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The meek shall inherit the web

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Computing: In future, most new internet users will be in developing countries and will use mobile phones. Expect a wave of innovation

Illustration by Belle Mellor



THE World Wide Web Consortium (W3C), the body that leads the development of technical standards for the web, usually concerns itself with nerdy matters such as extensible mark-up languages and cascading style sheets. So the new interest group it launched in May is rather unusual. It will focus on the use of the mobile web for social development—the sort of vague concept that techie types tend to avoid, because it is more than simply a technical matter of codes and protocols. Why is the W3C interested in it?

The simple answer is that the number of mobile phones that can access the internet is growing at a phenomenal rate, especially in the developing world. In China, for example, over 73m people, or 29% of all internet users in the country, use mobile phones to get online. And the number of people doing so grew by 45% in the six months to June—far higher than the rate of access growth using laptops, according to the China Internet Network Information Centre.

This year China overtook America as the country with the largest number of internet

users—currently over 250m. And China also has some 600m mobile-phone subscribers, more than any other country, so the potential for the mobile internet is enormous. Companies that stake their reputations on being at the technological forefront understand this. Last year Lee Kai-fu, Google's president in China, announced that Google was redesigning its products for a market where “most Chinese users who touch the mobile internet will have no PC at all.”

It is not just China. Opera Software, a firm that makes web-browser software for mobile phones, reports rapid growth in mobile-web browsing in developing countries. The number of web pages viewed in June by the 14m users of its software was over 3 billion, a 300% increase on a year earlier. The fastest growth was in developing countries including Russia, Indonesia, India and South Africa.

Behind these statistics lies a more profound social change. A couple of years ago, a favourite example of mobile phones' impact in the developing world was that of an Indian fisherman calling different ports from his boat to get a better price for his catch. But mobile phones are increasingly being used to access more elaborate data services.

A case in point is M-PESA, a mobile-payment service introduced by Safaricom Kenya, a mobile operator, in 2007. It allows subscribers to deposit and withdraw money via Safaricom's airtime-sales agents, and send funds to each other by text message. The service is now used by around a quarter of Safaricom's 10m customers. Casual workers can be paid quickly by phone; taxi drivers can accept payment without having to carry cash around; money can be sent to friends and family in emergencies. Safaricom's parent company, Vodafone, has launched M-PESA in Tanzania and Afghanistan, and plans to introduce it in India.

Similar services have also proved popular in South Africa and the Philippines. Mobile banking is now being introduced into the Maldives, a group of islands in the Indian Ocean where many people lost their life savings, held in cash, in the tsunami of December 2004.

For the W3C, M-PESA and its ilk are harbingers of far more sophisticated services to come. If mobile banking is possible using a simple system of text messages, imagine what might be possible with full web access. But it will require standards to ensure that services and devices are compatible. Stéphane Boyera, co-chair of the new W3C interest group, says its aim is to track the social impact of the mobile web in the developing world, to ensure that the web's technical standards evolve to serve this rapidly emerging constituency.

The right approach, Mr Boyera argues, is not to create “walled gardens” of specially adapted protocols for mobile devices, but to make sure that as much as possible of the information on the web can be accessed easily on mobile phones. That is a worthy goal. But Ken Banks, the other co-chair of the W3C's new interest group and the founder of kiwanja.net, which helps non-profit organisations exploit mobile technologies in the developing world, points out that simple services based on text messages are likely to predominate for some time to come, for several reasons. All mobile phones, however cheap, can send text messages. Mobile-web access requires more sophisticated handsets and is not always supported by operators. And users know what it costs to send a text message.

As countries work their way up the development ladder, however, the situation changes in favour of full mobile-web access. Jim Lee, a manager at Nokia's Beijing office, says he was surprised to find that university students in remote regions of China were buying Nokia Nseries smart-phones, costing several months of their disposable income. Such handsets are status symbols, but there are also pragmatic reasons to buy them. With up to eight students in each dorm room, phones are often the only practical way for students to access the web for their studies. And smart-phones are expensive, but operators often provide great deals on data tariffs to attract new customers.

Xuehui Zhao, a recent graduate of the Anyang Institute of Technology in Henan province, explains that a typical monthly package for five yuan (\$0.73) includes 10 megabytes of data transfer—more than enough to allow her to spend a couple of hours each day surfing the web and instant-messaging with friends. It is also much cheaper than paying 200 yuan per month for a fixed-broadband connection.

As this young generation of sophisticated mobile-web users grows up, what sort of new services will they want? Many NGOs and local governments are trying things out. Several examples were discussed at a workshop in June organised by the W3C in São Paulo, Brazil. The government of the Brazilian state of Paraná, for instance, is using text messages and voice-menu systems to notify the unemployed about job opportunities and farmers about agricultural prices.

But the workshop also highlighted the limits of what such efforts can achieve. It quickly became apparent that more or less identical services are being developed from scratch repeatedly in different parts of the world. There is clearly room for more co-ordination of such efforts, which is exactly what the W3C has in mind.

Furthermore, many clever systems are being developed by NGOs with no apparent interest in setting up commercial services. As Mr Boyera points out, this raises the issue of sustainability. What happens when the NGO's funding runs out? One conclusion from the workshop was that promoting social development through the mobile web will mean engaging with businesses. Regulators can also help by fostering cheap mobile access.

The developing world missed out on much of the excitement of the initial web revolution, the dotcom boom and Web 2.0, largely because it did not have an internet infrastructure. But developing countries may now be poised to leapfrog the industrialised world in the era of the mobile web.

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