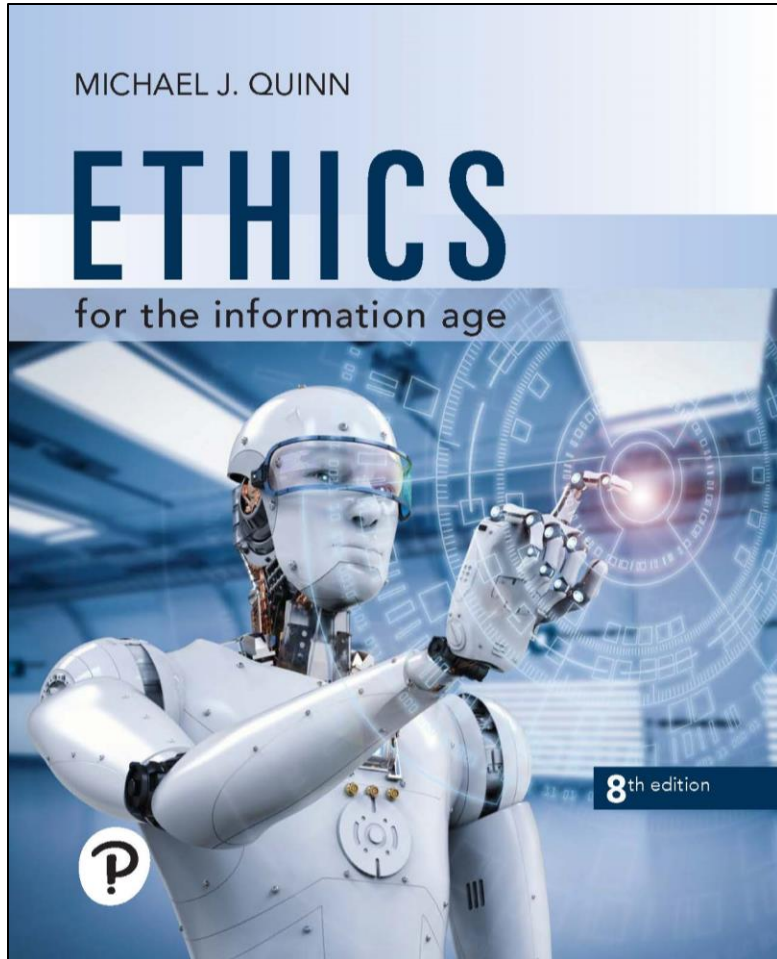


# Ethics for the Information Age

Eighth Edition



## Chapter 5

### Information Privacy

## 5.2 Perspectives on Privacy

# Defining Privacy

- Privacy related to notion of access
- Access
  1. Physical proximity to a person
  2. Knowledge about a person
- Privacy is a “**zone of inaccessibility**”
- Privacy violations are an affront إهانة to human dignity
- Too much individual privacy can harm society

*Where to draw the line?*

# Harms of Privacy

1. Can be a **cover for illegal or immoral** activities
2. Can be a **burden on the nuclear family**
3. Can hide **dysfunctional** **مختلة وظيفيا** **families**
4. People on **society's fringes** **أطراف المجتمع** can be **ignored**

# Benefits of Privacy

1. Necessary for each individual's growth as a unique person
2. Signals that individuals are responsible for themselves
3. Recognizes everyone's true freedom
4. Lets people be themselves
5. Allows people to shut out world so they can focus, be creative, and grow intellectually and spiritually

## 5.3 Information Disclosures

# Public Records

- **Public record: information about an incident or action reported to a government agency for purpose of informing the public**
- **Examples:**
  - **birth certificates, marriage licenses**, motor vehicle records, criminal records, deeds to property صكوك الملكية
- **Computerized databases and Internet have made public records much easier to access**

# Information Held by Private Organizations

1. Credit card purchases
2. Purchases made with loyalty cards
3. Voluntary disclosures الإفصاحات الطوعية
4. Posts to social network sites



# Data Gathering and Privacy Implications

- Facebook tags
- Enhanced 911 services
- Rewards or loyalty programs
- Body scanners
- RFID tags
- Implanted chips
- Mobile apps
- Facebook Login
- OnStar
- Automobile “black boxes”
- Medical records
- Digital video recorders
- Cookies

# Facebook Tags

- Tag: Label identifying a person in a photo
- Facebook allows users to tag people who are on their list of friends
- About 100 million tags added per day in Facebook
- Facebook uses facial recognition to suggest name of friend appearing in photo
- Does this feature increase risk of improper tagging?

# Enhanced 911 Services

- Cell phone providers in United States required to track locations of active cell phones to within 100 meters
- Allows emergency response teams to reach people in distress محنة

*What if this information is sold or shared?*

# Rewards or Loyalty Programs

- Shoppers who belong to store's rewards program can save money on many of their purchases
- Computers use information about buying habits to provide personalized service
  - **ShopRite** computerized shopping carts with pop-up ads

*Do card users pay less, or do non-users get overcharged?*

# Body Scanners (1 of 2)

- Some department stores have 3-D body scanners
- Computer can use this information to recommend clothes
- Scans can also be used to produce custom-made clothing

# Body Scanners (2 of 2)



A computer takes a customer's measurements. (AP photo/Richard Drew)

# RFID Tags

- **RFID:** Radio frequency identification
- An **RFID tag** is a tiny wireless transmitter
- Manufacturers are replacing bar codes with RFID tags
  1. Contain more information
  2. Can be scanned more easily
- If tag cannot be removed or disabled, it becomes a tracking device

# RFID Tags Speed Inventory Process



Employees take inventory more quickly and make fewer errors when items are marked with RFID tags.  
(Marc F. Henning/Alamy)



# Implanted Chips

- Taiwan: Every **domesticated dog** must have an **implanted microchip**
  1. Size of a **grain of rice**; implanted into ear
  2. Chip contains **name, address of owner**
  3. Allows lost dogs to be returned to owners
- **RFID tags approved for use in humans**
  1. **Can be used to store medical information**
  2. **Can be used as a “debit card”**

# Mobile Apps

- Many apps on Android smartphones and iPhones **collect location information** and sell it to advertisers and data brokers
  - Angry Birds
  - Brightest Flashlight
- **Flurry**: a company specializing in analyzing data collected from mobile apps
  - Has access to data from > 500,000 apps

# Facebook Login

- Allows people to login to Web sites or apps using their Facebook credentials
  - App's developer has permission to access information from person's Facebook profile: name, location, email address, and friends list

# OnStar

- OnStar manufactures communication system incorporated into rear-view mirror مرآة الرؤية الخلفية
  1. Emergency, security, navigation, and diagnostics services provided subscribers
  2. Two-way communication and GPS
  3. Automatic communication when airbags deploy
  4. Service center can even disable gas pedal دواسة الوقود

# Automobile “Black Boxes”

- Modern automobiles come equipped with a “**black box**”
- **Data maintained:**
  1. Speed of car
  2. Amount of pressure being put on brake pedal
  3. Seat belt status
- After a collision, investigators can retrieve the microprocessor from the automobile and view data collected in the five seconds before the accident

# Medical Records

- Advantages of changing from paper-based to electronic medical records
- Quicker and cheaper for information to be shared among caregivers
  - Lower medical costs
  - Improve quality of medical care
- Once information in a database, more difficult to control how it is disseminated يتم نشره

# Digital Video Recorders

- **TiVo service** allows subscribers to record programs and watch them later
- TiVo collects detailed information about viewing habits of its subscribers
- Data collected second by second, making it valuable to advertisers and others interested in knowing viewing habits

# Cookies

- **Cookie:** File placed on computer's hard drive by a Web server
  - Contains information about visits to a Web site
  - Allows Web sites to provide personalized services
- Put on hard drive **without user's permission**
- You can set Web browser to alert you to new cookies or to block cookies entirely



# General Data Protection Regulation

- **General Data Protection Regulation (GDPR): set of rules governing collection of information from citizens of European Union**
- **Requires companies to...**
  1. Disclose يكشف عن **information** they are seeking to collect
  2. Disclose **why** they are collecting it
  3. Get permission before collecting it
- Responding to GDPR, most large American companies are adopting new privacy guidelines
  - Web-site banners informing users, asking for consent

# 5.4 Data Mining

# Data Mining Defined

- Searching records in one or more databases, looking for patterns or relationships
- Uses:
  - Can be used to **create profiles** of individuals
  - Allows companies to build **more personal relationships with customers**

# Google's Personalized Search

- Secondary use: Information collected for one purpose use for another purpose
- **Google** keeps track of your search queries and Web pages you have visited
  - It uses this information to infer your interests and determine which pages to return
  - Example: “**bass**” could refer to fishing or music
- Also used by **retailers** تجار التجزئة for direct marketing

# Google's Personalized Search

- Google is able to personalize search results whether or not you have a Google account.
- If you are signed in to Google, the search engine examines your Web history to personalize the search results.
  - This information is held indefinitely, unless you delete your Web history.
- If you are not signed in, Google creates a cookie linked to your computer's browser, and it stores records of all queries associated with that cookie, as well as results that have been clicked, for up to 180 days

# Limiting Information Google Saves: Google Privacy Checkup

- You can limit amount of information Google saves about your activities
- [Google offers a Privacy Checkup](#) that lets you review and adjust your privacy settings.
- **Privacy Checkup lets you pause collection of personal information**
  1. **Web and App Activity**: Your search queries and other Google activity
  2. **Location History**: Locations you have visited with signed-in devices, how often you have visited them, how long you have stayed, and common routes of travel
  3. **Device Information**: Your contact and calendar information, as well as information from apps and other devices
  4. **Voice and Audio Activity**: Recordings of your voice and accompanying audio
  5. **YouTube Search History**: Your YouTube search queries
  6. **YouTube Watch History**: A list of the YouTube videos you have watched

# Collaborative Filtering

- Form of data mining
- Analyze information about preferences of large number of people to predict what one person may prefer
  1. **Explicit method**: ask people to rank preferences
  2. **Implicit method**: keep track of purchases
- Used by online retailers and movie sites

# Ownership of Transaction Information

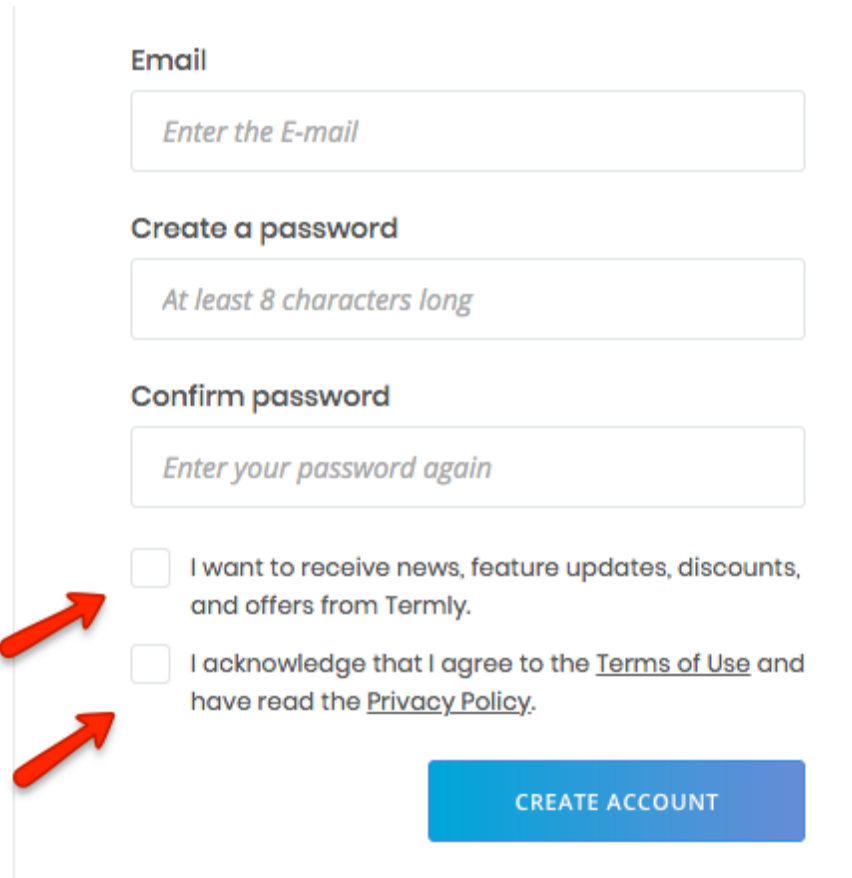
- Who controls transaction information?
  - Buyer?
  - Seller?
  - Both?
- **Opt-in:** Consumer must **explicitly give permission** before the organization can share info
- **Opt-out:** Organization can share info **until consumer explicitly forbid it**
- Opt-in is a barrier for new businesses, so direct marketing organizations prefer opt-out



# informed consent\*

- **informed consent** موافقة مستنيرة: is an individual's voluntary agreement, based on adequate understanding of relevant facts, to permit some type of intervention by a second party.
- This term is most commonly used in medical contexts to refer to individuals' agreements to undergo medical treatment or to participate in research.
- In most cases, informed consent is required both ethically and legally prior to the commencement of treatment or enrollment in research.

# Example of Opt In\*



Email

*Enter the E-mail*

Create a password

*At least 8 characters long*

Confirm password

*Enter your password again*

☐ I want to receive news, feature updates, discounts, and offers from Termly.

☐ I acknowledge that I agree to the [Terms of Use](#) and have read the [Privacy Policy](#).

CREATE ACCOUNT

# Example of Opt Out\*

Email

*Enter the E-mail*

Create a password

*At least 8 characters long*

Confirm password

*Enter your password again*

☒

I want to receive news, feature updates, discounts, and offers from Termly.

☒

I acknowledge that I agree to the [Terms of Use](#) and have read the [Privacy Policy](#).

CREATE ACCOUNT

# Informed Consent\*



## Sample Informed Consent Form - ©NCPI

The following is a sample consent form for a research project. It is a research project on faculty life on campus, carried out by the principle investigator (PI) of this project from the fake-named Century University. The interviewer (the investigator) should have the interviewee read this form carefully and ask any questions the interviewee may have. Before the interview can start, the investigator and the interviewee should sign two copies of this form. The interviewee will be given one copy of the signed form.

### Consent for Participation in Interview Research

I volunteer to participate in a research project conducted by Dr. [Name of the Principle Investigator] from Century University. I understand that the project is designed to gather information about academic work of faculty on campus. I will be one of approximately 30 people being interviewed for this research.

1. My participation in this project is voluntary. I understand that I will not be paid for my participation. I may withdraw and discontinue participation at any time without penalty. If I decline to participate or withdraw from the study, no one on my campus will be told.
2. I understand that most interviewees in will find the discussion interesting and thought-provoking. If, however, I feel uncomfortable in any way during the interview session, I have the right to decline to answer any question or to end the interview.
3. Participation involves being interviewed by researchers from Century University. The interview will last approximately 30-45 minutes. Notes will be written during the interview. An audio tape of the interview and subsequent dialogue will be made. If I don't want to be taped, I will not be able to participate in the study.
4. I understand that the researcher will not identify me by name in any reports using information obtained from this interview, and that my confidentiality as a participant in this study will remain secure. Subsequent uses of records and data will be subject to standard data use policies which protect the anonymity of individuals and institutions.
5. Faculty and administrators from my campus will neither be present at the interview nor have access to raw notes or transcripts. This precaution will prevent my individual comments from having any negative repercussions.
6. I understand that this research study has been reviewed and approved by the Institutional Review Board (IRB) for Studies Involving Human Subjects: Behavioral Sciences Committee at the Century University. For research problems or questions regarding subjects, the Institutional Review Board may be contacted through [information of the contact person at IRB office of Century University].
7. I have read and understand the explanation provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study.
8. I have been given a copy of this consent form.

\_\_\_\_\_  
My Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
My Printed Name

\_\_\_\_\_  
Signature of the Investigator

For further information, please contact:

Dr. [Name of Principle Researcher]  
[Contact Information of PI]

# “Target”-ing Pregnant Women

- Most people keep shopping at the same stores, but new parents have malleable **مرن** shopping habits
- Targeting pregnant women a good way to attract new customers
- Target did data mining to **predict customers in second trimester** **الثالث** of pregnancy
  - Large amounts of unscented lotion, extra-large bags of cotton balls, nutritional supplements
- Mailings included offers for unrelated items with offers for diapers, baby clothes, etc.

# Credit Reports

- Example of how **information about customers** can itself become a **commodity** سلعة
- Credit bureaus مكاتب الائتمان
  - **Keep track** of an individual's assets, debts, and history of paying bills and repaying loans
  - **Sell credit reports** to banks, credit card companies, and other potential lenders
- System gives you more choices in where to borrow money
- Poor credit can hurt employment prospects

# Targeted Direct Mail

- Businesses mail advertisements only to those most likely to purchase products
- **data brokers**: companies that combine information gathered online with offline information, such as magazine subscriptions, loyalty cards, and government records, to create comprehensive profiles of consumers
- Data brokers provide **customized mailing lists** created for information gathered online and offline
- Example of making inferences الاستدلالات for targeted direct mail
  - Shopping for clothes online + frequent fast-food dining + subscribing to premium cable T V channels → more likely to be obese
- Two shoppers visiting same site may pay different prices based on inferences about their relative affluence
- Retailers even **use customer profiles** to determine **who should be offered a discount and who should be charged full price** and offered more expensive options

# Microtargeting

- Political campaigns determine voters most likely to support particular candidates
  1. Voter registration
  2. Voting frequency
  3. Consumer data
  4. GIS data: information available from a geographic information system
- Target direct mailings, emails, text messages, home visits to most likely supporters



# Social Network Analysis

- A relatively new area in data mining.
- Collect information from social networks to inform decisions
- Bharti Airtel (India) offers special **promotions to “influencers”**
- Police use Facebook and Twitter posts to **deploy officers on big party nights**
- Banks combine social network data with credit reports to determine **creditworthiness** الجدارة الائتمانية
  - For example, someone applying for a loan to start a new business may be a bad risk if the proposed business has no connection with their social network, educational background, travel history, or previous business dealings

# Controlling Your Facebook Info (1 of 2)

- You can change your Facebook settings to minimize who can see what you're doing
- **Privacy settings**
  - Who can see your friends list? Set to **Only me**.
  - Who can see your future posts? **Set to Friends**.
  - Who can look you up using the email address you provided? Set to Friends.
  - Who can look you up using the phone number you provided? Set to Friends.
  - Do you want search engines outside of Facebook to link to your profile? **Set to No**.
  - Limit the audience for posts you've shared with friends of friends or Public? Set to Limit Past Posts.

# Controlling Your Facebook Info (2 of 2)

- **Timeline and Tagging**

- Who sees tag suggestions when photos that look like you are uploaded? Set to **No One**.
- Review posts you're tagged in before the post appears in your timeline? Set to **On**.
- Review tags people add to your posts before the tags appear on Facebook? Set to **On**.

- **Location History**

- Location Settings: Location History. Use your mobile device to set to **Off**.

# Controlling Your Facebook Info (2 of 2)

- **Ads – Based on**

- Relationship status. Set to **Off**.
- Employer. Set to **Off**.
- Job title. Set to **Off**.
- Education. Set to **Off**.
- Ads based on data from partners. Set to **Not allowed**.
- Ads based on your activity on Facebook Company Products that you see elsewhere. Set to **Not allowed**.
- Ads that include your social actions. Set to **No one**.

## 5.5 Examples of Consumer or Political Backlash (Self-Study)

# Marketplace: Households

- Lotus Development Corporation developed **C D** with information on **120 million Americans**
- Planned to **sell CD to small businesses** that wanted to create mailing lists based on various criteria, such as household income
- More than 30,000 **consumers complained** to Lotus about invasion of privacy
- Lotus **dropped plans to sell CD**

# Facebook Beacon

- 2007: **Facebook announced Beacon**, a targeted advertising device
  - Facebook user **makes purchase**
  - Facebook **broadcasts purchase** to user's friends
  - Based on **opt-out policy**: users enrolled unless explicitly asked to be excluded
- A significant source of advertising revenue for Facebook
- MoveOn.org led online campaign lobbying Facebook [to switch to an opt-in policy](#)
- [Mark Zuckerberg apologized, and Facebook switched to an opt-in policy](#)

# Malls Track Shoppers' Cell Phones

- In 2011 two malls recorded movement of shopper by tracking locations of cell phones
  - How much time people spend in each store?
  - Do people who shop at X also shop at Y?
  - Are there unpopular areas of mall?
- Small signs informed shoppers of study
- After protest, mall quickly halted study



# iPhone Apps Upload Address Books

- In 2012 a programmer discovered **Path** was uploading iPhone address books without permission
- Internet community pointed out this practice **violated Apple's guidelines**
- CEO of Path apologized; app rewritten
- Twitter, Foursquare, and Instagram also implicated for same practice

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