INNOVATIONS IN SPECTRUM REGULATION

Kari T. Ojala

Ministry of Transport and Communications

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- **BASIS OF REGULATION**
- **TELECOMMUNICATIONS**
- **TV CHANGE FROM ANALOG TO DIGITAL**
  NEW POSSIBILITIES FOR FREQUENCIES ?

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The three Pillars

- The first or 'Community' pillar concerns economic, social and environmental policies
- The second or 'Common Foreign and Security Policy ' (CFSP) pillar concerns foreign policy and military matters
- The third or ' Police and Judicial Co-operation in Criminal Matters ' (PJCC) pillar concerns co-operation in the fight against crime. This pillar was originally named 'Justice and Home Affairs'.

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Decision making in European Union

- Commission
- European Parliament
- Council
- European Court

- National Institutions

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- Law package
  - Frame Directive
  - Access Directive
  - Authorization Directive
  - Universal Service and User's rights Directive
  - Directive on privacy and electronic communications

- Additionally
  - Radio Frequency Decision
  - Market Recommendations [SEC(2006) 837]
  - Regulation of Local Loop Unbundling
  - Regulation of Roaming
  - R&TTE Directive

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Development of Frequency Administration

Technology Neutrality

'regulations':

Decision of Radio Frequencies
R&TTE (The Radio and Telecommunications Terminal Equipment) Directive

Service Neutrality

Trade with Rights of Use

Commission will have more power

Frequency Issue
Article 7 and Market Recommendations
Authorization of Common European Communications Services
Access Directive Article 5 (obligations for non-SMP operators)
Standards
Number allocation

Harmonisation of internal markets in EU

Data Safety and Protection

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Background

Telecommunications Markets Act (1997):

The licences (only for mobile) were issued to those applicants whose operations best promoted the objectives of the Act:

1. in accordance with the reasonable needs of the user
2. competitive with each other
3. technically advanced
4. of good quality
5. functionally reliable and secure
6. reasonably priced

Promotion of the building of UMTS networks

1. **License change**
   - must have own network at least 1/3 of population
   - else where can be agreed cooperation

2. **UMTS 900 coming**
   - change in frequency decree
   - GSM operator can use 900 MHz band also for UMTS
   - UMTS can be got cheaper to sparsely populated areas
   - same operators in 2G and 3G => easy task
   - not only Finland's business

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Promotion of multimedia services
Handset bundling 1.4.2006

1. **Why**

   - partly market demand
   - new 450 network difficult to control (Flash-OFDM)
   - broadband evolution track; bb to every cottage => bb to every pocket

     -- key roles of mobile and wireless networks

2. **Goals**

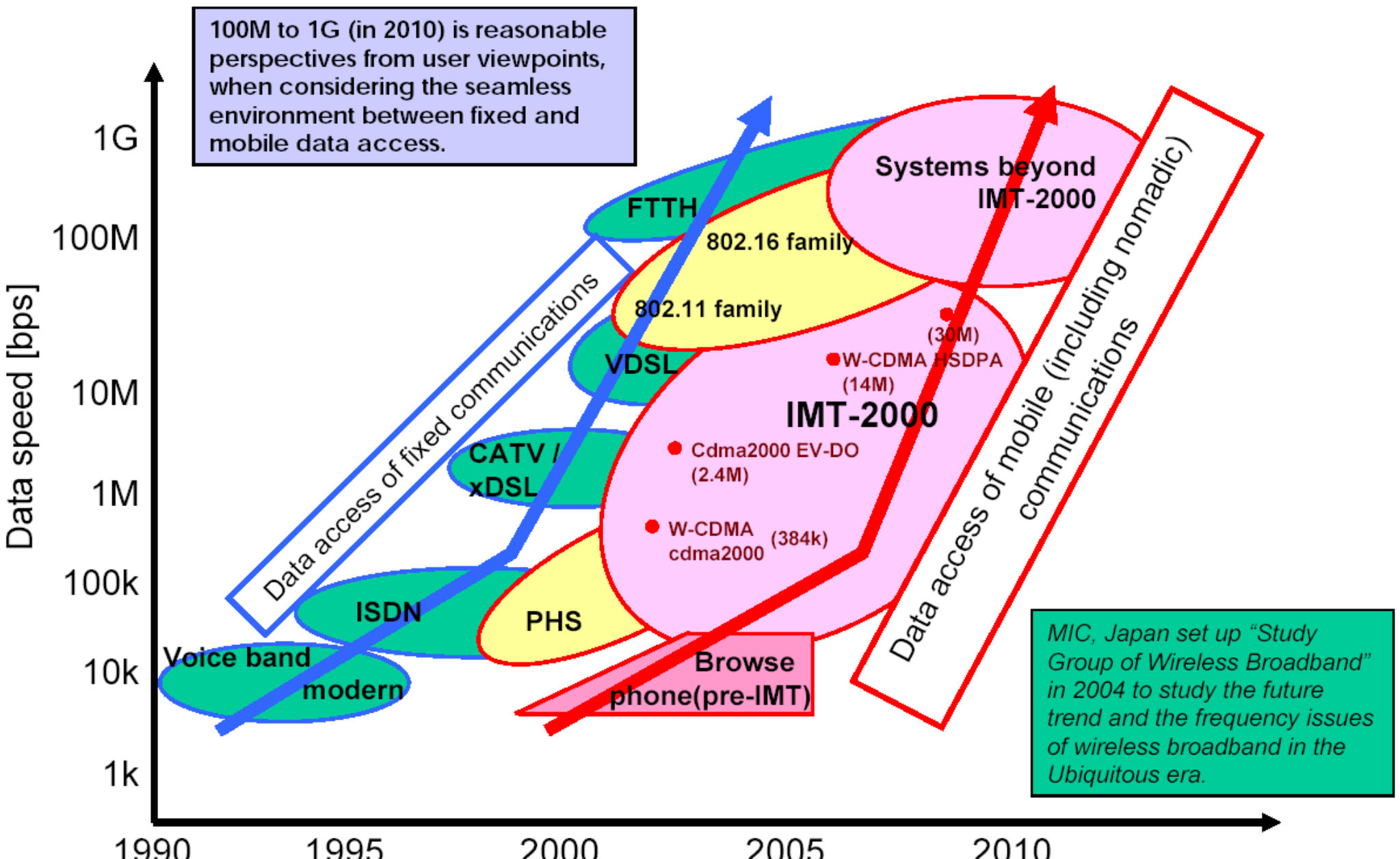
   - new speed into mobile business and especially into UMTS (3G)

     -- services and coverage
   - target service competition
   - ready made service packages for handsets

11. **Regulation**

   - in force three years, separate decision about the continuation
   - obligatory option for unbundled handset
   - not applicable for GSM

Growth of Data Access Speed in Fixed and Mobile communications



Convergence in handheld terminals

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Digital Dividend

Definition 1: (the choice of frequency working group in Finland)

Digital dividend is the amount of vacant frequencies after switching from analog TV broadcasting to digital TV broadcasting

meaning in Finland

the frequencies which are outside one multiplex

Defintion 2: (Ofcom, UK)

Digital dividend is the amount of vacant frequencies which will not be reserved for digital TV broadcasting

meaning in Finland

Digital dividend is the amount of vacant frequencies outside three multiplex

(DVB-H would use digital dividend)

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Switching to Digital TV

1. **Analog TV switch off in Finland 31.8.2007**

   - EU's goal 2012, many Member States will need additional time

   -- common interest, common influences

2. **Meaning?**

   - There would be space for 7 multiplex for digital TV in UHF frequencies and 2 multiplex in VHF frequencies in Finland, ***if*** the frequencies are used for digital TV broadcasting

   (RRC-06, Geneve Agreement)

   - ia. EU Member States augmented the statement, that the frequencies shall be usable for other purposes

   - the capacity of multiplexes:

   -- MPEG2 – appr. 5-6 digi-tv channels or one HDTV channel

   -- MPEG4 – appr. 20 digi-tv channels or 2-3 HDTV channels

   - DVB-T2 standard will double the amount of channels

   - ….and the development and evolution go on!

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Moving to Digital TV

1. **Where could we use released analog TV frequencies**

TV broadcasting

- adding new digital TV channels at present level
- adding new local digital TV channels
- change to mobile or handheld receiving
- change to HDTV channels
- data communications
- mobile-TV / DVB-H

Other communications

- mobile broadband
- wireless broadband (especially in sparsely populated areas)
- low power transmitters / common frequency space
- administrative communications, military, rescue, companies

Other business

- TV program production and wireless microphones

Analog TV switch-off

- Netherlands 11.12.2006
- Finland 31.08.2007
- Sweden 4Q/2007
- Germany 31.12.2007
- Denmark 2009
- Austria, Spain, Luxemburg, Malta 2010
- Belgium, Cyprus, Czsech Rep., Greece, France,
  Hungary, Italy, Lithuania, Latvia, Slovenia, Slovak, UK 2011-2012
- Poland, Portugal, Romania, Bulgaria, Ireland later or no decision

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Working Group for Released Analog Frequencies

Period: 1.3.2006 – 31.3.2007

Task:

To prepare suggestion for the use of analog TV frequencies. Clarification of national needs. Analyzing the impact of European Union's radio frequency policy, international development and the economy of options.

Members in WG:

LVM, Vivi, PL, EK, Ficom, Suomen Televisioiden Liitto, YLE, Digita, Telemast Nordic, Elisa, 3KTV (Finnet), TSF, TDC Song, Ericsson, Nokia, Siemens, C More Entertainment ja Digi TV Plus

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TV frequencies in use

VHF-I-space: 47-68 MHz (total 21 MHz)

- no use for TV in the future

VHF-III-space: 174-230 MHz (total 56 MHz)

- no planned use yet

UHF-spaces IV and V: 470-862 MHz (total 392 MHz)

- in use four DVB-T and one DVB-H multiplex
- space free for two multiplexes

Frequency need for one multiplex (UHF) = 7x8 MHz = 56 MHz

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Do not forget

Digital dividend is not constant

- one must be aware of market changes

Development of other type TV supply and take over

- increase and cover of CATV broadcast
- increase and cover of Satellite broadcast
- increase and cover of IPTV

Development of compression and broadcasting technology

- change from MPEG2 => to MPEG4 and to DVB-T2 etc.
- tasks in change-over

Development of HDTV

- increase in supply and usage
- links to compression and conveying technology

Need for international standardization (EU wide) use

- usage needs and time schedule

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… and don't forget

Change in EU's frequency policy

- will it be change to market based licensing and if yes, how ?

Frequency fees

- willit be changes in usage fees

Planning of use of TV frequencies

- can the use be more efficient and by which conditions
  - -- network plans and frequency allocation

Frequency use for other purposes

- technical restriction for frequencies (domestic and international coordination)

Need of frequencies for mobile and wireless communications

- for which use the digital dividend should be pointed
- which is the motif to get these frequencies

What will be the renewal of EU directives, Finnish Parliament's role and Government role

- all they are in key position

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Division of power and responsibility in EU Member State according to ITU's report

	Same regulator	Different regulator
In politics level power	Austria, Belgium, Cyprus, Hungary, Italy, Malta, Roma-nia	France, Greece, Latvia, Spain
In politics level no power	Bulgaria, Czech Republic, Denmark, Estonia, Finland, Germany, Ireland, Lithuania, Luxembourg, Poland, Portugal, Slovak Republic, Slovenia, Sweden, UK	Netherlands

In politics level there is power only in 40 % of Member States

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Thanks for your attention!

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