

FIGHTING CORRUPTION AND EMPOWERING THE PEOPLE

Cadastrres and Mobile Phones



Land Administration Systems (LAS) provide the infrastructure for implementing land policies and land-management strategies in support of sustainable development. They are operational and work well in about thirty, mainly western countries. In most developing countries the effectiveness of LAS is insufficient, which limits access to services by the most vulnerable. Mobile phones currently integrate GNSS positioning, digital cameras and video, thus enabling direct user involvement in land registration and cadastral processes. The author challenges his colleagues to redesign land-administration services based on the capabilities of mobile phones to empower citizens, fight corruption and stimulate participation of the poor.

Effective implementation of LAS is limited by complex procedures leading to high costs and charges, lack of supporting land-policy frameworks, inadequate support for social tenure systems, and corruption. What is more, communication channels with customers are either office- or internet-based, resulting in geographic discrimination or exclusion through the 'digital divide'. As a result many have no access to LAS services, leaving them trapped in poverty. Mobile phones enable more efficient service provision and, more importantly, increase accessibility for those currently excluded. The challenge is not just to replicate elements of current LAS services using mobile phones, but a radical rethink of how they can help more quickly and sustainably achieve the Millennium Development Goals.

Pervasive Mobile Phones

Mobile phones have made a bigger difference to the lives of more people more quickly than any previous communications technology. They have spread the fastest and proved the easiest and cheapest to adopt. Worldwide, around 3.6 billion people have mobile phones, and by 2013 six billion will have them. In developing countries growth will be focused where mobile phones have come within reach of the poor. In the year to March 2009, 128 million subscribers signed up in India, 89 million in China and 96 million across Africa; all enabled through the innovative tariff and network models introduced by Indian entrepreneurialism. These innovations also stimulate new information services, and such are not confined to urban areas. For example, rural people in developing countries benefit from farming tips, weather forecasts and prices of agricultural products disseminated by mobile phone. The most obvious economic benefits stem from money transfer or 'mobile banking'. Smart phones combine many technologies, giving a vital boost to the functionality and applicability of mobile phones in many new applications.

Crowd Sourcing

These developments create opportunities for making land administration services more effective and accessible. Remote guidance and support, which will become essential as citizen participation in land-administration services increases, can be offered through services providing, for example, procedural explanation, help in completing electronic forms, and best practice for land registration and cadastre (LR&C). Citizens may also directly record the boundaries of their property via written text, spoken word, or by video consisting of images accompanied by commentary voice; this might include contributions from neighbours as a form of verification (mobile phone numbers of neighbours could be provided). Quantitative boundary information can also be recorded, including positions of identified boundary points, and recorded on imagery using, for example, Google Maps or coordinates recorded by the GNSS capability of the phone. The results of this crowd-sourced information could then be submitted electronically to the LR&C authority. The power of crowd sourcing is gathering popularity and momentum in a variety of applications, and a report commissioned by the UN (United Nations Foundation, 2009) has

advocated its increased use. For example, Ushahidi (in Swahili 'testimony') is a web-based reporting tool that has allowed Africans caught up in political unrest to report incidents of killing, violence and displacement. Of course, the quality and authenticity of crowd-sourced information is limited, but it could form a starting point within the continuum of rights being proposed by UN-HABITAT, which organisation recognises that rights to land and resources can have many forms and levels. To guarantee quality, the LR&C authority could apply random checks in the field; perform comparisons with submitted nearby applications; check ownership of the mobile phone used to transmit the information; ask for clarification from submitter and their neighbours, and so forth.

Mobile Banking

The submission of an application for registration usually involves a fee, paid as cash over the counter or by bank transaction. Here we see the importance of 'mobile banking', which has grown out of using prepaid calling credit as informal currency. It is a phenomenon well placed to bring financial services within the reach of billions of 'unbanked' people. Securing a mortgage requires a bank account to support payment. Mobile banking simplifies the procedures, potentially opening up wider property ownership and reducing corruption associated with financial transactions in the land sector. For example, in the Jhang district of Pakistan all clerks were requested to submit daily amounts paid and mobile numbers of buyers and sellers; supervisors approached some randomly selected clerks to check payment of bribes or commissions. Following charges against one corrupt clerk services improved considerably. Feedback would appear essential in quality checking.

People Power

Mobile phones are already being used to manage personal identification information. For example, in Finland there is a move to adopt chip ID cards for government employees throughout central government. Encrypted forms of land title could similarly be incorporated into mobile phones and used as proof of ownership. Land Information Systems, initially developed in support of internal LR&C authority operations, are being made accessible for external users, either by extranet or internet. Information services such as these can now be accessed by mobile phones supporting internet access, broadening use of land administration services to many who are currently excluded. Innovative Location Based Services using Augmented Reality browsers enable retrieval of property sale information by aiming a smart phone camera at the property (Figure 1). Simply pointing at features both visualised on the phone display and contained in the remote database will instantly bring up the relevant information. Mobile phones have the potential to increase citizen participation in, for example, control of development planning. Alerts could provide citizens with details and location maps of new development proposals in areas of interest, giving them insight into and understanding of particular constituents of the formal development process.

Concluding Remarks

Today's mobile phones already affect people's lives in developing countries by providing them with innovative and effective applications. However, over coming years the functionality of smart phones will migrate down to cheaper handsets ('frugal innovation') and bandwidths in developing countries will continue to improve. The sophisticated mobile phone applications today available in developed countries will tomorrow arrive in the developing world. This will create the opportunity to radically rethink land-administration services using this new and innovative citizen-centric paradigm, delivering wider and more more inclusive services.

Further Reading

- A full version of this paper can be found at www.fig.net/pub/fig2010/papers/ts03b/ts03b_mclaren_4447.pdf
- Enemark, S., van der Molen, P., McLaren, R., 2010, Land Governance in Support of the Millennium Development Goals: Responding to New Challenges, Report on FIG/World Bank Conference Washington DC, USA, 9-10 March 2009, FIG Publication.
- Open Data Kit (2010): Open Data Kit, <http://change.washington.edu/projects/odk>
- A Special Report on Telecoms in Emerging Markets, The Economist (2009): 392:8650.
- United Nations Foundation (2009): New Technologies in Emergencies and Conflicts - The Role of Information and Social Networks, United Nations Foundation and Vodafone Foundation, www.unfoundation.org/press-center/publications/new-technologies-emergencies-conflicts.html