

# Wireless Data Services

Simon Garth

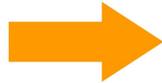
Vice President, Marketing - Symbian

9/2/2005

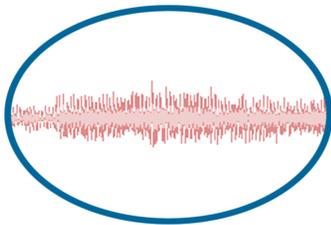
# Overview

- The mobile phone
  - ... Where it is today
  - ... Where it is going
  - ... Modelling the opportunity
- Background - product adoption lifecycle
- Applying this to Wireless Data Services
- Example services
- Conclusion

# Phone Evolution

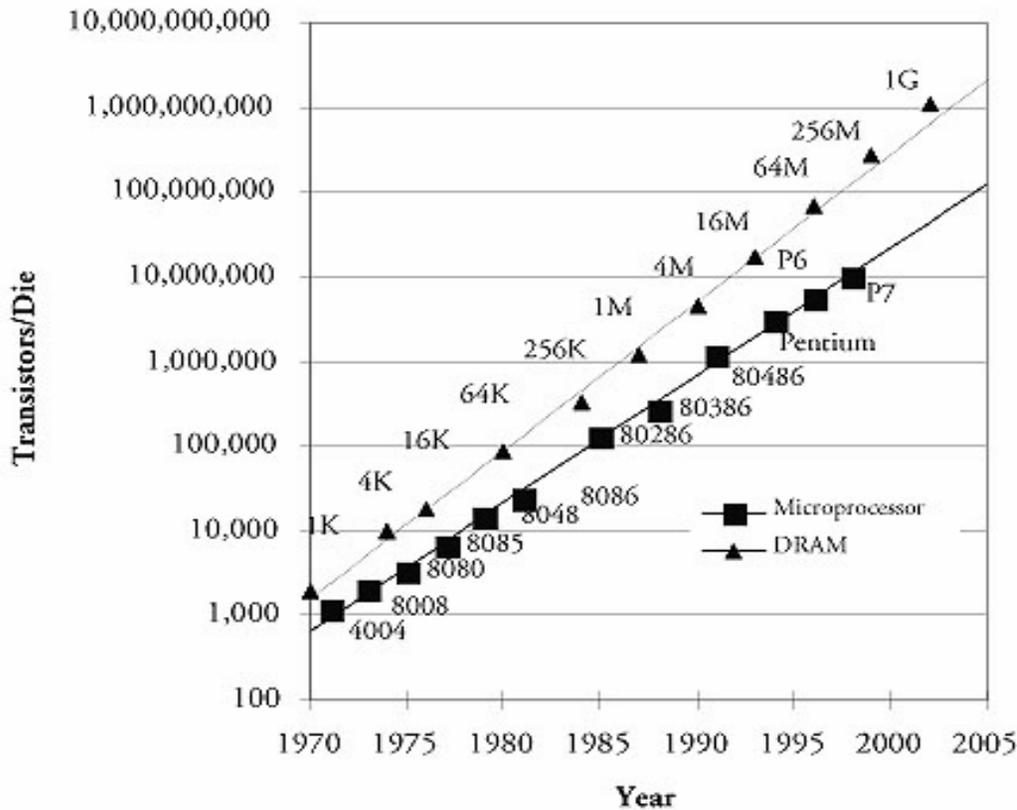


# Digital Revolution



# Smaller, Faster, Better, Cheaper

From this...

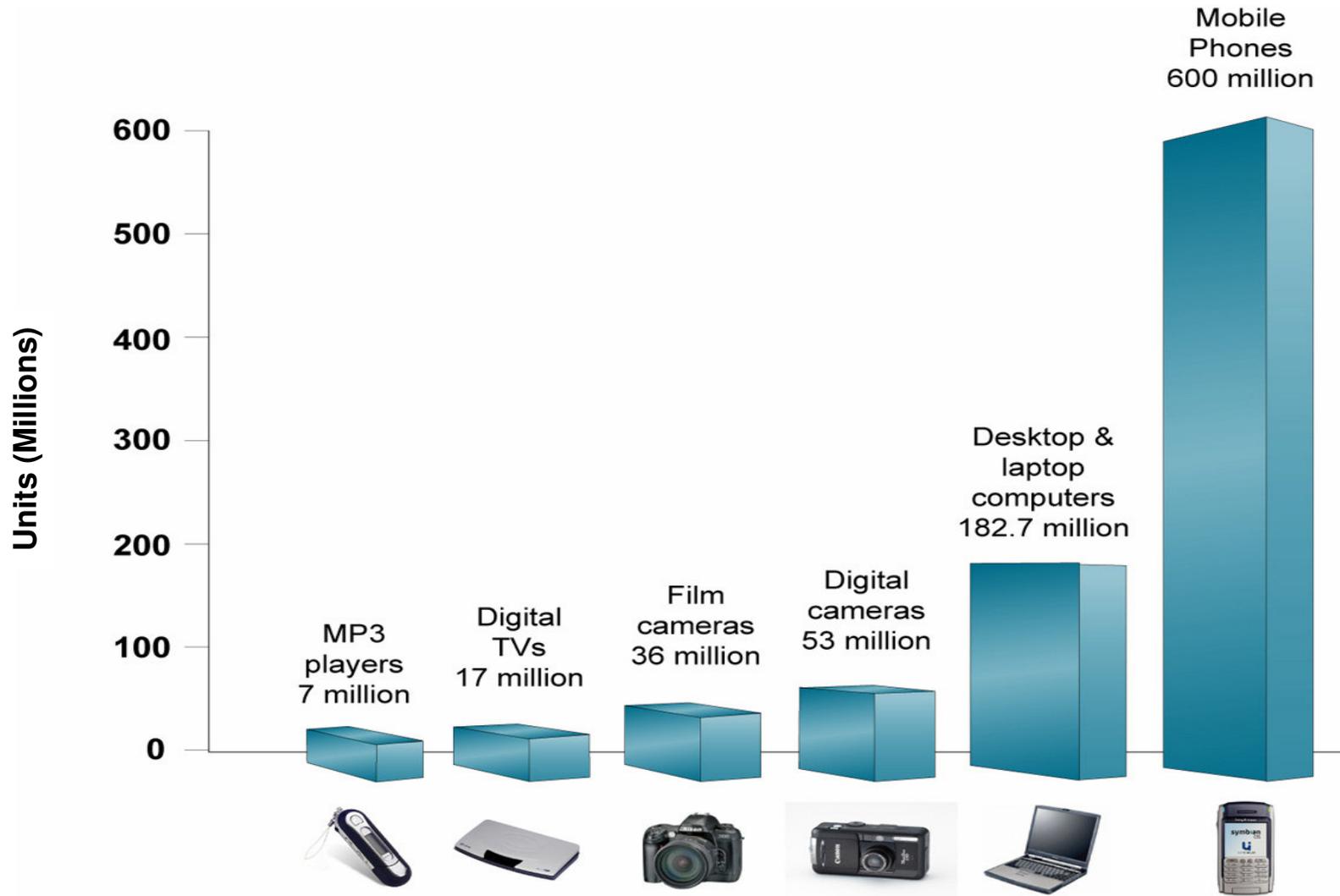


to this...

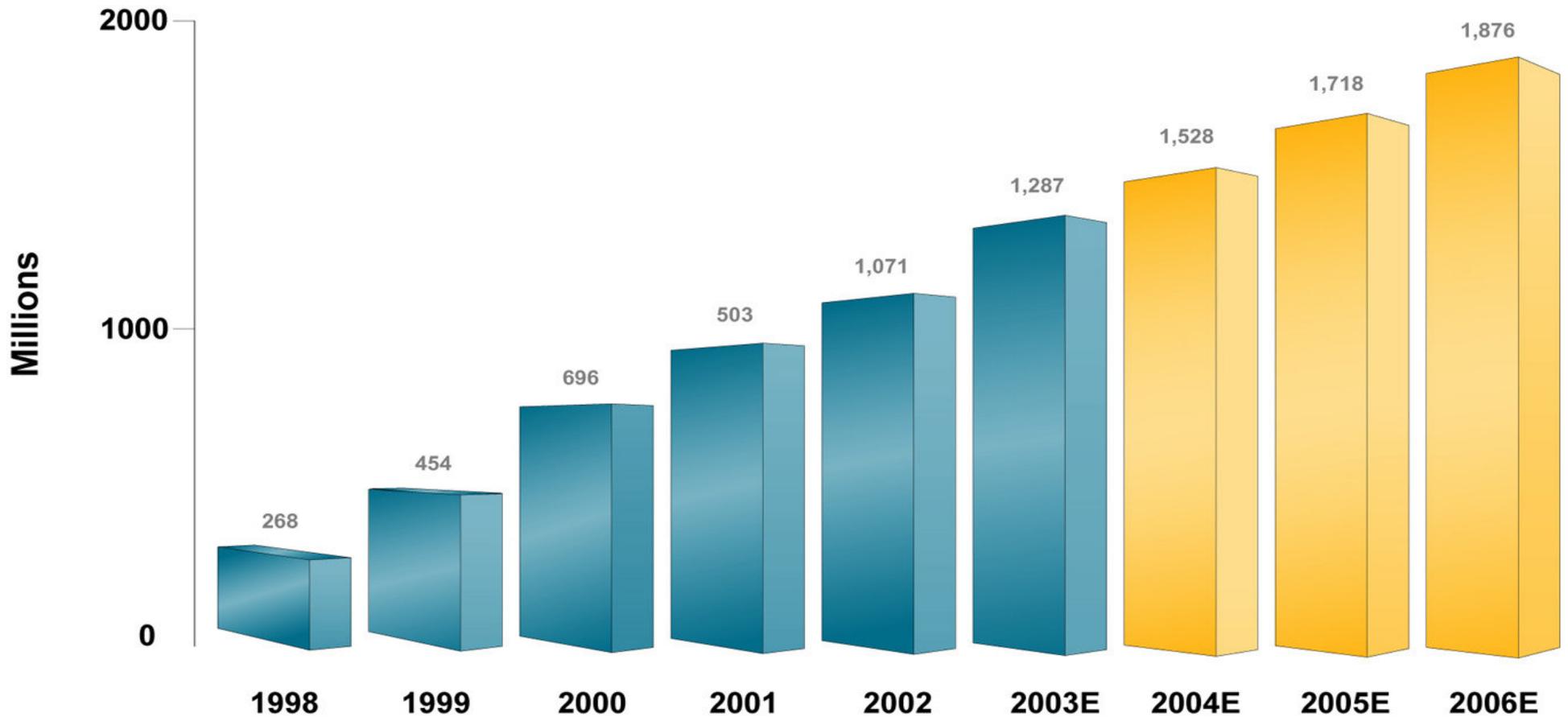


...in twenty years...

# Consumer electronics device sales 2004

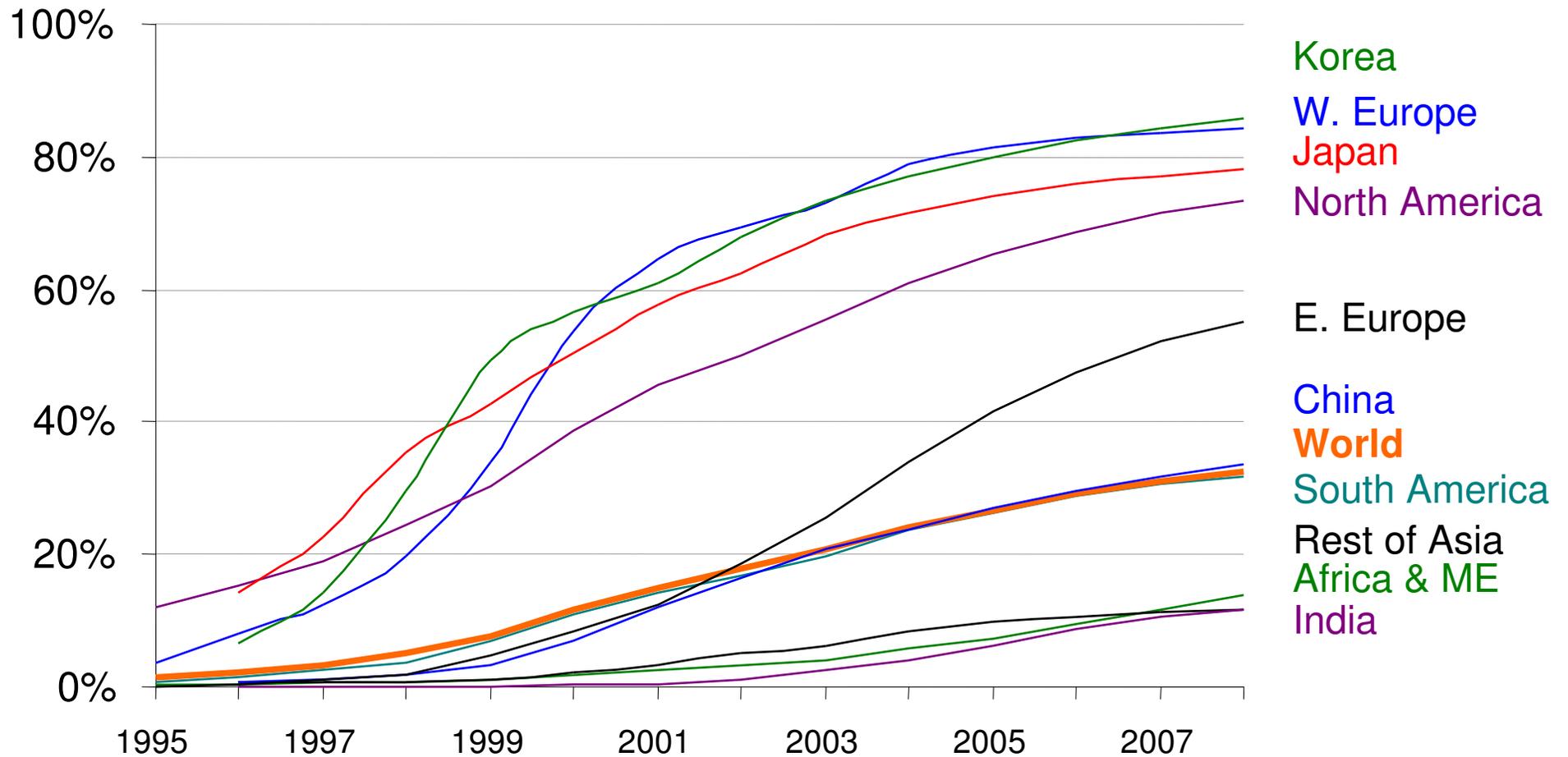


# Worldwide mobile phone subscribers



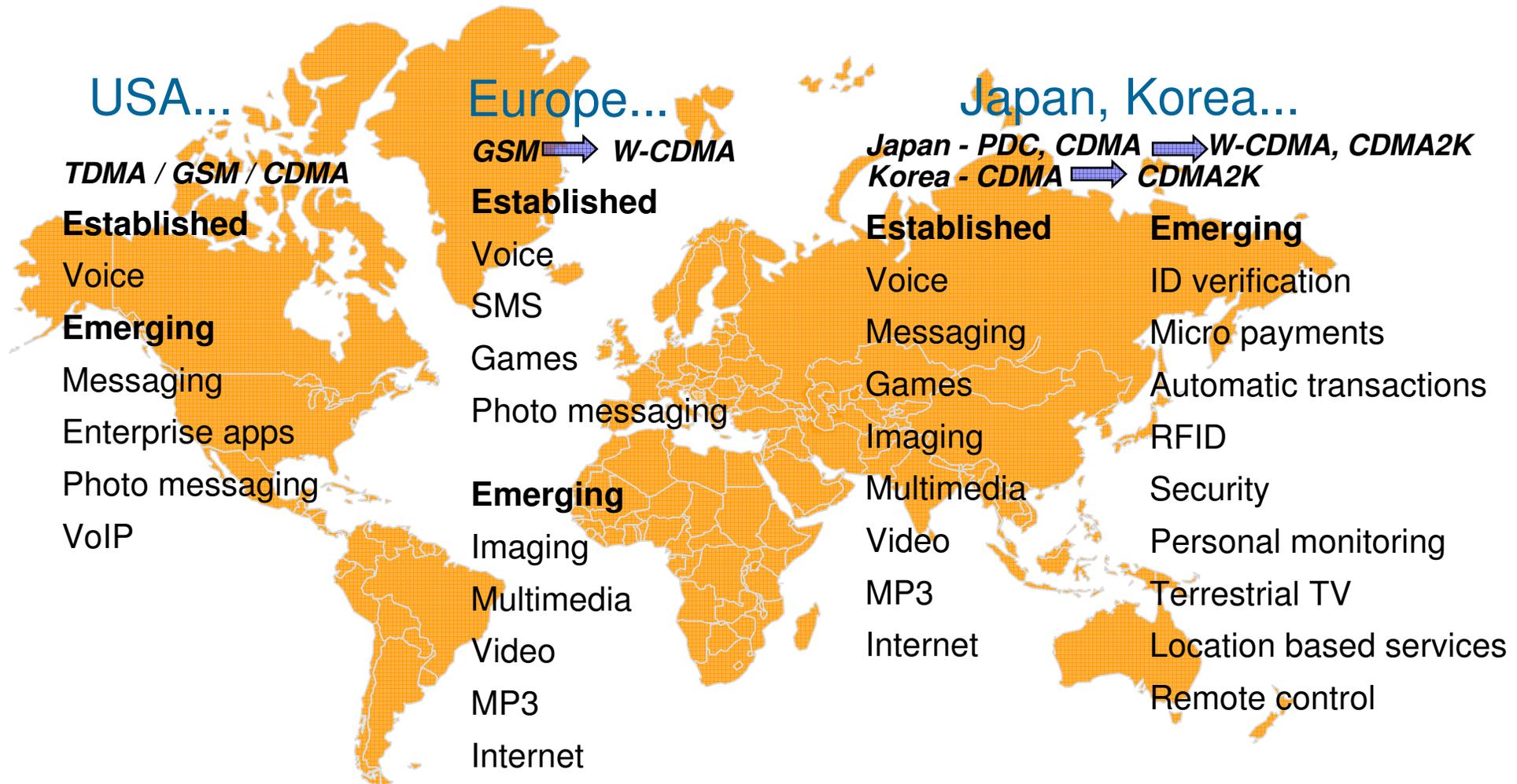
Source: Merrill Lynch global wireless matrix

# Mobile phone penetration by country



Source: Symbian market model, Feb 2004

# Different markets have different dynamics



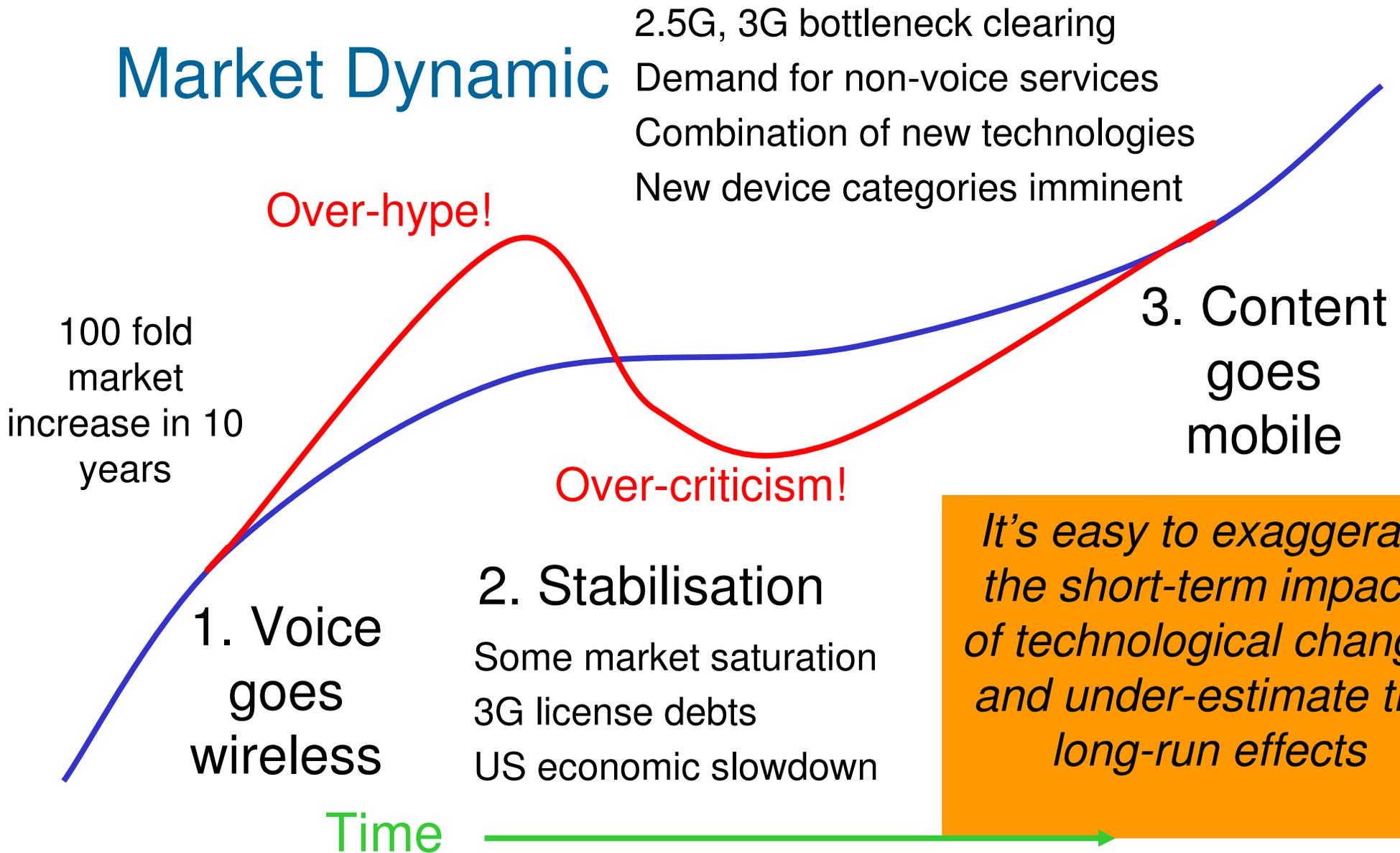
# The mobile phone today

- 3 Broad technologies
  - ... GSM (Europe, Asia, Africa, some USA)
  - ... CDMA (USA, Asia)
  - ... (W-)CDMA, PDC (Japan)
- Transition from voice phone to data phone
  - ... Data added to voice services
  - ... Priced by usage rather than connection time
  - ... Stepping stone to 3G
    - ... but what do people want to do with 3G
    - ... will it turn out like the Internet?

# Economics

- In Europe Licenses sold by auction
  - ... Total cost of approx \$100Bn
  - ...+ Roll-out cost of \$150Bn
- Funded by about 50% of the bond market from 1998-2002
- Total investment significant proportion of UK GDP
- Payback over 20 years
  - ... Approx 2008 with substantial data take up
  - ... Approx 2011 without

# Market Dynamic



— Expectations;

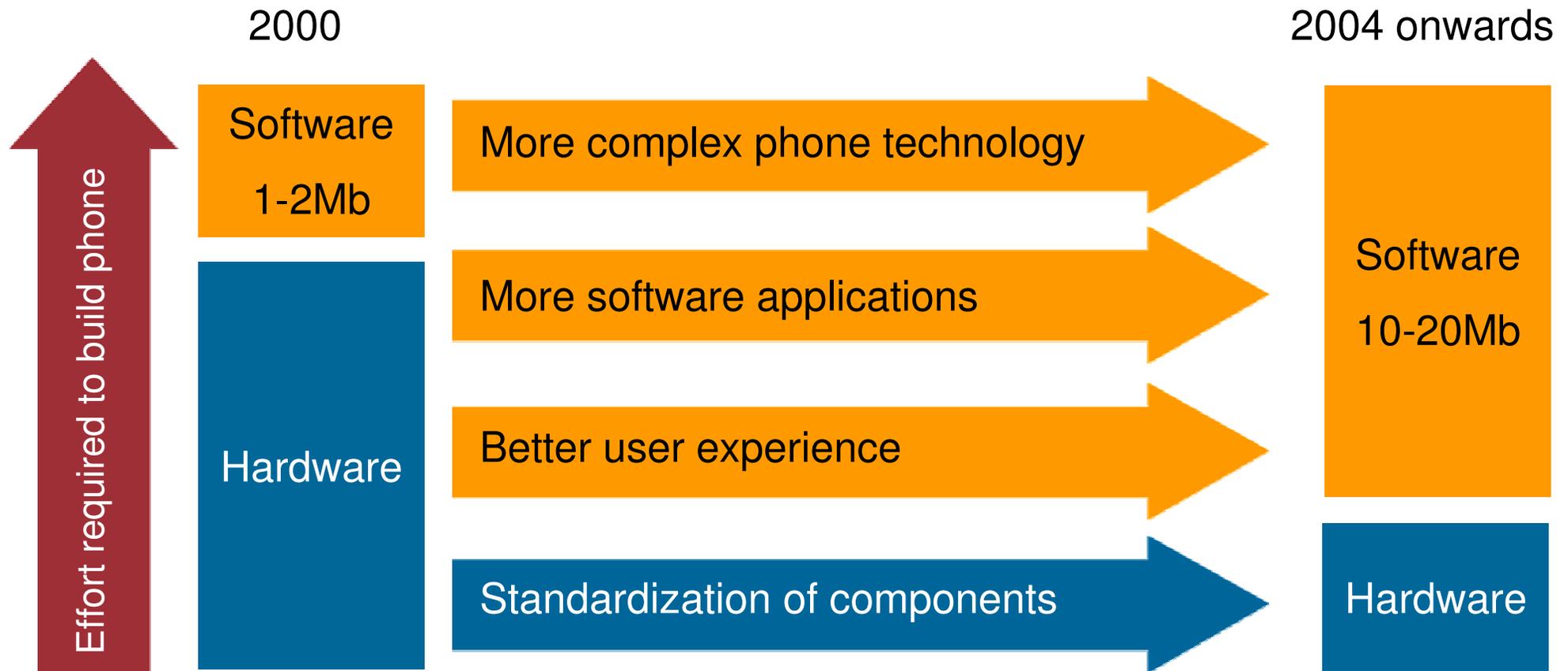
— Reality

**symbian**

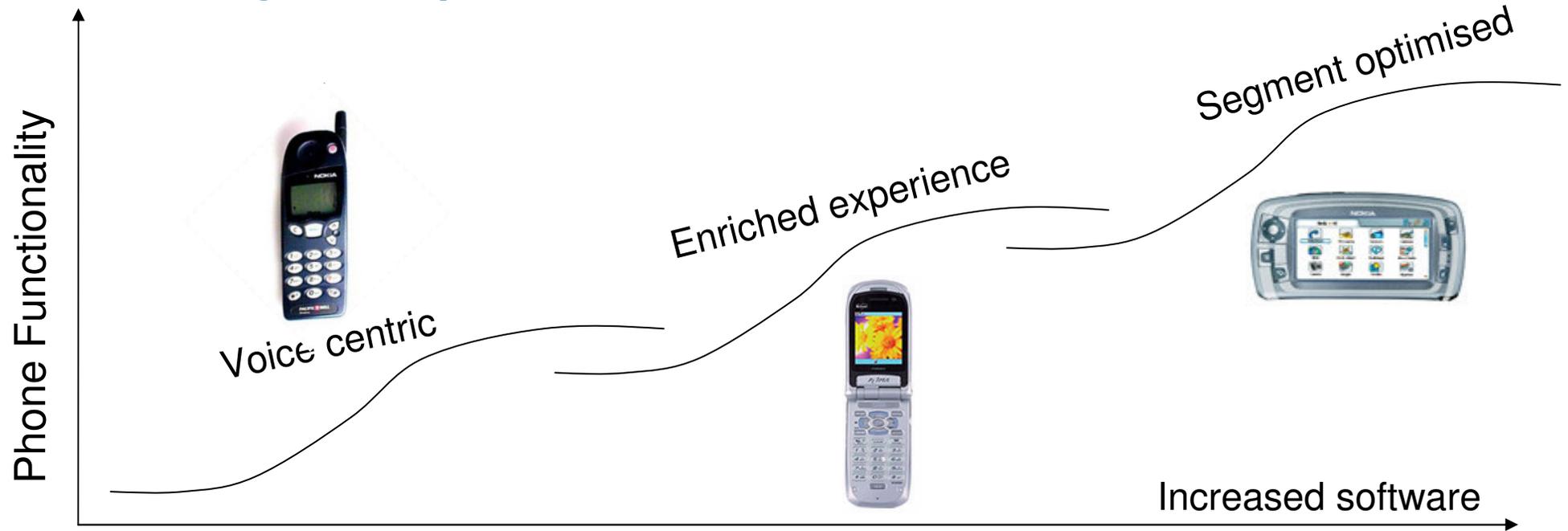
# The mobile phone device

# Why do you need an OS?

## Phone software is increasingly valuable



# Evolving the phone with software



## Differentiators

### Portability

Size, weight, battery life

### Features

Display, memory, camera

### Fit-for-purpose

Applications, brand, form factor, end-to-end solutions

## Phone vision

Fundamentally, smartphones will increasingly develop like consumer electronic appliances

# Symbian OS phones announced / launched Aug 2004 to Dec 2004

**NOKIA**  
6630



**NOKIA**  
9300



**BenQ**  
P30



**NOKIA**  
9500



**Arima**  
U300



**Panasonic**  
X700



**NOKIA**  
6260



**NOKIA**  
6620



**NTT Do Co Mo**  
F880iES by  
**FUJITSU**



**Sony Ericsson**  
P910

**NTT Do Co Mo**  
F900iC by **FUJITSU**



**NTT Do Co Mo**  
F900iT by **FUJITSU**

**NOKIA**  
6670



**MOTOROLA**  
A1000

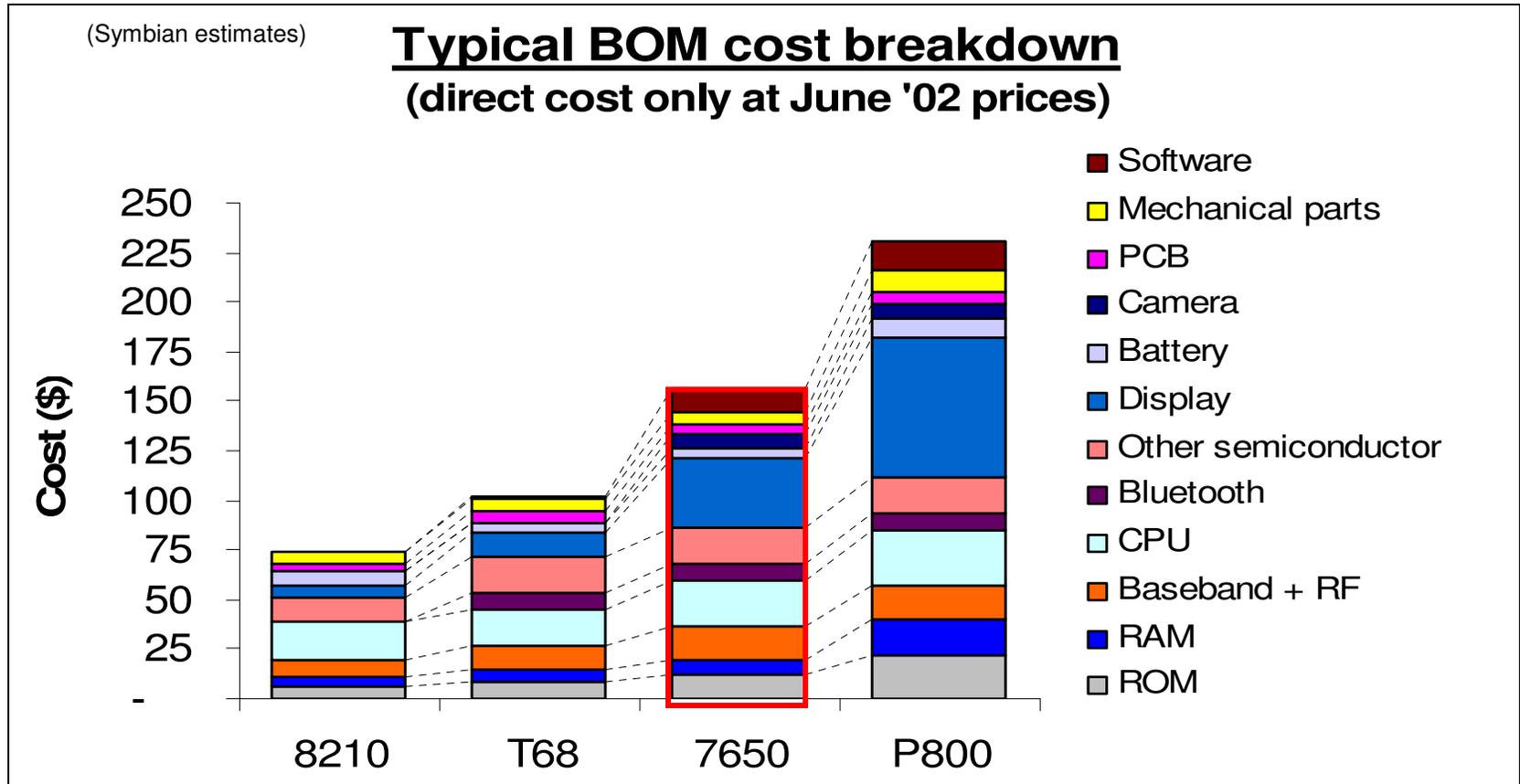
**NOKIA**  
3230



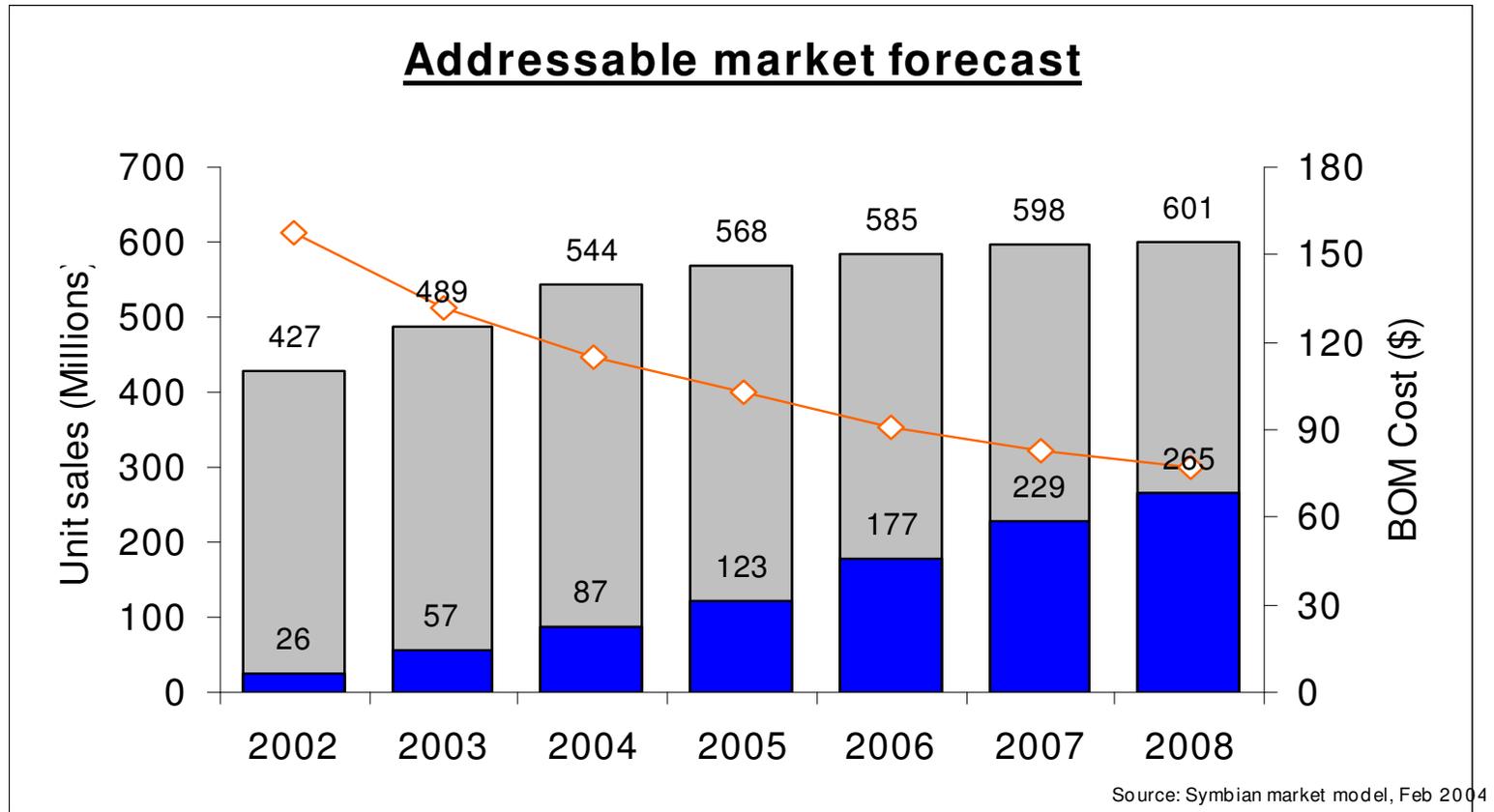
**NOKIA**  
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# Modelling a consumer electronics device

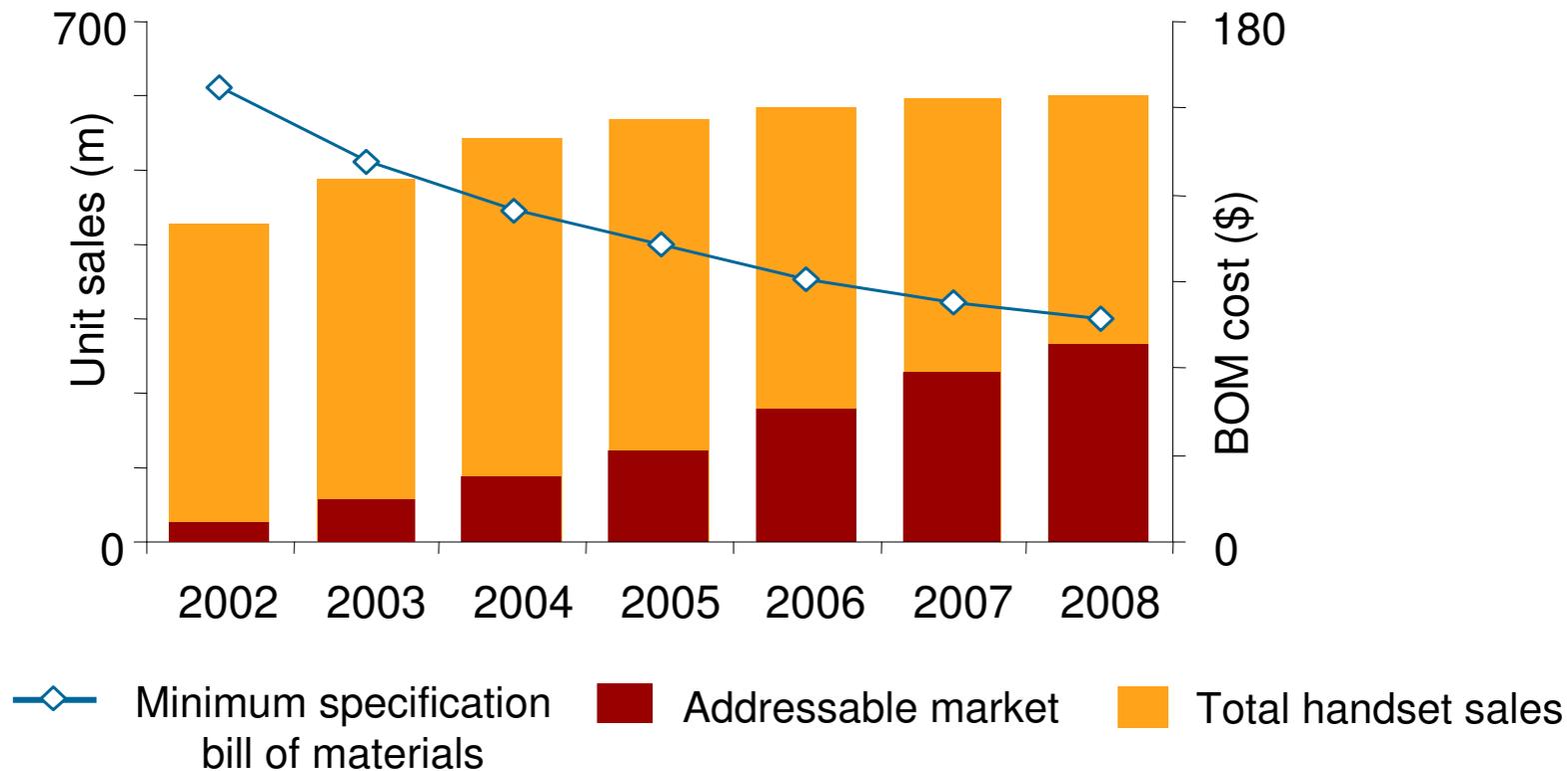


# Sizing the smartphone market



Source: Symbian market model, Feb 2004

# Estimating volumes from price information



# What this tells us

- Mobile phone is mass-market
  - ... One for every 6 humans on the planet
  - ... One in 2 by end of decade
  - ... Market won't tolerate user complexity
- Its personal, not family oriented
  - ... (unlike PC, TV)
  - ... Opportunity
- Attractive to emerging economies
  - ... Limited existing fixed line infrastructure
  - ... China, India set to become mass markets



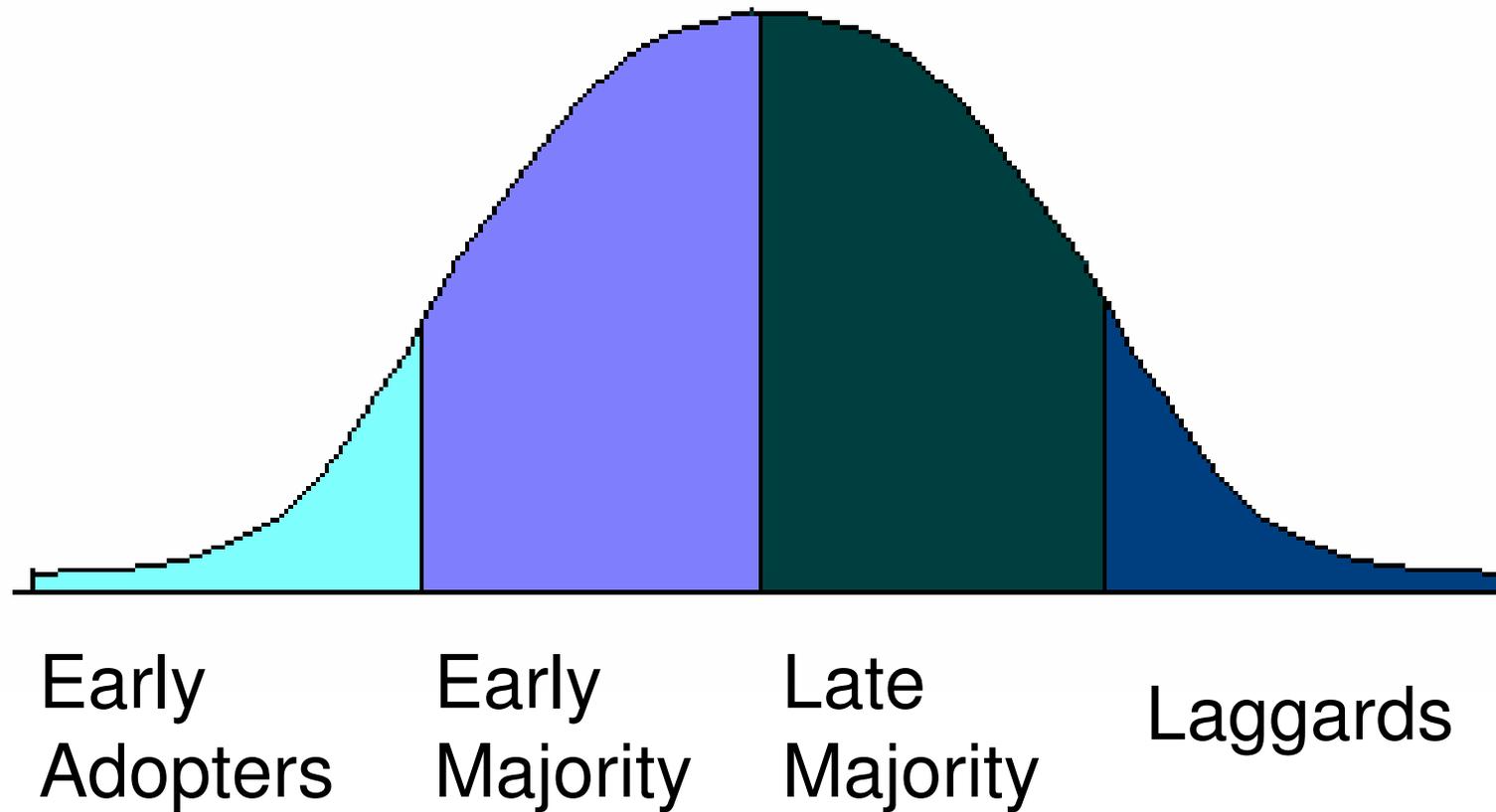
# The future

- Move to full IP backbone
- 3G
  - ... Higher bandwidth
  - ... Simultaneous voice and data
  - ... IPv6
- 4G
  - ... Adds local wireless (integrated telco and wireless)
  - ... VoIP
  - ... IEEE 802.11 (Wireless LAN), Bluetooth
  - ... Short range, high bandwidth, low cost potential



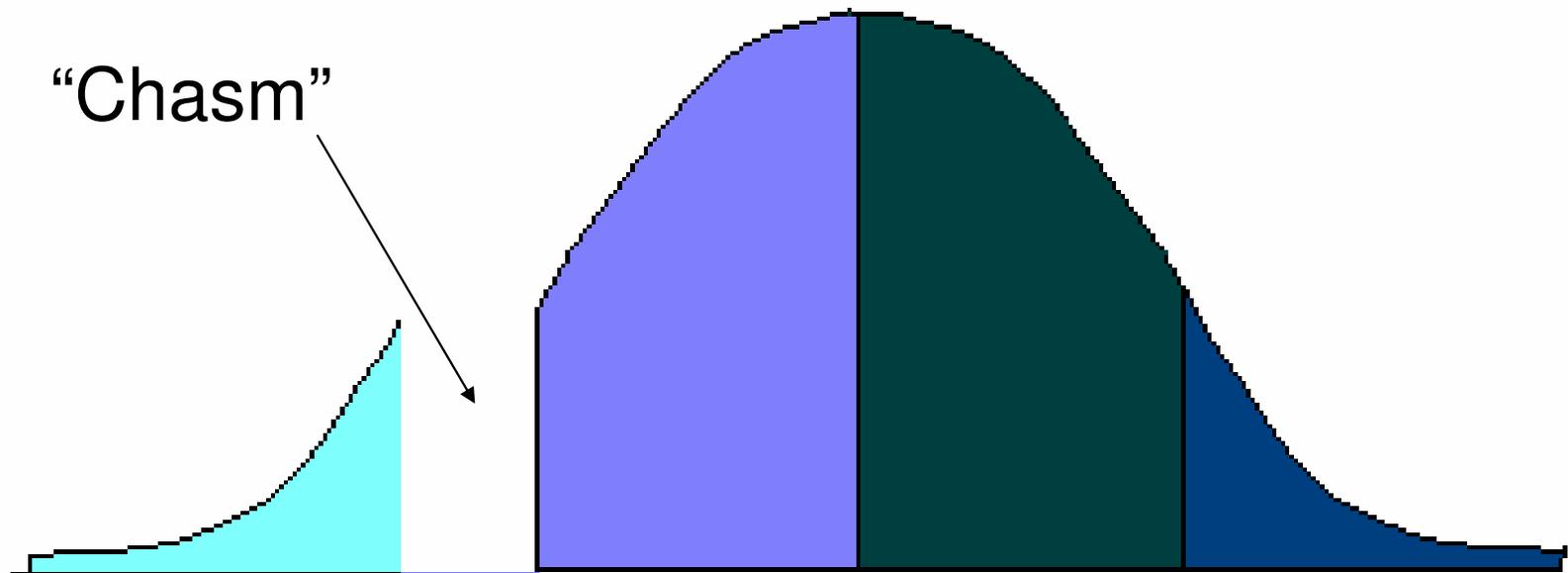
# Product adoption lifecycle

# Product lifecycle



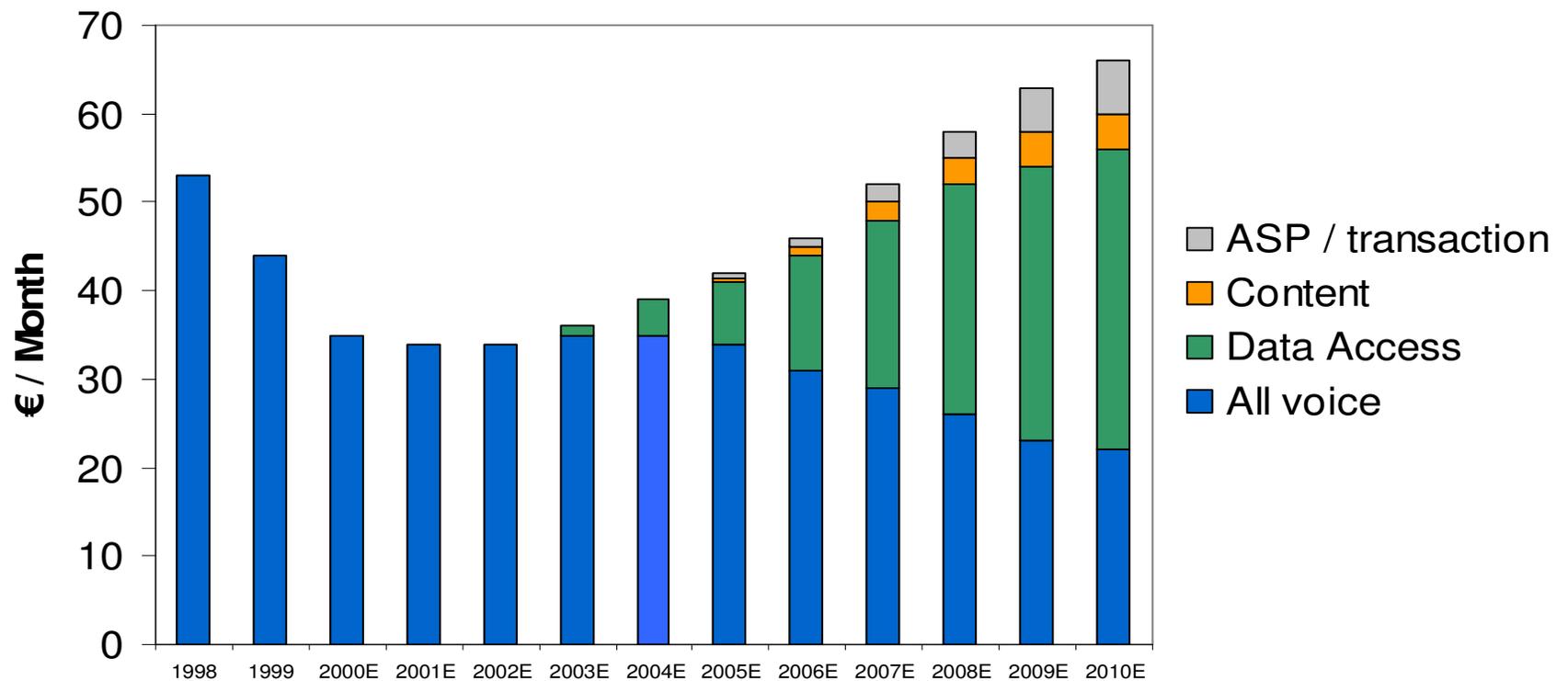
# High Tech adoption lifecycle

- After Geoffrey Moore “Crossing the Chasm”
- Requires “Whole Product Offering”



# Operators seeking future revenue from mobile data

## ARPU Breakdown for Orange



# Services overview

# The services

- Voice
- Messaging
- Browsing
- Multimedia
- m-commerce
- games
- applications (delivered over the air)
- location-based services
- Corporate/enterprise

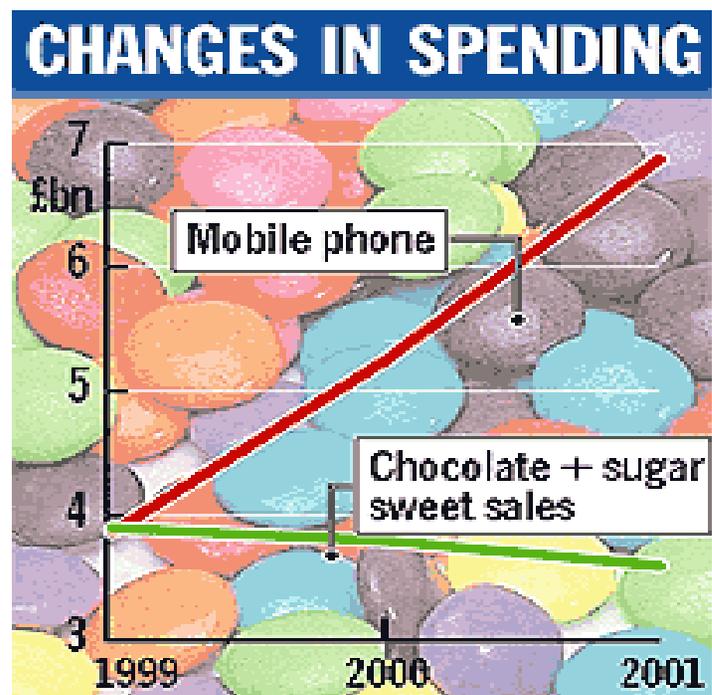
# Requirements

- 3 Classes of service
  - ... Vertical
  - ... Publish/subscribe
  - ... Peer to peer
- “Whole product” is critical
  - ... “Value chain” (who gets what revenue)
  - ... “Delivery chain” (who delivers what)
  - ... End user enchantment (cf WAP experience)

# Example - Multimedia Messaging

- Peer-to-peer
- “SMS with pictures and sounds”
- Whole product?
  - ... Value chain
  - ... Delivery chain
    - Composer on the phone
    - Needs a community
  - ... Enchanting experience
- How to roll out
  - ... Viral marketing
  - ... Trojan horse/market power

*Changing behaviour and business models  
in adjacent markets*



# Imaging and Mobility

## Market Momentum

- 2004: Worldwide camera phone sales (150 million) will triple that of worldwide digital camera sales, (53 million)

Source: InfoTrends

- The wider adoption of high-resolution camera phones is set to cannibalize up to 40% of digital-camera sales around the world by 2008

Source: LG Economic Research Institute in South Korea.

- 64% of all NTT DoCoMo phones have a camera



LG announces first 6-Megapixel Camera Phone for Japan



SAMSUNG Introduces World's First 5-Megapixel Camera Phone

# Impact on Imaging

## Ever present, Always Connected

- Creating new usage models and new experiences
  - ... Life Diaries
  - ... Video Chat
  - ... Interactive content
  - ... Remote monitoring
  - ... Onboard photo editing
  - ... Personalisation
  - ... Remote printing
  - ... Pornography
- New Business Models and New winners

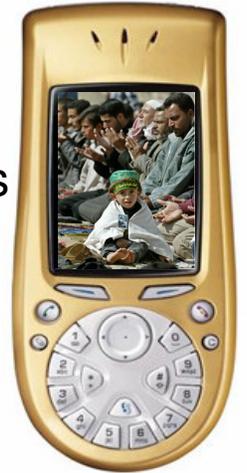


# Increasing Accessibility

## New Sources of Images: Changing the production of Images

e.g. BBC & Cameraphones

- ... 2003: BBC issues 40 2.5G Symbian OS phones to BBC journalists for fast on-the-scene video capture
- ... 2004: 3G phones being rolled out to reporters
- ... Other broadcasters now running similar experiments
  - Fox News, Reuters



## More Accessible Content:

e.g. Mobile TV

- ... Mobile operators offering Mobile TV services on Symbian OS phones
  - Including: TIM, Telefonica, ATT Wireless



# Music and Mobility

## Market Momentum

- **The worldwide ringtone market:**
  - ... \$3.5 billion in 2003, up 40% from 2002
  - ... Representing about 10% of the global music market
  - ... Forecast global sales > \$5.3 billion in 2008

Source ARC Group

- **2007: 52% of data enabled phones will be music enabled.**

Source: Strategy Analytics

- **The under-25 age group in the UK spends five times as much on mobile phone calls, texts and content as on traditional music formats**

Source: mobileYouth

## Next generation iPod?

- Onboard Storage in increasing e.g. 1.5Gbyte phone from Samsung
- Integrated Application Architecture, allowing users to do more with music

## New Industry Players

- New record labels – Operators..?
- New distributors - Coca Cola, Sony, MSN, Tiscali, Wanadoo, HMV, Virgin, Woolworths, Wal-Mart, Carphone Warehouse, artists direct to customer
- E.g. Carphone Warehouse, European Retailer becomes Content Distributor
  - ... Robbie Williams album sold on memory card in phone retailer



# Ever-present, Always Connected - Music

- Creating new usage models and new experiences
  - ... Streamed music
  - ... New formats
    - Shorter track lengths, ringtones, ringback tones
  - ... New merchandise bundles
    - Track, fanclub information, ringtone, updates, etc
  - ... Personalisation
  - ... Onboard remixing
  - ... Superdistribution
  - ... Cross-media DRM
  - ... PVR capability for digital radio



Sony service StreamMan offered across Symbian phones by TeliaSonera (Finland) & Orange



FirePlayer – onboard music remixing to create bootlegs and ringtones



Siemens SX1 music phone from O2 in partnership with Sony Music

# Symbian OS as a Mobile Gaming Platform

- Symbian OS is Games Friendly
  - ... Advanced Audio, Video and Graphics support
    - We supply Open Standard APIs such as Khronos OpenGL ES
    - Can make use of hardware acceleration
      - ... Major semiconductor and graphics suppliers working with Symbian
    - Roadmap includes new APIs in 2005
      - ... OpenMAX for Open Standard Audio, Video, Maths acceleration
      - ... OpenVG for 2d and Vector Graphics, Transparency etc
  - ... Multiplayer support through IP over Bluetooth, GPRS, 3G
  - ... Secure Content handling with DRM, Platform Security
  - ... Over-the-Air Download of Games Content
  - ... Optimisations for Micro-drive disks in 2005
- So far only one Licensee has produced Games deck phone – N-Gage
- But all phones are used for simple games....there is more to come here

# Mobility Markets and the Infinite Machine

Mobile Phone is largest consumer electronics market, still growing and developing fast

Mobile Phone is disruptive to

- existing markets

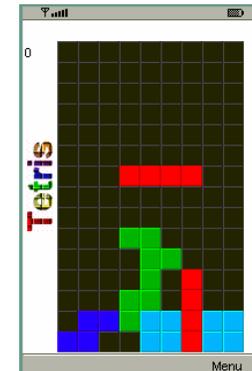
- existing business models

- existing technology platforms

Mobile value chain is complex and differs by country/region

# Games - consumer applications driver

- Growth market
- Channels are in place
- Very profitable use of data



# High performance games



# New Service Paradigms

## Virtual Identity

Mood

Generic & Custom Messages

Location

Phone Status

Georgie

"clubbin"

Messages: "Come join us, back 2 mine after, bring a bottle."

Location: Bar Atlantis

Mobile: 0777 476 6654

E.Mail: georgie@yahoo.com

# Conclusion

- Snapshot of mobile telecoms market
- Complex problem
  - ... Technology
  - ... Market
  - ... Economics
  - ... Social engineering
- Has the power to reshape the world
  - ... Rather like the railways
  - ... But like the railways - will it make money itself?

- Questions or comments:
  
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