Stakeholder Theory and ICT in rural Macha, Zambia

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Abstract. *The access to Information and Communications Technologies (ICT) in developing countries has gained significant importance in the recent years. However, the implementation of ICT has not worked flawlessly; in sub-Saharan Africa, many projects are not embraced by the target population and/or fail economically. The lack of stakeholder involvement on a community level and disregard of context and culture have been blamed for the failure of many ICT projects in sub-Saharan Africa. This paper examines the relationship between stakeholder involvement and the ICT project in Macha, Zambia. It looks through the lens of normative and instrumental stakeholder theory and investigates its adherence to an analytical framework for stakeholder involvement.*

The research found that a thorough involvement of stakeholders on the community level resulted in a high community acceptance, higher awareness, and adoption of the ICT services in Macha. Further, it found that context and culture play a significant role and need to be taken into consideration when designing management and communication strategies for stakeholders.

Keywords: ICT, rural Zambia, LinkNet, stakeholder theory.

INTRODUCTION

Access to ICT and digital information is regarded as a way of fostering development (H.R.H. Chief Chikanta and Mweetwa, 2007). Emerging ICT services open ways for information sharing in rural Africa. Use of ICT can overcome barriers of distance, and open new routes for relationships, even in rural areas of Africa (Johnson, Belding, and van Stam, 2012). ICT provides access to digital information by using different technologies and offering different services. However, in the disenfranchised regions of the world, the access to digital information is scarce. A gap between industrialised and developing countries - *the digital divide* - separates *the haves* of the information age, who can access ICT and reap their benefits, from *the have-nots* who are without the possibility of benefiting from ICT services (Hosman and Fife, 2008; Dourish and Mainwaring, 2012; Curran, Freedman, and Fenton, 2012).

Various technologies and business models have resulted in mixed outcomes in terms of progress, sustainability and community adoption of different ICT projects in developing countries (DCs). In the highly heterogeneous setting of sub-Sahara Africa, the implementation of ICT services is a strenuous undertaking. Different formal and informal constraints form barriers to successful and self-sustainable projects. Many ICT initiatives tend to fail in the long run and do not succeed either socially or

economically (Dodson, Sterling, and Bennett, 2012). Success stories appear to remain anecdotal, and do not transfer to other projects (Gomez and Pather, 2012).

The neglect of end user's needs and capabilities, prevalent cultural patterns, and a (technology-focused) top-down approach to the projects, are all frequent reasons for failure (Dourish and Mainwaring, 2012).

This paper investigates the relationship between stakeholder involvement and the LinkNet network in the deep rural community of Macha, Zambia. It endeavours to show how the stakeholder involvement on the community level contributes to the progress of the project.

METHODOLOGY AND DEFINITIONS

This paper focuses on the relationship between stakeholder involvement and the progress of the ICT project in Macha. Enshrined in extant theory of stakeholder analysis, the research aligns with case research involving qualitative data. Data triangulation strengthened interpretations and the explanatory function of the research. The study includes interpretive assessment of data from nine years of ethnographic research in Macha.

Success (in Western definition) is linked with social acceptance and economic self-sufficiency (Hosman and Fife, 2008; Awowi, 2010). The term *social acceptance* encompasses three elements: *awareness*, *adoption* and *usage* (Gyamfi, 2005; Kang, 2010; Steinmueller, 2001). These factors are determinants of the success of ICT projects (Migiro and Kwake, 2007). Economic *self-sufficiency* as per definition in this paper, exists when organisations are able to operate on the basis of the returns, with the activity generating income through service delivery and without funding from other parties.

Although ICT covers a wide field of technologies and services, this paper regards ICT based on the internet only. Therefore, in this paper the term ICT depicts internet-based ICT. The definition for *stakeholders* is: 'A stakeholder in an organisation is any group or individual who can affect or is affected by the achievement of the organizations objectives.' (Freeman, 1984). This paper puts its main focus on stakeholders on a community and user level.

THE ICT PROJECT LINKNET IN RURAL ZAMBIA

The rural village Macha is located in the Choma district in the Southern Province of Zambia. In 2004, ICT activities commenced with local enthusiasts in collaboration with engineering experts from outside the community (Matthee et al, 2007). Before the introduction of the ICT network, the community was isolated, without means of communication and did not take part in the information age. The local community sustains itself from proceeds from agriculture and livestock, relying on passed-on oral knowledge (van Stam, n.d.).

The ICT activities in Macha evolved into the co-operative organisation, Macha Works, with LinkNet being the focus unit for ICT. Other Macha Works units target transport, bio-energy, building, education, health and entrepreneurship (van Stam, 2011). They exist 'to inspire people in rural communities to reach their collective and individual potential', with targeted capacity-building purpose and the aim of expanding self-sufficiency in the community. Each unit contributes to community development; LinkNet contributes by access to information and skills development.

Macha Works emerged from a Public Private Partnership, established to fund the initial investments. During several periods, the project managed to break even. In line with the local culture, the activities are

inclusive. All community members are invited to participate in the activities. Therefore, Macha Works continues to operate as a Public Private People Partnership (PPPP).

The core task of LinkNet is to connect rural communities by developing rural internet networks and by raising awareness of the benefits of ICT in rural areas of Zambia, and in academic circles. The project provides the necessary infrastructure, technology, hardware and software based on low-cost and easy-to-replace solutions. LinkNet contributes to retaining local talented individuals and encourages migration from urban areas to the rural area (van Stam and van Oortmerssen, 2010).

LinkNet users utilise basic services such as e-mail, chat and browsing the web (Johnson et al., 2010; Johnson et al., 2011). Most users access the internet in the hospital, the Research Institute, the local schools, the radio station, a local internet resource centre and at home. The limited internet bandwidth hampers local content creation (Johnson et al., 2012). Progress in Macha inspired at least 7 other rural communities in Zambia to implement internet in their rural communities.

Wallstein points out that the connection costs are significantly higher in DCs than in western countries (Wallsten, 2005). This is certainly the case in Macha. In 2004, the lowest cost for uncapped 128 kbs committed information rate (CIR) downlink and 64 kbs uplink was **USD 1,400** per month, with most suppliers asking double that price. This best case equalled **USD 11,200** per Mbps per month, excluding purchase of equipment, and involved a one year commitment. In 2011, an uncapped 8:1 contended bandwidth with 512 kbps downlink and 128 kbps uplink cost **USD 1,100** per month. In the worst case - full utilisation of the links by all satellite users - this equals **USD 17,600** per Mb per month for a one year commitment. Terrestrial connectivity, a rarity in rural Zambia, costs around **USD 3-4,000** per Mbps (CIR). Minimum contract commitment requires an E1 line (2 Mbps). Mid 2011, leadership of a major Zambian Internet Service Provider revealed that their own bandwidth acquisition price was over 400 times the cost in a comparable western setting.

Macha Works also operates the 'LinkNet Information Technology Academy' (LITA). LITA offers local people the opportunity to acquire internationally acknowledged certificates on computer literacy and ICT engineering. This facility is an indispensable component of the overall capacity building objective of the co-operative.

During 2011, Macha had about 200 active internet users, 71% of which use the internet for educational purposes (Johnson et al., 2012). The access to digital information had its influence on processes in the community. Farmers gained knowledge about other types of crops and farming techniques. Some of them were implemented (BBC Clicks, 2011; van Stam, 2011). More than 54% of the messages in the network are between local users (Johnson et al., 2012).

The implementation process of new projects in Macha consists of a three-step plan that focuses on stakeholder involvement and local capacity building (van Stam, 2011).
- In the first step, *sensitisation*, creates awareness within the local community. The close interaction with local, regional and national leaders and bringing stakeholders together serves to encourage local talent.
- The second step engenders *local talent* through skills development and education.
- The last step, *implementation*, takes place when the local talent has completed the stages of sensitisation and talent creation. He/she works closely with the local community in order to build the necessary infrastructure, implements it and takes charge of the project.

This gradual and grounded process took up to 5 years, a time consuming process that ensures a maximum of community adoption, viability and sustainability of the activities. The Macha Works model describes the two preconditions (*vocation* and *commitment*) involved, and the five change elements (*observe*, *model*, *wait*, *mentoring and connecting*, and *showing*) that were involved (van Stam and van

Oortmerssen, 2010). Outsiders contributed to Macha Works' progress only as facilitators or mentors. They avoided imposing western solutions on the local situation. Figure 1 show the holistic approach with the three-step project implementation process combined with the Macha Works Model.
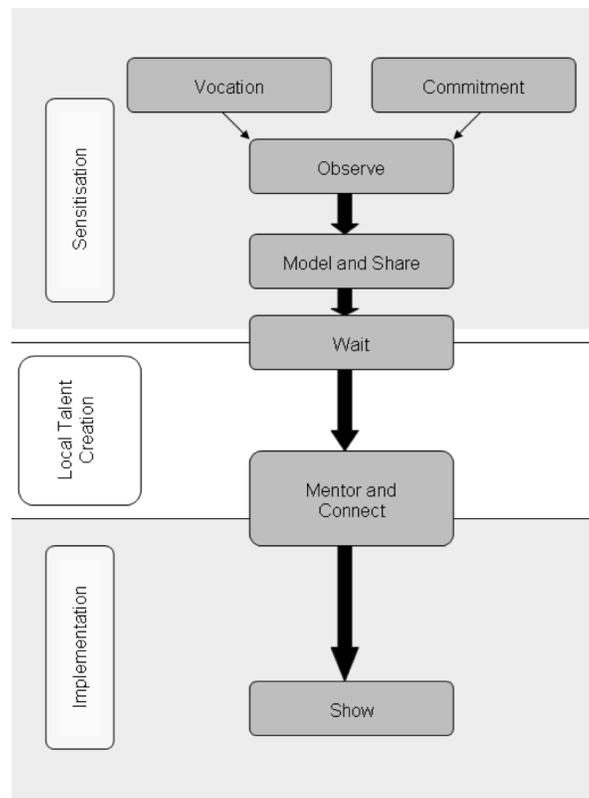
Figure 1: Macha Works Model and three step implementation process combined.

STAKEHOLDERS IN LINKNET

LinkNet is using a holistic, bottom-up approach that involves all the stakeholders on community level. It endeavours to ensure that the applied solutions and strategies fit the context, are developed by locals with a high community involvement, and that ideas, projects and improvements are managed by members of the community. In that manner, Macha Works aims for attainable, sustainable and replicable activities and positioning for acceptance and adoption of the project and its services within the community in Macha.

To achieve community engagement, LinkNet approached the community leaders, in line with the stratiform nature of society. This stratification assures the addressing of customary interests with influential people like the chiefs, and state interests exercised through government structures. Local leaders are traditional leaders, religious leaders, leaders in education and health, government leaders, and leaders of local, regional and national government departments, depending on their presence in the community. Such meetings involve sensitising and consulting over ideas, innovations, or activities. Adoption of new ideas by community leaders involve elaborate and collaborative consultation processes with the community. After such process, the community is culturally able to position and accept the activity.

The mechanisms that lead to progress involve interplay of the causal powers of the different entities. In the LinkNet case these entities are LinkNet, the community, the facilitators, the users and the local culture. In Macha Works, all these entities value enshrining activities in the local culture as the most relevant determinant for successful execution of activities. It is anticipated that the local view of the action in a resource-limited environment will be perceived in a different way from that in a resource-filled environment (cf. Sheneberger and van Stam, 2011; Dourish and Mainwaring, 2012; Gomez and Pather, 2012). Thus, western systems cannot be transferred 1:1 to a non-western world and vice versa. Community acceptance necessitates engagement with local people on their own terms, with recognition of historical perspectives, and embracing diversity and multiple perspectives (cf. Dourish and Mainwaring, 2012).

ASSESSMENT OF THE PROJECT IN ZAMBIA

LinkNet aligns factors that are significant for the success of ICT projects in DCs:
- community involvement in terms of raising community awareness (Migiro and Kwake, 2007),
- responding to the needs of the community (Bailur, 2007)
- and community participation (Cecchini and Scott, 2003).

The generation of profits is subordinate, as the accumulation of surplus is under strict scrutiny by the community at large, and the use of surplus for personal gain can be detrimental to the success of individuals involved (Sheneberger and van Stam, 2011). Experts from outside the community position themselves as facilitators only. All activities are initiated, linked to and managed by members of the local community.

The processes in the LinkNet project are in line with the different access types described by Van Dijk (Van Dijk, 2006). The Macha Works model elements *Observe* and *Share* do influence the motivational access in the Macha community, the precondition for change. The wireless network that covers the entire village allows physical access to households, schools and other institutions, and the public access point. Training facilities provide access to skills development, and allow knowledge to be conveyed to the users. Finally, all three preceding stages facilitate the use of ICT access within the Macha community. By offering internet access, LinkNet fulfils its social responsibility towards the local community. The managerial behaviour in Macha shows that holistic community stakeholder involvement can influence the ability of a project to reach adoption and desired outcomes.

The collective understanding of the stakeholders is that African culture values a shared understanding by all in the community (Khoza, 2005). Putting the number of 200 active ICT users in perspective with the estimated 128.000 persons in the Macha region, ICT services seem only to be beneficial to a small part of the population. This might lead to the conclusion that the ICT-illiterate members of the community in Macha are excluded from the benefits of the ICT project. Many question the influence of expat involvement (Toyama, 2011), possibly in reaction to the effects of a history of western-centric tradition (Dourish and Mainwaring, 2012). Others align with Khoza's observations of paradigms in development (Khoza, 2005) or subscribe to 'the white saviour industrial complex' (Cole, 2012). Assessment could benefit from measurement strategies of intangible outcomes e.g., the strategic development goals such as improved self-reliance and social cohesion (Gomez and Pather, 2012), and study of local perspectives on psychological, cognitive, physical, socio-cultural and material factors or resources (Eynon and Geniets, 2012).

From a normative stakeholder theory perspective, the social and moral responsibility of the LinkNet project towards its stakeholders is the creation of internet access opportunity to the whole community and provision of the opportunity for all to acquire ICT skills and capabilities. The declared goal of the LinkNet project is in line with the aims of Macha Works: to progress community development (van Stam

and van Oortmerssen, 2010). According to various local sources, the internet is a most significant development in the community (Vision Broadcasting, 2012).

Through the lens of instrumental stakeholder theory, the managerial behaviour triggered the intended outcome. Remarkably, expats rarely intervened actively but merely *engendered ideas* by a process of integral development (Bets, van Stam, and Voorhoeve, 2012). This behaviour resulted, over time, not only in universal access throughout the Macha area but also in an empowered community. The people in Macha established a sense of, and desire for, change. The stakeholder framework as put forward by Bailur differentiates between three different stages: *identification*, *strategising* and *bargaining*, see Figure 2. Analysing stakeholder involvement from the Macha Works model, the first two elements of change, *observe* and *model*, correspond with the process of stakeholder identification. One subgroup of the community is the local farmers, who use the internet to gain knowledge on new techniques or crops. Young people in Macha are a key stakeholder subgroup, as they use the internet for communication and socialising purposes (Johnson et al., 2012). Most local talent emerged from this group. Prioritisation of interaction with chiefs and other leaders of the community was beneficial, as they have a direct influence on the opinion of the community.
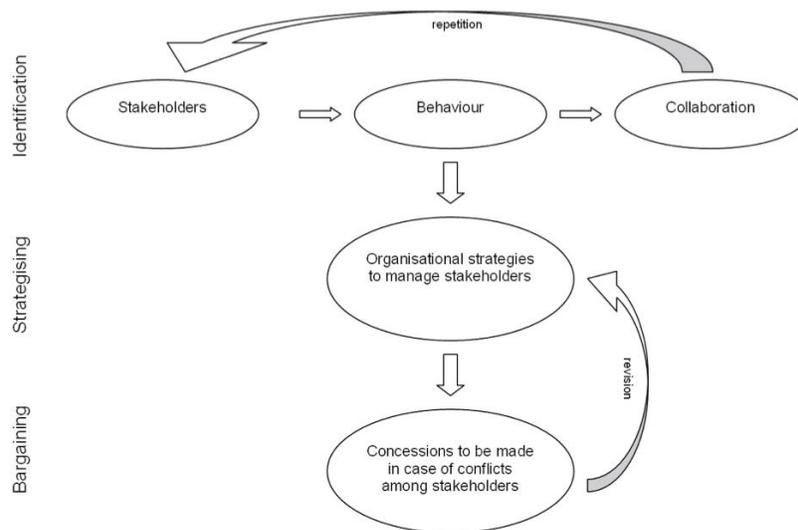
Figure 2: Stakeholder framework, amended from Bailur (Bailur, 2007).

During the identification stage, the interests of the stakeholders become manifest through observation and conversations in re-iterative processes of interaction (van Stam, n.d.). Positioning of interactions and activities fall in line with cultural behaviour patterns motivated through the Ubuntu culture. The Ubuntu concept is a true expression of African uniqueness. Tutu draws the contrast between Western philosophy and Ubuntu: 'it is not I think therefore I am'. It says rather: 'I am human because I belong (Tutu, 1999). The most striking characteristics of the Ubuntu culture pattern are collectivism and sharing, and the use of orality (van Stam, n.d.). Consultation about change involves the entire community; individualistic action is dissuaded. Blame, criticism and shame have negative consequences for the reputation of a person within the community. Hence, the model of project implementation and the model of change cope with these cultural patterns.

Apart from local stakeholders, LinkNet invests much effort in relationships with stakeholders on national (and international) level. These involve hundreds of visits to government offices and parastatal organisations in Lusaka and other areas in Zambia. Through its internet connectivity, Macha Works sends

regular and detailed reports. Further, Macha Works actively publishes and interacts in social media like Twitter, Facebook and presents in national and international meetings and conferences.

The strategies of how to manage stakeholders within an ICT project (the second stage of the Stakeholder Framework), are matching the phases (*local talent creation* phase) of the Macha Works model of project implementation and the corresponding two phases (*wait* and *mentor and connect*) of the Macha Works model for change. In this stage, any facilitation is passive. Local talent is responsible for any activity, and steers implementations. The community members are in control of the process. The driving energy comes from stories from the past and celebration of collective experiences in the present.

Ubuntu culture has specific methodologies to deal with conflict (Boon, 2007; Lamont, 2011). Conflicts involve the attention of all stakeholders. Conflict mediation and reconciliation are an integral part of the daily activities. The community favours restorative rather than retributive justice. As such, the community does not necessarily expose conflicts outside of its oral and carefully monitored environment.

DISCUSSION

Bailur (Bailur, 2007) demarcates four levels of stakeholder involvement (starting with the lowest degree of stakeholder involvement):

1. inform stakeholders,
2. consult with stakeholders,
3. partner with stakeholders, and
4. give control to stakeholders.

This paper focuses on stakeholders at community or consumer level. Analysis shows that the LinkNet project in Zambia shows a high degree of stakeholder involvement and community acceptance. This has resulted in an embeddedness of the project in the local community. Various sources propose that the members of the community are aware of the LinkNet project, have adopted it and put its services to use (cf. Oxford, 2011; Vision Broadcasting, 2012; BBC Clicks, 2011).

The high degree of stakeholder involvement in the Zambian ICT project seems to have contributed to social acceptance by the community. Practices such as giving responsibility for ICT projects to members of the community, facilitating ICT training within the project and the constant dialogue with the community on all levels, are actively involving stakeholders on community level.

The relationship between stakeholder involvement and the economic performance of an ICT project does not seem to be as evident as it is between stakeholder involvement and social acceptance. Assessment of economic self-sufficiency with its underlying universalising discourse of capitalism would benefit from African discourse on resource allocation, like 'relatio economics' (Sheneberger and van Stam, 2011). Stakeholder involvement on the community level proves to be an important factor for the social acceptance of the project by the local community.

This paper takes critical realism as philosophical stance, and accepts that the same causal processes might have different outcomes in a different context. Given the fact that Sub-Sahara is a vast region with a high degree of heterogeneity, its finding cannot by implication be generalised and transferred to other settings. However, its findings can inform knowledge where Ubuntu culture is the prevalent culture.

The application of stakeholder theory and the Stakeholder Framework (Bailur, 2007) to the LinkNet network exposes limitations. It shows that the theory and the framework alone do not suffice to explain the relationship between stakeholder involvement and progress.

Stakeholder theory is a concept that originally derived from the field of business ethics (Bailur, 2007). It addresses the relationship between companies and their stakeholders. In Africa, ICT projects often need to have different structures, especially when their core value is not-for-profit. Therefore, stakeholder theory cannot be transferred 1:1 to ICT in rural Africa. Instrumental stakeholder theory claims that a competitive advantage over companies that manage their stakeholders in an opportunistic way can derive from ethical management of stakeholders (Jones, 1995). The outcomes for organisations that do not have the foremost goal of profit maximisation need to be analysed by taking different organisational goals into consideration. These could be the adoption by the community or contribution to the improvement of living standards.

The concepts of stakeholder theory and the Stakeholder Framework have both been developed in a western context: Freeman is an American professor and Bailur performs research from within the London School of Economics. It is arguable whether a western research setting is entirely useful for the analysis of phenomena in Sub-Saharan Africa. It is difficult to assess how far stakeholder theory can be applied without any alterations, as the inclusion of cultural diversity involves ethical, pragmatic, and conceptual issues (Dourish and Mainwaring, 2012). The local setting and cultural context influence the behaviours of all stakeholders. These factors can differ between developing countries and people groups and need to be accommodated in the analytical framework. However, stakeholder theory and the stakeholder framework do not allow for such inclusion.

Where actors from two different cultural backgrounds come together, misinterpretations and misunderstandings can have a significant influence on the outcome (Trompenaars and Hampden-Turner, 2011). The delimitations of the analytical framework and stakeholder theory does not allow for investigating the causal powers of cultural differences and how they influence mechanisms and events in the project. This leads to a limitation in the analysis. A supplementary cultural dimension in the analytical framework could result in a better understanding of culture and its impact on stakeholder involvement.

The stakeholder framework is a descriptive tool. Its intention is to identify, involve and manage stakeholders. Its usability in terms of explaining the relationship between stakeholder involvement and success of ICT projects is restricted. It has a descriptive nature that outlines how stakeholders behave, who they are and what they want, but does not explain why they behave in certain ways. The cultural perspective, as mentioned above, could supplement this in order to explain the behaviour of stakeholders. The Stakeholder Framework alone does not serve to gain explanations in a normative or instrumental perspective of stakeholder theory. One needs a more holistic theoretical approach with a focus on the relationship of stakeholder involvement and project success in order to get more valuable answers. Stakeholder theory is an limited component as it isolates stakeholders from their contextual and cultural environment. It appears useful to supplement the analysis with other theories, for instance those from the field of cultural theory.

CONCLUSION

This paper deals with the use of instrumental and normative stakeholder theory as well as the stakeholder framework to the analysis of LinkNet project in Macha, Zambia. The research found that a thorough involvement of stakeholders on the community level resulted in a high community acceptance, higher awareness, and adoption of the ICT services in Macha. The LinkNet Project in Macha involves continuous stakeholder analysis, even if it did not adhere to a rigid framework. Community embeddedness and the involvement of all community members appears to have had a noticeable influence on the success of an ICT project in rural Zambia. Access to the internet has made a significant contribution to the Macha community.

Throughout the process of project implementation, observed stakeholder activities match with the stages *identification* and *strategising*. The local culture to shield contentious information limits the ability to assess activities for the third stage, *bargaining*.

The approach in Macha Works is exemplary. Stakeholders appear to shape the process of project implementation from the initial stages until implementation and operation. Facilitators support the local talent, but impose nothing. There appears causality between this holistic bottom-up approach and sustainable progress.

The analysis and discussion of findings, theory and methodology revealed that the extant stakeholder theories are only partially useful since they do not allow for investigating elements such as culture and context. However, stakeholder inclusion does influence the progress of the LinkNet project. The relationship between stakeholder involvement and social acceptance of the projects is strong. Context and culture play a significant role and need to be taken in consideration when designing management and communication strategies for stakeholders.

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