

# mLearning at the base of the pyramid

## Case studies from Commonwealth Africa and Asia

### GSMA Development Fund

Since 2007 there have been more mobile phone users in the developing than the developed world. GSMA mobile connections have reached 5.2 billion; India alone will have 945 million users by the end of 2012. While not a new concept, mLearning is therefore approaching a tipping point where its full potential is realised, supported by sustainable business models. In December 2010, the GSMA Development Fund published *mLearning: A Platform for Educational Opportunities at the Base of the Pyramid* – its research with operators, vendors, technology providers, teachers and academics.

### The benefits of mLearning

mLearning is the ability to access educational resources, tools and materials at any time from any where, using mobile technology. While it can be used in the classroom, a fundamental element of mLearning is its ability to deliver learning resources to those who may otherwise be unable to attend traditional learning environments, and to provide a practical and personal way to learn.

Lauren Dawes, author of the GSMA report and Programme Manager of mLearning at GSMA, explains the benefits.

*mLearning has the flexibility of acting as a stand-alone method or as part of a wider learning programme. For many people it is a way to incorporate education into their lives when they may have previously been denied the opportunity, therefore becoming an enhancement to their livelihood. Remember also that only 2–3 per cent of disabled children attend school; voice or text can be customised for use with blind or deaf learners, and speech recognition technology is advancing at a great pace.*

*In terms of benefits to the formal education sector, mLearning courses can be updated on a regular basis, unlike books which need constant reprints to remain relevant with up-to-date content. Teachers are able to access and download curricula in real time so that content remains current and relevant. Learning on the go also allows for 'on the job' training to occur and be put into practice immediately.*

### Smart phones or smart strategy?

Smart phones offer the most user-friendly mLearning experience. However, although prices continue to drop, they are still not yet affordable for the vast majority of those living in developing

Commonwealth countries (costing not far short of US\$100 in many cases). Smart phone penetration is only expected to reach around 17 per cent by 2014, so low-end or feature phones are often the most viable tools for mLearning. Smart phone prices are predicted to fall considerably over the next few years, but it is still unclear when they will become commonplace at the base of the pyramid, if ever.

Apart from the costs associated with handsets and the use of mobile networks, content and its provision also costs money, and it is not yet clear who should pay – governments, local authorities, the consumer or other. For a government to invest, the benefits must outweigh the costs in comparison to the traditional method of teaching. Learning outcomes (i.e., students' results) should be at least on a par with those achieved through the classroom approach for the vast majority of students, and delivery via a mobile network and handset should be cheaper than the resources currently used. This calls for large-scale trials, not small pilot projects.

### Findings from sub-Saharan Africa

Research indicates that mobile coverage could be extended to cover 97 per cent of Africa's population without public subsidy. Rates of access to a mobile phone, as opposed to ownership, are even higher in developing countries, as one mobile phone is often shared within and between families. In Botswana, for instance, household surveys reveal that 62 per cent of phone owners share their phones with their family, 44 per cent with their friends and 20 per cent share their phone also with their neighbours.

The Millennium Villages project in Kenya, Uganda and Rwanda uses mLearning modules; community health workers are able to download learning materials on reproductive health, care for newborns and other subjects to their mobile phone. Mobile networks provide the privacy, quality of service and interoperability required to deliver this learning application. Together with Millennium Villages, Ericsson co-founded Connect To Learn, an education initiative supporting secondary education especially for girls through scholarships and the use of information and communications technology (ICT) in classrooms.

In a continent where the number of AIDS or HIV infected persons is estimated to be around 22 million, 50 per cent of mLearning programmes are focused around health education. The mobile service provider Zain Kenya has partnered with Text To Change (TTC), a non-profit organisation, to make life-saving knowledge easily available to the general public and especially to community and family level care-givers. TTC is specialised in interactive and incentive-based SMS programmes that address a wide range of health issues, such as HIV and AIDS, malaria and reproductive health. By 2009, TTC had reached over 200,000 people with low-tech mobile phone-based health messages.



In South Africa, 90 per cent of urban youth has access to a mobile phone. The Mobile Learning for Mathematics (MoMaths) project is funded and led by Nokia, who partnered with the South African government, mobile phone providers MTN and Cell C, educational publisher Maskew Miller Longman, and MXit, a mobile social networking platform used by millions of young people in the country. MoMaths was piloted in 2009 in six public schools. To date, the project has reached 30 schools in three provinces, involving approximately 4,000 learners of Grade 10 maths.

Through this project, teenagers in Grade 10 (mostly aged 17) are able to do their maths homework and revision on MXit. The materials are aligned to the current South African curriculum for maths. The students receive immediate feedback on multiple-choice practice exercises, and can compare results with classmates in their school, in other provinces and nationally. Learners reported that they mostly use the service outside school time – in the evenings and at weekends.

Fifty-one per cent of households in South Africa do not own a single book intended for leisure. Only 7 per cent of schools have functioning libraries. The Shuttleworth Foundation's m4Lit project began in 2009 as a pilot initiative to explore whether and how teens in South Africa would read stories on their mobile phones. The Shuttleworth Foundation first published a 20-page story called *Kontax* in September 2010, and invited readers to comment, vote in opinion polls about the story and enter a writing competition.

The uptake was tremendous. Since its launch, two stories have been read more than 34,000 times on mobile phones. Over 4,000 entries have been received in the writing competitions, and over 4,000 comments have been left by readers on

individual chapters. Many of the readers asked for more stories and in different genres. In response, the Foundation decided to launch Yoza novels. Within the first month, Yoza had more than 60,000 unique visitors and over 8,500 user comments. Images have been kept to a minimum to keep the mobile data charges low – 5c to 9c per chapter (equivalent to roughly half a British pence or one US cent) – making Yoza novels a very affordable option for teens.

### Pakistan: Mobilink and UNESCO

Pakistani mobile operator Mobilink, a subsidiary of Orascom, has sought to demonstrate the power of mobile phones to improve literacy rates for adolescent girls in rural areas of Pakistan where reading materials are often scarce. In 2009, Mobilink partnered with UNESCO and a local non-governmental organisation (NGO), Bunyad, on a pilot project in a rural area of southern Punjab province involving 250 females aged 15–24 who had recently completed a basic literacy programme.

Each of the girls was provided with a low-cost mobile phone and prepaid connection. Teachers were trained by Bunyad to teach students how to read and write using mobile phones. The company set up a system for the NGO to send out SMS messages in an effort to maintain and improve participants' literacy, which often lapses because of inadequate access to interesting reading material.

Crucially, low-cost phones were selected that can send and receive messages in Urdu, the local language, rather than in English. The girls received up to six messages a day on a variety of topics,

including religion, health and nutrition, and were expected to practise reading and writing down the messages and responding to their teachers via SMS. Monthly assessments of participants' learning gains were conducted to assess impact. Programme organisers encountered considerable resistance on the part of parents and community leaders to the idea of allowing girls to have mobile phones, largely due to the conservative social norms of the area. This resistance began to soften, however, once people began to see the nature of the messages the girls were receiving and the benefits the programme conferred.

The programme showed striking early gains in literacy, with the share of girls receiving the lowest exam scores dropping nearly 80 per cent. Participants and their families are even taking advantage of other features of the phones, including the calculator.

Bilal Munir Sheikh, Vice-President of Marketing for Mobilink, believes that:

*With more than 98 million mobile phone users in Pakistan versus a 60 million illiterate population, the mobile phone holds endless potential if placed in the right hands. A leading cause for extremely low female literacy in Pakistan is either because the educational facility is far or the family does not want the girl to go outside the house. There are however, two flip sides to this sociocultural barrier: the female, while being confined to the home space in Pakistan, is inadvertently the centre of*

*knowledge and learning for her offspring, most of whom don't make it past primary school; and she has relatively more time available to participate actively in mLearning programmes.*

### Bangladesh: BBC World Service Trust (DFID funded)

Eighty-four per cent of Bangladeshis surveyed by the BBC said that learning English was a top priority for their future, and a staggering 99 per cent want their children to learn. Over half are in socio-economic group D living on less than £2 a day.

In November 2009, the BBC World Service Trust launched BBC Janala ('Window'), a groundbreaking multi-platform project using mobile phones, the internet and television to provide English-language teaching to millions of people in Bangladesh for the first time. In just nine months, Janala has attracted almost 3 million calls with a high rate of repeat users.

All customers need to do is dial '3000' to access hundreds of 3-minute audio lessons, which range from 'Essential English' to 'English for Work'. Learners can then assess their progress with interactive audio quizzes, or even record their own stories in English. With a tariff of just 1 Taka (1 pence) per minute, BBC Janala is affordable to many of the 50 million plus mobile-users in Bangladesh. Partnership with the mobile sector has been critical, with all six of the country's operators – Banglalink, Citycell, Grameenphone, TeleTalk, Robi and Warid – joining forces to offer a service across all networks at half the cost of typical value-added service tariffs.

The mobile service is also supported by other platforms. Substantial text-based lessons, as well as audio content and more than 100,000 audio lessons have been downloaded from the mobile internet site for high- and low-handset users. The country's biggest newspaper, *Prothom Alo*, offers print lessons – linked to mobile and web content – three times a week. In October 2010, *Bishaash* ('Believe') was launched, the first ever bilingual drama to be set between Bangladesh and the UK – again with links to mLearning content.

### Report conclusions

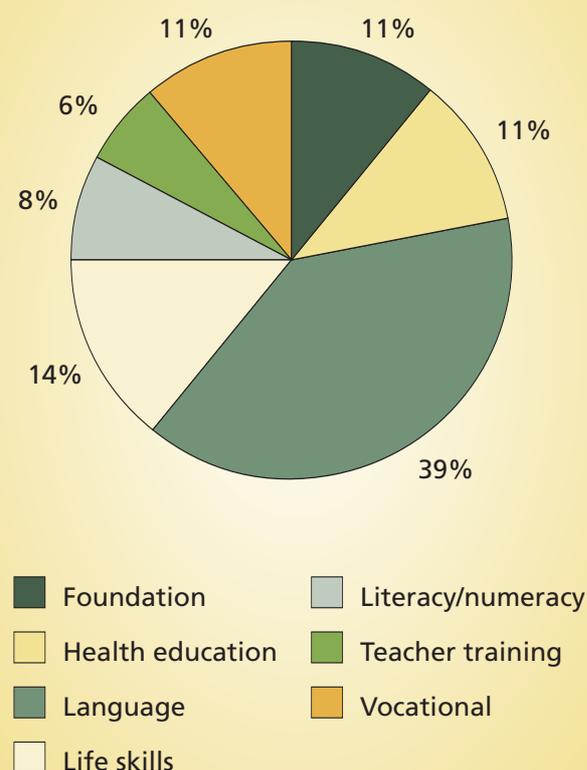
A key challenge for the replication of mLearning services is the need for content to be locally specific and current. For example, educational voice messages sent by Iffco Kisan Sanchar Limited (IKSL), the rural ICT subsidiary of the Indian Farmers Fertilizer Co-operative Ltd, are provided at a district and zone level (smaller areas than state) and in the local language. The information covers crops, animals and news specific to that region.

Another challenge is when local cultural norms prevent the wide dissemination of content; for instance, pregnancy advice varies from country to country, and most countries in Asia and Africa have multiple dialects and languages. The growing demand for mLearning products and services has seen a surge in the number of companies who now specialise in developing and rolling out content.

The key players required to catalyse the uptake of mobile learning are often working independently of each other. The educationists,

Figure 1

Breakdown of mLearning programmes involving mobile network operators by type (up to 2010)



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academics and researchers have a greater understanding on what mLearning methods are most effective, but not necessarily the experience to transform them into sustainable or commercial projects. At the same time, mLearning remains unknown to many involved in the mobile industry. So there is a need to convene the thought leaders and experts in order to work towards growing the mLearning industry in a structured way. Looking beyond phone apps and subscription-based services, there needs to be a convergence between the social and commercial side of mLearning.

The time for experiments and small-scale pilots is coming to an end. Pedagogues, researchers, content providers and governments all have vital roles to play, ensuring relevance of learning materials and best practices in delivery. A meeting of all these industries could facilitate and catalyse the expansion of a robust and sustainable mLearning model and help alleviate the extensive educational challenges that affect all demographics and regions of the world.

The **GSMA** represents the interests of mobile operators worldwide. Spanning 219 countries, the GSMA unites nearly 800 of the world's mobile operators, as well as more than 200 companies in the broader mobile ecosystem, including handset-makers, software companies, equipment providers, internet companies, and media and entertainment organisations. The GSMA also organises industry-leading events, such as the Mobile World Congress and Mobile Asia Congress.

Within the GSMA, The Development Fund works in Mobile Learning and five other areas: Mobile Money for the Unbanked, Green Power for Mobile, Mobile Agriculture, mWomen and Mobile Health.