How to prevent failures in ICT4D projects?

Challenges and failures in ICT4D projects and solutions for it

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1 Introduction

Information and Communication Technology for Development (ICT4D) is research about the use of ICT for international development, with focus on developing countries; for example rural Africa (Walsham, 2017). ICT4D research delivers sometimes practical solutions for people in these developing countries, such as useful applications. There are, according to Avgerou (2008), three ways of looking into the implementation of information systems in developing countries: "as a process of technology and knowledge transfer and adaption to local social conditions; as a process of socially embedded action; and as a process of transformative techno-organizational intervention associated with global poltics and economics." (Avgerou, 2008).

Examples of ICT4D research are Big Data for Development (Hilbert, 2016), ICT for Education (Tongia & Subrahmanian, 2006), ICT for disasters, ICT for health, ICT for livelihoods, and ICT for education (Loh, 2015).

Of course there are success stories of ICT4D practices, but there are also challenges and failures in these projects. To make an ICT4D project successful it is important to think of the sustainability of the project: how to keep it running after the initial (funding) phase and how to expand it?[1] A definition for sustainability is "the failure of many ICT4D projects to deliver and survive prompted a new emphasis on ensuring the longevity of such projects." (Heeks, 2008).

In this essay challenges and failures in ICT4D projects are researched. What are these challenges, what are factors that make a ICT4D project fail and how can we prevent this? First the challenges in ICT4D projects are mentioned, followed by an overview of reasons why ICT4D projects fail. After that some solutions how to prevent these failures can be found. In the last section the essay and research is discussed and you find a conclusion.

2 Challenges in ICT4D projects

In this section shortly some challenges in ICT4D projects are discussed. In the next section you find more challenges that also have an impact on the success or failure of an ICT4D project. Some general issues in development initiatives are: "HIV infections, a high occurrence of Tuberculosis, high unemployment, extreme poverty, child-headed households, illiteracy, polygamy and development inhibiting traditions." (Krauss, 2009). According to Hilbert (2016) there are a few challenges in the use of Big Data for Development: Big Data is still based on samples, there is unequal access, there are less capabilities for software and computer services, and there are not enough data specialists and managers (Hilbert, 2016).

[1] Explained during ICT4D Course 2019, Vrije Universiteit Amsterdam, lecture 12: 'Sustainability in ICT4D: Collaborative Innovation and Business in Value Webs' by Bon, A.

3 Failures in ICT4D projects

In this section an overview is given why ICT4D projects fail. These factors are based on literature and earlier research. This is not an exhausting list, but a small contribution and a set-up for future research, as also explained in the discussion section of this essay.

Reasons why ICT4D projects fail or factors that influence the success of an ICT4D project are, in random order:

- #01 It is difficult to find skilled ICT staff (Avgerou, 2008; Tongia & Subrahmanian, 2006)
- #02 The IT skills and knowledge in IT of local people is not enough (Krauss, 2009)
- #03 Collaboration with the users is not close enough (Harris, 2016; Krauss, 2009; Qureshi, 2015)
- #04 "Incomplete assessment of the problem being solved and the metrics used to evaluate solutions." (Tongia & Subrahmanian, 2006)
- #05 Programs are not financial sustainable (Tongia & Subrahmanian, 2006)
- #06 Shortfalls in power (Tongia & Subrahmanian, 2006)
- #07 Limited financial resources (Avgerou, 2008)
- #08 "Ignorance of lifecycle costs, or total costs of ownership." (Tongia & Subrahmanian, 2006)
- #09 Researchers focus too much on specialised projects who are less accessible to a larger audience. Also too much focus on "citation rates and impact factor" (Qureshi, 2015).
- #10 Limited availability of technology (Avgerou, 2008)
- #11 "No understanding of the ecosystem in which ICT solutions are to be applied." (Tongia & Subrahmanian, 2006)

4 Prevention of failures

In this section a few solutions for these challenges and to prevent the failures are mentioned. The mobile phone is for example an useful technology to use in development countries, because they are easy to use, financial beneficial (you can use a prepaid card), also usable by illiterates and non-educated people and usable with less infrastructure (Tongia & Subrahmanian, 2006).

In the previous section Harris (2016), Krauss (2009), and Qureshi (2015) mentioned that collaboration with the users is not close enough. An important solution for this is giving local people the responsibility for the system and create engagement (Harris, 2016). These local people can also train users of the system and create trust (Tongia & Subrahmanian, 2006), so the system become more sustainable then. Krauss (2009) underlines the importance of "community gatekeepers, building relationships, community ownership, participation and respecting local customs and protocol." (Krauss, 2009)

Despite ICT4D research and projects in the past were successful, there was not enough effort to learn from these successes and to document success stories (Krishna & Madon, 2003). That could be an useful lesson. Another approach is asking users and other stakeholders for feedback and quickly modify these feedback into the project (Tongia & Subrahmanian, 2006).

An useful strategy for ICT4D projects is to make sure that designs are sufficiently aligned to local realities (design), that you use the strengths of multiple actors (governance), and that you keep the project sustainable (Heeks & Molla, 2009).

One solution to keep projects sustainable is ongoing support from government or donors (Marais, 2011). This is ongoing support is a prevention for failures #05, #07 and #08 that deal with financial problems.

5 Discussion and conclusion

Due to limited available time and no possibilities for extensive research technologies, this essay is only a small contribution to this topic with the aim to stimulate future research into this topic. The advice for future research is to do a case study in rural areas for a longer period to see how effective ICT4D research and ICT4D applications are on a longer time.

Conclusion can be that failures deal with a lack of skills at IT staff or at users of an application (#01 and #02), a collaboration with users that is not close enough (#03), financial limitations (#05, #07 and #08), problems with technology (#06 and #10), and problems related to the research itself (#04, #09 and #11). Solutions can be among other things: improving the collaboration with local people, learning from success stories, ongoing support, and quickly adapt feedback of users into the application. To end with, ICT4D research and projects can be very useful for people in developing countries, but you have to think about the long-term sustainability of such projects, to prevent failures and throw away limited research time.

6 References

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