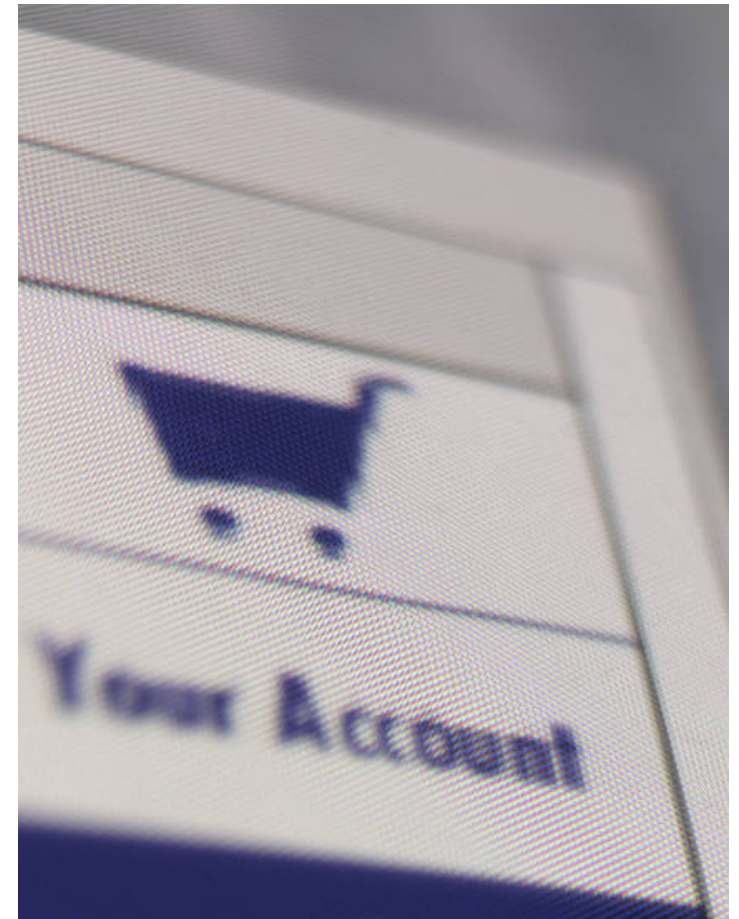# mobile business

Lecture 5

Economic Basics I:
Electronic Business vs. Mobile Business

Mobile Business I (WS 2020/21)

Prof. Dr. Kai Rannenberg

Chair of Mobile Business & Multilateral Security
Johann Wolfgang Goethe University Frankfurt a. M.

Economic Basics: Electronic Business vs. Mobile Business

- Phenomenon "Mobility"

- Mobile Lifestyle and Social Phenomena

- Specifics of the Mobile Economy

- Infrastructure Environment

- Mobile Business

What is mobility?

Lat. *mobilitas*:

(1) Flexibility, velocity, motion;
and as "mobilitas animi": (mental) fitness

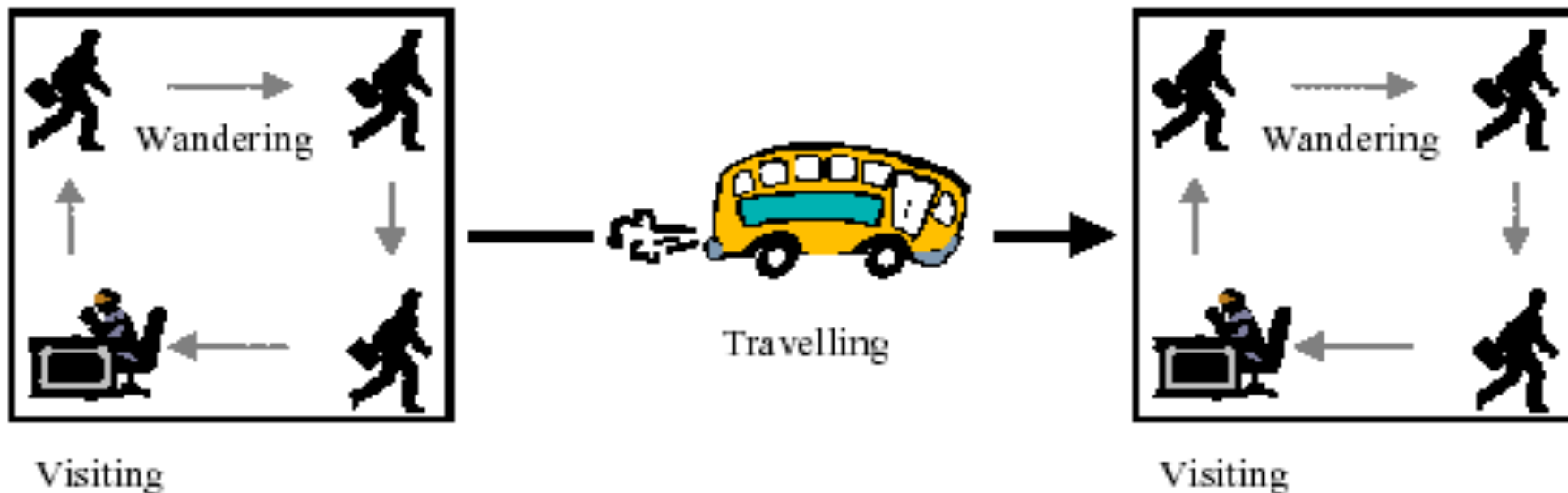(2) But also (and quite ambivalent to (1)) changeability, inconstancy,
unstableness

[SkuStowPets1998]

- Social implications

  Mobility not just "*humans' independence from geographical constraints*"

- Spatial Mobility
- Temporal Mobility
- Contextual Mobility

[KakihaSorens2001]

■ Different degrees of mobility

[KristoLjungb1998]

- Visiting
  - Working at different places for a little longer time
  - Connectivity via network of the host or of a mobile operator

- Example: German Parliament

- Example: Accountant visiting a client

- **Travelling**

  - Working while travelling

  - Example: top management
    in a limousine

  - There are different
    technologies facilitating
    this in different travelling occasions
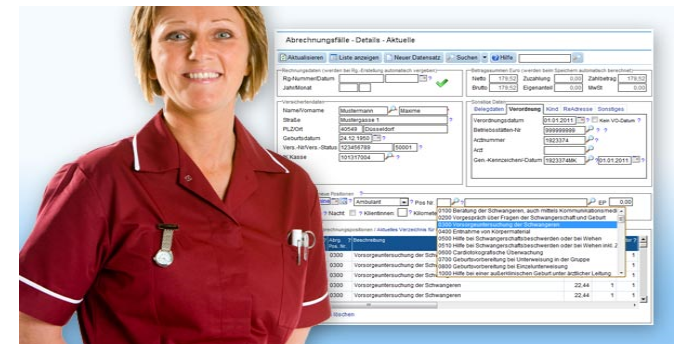   (e.g. satellite connection for planes, GSM/UMTS for
    cars)

http://cdn.ttgtmedia.com

- Wandering
  - Working while being mobile "at a place or site"

  - Example: Facility-Management in an office building

www.computerwoche.de

  - Example: Midwifes manage administrative tasks and billing via web apps.

http://www.dmrz.de/abrechnung_fuer_hebammen.html
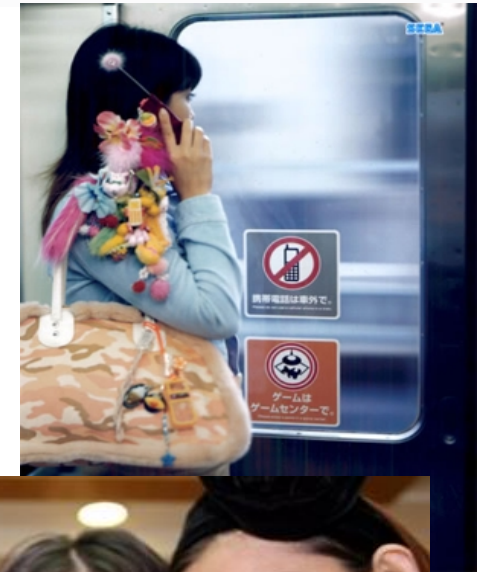
- Phenomenon "Mobility"

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- "keitai"
- Mobile devices are becoming a "cult":

- The way people communicate
- The way mobile phones are integrated into normal life
- The importance of mobile communications

- ... but not only in Japan.

- ## Society Approach: Smart Mobs
  - *"Smart mobs consist of people who are able to coordinate even if they don't know each other."*

    [Rheingold2002]
  - Examples:
    - 2001: People Power II, Manila versus President Estrada, coordination of the rebellion through SMS
    - 2010: Arab Spring, coordination of the rebellion through SMS and Social Networks

- People and groups expose themselves, e.g. via "selfies".

- Example: Pokémon Go

Large gatherings of hundreds of players to hunt for Pokémons

Picture: [Ring2016]

- *Phone + Snubbing = "Phubbing"*

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What are the characteristics of the Mobile Economy?

	Electronic Economy	Mobile Economy
Automation / digitization	●	●
Time flexibility	●	●
Interactivity	●	●
Individualization	●	●
Location independence		●
Personal sphere	○	●
Continuous reachability		●
Context sensitivity	○	●

Based on [ReicMeieFrem2002]

- **Automation / digitization**
  - Value proposition of Internet services is provided electronically (digital)

- **Time flexibility**
  - Internet services are accessible 24 hours per day

- **Interactivity**
  - Users are integrated into the provision of Internet services

- **Individualization**
  - Personalisation of Internet services according to individual user preferences

Based on [ReicMeieFrem2002]

Specifics of the Mobile Economy

- Location independence

  - Provision of mobile services is independent of a user's current location

  - Examples
    - o Mobile E-Mail Services
    - o Mobile Information Services
    - o Mobile Sales Force Services
    - o ...

Based on [ReicMeieFrem 2002]

- **Personal sphere**

  - Mobile devices ("Mobiles") as personal accessories

    - o Mobile device is part of a user's personal sphere such as keys, data books, clothes, etc.

    - o Users carry mobile devices with them most of time.

Based on [ReicMeieFrem2002]

Specifics of the Mobile Economy

- **Continuous reachability**

  - Location independent network access
  - Users are instantly addressable
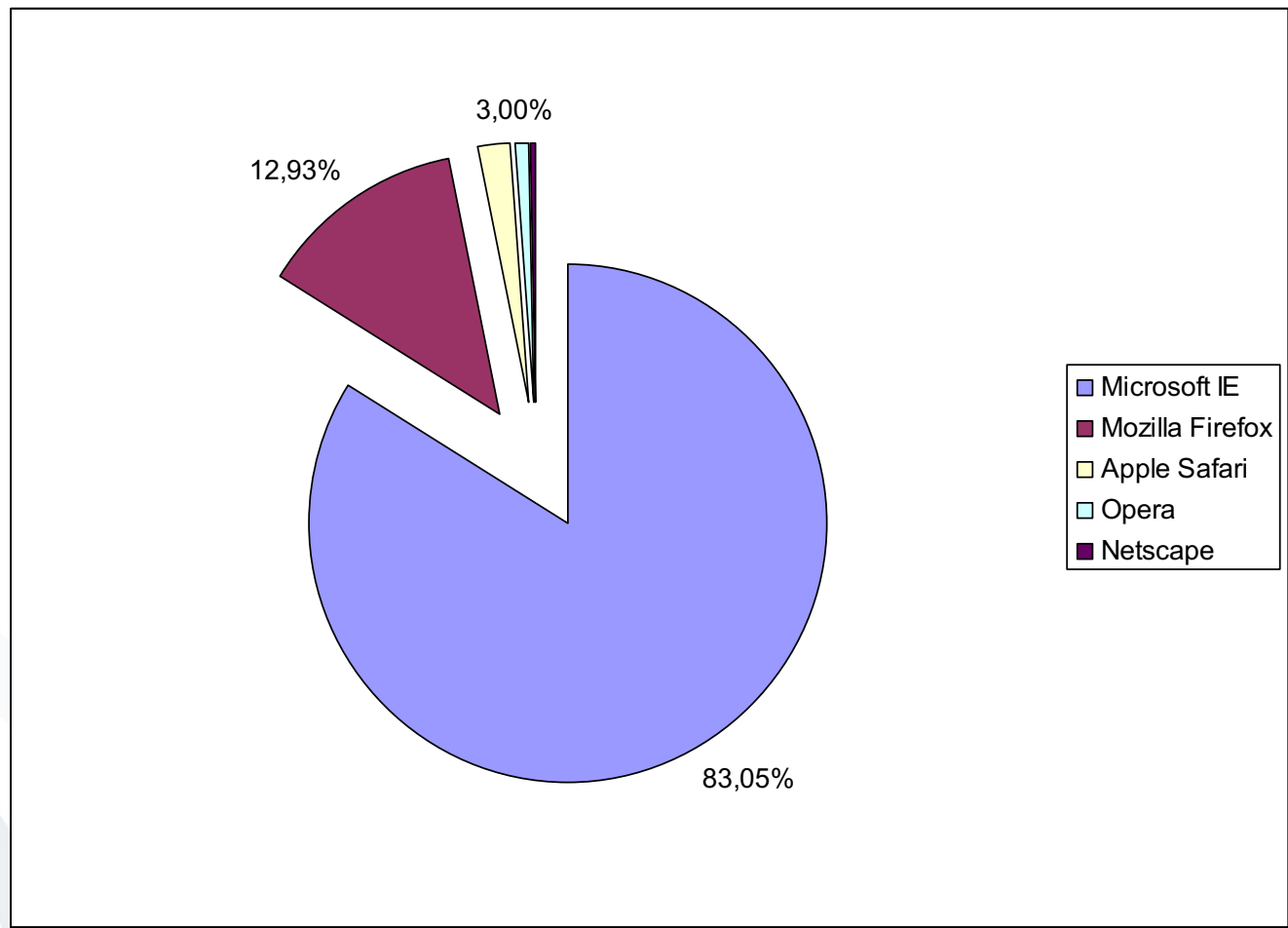 - Always-on-Functionality

- Context sensitivity
(Detection and evaluation user's environment information)
  - **Local context**
    (user's current place / time)
  - **Action context**
    (user's current place / time combined
    with geo data)
  - **Time context**
    (user's current time combined with time relevant information)
  - **Interests specific context**
    (local, action and time context combined with personal user preferences)

Based on [ReicMeieFrem2002]

- ## Additional market-driven specifics

  - ### High penetration of mobile devices in society:
    - 6,8 billion mobile cellular subscriptions worldwide in 2012 (world population: 7,1 billion people)
    - 2,096 million users had access via mobile broadband in 2012 [ITU2013]
    - 115 million mobile phone contracts in Germany in 2012 [BITKOM2013]

  - ### "Everybody" is reachable via mobile phones.

Economic Basics: Electronic Business vs. Mobile Business

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Technology	PC	Mobile
Device	Desktop, Laptop	Smartphones, Tablets, Pagers
Operating System	Windows, Linux, MacOS	Android, iOS, BlackBerry 10, Harmony OS (Huawei)
Presentation Standards	HTML5	HTML5, WML, HDML, i-Mode
Browser	Chrome, Microsoft Explorer, Firefox, Safari, Microsoft Edge	Chrome, Microsoft Explorer, Safari (iPhone), Nokia browser, UC browser, Opera Mini, other mobile browsers

mobile business

- eWorld: Few types of "access paths" to the homepage

3,00%

12,93%

83,05%

Legend:
- Microsoft IE
- Mozilla Firefox
- Apple Safari
- Opera
- Netscape

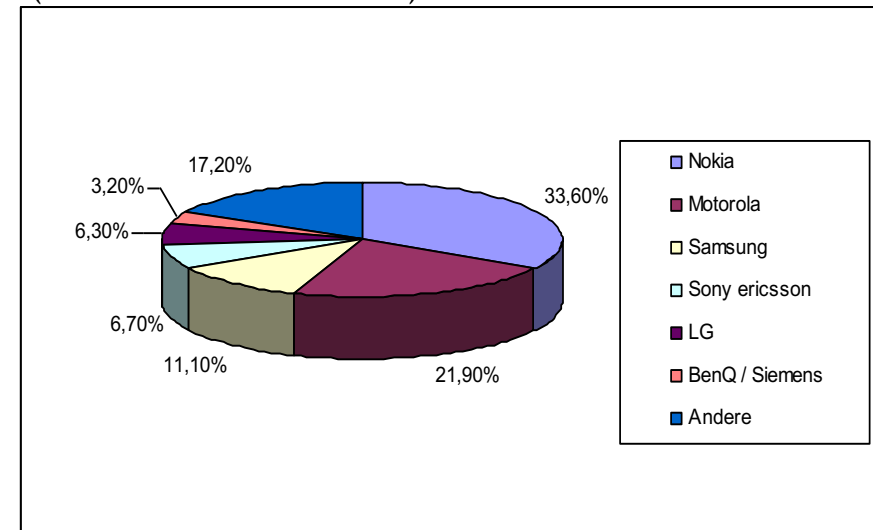[ONESTAT]

Date: 2006-09-07

- mWorld: many types of "access paths" (platforms) to the homepage
  - Market distribution of types of access paths difficult to assess due to lack of specific statistics
  - Some information can be derived from interpreting related statistics

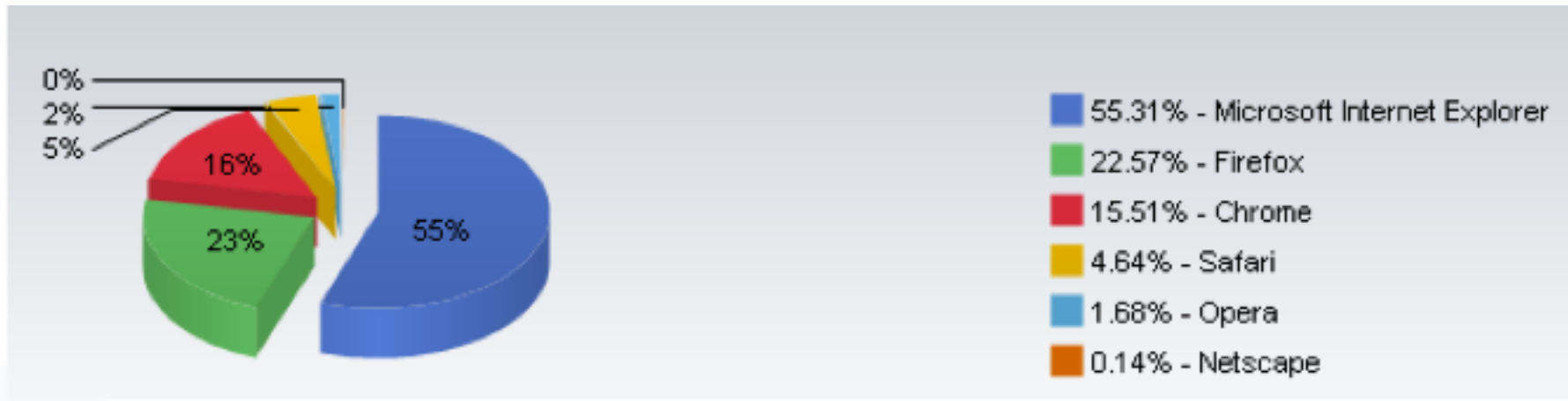Market shares by operating systems worldwide, Q1 2004 – Q2 2005 [Gart 2006]
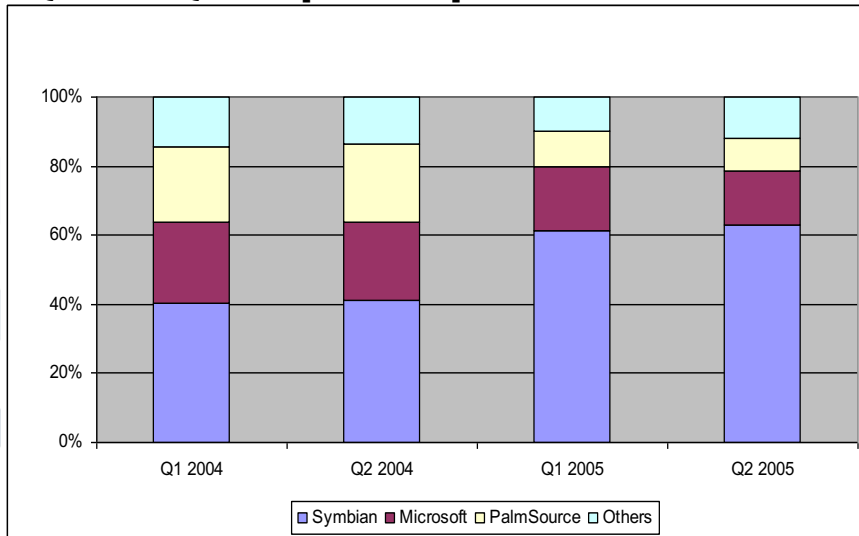
Market share of sold telephones worldwide, 2/2006 (Gartner on www.heise.de)
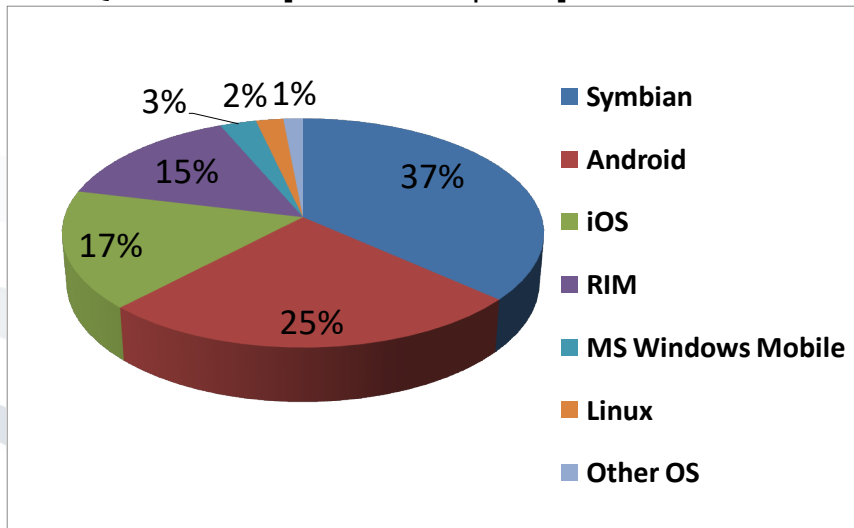
mobile business

- eWorld: Few types of "access paths" to the homepage

August 2011

- 55.31% - Microsoft Internet Explorer
- 22.57% - Firefox
- 15.51% - Chrome
- 4.64% - Safari
- 1.68% - Opera
- 0.14% - Netscape

[NetMarketShare2011]
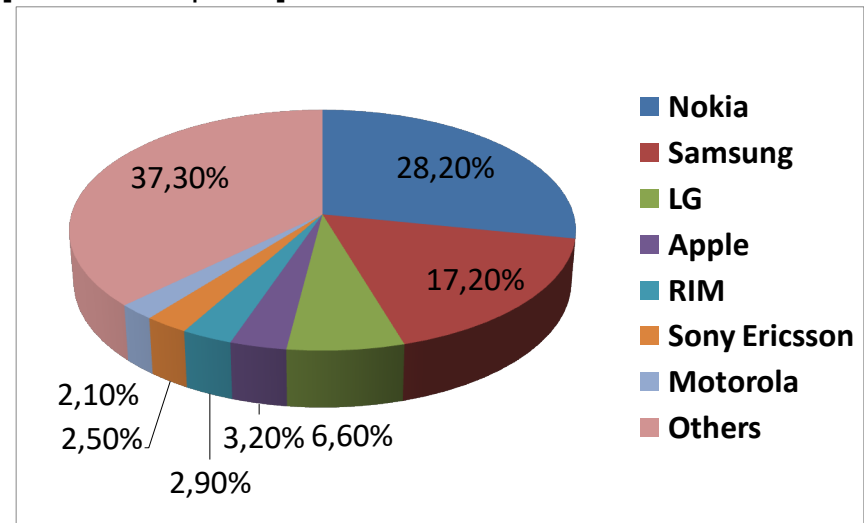
Infrastructure Environment 2011 (II)

- mWorld: many types of "access paths" (platforms) to the homepage
  - Market distribution of types of access paths difficult to assess due to lack of specific statistics
  - Some information can be derived from interpreting related statistics

Market shares by operating systems worldwide, 3rd Quarter 2010 [GartnerGroup2011]

37%	Symbian
25%	Android
17%	iOS
15%	RIM
3%	MS Windows Mobile
2%	Linux
1%	Other OS

Market share of sold telephones worldwide, 3rd Quarter 2010 [GartnerGroup2011]

28,20%	Nokia
17,20%	Samsung
6,60%	LG
3,20%	Apple
2,90%	RIM
2,50%	Sony Ericsson
2,10%	Motorola
37,30%	Others

Infrastructure Environment 2018 (I)

- eWorld (desktop PC): Few types of "access paths" to the homepage ?
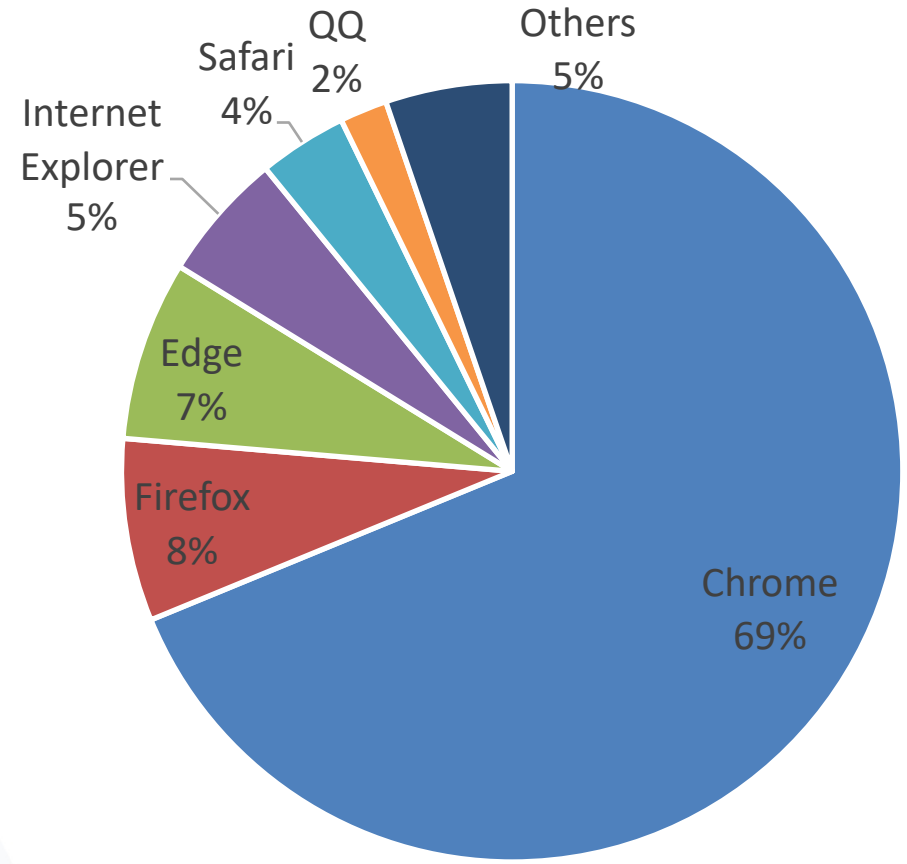
September 2020

■ mWorld (mobile + tablet): Many types of "access paths" (platforms) to the homepage?

September 2020
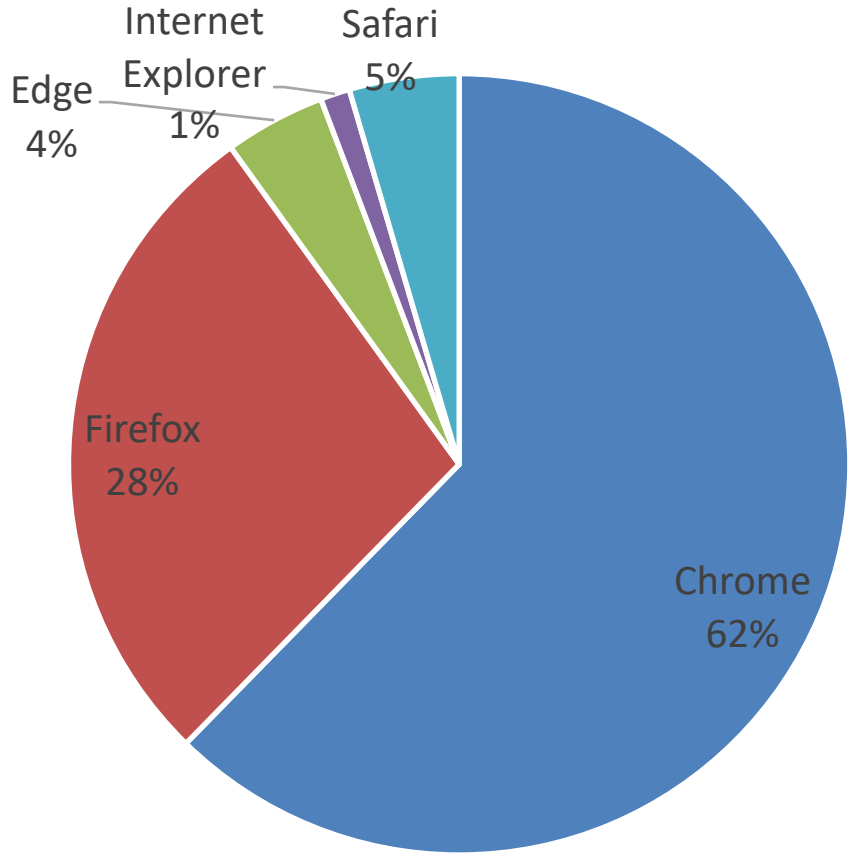
[NetMarketShare2020]

- The variety of mobile terminals and wireless transmission technologies requires an intelligent Multi Channel Management
→ services have to be fitted to minimal requirements (e.g. TAN 2 Go has to work with low bandwidth)

- Critical parameters of the Multi Channel Management:
    - *Display characteristics*
    - *Transfer speed*
    - *Transmission security*
    - *Transmission costs
(SMS TAN in foreign countries)*

Multi Channel Management of mobile applications becomes increasingly complex.

Multimedia Content	Bearer Service	User Agent	
WBMP Images	CSD	WAP Browser	
Color Images	GPRS	HTML Browser	
Multimedia Streams	UMTS	HTML Browser	
Video Telephony	LTE	Apps	

[Example Multi Channel Management Scenarios]

- User Agent Detection can be implemented by the providers of mobile applications.

- Only network operators can identify the data transfer services used by the user (bearer detection).
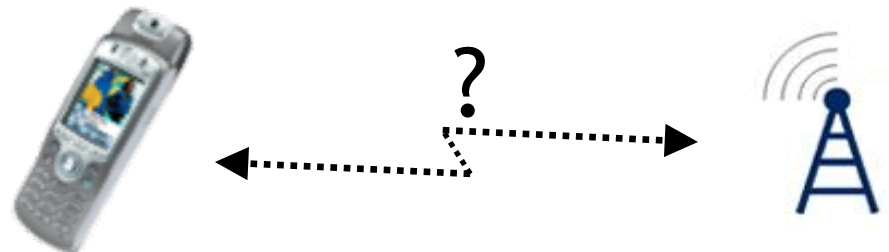
Consequence:

- Higher planning uncertainties in the "Mobile World"

- Higher costs through multi-optimizing in the "Mobile World"

- Mobile Access depends on location (city / countryside)

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Various Electronic Business (E-Business) definitions...

"**E-Business:** Doing business online." [TechwebNetwo2013]

"E-Business is about business transformation, changing the way companies go to market, impacting what they sell and how they create value." [Kortzfleisch2005]

"E-Business... the conduct of business on the Internet, not only buying and selling but also servicing customers and collaborating with business partners." [Searchcio2007]

"using the internet to connect with customers, partners, and suppliers"

...

Many definitions of Mobile Business (M-Business)…

"**M-Business**: Doing business using wireless services. The mobile counterpart to E-Business." [TechwebNetwo2013]

"The total sum of business processes based on location-independent interactive communication technologies." [ReicMeieFrem2002]

"We define M-Business as a collection of mobile technologies and applications used to support processes, value chains and entire markets using wireless technology." [Stanoevska-S2003]

…

We chose a definition that (hopefully) lets us do interesting things:

"The usage of
mobile devices, infrastructure,
communication, and interaction
for
mobile applications
and transactions."

mobile business

Service user

		Consumer	Business	Administration
Service provider	**Consumer**	Consumer-to-Consumer	Consumer-to-Business	Consumer-to-Administration
	Business	Business-to-Consumer	Business-to-Business	Business-to-Administration
	Administration	Administration-to-Consumer	Administration-to-Business	Administration-to-Administration

Based on [HerrmaSauter1999]

mobile business

Service user

	Consumer	Business	Administration
Consumer	**Consumer-to-Consumer** e.g. SMS, Whatsapp, Viber and other texting	**Consumer-to-Business** e.g. Tickets in mobile phones at ticket control (train tickets, boarding pass)	**Consumer-to-Administration** e.g. ID card implemented in mobile phones
Business	**Business-to-Consumer** e.g. downloading tunes, apps, streaming	**Business-to-Business** e.g. mobile access for management consultants at their clients' site	**Business-to-Administration** e.g. toll collection
Administration	**Administration-to-Consumer** e.g. mobile traffic fine/ticket	**Administration-to-Business** e.g. push-message on requests for bids	**Administration-to-Administration** e.g. fire brigade communication

Service provider (left axis label spanning Consumer / Business / Administration rows)

Based on [HerrmaSauter1999]

- In terms of electronic communication, M-Business is a specific part of E-Business, but …
  - for M-Business services a more complex, sophisticated infrastructure environment is required.
  - M-Business services have to deal with several technical limitations (e.g. bandwidth, screen size of device, etc.).
- Specifics of the Mobile Economy enable the provision of unique M-Business services (distinct from E-Business services).
  - e.g. Location-Based Services or Mobile Brokerage
  - See also lecture „M-Business behavioural issues"
- Addressing the issues of the mobile infrastructure environment while taking advantage of the Mobile Economy specifics is the challenge for the successful provision of M-Business services.

- **Convergence of Mobile and Fixed Networks:**

  - Deutsche Telekom reintegrated T-Mobile.

  - Vodafone reintegrated Arcor and bought Kabel Deutschland and ONO.

  - O$_2$ (Telefónica) bought HanseNet.

  - …

→ Will E-Business and M-Business converge?

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