

What Goes Around Comes Around

By Ross Anderson

Each nation gets its day in the sun, its chance to leave a mark. As a Brit, I'm proud of the fact that my nineteenth-century ancestors gave the world both technology (railways, steamships, electricity) and moral norms (universal education, the abolition of slavery, and of child labour, too). Now it's America's turn. America has already given us many great things, from the motor car to the Internet, and has maybe one more generation left in which to make a real difference.

The architecture of the Internet, and the moral norms embedded in it, will be a huge part of America's legacy. The network effects that dominate the information goods and services industries will give that architecture great longevity, just as the Roman standard cart axle of 4 feet 8½ inches is still our railway gauge today.

So what Americans inflict on foreigners now will massively influence what the world inflicts on all our descendants for generations to come. If America re-engineers the Internet so that the NSA can snoop more easily on people in Pakistan and Yemen and Iran today, then in 50 years time the Chinese will use it to snoop on Americans; in 100 years time perhaps the Indians will have the whip hand; and in 200 years it might be the United States of Africa.

There is also a curious disconnect here between the way the tech industry sees the world and the view from Washington. It's not just that almost everyone in DC considers Edward Snowden to be a traitor while almost everyone in the tech industry sees him as a whistleblower. The right coast and the left coast also have completely different views of the underlying economics, and don't even seem to realise that there's a gap.

The tech industry has many monopolies, because of three factors that become ever more important as everything goes online. First, network effects mean that the value of a network grows faster than the number of members, so its value to each member increases with its size. Second, there's technical lock-in; you can't use your iPhone apps if you move to Android. And third, while the capital costs of new products get ever higher, the marginal cost of providing for one more customer is lower—and often pretty well zero.

But while the left coast is acutely aware of increasing returns to scale, the right coast sees international relations as a zero-sum game in which one nation gains power as another loses it. And government folks' failure to understand network effects and geek ways of working leads to many unforced errors. The regulation of networked industries is poor, and public-sector IT projects are notorious: the Obamacare website was just the latest of many failures.

Yet, like it or not, technology is starting to change the business of government, including intelligence and defence. The Snowden papers reveal that the NSA has been sharing intelligence with a growing network of nations worldwide; it's not just the traditional "Five eyes" partners of Canada, the UK, Australia and New Zealand, but Germany, Sweden, Israel, France and many others too. While India used to buy its jet planes from Russia during the Cold War, now it shares intelligence with the NSA. Why? Well, the NSA has the bigger network. As five eyes become fifteen, then 25, then 65, the intelligence world is becoming a shadowy clone of the United Nations, but minus Russia and China. (Or maybe it's Microsoft versus Apple all over again.)

There is also technical lock-in as a single market emerges for the firms who do wiretapping and surveillance equipment. In the old days, the Russian phone system was different, so the NSA needed different kit to tap it; but now everyone's using IP. This leads to some interesting moral dilemmas around exports. And in both defence and intelligence, capital

costs go up as marginal costs go down. In the old days, you had to pay a man a salary to climb a telephone pole and attach a wiretap; now the marginal cost of wiretaps is zero (though the agencies spend billions on data centres, and leverage the further billions spent by the service firms, ISPs and telcos).

This system-of-systems is sustained by commercial surveillance—by watching what we do and showing us ads. But it enables the law enforcement and intelligence agencies of dozens of countries to watch us too. And the spread of devices with gesture interfaces, voice interfaces and touch interfaces will mean that pretty soon there will be cameras and microphones in pretty well every room of every house on earth.

So how will that be governed? The intelligence agencies mostly don't care about even their own citizens' privacy, let alone anybody else's. Snowden reveals that in a meeting about whether Five Eyes states had to minimise metadata revealing sensitive personal information about each others' citizens, only Canada insisted on minimisation. In other words, GCHQ was quite happy for the NSA to know whether a UK citizen like me had ever phoned a sexual health clinic—and the NSA was quite relaxed about GCHQ having the same information on Americans. In another case, the NSA was relaxed about its Australian counterpart wiretapping a U.S. law firm that was representing the government of Indonesia in a case where Australian interests were considered to be at stake. In other words, a foreign intelligence service violated a U.S. law firm's attorney-client privilege, in the USA, using interception facilities largely provided by the U.S. taxpayer. If that isn't a wake-up call, it's hard to know what might be.

So it's great that Obama's review panel suggested that the NSA start respecting the privacy of non-U.S. citizens. But it doesn't go far enough. It's helpful too that the panel also suggests ending the bulk collection of metadata; while the government may be able to snoop on

anybody, it should not be able to snoop on everybody. But it will be hard to design an Internet where the NSA can do bulk surveillance of foreigners but only targeted surveillance of Americans. If code is law, then architecture is policy. How the U.S. treats foreigners now will not just set the tone for our generation, but will shape how the world works and the way people are treated in future generations—once U.S. supremacy has passed the way of the British empire, the Spanish empire, and the Roman empire.

Here is the core issue, the acid test of whether America really believes in universal rights. But it is a challenge to which America can rise, because of the way its concept of rights has expanded steadily over the generations. Once a nation has bought the idea that “all men are created equal”, you eventually ask, “Blacks too”? It might take fourscore and seven years, but sooner or later the question can’t be ducked anymore. Then people ask, “Women too?” and so it goes: civil rights, gay rights, until eventually there’s only one taboo left. The question now is “Foreigners too?”

Appeared in “Privacy in the Modern Age: the Search for Solutions”, EPIC, April 2015