Mobile Learning: An Agricultural Revolution Enabler in Africa?

Issue at-hand

There is growing evidence that mobile technologies and their now ubiquitous presence and use in the lives of many Africans are changing the continent in significant ways. Entire sectors have been revolutionized such as commerce and banking and Africa played a lead role in introducing the democratization of access to banking services through mobile banking (e.g. MPESA in Kenya). However, commerce and banking are part of the modern and formal sectors of the economy with strong structures and practices that lend themselves to the development of specific computer applications. Researchers, policymakers and development practitioners are still investigating and wondering how mobile learning can change traditional sectors where high illiteracy is prevalent and therefore both modern and indigenous knowledge and skills are transmitted orally within a web of human networks such as families, clans and communities.

Agriculture in Africa is one such sector. It is characterized by the dominance of the traditional and subsistence-oriented smallholder farming with low productivity. Smallholder farmers in Africa are currently confronted with a host of challenges, including the aftermaths of climate change, lack of access to information and key services that prevent them from producing enough to stave off famine and poverty. This situation of increasing food insecurity and poverty due to low income within the farming communities is attributed to the low level of adoption of modern agricultural technologies; which in turn is explained by the low level of literacy among the farmers.

There is now a growing body of literature that suggests that the use of mobile technologies for mobile learning can make a difference in changing the fortune of African smallholder farmers. For instance, Henze and Ulrich (2016) argue that “[a]griculture applications can provide farmers with an array of services from production systems management to climate information,
and market access. However, they caution that “...while many of these applications have real potential to further social and technological transformation, particularly by engaging the youth and providing data to the government, they struggle with distribution and the set-up of sustainable business models”.

**Policy Recommendation: Combining Mobile Technology and Human Networks to help Smallholder Farmers get Accurate and Timely Information to Improve their Businesses and Livelihoods.**

In a paper presented by Dianah Nampijja at the 2016 3rd International Conference of the AVU and entitled “Increasing Access through Mobile learning. A Socio-technical tale of mLearning ActorNetwork among Smallholder farmers in Uganda”, an initiative called the “Community Knowledge Worker (CKW)” introduced by the Grameen Foundation is analyzed and findings show the great potential of combining mobile technology and human networks to address the challenges of lack of access to timely information to improve smallholder farmers’ businesses and livelihoods in Uganda.

The CKW initiative entails hiring literate individuals within rural farming communities to act as brokers of knowledge between digital content on farming techniques and other much needed information such as commodity pricing at local stock markets. Once identified through a selection process that includes the participation of community members, the future Community Knowledge workers (CKWs) are trained in the use of the android phones with digital agriculture information as well as good communication skills. Given that the CKWs need to work within networks of farmer groups, the latter are also equipped with android phones and trained with skills on how to interact with CKWs to request the support of CKWs in terms of agricultural advice and other needs. The CKWs work also in partnership with government or local district officers and field officers in the mobilization of farmers; thus, ensuring the sustainability of the practice beyond the project.

Within the CKW scheme, mobile phones provide elements of mobile learning in order to enable farmers to educate themselves. Interaction between CKWs and farmers is conducted through individual and group meetings within the same locality. This allows the groups to define the procedures that govern them in their learning activities.

One of the key features of the CKW initiative is the promotion of local knowledge. By design, CKWs do not only provide modern knowledge to the farmers but they also collect information from different farmer groups involved in the network. The local knowledge thus collected is then later on fed into the CKW database to increase the adoption of local farming practices in
the CKW network. Mobile phones, therefore, acted as digital libraries with fully equipped and regularly updated agricultural information.

Nampijja underscored the key condition for mobile learning to succeed in transforming the knowledge of farmers: [by] Aligning smallholder farmer’s interests to technological initiatives supports the adoption of mobile technologies; which in turn stabilizes the network. Farmers act well if their needs and interests are aligned to project objectives.

In terms of the outcomes of the CKW initiative, one of the farmers stated the following: “we were not aware of how to control pests and manage our banana and coffee plantations. All we had was old knowledge. Our plantations were diminishing day by day and yet, no extension officer comes to meet us in our farms like the CKWs. Thanks to Grameen’. This statement underscores the dire need for modern agricultural education in rural Africa and the inability of governments to meet this type of demand.

**Recommendations**

Even though the CKW seems to point to a viable model of use of mobile technologies and their integration in social networks to address the perennial lack of information, knowledge and dissemination of agricultural modern techniques in rural Africa, it comes with a few limitations as indicated by Nampijja. One of these is that replication or scaling up of projects such as the CKW, a controlled experiment of mobile learning activities which has contributed to farmer’s livelihood security, can present challenges. But these challenges can be overcome if the following conditions are in place:

- Policy environments created by African governments to research mobile learning and scale up best practices. Currently, there is no indication that an African government has put its own resources to develop large scale initiatives for the development of mobile learning in the rural farming communities. Most of the initiatives are donor-led and funded.

- The Distribution and the set-up of sustainable business models for agricultural applications should also be facilitated as indicated by Henze and Ulrich (2016). This can be done through government regulations and policies.

**References**


For more information, please visit AVU’s Website: http://www.avu.org/avuweb/en/