How is new technology reshaping the structure of pressures and opportunities within the informal economy? Discuss with relation to one or two specific cases of technological change in a particular context (mobile phones, internet, mobile money, etc.).

With the high rates of penetration and diffusion of mobiles across Africa development discourses have focused on the creation of new opportunities to target socio-economic demographics outside the reach of formal institutions.[1] This essay aligns with the ILO (2014) view that the informal economy represents poor employment conditions and is associated with persistent and high levels of poverty.[2]

This essay focuses on mobile money (hereafter m-money) as a form of 'technological change'. In particular, Kenya's M-PESA, which was launched in March 2007 by Safaricom, part of the Vodafone Group.[3] M-PESA is an agent-assisted, person-to-person mobile payment and money transfer system, where customers do not need a formal bank account in order to transfer money (Plyer et al. 2010). M-PESA has been heralded a driver of entrepreneurship and economic development (Huges and Lonie, 2007).

The aim of this essay is to question whether m-money, especially M-PESA, has really created the assumed opportunities for commercial enterprise. It finds that, while some have used M-PESA for income creation, many in the informal economy unable to access the formal banking sector, are using it for savings and remittance flows. Thus, it is primarily argued M-PESA has created new opportunities to cope with the symptoms and constraints of poverty.

However, while making money travel faster and safer may help smooth levels of vulnerability to poverty nodes, it does not tackle the underlying causes. This

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[1] Nearly 620 million users in 2010 (GSMA, 2010).

[2] See World Bank (2014) for poverty and inequality indicators.

[3] In Kenya above average usage rates (75.4percent) remain high even for those living at the lower end of the economic spectrum (Crandall et al., 2012). Of the Kenyans living on under US$2.5 per day,
60.5 percent use a mobile phone (RIA, 2012).

essay offers a caveat to Kenyans, since recent evidence suggests the government under Uhuru Kenyatta, has a poor track record when it comes to promoting Information and Communication Technologies (ICTs) rather than focusing on building sustainable solutions necessary for poverty reduction in the informal sector.

M-money Discourses

Discourses on ICT in development (ICTD) have been widely cited by scholars as having had a beneficial impact on development on broadly two levels. First, the wide diffusion of technology, specifically mobile phones amongst the poor has enabled economic and social interactions, creating new opportunities to reach previously isolated communities (ITU, 2011; Heeks, 2008; Heeks, 2010; Heeks and Fosters, 2010; Thompson, 2008; Smith et al, 2011; Avgerou and Li, 2012). On a second level, these technologies have enhanced the capacity of producers, traders and customers to facilitate communication and business networks (Avergerou and Li, 2012).

There are two leading schools of thought useful for understanding the impacts of technological change in developing countries; Innovation Diffusion Theory (IDT) and Socially Embedded Approach (SEA).[4] In considering IDT, Rogers (1995:5) understands that the diffusion of innovation may be defined as 'the process by which an innovation is communicated through certain channels over time among the members of a social system.' Therefore, diffusion may be achieved through user adoption, where consumers accept and continue to use a new idea or innovation (Chen et al. 2002). IDT understands change as evolution where it is not people who change but the innovations themselves, thus reverts attention to understanding how and why certain innovations spread more quickly than others.

However, IDTs usefulness is limited since at macro level it pays no attention to the techno-organisational arrangements of the developing country in question (Avergou, 2010:3). At micro level, it assumes technology will diffuse equally

[4] See Avgerou (2010) for a useful summary of these discourses.

across society thus takes no account of the informal economy. Therefore, IDT should be considered rather simplistic and too ambiguous for the task of evaluating opportunities and pressures created by m-money as it fails to take into account the characteristics of Kenya's socio-economic landscape.

SEA, on the other hand, attempts to broaden the research perspective beyond the specific circumstance of work within an organisation (Avergou, 2010:3). One way in which this is different form IDT, is that the approach attempts to underscore the embeddedness of ICT innovation within the social context of varying organisational settings. For instance, theoretical approaches have evolved to explore ICT innovation in the context of developing countries, such as the neo-institutionalist view and social constructionist analyses (Avergou, 2001, 2010; Braa et al. 2007; Miscione, 2007; Silva, 2007). Therefore, SEA goes beyond IDT by acknowledging that to assess the impacts of technological innovation, it first must be understood as embedded within the national and local context, and as such offers a holistic platform to analyse how opportunities and pressures are being reshaped.

M-money: the promise of economic growth

From inception, m-money has been considered a 'transformational' tool for economic development. Policymakers, journalist, academics as well as mobile phone companies have all touted the poverty-eradicating potential of m-money (Corbett, 2008; Aker & Mbiti, 2010). One Economist (2008:1) article stated that 'a device [mobiles] that was a yuppie toy not so long ago has now become a potent force for economic development in the world's poorest countries'. M-money has been constructed as a powerful tool of development supposedly because of their potential to expand banking and financial systems. Overall growth of these sectors is understood to improve economic growth and development (Banerjee and Newman, 1993; Burgess and Pande, 2005; Levine, 2005).

The discourses on MPESA claim it has created opportunities for economic growth through expansion of employment opportunities and entrepreneurial activity. First, the demand for M-PESA credit kiosks allegedly creates new

employment for Kenyans. Andjelkovic and Imaizumi (2012) claim that the M-PESA system supports 23,000 jobs for agents in Kenya alone. This may well be accurate considering in 2010 Airtel Kenya (Kenya's second-biggest mobile operator) had plans to recruit some 25,000 agents for Airtel Money its m-money service (Cull, 2010). Indeed, visitors to Nairobi will often find men on the corners of busy streets and at bus stations selling M-PESA cards.

While data statistics are thin, further analysis suggests it is likely employment opportunities have been over reported. Plyler et al. (2010:2) show that while M-PESA has created business expansion it had only led to 'a relatively small increase in employment' which were especially noticeable because of the low levels of formal employment in places like Kibera (the largest informal settlement near Nairobi's center). Furthermore, other studies have found that existing businesses are simply adding M-PESA signs to the windows of their shops, rather than employing someone who would not already be employed (Aker, 2008). Here there is scope to question how far M-PESA has really created long term and secure employment. The evidence signals that the opportunities to sell M-PESA money transfers *alone* is not driving job creation but rather offering new ways in which to make already established businesses more efficient. Thus is unlikely to offer people in the informal economy very secure and long-term employment.

Second, m-money has been hailed an engine for economic growth by creating a new cohort of 'entrepreneurs' who can not only start or expand enterprises through M-PESA but can also find new ways to market their goods to people living at the Bottom of the Pyramid (BOP). Framing m-money as 'transformational technology' within wider discourses, for example, the fast expanding literature on BOP helps to shed light on why it is considered an entrepreneurial catalyst. BOP is an approach which is believed to help businesses and governments think creatively about new products or services that meet the needs of the poorest people, with the longer-term goals of

spurring economic growth through enterprise (Hammond et al. 2007:20).[5] For instance, some high profile, BOP private sector social initiatives include, Ericsson's wireless networks for rural areas, Vesterguard's water purification equipment and Phillip's smoke free stoves (Cross and Street, 2009:4).

The terms BOP and informal economy are commonly conflated in development rhetoric since they both attempt to capture the idea that these are generally poor segments of society often living outside the remit of the formal sector. However, BOP approaches view this segment as a lucrative market, for example, Hammond et al. (2007:45) reports that the measured BOP market in Africa is worth US$2.0billion and the estimated BOP market is much higher at US$4.4billion. Indeed, the international development community is bloated with inflammatory rhetoric about how m-money creates opportunities for entrepreneurs at the BOP. The website of one of the many development organisations in Kenya reports that it will;

> 'create an ecosystem in which the creation and launch of new mobile services filling the social and/or business needs of the local market is possible, triggering a positive socio-economic impact on broader segments of the population (World-Wide Web Foundation, 2014).'

Such language is typical of the hype over mobile services, which are often assumed to empower previously 'unbanked' Kenyans as entrepreneurs. Yet, as Dolan et al. (2012) remind us, it is necessary to question what exactly is it about entrepreneurship that is empowering?

Consider, for the sake of this essay, that the empowerment process is the notion of increased agency – the ability 'to formulate strategic choices, and to control resources and decisions that affect important life outcomes' (Malhortra, 2003:9). From the SEA perspective, this would suggest access to m-money gives people in the informal economy greater agency to break down the barriers they face in starting their own business. Such barriers might

[5] BOP approaches have been coined from Prahalad (2006) - The Fortune at the Bottom of the Pyramid.

include: access to finance, limited capacity to develop their business, poor market information and low financial management capacity (Avgerou and Boyi, 2013:331). While studies on the impact of general mobile phone use in business have shown that it greatly reduces information costs by greater and faster agency in searching for information, there are is little evidence to prove M-PESA has facilitated information flows that have spurred start-up businesses (Aker and Mbiti, 2010). Indeed, for people in the informal economy to take advantage of spatially arbitrage opportunities, such as higher priced goods, M-PESA would have to do more than simply facilitate financial flows. While this essay has not focused on the structural barriers people in the informal economy face in the pursuit of new business, it appears unlikely that M-PESA alone is able to overcome all the challenges associated with entrepreneurship. By underscoring the disconnect between the BOP discourses and the true potential for M-PESA to empower people in the informal sector it becomes clear economic opportunities have been largely over stated.

M-PESA as a Coping Mechanism

A coping mechanism describes a tool or strategy, which enables low-income households to negate the risk of falling back into poverty and thus reduces vulnerability to chronic poverty. M-PESA is used more as coping mechanism in Kenya's informal economy then for entrepreneurial empowerment for two primary reasons; safety in accumulating savings and urban to rural remittances.

First, M-PESA offers new opportunities for the 'unbanked poor' to save money in order to cope with shocks that could throw people living at the margin into extreme poverty. Consider that in 2006 Kenya had just 450 banking branches, 600 automatic teller machines which equates to two bank branches for every 100,000 Kenyans (Vaughn, 2007). Studies have found that M-PESA is used as a proxy bank account, thus creates new opportunities for savings for the many people unable to access a formal savings account (see for example, Morawczynski and Pickens, 2009). For instance, Jack and Suri (2009) have suggested that money sent through M-PESA makes saving easier since a

mobile offers new levels of discretion where relatives and friends cannot account for the quantity and amount of transfers. Ethnographic fieldwork by Morawczynski (2009) reveals that female M-PESA users in Kibera frequently used M-PESA to store their “secret savings” where they were unlikely to be found by their husbands. Additionally, Wilson et al. (2010) found that M-PESA encourages informal savings groups within Nairobi, because it is easy to use the system in order to deposit individual savings into group accounts. M-PESA savings were reported to be useful as a highly accessible source of money to tackle ‘illness’ as well as to pay school fees (Morawczynski, 2009:516). 6 Finally, financial diaries of men in Kibera show on average 25percent of household income was at one time stored in M-PESA and commonly reported as a way to deal with specific needs, for example, for the home or daily consumption of food and clothes (ibid). Therefore, this suggests M-PESA is an important mechanism to cope with the symptoms of poverty, assisting in achieving financial access for the purchase of food and medicine.

Second, M-PESA provides new opportunities for money transfers since it is cheap, reasonably safe and easily accessible, especially for people living outside city hubs where banks are scarce. Consider that in 2008 to send 1000 Shillings (approximately US$15) from Nairobi to Western provinces through M-PESA was two-fifths the cost of the post office and one-fifth the cost if it was sent via intermediaries, such as bus drivers (Morawczynski, 2009). In times of extreme vulnerability to external shocks M-PESA was vital for survival. During the presidential elections in December 2007, reportedly 15,000 people died and a further 300,000 where displaced (BBC, 2008).7 M-PESA offered a safety net to migrants who were able to receive money from relatives for food and transport. For instance, it helped migrants from Kibera to move back home post elections, to purchase basic commodities, such as

[6] One critical impediment to the M-PESA model for savings it that it does not provide interest on savings without the purchase of a Safaricom product called M-Shwari.
[7] Between December 2007 and February 2008, Kenya experienced ethnic violence which was largely triggered by the dispute over the presidential election which was held on 27 December 2007.

food and water and thus facilitated a way to escape ethnic violence during this time (Gugler, 2002; Morawczynski, 2009).

However, new societal pressures are also emerging as a result of M-PESA, particularly for middle-class Kenyans in urban areas who are now expected to send money to poorer relatives even outside times of economic and political instability. Morawczynski (2009:519) argues that this shows that the migrants are sending an important message – 'that they have not forgotten their obligation to the village while residing in the city'. Pressure for urban to rural remittances are increasing and infuse even the most peripheral ties (Owuor, 2004). According to one informal worker, during the harvest and planting season, when fertilizer and 'farm hands' needed to be purchased, he would send requests for money via M-PESA to five or six relatives even though he hardly knew them (Morawczynski, 2009:514).

In summary, as well as new opportunities to use M-PESA to cope with the symptoms poverty, new pressures have been facilitated and catalyzed by the increasing ease of money transfers via mobile. From a development perspective, increasing pressure for 'Robin Hood' like remittances to smooth out the hardships faced by people at the margin is no bad thing. However, M-PESA is no long-term solution to reducing poverty levels and insecure employment in the informal economy.

The Risks

There is a real risk that the Kenyan Government will promote ICTs over the more challenging task of building institutions, such as a formal banking system. M-PESA's assumed potential as an engine for economic growth makes it ever more likely that the constraints people face in the informal economy will be put aside in the interest of financial gain (mobile phones are an easy tax target, since the billing systems of phone companies do much of the hard work). Indeed, the Kenyan government has a poor track record when it comes to promoting ICTs and leapfrogging more pressing institutional challenges. Consider for example, the current government's commitment to

the One Laptop Per Child (OLPC) [8] . Evidence has suggested that this unjustified focus on a laptop for each child (when developed countries do not even work to this ratio) has lead to inertia in the face of increasing school fees. This is a 'symptom of a dysfunctional public-education system' where children attend school but are not learning (Economist, 2014:1)[9]. Hence, there is a real danger that the 'buzz' of m-money and subsequent literature will gloss over the opportunity costs of ignoring those unable to join the formal economy and particularly the poor.

Conclusion

From a socially embedded view of M-PESA, there is some evidence that m-money has offered new opportunities for income generation. However, discourses on M-PESA that assume it to be an engine for entrepreneurial empowerment skim over the barriers other than the facilitation of financial flows that constrain people in the informal economy. On further analysis of the evidence, M-PESA has reshaped new opportunities for people in the informal economy to cope with poverty particularly through savings and remittances. However, new pressures are increasing for middle-class Kenyans to send money often and in increasing amounts since it is easy and cheap (Morawczynski, 2009). Remittances and non-formal savings by themselves are not primarily a cause for concern. However, this essay signals that the literature has glossed over the risks of ignoring the deeply embedded structural problems people face in the informal economy, as has been the case with the Kenyan education sector. Ultimately, improving the plight of poor people will take more than making money travel cheaper and faster.

Words 2,936

[8] OLPC requires developing countries to offer less students per computer than is recommended even in for developed countries (James, 2010:231).
[9] According to the World Bank (2013) Kenyan teachers were absent almost half the time and one-third of public-sector teachers had scored at least 80% when tested on their teaching curriculum (Economist, 2014).

References:

Acker, J. and I, Mbiti. (2010). *Mobile Phones and Economic Development in Africa.* Centre for Global Development. Working Paper 211.

Aker, J. (2008). Does Digital Divide or Provide? The Impact of Mobile Phones on Grain Markets in Niger. BREAD Working Paper no. 177.

Andjelkovic, M and S. Imaizumi. (2012). *Mobile Entrepreneurship and Employment.* Available from:http://siteresources.worldbank.org/EXTINFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/Resources/IC4D-2012-Chapter-5.pdf [Last Accessed: 3/3/2014].

Avgerou, C, and L. Boyi. (2013). Relational and institutional embeddedness of Web-enabled entrepreneurial networks: case studies of entrepreneurs in China. Information Systems Journal, 23 (4). pp. 329-50.

Avgerou, C. (2001). The significance of context in information systems and organisational change. Information Systems Journal. 11 **(1).** pp. 43-63.

Avgerou, C. (2010) Discourses on ICT and development. *Information Technologies and International Development,* 6 **(3).** pp. 1-18.

Avgerou, C. and B. Li. (2013) Relational and Institutional Embeddedness of Web-enabled Entrepreneurial Networks: case studies of entrepreneurs in China. *Information Systems Journal.* 23 **(4)** pp. 329-350.

Avgerou, C., and G. Walsham, G. (eds). (2000). Information technology in context: Studies from the perspective of developing countries. London: Ashgate.

Banerjee. A and A. Newman. (1993). Occupational Choice and the Process of Development. *Journal of Political Economy.* 101 **(2)**. pp. 274-298.

BBC. (2008). *6 July.* Kenyan Police Defend Crackdown. *The BBC.* Available from:http://news.bbc.co.uk/1/hi/world/africa/7497554.stm [Last Accessed: 14/5/2014].

Braa, J., Hanseth, O., Heywood, A., Mohammed, W., and V. Shaw, V. (2007). Developing health information systems in developing countries: The flexible standards strategy. *MIS Quarterly.* 31 **(2)**. pp. 381–402.

Burgess, R. and R. Pande. (2005). Do rural Banks matter? Evidence rom the Indian Social Banking Experiment. *The American Economics Review.* 95 **(3)** pp. 869-902.

Chen, M., Jhabvala, R. and F. Lund. (2002). Supporting workers in the informal economy: a policy framework. *ILO Employment Sector Working Paper on the Informal Economy*, No. 2002/2.

Corbett, S. (2008). 13 April. Can the Cell Phone Help End global Poverty? New York Times, April 13. Available from:http://www.nytimes.com/2008/04/13/magazine/13anthropology-

t.html?pagewanted=all&_r=0 [Last Accessed: 4/4/2014].

Crandall, A., Otieno, A., Mutuku, L. Colaço, J. Grosskurth, J. and P. Otieno. (2012). Mobile Phone Usage at the Kenyan Base of the Pyramid. Available from:http://blogs.worldbank.org/ic4d/files/ic4d/mobile_phone_usage_kenyan_base_pyramid.pdf [Last Accessed: 25/3/2014].

Cull, R. (2010). M-PESA: Mobile Payments, Improved Lives for Kenyans. Available from:http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/0,,contentMDK:22594763~pagePK:64165401~piPK:64165026~theSitePK:469382,00.html [Last Accessed: 5/4/2014].

De Carvalho, A., Klarsfeld. L and F. Lepicard. (2011). *Leveraging Information and Communication Technology (ICT) for the Base of the Pyramid (BoP)*. Available from:http://www.icco.nl/nl/linkservid/397AED65-A4AA-3903-4EFD2A48FE173E6E/showMeta/0/ [Last Accessed: 12/5/2014].

Dolan, C. Johnstone-Louis, M. and L. Scott. (2012). Shampoo, saris and SIM cards: seeking entrepreneurial futures at the bottom of the pyramid. *Gender & Development*. 20 **(1)**. pp. 33-47.

Economist (2014). *22 February*. Education in Kenya, Classroom Divisions. *The Economist.* Available from:http://www.economist.com/news/middle-east-and-africa/21596981-paid-private-schools-are-better-value-money-free-sort-classroom [Last Accessed: 7 April 2014]

Economist. (2008). *29 May.* Halfway there: how to promote the spread of mobile phones among the worlds poorest. *The Economist*. Available from:http://www.economist.com/node/11465558 [Last Accessed: 16/5/2014].

Economist. (2013). *14 September.* Electronic payments in Africa. *The Economist.* Available from:http://www.economist.com/news/finance-and-economics/21586309-paul-edwards-took-pay-tv-and-mobile-phones-africa-now-its-e-payments-cash-be [Last Accessed: 15/4/2014].

GSMA. (2010). *Mobiles for Development.* Available form:http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2012/03/What-makes-a-successful-mobile-money-implementation.pdf [Last Accessed: 3/5/2014].

Gugler, K. (2002). *The son of the Hawk Does not remain abroad: the urban-rural connection in Africa.* African Studies Review 45 pp. 21-41.

Hammond AL, Kramer WJ, Katz RS, Tran JT, Walker C. (2007). The Next Four Billion: Market Size and Business Strategy at the Base of the Pyramid. World Resources Institute and International Finance Corp, Washington, DC.

Heeks, R. (2002). Information systems and developing countries: Failure, success and local improvisations. *The Information Society.* 18 **(2).** pp. 101–112.

Heeks, R. (2010). Emerging markets development 2.0: the IT-enabled transformation of international development. *Communications of the ACM.* 53 **(4).** pp. 22–24.

Heeks, R. and Foster, C. (2010). Researching ICT Micro-Enterprise in Developing Countries: Themes, wider concepts and future directions, EJISDC, 43, 7, pp. 1-20.

Heeks, R., Boateng, R., Molla, A. and R. Hinson. (2008). E-commerce and Socio-economic development: Conceptualizing the link. *Internet Research*. 18 **(5).** pp.562-594.

Hoddinott, J. (1994). A model of migration and remittances applied to Western Kenya. Oxford Economic Paper, 46. pp. 459-476.

Huges, N. and S. Lonie. (2007). M-Pesa: Mobile Money for the "Unbanked" Turning Cellphones into 24-Hour Tellers in Kenya. 2 **(1-2).** pp. 63-81.

ILO. (2014). *Informal Economy.* Available from:http://www.ilo.int/global/topics/employment-promotion/informal-economy/lang--en/index.htm [Last Accessed: 15/5/2014]

ITU. (2011). *Measuring the Information Society.* Available from:http://www.itu.int/net/pressoffice/backgrounders/general/pdf/5.pdf [Last Accessed: 5/5/2014].

Jack, W. and T. Suri. (2009). Mobile Money: The Economics of M-Pesa. *MIT Sloan School of Management Working Paper.*

James, J. (2010). New Technology in Developing Countries: A Critique of the One-Laptop-Per-Child Program. *Social Science Computer Review. 28 **(3)** . pp. 381-390.*

Levine, R. (2005). Finance and Growth: theory and evidence. *In:* Handbook of Economic Growth. Philippe, A. and S. Durlauf (eds.) (2008). The Netherlands: Elsevier Science.

Malhotra, A. (2003). Conceptualizing and measuring women's empowerment as a variable in international development. A paper presented at the workshop on 'measuring empowerment: Cross-disciplinary perspectives' held 4-5 February at the World Bank in Washington, DC.

Manson, K. (2013). *26 August.* Somalis fear loss of remittances as Barclays plans exit. *The Financial Times.* Available from:http://www.ft.com/cms/s/0/f5bb5a64-0bcc-11e3-b060-00144feabdc0.html#axzz2yEmaM1sF [Last Accessed: 7/4/2014]

Miscione, G. (2007). Telemedicine in the Upper Amazon: Interplay with local health care practices. *MIS Quarterly.* 31 **(2)**. pp. 403–425.

Morawczynski, O. (2009). Exploring the Usage and Impact of "Transformational" Mobile Financial Services: The case of M-PESA in Kenya. *Journal of Eastern African Studies.* 3 **(3)**. pp. 509-525.

Morawczynski, O. and M. Pickens. (2009). Poor People Using Mobile Financial Services: Observations on Customer Usage and Impact from M-PESA. *CGAP Brief*. Available at:http://www.cgap.org/gm/document1.9.36723/BR_Poor_People_Using_Mobile_Financial_Services.pdf [Last Accessed: 14/5/2014]

Owuor, S. (2004). Urban households ruralizing their livelihoods: The changing nature of urban-rural linkages in an East African town. Paper presented at the "African Studies Centre Seminar Series" Leiden, Thursday 16 December 2004. Available from: https://profiles.uonbi.ac.ke/samowuor/files/2004_asc_seminar.pdf [Last Accessed: 3/5/2014]

Plyler, M., Haas, S. and G. Nagarajan (2010). Community-level economic effects of M-PESA in Kenya. College Park, MD: University of Maryland. Available from:www.fsassessment.umd.edu [Last Accessed: 1/2/2014].

Praekelt. (2012). Mobile Stats for Africa 2012. Available at: http://mobilekenya.wordpress.com/2012/07/11/mobile-stats-for-africa-2012-praekelt-foundation/[Last Accessed: 14/5/2014]

Prahalad, C. (2006). *The Fortune at the Bottom of the Pyramid*. Upper Saddle River, NJ: Wharton School Publishing.

Qiang, Z., Yamamichi, M. Hausman, V. Miller, R. and D. Altman. (2012). Mobile Applications for the Health Sector. *ICT Sector Unit.* World Bank*,* Washington, DC. Available from:http://sitere-sources.worldbank.org/INFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/Resources/mHealth_report_(Apr_2012).pdf [Last Accessed: 14/5/2014]

RIA. (2012). *Kenya.* Available from:http://www.researchictafrica.net/countries.php?cid=13 [Last Accessed: 3/4/2014].

Robinson, L. (2009). A Summary of Diffusion of Innovations. Available from:www.enablingchange.com.au/Summary_Diffusion_Theory.pdf. [Last Accessed: 21/4/2014].

Rogers, E. (1962). The Diffusion of Innovation. 1st Edition. New York: Free Press

Rogers, E. (1983). *The Diffusion of Innovation.* 3rd Edition. New York: Free Press

Rogers, E. (1995). *The Diffusion of Innovation.* 4th Edition. New York: Free Press

Silva, L. (2007). Institutionalization does not occur by decree: Institutional obstacles in implementing a land administration system in a developing country. *Information Technology for Development.* 13 **(1)**. pp. 27–48.

Smith, M., Elder, L., and H. Emdon. (2011). Open Development: A New Theory for ICT4D. *Information Technologies & International Development.* 7**(1).** pp. iii–ix.

Thompson, M. (2008). ICT and development studies: towards development 2.0. *Journal of International Development.* 20 **(6).** pp. 821–835.

Vaughan, P. (2007). Early lessons from the deployment of M-PESA, Vodafone's own mobile transactions service. *Vodaphone Policy Paper Series, No.6.* Available from:http://www.vodaphone.com/m-transactions [Last Accessed: 14/4/2014].

Walsham, G. (1993). *Interpreting information systems in organizations.* Chichester, UK: John Wiley.

Wilson, K., Harper, M. and M. Griffith. (2010). *Financial Promise for the Poor: How Groups Build Microsavings.* Virginia, USA: Kumarian Press.

World Bank (2013). *Are Kenyans Being Served? New Data Sheds Light on Health and Education.* Available from:http://www.worldbank.org/en/country/kenya/publication/are-kenyans-being-served-well-new-data-sheds-light-on-public-service-delivery [Last Accessed: 14/5/2014].

World Wide Web Foundation (2014). Project: *Mobile Entrepreneurship*. Available from: http://webfoundation.org/projects/mobile-entrepreneurship/ [Last Accessed: 12/5/2014].