

Information Policy

This course is about policy issues relating to information and communication technology.

In general, for every topic there are two questions:

- What is the law or policy today? What should you (or must you) do as a participant in this field?
- What should the law or policy be? If you could advise Congress, what would be best for the country?

Technological determinism

Sometimes engineers think that if something becomes possible, it's going to happen: that technology progress is unstoppable and always wins.

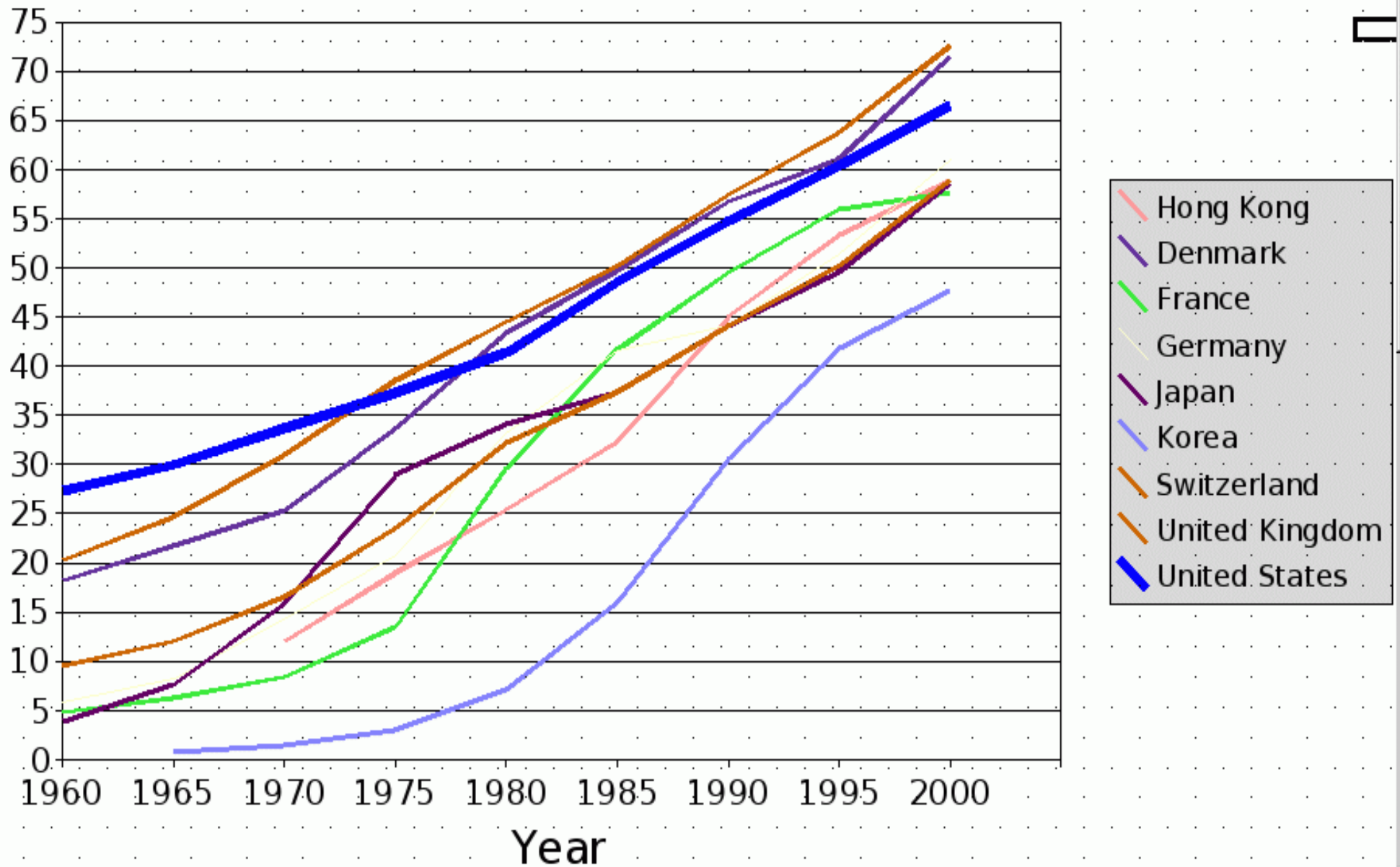
That's not true.

- Consider supersonic flights, nuclear power, and (almost) childhood vaccines.
- For an earlier example, see Noel Perrin's excellent short book, *Giving Up the Gun*, discussing how the Japanese decided, for about a century, to abandon firearms and go back to fighting with swords.

Policy impact

Decades ago, the United States had what was clearly the best telephone service in the world. People in Europe often waited months or even years to get a phone installed. The chart on the next slide shows the number of phone lines per 100 people in a variety of countries. The US once had a clear lead, but it has dissipated. (The chart stops in 2000 because more recently the number of phone lines is not so important, and is actually declining in the most advanced countries as people switch to mobile phones). Then, the slide after that shows broadband use in several countries; the US is well down the list.

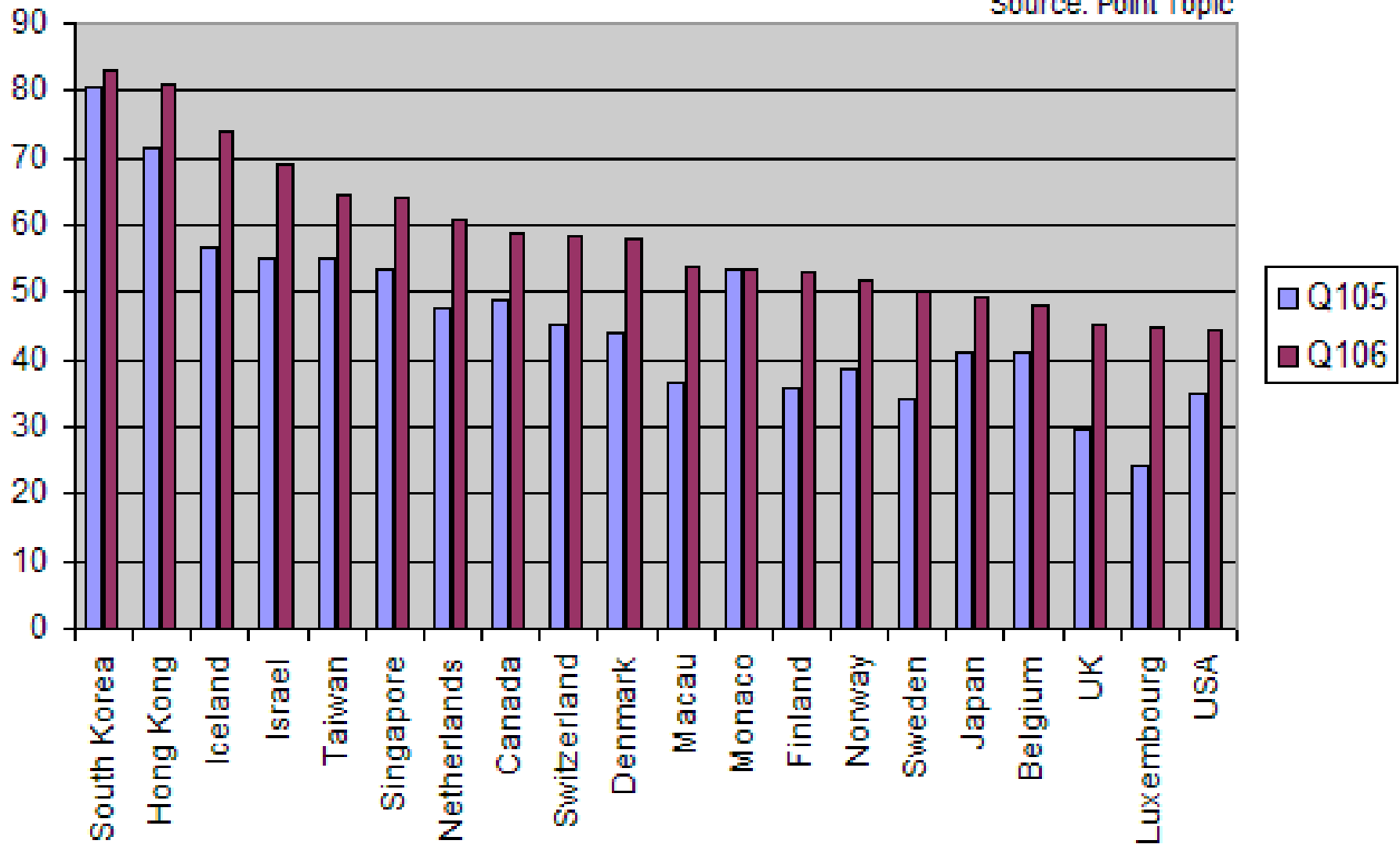
Phone lines per 100 people



Top 20 Broadband Countries by household penetration 2005-2006

Broadband lines per 100 households

Source: Point Topic



What happened?

The US has been on an experiment about how to reorganize its telecom industry. In 1982, some new antitrust economists decided that local and long distance telephone service should be separated (until 1980 the intent of the antitrust action against AT&T was to separate manufacturing and service). The results have been

- Telecom manufacturing went overseas
- Bell Labs, having invented the transistor and Unix, can no longer afford the same level of research
- Enormous effort is spent lobbying (some years telecom lobbying trails only health care) rather than inventing or installing
- Enormous amounts of money were transferred to investors and then a lot was lost in the Worldcom bankruptcy
- And, of course, we now have two large companies, AT&T-SBC and Verizon-MCI that combine local and long distance service.

Policy does matter

What the government and society do about policy does affect how the industries develop and what kinds of service we have. I was once at a meeting where somebody deplored the FCC's attitude towards spectrum allocation and the inability to start any new service. I asked what he thought might cause the situation to improve. He said "when the politicians wake up and see that Botswana has better phone service".

Price of wideband connectivity, unlimited phone calls, and >100 TV channels: \$36/month in France, \$100/month in US.

Head of the French ARCEP: Paul Champsaur, b. 1944, graduate of ENSAE and chief executive of INSEE (national statistics lab)

Head of the FCC: Kevin Martin, b. 1966, Harvard Law, worked for Ken Starr and the Bush-Cheney transition team.

The “long tail”

Will the variety of information and entertainment available to us increase or decrease? For two centuries technology has favored mass media – radio replaced vaudeville, best-sellers took over the book business, and so on.

Now it is suggested that with everyone his own publisher (Marshall McLuhan originated this idea, but did not live to see the Web), even rarely accessed material will have a life. The “long tail” phenomenon is a claim that $\frac{1}{4}$ of what Amazon sells are books no physical bookstore even carries.

Will random bands and performers overtake the superstars? Will we get increasingly tailored material to individual users? Remember Ranganathan – every book its reader, every reader his book.

Individualization

If a Web service is watching you, and tailoring what you see based on your preferences and behavior, is this

a) an invasion of privacy?

b) customer service?

People simply don't understand what is going on – for example, that the search engines save every search that is done.

Depending on how this is used, it might be good or bad. What we do not have today is any control over it.

What's coming up?

Everything is going to be available digitally. The average Chinese is more likely to be able to get at it than the average US citizen. Whether this will mean that China has no entertainment industry or that Chinese students have an edge in school is not known.

VoIP – voice over IP – is probably going to take over the communications business (invented at both Bell Labs and Xerox Parc, by the way). Whether any old companies survive this transition is not known; in the past they usually didn't.

Scientific research will change as we go from “plan an experiment and do it” to “think of an experiment and look up the data you would find” as large scientific databases appear everywhere.