

Why Smartphones will replace Laptops

As someone who gets in trouble from their partner for being too attached to their laptop it may seem strange that I would argue that smartphones will replace laptops. However, I think it is not a question of 'if' but rather 'when'.

My central argument is that if you could offer someone a Smartphone that would do everything a laptop does then the switch to smartphones would be almost instantaneous because of the portability advantages. Three things are required for this to happen: smartphones need to get more powerful in terms of processing power, they need to have displays that enable people to work and view movies and web clips, and they need to have user interfaces that allow control of the device that matches laptops. So let's look at each of those in turn.

Firstly, everyone knows the progress that has been made in processing power and miniaturisation that has led to smaller and more powerful mobile phones. These sorts of advances are going to continue. At the Web 2.0 summit in San Francisco, GE CEO Jeff Immelt revealed a portable ultrasound scanning system that is the size of a Smartphone. In the video of the presentation (<http://emergentfutures.tumblr.com/search/Immelt>) he describes how the device has the same power and image quality of a full size ultrasound machine of 2-3 years ago. The developments in processing power and miniaturisation will not come just from the mobile phone market but from developments like these increasing the speed of the trend. With increased processing power will come better operating systems and operating system performance. If we take the example of the Android mobile operating system, early developments were hindered by the sluggishness of the system on poor hardware. We seem to be beyond that phase now and appear to be on the verge of an explosion of hardware choices.

Secondly, in terms of displays there are a few ways that the Smartphone may move. There are lots of developments going on in micro-projector technology and embedding projection technologies into smartphones (see some at <http://emergentfutures.tumblr.com/search/projector>) and you can now buy mobile phones with projectors in them. In October, 3M announced an optical film setup that will allow true 3D vision using mobile phones. However, the most likely technology in my mind is new augmented reality systems. (<http://emergentfutures.tumblr.com/search/augmented+reality>). Researchers at Columbia University have been working with the US Marine Corp using augmented reality systems for mechanics. The system includes an augmented reality headset and an Android smart phone attached to the mechanics wrist. Significant reductions in time taken to find and begin a maintenance task have been reported.

Thirdly, user input systems are likely to be a combination of voice activated commands, touch interfaces and virtual keyboards which allow flexible inputs that suit an individual user and do away with the need for a keyboard. All of these products are available in various forms already, for instance I have written this story using a voice recognition software system. None of them are at the stage where they can really replace keyboard operations but ongoing developments will ensure that change is rapid.

So if I can be supplied with a Smartphone that has good processing power, a way of displaying screens and data that is useful to me, and an input system that does away with a bulky keyboard, why would I still use a laptop? Such a system will do everything my current laptop does and will supply extra portability that will open all sorts of possibilities. As Clay Shirky says "**Communications tools don't get socially interesting until they get technologically boring**". Once we move past the technical difficulties I have discussed here the ability to summon and use information where and when we want it will be the big driver, not the technology. For example, IBM's Breadcrumbs system allows the user to point a Smartphone at a product in a supermarket and automatically download consumer information on the spot, and car sharing services are using Smartphone applications that allow you to book, open and drive one of their cars. I am not going to lug a laptop to do either of those.

On a completely different note, I am a big fan of the productivity gains from utilising multiple screens. So much so that when I am on the road these days I really miss my home double screen system. While there are now double screen laptops available, they are heavy and cumbersome and I cannot see them catching on (<http://emergentfutures.tumblr.com/search/double+screen>). So having a laptop away from home limits my productivity. However, a Smartphone with enough processing power to do what I want and a display system that would allow me to project a much larger screen than I currently use would allow me to be on the road and have a better set up than my current double screen system. Market that to me and my precious laptop will end up in the dustbin of history.

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