

Privacy vs. Data: Business Models in the digital, mobile Economy

Lecture 1 Introduction & Course Organisation

SS 2015

Dr. Andreas Albers



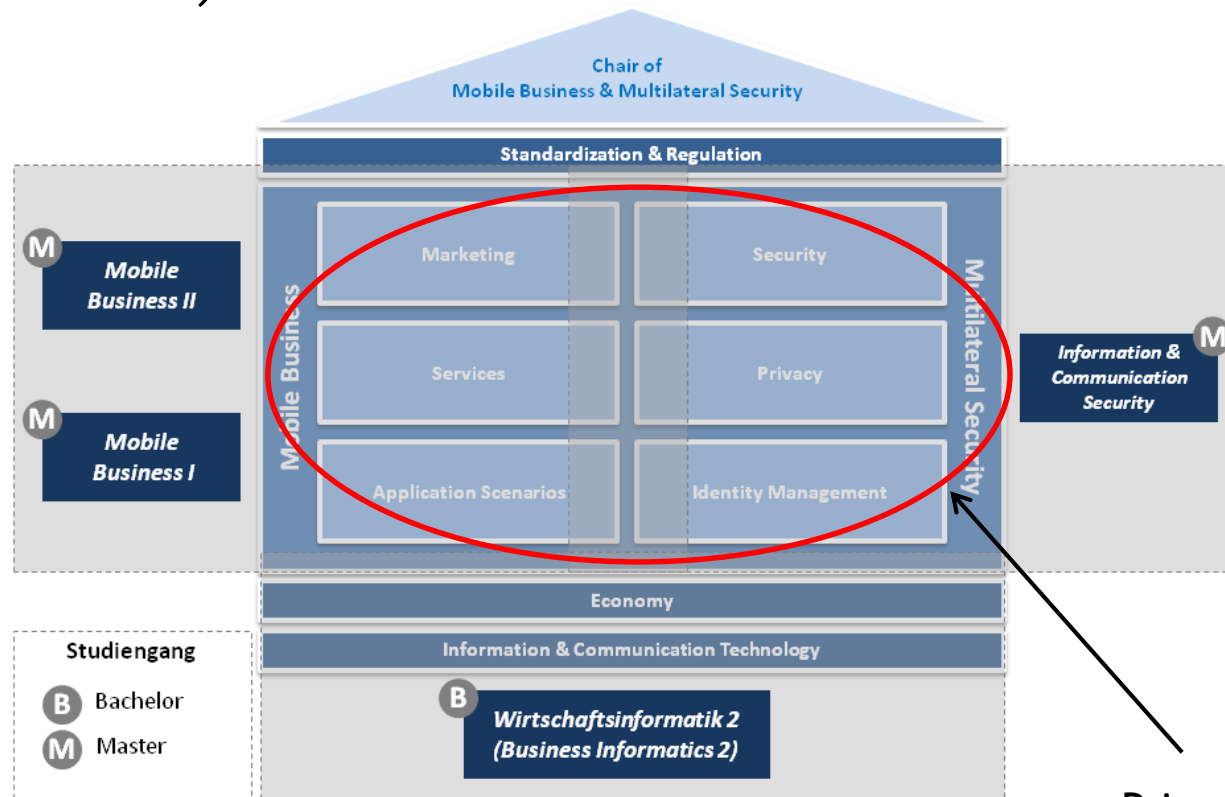
- Introduction of the Chair
- Course Organisation
- Introduction to (Mobile) Digital Economy
- Scope and Outline of the Course



Department “Business Informatics” @ Goethe University Frankfurt

E-Finance Prof. Dr. Peter Gomber		Information Systems Engineering Prof. Dr. Roland Holten
	Business Informatics Junior Prof. Dr. Lukas Wiewiorra	
Information Systems & Information Management Prof. Dr. Wolfgang König		Mobile Business & Multilateral Security Prof. Dr. Kai Rannenberg

Chair of Business Administration, especially Business Informatics, Mobile Business and Multilateral Security



Privacy vs. Data
Lecture

Chair of Business Administration, especially Business Informatics, Mobile Business and Multilateral Security

Deutsche Telekom Chair of Mobile Business & Multilateral Security

Grüneburgplatz 1
Campus Westend
RuW, 2nd Floor

Phone: +49 69 798 34701
Fax: +49 69 798 35004
eMail: info@m-chair.de

www.m-chair.de



Vita of Kai Rannenberg

Einbeck, Göttingen, Eystrup, Wolfsburg, ...
TU Berlin (Dipl.-Inform.)
Uni Freiburg (Dr. rer. pol.)

Dissertation on “**Kriterien und Zertifizierung mehrseitiger IT-Sicherheit**“
Standardization at ISO/IEC JTC 1/SC 27 and DIN NI-27

Kolleg “**Sicherheit in der Kommunikationstechnik**“
Gottlieb Daimler- and Karl Benz-Foundation

Multilateral Security:
“Empowering Users, Enabling Applications“, 1993 - 1999

Recent History
1999-09 till 2002-08
Microsoft Research Cambridge UK
www.research.microsoft.com
Responsible for “Personal Security Devices and Privacy Technologies“

2001-10 Call for this chair
2001-12 till 2002-07 Stand-in for the chair

Since 2002-07 Professor



- Dissertation on
“Commercialisation of Context-sensitive Mobile Attention in Mobile Media Markets”
- Assistant Professor at the Chair from 2010-2013
- Since 2013
 - Product Manager at Telekom DBU Cloud Services
 - External Lecturer & Fellow Researcher at M-Chair
- Lecture Focus & Research Interests
 - (Two-sided) Business Models in the Digital Economy
 - Identity Management in the Digital World
 - Privacy in the age of omnipresent media and abundance of data
 - Privacy as Competitive Edge



fre^e
ZONES
Enjoy free mobile services

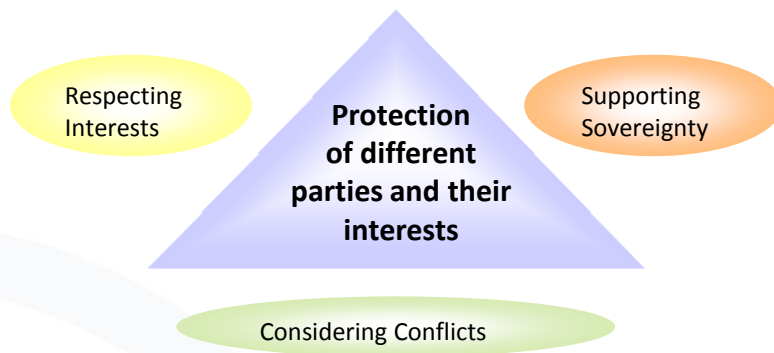


Premium*

Premium|Services

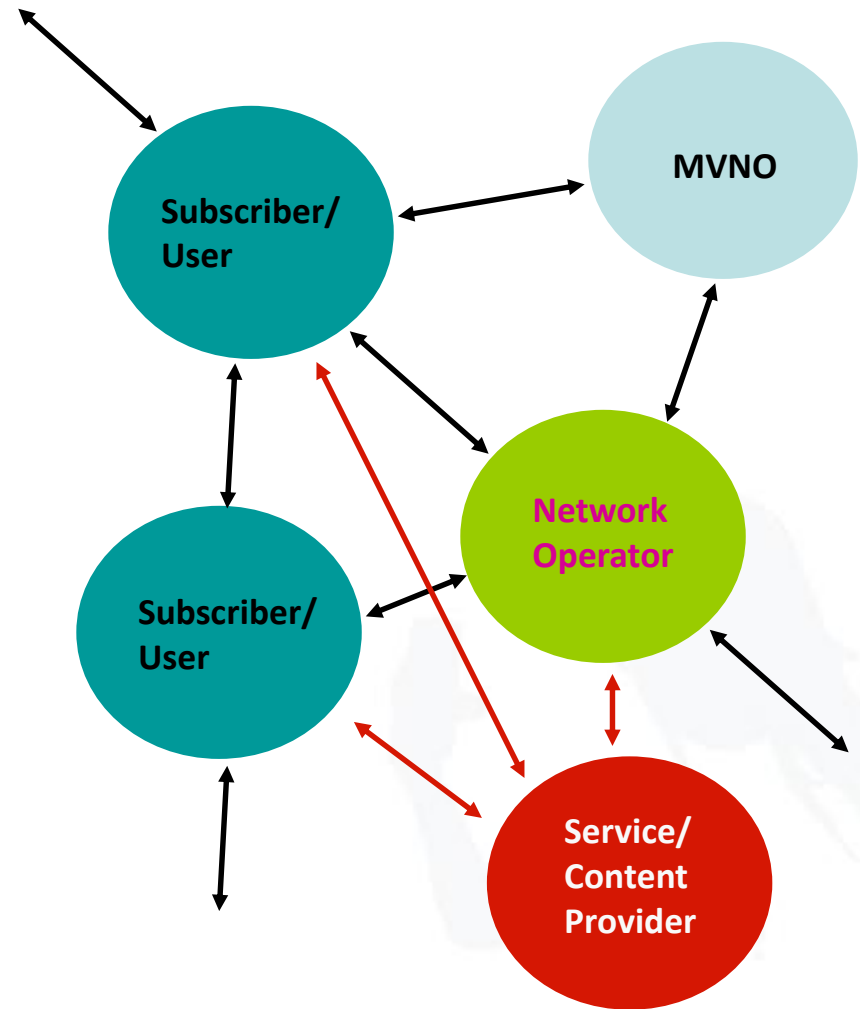
Different Parties
with different Interests

- Customers/Merchants
- Communication partners
- Citizens/Administration

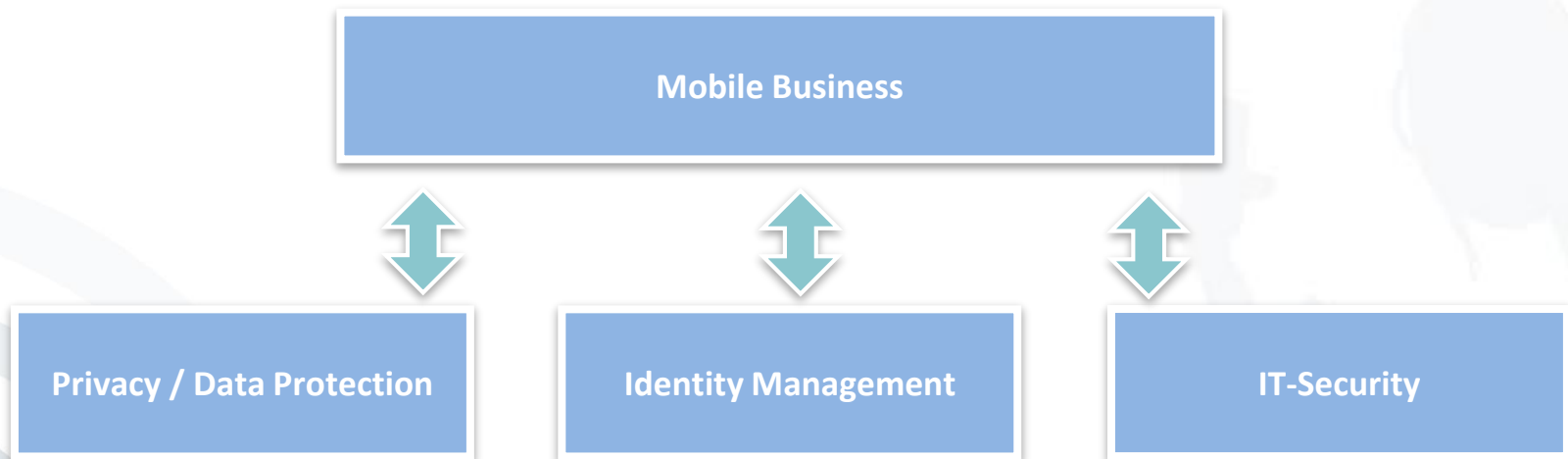


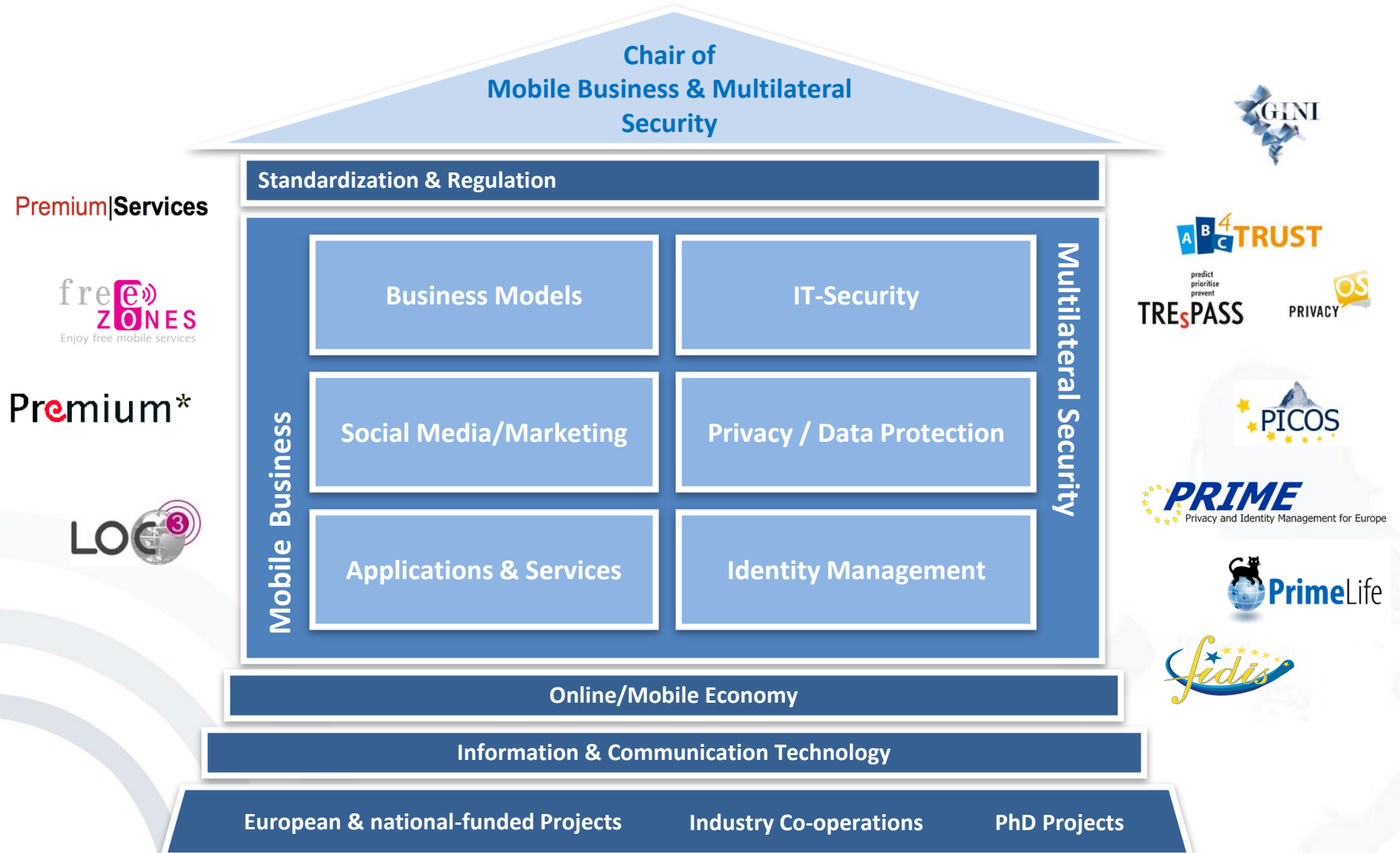
... in a world of consortia

- more partners
- more complex relations

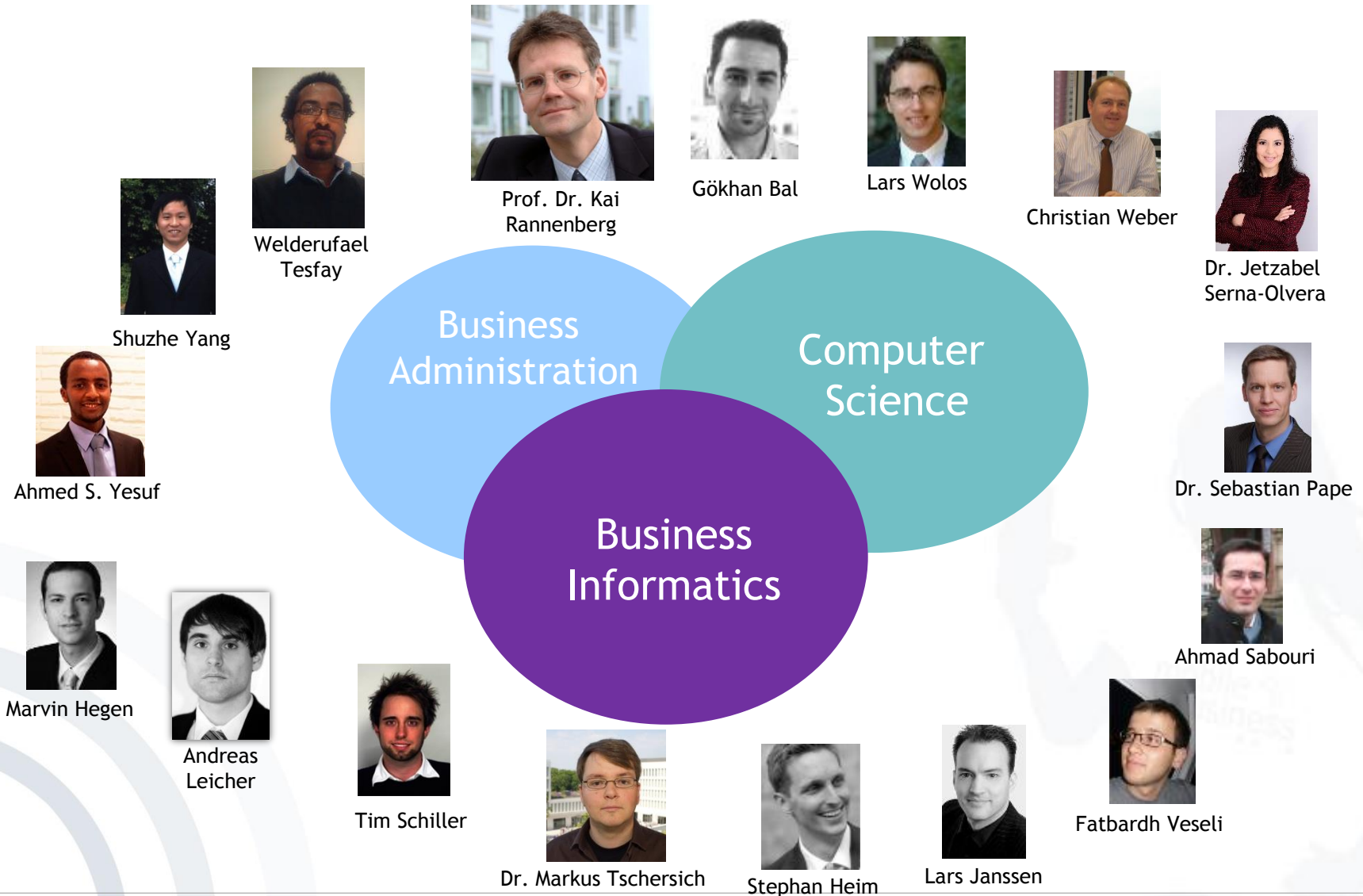


Advancing *Mobile Business* while enabling Individuals to be in control of their Personal Data by providing *Identity Management*, *Privacy Protection* and *IT-Security* within the Digital Economy





Multi-Disciplinary Competencies of M-Chair





Architecture enabling
Privacy-friendly Attribute-
based Credentials



Industry Co-operation on
Fraud risks in Online
Services

predict
prioritise
prevent

TREsPASS

Industry Co-operation on
Fraud risks in Online
Services



Localisation
Infrastructure
incorporating and
managing COO,
LBS, and Wi-Fi
Location data



Pricing Mechanisms for
Context-sensitive Mobile
Consumer Contacts offered
to Mobile Advertisers



Means for Providing
Privacy throughout
Life



Personal Identity
Management
Environment for
Individuals



Industry Co-operation
on Identity Enabler
Services

Premium*

Context-sensitive Mobile
Advertising Models for
Mobile Portals

Premium|Services



Enabling Privacy-
friendly Location-
based Services



Develop a deeper
understanding of how
appropriate identification
and Identity management
can be enabled

Infrastructure



(Mobile) Social Media
Concepts for Enterprises

Marketing/
Social Media



Privacy Concept for Mobile
Social Communities

Privacy

IT-Security

Identity
Management



Introduction
of Social
Enterprise
Networks



Mobile
Marketing
(Extended
Packaging)



Revocation for
Attribute-based
Credential
Applications



Application of
Attribute-based
Credentials



Information
Transparency on
Mobile Phones



Security
Research



Security Research



Multilateral
Security, Privacy,
and Identity
Management in
Infrastructures, IT
Security Evaluation
& Standardisation



Mobile
Gaming
Concepts



Smart-Home
Business
Models



Impacts of Privacy-
by-Default in
Social Networks



Context-sensitive
Online Reputation
Management



Fraud
Prevention
for Telco
Services



Security in Cloud
Environments



Security Research



Security
Research



SIM card based
OpenID
authentication

Marketing
Social Media, Business
Models

Privacy

Identity
Management

IT-Security

Overarching
Topics

M-Teaching in Frankfurt

Teaching Topics

Identity Management

Privacy

Information Security

Mobile Business

Business Informatics

Master Courses

Lectures

Mobile Business 1

Mobile Business 2

Information Security

Privacy vs. Data

Master Thesis

Seminars

Bachelor Courses

Lectures

Business Informatics 2

Bachelor Thesis

Seminars



- Introduction of the Chair
- Course Organisation
- Scope and Outline of the Course
- Introduction to (Mobile) Digital Economy



Dr. Andreas Albers

External Lecturer at
Chair of Mobile Business & Multilateral Security
Goethe-University Frankfurt am Main

E-Mail: andreas.albers@m-chair.de

WWW: <http://m-chair.de/index.php/staff/externals/16>



Consultation hours on appointment

Secretary:

Elvira Koch

E-Mail: elvira.koch@m-chair.de

WWW: <http://m-chair.de/index.php/staff/2>

Office Hours:

Mon.- Fri. 10am - 2pm



- **Course Slides**
 - Slides of the course can be downloaded from the website of the Chair at www.m-chair.de
- **Online News**
 - News about the course (e.g. room changes, announcements, etc.)
 - Available via website of Chair
- **Twitter Updates**
 - Additional urgent, short notice information
 - Follow [@mchair](https://twitter.com/mchair)

www.m-chair.de | [Twitter](#) | [Imprint](#) | [Sitemap](#)






Chair of Mobile Business & Multilateral Security

Home

News

Team

Teaching

Chair

Research

Links

Contact

■ **Privacy vs. Data: Business Models in the digital, mobile Economy**

■ **Basic Information**

Type of Lecture:	Lecture
Course:	Master
Hours/Week:	2
Credit Points:	6
Language:	German
Term:	Summer 2015
Lecturers:	<ul style="list-style-type: none"> ■ Dr. Andreas Albers ■ Shuzhe Yang M.Sc.
Email:	andreas.albers@m-chair.de

Latest News

- 2. INKO Klausureinsicht (2nd Exam review)
- INKO Klausureinsicht (Room for Exam review)
- INKO Klausureinsicht (Exam review)
- Successful Summit of ABC4Trust
- Information & Communication Security: Next lecture will regularly take place on January 21

● **Content of the Course**

Description:

The majority of business models in the digital, mobile economy heavily rely on the existence of user data in order to enable a value proposition for users. For instance, advertisers use data for the targeting of advertisements whereas others apply it for the personalisation of their service offerings. However, what is beneficial for businesses often becomes of a threat to the privacy of users – especially if highly sensitive data, such as location data, is collected and processed without their consent. Within the digital, mobile economy field and beyond, this course is going to explore the area of conflict between data-centric online/mobile business models and user privacy. Thereby, the following topics will be covered:

- Means of data collection and its threat to privacy
- Privacy and Data Protection
- Basics of Information Security
- Interplay between data and privacy within digital business models
- ...

Quick Links

- Courses
- Theses
- FAQ (Teaching)
- Job Offers
- How to find us

mchair @ twitter

twitter: [@mchair](https://twitter.com/mchair)



- Exercises
 - Working on exercises in groups (45 - 60 min)
 - Presentation and discussion of exercise results (30 - 45 min)
 - Addressing of open questions from lectures
 - Preparation for final written exam



Written Final Exam



- Duration: 90 minutes
- 6 Credit points
- Date of written exam on examination office's website
- All lecture and exercise content is relevant unless it is explicitly excluded
- Registered course participants are IN ADDITION required to sign up for the course's written exam at the Chair of Mobile Business & Multilateral Security in room RuW 2.257
 - There will be no written exam sign up via LSF!
 - The registration period starts on 11.05.15 and ends on 29.05.15
 - Deregistration is also possible until 29.05.14

- Interest ...
 - ... in new technologies
 - ... in new business models for the digital economy
 - ... in protecting your privacy while still taking advantage of the digital era offerings
- Other taken Business Informatics lectures are helpful but not mandatory



Course Dates/Times and Places



- Mon, 20.04.15, 9 am - 12:30 am (Room 2.202, RuW building)
- Mon, 20.04.15, 1 pm - 5 pm (Room 1.202, RuW building)
- Tue, 21.04.15, 9 am - 5 pm (Room 2.202, RuW building)
- Wed, 22.04.15, 9 am - 1 pm (Room 1.801, Casino)
- Wed, 22.04.15, 1 pm - 5 pm (Room 2.202, RuW building)
- Thu, 23.04.15, 9 am - 5 pm (Room 2.202, RuW building)
- Fri, 24.04.15, 9 am - 5 pm (Room 2.202, RuW building)

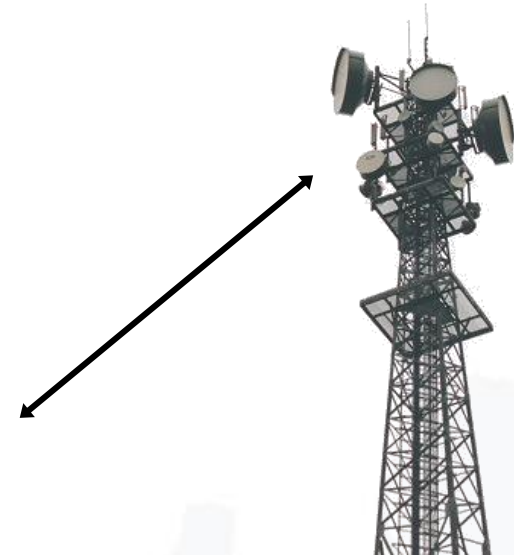
Note: The course starts every day "cum tempore" (ct.)

- Introduction of the Chair
- Course Organisation
- Introduction to (Mobile) Digital Economy
- Scope and Outline of the Course



What is mobile?

- The User?
- The Device?
- The Connection?
- The Information?



101010101010110

- First digital mobile radio network with high voice quality and reliability (roaming).
- Global diffusion in more than 212 countries with more than 1 billion users.
- In February 2004 the first commercial mobile radio network (based on GSM) was launched in Iraq.
- GSM is the basis of data services like GPRS and EGDE.



Source: Sauter (2008)

- Third-generation (3G) mobile phone technology
- Provides high data transfer rates for multimedia communication services
- Germany's UMTS frequency licenses were sold by auction in 2000 for approx. 50bn €.
- Commercially available in Germany since 2004
- UMTS/3G is the underlying network and the basis of the data services HSPA and HSPA+.



Source: Sauter (2008)

- **LTE:** 100 Mbit/s downlink and 50 Mbit/s uplink speed is possible with the existing LTE technology (LTE-Release 8 User Equipment Category 3).
- **LTE Advanced (from ~2012)** will be backward compatible with LTE, the same frequency band is used.
- **LTE Advanced** will make use of the frequency spectrum more efficiently, resulting in higher data rates (above 100 Mbit/s, towards 1 Gbit/s).
- Like GSM and UMTS/HSPA technologies, **LTE** and **LTE Advanced** are developed by the 3rd Generation Partnership Project (3GPP).



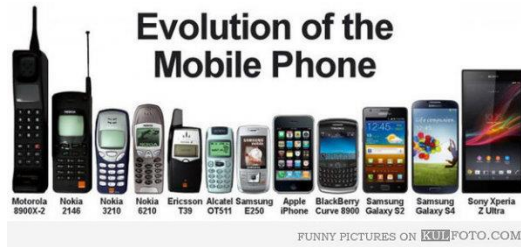
<http://www.3gpp.org/LTE>



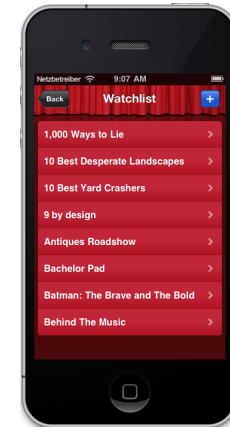
<http://www.3gpp.org/LTE-Advanced>

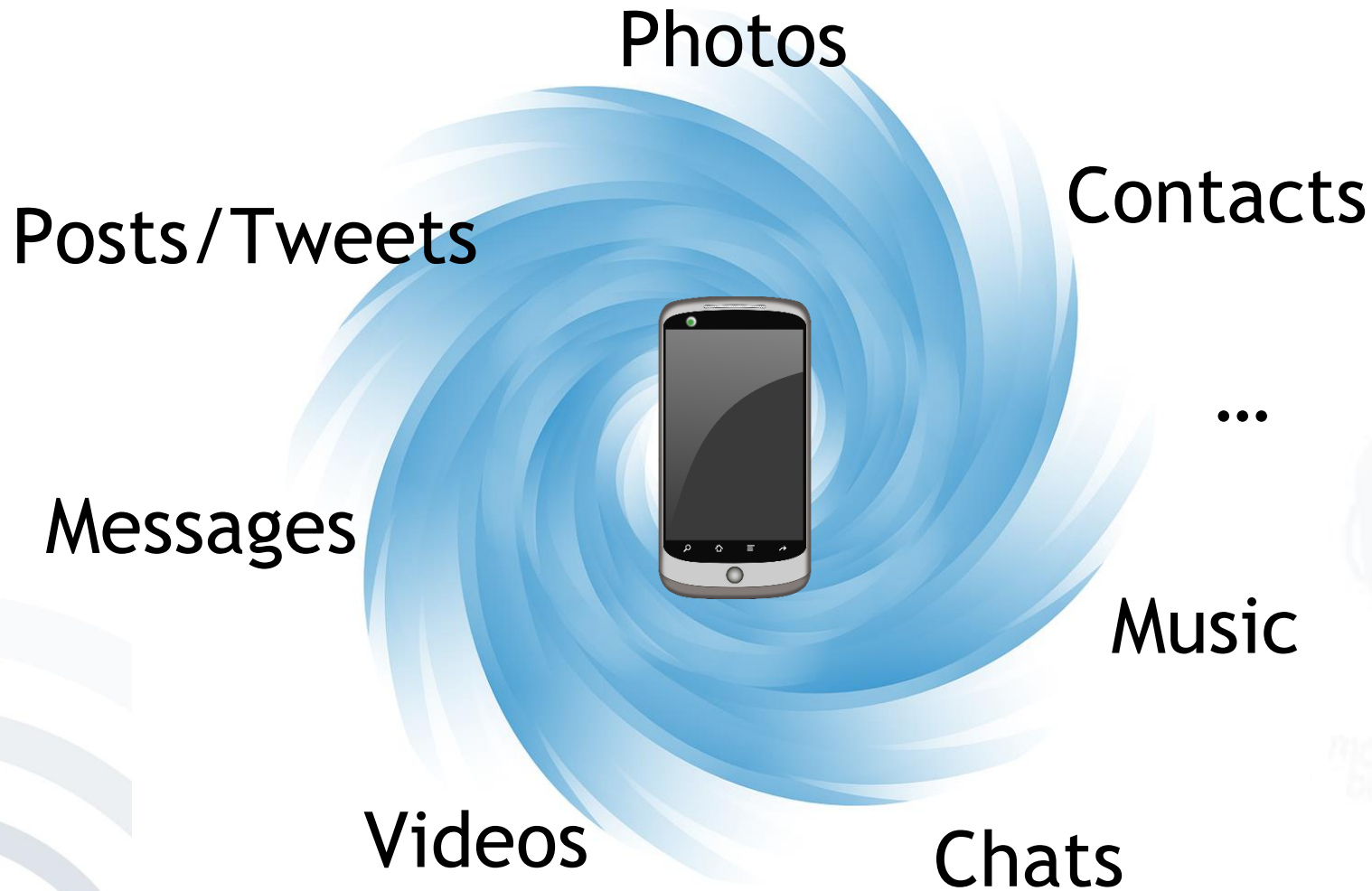


Evolution of Mobile Devices



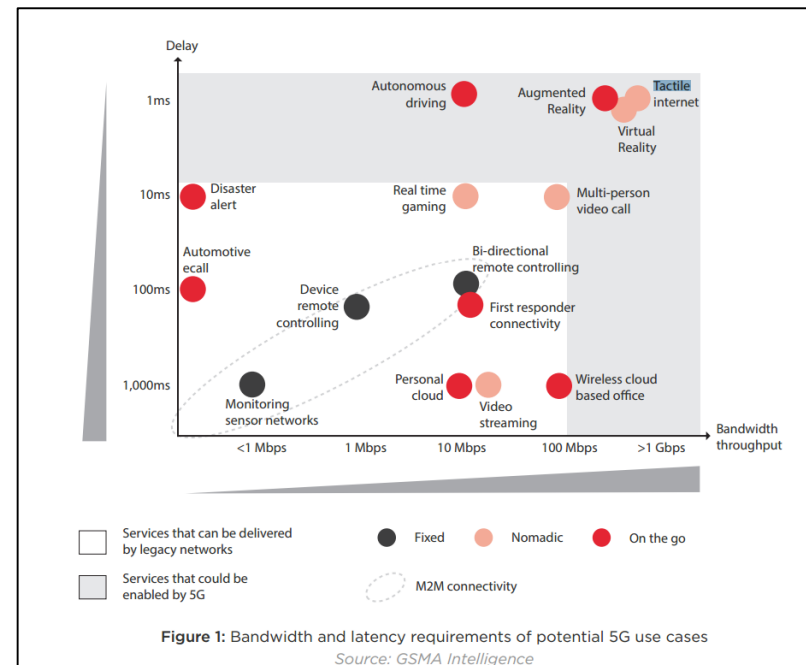
Mobile Web (Apps) & Apps powering Mobile Devices





- Faster (up to 10 GBit/sec)
- Less latency
- Support for Internet of (Every)thing(s)
- Better (nationwide) coverage
- Less power consumption (up to 90 %)

5G



Cloud	Automation	Big Data	Smart Data
Mobile	Internet of Things	Machine to Machine	Robotics
Security	Big Data	Smart Data	Privacy
Artificial Intelligence	Personal Data	Industrie 4.0	Smart Home

What is privacy?

- ... or why does privacy still matter in the digital age?
- For now, privacy ...
 - has no unified definition
 - is individual for each person
 - is important to individuals?!?
 - can be violated
 - is worth protecting?!?





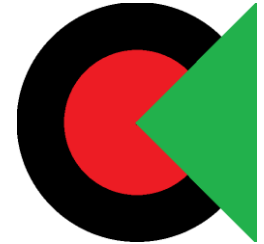
- Threats
 - Companies/Institutions collecting personal data (Google & Co.)
 - Users sharing (deliberately or not) personal data
 - Surveillance of individuals (e.g. Trojan Horses)
 - Mass surveillance (NSA & Co.)
 - Research leveraging big data (data may not be completely anonymous)
- Countermeasures
 - Technology (e.g. encryption)
 - Trusted Parties
 - Media competency
 - No disclosure of personal data
 - Privacy settings
 - ...


- Introduction of the Chair
- Course Organisation
- Introduction to (Mobile) Digital Economy
- Scope and Outline of the Course



Digitalisation in the Scope of this Lecture

- Mobile (devices) are an important interface between humans and digital sphere
- Digitalisation trend is fuelled by data
- Data becomes more important than things
- Data as valuable asset requires security
- Use of digital applications is always a trade-off between data & privacy



- 
- Lecture focus on individual privacy and mobile business (using smart phones)
 - However, borders of mobile business as well as individual privacy may be blurry
 - Consequently, course will also explore (whenever beneficial) possible adjacent fields



Objectives of the Course

- Learning about the special characteristics of the (mobile) digital economy (and its underlying technology) and what makes it unique
- Understanding what fuels the digital economy (data/attention) and learn how to protect/invest these resources carefully
- Acknowledging the balance between the required fuel of the digital economy and an individual's need/obligation to protect this resource/good (privacy & security)



Understanding **digitalisation** esp. in the mobile context and its impact on technology, economy, law and most importantly on society & privacy

Introduction to the Digital Economy

Personal Data as digital Assets

Privacy & Privacy Protection

Identity Management

Data vs. Privacy

Electronic library of magazines, access to more than 2000 magazines:

<http://www.ub.uni-frankfurt.de/online/emedien.html>

available only for University members via HRZ account (141.2.XXX.XXX IP-addresses; PC Pool) or via University Library login:

www.ub.uni-frankfurt.de/login.html



Literature



search.epnet.com/login.asp
www.jstor.org



Research
Databases

Online search engines:

scholar.google.com
academic.live.com