

Spectrum lessons from Europe

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Introduction

- Introduction
- Harmonisation
- The success of GSM
- Absorbing PCS 1800 into GSM
- The death of GMPCS
- The death of second generation paging
- The slow rise of 3G
- Conclusions



European Union rôles

- The role of the EC in spectrum remains modest:
 - encourage
 - identify best practice
 - coordinate positions at ITU-R and CEPT
- Member states have consistently refused to cede control
- In 1984 the agreed to ensure the harmonised introduction of future services
 - consult each other before introducing new services
 - establish common guidelines to combine innovation and harmonization
- In 1990, the Council agreed to improve coordination on the use of frequencies
- The 1999 Review heard more discussion
- The 2002 legislative package saw the creation of:
 - Radio Spectrum Committee (RSC)
 - Radio Spectrum Policy Group (RSPG)
- Further proposals from Commissioner Reding in 2006
 - little hope of success



Consolidation of GSM

- Trans-national consolidation by operators:
 - Vodafone
 - Orange
 - Telefónica de España
- Subject to merger control:
 - forced to eliminate overlaps in national markets
 - non-roaming offers were opposed to protect smaller national operators



Market failures

- Proved to be not one but several markets
- Regulation required on termination rates:
 - Voice (2G and 3G)
 - SMS
- Access and call origination markets very heavily concentrated
- Split the national markets for toll-free and premium rate calls
- Imperfectly identified market abuse in roaming
- Leveraging power into adjacent markets:
 - mobile television



A culture of resistance

- Regulatory interventions were opposed
- Took up the spirit of the fixed operators
- Sought to block analysis
- Asserted they were “fiercely competitive”
- Successful in delaying and degrading:
 - mobile number portability
 - reduction of mobile termination rates
- Dominating the broader debate, including mobile television



PCS – DCS – 1800 MHz

- Could have been a competing business model
- Instead it became GSM 2.0
- An exercise in industrial policy
- Allowed existing operators into adjacent markets
- Everything kept within the GSM family:
 - technology
 - business model
- As ever the dual-mode handsets were late
- An lost opportunity for competition and disruption



Satellite-based mobile

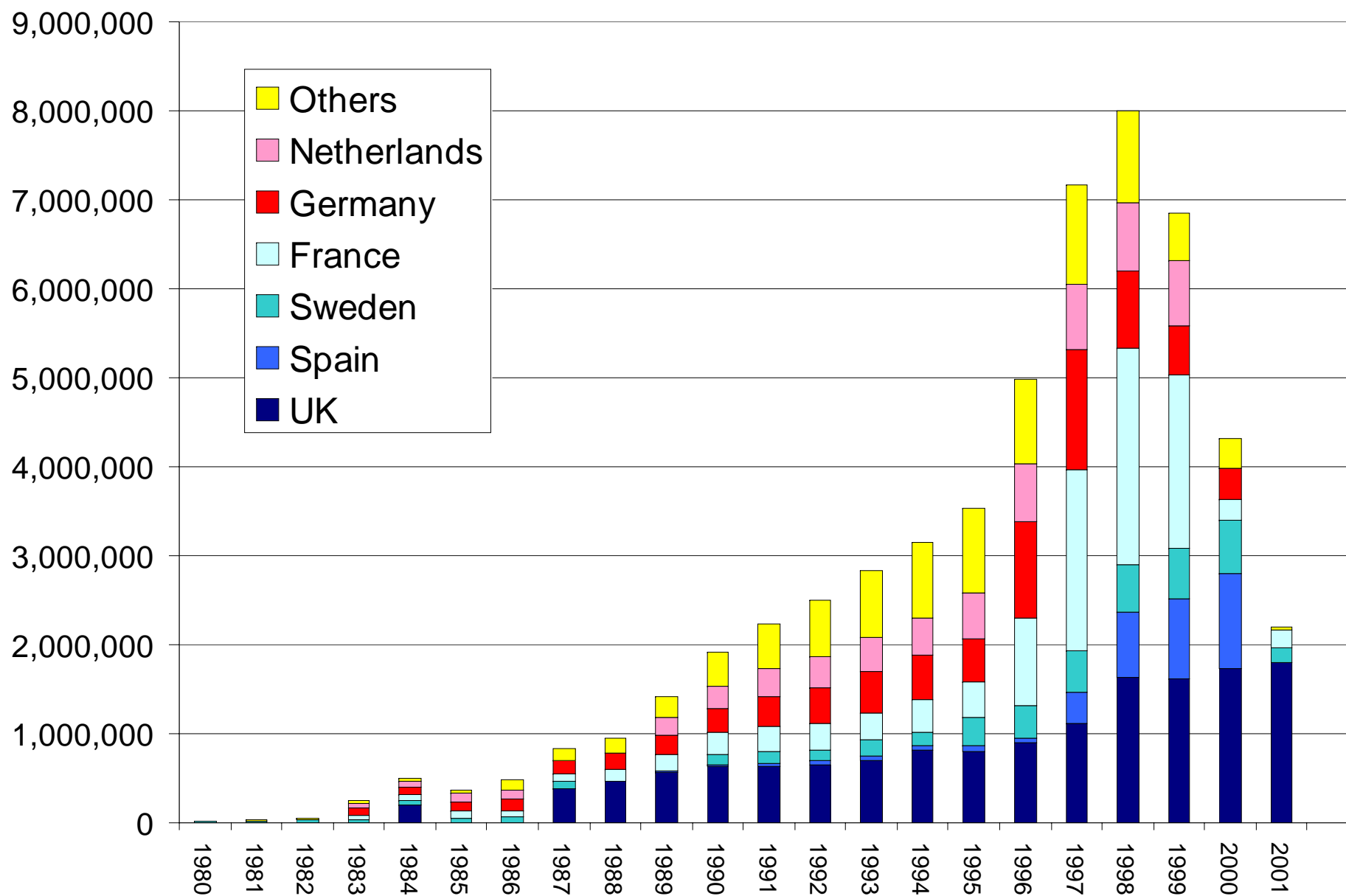
- Fear of the monopolisation by the USA
- Spectrum was assigned:
 - never used
 - still in limbo, to protect “3GSM”
- Bankruptcy of low earth orbital operators:
 - Iridium
 - Globalstar
 - rebirth as niche players



European Radio Messaging System

- Pan-European bi-directional paging
- The market was lost to GSM and SMS
- The spectrum was eventually recycled for harmonised:
 - hearing aids
 - social alarms
 - tracking or tracing systems
 - meter reading systems
 - paging and PMR systems





Tetra

- Second generation trunked radio
- Trans European Trunked RAdio (TETRA)
- Later rebranded TErrestrial Trunked RAdio
- Like GSM:
 - Digital
 - Pan-European
- Despite excellent assignment of spectrum, it became a niche player



3G

- An early push for UMTS
- Slash and burn:
 - new technology
 - new spectrum
 - new handsets
 - new base stations
- Money was (apparently) not a constraint
- Massive divergence between countries:
 - auctions
 - beauty contests



Greed, Gullibility, Grief

- Massive overspending on spectrum to secure existing positions
- No applications
- No suppliers
- No preparation for competition from mobile television and WiMAX
- Eventually some cost cutting
- Delays in roll-out



The Mobile Internet

- Should have been available with GPRS
- But 2.5G was not subject to obligations:
 - geographical coverage
 - data speeds
- Operators did not know what to do with it:
 - very limited investment
- No lessons learned for 3G and 3.5G
- No upstream suppliers of services
- Enterprises turned to Wi-Fi because data was and remains unaffordable



Conclusions

- The myth of the success of GSM
- The reality was:
 - a set of very deeply flawed markets
 - a bunch of overweening operators
- The success has proved to be unrepeatable
- The success killed or absorbed:
 - other technologies
 - potential business models
- Europe:
 - had one success and many failures
 - lost its leadership
 - Remains a set of national markets



Auctions and spectrum trading

- Do not address the market failures
- Do not advance the single market
- Do not create jobs or generate growth
- Do not remove bottlenecks
- Do not reduce market concentration
- They are highly likely to strengthen the established “3GSM” players



Thank you

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