

Opinion **New Technology Policy Forum**

Eli Noam: Broadbandwagons at the crossroad

Eli Noam MARCH 6 2006

Without much fanfare or planning, the two sides of the Atlantic are constructing electronic media systems that will be very different from each other.

The basic medium is broadband, which provides high-speed connectivity to the internet. As broadband becomes more powerful and ubiquitous, it will increasingly be the way people get video, music, games, news, or health services. It will connect them to their work from a distance, such as when bird flu strikes.

Much attention has been given to the middling rank of US broadband penetration, which is lower than in several European countries or Japan. But this obscures the more fundamental, costly, and time-consuming platform upgrades that are taking place in the US.

In much of Europe, broadband is carried to the user's home over the copper phone lines of the telephone companies, using a technology known as DSL. DSL is the cheap way to go and does not require much investment. But it is relatively limited in data capacity and range. In contrast, in the US broadband is in the process of increasingly being carried over fibre telecomlines and cable television networks, which are vastly more powerful.

There are several reasons for this. The first is the prevalence of cable TV in North America. In the larger European countries, in contrast, multichannel TV tends to be carried over one-way satellites. There is little of cable in France, Italy, Poland, or Spain, and it is struggling in Germany and the UK.

In the US, cable TV companies pushed broadband most aggressively over their powerful coax lines, and they hold today about 60 per cent of the market. In response, the phone companies had to hustle to catch up. After starting with DSL like phone companies around the world, the phone companies, in particular Verizon, have embarked on a major upgrade program into fibre. Verizon, much to the unease of its investors, is putting \$20bn into the ground. Given the competition from the powerful cable pipes, the phone companies feel they must catch up or become the next Western Union.

Thus, North America (as well as Korea, the world's leader in broadband) are moving to what can be called a "2.5 platform" infrastructure. This means two powerful wires - telecom fibre and cable TV - plus a few other, smaller, often weaker infrastructures for niche applications such as municipal WiFi and fiber, electric powerlines, and satellites.

In contrast, the major European countries are moving mostly to a "1.5 platform" system, centered at first on the DSL phone infrastructure, which is eventually upgraded to fibre, plus the smaller options. Mobile wireless will be a smaller alternative because it cannot match the power of fibre in populated areas, unless vast amount of spectrum is allocated, or every hill is dotted by transmission towers - which must still be connected by fibre lines.

What's the implication? It means a very different media market structure, which in turn has an impact on content, prices, investments, and regulation. A 1.5 system is basically a telecom monopoly, whereas a 2.5 system is an oligopoly. 2.5 platform countries have more competition, often lower prices, greater dynamism, but also greater volatility.

1.5 platform systems are more profitable, safer for investors, but also have a much greater gatekeeper power over content providers and pricing power over consumers. That's why they require more regulation of access and prices. A 2.5 platform system is riskier for investors, though as an oligopoly it's likely to keep price competition under control. It is also more likely to vertically integrate network and content operations, and this creates incentives to keep content rivals out.

A 1.5 platform system is more likely to resemble a phone system, which will be its upgraded backbone, and it will almost certainly have to operate like a common carrier, open to all but slower in innovation. In contrast, a 2.5 system will be more like a cable TV system - which will be at its core, mirrored by telecom - with more control and content participation by the infrastructure provider. This is at the heart of the current regulatory fight in Washington over "net-neutrality".

What does this spell out for the type of media on the two sides at the Atlantic? The more powerful, dynamic and unregulated 2.5 platform system is likely to lead sooner to new technology styles and content genres. It will be a system that favours commercial efforts, whether from established media firms or new venture startups.

The more limited 1.5 platform system, in contrast, will by necessity be kept more open by regulation and therefore will be relatively more accessible to nonprofit and alternative content. One system will be more dynamic; the other, more diverse. One system will be more commercial, the other, more participatory. And if the medium is indeed the message, this will have long-term impacts on societies, culture, economic growth, and politics on the two sides of the Atlantic.

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