

The mobile as transformational technology



It is clear that the mobile phone has the potential to transform African society, education, commerce, and politics. This is true for reasons that extend beyond its obvious use in facilitating conversation and the flow of information between people.

One of the most powerful aspects of the mobile is that it has become the computing platform for the continent. Mobile phones, even the older ones more commonly found there, are relatively powerful computers, and have inbuilt communications as well as computational powers. Desktop PCs are rare – they are expensive, subject to failure because of dust, temperature and generally harsh conditions, and are less useful for more-prosaic reasons: they require a relatively large amount of electricity to run.

In the bush, this power simply does not exist, whilst in the cities, reliable supplies are becoming a thing of the past. Whilst in Cape Town investigating this work, under a Royal Academy of Engineering Global Research Award, Dr Russell Beale had two or three power cuts that were unplanned, and

the power company announced a 'load shedding' regime in which the power was regularly cut off for four hours a day.

There are major differences in creating technologies in the developed and developing world. For example, usually the applications that Dr Beale designs have two cycles of interaction: an internet-based route, and a mobile-based one. The mobile augments the internet one, giving a user access to the system on the move.

In Africa, the internet part is almost always absent, and systems have to be designed for purely mobile use. Other issues have to be factored in. These range from limited literacy, forcing designs that are non-textual in nature, through to respecting social structures. A system is likely to be better-received and trusted if introduced

through village elders, rather than directly to users.

Our western notions of structure have to be reconsidered. For example, some cultures have no notion of hierarchy. This means that, for example, a mobile system given to bushmen to classify animals they saw, which originally used categories such as number of legs, size, and colour, was not that successful but worked much better when it was redesigned to remove categories and present everything in a long, long list.

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