

Security Management in the Internet Era

7th : Personal Information and Security
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Jun Murai
Keio University

Suguru Yamaguchi
Nara Institute of Science and Technology

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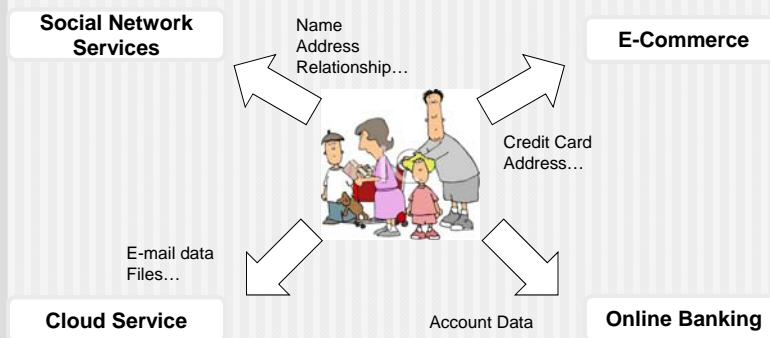
Schedule

- 01st (09/22) Course Description
- 02nd (09/29) Cloud Security (1)
- 03rd (10/06) Cloud Security (2)
- 04th (10/13) Military use of the cyber security technology and its issues
- 05th (10/20) IPv6 Security
- 06th (10/27) Guest Lecture (Joichi Ito)
- 07th (10/27) Personal Information and Security (1)
- 08th (11/10) Personal Information and Security (2)
- 09th (11/17) Disaster Recovery Internet (1)
- 10th (12/01) Disaster Recovery Internet (2)
- 11th (12/08) Midterm Presentation (1)
- 12th (12/15) Midterm Presentation (2)
- 13th (12/22) Evaluation of Security Risk
- 14th (1/12) Final Presentation (1)
- 15th (1/19) Final Presentation (2)

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Security Risks

- We use many services on the Internet.
 - We publish our person information to these services.



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Identities & Personal Information

- General attributions
 - Name, birth date, gender, address, telephone number, health care record, etc.
- Service oriented
 - Email address, query word in the Internet search, purchase history, uploaded photo, geographic location history, etc.



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Getting Personal Information

- Many service providers use personal information for improving their services (CRM).
 - Amazon and other e-commerce companies
 - They use historical purchased data for item recommendation.
 - Google services
 - Gmail uses e-mail data for an advertisement.
- User consents to a service agreement that allows a service provider to gather a personal information.
 - E.g. a behavior on web site, previous purchase data, search history, etc.

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Mobile Devices

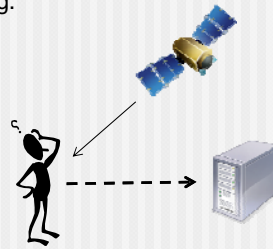
- The new generation of smart phones and phones with wireless connections and access to the Internet present new information security challenges:
 - Smart phone malware
 - Phone phishing
 - Accessing personal information including usernames & passwords were stored in your device while using the Internet
- Smartphone holds a great deal of personal information in a single place, making life very easy for fraudsters.
- Remember it's not 'just a phone'

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Case Study



- Apple Inc.
 - Apple collects a user's geographic information from iPhone
 - In April 2011, a lawsuit has been filed in U.S. federal court targeting Apple over this privacy concern
 - Apple's privacy policy ^[1]
 - Apple uses personal information to improve the products, services, content, and advertising.
- What's a problem?



^[1] <http://www.apple.com/privacy/>

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Risk Becomes Reality

- Burglars are using social networks to rob houses
 - The burglars are taking advantage of location status updates that suggesting people are out of their houses as an “open invitation” to commit their crimes.
 - Real criminal in 2010
 - Location: New Hampshire
 - Tools: Facebook, Twitter, Gowalla, and Foursquare
 - Damage: 50 houses & 100,000\$



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User Behaviors Estimation

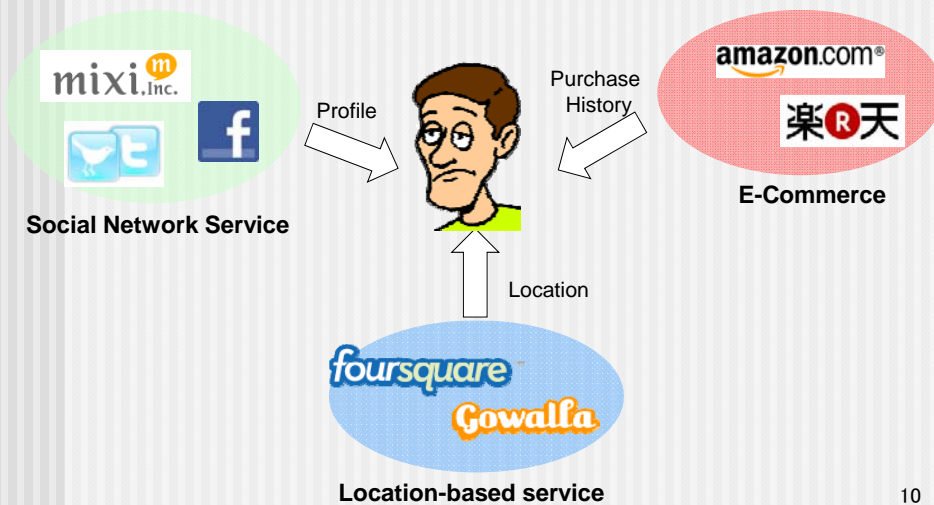
- User behaviors can be estimated from a location-based data
 - Home, work place, private activities, etc.



User behaviors are estimated by using Twitter data

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Personal Information Estimation



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Personal Information Theft

- Social Engineering
 - Just ask!
 - Shoulder surfing, dumpster diving, vishing, etc.
- Cyber attacks
 - More sophisticated techniques
 - Phishing, spyware, viruses, eavesdropping, SQL injection, etc.

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Basic Personal Information Protection on Cyber Space

- Know who you're dealing with online
- Use security software: anti-virus, anti-spyware, firewall
- Update your OS and web browser
- Keep your password secret
- Backup important files
- Use a security lock or PIN number if your phone allows it
- ...

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Issue – Service Provider Side

- Customer information protection
 - They shouldn't leak the customer information to others.
 - Which data are needed by a service?
 - They should collect only necessary information.
- How we can know our data is protected properly by a service provider?

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Issue – User Side

- Realize pros & cons
 - Pros
 - User receives an usability and advanced services.
 - Cons
 - Personal information is collected by a service provider.
 - There is an information leakage risk.

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Discussion

- We have to realize a risk when personal information are published.
 - What's a benefit?
 - What's a risk?
- In the future, most of the services use a personal information.
 - IC-Card, Communication log, Trajectory
- Is the current legal framework for protecting a personal information perfect?

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Reading List for Next Class

- [OECD Guidelines on the Protection of Privacy and Transborder Flows of Personal Data](#)
- [Act on the Protection of Personal Information](#) (Japanese Law)

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