Paying for Privacy: Consumers & Infrastructures

Adam Shostack
adam@informedsecurity.com

Presented at 2nd Workshop on Security and Economics
Maryland, May 2003
Privacy: Two Intertwined Views

- Consumers and Privacy
  - What consumers want
- Identity Infrastructures
  - What governments want
- What we all get
Does Privacy Matter to People?

- Polls say that it does
- Media reports pay it huge attention
- People seem to care quite deeply
They don’t act that way

- Tell strangers all sorts of things
- Don’t object to intrusive searches
- Trade DNA for a Big Mac
- Don’t buy privacy products in great bulk
- Author worked for Zero-Knowledge for three years
  - Still in business, not ruling the world.
- “People won’t pay for privacy”
People Won’t Pay for Privacy

- Wrong Conclusion
- People won’t pay for things they don’t understand:
  - The problem a product solves
  - The way it solves it
- Freedom Network had both those issues
  - People were amazingly excited by the idea
Quick Review Freedom Net

- Zero Knowledge’s Anonymous IP net
  - Real time
  - Email, web, chat
  - No single trust point
  - Very expensive to operate (ZKS paid)
- No longer in operation
What is Privacy?

Confusing!
Privacy means too much

- The word has too many meanings
- People use it sloppily
- The result is confusion over what people want and will pay for
- Privacy from the perspective of buyers
  - Important to answering the question “Will people pay?”
Privacy is Many Things

- Spam, telemarketers
- ID theft, CC theft
- Cookies
- Total Information Awareness
- CAPPS II
- Do Not Call lists
- Abortion
- Unobservability
- Untracability
- Cryptography
- Blinding

- Gut feelings
- Curtains & Venetian Blinds
- Unlisted Phone #s
- Swiss bank accounts
- Right to be left alone
- Fair Information Practices and Data Protection Laws
- Informational self-determination
- “Lie and get away with it”
Broad Set of “Privacy Tools” That Sell

- Cash and banks
  - Athenian banks and taxation
  - (See Edward Cohen, Athenian Economy and Society, A Banking Perspective, Princeton University Press, 1992)

- Remailers
- Novelty ID/2nd Passports
- Curtains
- Anti-spyware
Tools Don’t Address All Problems

- Maybe the law can help?
- Almost all built on Fair Information Practices
- Tradeoff between
  - “You must give us this data”
  - “We’ll treat it fairly”
  - Mandatory tradeoff (one size fits all)
Is Pollution a Good Analogy?

- Balancing Diverse Interests
  - Production, health, transaction costs
  - Different levels of tolerance for, utility from production and health
- Clean air markets exist now
  - Consumers marginally involved
Externalities

- A situation in which someone’s well-being is affected by another’s action, and they have no control of, or involvement in that action.
- Pollution is a classic example.
Looking at the Externality

- Storage of data creates privacy hazard
- (Computer security stinks)
- Users can’t insure privacy
  - Hard to measure value
  - Hard to measure risk
  - Risk is a likelihood of a hazard leading to damage
  - ID Theft insurance available
- May lead to tort claims
Risk & Externality

- Business are not motivated to protect data as well as the individual who will be hurt by its release
- e.g., AIDS patient lists
- Many people not comfortable with this tradeoff
  - “Privacy Extremists”
Both Sides Are Rational

- Business needs certain data to function
- Customer doesn’t trust the business
- Let’s not even talk about secondary uses or default states
Both Sides Are Emotional

- People are tired of privacy invasions
  - Ask the travel business about CAPPS II
- Businesses are tired of privacy complaints
  - Ask your HR person for privacy problem stories…but only over beer.
Zero-Knowledge Analysis

- It didn’t do well in the market
- What can we learn from this?
- NOT: “People won’t pay for privacy”
- Service didn’t meet a meaningful threat that the users cared about
Overview

✓ Consumers and Privacy

› Identity and Infrastructure, or

We’re from the government and we’re here to help someone pretend to be you.
Identity

- What’s in a name? A rose by any other name would smell as sweet…
- But try getting a new ID for Ms. Capulet
- Common law
  - Use any name you want as long as your intent is not to deceive or defraud
Modern State

- Welfare systems
- Immigration problems
- Require an identity infrastructure
  - Unique identifiers
  - Some biometrics
Identity Infrastructures

- Hard to build without coercion
  - Diffuse benefits to me of an ID card
  - See Public Key Infrastructure (PKI) “industry”

- Businesses can use
  - At least in USA
  - US SSN, no restrictions
  - Dutch passports, illegal to copy
  - German ID cards, # changes every 5 years
Risk Assignment

- Easy to demand ID
  - Everyone has one
- Hard not to demand ID
  - If problem, need to justify
  - Hard to check ID carefully
    - Expensive
    - Excludes customers whose money you want
Fake IDs

- Market driven by ease of demand, problems with checking
  - Drinking laws
  - Employment/Immigration laws
Banks and ID Risk

- Banks check ID to issue mortgage
  - Rather than meet in the property
  - Reasonable cost/risk tradeoff (for the bank)
- Banks don’t check ID to issue credit cards
  - Consumer credit is useful
  - Reasonable cost/risk tradeoff (for the bank)
- Rising costs of ID theft
High security ID cards

- Reduce forgery
- Increase value of issuance fraud
- Ignore privacy problems
Forbid non-gov use

- Aggressive solution
- Requires explicit cost/benefit analysis
- Bars hire police to check IDs?
  - “Society pays” for benefits of stopping underage drinking (or)
  - Tax bars so drinkers pay
Air Travel Security

- TSA could check ID
- Other measures more effective?
  - Cockpit doors/tunnels
  - Air Marshals?
- Focus on threat, not ID checking
  - ID checking seems free
  - Imposes societal privacy cost as ID becomes mandatory
Hard to Forbid ID use

- US Legal traditions
  - Free speech
  - Free association
  - Free to demand ID

- Classify ID cards?
  - Exemption for card holder
  - Requires government agencies to treat data carefully
  - Prevents others from using it
Hard to Forbid ID use (2)

- Liability for storing information insecurely
  - Hard for consumer to find where problem happened
- Liability for government decision makers?
- Tax on ID requirement to discourage?
Conclusions

- ID theft as risk distribution
- Free riding
- Inappropriate distribution of risk
- Possible solutions
- More work could be interesting