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UNIVERSITÄT
DUISBURG
ESSEN

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**international law of contemporary
media**
session 3: int'l telecommunications law

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goals of the day

- overview of the telecommunications rules at the international level
- rationales behind the existing patchwork of rules
- role and function of the International Telecommunication Union (ITU)
- regulation of satellite communications
- paradigm shifts in the regulation of telecommunications (from the state-owned PTT to competitive markets, and now to global governance of infrastructure).

2

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**int'l telecommunications law:
explaining a patchwork of rules**

- digitisation / convergence
- different rationales for regulation and different origin of the rules (e.g. pre- and post-Cold War; pre- and post-liberalisation)
- multiple organisations adopting sometimes overlapping or diverging rules
- new forms of governance that are not strictly state-centred and *inter*-national.

3

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old → new

It is however not about the convergence of devices only.

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**the communications model:
layered structure**

content layer
(humanly meaningful messages, communication)

↓

logical layer
(standards, protocols, software)

↓

physical layer
(networks, hardware, all devices connected)

5

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the communications model

	<i>Speakers' corner</i>	<i>Madison Square Garden</i>	<i>Telephone System</i>	<i>Writing / Recording</i>	<i>Internet</i>	<i>PVR</i>	<i>Surveil- lance</i>	<i>Cable TV / ADSL</i>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Content	Open	Open	Open	Open	Closed	Closed	Closed	Closed
Logical	Open	Open	Closed	Closed	Open	Open	Closed	Closed
Physical	Open	Closed	Closed	Open	Closed	Open	Open	Closed

Lawrence Lessig, *The Future of Ideas: The Fate of the Commons in a Connected World*

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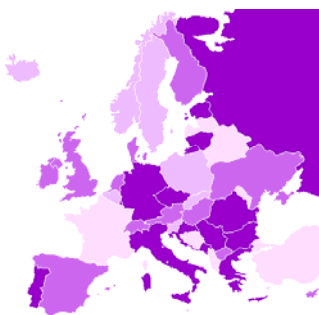
telecom regulation: **rationales**

- **economic:**
- network industry (also e.g. railways, water/gas supply)
- natural monopoly theory (incredibly high sunk and fixed costs, i.e. costs to build the network and the costs to maintain it)
- state-owned enterprises, often part of the administration (PTT); legalised monopoly
- **societal:**
- essential communication means
- universal service (basic services, coverage, quality, affordability for all).

7

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example: universal service



- universal service still needed? constituent elements?
- example: public pay phones
- path dependencies
- Swisscom – universal service licensee (2008-2018)
- for the first time including broadband internet.

mobile penetration Europe
130% >
115-130%
100-115%
< 100%

9

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int'l telecommunications law

- telecommunications inherently *trans-national* nature
- International Telegraph Union (1865)
- International Telecommunication Union, ITU (1932), based in Geneva
- specialised United Nations agency (1947)
- presently 191 members (Switzerland – member since 1866)
- membership includes also 700 private companies and NGOs.

9

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ITU

- permanent and non-permanent bodies
- non-permanent: **the Plenipotentiary Conference** (*plenus + potens, full + power*). **The supreme ITU body; representatives of all member states; meets every 4 years**
- general policy directions; budget; elects members of the Council, the General Secretary; amendments to the ITU Constitution and the Convention
- permanent: **the Council**. Max 25% of the MS; regional representation; highest organ between the conferences.

10

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ITU

- ITU's multi-faceted work is structured into three sectors:
- **Radiocommunication Sector (ITU-R)**
global management of the radio-frequency spectrum and satellite orbits; aims at ensuring interference-free operations of radiocommunication systems. This is ensured through implementation of the **Radio Regulations and Regional Agreements**, and their updates through the processes of the **World Radiocommunication Conferences**.
- **Telecommunication Standardization Sector (ITU-T)**
develop international standards and secure interoperability amongst the already existing ones. The work is essentially done in expert study groups, whose suggestions are transformed into recommendations at the **World Telecommunication Standardization Assemblies** (e.g. H.310 for broadband audiovisual communications; H.323 for videoconferencing, H.264/MPEG-4 AVC for video compression; E.164 recommendation defining the format of telephone numbers).
- **Telecommunication Development Sector (ITU-D)**
making available the newly developed technical standards to developing countries; technical assistance for the building of communication systems, but also for financial, educational and administrative issues.

11

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substantive ITU law

- **Proclaimed principle:** Member States recognise the right of the public to correspond by means of the international service of public correspondence. The services, the charges and the safeguards shall be the same for all users in each category of correspondence without any priority or preference (*Atherfreiheit*).
- However the state sovereignty and the **principle of prior consent** are the effectively applied rules and limit the so proclaimed right to international public communications.
- Member States reserve the right to **cut off any other private telecommunications** which may appear dangerous to the security of the State or contrary to its laws, to public order or to decency.
- Each Member State reserves the right to **suspend the international telecommunication service**, either generally or only for certain relations and/or for certain kinds of correspondence.
- Member States accept **no responsibility towards users of the international telecommunication services**, particularly as regards claims for damages.
- Principles of **secracy** and **efficiency of telecommunications**.

12

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frequency distribution

- until 1973, 'first come, first served' basis
- frequencies as limited resources / digital dividend not fully acknowledged
- planning of radio frequencies is done through the Radio Regulations, which are an intergovernmental treaty; issued every 3-4 years at the **World Communication Conferences**
- **Radio Regulations** define: allocation of different frequency bands to different radio services; the mandatory technical parameters to be observed by radio stations, especially; procedures for coordination (ensuring technical compatibility) and notification (formal recording and protection in the **Master International Frequency Register**).
http://life.itu.ch/radioclub/rr/rrvol1.htm#VOLUME_1
- on the basis of the so allocated frequencies, the state authorities distribute them amongst private users. 13

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satellites

The diagram illustrates a central satellite in orbit connected to various ground stations and services. On the left, services include Broadcast Video to Cable Headends, Direct Broadcast TV Last-mile Broadband, and Corporate Data Networks (Interactive & Multicast). On the right, services include Local ISPs, Video Contribution, Teleport, PSTN, and End Users. At the bottom, Teleport and Internet connections lead to End Users.

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The diagram shows three concentric circles representing different satellite orbits around Earth. Each orbit is associated with an average distance to the moon (240,000 miles) and a specific altitude range.

- Geostationary Orbit:** Altitude: 22,282 miles
- Medium Earth Orbit:** Altitude: 8,000-20,000 Km
- Low Earth Orbit:** Altitude: 500-2,000 Km

•geostationary orbit:
above the Equator, at 35,786 km

•medium Earth orbit:
at 8,000-20,000 km

•low Earth orbit: at 500-2,000 km.

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satellite communications

- if an operator wants to place a satellite into orbit, the ITU Member State must place a request with the **Radio Regulations Bureau**. The Bureau checks the slot and whether it is still free. Then the rest of the Member States are informed about the forthcoming project. If there are no voices against, registered in the **Master International Frequency Register** and **future claims for this slot are blocked**
- **implications: "paper satellites"** (e.g. claiming 6 times more slots than would be actually available in Asia). Some satellite projects have not waited for ITU approval
- while the ITU envisages a **dispute settlement procedure**, this has not yet been used in practice; most disputes settled bilaterally.

16

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satellite communications

- **origins: with the successful launch of Sputnik I in 1957, the operation of the satellite systems was initially a highly charged political arena with important military ("Cold War") implications**
- **Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, 1967: spectrum and orbital slots common heritage of mankind**
- **at that time, national, generally state-owned, monopoly operators; the first satellite systems were accordingly the subject of international treaty, rather than private endeavour**
- **1964: First int'l satellite organisation INTELSAT: US-led consortium of 20 governments**
- **OTHER organisations: INMARSAT, EUTELSAT, INTERSPUTNIK; presently all privatised with int'l supervisory organisation attached.**

17

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trends in telecom rules evolution

- **1st NetWorld Order (NWO): mid-19th century until 1980s: the PTT model; sovereignty as the baseline requirement for global governance; perfectly reflected in the law of the ITU**
- **2nd NWO: 1980-1995: liberalisation and privatisation; from PTT to PTO; pressure from transnational companies and major industrialised countries; competition that is not reflected in the ITU law ; ITU loses practical relevance; forum-shopping (from ITU to WTO)**
- **3rd NWO: 1995 until now: complex governance models "from above" and "from below"; increasing role of private stakeholders; self-governance models (example: standard setting); pressure from civil society and developing countries (WSIS).**

18

example: **standard setting**

- standards particularly important for the smooth function of communications
- initially given by the PTTs
- later agreed on in the ITU; lengthy procedures; thousand of pages of technical specifications
- with the advent of competition and private players, this process too cumbersome (because of the sheer number of ICT standards to be discussed and because of the pace of technological advances)
- standards as strategic tools of market behaviour (**standard wars** – *Betamax v. VHS*; *Blu-Ray v. HD-DVD*; open standards; industry cooperation).

19

- please consult modified schedule of sessions: **session 8 and 9 swapped**
- **guest lecturer on IP:**
Dr. Ingo Meitinger, Swiss Federal Institute of Intellectual Property
- **thank you.**

20
