



Economics of Privacy

CYBR 4400 / 5400: Principles of Internet Policy, Lecture 5-5

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Today's Lecture

- ❖ Current events
 - ❖ Zoom Bombing
- ❖ Debate on Friday
- ❖ Economics of Privacy Lecture

Economics of Privacy

Source: Hal Varian, Economic Aspects of Personal Privacy

Establishing the Baseline: Size of U.S. Digital Economy

- ❖ Digital economy = all digital goods and services
- ❖ Accounted for 6.9% (\$1.35 trillion) of gross domestic in 2017 according to statistics released by Bureau of Economic Analysis (BEA)
- ❖ Supports 5.1 million jobs in 2017 (3.3% of total U.S. employment of 152.1 million jobs)
- ❖ Employees earned \$132,223 in average annual compensation in 2017, compared to \$68,506 per worker for the total economy

Source: <https://www.ntia.gov/blog/2019/digital-economy-accounted-69-percent-gdp-2017>

Economic Transaction Fundamentals

Consumers

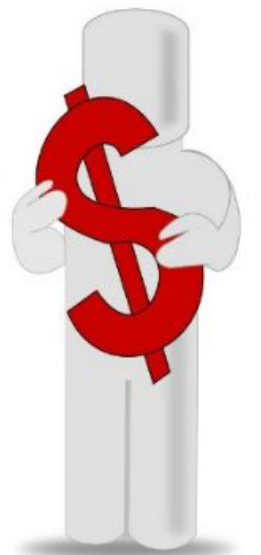


Tastes in products interested in buying

Maximum willingness to pay for products



Sellers



Concept Discussion: Under what conditions have you shared your product interests online that you experienced a positive result? A negative result?

Search Costs

- ❖ privacy rights = right not to be annoyed
- ❖ “excess search costs” arise because seller has too little information about the buyer
- ❖ If seller knows precise buyer interest in product, make better decision about providing product info

Concept Discussion: Do you believe this argument is true? Do you have an example where providing personal information reduced your search costs or annoyance?

Secondary Users of Information

- ❖ Info of a transaction from original seller and third party may not have well-aligned incentives
 - ❖ “Externality” present: actions of third party may impose costs on original buyer, which the seller ignores
 - ❖ Mitigation: allow buyer to forbid all secondary transactions in his personal information
- ❖ “Annoyance” improved with clear communications between buyers and sellers

Concept Discussion: Do cookies create “clear communications” between buyers and sellers? If not, what is preferred?

Incentives Involving Payment

- ❖ Sometimes buyer's revealing information is detrimental (e.g., smoker buying life insurance)
- ❖ People who have negative characteristic lack incentives to reveal, but people who *don't* have good incentives to reveal!
- ❖ Solution: Seller constructs transaction in way that reveals information (e.g., discount for non-smokers)

Contracts and Markets for Information

- ❖ Problems arise due to lack of information
- ❖ Use of property rights could be used to cause more efficient transactions
- ❖ Allow contracts that assigns property rights to one's PII, defining how individual chooses to sell, or more properly, rent, that info
 - ❖ For limited times and specified purposes
 - ❖ Info could not be resold, or provided to third parties, without that individual's explicit agreement
 - ❖ Could even develop market for PII
 - ❖ Today, property rights held by those who collect and compile PII — not by individuals themselves (e.g., recall results of Web Census trackers)
 - ❖ FIPPs would automatically implement property rights in individual information

Fair Information Practice Principles (FIPPS)

- ❖ Created in 1974 as part of the Privacy Act, although not in themselves law, form backbone of privacy law in the United States

Transparency

- ❖ There shall be no personal-record systems whose existence is secret.

Choice

- ❖ Individuals have rights of access, inspection, review, and amendment to systems containing information about them.

Information Protection

- ❖ There must be a way for individuals to prevent information about themselves gathered for one purpose from being used for another purpose without their consent.

Data Protection

- ❖ Organizations and managers of systems are responsible for the reliability and security of their systems and for the damage done by them.

Accountability

- ❖ Governments have the right to intervene in the information relationships among private parties.

Fair Information Practice Principles (FIPPS) for Certified Information Privacy Professional (CIPP) Certification

❖ Privacy Notice must include:

Notice / Awareness

- ❖ Legitimate name and physical address of entity collecting data
- ❖ Type of data collected
- ❖ How collected data will be used
- ❖ Any potential third-party disclosure or secondary use of PII

❖ Individuals must be able to consent or reject certain uses of PII, particularly for secondary uses and marketing purposes

Choice / Consent

- ❖ Two main mechanisms: Opt-in (action required to START) and Opt-out (action required to STOP)
- ❖ Individual must be able to view their consent options and change them at any time

Fair Information Practice Principles (FIPPS) for Certified Information Privacy Professional (CIPP) Certification

- ❖ Individual must be able to view data an entity has on record
 - ❖ Must be able to correct incomplete or false info contained in their file
 - ❖ Access to data must be granted within a reasonable time frame and a minimal cost
- ❖ Data must be accurate, up-to-date, not stored longer than needed
- ❖ Security of data must be maintained using physical, technical and administrative safeguards to protect against unauthorized access, use, disclosure and destruction
- ❖ Safeguards should be implemented in proportion to security risk, with greater risks using greater resources and stronger protections.
- ❖ Individual must be able to file complaints with the entity to have their issues addressed
 - ❖ Should be mechanism in place to ensure compliance with privacy standards, either through self or government

Access/
Participation

Integrity/
Security

Enforcement/
Redress

Assignment of Rights

- ❖ Economic solution
- ❖ Determine baseline assignment of rights, allow individuals to trade those rights if they desire
 - ❖ If no transactions costs in trading or negotiation, initial assignment of privacy rights is arbitrary from the viewpoint of economic efficiency

Concept Discussion: Would you participate in a National Information Market? Is this a realistic approach?

More Current Events

- ❖ FTC Has 40 Employees Overseeing Privacy and Data Security
- ❖ Facebook Privacy Plans