

## *Assignment 3*

# Regulation of (mobile) Telecommunications

Mobile Business II (SS 2011)

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## Exercise 1:

Provide a short definition (in your own words), of what regulation means for a mobile communication market.

- Public intervention into markets
  - Limits/enables action scope of market players as to e.g.
    - Market entry
    - Pricing
    - Offerings
  - Limits/enables action scope of individuals
  - Limits/enables application of new technologies
  - Modifies general laws with regard to a certain industry
  - Often owing to market failure
  - Has a long history in telecommunications and broadcast

- Market Failure as a reason for regulation
  - The market price does not reflect the real costs of the system
- Consequence:
  - Hampered competition, innovation, society progress.

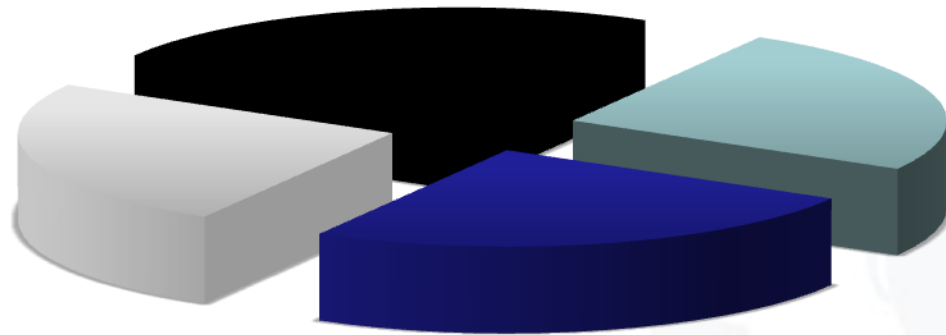
- Telephone Monopoly:
  - Formerly high prices and inflexible service, no customer orientation
- DSL-flat-rate:
  - Higher costs for competitors, advantages for the former monopolist
- Microsoft-trial:
  - Exploitation of market power against Netscape
- Post-monopoly:
  - Volatile service quality and high prices for international delivery of mail

## Exercise 2:

What are the types of market failures that make regulation necessary? Give a short description of their impacts on the market.

# Types of Market Failures

- 1. External Effects
- 2. Natural Monopolies
- 3. Dominant Supplier
- 4. Political Failure



- Actors and beneficiaries are different:  
“Investment does not pay off.”.
- Examples:
  - State subsidizes infrastructure for the benefit of the public since private efforts do not pay off.
  - New infrastructures: One Market player invests into a new infrastructure, others shave off the benefits.

- In industries with high fixed costs or limited market potential,
- One (monopoly) supplier may produce at lower costs than several suppliers in competition.
- Prices and services need to be regulated.

- If a supplier
  - dominates a market and
  - harms competition and innovation
- Competition surveillance may
  - foster market entries or
  - limit the market power of the dominant supplier.

- Political goals are not achieved.
  - E.g. employment goals or social goals are not achieved by the market itself.
- Then, state intervention may be necessary.

- Purpose of regulation
  - Encourage more national and international competition
  - Foster innovation through competition
  - Let price competition drive new technologies into the mass market

Regulation is

“ ... justified and accepted in case of market failures, i.e. when the market fails to allocate resources in a welfare maximizing way.” [Drüke 1999]

## Exercise 3:

Give an example for regulation in the (mobile) telecommunication market in the last (five) years (in any country).

- What was the scope of regulation?
- Which factors led to regulation in that case?
- Did the regulation have any impact on the mobile telecommunication market?

## Example 1: Roaming fees in the EU

### What is Roaming?

→ *Traditional GSM Roaming is defined (cf. GSM Association Permanent Reference Document AA.39) as the ability [...] to automatically make and receive voice calls, send and receive data, or access other services, [...], when travelling outside the geographical coverage area of the home network, by means of using a visited network.*

## Regulation of Roaming Fees: A Case History

July 2005	European Commission warns consumers on cost of using mobile phone abroad and targets lack of price transparency
October 2005	Commission launches consumer website on the costs of mobile roaming in Europe
March 2006	Commissioner Reding outlines proposal for an EU regulation to bring down prices and presents new figures
July 2006	Press Fact Sheet - The proposed EU Roaming Regulation - what are the benefits for customers
July 2006	Commission proposes to cap the high cost of using mobiles when travelling within the EU
November 2006	Eurobarometer survey - Prices still far too high say many Europeans
April 2007	"Roaming Vote in the European Parliament: "The bell is now tolling for international roaming charges in Europe" (Commissioner Viviane Reding)

## Regulation of Roaming Fees: A Case History

May 2007	Commission welcomes political agreement to cap mobile roaming charges in Europe as from summer
June 30, 2007	<b>Main changes introduced by the 2007 regulation; new EU rules on roaming (roaming regulation) entered into force</b>
July 2008	"Texting without borders": Commission plans ending roaming rip-offs for text messages abroad
September 2008	Commission acts to cut cost of texting and mobile data services abroad
July 2010	„Cut off“ mechanism for data roaming within the EU
...	Regulation of cost for data roaming threatened.

- **Consequently:**

→ As from 1 July 2009, costumers roaming in another EU Member State will not only benefit from lower prices for making and receiving calls but also for texting when abroad and using data services.

**Eurotariff maximum roaming charge per minute in Euros (without VAT) !**

Eurotariff maximum price while abroad	Making a call	Receiving a call	Sending an SMS	Receiving an SMS
Summer 2009	43 cents	19 cents	11 cents	free
Summer 2010	39 cents	15 cents	11 cents	free
Summer 2011	35 cents	11 cents	11 cents	free

**These are maximum prices. Operators are free to offer cheaper rates: be on the lookout for better deals!**

- The situation is:
  - Sending SMS inside the EU will cost you 11 Ct. Plus VAT (~13 Cent) at most
  - BUT: Inside Germany you still pay up to 19 Ct./SMS
- *„Und damit haben wir das Paradoxon, dass künftig eine SMS im Ausland 13 Cent und im Inland 19 Cent kostet, wenn man keine Karte eines Tiefstpreis-Discounters hat.“ [XONIO01]*

## Example 2: “Terminierungsentgelte” (Interconnection Fees)

What is this?

*→ Fees that (mobile) telco A has to pay for interconnection of the two networks during a call into network of telco B.*

## Regulation of Interconnection fees: A Case History

April 2005	Study on mobile communication market shows that the four german MNOs have a remarkable market power against the fixed line operators
November 2005	Bundesnetzagentur thinks about regulation of IC fees
August 2006	First regulation on german mobile communication market: ex ante regulation for IC fees
April 2008	Federal Administrative Court (Bundesverwaltungsgericht) decides that Bundesnetzagentur is allowed to regulate the german mobile communication market
May 2009	EU wants to reduce IC fees drastically (1-2 ct./min.)

## Exercise 4:

Ten years after the German UMTS license auction: What is the current market situation?

- Is 3G/UMTS successful? Why (not)?
- What are differences to the auction on wireless access (2010)?
- What is meant by “digital dividend” in this context?

## 4 Roll-Out and Coverage Obligations

- 4.1 The LICENSEE shall ensure the offer of UMTS/IMT-2000 mobile radio services to **at least 25% of the population by no later than 31 December 2003** and to **at least 50% of the population by no later than 31 December 2005**.

- June 30, 2009: Revocation of Quam/Group3G UMTS (end of 2004) licence is legitimate
- Another licence holder, MobilCom gave back her licence in 2003
- Both companies had to write off their 8 billion Euro investments

## Final result of the UMTS licence auction

Licensee	acquired frequency spectrum	DM
E-Plus Hutchison	2 x 5 MHz paired 1 x 5 MHz unpaired	16.491.800.000
<b>Group 3G</b>	<b>2 x 5 MHz paired 1 x 5 MHz unpaired</b>	<b>16.568.700.000</b>
Mannesmann Mobilfunk	2 x 5 MHz paired 1 x 5 MHz unpaired	16.594.800.000
<b>MobilCom Multimedia</b>	<b>2 x 5 MHz paired 1 x 5 MHz unpaired</b>	<b>16.491.000.000</b>
T-Mobil	2 x 5 MHz paired 1 x 5 MHz unpaired	16.704.900.000
VIAG Interkom	2 x 5 MHz paired	16.517.000.000
	<b>Total amount:</b>	<b>99.368.200.000</b>

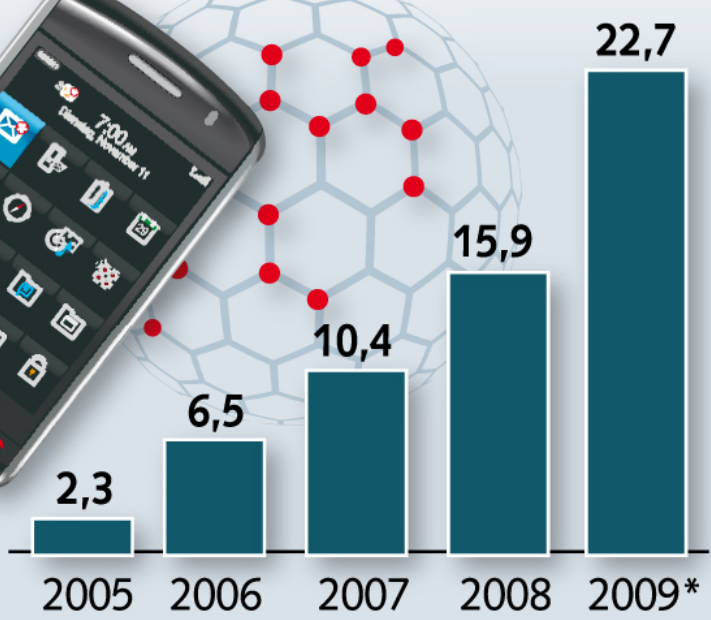
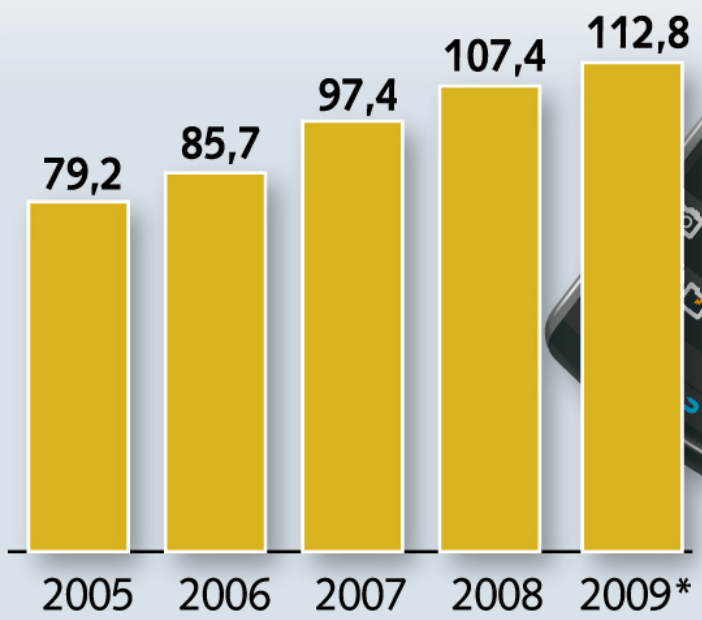
# UMTS-Boom in Deutschland

20 Prozent der deutschen Mobilfunkanschlüsse mit UMTS

Mobilfunkanschlüsse gesamt

Angaben in Mio.

davon UMTS-Anschlüsse

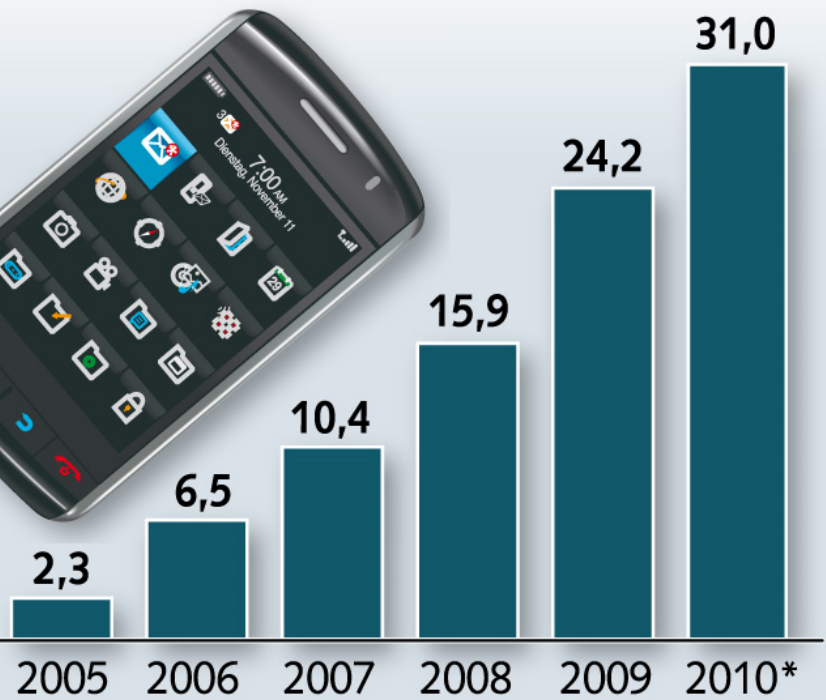


Quelle: BITKOM; \*Schätzung

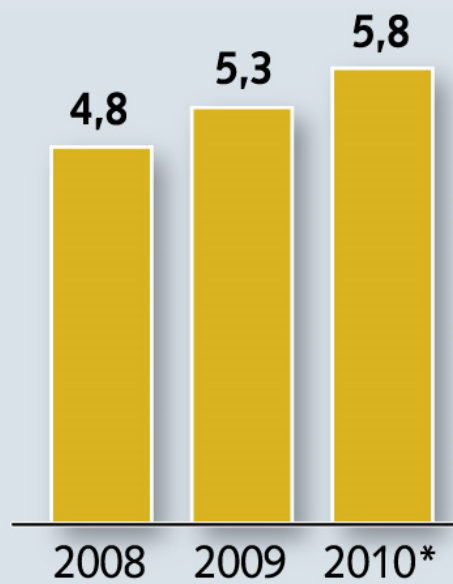
# 10 Jahre UMTS-Auktion

Mobile Datendienste boomen Dank UMTS-Technologie

UMTS-Anschlüsse, in Mio.



Umsatz mit mobilen Datendiensten in Mrd. Euro



Quelle: BITKOM / EITO; \* Prognose

- 3G market is growing fast meanwhile
- Lower charges for 3G data services (e.g. 2,50 €/day, 20€/month)
- Companies have a more keen sense of 3G business models (?)
- Thanks to the new smartphone mania, mobile web finally made it (?)
- More „realistic“ bidding behaviour ?
- Economic Crisis
  - Influence on auction proceeds ?

Based on Broadband strategy within the  
German economic stimulus package  
(Konjunkturpaket II)

- Usage of digital dividend as soon as possible
- Provisioning of innovative mobile telephony  
and broadband internet in rural  
environments

The expression „digital dividend" refers to the **increase in transmission capacity** that is achieved by changing over to digital technology.

In the course of digitizing TV and radio broadcasts (DVB-T), signals will be transmitted in future over one frequency or one channel. This will **free up valuable frequency bands** (frequency range 790-862 MHz) - used to date solely for the transmission of analog signals - for the broadband Internet service.

## Comparison of auctions

### UMTS (2000)

- Participants 6
- Altogether 145 MHz
- Duration 19 days
- 173 rounds
- Time per round 40 Min.
- Coverage: 25% - 50% of the population

➔ 50bn €

### Wireless Access (2010)

- Participants 4
- Altogether 360 MHz
- Duration 27 days
- 224 rounds
- Time per round 90 Min.
- Coverage: rural territory

➔ 4.4bn €

- [BITKOM01] 16 Millionen UMTS-Anschlüsse in Deutschland,  
[http://www.bitkom.org/de/presse/8477\\_57785.aspx](http://www.bitkom.org/de/presse/8477_57785.aspx)
- [BITKOM02] Presseinfo zu 10 Jahren UMTS Versteigerung,  
[http://www.bitkom.org/files/documents/BITKOM\\_Presseinfo\\_10\\_Jahre\\_UMTS-Versteigerung\\_18\\_07\\_2010.pdf](http://www.bitkom.org/files/documents/BITKOM_Presseinfo_10_Jahre_UMTS-Versteigerung_18_07_2010.pdf)
- [BNA01] Vergabeverfahren Mobilfunk - Präsidentenkammerentscheidung,  
bundesnetzagentur.de,  
[http://www.bundesnetzagentur.de/enid/97847504014df44d778d5a4194b61da5,0/Oeffentlicher\\_Mobilfunk/Vergabeverfahren\\_Mobilfunk\\_-\\_BKss-Entscheidung\\_5ng.html](http://www.bundesnetzagentur.de/enid/97847504014df44d778d5a4194b61da5,0/Oeffentlicher_Mobilfunk/Vergabeverfahren_Mobilfunk_-_BKss-Entscheidung_5ng.html)
- [BNA02] Vergabeverfahren Mobilfunkfrequenzen -  
Präsidentenkammerentscheidung III,  
[http://www.bundesnetzagentur.de/enid/97847504014df44d778d5a4194b61da5,0/Oeffentlicher\\_Mobilfunk/Vergabeverfahren\\_Mobilfunkfrequenzen\\_-\\_BKss-Entscheidung\\_III\\_4kw.html](http://www.bundesnetzagentur.de/enid/97847504014df44d778d5a4194b61da5,0/Oeffentlicher_Mobilfunk/Vergabeverfahren_Mobilfunkfrequenzen_-_BKss-Entscheidung_III_4kw.html)
- Drüke, H. (1999) Regulierungssysteme in der internationalen Telekommunikation – Regulierung und Deregulierung in Zeiten der technologischen Konvergenz, FS II 99-202 Schriftenreihe „Regulierung der Arbeit“, Wissenschaftszentrum f. Sozialforschung Berlin.

- [EC01] European Commission - **Main changes introduced by the 2007 regulation,**  
[http://ec.europa.eu/information\\_society/activities/roaming/regulation/archives/current\\_rules/index\\_en.htm](http://ec.europa.eu/information_society/activities/roaming/regulation/archives/current_rules/index_en.htm)
- [EC02] European Commission - Press Material,  
[http://ec.europa.eu/information\\_society/activities/roaming/press/index\\_en.htm](http://ec.europa.eu/information_society/activities/roaming/press/index_en.htm)
- [EC03] European Commission - A History of Roaming Rules,  
[http://ec.europa.eu/information\\_society/activities/roaming/regulation/archives/index\\_en.htm](http://ec.europa.eu/information_society/activities/roaming/regulation/archives/index_en.htm)
- [EC04] European Commission - The new proposal for reducing roaming prices,  
[http://ec.europa.eu/information\\_society/activities/roaming/regulation/index\\_en.htm](http://ec.europa.eu/information_society/activities/roaming/regulation/index_en.htm)

- Ewers, H. and Fritsch J. (1987) Zu den Gründen staatlicher Forschungs- und Technologiepolitik, in: Böttcher, Herder, Dornreich, Schenk (Eds.): Jahrbuch für neue politische Ökonomie (6).
- Meyer-Krahmer, F. (1995) Innovation Behaviour and Regional Indigenous Potential, in: Regional Studies (19.6).
- Merriam-Webster OnLine Dictionary: [www.m-w.com/dictionary](http://www.m-w.com/dictionary) [visited 2008-04-29]
- [OnlineKosten01] Terminierungsentgelte in der Übersicht, [onlinekosten.de](http://www.onlinekosten.de), <http://www.onlinekosten.de/mobilfunk/terminierungsentgelte>
- Picot, A. and Burr W. (1996) Regulierung und Deregulierung im Telekommunikationssektor, in: *ztf* (48:2).
- Siemer J.P (2003) Digitalization and Regulation – the German Case; in: Ernst Helmstädter (Ed.): The economics of knowledge sharing: a new institutional approach, Cheltenham, Elgar. New horizons in institutional and evolutionary economics.

- [OnlineKosten01] Terminierungsentgelte in der Übersicht, [onlinekosten.de](http://www.onlinekosten.de),  
<http://www.onlinekosten.de/mobilfunk/terminierungsentgelte>
- Picot, A. and Burr W. (1996) Regulierung und Deregulierung im Telekommunikationssektor, in: *zbf* (48:2).
- Siemer J.P (2003) Digitalization and Regulation – the German Case; in: Ernst Helmstädter (Ed.): *The economics of knowledge sharing: a new institutional approach*, Cheltenham, Elgar. *New horizons in institutional and evolutionary economics*.
- [SuedDeutsche01] Gericht: Widerruf von UMTS-Lizenz ist rechtmäßig, [sueddeutsche.de](http://www.sueddeutsche.de), <http://newsticker.sueddeutsche.de/list/id/666143>
- [TelTarif01] Kommt die Regulierung für Mobilfunktarife?, [teltarif.de](http://www.teltarif.de),  
<http://www.teltarif.de/arch/2005/kw47/s19524.html>
- [TelTarif02] Deutscher Mobilfunkmarkt wird reguliert, [teltarif.de](http://www.teltarif.de),  
<http://www.teltarif.de/arch/2006/kw35/s22918.html>

- [TelTarif03] EU will Mobilfunk-Terminierungsentgelte drastisch senken,  
<http://www.teltarif.de/eu-terminierung-senkung-drastisch/news/34131.html>
- [TomHard01] BNetzA versteigert wieder UMTS-Frequenzen, tomshardware.de,  
<http://www.tomshardware.com/de/Bundesnetzagentur-UMTS-Versteigerung-Frequenzen-Breitbandstrategie,news-242588.html>
- [Welt01] Der Rundfunk macht bald Platz fürs Internet, welt.de,  
<http://www.welt.de/webwelt/article3386784/Der-Rundfunk-macht-bald-Platz-fuers-Internet.html>
- [XONIO01] Wenn die SMS im Ausland billiger ist..., xonio.com,  
<http://blog.xonio.com/wenn-die-sms-im-ausland-billiger-ist-20081128/>
- [WIKI09] Roaming, <http://en.wikipedia.org/wiki/Roaming>
- [ZDNet01] Urteil: Regulierung der Terminierungsentgelte ist rechtens,  
[http://www.zdnet.de/news/wirtschaft\\_telekommunikation\\_urteil\\_regulierung\\_der\\_terminierungsentgelte\\_ist\\_rechtens\\_story-39001023-39189179-1.htm](http://www.zdnet.de/news/wirtschaft_telekommunikation_urteil_regulierung_der_terminierungsentgelte_ist_rechtens_story-39001023-39189179-1.htm)