

Mobile number portability

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Introduction

- Introduction
- Competition, portability and churn
- Number portability:
 - fixed
 - mobile
- Internet names and addresses
- Conclusions

Definitions

- ***Number portability*** is the ability or the means by which a user is able to retain their number while taking service from a different operator
- ***Churn*** is a measure of the rate at which customers change to another supplier

Fixed ladder of investment

- New entrants would gradually build out networks:
 - international gateway
 - major exchanges
 - local exchanges
 - local loops
- By regulation they would use:
 - Carrier Selection (CS)
 - Carrier Pre-Selection (CPS)
 - Number Portability (NP)
- Eventually, new entrants would need access to numbers
- Number portability is *essential* to allow customers to change supplier with the least cost and inconvenience

However ...

- The ladder shifted or morphed
- Telephony was no longer profitable
- Broadband came along in time to save some of the new entrants
- A new ladder of investment with:
 - unbundled local loops
 - bitstream access

Mobile networks

- Had more than one operator
- Markets were presumed to be competitive
- Therefore no need for regulated access
- Market analyses have shown this to be untrue, so regulation of:
 - mobile termination rates
 - national roaming
 - mobile number portability

Dominance and abuses

- Obscure tariffs
- High switching costs
- High call charges
- Excessive data charges
- Walled gardens
- Poor quality of service
- Absence of service level agreements
- Lack of customer care
- Over-estimation of the numbers of customers

Mobile is not one market

Wholesale

- Call origination
- Call termination
- Text messaging (SMS)
- Access:
 - national roaming
 - international roaming
 - virtual networks
 - content providers

Retail

- Substitutability
- Cutting the cord
- Services “at home”
- Bundling into triple and quadruple play

Remedies

- Mobile Number Portability (MNP)
- Price caps and glide paths
- Long Run Incremental Costs (LRIC)
- Wholesale access:
 - national roaming
- Accounting separation
- Publication of data:
 - accounting
 - quality of service

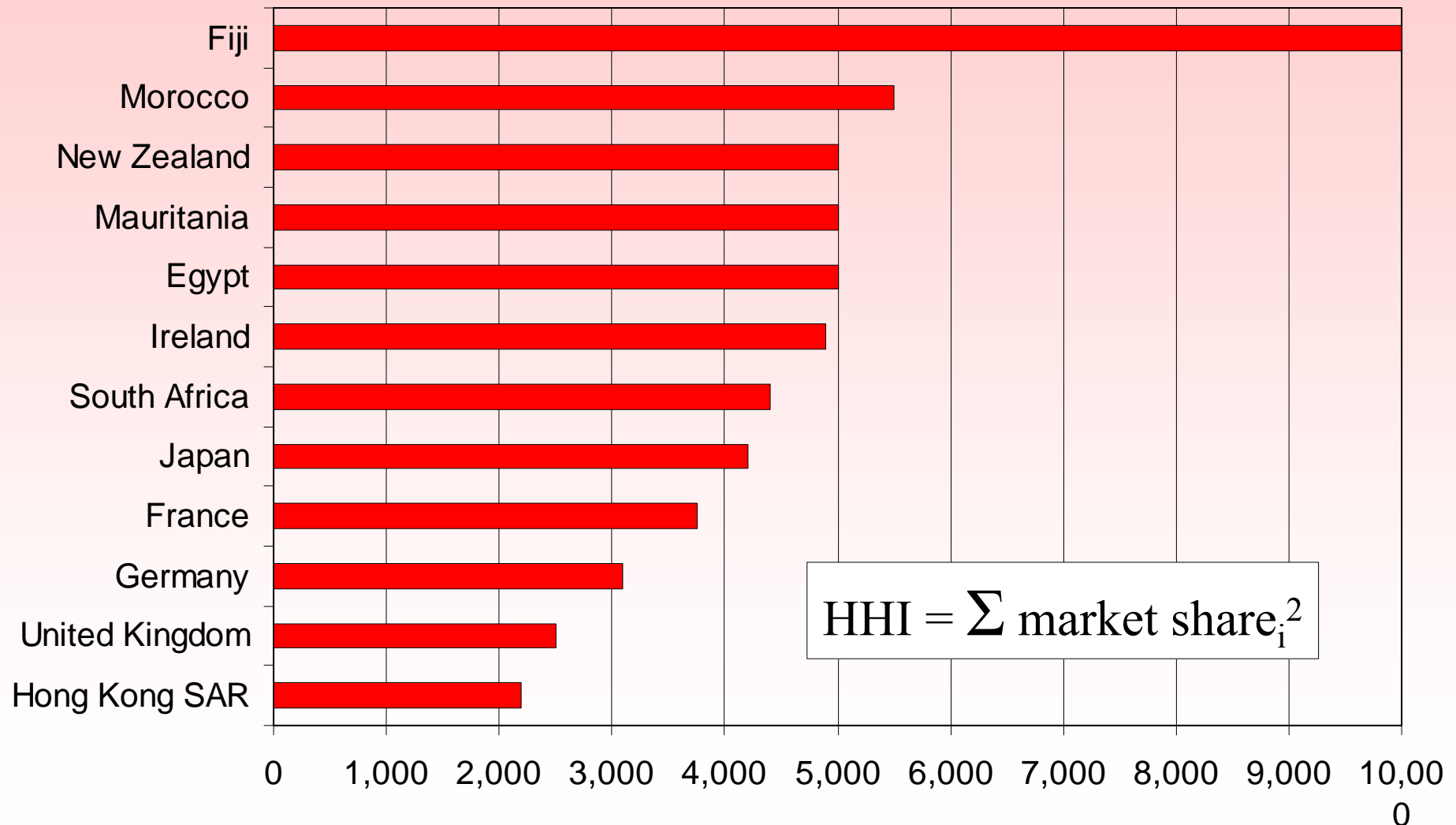
Uncompetitive mobile markets

- Extremely complex tariff schemes
- Very high termination rates
- Outrageous roaming charges
- Blocking of alternative technologies
- 3D on Mobile Number Portability:
 - deny
 - delay
 - degrade

Systematic appeals

- MNOs will appeal any decision (sometimes even if they appear to have won)
- And then appeal again
- To intimidate the regulator
- To create FUD (Fear, Uncertainty and Doubt)
- To divert attention and resources
- To delay change
- To discourage potential market entrants
- It has become reflex and habit

Herfindahl-Hirschman Index



The value of numbers

- Only users create value for numbers
- They propagate their numbers to:
 - customers and suppliers
 - colleagues
 - family and friends
- They generate all:
 - the inbound traffic
 - the revenues

A test case

- In the USA some direct marketing firms used random dialers to find customers not listed in directories
- Many people hated these calls
- US Congress enacted Do Not Call register
- Millions of people registered not to receive marketing calls
- There were the inevitable exemptions for faith-based organisations and political parties

Business customers

- Demand for number portability is high
- There is a marked reluctance to switch providers *without* portability
- Potentially considerable costs of changing numbers:
 - reprinting business cards and other stationery
 - repainting signs and vehicle fleets
 - loss of business
- Having to persuade people to change numbers stored in:
 - mobile phones and PDAs
 - electronic mail software and diaries
 - databases

Multi-national corporations

- Heavy users of mobile telecoms
- Largely fragmented by country and even by individual in contracts
- Want:
 - trans-national services
 - Service Level Agreements (SLAs)
- Operators try to divide and conquer

Consolidation of contracts

- Typically, because of lack of control in purchasing, mobile telephony is found in a range of contracts across the firm
- MNP is a vital enabler - you cannot tell employees they must change their numbers!
- Can improve buying power
- Can claim back errors in bills
- Can improve financial controls (Pareto Principle applies)

Small businesses & sole traders

- Many SMEs and sole traders rely on use of mobile phones
- Often they are early adopters
- Very many use pre-paid
- They are an important part of the market for new entrants
- Without MNP these customers are locked out of the benefits of competition
- MNP for pre-paid is essential



Special number ranges

- Specific codes are usually assigned for:
 - toll-free or freephone
 - premium rate
 - short codes on mobile networks
- The simplest solution on an intelligent network is:
 - a central database
 - individual calls and SMSs to the number are translated to a “real” telephone number
 - then the call is completed
- Number portability enhances the competition to supply these services
- Competition drives down the cost and improves the quality of these services
- Portability is a pre-requisite for competition

Toll-free numbers

Fixed networks

- single number for marketing
- competitive supply
- free to the caller
- proved very popular with corporations
- attempts to extend to trans-national services failed

Mobile networks

- not bound by regulations for fixed networks
- mostly refused low cost freephone services
- instead they pursued “revenue sharing”
- discrimination in the assignment of short codes

Numbers as a tariff indicator

- Historically, numbers indicated the price of a call
- In many countries numbering and tariff schemes have been made so complex that few people can accurately predict the cost of calls
- Increasingly calling plans are flat-rate, so the identification is no longer relevant
- Number portability in making geographic, network and service-based numbering schemes no longer relevant

Entry onto the mobile market

- Many customers will have existing mobile numbers, especially the more lucrative subscribers
- New entrant operators will wish to compete for their business
- Customers want to keep their existing numbers, especially businesses which can exercise buyer power
- Established operators have tried to frustrate the introduction of MNP
- MNP is a *prerequisite* for competition

Bahrain TRA

- “It is counter to the goal of increasing benefits to customers and would be unfair to businesses if they were required to incur these costs because number portability was not available.”
- “Appeals by incumbents against the introduction of number portability have consistently failed; competition commissions and appeal courts have found in favour of the competitive benefits to the consumer.”
- “As a result of its own studies and considerations the TRA is satisfied that available evidence consistently points to the competition enhancing benefits of MNP and considers that MNP may be especially important in a maturing market that is currently served by a single operator”
- “It is accordingly the position of the TRA that it should require the implementation of MNP within Bahrain.”

<http://www.tra.org.bh/>

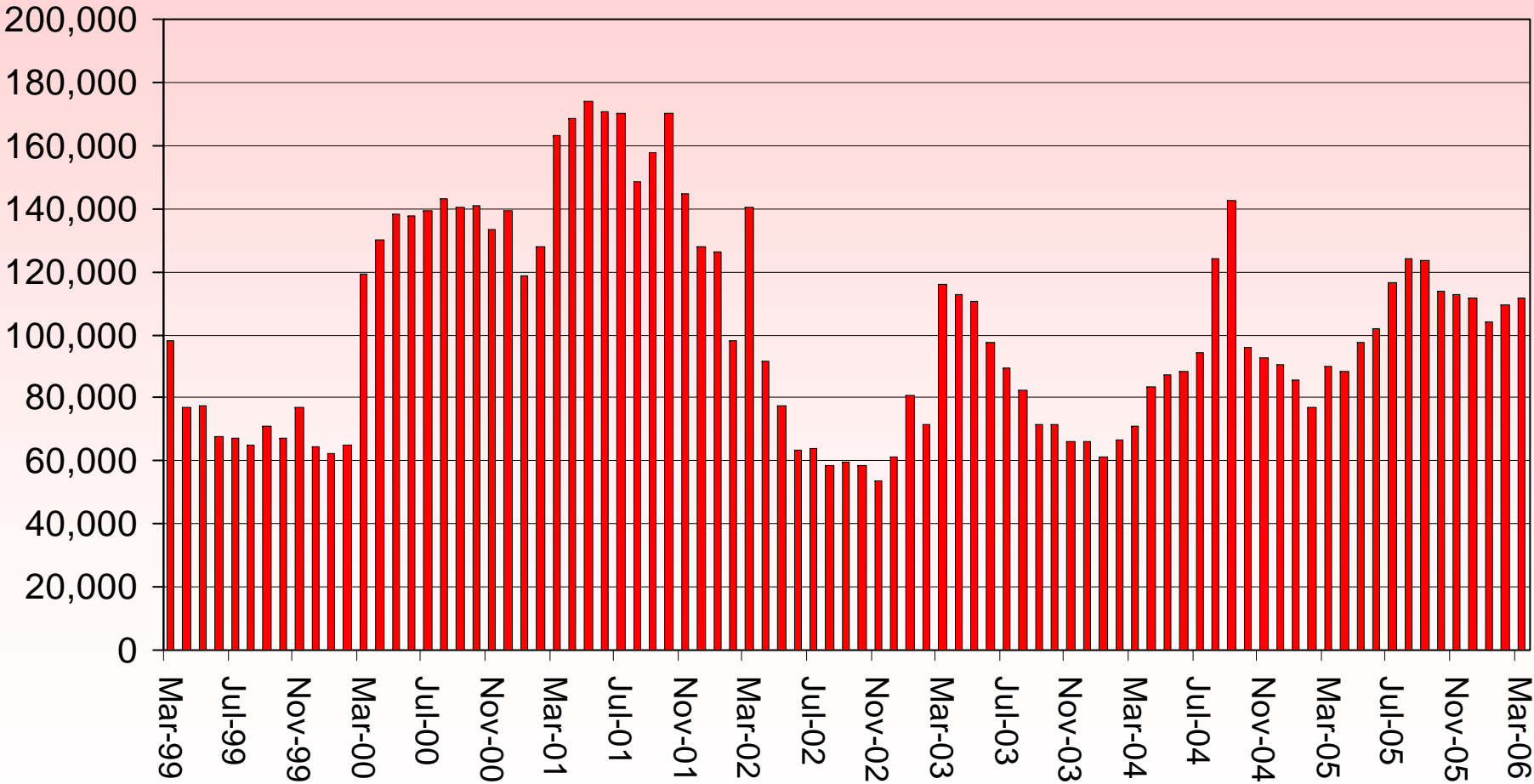
Hong Kong SAR

- A fiercely competitive market
- Around 130 per cent mobile teledensity
- About 1.3 million portings per year, or one quarter of the population
- MNP has become an accepted part of the market

Yan Xu's case study on Hong Kong and China

<http://www.itu.int/osg/spu/ni/multimobile/papers/ChinaHKMobileMultimedia.pdf>

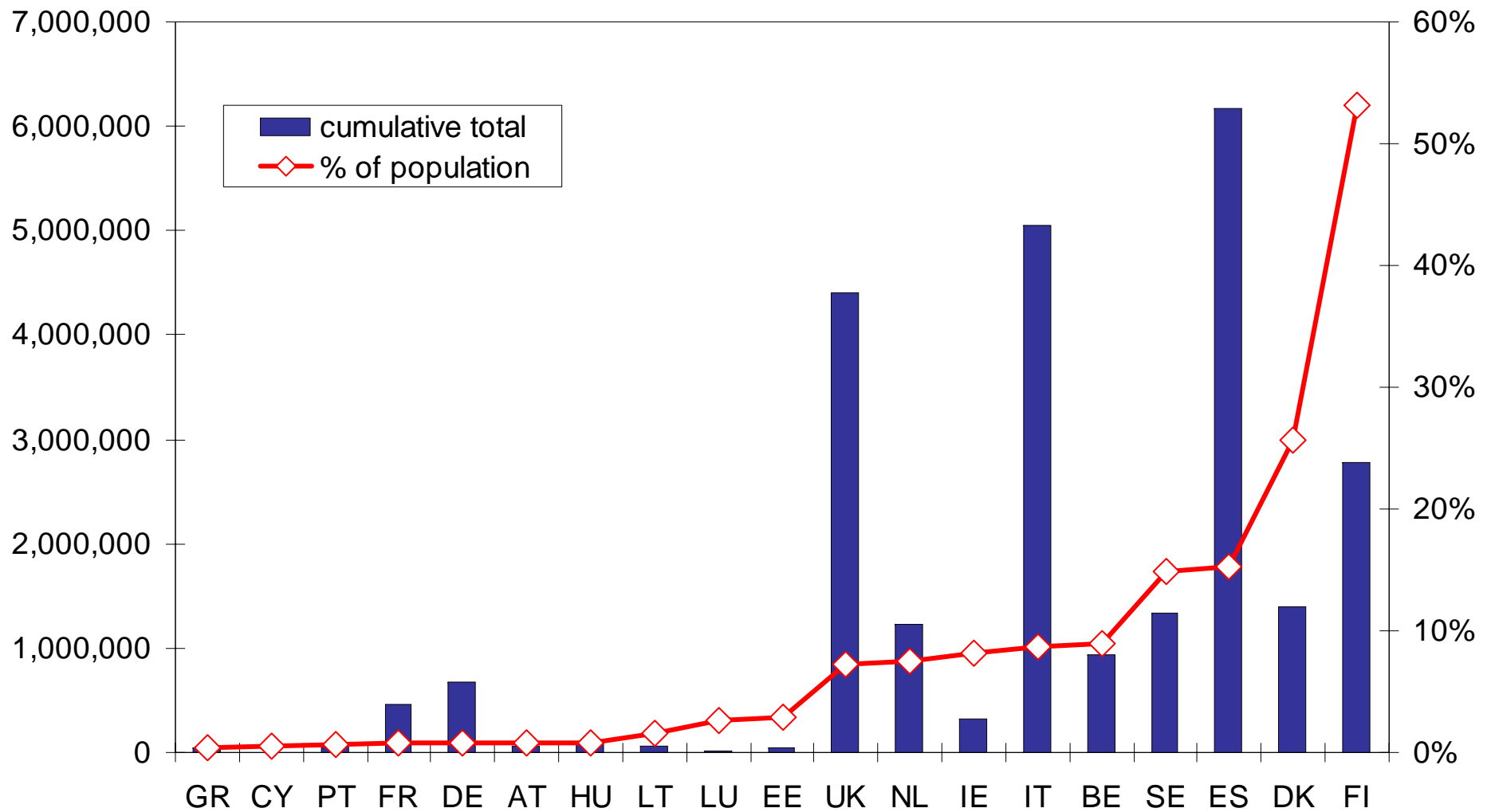
Hong Kong, SAR



European Union – MNP

- Many countries have had MNP for a long time
- EU legal obligation requiring MNP since 25 July 2003:
 - geographic numbers
 - non-geographic numbers
- Technology neutrality, so MNP applies to 2G and 3G
- Each country has created its own complex systems
- Portability between fixed and mobile:
 - Denmark and Switzerland have legal provisions, but extensively delayed
 - one major problem is high mobile termination rates
- No specific legal obligations on Internet:
 - user identifiers
 - domain names
 - IP addresses

Mobile numbers ported in the EU



EU – Subsidiarity

- Member states were each to implement MNP
- Operators demanded “light touch” regulation
- Some countries were incredibly slow
- A few received infringement proceedings
- “incumbent” mobile operators opposed MNP
- Some administrative systems are worthy of Kafka
- Some implementations are just inept
- Subsidiarity has clearly failed!
- Light touch regulation can clearly fail!

MNP effects

- South Korea:
 - fierce competition
 - many new special offers for customers
 - about 3 (of 36) million customers ported to a rival
- United States of America:
 - bitter resistance by operators
 - then fierce competition:
 - to retain existing customers
 - to attract new customers
- Japan:
 - will be available from 1 November 2006
 - operators have announced procedures and plans to resist competitors including infrastructure investment

A widening name space

- Range of networks:
 - GSM, CDMA, UMTS
 - WLL (CDMA and PAS), Wi-Fi, Wi-MAX
 - DAB, DVB, DMB
 - fixed broadband (with Wi-Fi)
- Range of services:
 - messaging, voice, video-telephony
 - streamed content
 - location based services
- Range of devices:
 - PC, PDA
 - games console
 - set-top box

A range of identities

- Telephone number(s):
 - real
 - temporary (e.g., local SIM card)
 - virtual
- Handset and SIM card (IMEI, IMSI, etc)
- IP addresses (fixed, temporary or mapped)
- Personal:
 - social security, passport, identity cards
 - credit cards
 - frequent flyer

Some numbers are needed to block or open access to adult content

Payments

- These are often tied to numbers
- There is a long history of the inaccuracy of bills
- Premium rate “scams”
- Increasingly mobile phones can be used a banking instrument:
 - a major m-commerce initiative by the GSM Association
- Purchases can be:
 - added to monthly bill
 - deducted from stored credit
 - treated as a credit card transaction

Internet identifiers

- Many people adopt *non-portable* identifiers from their ISP and ASP
- Electronic mail addresses:
(e.g., fred@hotmail.com or fred@ethionet.et)
- Instant messaging identifiers
(ICQ 1077801 or skype://fred)
- Social networking software
(fred@myspace.com)

Internet domain names

- In many countries registration of a domain name is restricted and complex
- Often the charges are high or unaffordable
- National ICT strategies should:
 - ease registration
 - create competition amongst Internet registries to lower the cost
 - encourage affordable domain name hosting services
- People and businesses should be encouraged to register their own domain names
- With your own domain name you are independent from ISPs and some ASPs
- Domain names should be portable to other ISPs, subject to applicable contract law

Churn is good (to an extent)

- The ability to switch supplier is a sign of a properly functioning market
- Customers should be able freely to move between suppliers
- However, high churn rates indicate:
 - poor quality of service
 - inadequate customer care
- Combined with high customer acquisition costs, this makes the mobile sector very inefficient
- Operators try to lock customers in with:
 - handset “subsidies”
 - network specific handset designs
 - tariff schemes
 - walled gardens
- But these are unattractive to customers
- Such characteristics invite interventions by NRAs and NCAs

Operator benefits

- NP need not be a burden
- It should be an opportunity to:
 - increase market share
 - target high-ARPU subscribers
- NP does not cause churn:
 - portability only frees customer
- Churn is caused by:
 - poor quality
 - inadequate coverage
 - the offer of better handsets
- A strong, high-quality brand will be able to resist the desire to port to other operators

Conclusions

- Competition is more talked about by operators than engaged in
- Operators have often delayed number portability, but have never managed to avoid it
- Operators have managed to make portability unworkable in several countries
- Increasing use of Internet identifiers requires:
 - vigilance on competitiveness
 - policies to encourage people and businesses to register their own domain names
- Customers create the value associated with names and numbers

Looking ahead

- VoIP is an increasing issue with virtual telephone numbers in distant locations
- An ever wider range of Services over Internet Protocol
- The importance of national numbers disappears into the IP cloud
- The dialling of numbers is declining in importance as we use stored identifiers

Thank you

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