

## *Lecture 8*

# Regulation of (mobile) Telecommunications

Mobile Business II (SS 2011)

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- Definitions of Regulation
- Origins of Regulation
- Regulation Levels
- Regulation in Germany
- Development and Future of Regulation in Europe
- Examples for Regulation

## Main Entry: <sup>1</sup>reg·u·la·tion

- Pronunciation: \,re-gyə-'lā-shən, ,re-gə- *also* ,rā-\
- Function: *noun*
- **1:** the act of [regulating](#) : the state of being [regulated](#)
- **2 a:** an authoritative rule dealing with details or procedure <safety *regulations*> ; **b:** a rule or order issued by an executive authority or [regulatory](#) agency of a government and having the force of law
- **3 a:** the process of redistributing material (as in an embryo) to restore a damaged or lost part independent of new tissue growth; **b:** the mechanism by which an early embryo maintains normal development

## Main Entry: <sup>2</sup>regulation

- Function: *adjective* Date:
- : conforming to [regulations](#) : [official](#)

[Merriam-Webster 2008]

## Main Entry: reg·u·late

- Pronunciation: \ 're-gyə- ,lāt *also* 'rā-\
- Function: *transitive verb*
- Inflected Form(s): reg·u·lat·ed; reg·u·lat·ing
- Etymology: Middle English, from Late Latin regulatus, past participle of regulare, from Latin regula rule
- **1 a:** to govern or direct according to rule; **b (1):** to bring under the control of law or constituted authority **(2):** to make [regulations](#) for or concerning <*regulate* the industries of a country>
- **2:** to bring order, method, or uniformity to <*regulate* one's habits>
- **3:** to fix or adjust the time, amount, degree, or rate of <*regulate* the pressure of a tire>

[Merriam-Webster 2008]

- 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

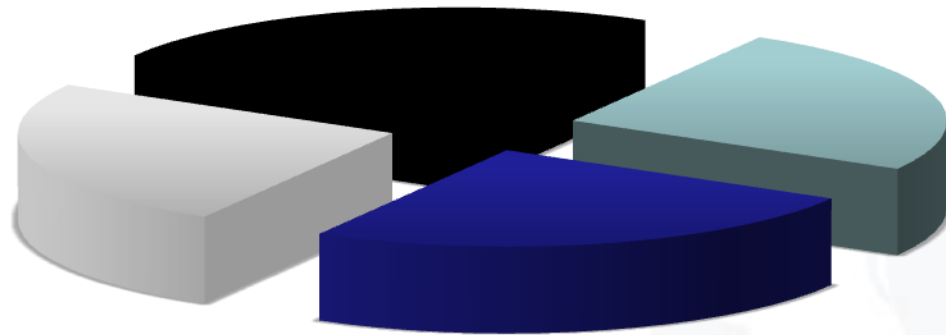
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- Market Failure as a reason for regulation
  - The market price does not reflect the real costs of the system
- Consequence:
  - Hampered competition, innovation, society progress
- This may occur in different ways.

- 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 other web browser providers
- Post-monopoly:
  - Volatile service quality and high prices for international delivery of mail

# 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:
  - Basic Research: 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

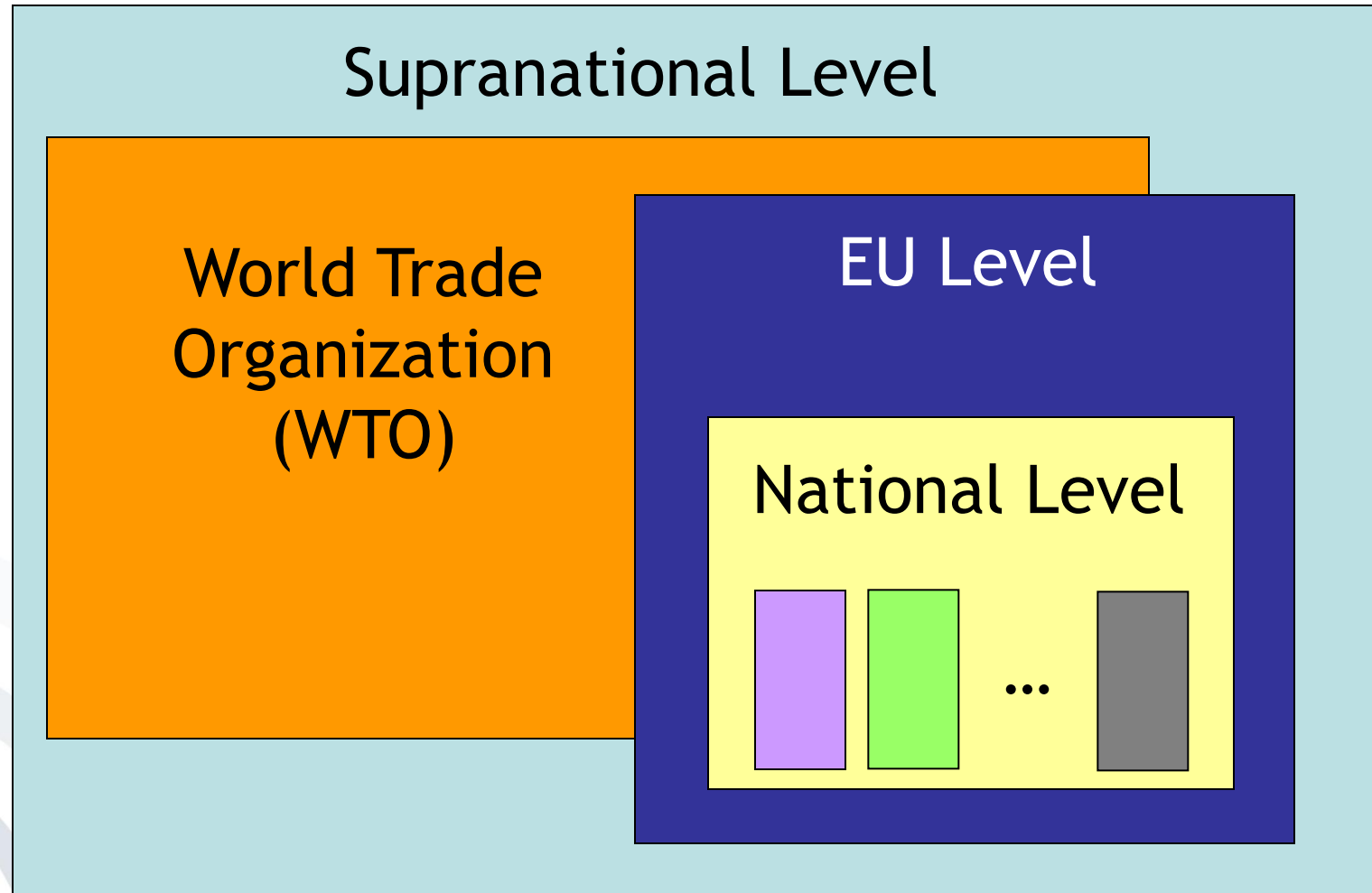
Regulation is

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

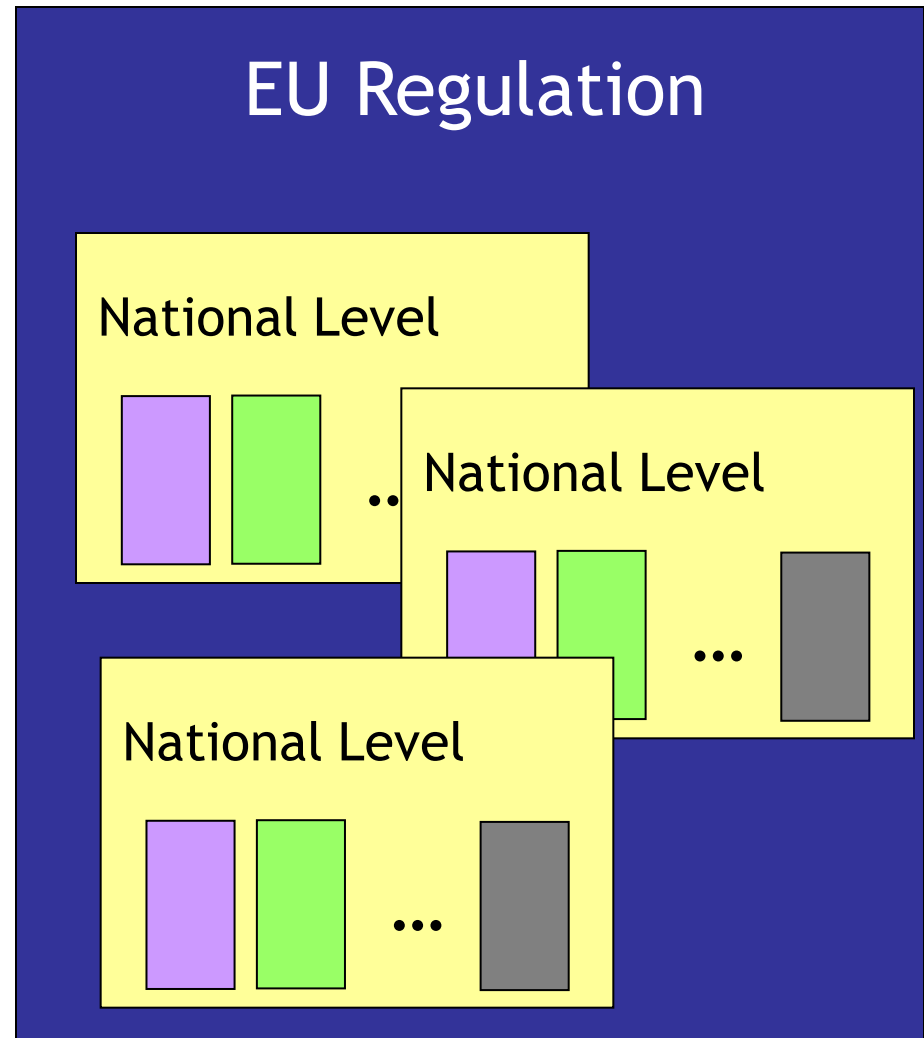
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Regulation is done on several levels:

- International agreements (WTO)
- EU regulation
- National regulation
- Regional regulation



- Within the EU:  
national regulation and  
EU regulation
  - National Sovereignty:  
multitude of regulations
- ⇒ The French military  
claimed Bluetooth  
frequencies:
- Market failure?
  - Regulation failure?
  - Bad luck in  
standardization?



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- Was developed over a long period of time
- Some developments can only be explained historically.
- Separation of technical services and content services, e.g.:
  - Telephone networks
  - Mobile radio networks
  - Radio amateur
  - Broadcasting

- Regulation of:
  - Price,
  - Access,
  - Technology,
  - Distribution, and
  - Availability.
- Competence split between federal authorities and state authorities
  - Federal Ministry of Economics,
  - Federal state media institutions,
  - Data protection authorities,
  - Authorities for the protection of minors, and
  - other authorities.

- ➔ Intransparent mesh of competencies
- ➔ One resolution approach:  
1997: synchronization and assimilation of  
Mediendienstestaatsvertrag (State Treaty for Media  
Services) and Informations- und  
Kommunikationsdienstegesetz (ICT Law)

Means	Responsibility
Law	Parliament (“Bundestag”)
Ordinance	Government
Ordinance / Decree	Ministry / Department
State treaty	State governments
Licensing	Authority (e.g. Federal Network Agency)
Supervision	

	Technical Services	Content Services		
Service Category	Telecommunication Services	Voice Telephony and Annex Services	Tele & Media Services	Broadcast
Relevant Law	Telekommunikationsgesetz (TKG)	Telekommunikationsgesetz (TKG)	Telemediengesetz (TMG)	Rundfunk-staatsvertrag (RSTV)
Holder of Competence	Federation (Bund)	Federation (Bund)	Federation (Bund)	Federal states
Regulation Measures	Limited economic freedom: universal service duty, tariff regulation, control competence of the federal state's media institutes over the broadband cable network	Limited economic freedom: license obligation; ex-ante tariff control	Economic freedom: no mandatory admission and registration, no supervision	No economic freedom; broadcast freedom (Rundfunkfreiheit) as institution; dual system
Responsible Institutions	Federal Network Agency	Federal Network Agency	none	Supervision bodies of the broadcasting institutions; state media institutions as well as KEF and KEK

# Services and Supervisory Bodies

	Telecommunication Services	Tele Services	Media Services	Broadcast
Variety, Chances of Communication	Federal Network Agency "Bundesnetz-agentur"	Federal Cartel Office		Federal State Media Institutes "Landesmedien-anstalt"
Access Control				KEK <sup>1</sup> /KDLM <sup>2</sup>
Concentration Control				
Regulation of Promotion and Advertisements, Miscellaneous			Institutions according to § 18 I 3 MDStV	Federal State Media Institutes
Protection of Minors		not explicitly mentioned: BPjS (Prot. of minors)	Institutions according to § 18 I 1 MDStV	
Data Protection	Federal Network Agency Data Protection Offices according to § 38 BDSG		Institutions according to § 18 I 3 MDStV	Institutions according to Federal States law

1) Kommission zur Ermittlung der Konzentration im Medienbereich

2) KDLM: Konferenz der Direktoren der Landesmedienanstalten

Since 1987	State Treaty on Broadcasting (“Rundfunkstaatsvertrag” (RStV))
Since 1996	„Telekommunikationsgesetz“ (ICT Law, TKG), “Telekommunikationsüberwachungsverordnung (TKÜV)”
1997-2007	“Mediendienstestaatsvertrag (MDstV)” and “Informations- und Kommunikationsdienste-Gesetz (IuKDG)” (including “Teledienstegesetz (TDG)” and “Teledienstedatenschutzgesetz (TDDSG)”)
2000-2004	„Telekommunikations-Datenschutz-Verordnung (TDSV)”
Since 2007	“Telemediengesetz (TMG)”

- International agreements on satellite communications
- ... further regulations as to criminal prosecution, basic rights, consumer protection (“Konsumentenschutz”).

- License-free vs. license obligation
- Licenses have to be assigned before operations start, i.e. there are preconditions for a license to be assigned
- License-holders also have to fulfil ongoing obligations, in order to retain the license.

## Examples for license preconditions

- IT security and data protection concept
- Proof of technical competence

## Examples for continuous license obligations

- Employment of reliable personnel
- Provision of emergency numbers
- Support of police and intelligence services at e.g. law enforcement, criminal prosecution and protection of the constitution.

# The “Regulatory Authority” and “its” Ministry

- Federal Ministry of Economics and Technology “BMW<sub>i</sub>”
  - Includes former post ministry
    - ➔ responsible for post and telecommunications
  - Supervision of “Regulatory Authority” Federal Network Agency (FNA)



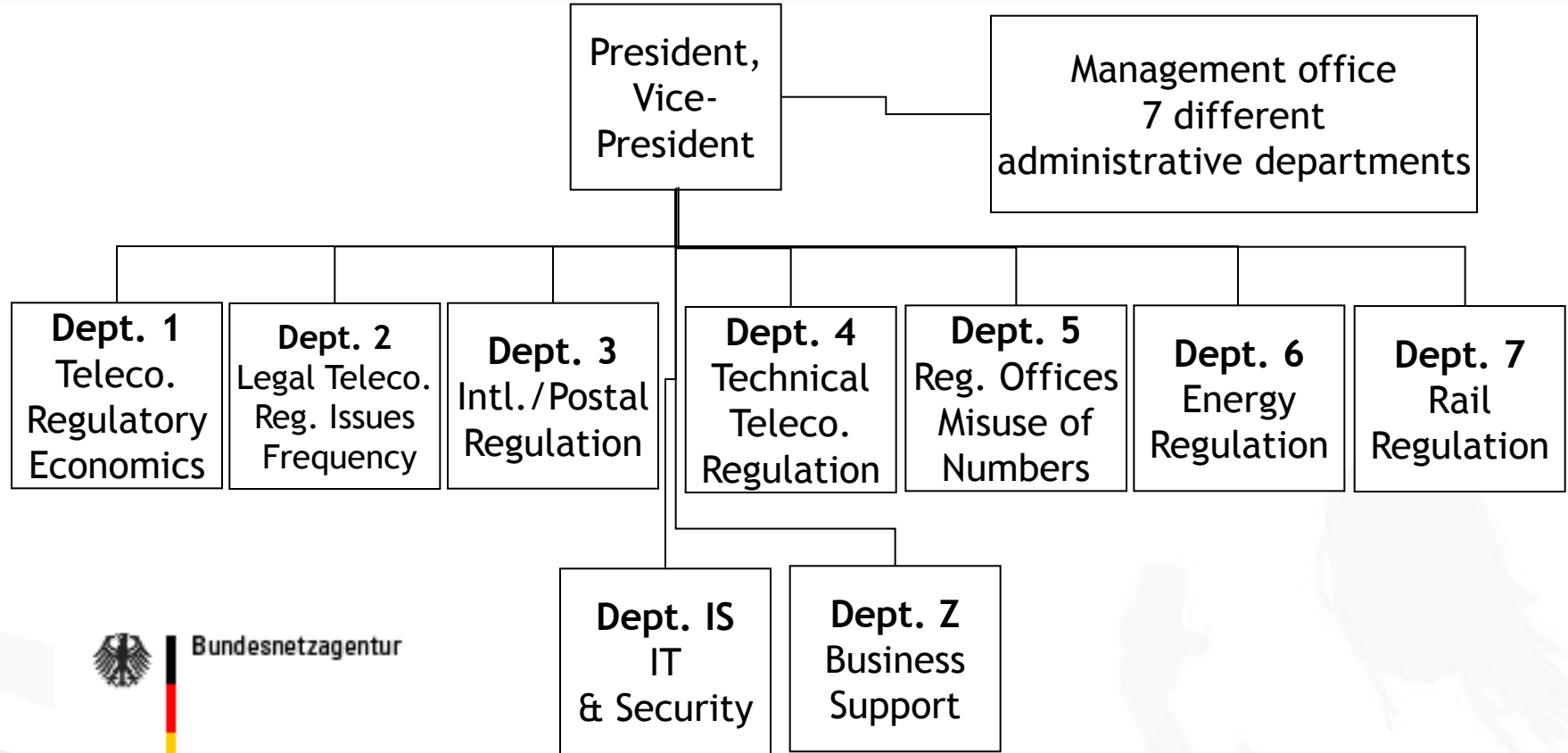
Bundesministerium  
für Wirtschaft  
und Technologie

- Federal Network Agency (“Bundesnetzagentur”; “BNetzA”, FNA)
  - “Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railway”: separate higher federal authority within the scope of business of the Federal Ministry of Economics and Technology.
  - According to TKG (1996) established as an authority under the supervision of the Ministry of Economics
  - Emerged from Federal Ministry of Post and Telecommunications (Bundesministerium für Post und Telekommunikation (BMPT)) and the Federal Bureau of Post and Telecommunications (Bundesamt für Post und Telekommunikation (BAPT)).
  - Start of operations 1998-01-01 as “Regulierungsbehörde für Telekommunikation und Post” (RegTP)
  - Renamed in 2005-07-13 to the current name

- The task of the “Regulatory Authority” (currently the “Federal Network Agency”) is to develop postal and telecommunications markets by liberalization and deregulation.
- Starting 2005 the Federal Network Agency also supervises the energy industry.
- The “Regulatory Authority” ’s instruments are:
  - Information
  - Investigation
  - Sanction authority

# Organization Chart of the “Regulatory Authority”

9 Ruling Chambers for several Regulation areas



[Source: <http://www.bundesnetzagentur.de/cae/servlet/contentblob/150968/publicationFile/5919/100311OrgChartSept09Id10837pdf.pdf>]

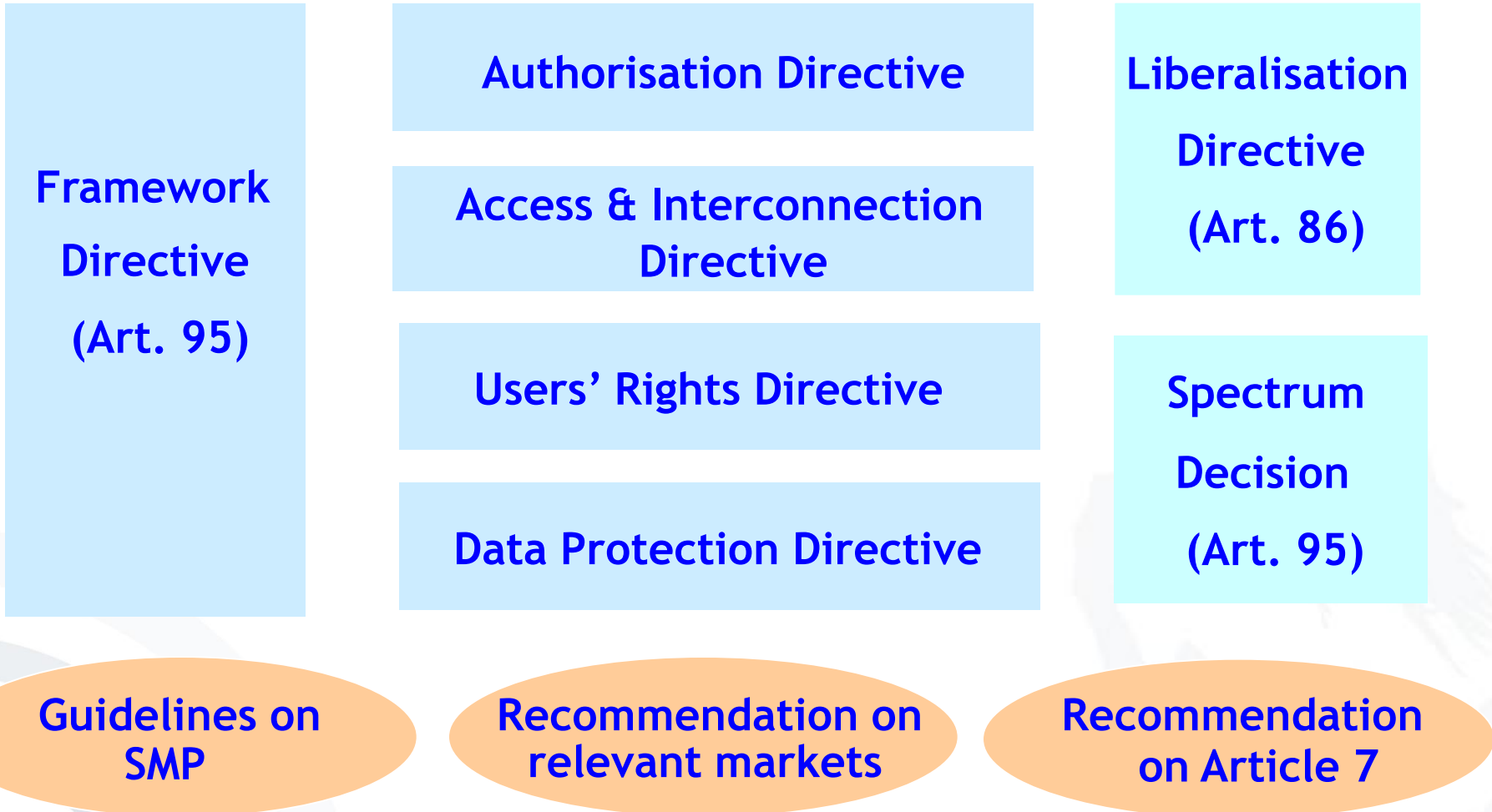
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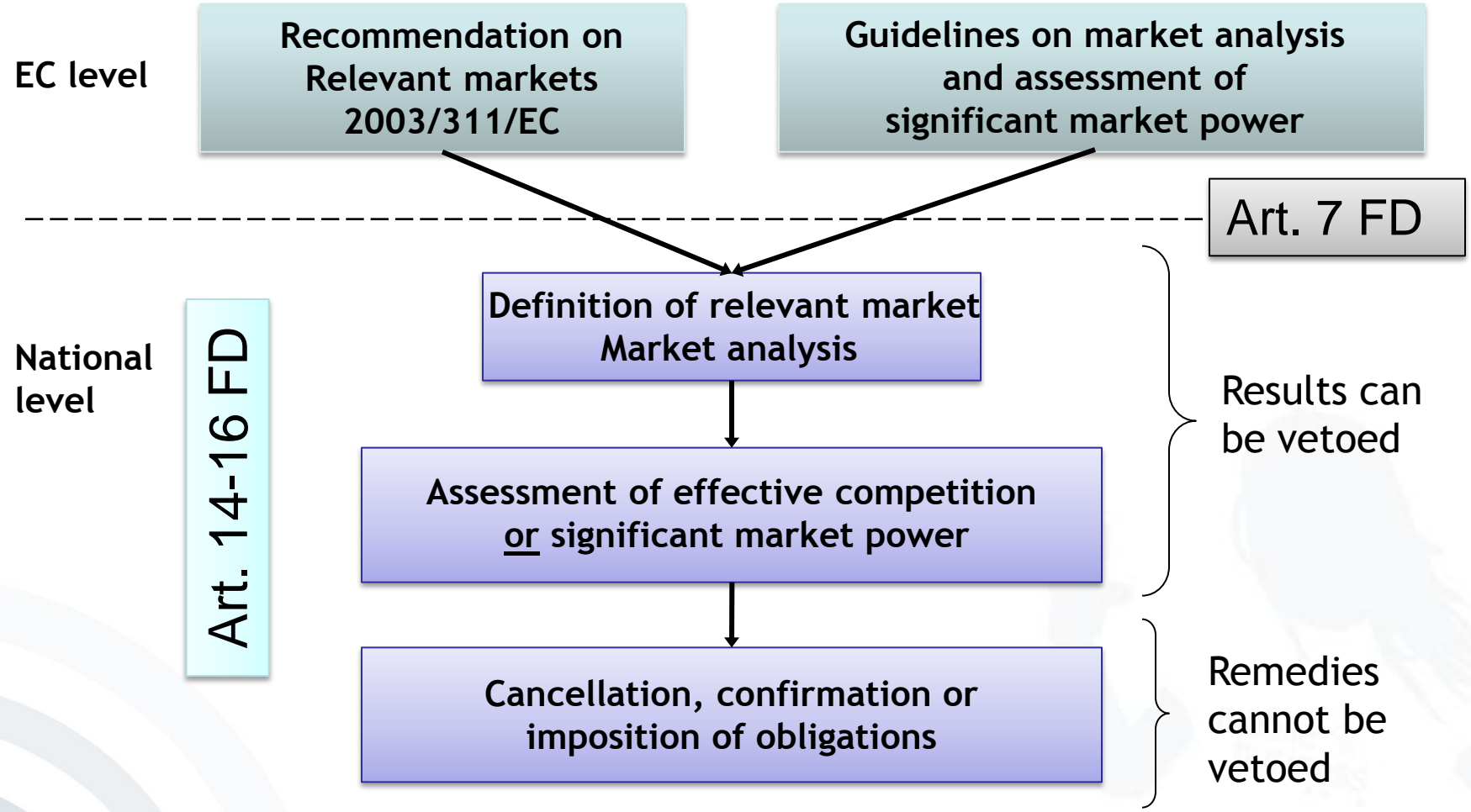
Within the EU:

- Greenbook “Convergence in Telecommunications” (1997)
- EU regulation with aligned rules, e.g. on emergency call services
- Request for joint regulatory authority for telecommunications

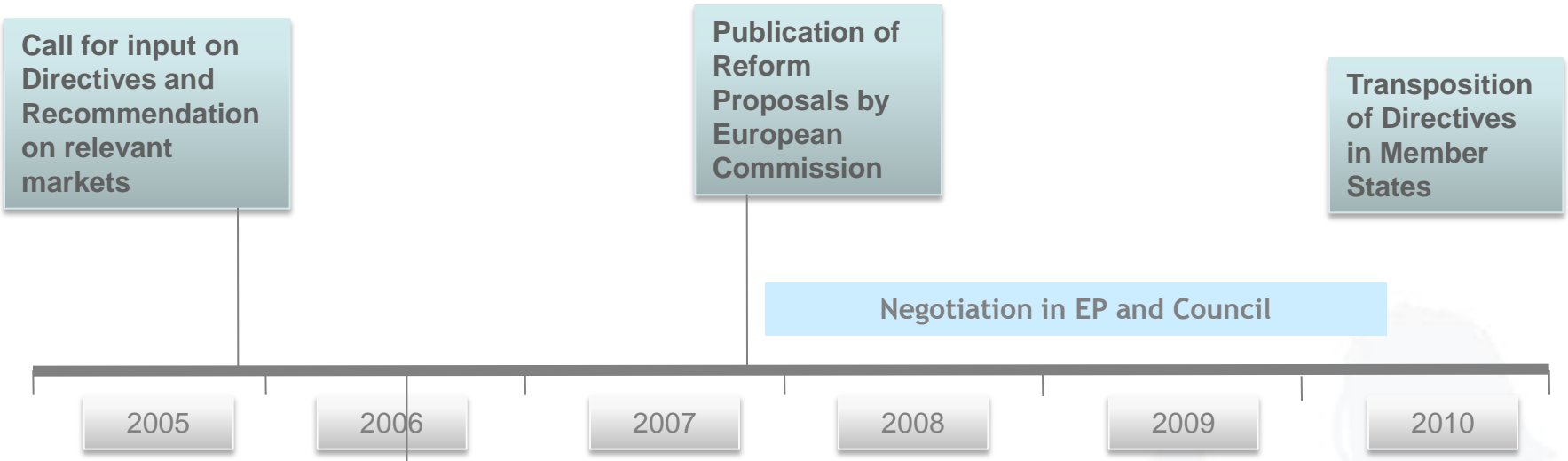
- Separation of media, services and transmission technology becomes obsolete owing to digitization
  - “Range” is not limited to radio signals since digital services are ubiquitous (⇒ Internet)
  - Merging of infrastructure and services (radio as part of the infrastructure, content as service)
- ⇒ Hence, the historically grown separation of technical services and content services is obsolete.

- 1990: Directive on „Open Network Provision“ (ONP) for telecommunications network access within the EU
- 1996/97: Adaptation of ONP:
  - Data protection rules
  - Licensing
  - ONP-revision (e.g. addition of topics like preselection, call-by-call, number portability)
  - Guidelines for user devices
  - National implementation had to happen swiftly.
- 2002: Electronic Communications Networks (ECNS) Regulatory Framework
- 2006/07: Review of the EU Regulatory Framework for electronic communications networks and services (ECNS)





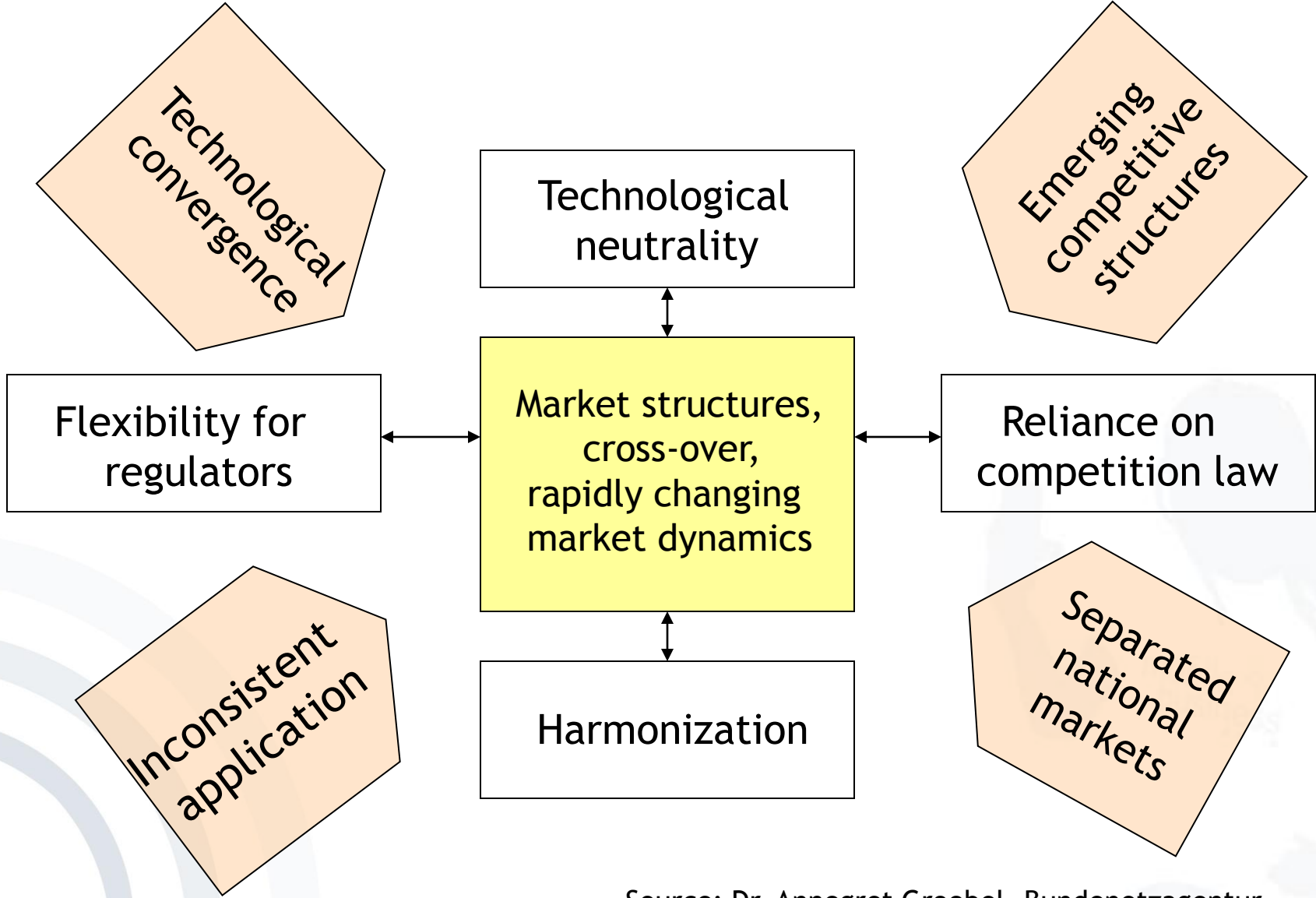
➔ Remedy should be effective → solve the lack of competition  
Important role of national regulatory authorities (NRA) to choose the appropriate remedy



Commission Communication launching public consultation  
Draft revised Recommendation on relevant markets

- Innovation & Investment
- Spectrum management
- Simplification of burden in relation to market reviews
- Consolidate the internal market
- Consumer issues
- Improve security
- International Roaming (prop. Art. 95 Regulation)

- Investing in new technologies: beginning of the investment cycle
  - NGNs
  - WiMax
  - VDSL } Convergent markets
- NGNs will require adjusting the interconnection regime from the current narrowband to IP-IC
- Convergence of fixed and mobile services with potentially changing market boundaries
- Convergence of communications and broadcasting services (bundles)
- New services, new players and a higher market dynamic
- Chances and risks for competition



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- Spectrum allocation for radio and television broadcasting (DVB-T)
- Spectrum allocation for mobile communications
- UMTS-license awarding
- Frequency Allocation
- Digital / electronic signature
- Countermeasures against illegal diallers

## Administration by state media institutions

- Spectrum allocation by tendering
- Public and private broadcasting corporations
- Analogue and digital transmission via cable and broadcasting
- Not responsible for Internet television and Internet radio

- Administration of radio frequencies and issuing of licenses by Federal Network Agency.
- Determining frequency bands
- Administration of licenses for mobile network operation
- Recent licenses were auctioned.

Most recent (May 2010):

Frequency Allocation for high-speed wireless data transfer (800 MHz, 1,8 GHz, 2 GHz, 2,6 GHz)

- Auction amounted to tremendous license costs
- Strict license obligations as to
  - Network construction
  - Coverage
  - Investments
- Dispute over division between federal government and states
- Is UMTS telephony, data service, or broadcast?

- Adoption of the German Signature Act (Deutsches Signaturgesetz (SigG)) and Signature Ordinance (Signaturverordnung (SigV)) 1997
  - Trust center control
  - Security related prerequisites
- EU directive 1999
- 2001 Adaptation of SigG and SigV according to EU directive

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