Chapter 1
Community Networks for Addressing Affordability of ICT Access in African Rural Areas: A Case Study of Zenzeleni, Makhosi

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ABSTRACT

Mobile ICTs have addressed the digital divides between the global south and the global north. While a phenomenal mobile penetration in developing countries has enabled ICT4D innovations by connecting previously unconnected people, several communities suffer adverse inclusion or lack access altogether. Such digital divides within countries have been attributed to technical, social, and economic issues. As a result, many approaches to bridging the digital divides have been used by both academics and practitioners. This chapter, therefore, discusses the potential use of community networks for providing sustainable and affordable access to rural communities in developing countries. In addition to the advantages of community networks, the chapter presents the challenges thereof, and it contributes to the vexed question about how to harness ICTs to empower the disadvantaged communities in developing countries. A case study of Zenzeleni Makhosi community network in South Africa’s Eastern Cape province is presented and analysed using Sen’s capability approach.

DOI: 10.4018/978-1-5225-3179-1.ch001
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INTRODUCTION

The use of ICTs for development and poverty reduction has been greatly enabled by a phenomenal mobile penetration during the last two decades. The teledensity in many developing countries has increased 74 to 94 subscribers per 100 inhabitants of developing countries. The better-off developing countries and industrialised countries have exceeded 100 subscriptions per 100 inhabitants during the last decade (ITU, 2016). While such figures suggest full access, there are several parts of the developing countries that remain unconnected. World Bank (2016) estimates that about 6 billion people do not have internet access. These are mainly remote rural areas that are inhabited by people that are either too few or too poor to guarantee a return on investment to the mobile network operators (MNOs). It is not viable for MNOs to invest in areas where they reach less than 3000 paying customers per base station (Mishra, Hwang, Filippini, Du, Moazzami and Subramanian, 2005; Balancing Act, 2017).

DIGITAL ACCESS INDEX

Information Systems (IS) scholars have conducted extensive research on how to bridge various causes of digital divides (Fuchs and Horak, 2007; Acilar, 2011, Bornman, 2016). Digital divides refer to unequal patterns of access, usage capabilities and ICT enabled benefits that emanate from demographic and technical stratifications that produce classes of winners and losers of the information society, (Fuchs and Horak, 2007). Digital divide studies have identified impediments that range from demographic imperatives like gender, innumeracy, lack of information literacy and income. They have also identified structural ones like infrastructure, unaffordability of access among other causes (Mansel, 2001; Acilar, 2011). These studies have attributed these structural challenges to the lack of resources to invest in the installation of the required ICT infrastructure. They have however applauded the advent of mobile technologies as a viable solution to connecting previously unconnected parts of the developing world. While the phenomenal mobile penetration in developing countries has diminished researchers’ focus on infrastructure oriented digital divide studies in the 90s, the discourse has shifted from mono-topical to multi-dimensional frameworks of digital inequalities. This shift toward users from technology is due to evidence of differential access where parts of the developing world either lacks or has inadequate access to ICTs (Barzilai-Nahon, 2006).

There is undisputable evidence that shows that mobile ICTs have made substantial progress to bridging digital divides in developing countries. In spite of this evidence,
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