools … [but] we had no data … [so] we started*

> *to collect some data ... manually ... but then we realised that, well, we need an integrated system, which is, how to say, reliable ... and then Delta ... at the time, agreed to support the establishment of the Alpha system ... [so], it was established in 2002.* (Josh –pseudonym, former minister)

The Government and the international institutions needed to collect data as soon as possible for planning purposes. The initial Alpha e-government system was used until 2008, when a new database platform was introduced with the financial support from Epsilon, another UN agency. By the time the fieldwork was conducted in mid-2013, Delta was again supporting Alpha.

Alpha Project Heterogeneous Key-actors

Alpha project involved actors from different backgrounds and interests. However, because the system implementation was driven by an external organisation, very little effort was made to address the needs and interests of the actors involved, especially the top management at Alpha. The above background and donor driven system implementation had a negative impact on Alpha's subsequent use and enhancement.

Since the beginning, Alpha's implementation was driven by Delta, with a mandate to improve the conditions of Timorese children, including better access to education. Thus, both institutions are working in the same sector, specifically in the area of primary education.

The discussion to implement the Alpha system was first conducted between Alpha and Delta in 2001. Following this discussion, it was decided to conduct a needs assessment funded by Delta. Due to Alpha's lack of financial capacity at that time, Delta was also funding the initial system implementation and its use. Consistent with its focus on children's welfare, which includes education, it was then decided to implement Alpha with a focus on primary education. Describing the initial Alpha implementation, a former minister of Alpha shared:

> *Since its inception ... in reality we had a greater dependency on them ... they came to talk to us that it was a good thing, so we [accepted it].* (Josh, former minister)

Indicating the donor's domination during the initial system implementation, the same source added that at the time, the host ministry did not have enough financial independency to assert its interests in dealing with international institutions:

> *[W]e didn't have the power to say, 'well this has to be like this, like that', 'the data has to be ours', etcetera ... nothing. Because if we did so, they will come back to us and say, 'well, if that is so, then thank you ... [laughing] we will look for others to support'.* (Josh, former minister)

The above statement points to a situation where the host institution had little influence over the initial system implementation process and no control over the system's data outputs. This initial donor driven system implementation continued to shape Alpha system use in the future.

In order to produce system outputs in a short period of time, the donor contracted individual consultants to design and develop the system. This system implementation process went through a straightforward process of developing forms for data collection through consultation with the local actors, both at Alpha and the teachers at schools from selected districts. The Alpha system was then developed using a readily available database platform: Microsoft Access database software.

Support was also provided for the data collection process through the provision of facilities such as laptops and transport (motorcycles) to the Alpha's field data collection officials. These officials were also trained on how to use the computer to facilitate the data collection process.

As mentioned above, the Alpha system was delivered by individual consultants recruited by the donor institution under a short-term employment contract. Thus, the objectives of their assignment had been pre-determined by the donor institution in consultation with the host institution. However, the recruited individual was naturally bound to serve the needs of the contracting institution, which are the donors. The individual vendor came with an existing set of skills and expertise, which was difficult to extend. Thus, the donor and/or host institution have to adapt to these limitations. Consequently, the system specifications were developed based only on the expertise of the recruited individual vendor.

As an illustration, in 2008, even though there was resistance from the lower-level local actors at Alpha, the database system was upgraded from a Windows-based platform to a more sophisticated SQL platform. The enhancement was made simply because the contracted consultant (vendor) had expertise in the platform and advocated for the switch, as per the employment contract. As a result, when this individual consultant left, the local official could not handle simple enhancements of the system. When a new consultant hired by the donor arrived recently, it was observed that the new consultant favoured a switch of platform back to the original platform, simply because he was more familiar with the technology.

Alpha Project Outcomes

As the focus of the initial Alpha system implementation was to deal with the immediate challenge of lack of data, the system implementation was designed in a way to quickly produce outputs needed by donors and the host institution for planning and monitoring activities. These initial considerations resulted in a series of negative impacts on the technology being implemented as discussed below.

Poor System Use

Before the system was to be used, the potential users, such as the data collection and data entry officials, were trained. However, because the vendor was individual, it was identified that this condition had also affected the training process, which was conducted very informally. It was observed that the individual vendor had no supporting structures to run a professional training environment. The informal training sessions resulted in training outcomes that are not measurable and thus, could not be regarded as part of the capacity development efforts for local actors. Consequently, there is a lack of capacity to use and enhance the system.

Further, it was observed that the use of individual vendors resulted in informal handlings of important activities, such as training, system maintenance and enhancement, which led to continued dependency on the individual consultants. Dependency on international experts is evident from the fact that since 2002, Alpha has been constantly operating under the supervision of international consultants with the exception of 2011–2012, after the departure of a consultant supported by Epsilon.

By mid-2013, a new consultant had been hired, while another consultant is under recruitment. These new consultants were contracted by Delta.

Lack of Trust

The initial straightforward system implementation driven by donor, with the focus to produce data, explains why there were no efforts to achieve top management sponsorship. Ultimately, the Alpha system was considered a foreign-supported entity within the host institution, thus, local actors initially did not trust the system. A former minister shared his observations on this issue:

> *[B]ecause all the people working there were paid by them [the donor], obviously in the end, we must share the data [with them] ... [and] then they also have access ... all these things ... and we don't know they are going to use the data for what purpose, could be for their own interests to receive more support, things like that. So, it's different if the whole thing is completely ours: the system is ours, the people are our people, we pay them, so data stays here [with us].* (Josh, former minister)

The above perception was also shared by lower-level officials. One of the directors supervising Alpha operation shared his observation on Alpha's existence:

> *[P]eople considered Alpha as a project ... so Timorese has this view [and] I believe that this is a negative part of the reality, but this is the reality ... people have the assumption that Alpha is a project, so [they say] don't provide them with data, [because] this is just a project ... if we give them data ... they will use [it] for a different project, they will sell our names, for example on behalf of the students [and] the teachers, they create a project for them.* (Albert –pseudonym, Alpha supervisor)

It is understood by the local officials that, to Timorese, a 'project' has a negative meaning as an illicit activity to obtain financial gains for individuals, more specifically when the project is supported by foreign entities. This lack of trust resulted in lack of ownership by the local actors.

Lack of ownership

The lack of trust resulted in local actors having a minimum level of system ownership. Commenting on Alpha's early status within Alpha, a former minister of Alpha shared his experience:

> *Alpha ... they sent their people to the field, with coordination with us, but here is the thing, there was a perception that ... this is not yet under us 100 per cent ... Because the funding was from outside, the staff there were also paid by them.* (Josh, former minister)

In the end, different units within Alpha continue to collect their own data, which further undermined the importance of the Alpha system for planning and monitoring of programs within Alpha. At the same time, Alpha continues to serve its original function to produce data mainly wanted by the donors. This condition explains why donor institutions have been continuously supporting Alpha through provision of international experts throughout its decade-long operation (since 2002). One local actor shared his experience on this condition by saying that:

> *I know very well which institutions are consuming most of the data [and] which ones are not ... to be honest with you ... the donors are the ones using most of data from Alpha.* (Angelo – pseudonym, Alpha staff member)

Delta, for instance, depended on the outputs for its annual planning of activities, as well as the base line for its monitoring and evaluation activities. As such, the international institutions need the Alpha system to produce data for them. Alpha's circumstances were further deteriorated by the existence of constraining factors, such as competing interests, where local actors pursued private gains in contrast to the objective of Alpha system use (to promote transparency and accountability among management of the sector).

Data discrepancies

The local actors' continued efforts to undermine the Alpha system resulted in Alpha's inability to produce accurate data in a timely manner. At the same time, different units within Alpha also continue collecting their own data from the field, thus, creating multiple source of information within Alpha. One director shared his observation on this condition:

> *[A]t the moment there is still diverse [sources of information] ... for example, from human resources [department] provides their own data, from the infrastructure [department] [also] provides their own data, from other parts also provide their own data.* (Albert, Alpha supervisor)

This essentially creates data discrepancies within Alpha. The same source shared his concerns:

> *[This] is a big issue ... if we want things to be better, all the information must come from one source ... it has to be only one [source]. This way, our line of coordination will be better ... in terms of provision [of data] ... in terms of responsibility will be [better], otherwise, when we ask [data] from directorate A they will give us something, directorate B gives something else, directorate C ... now how can we proceed?* (Albert, Alpha supervisor)

The above condition indicates a lack of effort by the host institution to grow Alpha to serve its data needs. Only very recently, with support from one of the top management, has Alpha been receiving the attention it deserves. However, more efforts are needed to translate the high level of support into real actions to develop Alpha in order to deliver its true potential as a tool to increase efficiency, transparency and accountability in the management of the education sector.

Poor system enhancement

Alpha e-government system was developed using open-source platform and Alpha owns the source code. However, because there was no proper training for the locals, system enhancement has been hindered by

the local actors' lack of capacity to handle system enhancement. In fact, the information technology (IT) department within Alpha was not included in the Alpha development process. One of the officials from the IT department shared his observation on this issue:

> *[S]ince the beginning of this project they did not include IT… the design of the database was handed [over] to [the] people from outside, the international consultants. So they did not involve IT department.* (Rudy –pseudonym, national adviser at Alpha)

Consequently, when it comes to system enhancement, the local actors within Alpha were forced to 'improvise' with available limited skill sets. When there was a need to extend the database, the local actors turned towards the development of a separate Windows-based system. This effectively created multiple standalone database systems within Alpha and further complicated Alpha's daily operation.

Conclusion

This paper presents the findings derived from a study of an ICT4D (e-government) project implementation in Timor-Leste's education sector during difficult times to re-developed Timor-Leste after a systematic destructions committed by the Indonesian military and its militiamen just after the 1999 Referendum. The needed technology was funded and implemented by the international agencies. However, the 'free lunch' initiative turned out to be not so free at all: precisely because of its donor funded and delivered mechanisms, the ICT4D system was also donor controlled, and with the purpose mainly to serve donors' own needs for data in the education sector. This condition in turn, produces a series of negative project outcomes such as:

1) The delivered ICT4D system suffered poor system use by the host institution;

2) Lack of trust from the local actors;

3) Lack of ownership by the local actors, which in turn resulted in

4) Data discrepancies, and

5) Difficulties in maintaining the system (poor system enhancement), and eventually

6) The e-government system never grew to its full potentials to increase efficiency, transparency and accountability within the host institution.

In general, it is expected that the results of the research contribute to the on-going debate on topic of the influence of international agencies in ICT4D projects, in particular the e-government projects. The results of the research may also be used as a reference for the practitioners to design and implement ICT4D projects, particularly, the ones with significant supports from the donor institutions.

It should be noted here that the findings presented in this paper were derived from a single e-government project implementation in Timor-Leste, a young country located in the South-East Asian region. Therefore, further studies in different contexts are needed to investigate more about the influence of the international agencies in ICT4D projects. The results of the studies would further enhance our understanding on the complexities around ICT4D projects, and thus, contribute to increase the chance to successfully deliver ICT4D projects in the future.

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