

IFIP FIDIS Summer School 2007:

Online Social Networks and the Need for New Privacy Research in ICT

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Personal Information

- Born 1965 in Idstein, Germany
- BBA/MBA University studies in USA
(The George Washington University)

Profession

- Citigroup, Management Positions, 1993-2000
- Internet Consulting & Security Companies
(World of Internet, Defcom Security, @stake), 2000-2003
- Deloitte, Security & Privacy Services, 2003-present



PhD Research & Privacy Work

- Security & Privacy Aspects in the Web with a focus on Social Networking Applications
- Project Editor in the ISO for two new privacy standards

Goals and Objectives of this Paper

- Sharing some insights on privacy problems with social networking sites and communities online
- Discussing with you some existing technical solutions that may address part of the privacy issues I am researching (what's your experience?)
- Getting your general feedback and recommendations
- Winning you for participation in my research surveys (please provide your Email address to stefan.weiss@m-lehrstuhl.de)

Web 2.0 and Privacy

Economic Importance of Social Networking Applications

Privacy Risks when using Social Networking Applications

Traditional vs. New Privacy Approaches

Privacy Research for Web 2.0

Conclusion

“Web 2.0 is a set of economic, social, and technology trends that collectively form the basis for the next generation of the Internet - a more mature, distinctive medium characterized by user participation, openness, and network effects.”

John Musser, Tim O'Reilly
Web 2.0 - Principles and Best Practices

November, 2006

Examples for Web 2.0 Applications

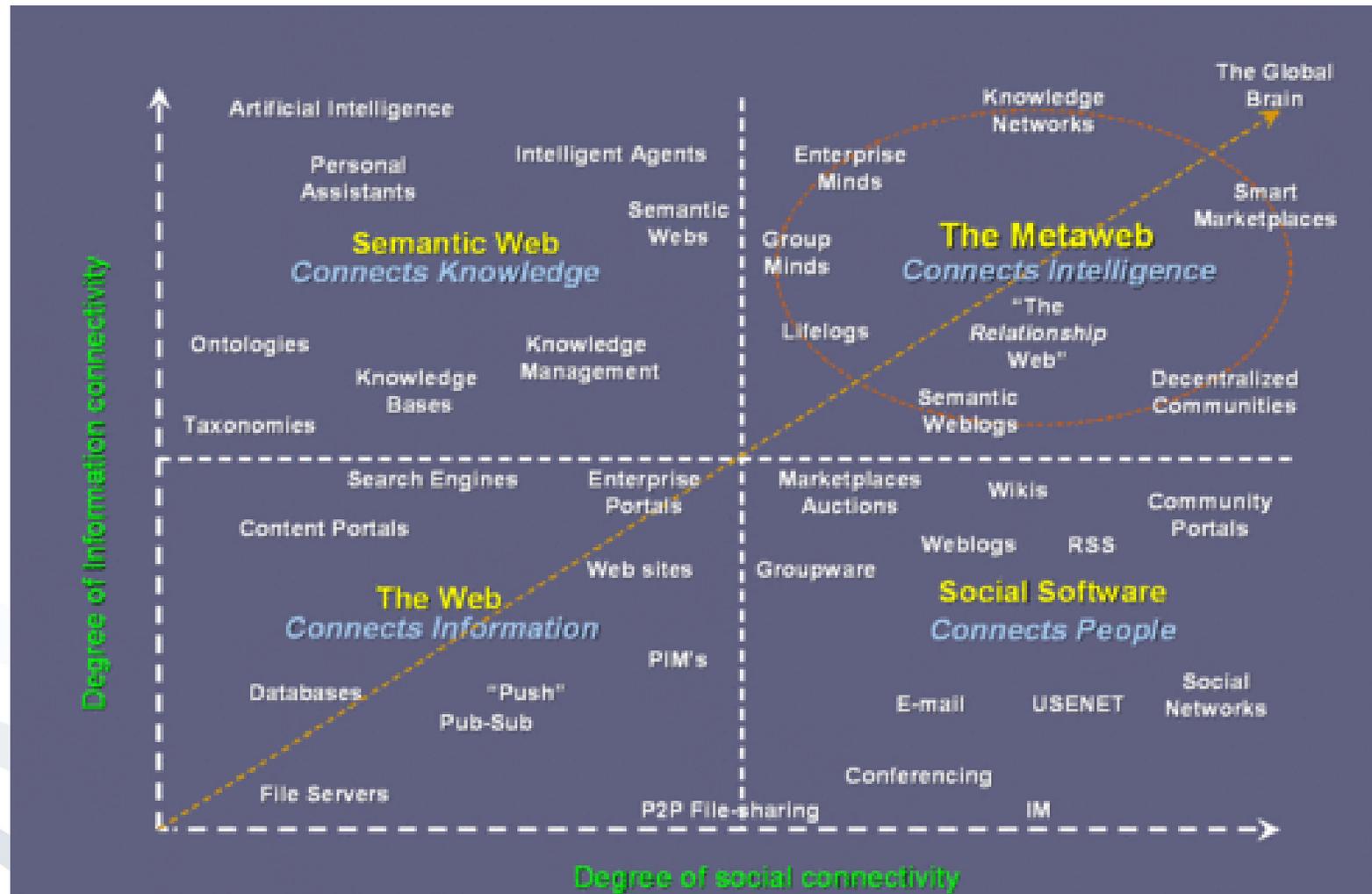
- Social Networking, Communities
- Blogging
- Wiki
- Multimedia
- News creation and broadcasting
- Social bookmarking, Portals
- Profiling
- Searching, digging and rating
- Co-development/-design
- ...

➤ User-generated content

Examples for Social Networking Sites

Category	Examples
Business	LinkedIn Monster XING
Personal	MySpace Orkut Hi5 Classmates Bebo
Publication	YouTube Xanga Broadcaster Last.fm LiveJournal
Special Interests	BlackPlanet Cyworld Mixi WAYN Care2
Individual	SecondLife Gaia Online

And Web 3.0 is already talked about



Spivack, Nova, „Web 3.0 - Next Step for Web?“, Nova Spivack's Weblog, <http://novaspivack.typepad.com>, July 3, 2007

- Which characteristics influence privacy in Web 2.0 applications?



The Principles of Wikinomics¹

- Openness
- Peering
- Sharing
- Acting globally

¹ Tapscott, Don, Wikinomics – How Mass Collaboration Changes Everything, December 2006.

The Principles of Wikinomics ... extended

Principle	Enterprise Mechanism	Privacy Approach
Openness	Transparency	Accountability of data use
Peering	Marketocracy	Privacy self-control
Sharing	Collaboration	Personal data “property” rights
Acting globally	Multinational	Non-legal rules and policies (Standardization, Codes of conduct, etc.)

The Principles of Wikinomics ... extended further

Principle	User Experience	Privacy Questions
Openness	“I have nothing to hide”	How will privacy be defined? Why would I care?
Peering	Group dynamics	Are individual decisions taken? (following others)
Sharing	Goes both ways	Who owns and uses my data for which purpose?
Acting globally	No boundaries	Who is responsible? Which guidelines to go by?

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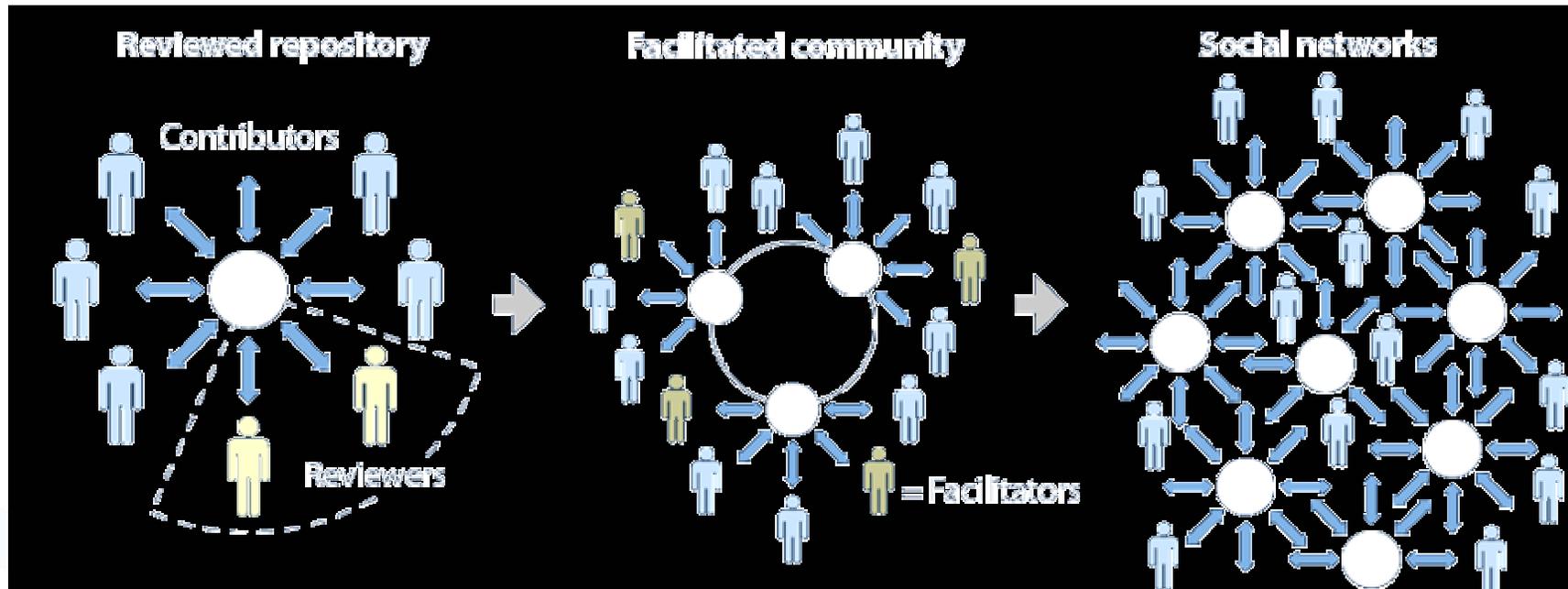
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Social Networking Applications

New group dynamics*



* Source: Forrester Research
"Social Computing Upends Past Knowledge Management Archetypes" Report, March 8, 2007

Social Networking Site Users - An Attractive Audience

FORRESTER®

Adult social networking site user demographics and psychographics

	Adult social networking site users	Site usage daily or more	Interest in marketer profiles
Mean age in years	37	32	33
Male	52.9%	52.8%	53.3%
Average household income	\$63,390	\$61,688	\$63,595
Percent college degree or higher	33%	28%	27%
Percent Gen X (27-40)	43%	45%	49%
Percent read blogs weekly or more	34%	50%	50%
Percent publish own blog weekly or more	21%	39%	35%
Average number of social network sites used weekly or more	0.79	1.38	1.26
"I am a natural leader — people always listen to my opinion"*	33%	32%	49%
"I often tell my friends about products that interest me"*	50%	47%	61%
"I like to show off my taste and style"*	14%	18%	27%

Base: US adult online social network users

*Percentage of respondents who agree with this statement

Source: Forrester's North American Consumer Technology Adoption Study Q3 2006
Media & Marketing Online Survey

FORRESTER

Youth social network site user demographics and psychographics

	Youth social networking site users	Site usage daily or more	Interest in marketer profiles
Mean age in years	18	18	18
Male	46%	43%	45%
Average household income	\$62,523	\$64,065	\$63,296
Percent read blogs weekly or more	51%	60%	60%
Percent publish own blog weekly or more	43%	53%	52%
Average number of social network sites used weekly or more	1.25	1.53	1.51
"I like to show off my taste and style"*	36%	38%	45%
"I am a natural leader — people always listen to my opinion"*	48%	50%	60%
"I often tell my friends about products that interest me"*	67%	69%	77%
"I find I spend more time giving advice to friends than getting advice from them"*	46%	50%	57%

Base: US youth social networking site users between the ages 12 and 21

*Percentage of respondents who agree with this statement

Source: Forrester's North American Consumer Technology Adoption Study Q4 2006
Youth Media & Marketing And Finance Online Survey



Attractive Users Have Attractive Personal Data

- Personalization, Egocasting
- Influencers (product recommendations)
- Monetary value of collected personal data



Issues that ICT developers and researchers need to respond to

- User-generated content is hard to control
- Valuable personal data is everywhere
- Web technology has lots of security vulnerabilities
- Personal data is at the core of the business model of social networks and, thus, informational privacy should get more attention
- Risks for the misuse of personal data are rising

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Traditional social factors for privacy control²

- Unwanted intrusion of one's time, space and person
- Protection from discrimination
- Avoid "type casting"
- Necessity for "whistle-blowing"
- Strategic economic interests
(i.e. auctions)

² Marx, Gary T., What's in a Name? Some Reflections on the Sociology of Anonymity Title, Massachusetts Institute of Technology, 1999.

Informational Privacy

What is Personal Information?

Typical data considered to be personal information:

- Name, Address, Date of Birth
- Government Identifiers
- Health information
- Financial information
- Sensitive information
- etc.

Add Personal Information from Social Networking Sites

Social Networking Applications capture additional information that can be considered personal:

- Group affiliations
- Personal affiliations
- User behaviour
- Comments and Opinions
- Likes and Dislikes
- Graphical Material
- etc.

New Privacy Risks Emerge Online

Category	Examples	Privacy Risks
Business	LinkedIn Monster XING	Blackmail, Breach of Confidentiality, Data Reuse/Secondary Use, Discrimination, Aggregation (i.e. Pre-Screening for Recruiting, Harvard Business Case on Mimi Brewster)
Personal	MySpace Orkut Hi5 Classmates Bebo	Intrusion, Breach of Confidentiality, Data Reuse/Secondary Use, Aggregation, Identity theft, Abuse by Cyberbullies or Predators, Badmouthing, Pedophilia
Publication	YouTube Xanga Broadcaster Last.fm LiveJournal	Unwanted Exposure, Distortion, Data reuse/Secondary Use, Abuse by Cyberbullies or Predators, Video-bullying, Objectionable material, Pedophilia, Child pornography
Special Interests	BlackPlanet Cyworld Mixi WAYN Care2	Discrimination, Data reuse/Secondary Use, Aggregation, Intrusion, Exposure, Breach of Confidentiality
Individual	SecondLife Gaia Online	Exposure, Appropriation, Identity theft, Breach of Confidentiality, Insults, Cyberbullying

Privacy problems change

Without

- Control,
- Consent, and
- Context

it will be difficult to prevent

- misuse
- inaccuracy
- poor data quality
- discrimination
- wrongful profiling
- damage to ones reputation
- ...

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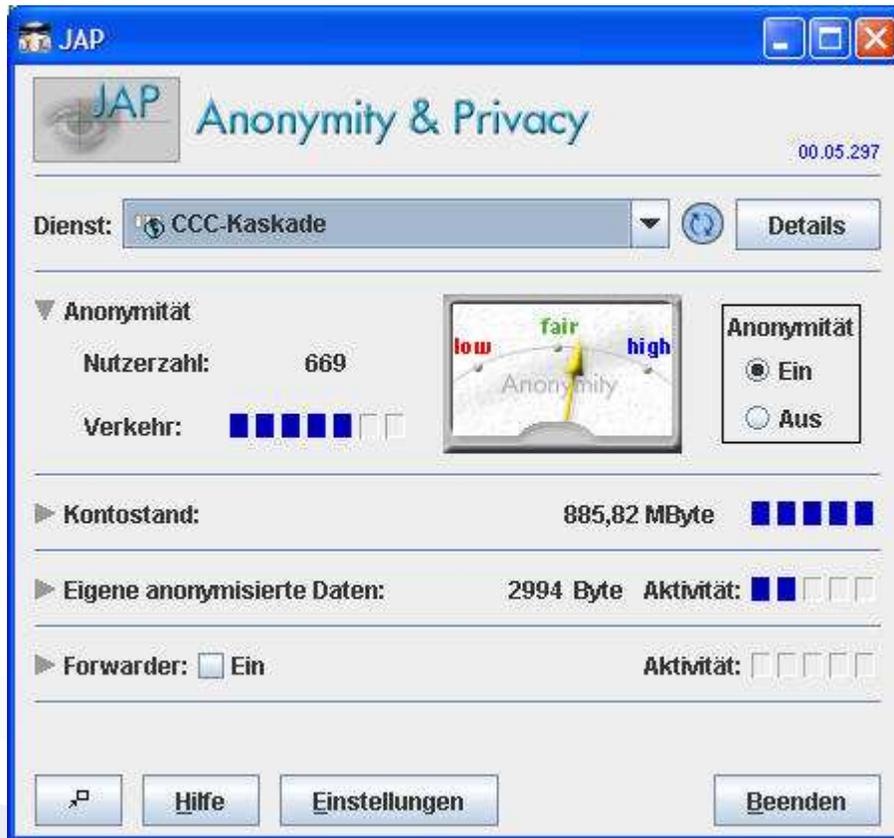
Traditional Privacy Approach

Focus on Access Authorization

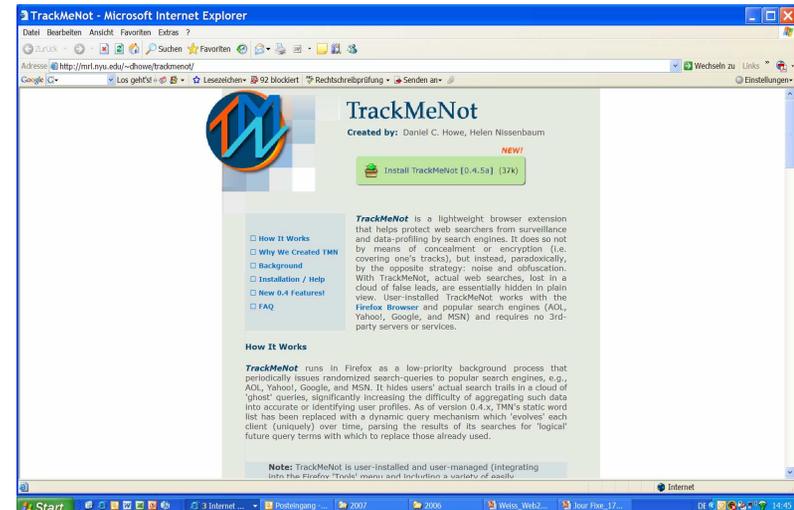
- Information hiding
- Access control
- Limiting the collection of data



Examples for Privacy-Enhancing Technology



Source: <http://anon.inf.tu-dresden.de>

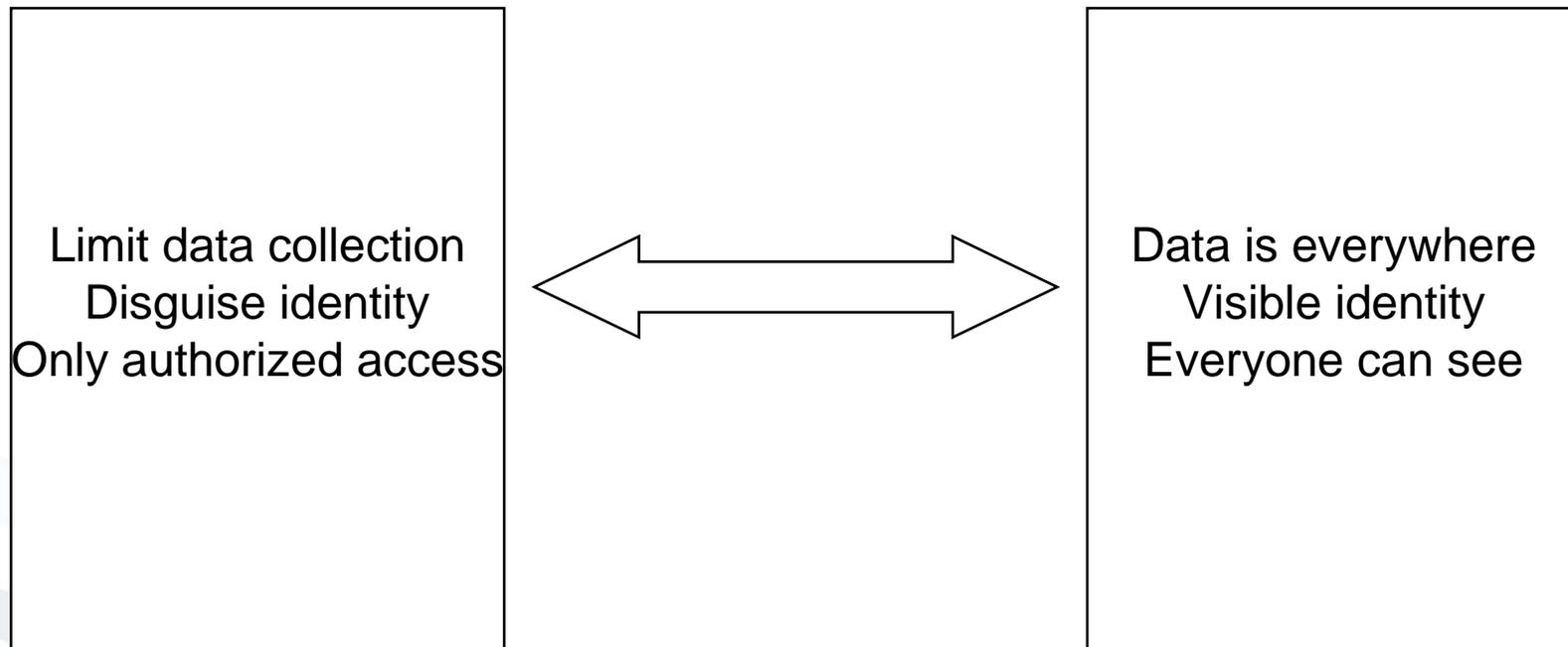


Source: <http://mrl.nyu.edu/~dhowe/trackmenot/>

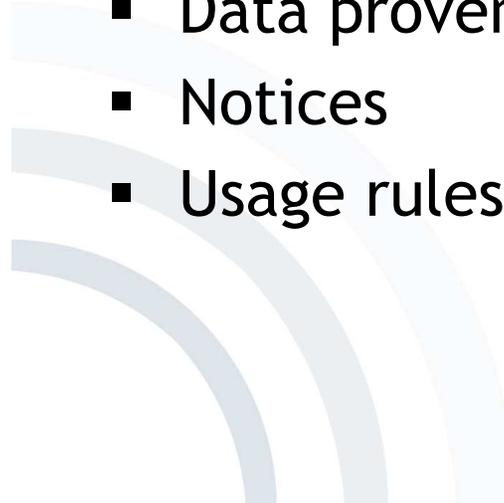


Source: <http://www.foebud.de/>

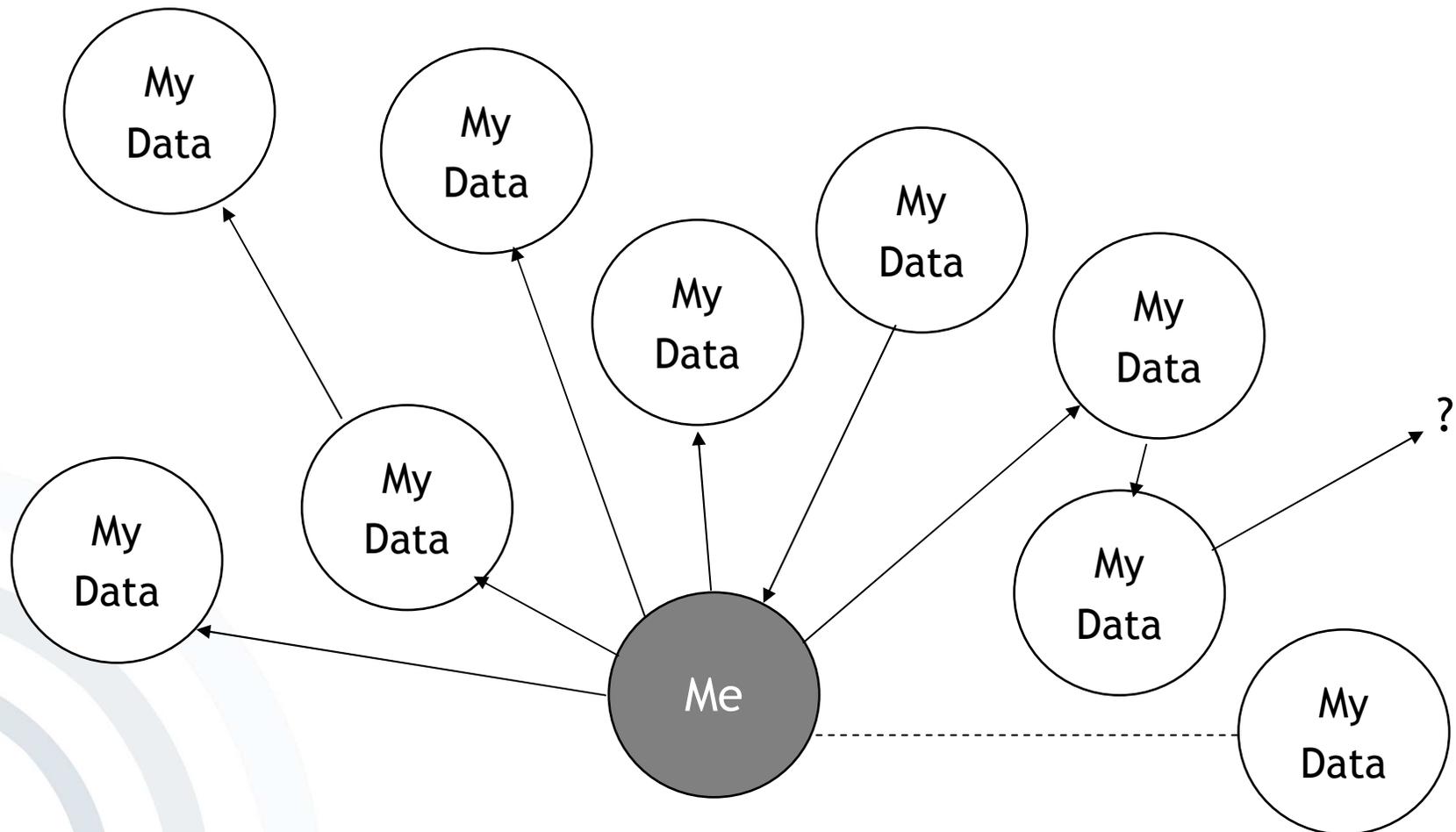
Contradictions when Using Social Networking Sites



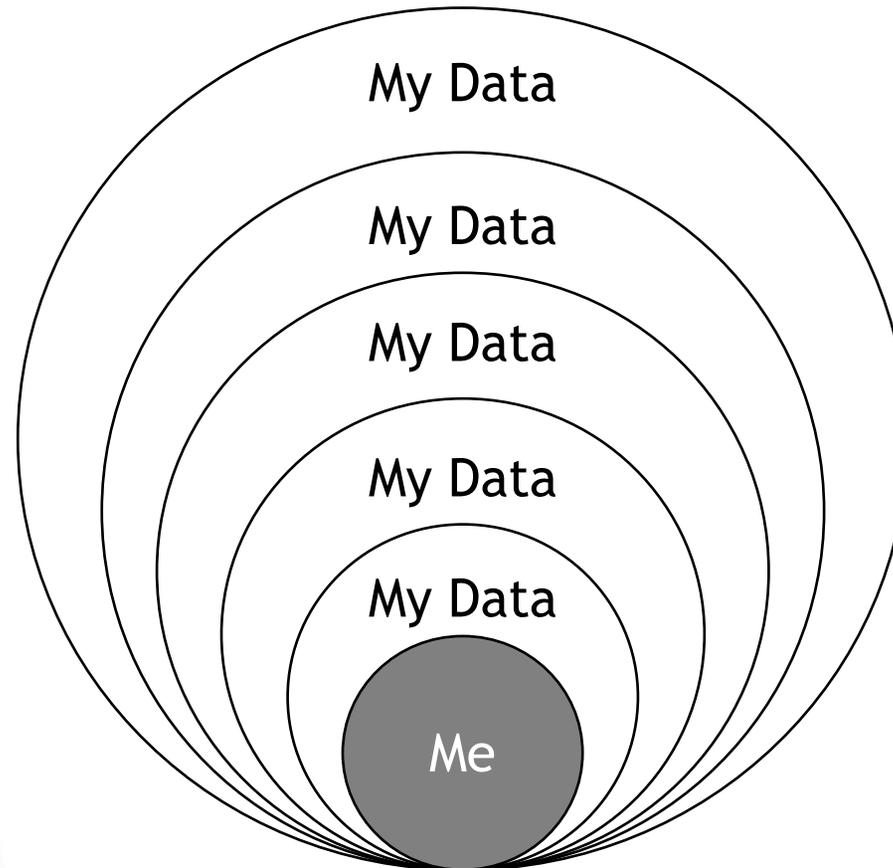
Focus on Transparency and Accountability

- User Participation (Self-control)
 - Providing Choices
 - Consent
 - Context
 - Accountability
 - Data provenance
 - Notices
 - Usage rules
- 

Increasing Complexity for Privacy in Social Networking



A solution needs to put the control into the user's hands



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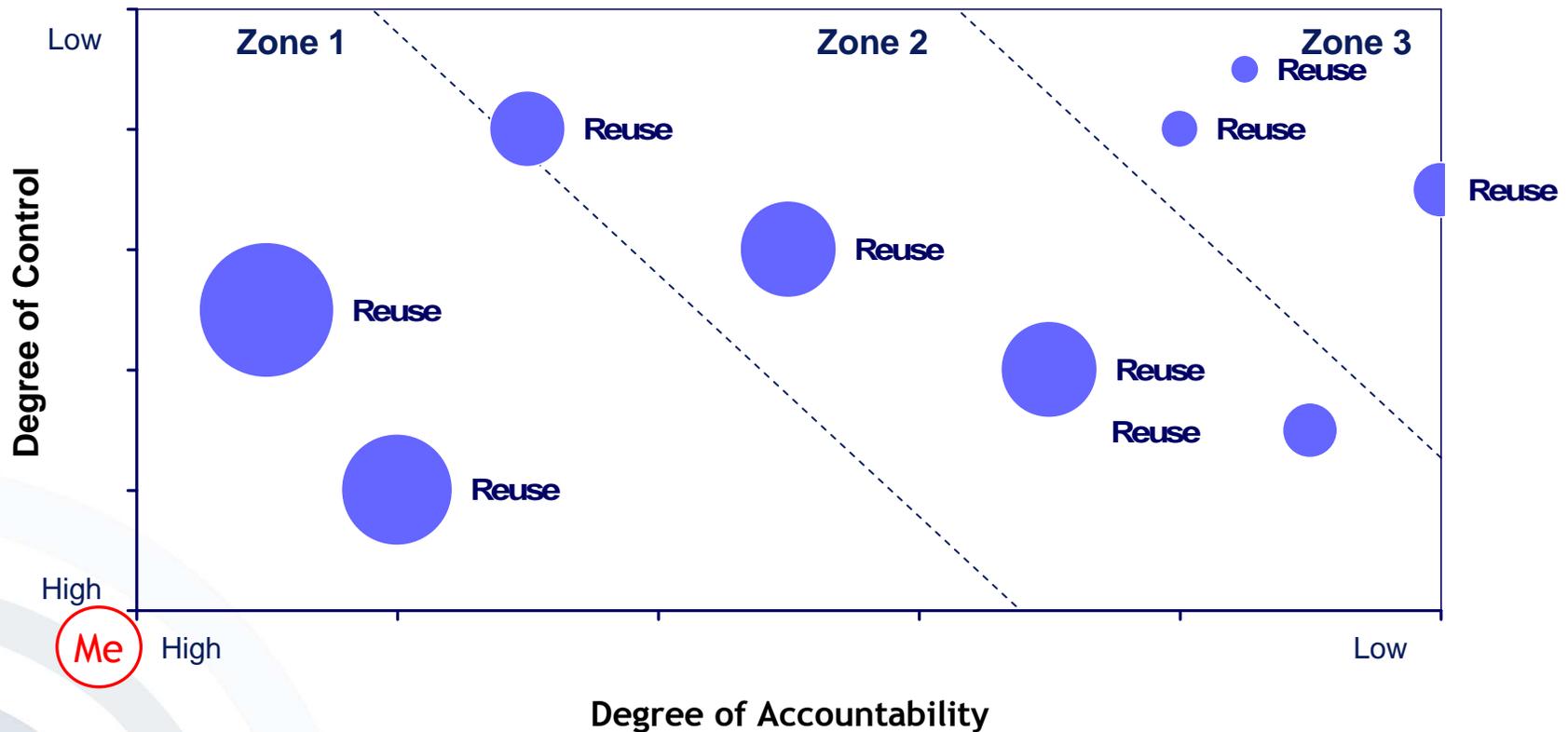
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Privacy Research that needs to be extended to cover Web 2.0

- User control model (Trusted Computing)
- Knowing data provenance (Watermarking)
- Adding context like usage purpose to personal data (Semantic Web Technology)
- Privacy Rights Management (DRM concept)
- Privacy Policy Management (Sticky policies)
- Privacy Assurance Methods (Audit trails or “FireFighter” tool concept)
- ...
- How to deal with the “I don’t care” attitude?

How to determine and evaluate the “CARE” factors?



*Control, Accountability and Reuse


 Data Sensitivity

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- New communication methods will increasingly involve social networking or community applications. With that in mind, our social behaviour, the way we will look at our identity, and ultimately, the way we will deal with our informational privacy online will change.
- Traditional privacy approaches need to be reassessed and adjusted to these developments.
- Technical solutions should be able to automate some supporting functionalities to enhance informational privacy but cannot alone address the complexity of privacy management on the Internet in its entirety (HCI, social sciences and legal disciplines are also required).

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