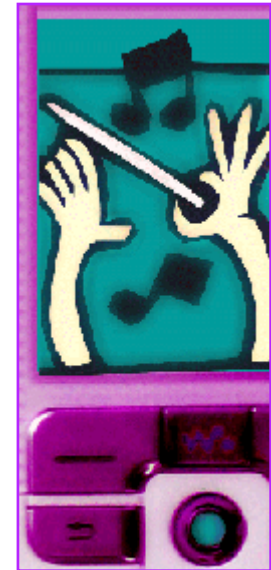


the evolution of mobile multimedia and the role of regulation



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The views expressed in this presentation are those of the author and do not necessarily reflect the opinions of the ITU or its membership.
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changing tides

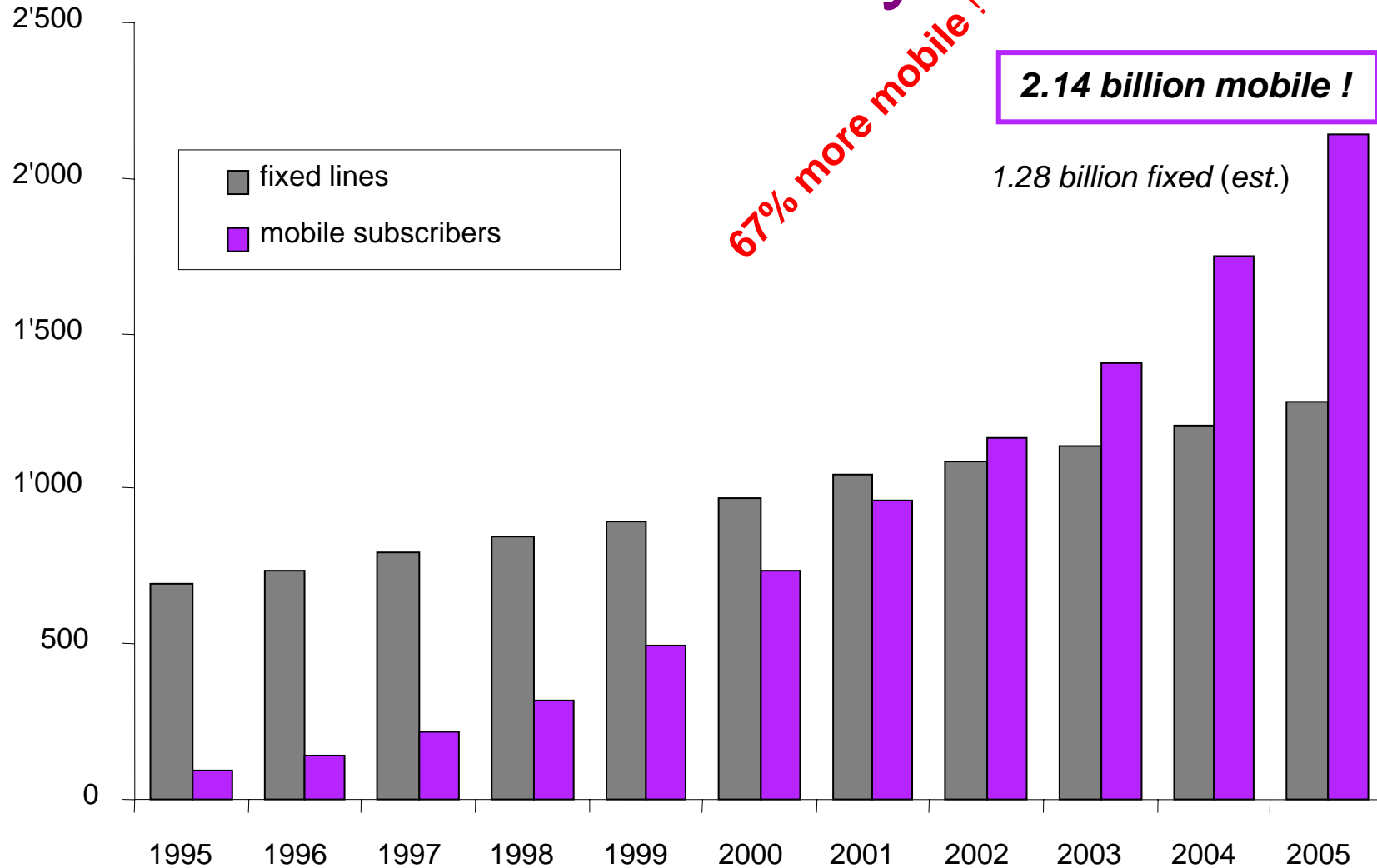
- from local thinking to global thinking
- from stable markets to fast-paced innovation
- from physical distance to virtual proximity
- from occasional information flow to constant information flow
- from big devices to small devices
- from passive users to active users
- from low-speed to high-speed
- **from fixed to mobile**



NASA



we are indeed much more mobile today...





...and not only in numbers

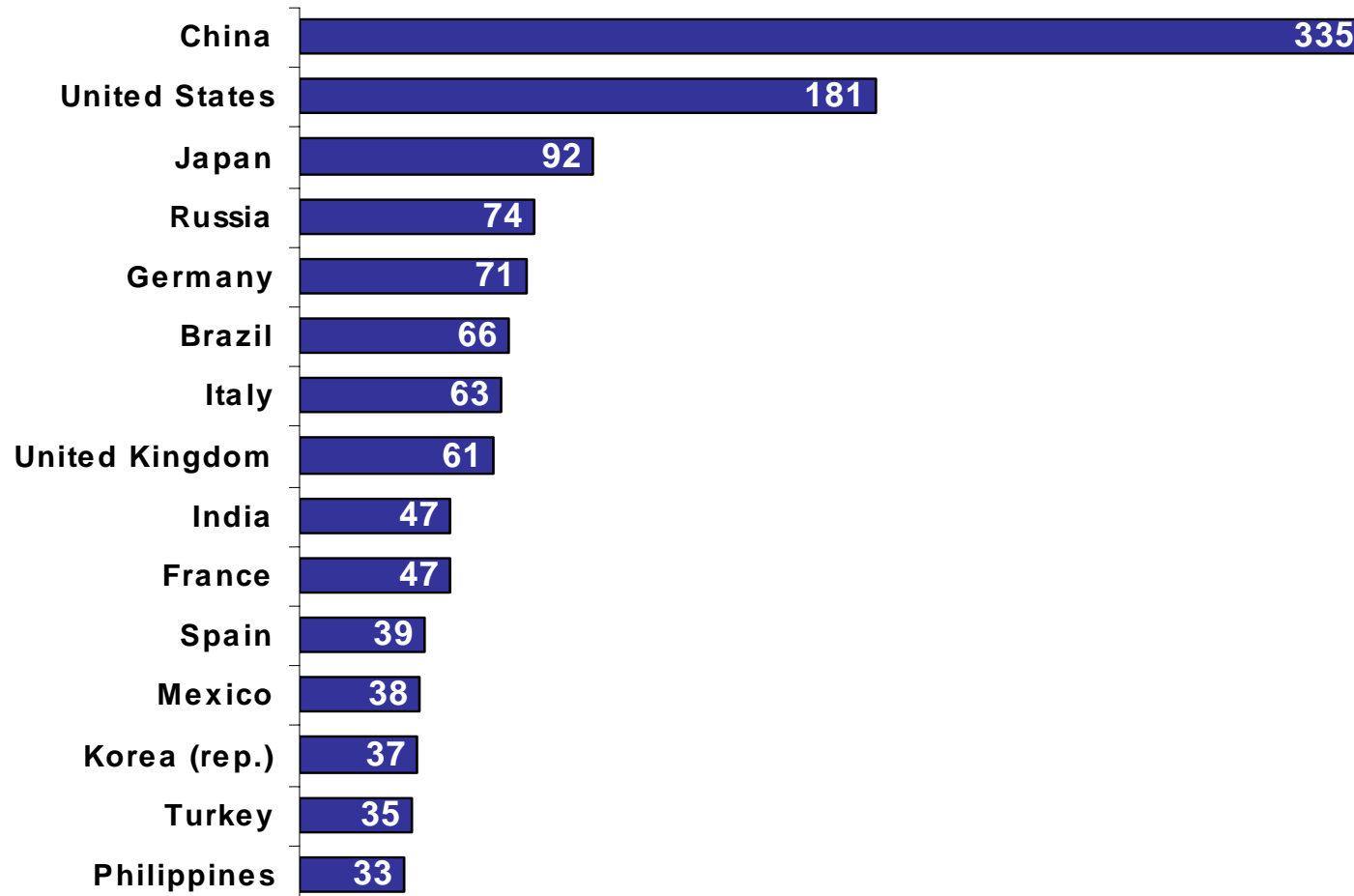
- the mobile has become a portable daily necessity not unlike e.g. a pen or a piece of ID?
- it is typically no more than one metre away from users (day & night)
- it often replaces wristwatch & alarm
- its loss causes panic and major disruption in daily life
- it is reflective of individual identity (as an extension of the self) (e.g. fashion accessory, personal diary, photo album)
- it indeed has wide appeal and can facilitate shared experiences (e.g. moblogging, P2P exchange)
- it's the most intimate ICT device around, creating “emotional attachment” in users





the giants in mobile

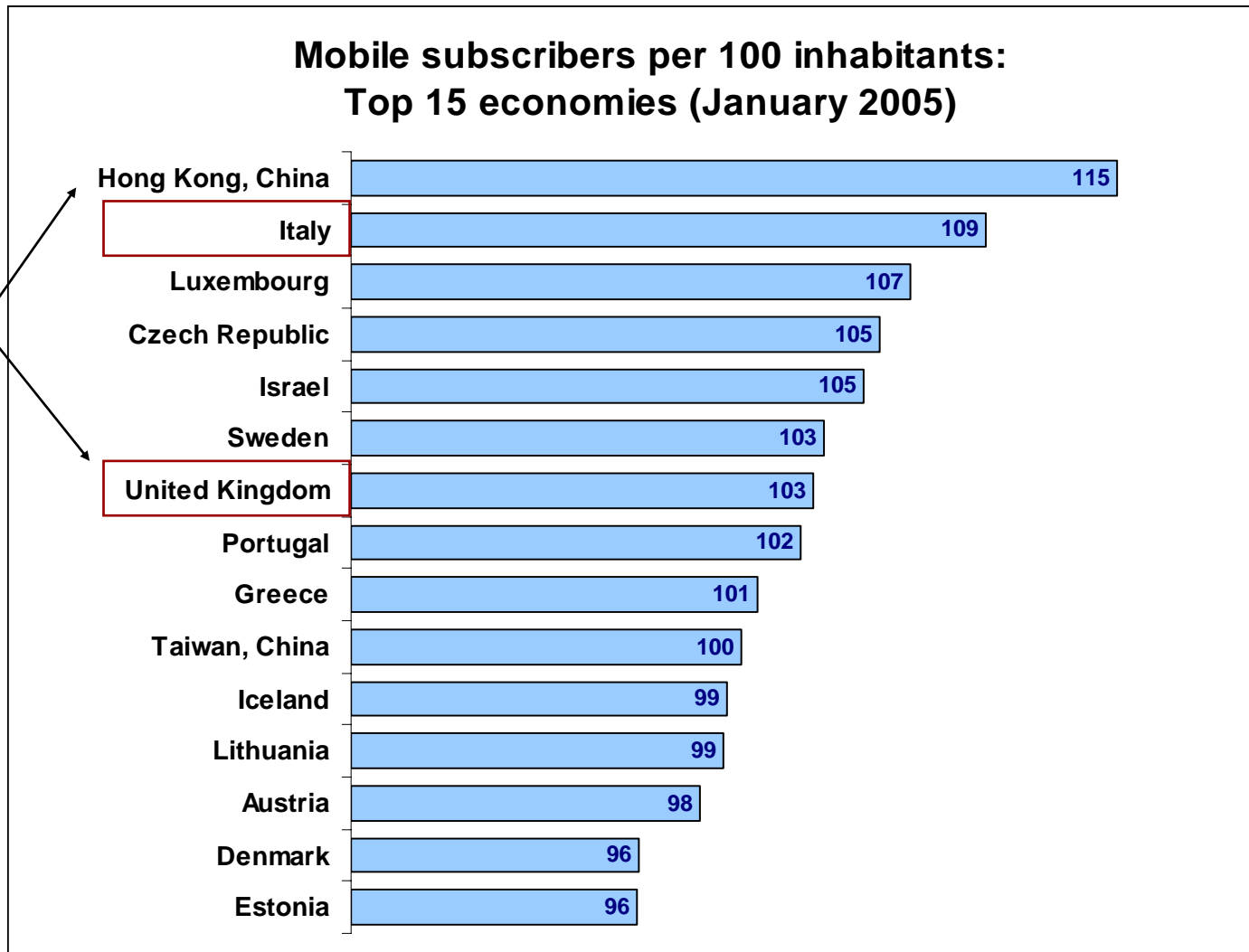
Total mobile subscribers: Top 15 economies (Jan 2005)



and who leads in mobile density?



Italy & UK also in
Top 15 for TOTAL subs





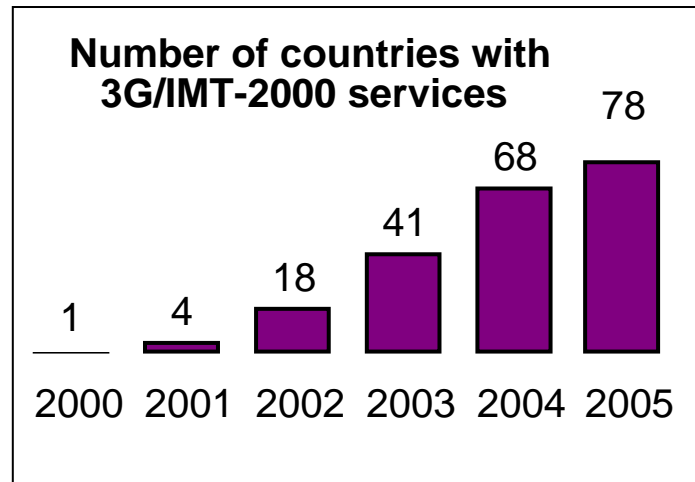
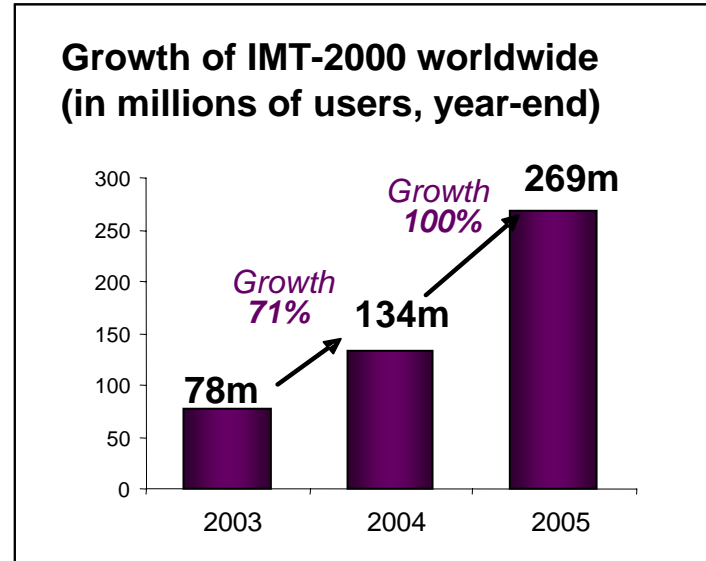
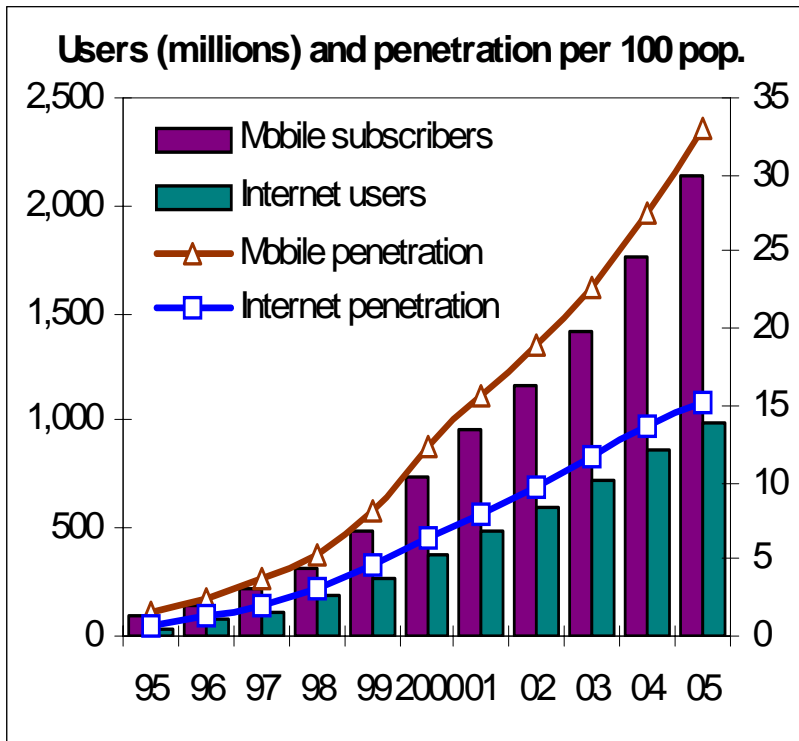
mobiles for extending access...

- Developing countries have seen the greatest impact of mobile communications on access to basic telecommunication services
- Cellular networks can be built faster than fixed-lines networks and can cover geographically challenging areas
- Mobile services have served to boost competition, and prepaid models have opened access to mobile cellular for those who would otherwise not qualify for telephone subscription plans





...and diversifying access, through networks like IMT-2000/3G



Source: ITU



with higher speeds, mobile multimedia begins to take off!

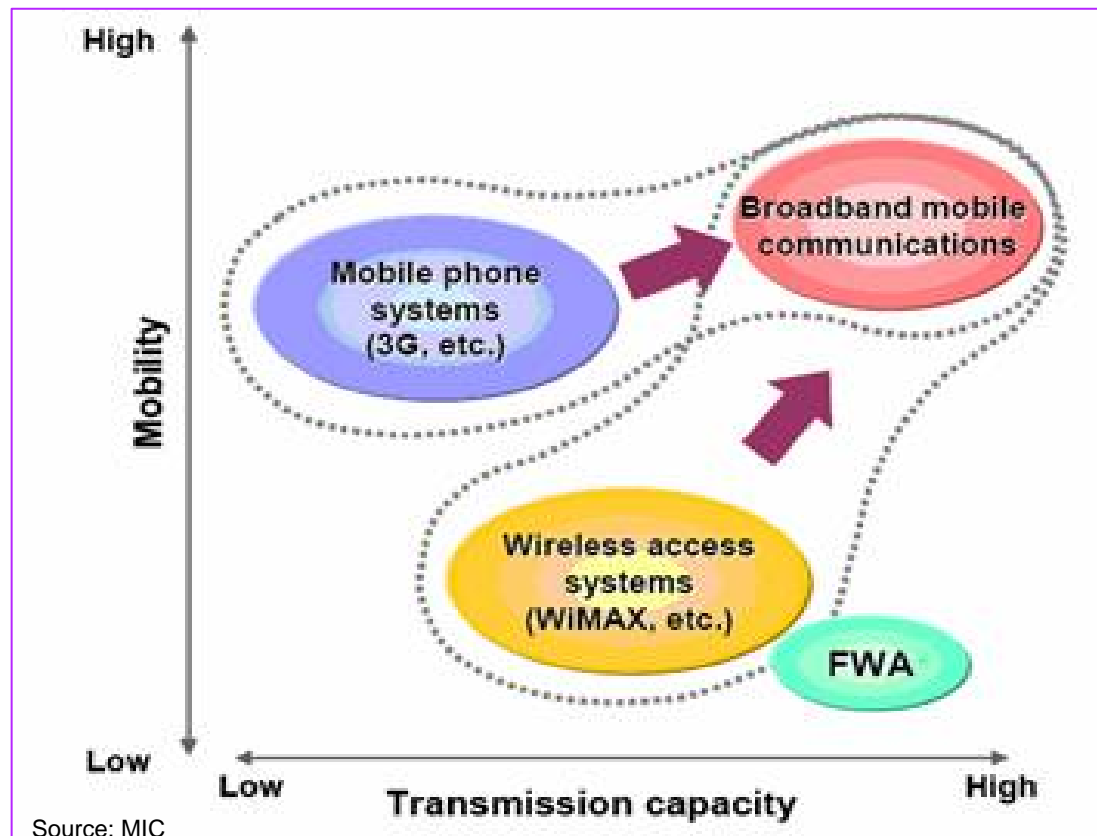
- mobile TV
- videophone
- news & information alerts
- information/internet browsing
- downloading of wallpapers and ringtones
- digital audio and video
- ticketing and transaction services
- gaming





converging objectives: towards ubiquitous broadband connectivity

Key question: how to make effective use of spectrum to achieve this objective?





manufacturers continue to aim for more & more personalization ...

- **fashion phones:** e.g. chocolate-like phones such as Nokia's 7380, LG's slim KG800 & Motorola RAZR, athletes' sport smartphones
- **security phones:** e.g. fingerprints, or Pantech's finger-writing PG-2800
- **mood phones:** e.g. Ornetia biorhythm for windows-based smartphones
- **smelly phones** e.g. Samsung's patent application for perfume-spraying mobile phone functionality
- **slow phones** e.g. NTT DoCoMo's handset which slows down talking speeds

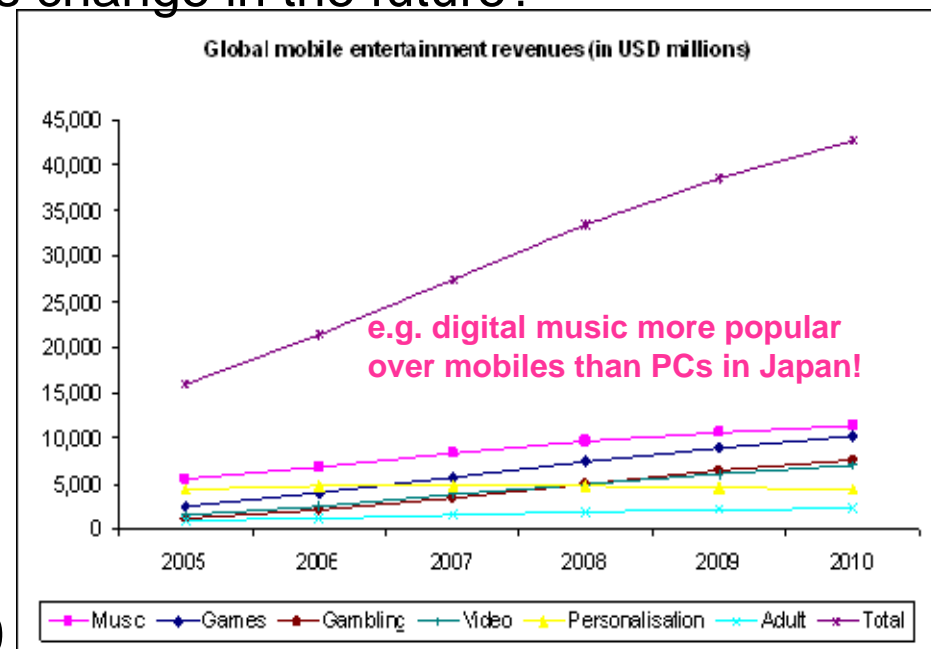


Source: Nokia



...while operators scramble to push multimedia services

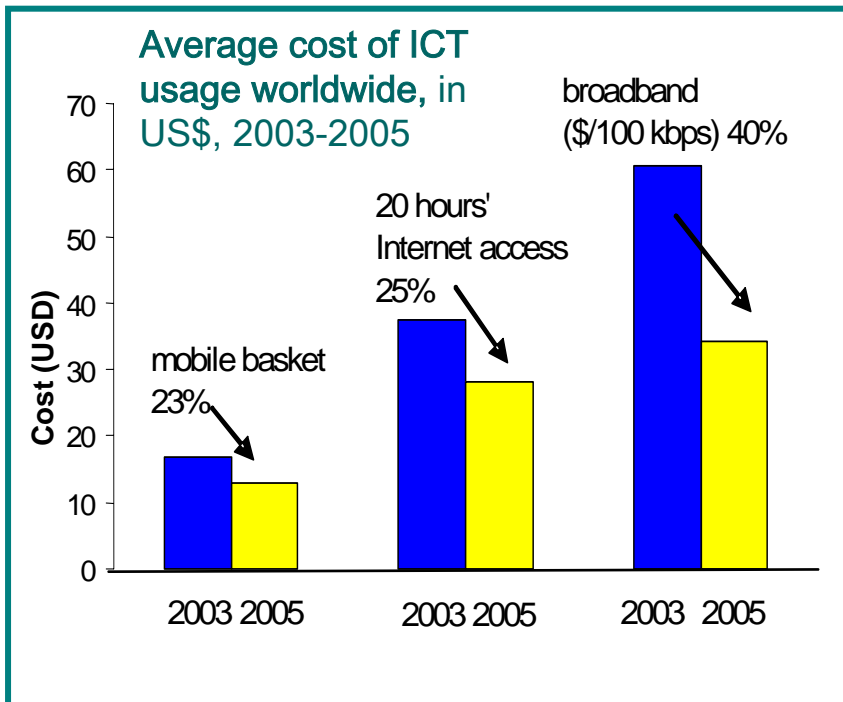
- large proportion of content still stems from personalization services (e.g. ringtones, wallpapers)
 - driven by events or brands unrelated to the mobile industry, e.g. popular TV series. Will this change in the future?
- analysts predict that content will diversify over the next years, first to more audio & video services (e.g. mobile TV, with share of personalization services decreasing)
- Total mobile entertainment revenues set to rise from 15.8 to 42.8 bn USD by 2010
- (how) will traditional mobile players re-position themselves?



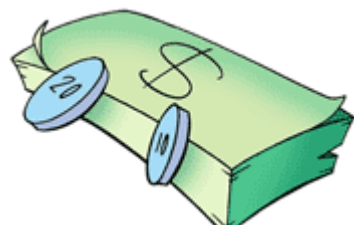
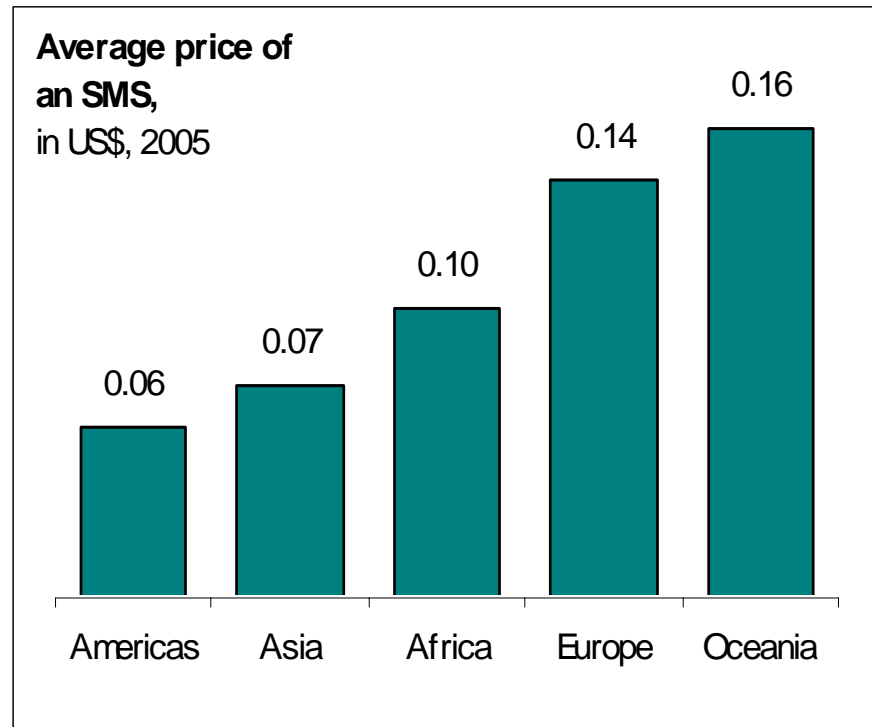


more multimedia - more money...? not in the consumer's pocket

price of mobile services hasn't decreased
at same rate as broadband, internet



cheap-to-produce services, e.g. SMS, priced well-above cost in some regions





affordability remains a problem and threatens take-up

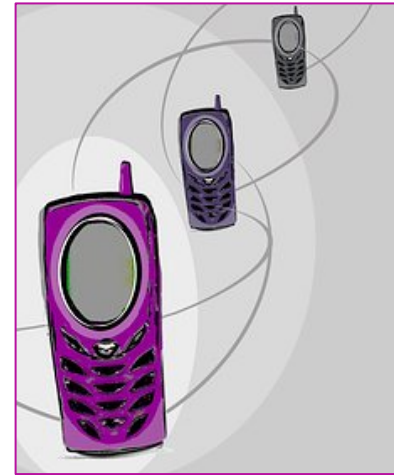
- research by European commission (2004) reveals:
 - 16% of households without a mobile phone cite affordability as obstacle
- mobile termination and roaming are notable for systemic high pricing
- transparency in tariff structures is still limited
- cost of new handsets, in particular 3G handsets, has been cited as obstacle to service take-up
- regulatory intervention could include, *inter alia*: cost-oriented price controls, licence conditions imposing disclosure requirements, price comparisons, and fostering competition (e.g. through MVNOs)





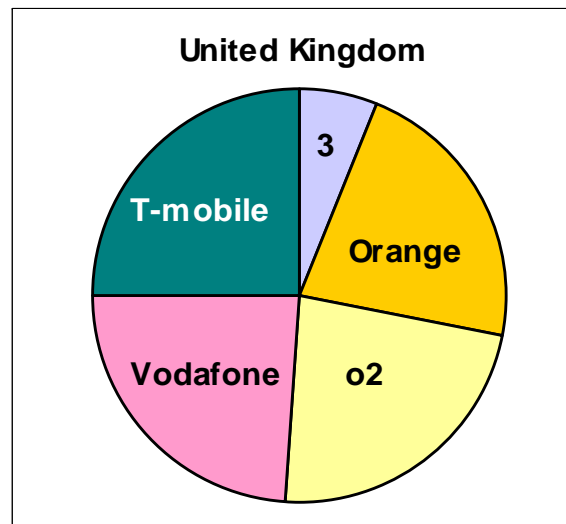
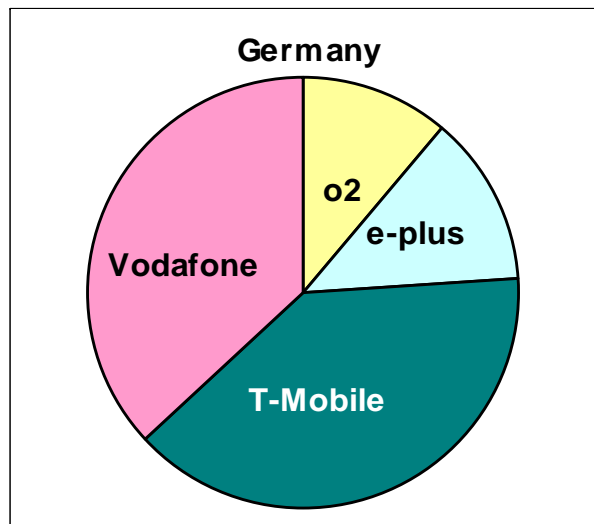
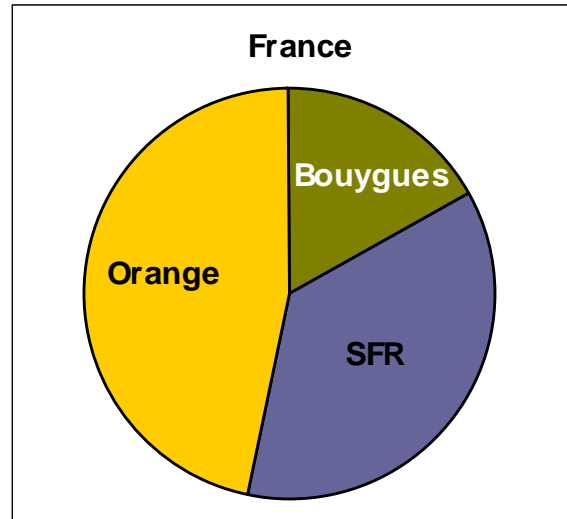
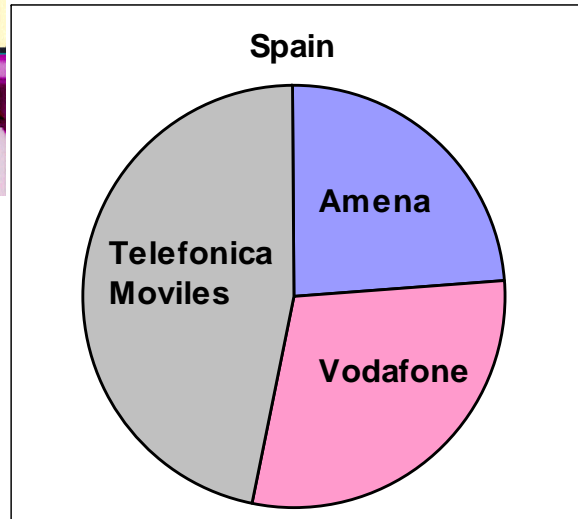
compete, compete?

- ICT regulatory trends in Europe:
 - from *ex ante* to *ex post*
 - roll back of sector-specific regulation as markets become more competitive in favour of competition law
- mobile has traditionally been less regulated than fixed
- many of the larger mobile markets remain relatively concentrated in Europe
- number of specific concerns have arisen:
 - e.g. SMS termination, roaming, access to premium sports content



major mobile markets

Shares of network operators in mid-2005



with exception of UK, retail sector in major mobile markets is relatively concentrated around a few players

... dominated by incumbent (with at least 40% share)

- New entrants have not had much success, with notable exception of 3



the case of mobile sports content

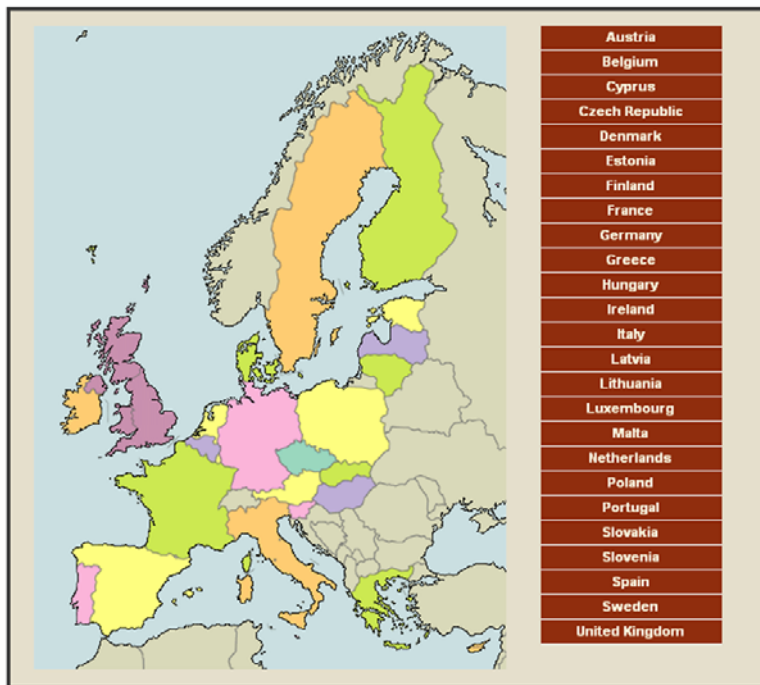
- 2006 **FIFA World Cup™** is expected to be the first mainstream event where video mobile will play a key role as a media platform
- 09/05: the EC released the findings of Sector Inquiry into the provision of 3G sports content
 - inquiry concluded that sports services offered over mobile platforms and non-mobile platforms were distinct markets, due to lack of substitutability
 - though the inquiry covered 3G specifically, it noted the need to keep this question under review as technologies such as fixed wireless networking and DVB-H develop
- EC stated that the market for 3G sports services may form an entirely different market compared to other types of 3G content, which would require case-by-case evaluation
- it went on to highlight areas of particular concern, namely cross-platform bundling of rights, excessively restrictive conditions on exploiting rights (i.e. in terms of transmission length and timing), joint selling and exclusivity.





not so free to roam...

- roaming =15% of global mobile revenues in 2004 (US\$78.6 billion)
- EC first looked into issue in 2000, but to not much avail
- In 2005, a tariff comparison [website](#) was set-up



Informa estimates each fan at the FIFA World Cup will spend €36.50 on roaming charges!

- Roaming charges vary widely, with the highest rate found by EC to be 13 euros a minute (Maltese calling home from Latvia)
- EC now proposing a [regulation](#) (consultation period ended in May 2006) which will be put into effect no earlier than summer 2007



SMS - SOS

- by some estimates, the total SMS revenues in 2005 were about 75 billion USD. Compare this to:
 - Global box office: 25-30 billion
 - Global music industry revenues: 35 billion
 - Videogaming, consoles & all software: 40 billion
- though SMS interconnection costs are very low, **retail costs remain high**
- this does not bode well for future mobile data and multimedia pricing
- though little has been done thus far, some regulators are imposing **price caps** on SMS termination (e.g. ARCEP).
- however, some argue that **intervention at retail (rather than wholesale) level** may be required





calling the virtual

- Mobile Virtual Network Operators (MVNOs) have long been seen as an answer to affordability and competition issues, notably on the European market
 - though many are struggling to break even
- The presence of MVNOs can **promote competition** as follows:
 - enabling new entrants to enter the market without incurring large network costs
 - bringing down prices and expanding consumer choice
 - promoting the use of excess network capacity
- Is a **new generation** of MVNOs starting up?
 - The move from the voice-only reselling model to the niche MVNO focused on content distribution, e.g. Disney mobile, Amp'd Mobile
- Is **there a future** for MVNOs?



content rules

- Specific forms of content
 - the 3Gs
 - regulating specific forms of content
 - increasing use of camera phones and user-generated content
 - protection of minors
- advertising
 - advertising rights & responsibilities
 - the problem of spam
- copyright and DRM
 - prevention of piracy & payment of appropriate royalties
 - rewarding content creation without limiting distribution
 - use of universal principles for DRM
- regulation of mobile transactions, mobile payments





content and convergence

- traditional separation of broadcasting and telecommunications giving way to increasing convergence: both in terms of media & regulation
- Europe's TWF Directive now being amended as *Audiovisual Media Services Directive* (AMS)
 - to cover (scheduled and on-demand) media services over internet, mobile, telecom, broadcasting and over *“any other electronic network whose principal purpose is the provision of moving images to the general public”*
 - regardless of technology used, multimedia services will be subject to a minimum standard of protection relating to e.g. advertising, discrimination, incitement to hatred
- Thus the directive will extend regulation to control audio-visual media services that have, until now, been untouched by specific regulatory intervention, and left to MS's general laws (and self-regulation has been the norm)





the intimate mobile, the private mobile?



- the mobile phones has become one of the most intimate ICT devices ever known
- as such, its use, particularly in light of the growing use of **location-based services** and **camera phones**, has raised concerns about data protection and privacy
- some governments have attempted to control the use of camera phones (e.g. regarding the taking of illicit or indecent photos) as have commercial enterprises (e.g. gyms, night clubs)
- the right to privacy also includes the right to freedom from interference and in this respect, the fight against **mobile spam** is crucial
- other important consumer protection issues include the **health and environmental impacts** of mobile phones



the evolution of RFID-enabled and sensor-enabled smart mobiles

• the diabetic's mobile

- equipped with a sensor to test glucose level, an RFID reader to read information on booklets/articles or prescription drugs, and an RFID tag containing vital medical information



• the shopper's mobile

- the sensor senses restaurants nearby, the RFID reader easily scans product information and the embedded tag enables up-to-date information on sales and promotions in the shopper's vicinity and facilitates e-transactions



• the kid's mobile

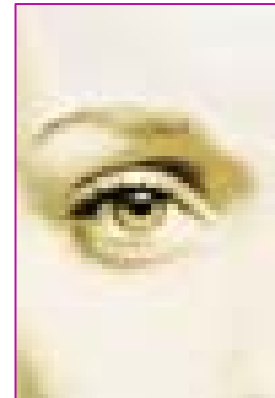
- the sensor senses detects the proximity of peanuts (if child has an allergy) or any other danger (e.g. smoke, gas), the RFID reader can enable the child to read printable tags on assignments, and the embedded tag sends out location information to concerned parents or teachers as well as serving as a micro-payment platform (e.g. for buying snacks or drinks without having to carry cash)





big brother on the phone?

- growth of citizen journalism
 - through use of camera phones and moblogging, all human activities susceptible of being recorded
 - climate of security threats and terrorism may mean that vigilantes become increasingly common
- lack of technical and economic incentives to delete any information about anyone
- such an environment of surveillance (real or perceived) may lead to lack of individuality, self-expression and greater anxiety in decision-making (no matter how small)
- these elements are crucial to individual and societal development

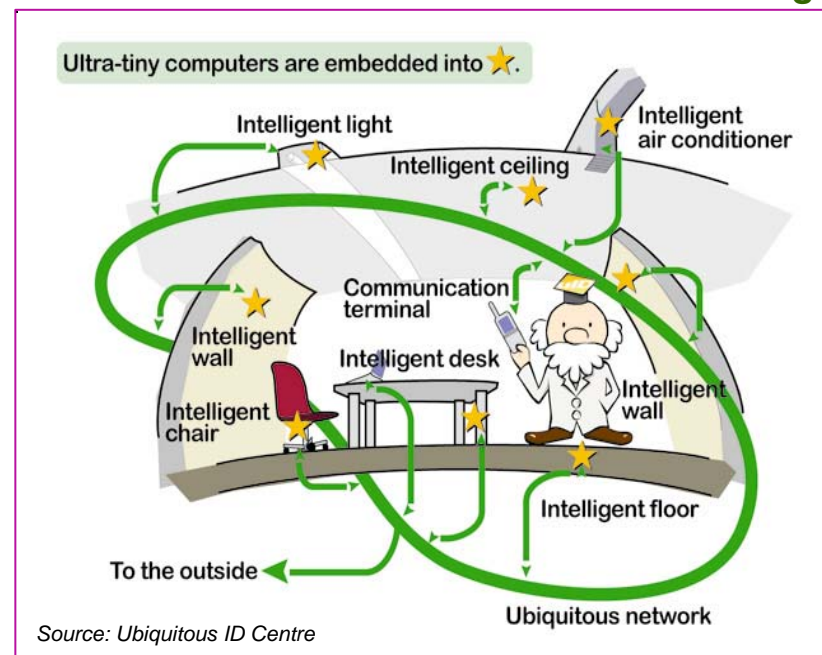




from mobility to ubiquity

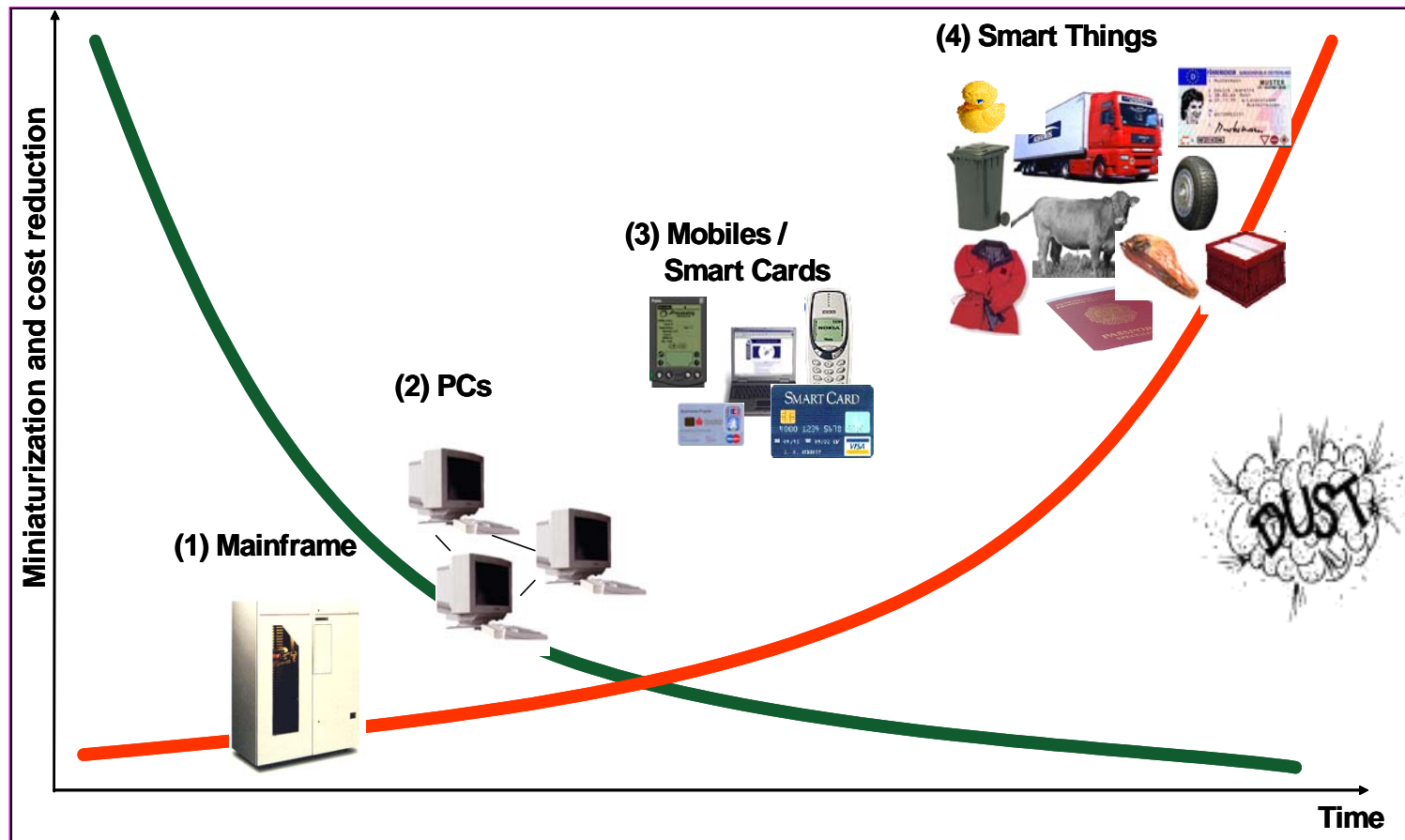
- the overwhelming use of mobile communications today is but a beginning
- we are witnessing the dawn of a new era of ubiquitous/ambient connectivity
- growth of technologies like wireless sensor networks and RFID mean that in the future, individual items or things may become networked, leading to an “internet of things”
- what issues can already be addressed in an always-on mobile multimedia environment that might foster the growth of ubiquitous networking, and ensure its user-centric, healthy and safe development?

From smart mobiles to ambient networking



a smaller and smarter world?

with developments in miniaturization and nanotechnology, smaller and smaller things could become “networked” (nano-wireless?)

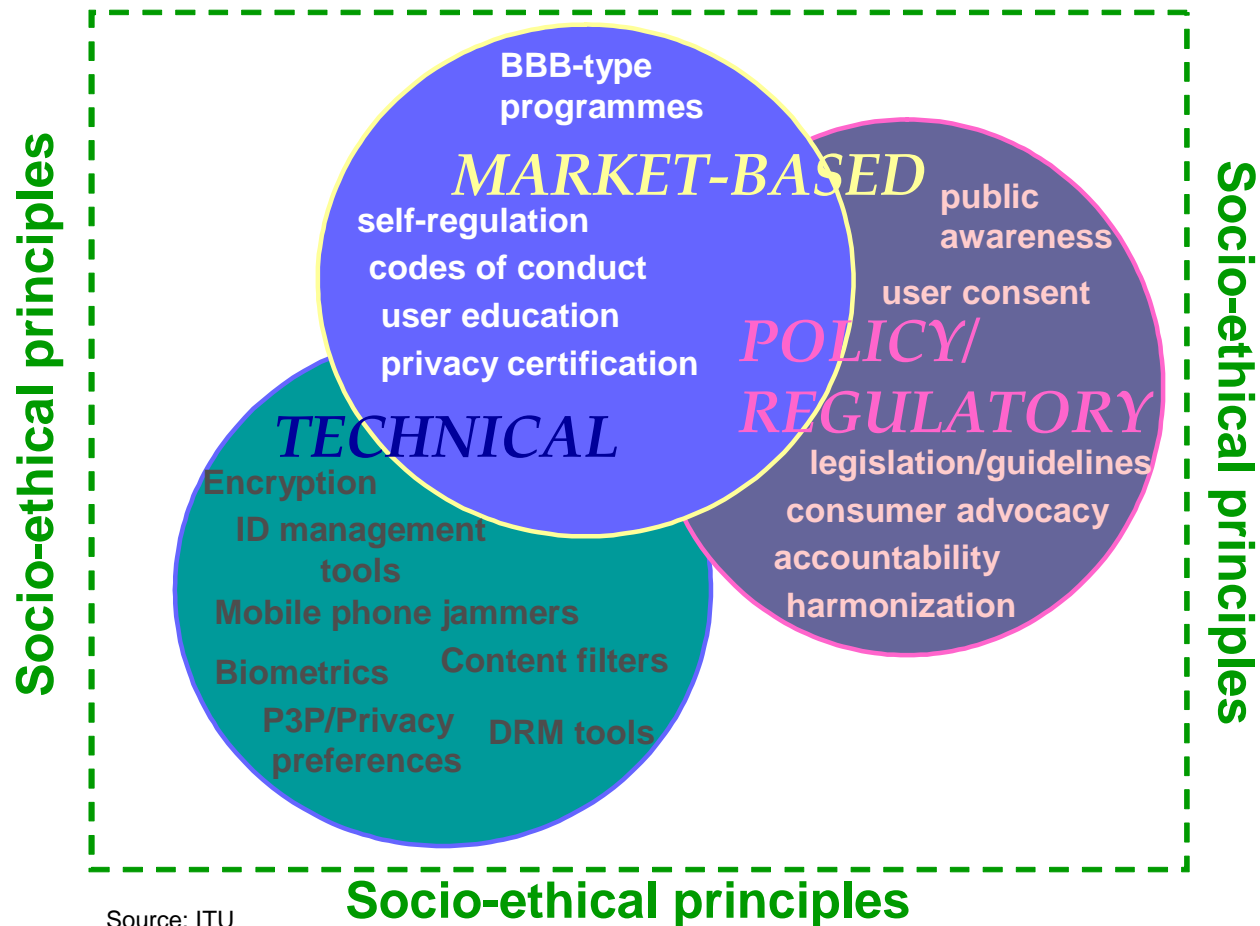


Source: ITU, “Ubiquitous Network Societies”, April 2005, www.itu.int/ubiquitous



How to be future-proof? ... by ensuring a holistic approach

Example: Privacy and data protection in mobile multimedia



Source: ITU



... through global dialogue

- development of harmonized approaches:
 - spectrum management
 - licensing
 - global standards
- data protection schemes across borders
- development and interoperability of privacy-enhancing technologies (PETs)
- articulation of global digital identity management principles
- international cooperation on digital rights management
- global efforts for security in infrastructure
- governance issues





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