

# Privacy versus government surveillance – where network effects meet public choice

Ross Anderson

Cambridge

# Two views of money and power

- The Bay Area view: money and power are all about network effects, which help you create a platform to which everyone else then adds value
- The Washington DC view: power is about having more tanks and aircraft carriers, which is founded on taxation capacity
- Almost no-one talks of network effects there, or among scholars of government!

# Is this changing?

- 1980s: a non-aligned country like India is a democracy, but buys its jet fighters from Russia because they're cheaper
- 2000s: Snowden tells us that India shares intelligence with the NSA rather than the FSB, as the NSA's network is bigger
- The “five eyes” is maybe 15 eyes, or 30 eyes, or 65 eyes ...

# View since WEIS 2002

- Three things make IT industries monopolistic:
  - Network effects
  - Low marginal costs
  - Technical lock-in
- Each of these makes dominant-firm market structures more likely
- Together, they make them much more likely
- They also explain security and privacy failures

# View since WEIS 2002 (continued)

- In a market race, you open your system to appeal to complementers such as app writers
- Once you've won the race, you lock it down to extract rents
- In one market after another – mainframes, PCs, routers, phones, social network systems – security is added later
- Its design ends up aligned with the platform's interests almost as much as the users'

# Economics of privacy

- Privacy suffers from the same problems as security, and more
- Asymmetric information: users don't know much about what gets done with their data
- Hyperbolic discounting: many users don't care about long-term effects of disclosure
- Firms that depend on mining private data go out of their way to not make privacy salient

# Now – economics of surveillance?

- The concentration of the industry into a few large service firms (MS, G, Y, FB ...) made the PRISM program foreseeable (except in its details)
- The concentration of the telecomms industry into a handful of large operators similarly made TEMPORA foreseeable (and its was described by several journalists in its earlier form of 'Echelon')
- But that's not all!

# Information economics and defence (1)

- Network effects do matter in the defence / intelligence nexus!
- Neutrals like India prefer to join the biggest network
- Network effects entangle us with bad states which use the same surveillance platforms (see rows over exports to Syria)

## Information economics and defence (2)

- Medieval warfare was all run on marginal costs (40-60 days service for every peasant)
- WW1: sent millions of men to Germany
- WW2: hundreds of thousands, plus lots of planes, tanks and other capex
- Now: to kill a foreign dictator you can use a \$30,000 Hellfire missile
- But we rely on trillions of capital investment

# Information economics and defence (3)

- Complex technical lock-in games
- 1980s: it was basically about ammunition and spares
- Now: are you using Cisco or Huawei?
- Very expensive try to build independent infrastructure for government networks
- Even so, shared code can lead to shared attacks

# Intelligence network governance

- Core is 5 eyes; expanding circles of others
- Governance: each agency could decide whether to minimise its citizens' personal data
- Only Canada did so!
- So GCHQ happy for NSA to read my medical records, and NSA happy for GCHQ to read yours!

# Law enforcement network governance

- Various models from Interpol through mutual legal assistance treaties
- Very slow and cautious: requests vetted by both governments, often several agencies
- Much effort on accelerating the process, e.g. via personal links created from NCFTA training and exchange programs

# One network or many?

- Networks tend to merge: the Internet absorbs everything else
- Will the intelligence network and the law-enforcement network become one?
- Already intel resources are used for rapid solution of exceptional crimes
- NTAC and the Communications Data Bill
- PRISM

# Network effects in civil government

- Example 1: the EU smart metering programme, which aimed at energy efficiency and demand response, but was fragmented by national energy markets
- Example 2: the EU itself as a customs union, which ends up imposing its legislation de facto on neighbouring states (Norway, Iceland, Switzerland ...)

# The IR Community

- Realists (Thucydides, Machiavelli, Hobbes, Kissinger ...) vs idealists / liberals (Kant, Wilson, Keohane, Clinton ...)
- Not even the latter seem to have considered network effects (rare passing references only)
- Yet network effects surely add weight to the liberal side of the argument
- Serious opportunity for our industry to engage better with governments?

# Conclusions

- There's a big gap between left-coast people and right-coast people
- It's not just whether you see Snowden as a whistleblower or a traitor!
- The economic models are just as different
- The IR people should start thinking about information economics
- We should start thinking about the economics of surveillance – and what it implies