

Opinion **New Technology Policy Forum**

## Coming soon: mobile, immersive, interactive entertainment

Eli Noam JULY 17 2009

---

One of the mainstays of digital lore has been the “Negroponte Switch”, named after the founder of MIT’s Media Lab. Nicholas Negroponte popularised the observation that in the past, voice telephony had run over landlines and mass communication like television had travelled over the air to viewers. But this was rapidly changing. Telephony was migrating to the mobile wireless, especially in poor countries, while TV was moving in the opposite direction to cable landlines.

This is true for the present. But in the future we will see a significant *switch-back* from this path, in the opposite direction.

Voice telephony increasingly uses the internet, and hence typically runs over a landline-based broadband internet connection, including over cable TV lines. Yet far more interesting is the long-term path of entertainment media back to the airwaves. Not in the old-fashioned way but instead over the mobile phones themselves.

Already, broadcast-style TV is being sent to mobile handsets. In some countries, this form of TV is becoming quite popular. In South Korea, there are day periods in which more people watch TV over cellphones than over TV sets.

Most people who have watched some form of video over the mobile phones tend think of it more as a curiosity than a genuine mass medium. Its screen is tiny, its picture quality spotty, and its content mostly some sports and news clips and TV show promotions. Its use seem to be limited to killing boredom, such as in a morning bus commute or in long waits. Who would possibly want to watch a full-length movie on the itsy-bitsy handheld screen when at-home TV sets are bigger and sharper than ever before?

All this is true in the short term. But for the long term one should not think of the mobile terminal as an undersized screen but as an extraordinarily powerful mobile connection point to a new style of video media. Eventually it will be not just as good as wire based TV but actually be *superior*.

How so? One important reason is that television will change its nature as high-speed wireline and wireless networks make it possible to supply users with many more bits, per second and per dollar. These bits will do much more than add channels and programme choices. They will also “deepen” the video image by enabling an ultra-high picture quality, with computer-based virtual reality, video-games style interactivity, two-way connectivity, three-dimensionality, multiple audio channels, and other features.

This creates the ingredients for a new style of an immersive, interactive entertainment experience in which the user is surrounded by the action. For such media participation, a TV is not a box one looks at, but it is something one straps on, something one wears, like eyeglasses. And this participatory media activity requires an untethering from hardware, and mobility within the entertainment experience.

But what about the small screen? Much more likely is that the images will be projected through light video glasses and heads-up displays using microlaser projectors embedded in the temples of eyeglasses, and known as personal media viewers, which enables sharper and multi-dimensional images while maintaining sight lines to the real world. This, too, greatly favours a mobile wireless device worn by the user.

The bit-rich media activity requires, by the laws of physics, a much larger wireless “pipe”. Already in the planning stage is the so-called fourth generation of mobile phones with a much improved bandwidth that can be used for better pictures and even surround sound. A few years down the road, a still faster 5G generation of wireless networks will emerge. There will also be a much better efficiency in using under-utilized frequencies, a widespread introduction of much smaller “femtocells” or wifi-style in-home transmission, and the use of a pricing system. Together, all this will increase the available spectrum resources.

Thus wireless TV would often be superior to the stationary, wire-connected TV in visual and immersive experience and intensity. For the mobile phone companies it would not be a supplementary service but the centre of gravity of their business activity. In the process, they would become media companies rather than telecom firms, and face a new generation of regulatory issues.

And when all of this has taken place, which will take a while, significant parts of television and telecom media will have switched places, again, and in the opposite direction.

*The writer is professor of finance and economics at Columbia University.*

---

[Copyright](#) The Financial Times Limited 2022. All rights reserved.

---

