

# Sustainable business model for ICT projects in Southern Africa

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## ABSTRACT

ICTs have potential to improve service delivery. ICT projects in Africa heavily depend on external stakeholders and are mainly donor- funded projects. As a result, ICT projects mainly in Southern Africa fail to benefit the targeted community. Sustainability of most ICT projects is heavily depended on the project initiators. Besides available ways to improve ICT projects sustainability, we propose the inclusion of technical business model when planning for ICT projects. By engaging ICT stakeholders, a participatory design approach is used. Participants are engaged in a discussion on possible ICT projects and come up with a business model for that. We argue that coming up with effective business models can improve ICT project success.

## Author Keywords

ICTs, Technical Business Model, ICT innovation, participatory design, sustainability

## ACM Classification Keywords

H5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous.

## INTRODUCTION

The pace of change and technological evolution has accelerated greatly over the last decades, with unequivocally positive transformations for societies, companies, and individuals. It is remarkable not only how dramatically the technologies in everyday use have changed, but also how easily society as a whole has adopted these innovations. The use of Information Communication Technologies (ICTs) can support sustainable development within societies. ICTs have been supported by governments, private companies, non-governmental organisations, academic institutions and individuals (Gichoya, 2005).

Affordable use of ICTs in Africa is critical, not for the mere ability to conduct social intercourse by electronic means, or to improve the delivery of governmental and

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business services to isolated communities; rather, it is central to the core objective of empowering people through literacy, education, knowledge, employable skills, poverty reduction and wealth creation (Heeks, 2002). For these reasons, African governments are making varying degrees of effort to ensure that ICT policy, legislation and regulation keep pace with the rapidly evolving telecommunications and ICT sector (Gichoya, 2005).

In this paper we appreciate different ICT initiatives, ICTs projects and developments that are taking place in Southern Africa. We refer to other success stories and outline some challenges faced by African countries in having successful ICT projects.

Researchers, governments, entrepreneurs have attempted to come up with strategies, techniques, models and different techniques to improve ICT service delivery. All these efforts have been encouraged because of the common benefits brought by ICTs, which include: employment creation, economic growth, poverty reduction and social development. Despite various efforts being done to improve growth and sustainability of ICTs, there is no doubt that Southern Africa still face a lot of challenges. For instance, most ICTs are not benefiting the targeted communities.

## OVERVIEW OF ICTS

In this paper we used a definition of an ICT project from Leydesdorff and Wijsman (2007). An ICT project "is a project whose aim is to develop and/or introduce an ICT system". This involves the specification, acquiring and internal and external construction or modification of the system.

Generally, ICT interventions need to be sustained culturally, socially, technically as well as economically and financially (Tarwireyi, 2008). People in rural areas need to be equipped with the knowledge of new ICTs and technologies. There are however, many challenges that affect the success of ICT projects. These challenges are not only in Africa but also in developed nations. For example according to Leydesdorff and Wijsman (2007), the Dutch government experiences severe difficulties managing ICT projects. These include need for more finance than planned for, more time or do not produce the planned results.

Leydesdorff and Wijsman (2007) found that most government ICT projects are often too ambitious and too

complex because of the combination of the political, organisational and technical factors. Complexity makes it difficult to manage projects. At times, the best way is to have a small ICT project and avoid making the idea too complicated. The main ICT project failures are summarised in Figure 1.

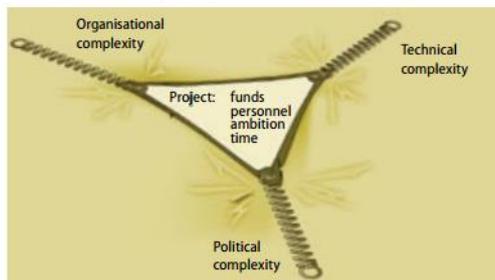


Figure 1: ICT projects failure adopted from Eefje and Wijsman (2007).

### Characteristics of ICT environment in Africa

We understand that there are similarities within the African community in terms of the current environment. For example, as was noticed in Kenya by Gichonya (2005)

- majority of ICT projects are initially donor funded;
- in most cases no consultations are done to engage all stakeholders;
- Government remains the main source of income for ICT projects;
- Besides having budgets for ICT projects, these are never enough;
- no proper ICT plan to manage, coordinate and sustain ICT projects.

Gichoya (2005,) identified the common factors that lead to failure of ICT projects in Africa as follows:

- poor infrastructure
- lack of finance
- high technological illiteracy
- failure to engage and understand the cultural, societal and community needs.

Besides the factors that disturbs ICT projects, Heeks (2003) and other many authors pointed out some strategies that could help to improve ICT sustainability. These include:

- Coming up with an ICT project vision and strategy
- Government to be the main player
- Increase ICT project awareness
- Propose effective project management and coordination

In most countries, these strategies have been tried, but we argue in this paper that more could be done and possibly ICT project business models could be the solution.

### Summary of ICTS in Africa

Besides the already observed and noticed benefits that ICTs can bring, it is clear that technological changes have made most ICT initiatives haphazard due to poor planning. There is no systematic plan on how to deploy services, infrastructure and devices especially in Southern Africa. There is no doubt that there are variations and lack of ICT project coordination.

In most cases there is less on economic, social and stakeholders' engagement when ICT stakeholders are planning for ICTs. There is need to improve ICT planning to ensure ICT sustainability by considering the business models.

The motivation for this paper is that, it is clear that ICTs have been important in all the sectors of any nation's economy. Most countries are spending billions of money for ICT developments. However, in many areas the sustainability of ICTs services is debatable. We are proposing business model for ICT projects. The ICT stakeholders could benefit from the importance of business models in implementing ICT projects.

### ICT PROJECTS IMPLEMENTATION PLAN

There are many ICT sustainable solutions that could assist ICT service providers. One of the solutions to addressing these ICT challenges is considering the use of business models during ICT planning. In this paper, we would like to apply the Business Model Canvas to assist in ICT project for low resource areas. The different nine building blocks of the Business Model Canvas will be considered for the business model as mentioned by (Osterwalder & Pigneur, 2009). The approach suggested in the paper is organized as follows:

A 10 minute presentation on ICT developments and Business models could be done. The presentation may introduce common ICT projects in Southern Africa, lessons learnt for ICT projects and explain in brief the Business Model Canvas. Participants could be grouped and choose a particular ICT project which they could apply the Business Model Canvas. For each of the identified ICT service, participants could consider each of the 9 building blocks of the Business Model Canvas and specify what each will affect the chosen ICT service. The whole idea is to engage and practically involve the ICT stakeholders when incorporating the business model concept.

### TARGETED PARTICIPANTS

The paper idea is open for all ICT service providers, ICT beneficiaries, Telecommunication operators, Business Management experts, ICT policy Makers, ICT researchers, ICT service developers, public and private cooperation representatives. It is expected that the paper could provide a better ICT planning approach which could be useful in providing ICT projects in Southern Africa. The idea raised in this paper is to educate the ICT stakeholders on how the Business Model Canvas could assist in improving sustainability of ICT projects. We are positive that this approach will change the thinking and

planning of ICT projects in Africa. Several European countries have successfully used the Business Model Canvas and have sustainable ICT services.

### OVERVIEW OF BUSINESS MODELS

Business Model Canvas - a strategic management and entrepreneurial tool used to enable the development of a proper business model based on the existing models and the different factors within the business environment (Osterwalder & Pigneur, 2009). According to Wilson et al (2009) the important aspect of any business model is the 'value proposition' — the products and services that yield tangible results for the project's target customers. Value proposition distinguishes it from its competitors (Wilson et al, 2009).

Wilson et al (2009) mentions production and marketing are key in coming up with an innovative business model. Production deals with creating the value. The marketing side comprises the activities, mechanisms and relationships for capturing value (Wilson et al, 2009).

Business models for sustainable development aim to deliver economic, social and environmental benefits – the three pillars of sustainable development – through core business activities. In these models, the value proposition includes social, environmental and economic values, while value distribution within the whole market chain is a key feature (Wilson et al, 2009).

### Application of Business model in ICT projects

This paper explains the application of the Business Model Canvas concept to ICTs projects for Southern Africa. This tool should assist in developing effective ICT Business Models. We argue that the failure rate of majority of ICT projects in Southern Africa could be improved if the stakeholders are aware of the business models to use.

The intention is to answer the main research question which is: How can the Business Model Canvas be applied to assist in ICT projects in Southern Africa.

The Business Model Canvas has the following key components as defined by Osterwalder & Pigneur, (2009):

- Customer Segments
- Value Propositions
- Channels
- Customer Relationships
- Revenue Streams
- Key Resources
- Key Activities
- Key Partnerships
- Cost Structure

The nine building blocks of the business model canvas allow the project managers to identify all the stakeholders, the revenue streams and the key values of the project. This is likely to improve the sustainability of ICTs in Southern Africa. The summary of the business model that we propose in this paper for sustainable ICT projects can be represented as follows.



Business Model components Adopted from (Osterwalder & Pigneur, 2009)

It could be noticed that if all the components of the business model are clearly understand, then the success of ICT projects could be achieved.

In this position paper, we have shared ideas that could be tabled to improve ICT projects by different stakeholders to engage on the following:

- Discuss the current ICT environment in Southern Africa - this helps to find out which ICT services, infrastructure, devices are required in rural areas
- Identify critical enabling technologies that are needed in rural areas
- Identify key stakeholders for specified ICT services
- Apply the Business Model Canvas to ICT services
- Understand how the Business Model Canvas could be applied to assist ICT service delivery

Such discussions are vital for planning for a successful business model.

### CONCLUSIONS

One of our conclusions is to mention the importance of identifying a number of factors that contribute to the success of business models for sustainable development. Some of these conclusions are:

- Need for all ICT stakeholder to engage and work together for ICT projects.
- Involving local communities as partners and co-designers of new models enhances local buy-in and ownership.
- Business models for sustainable development need to be self-sustaining in the long term. However, significant investment of time and

resources at the start is key for successful innovation and scale-up.

- Ongoing monitoring and evaluation need to be built in to the business model.

We conclude by mentioning that this paper educates the participants on the importance of incorporating business model when planning for ICT projects. There is clear evidence that successful ICT projects such as the M-pesa in Kenya have become popular because of an effective business model. We understand the power of business models in ICT projects and recommend ICT stakeholders to incorporate business models.

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