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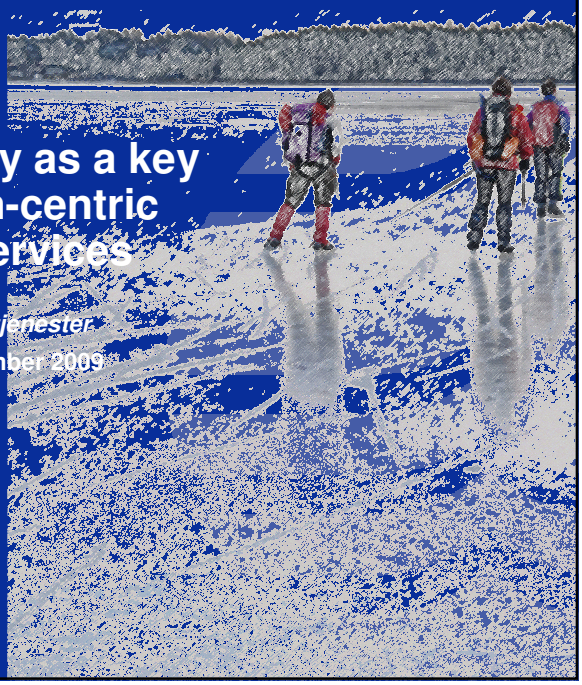
Privacy technology as a key enabler for person-centric Location-based Services

Workshop om LBS og sporingstjenester

Trådløs Framtid, Oslo, 3. September 2009

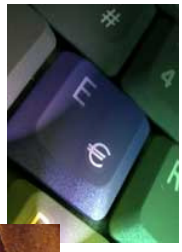


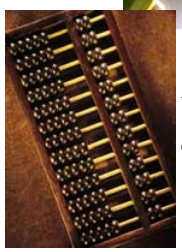
Dr. Lothar Fritsch

Norwegian Computing Center

Facts about Norsk Regnesentral

- Independent foundation for applied research
- Financed by
  - domestic private companies
  - public sector
  - The Research Council of Norway
  - EU
  - international companies
- Established in 1952 as government computing center
- > 58 research scientists
- Turnover 52 MNOK, 7 M EURO





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ICT Research at Norsk Regnesentral

- Security
  - Privacy
  - Digital forensics
  - Risk management
  - Public Key Infrastructure (PKI)
  - Digital Rights Management (DRM)
  - Mandatory Access Control
- eInclusion
  - Universal design
  - Product and services accessible by as many users as possible
- Multimedia multichannel
  - Video/Audio Streaming
  - Multimedia Metadata & Databases
  - Mobility
  - Games
  - Digital TV
  - Multimedia e-learning tools

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LBS motivation

- Location-based services can provide personalized, context-based, interactive and mobile services.
  - Example: Disaster management with notification
  - Example: Mobile dating
  - Example: Personal navigation with context
- Challenges:
  - Large-scale deployment with many partners
  - Data retention – law enforcement - profiling

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Legal and business challenges

In a globalized, mobile

- …inhomog
  Consider p
  retention, t
- …differenc
  acceptable
- … various

These have in
application

TORONTO, May 31, 2008

Canada Launches Facebook Privacy Probe

Social Networking Site Under Investigation After 4 Students Complain Of Privacy Violations

Font size Print Share 1 Comment

PHOTO
Popular social networkign site Facebook is the subject of a Canadian investigation into alleged privacy violations. (AP Photo/L.G. Patterson)

SCITECH PODCAST
Facebook's New Privacy Policy
MoveOn.org's Adam Green talks about what "Beacon" means to you.

STORIES
Social Networks And Profitability

(AP) Canada's federal privacy commissioner has launched an investigation into Facebook after four students complained that the popular Web site violates Canadian law by disclosing personal information to advertisers without proper consent.

The University of Ottawa law students, some of whom are dedicated Facebook users, allege in a complaint lodged Friday that the social networking Web site has committed 22 violations of the law.

"There's definitely some significant shortcomings with Facebook's privacy settings and with their ability to protect users," said Harley Finkelstein, 24, one of the students behind the complaint.

Facebook has refuted the claims, saying that the complaint ignores key elements of the company's policy.

"We've reviewed the complaint and found it has serious factual errors - most notably its neglect of the fact that almost all Facebook data is willingly shared by users," Facebook chief privacy officer Chris Kelly said Friday in an e-mail.

Kelly said Facebook has worked with Ontario's information and privacy commissioner to create a brochure and video that will educate users about the site's privacy controls.

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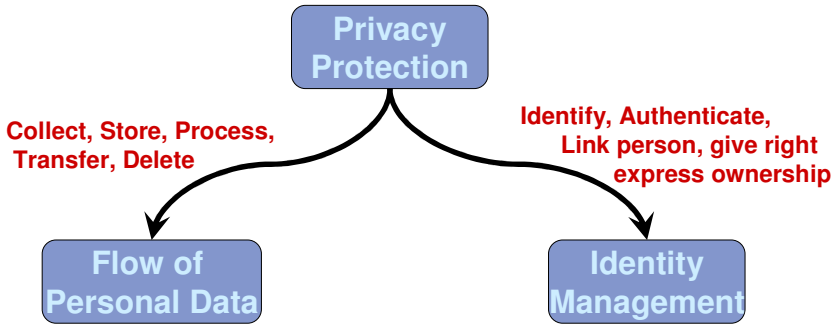
Trust: Privacy Protection in IT



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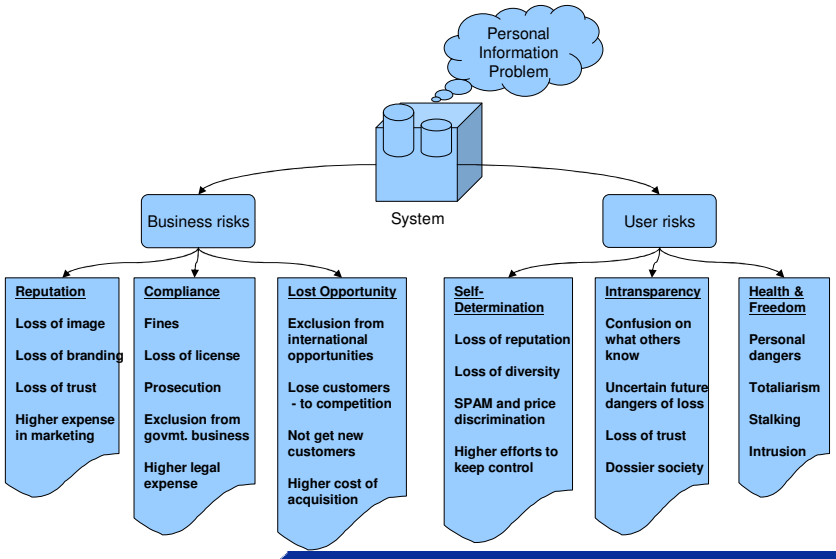
Duality of Privacy Risks



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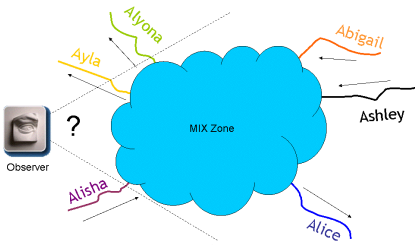
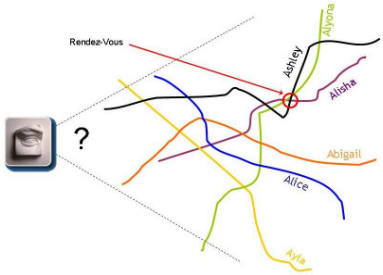
Fritsch, Lothar; Abie, Habtamu: A Road Map to Privacy Management, Oslo, Norway, 2007

Approaches: Options

- Implementation using Privacy-enhancing Technology (PET) and privacy-enhancing identity management (IDM)
- Definition of access control policies & enforcement
- Location Mixing





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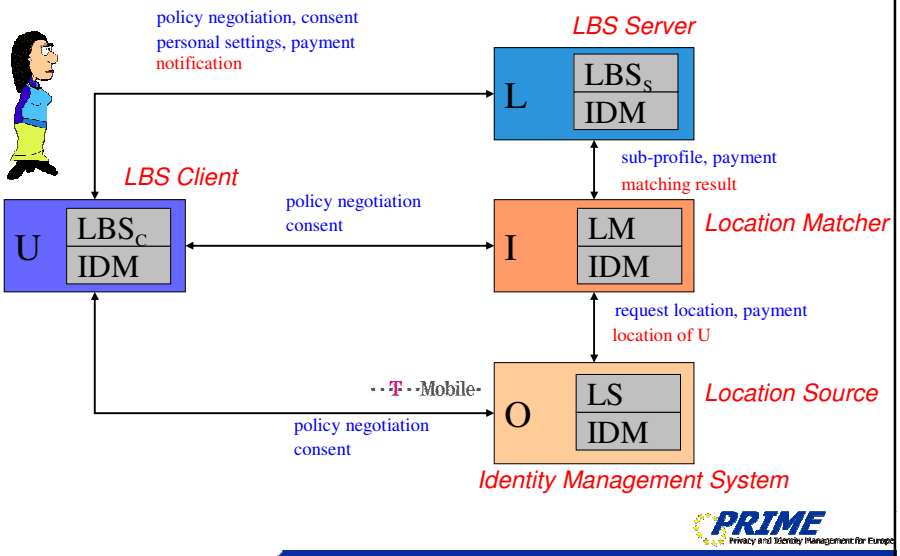
Fritsch, Lothar (2008) **Profiling and Location-Based Services**, in: M. Hildebrandt und S. Gutwirth (Eds.): *Profiling the European Citizen - Cross-Disciplinary Perspectives*, April 2008, Dordrecht, Springer Netherlands, pp. 147-160

Approaches: T-Mobile prototype



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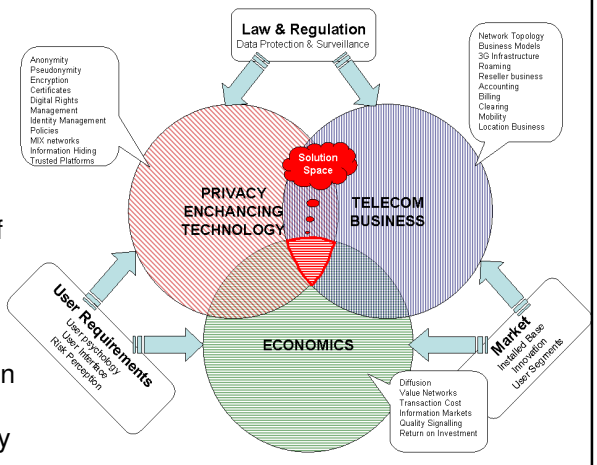
(Jan Camenisch, Lothar Fritsch, Markulf Kohlweiss, Mike Radmacher, and Dieter Sommer: LBS Application Prototype, "Requirements and Concepts", PRIME internal presentation, 2005)

Conclusion

- Privacy support is an important feature in the application design phase. Designing privacy support is a non-tirval, interdisciplinary task.
- There is a large number of methods and research results to be used.
- A mobile communications operator is in a key position to extend its business into that of an identity & privacy provider.



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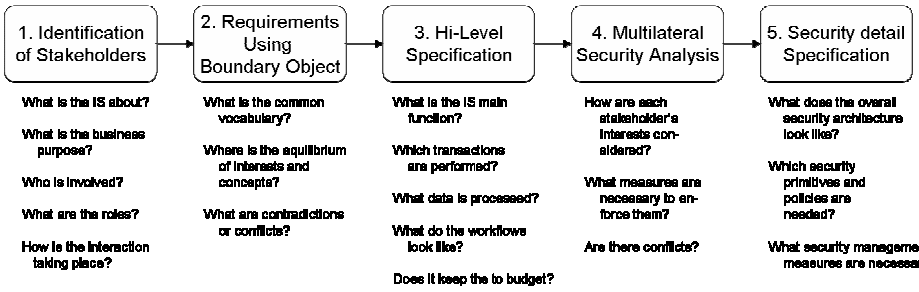
Process for requirements & multilateral security analysis



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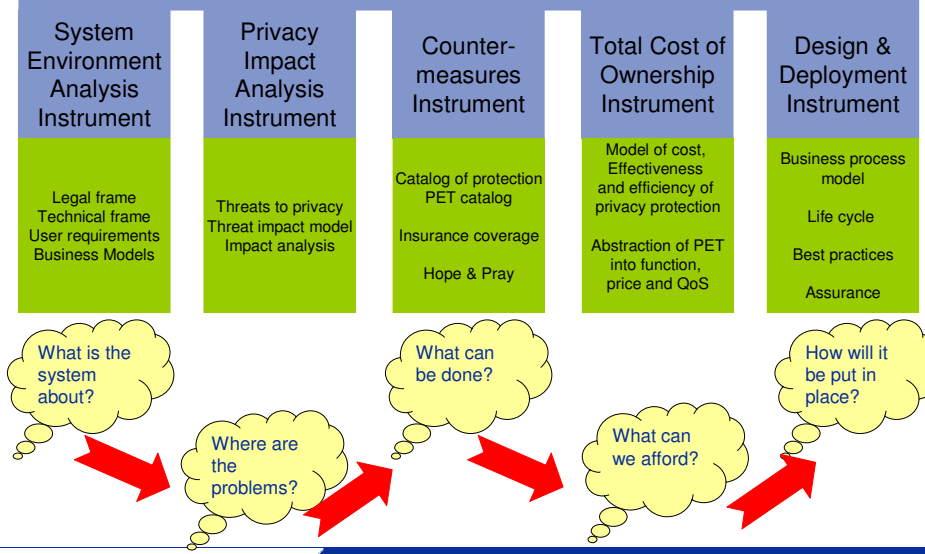
Privacy Investment Decision Instruments



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What can Norsk Regnesentral provide?

- Scientific research & consulting in security and privacy concepts
- Evaluation of security systems, properties & privacy impact
- Preparation of certification or audit
- Industry- or publicly funded research
- Open or confidential cooperation

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Questions?

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