

Global Drivers for an Open Mobile Ecosystem

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Contents

Broadband service pricing

Network economics

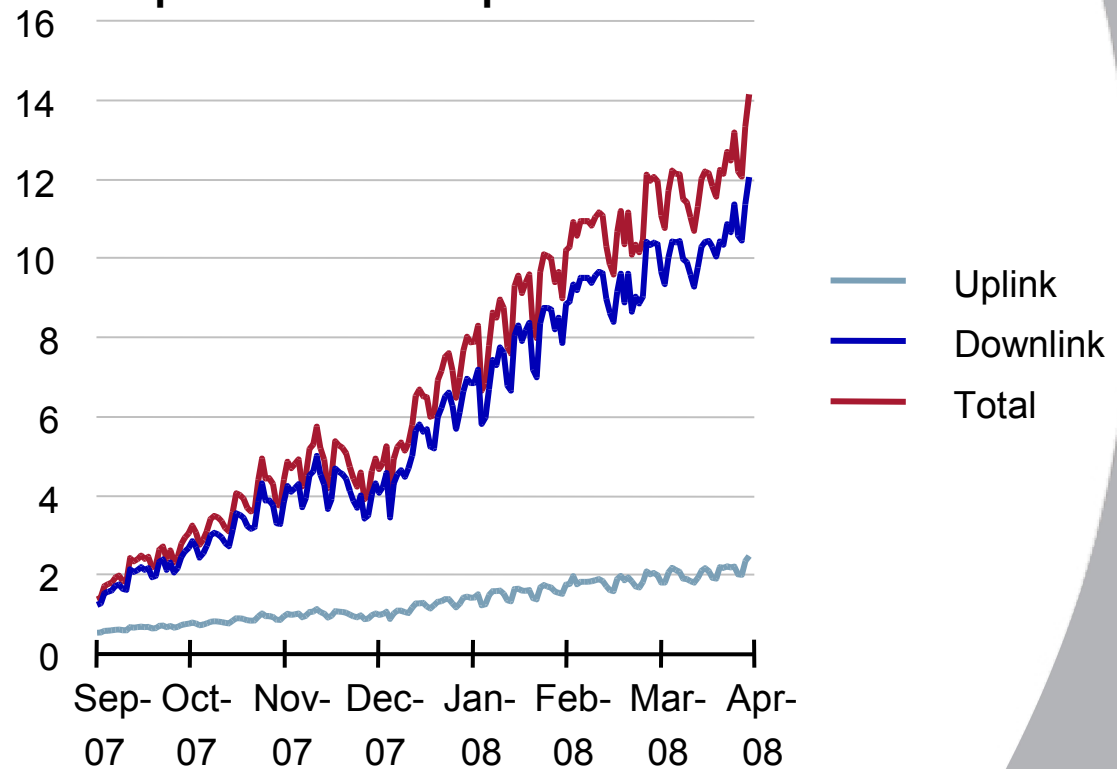
Experience development

New pricing structures have created today's "Open Mobile" ecosystem



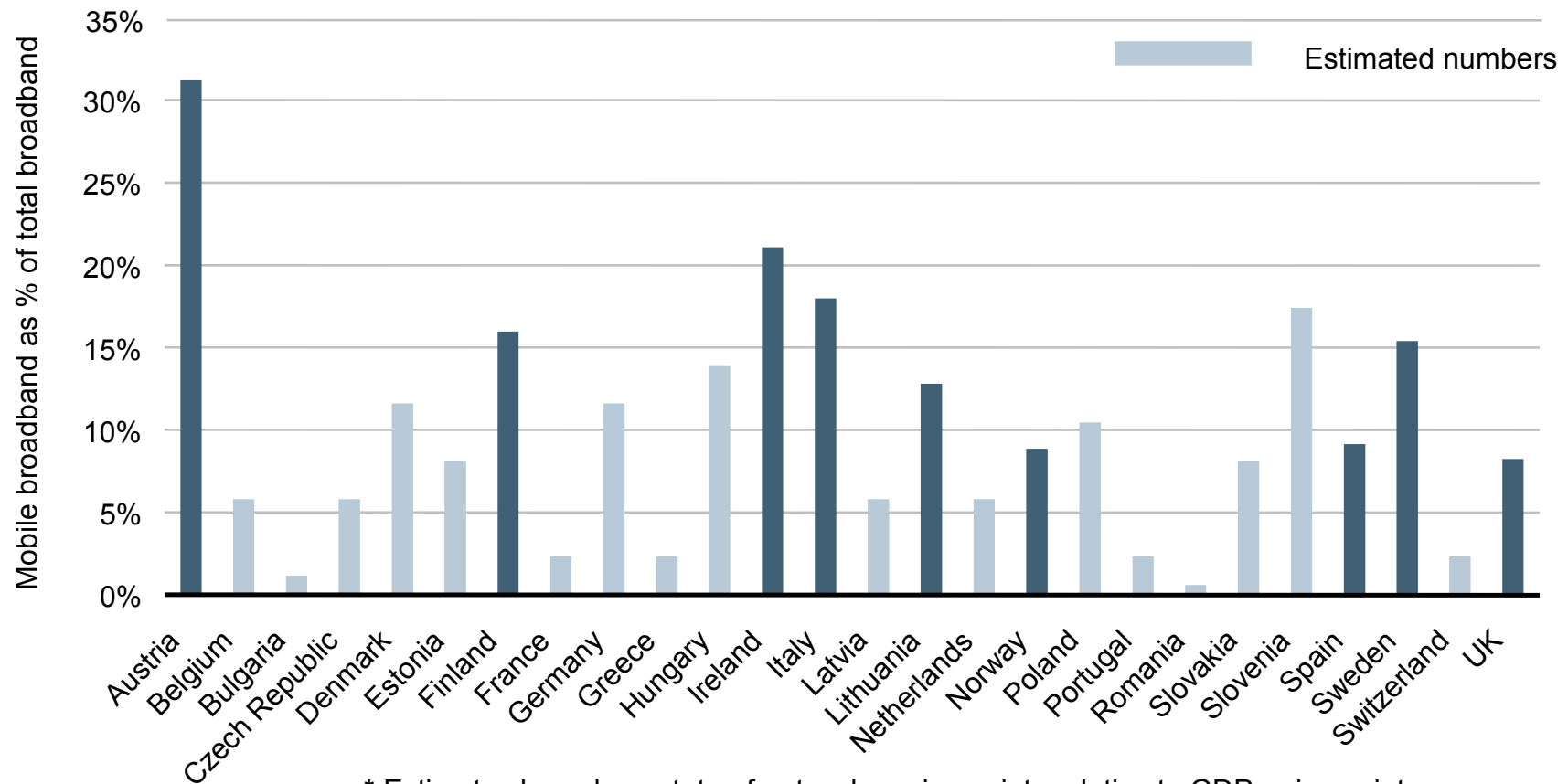
Relative traffic growth

Growth in 3 UK data traffic:
September 2007–April 2008



The success of mobile broadband has taken many by surprise

Mobile broadband as a proportion of total broadband, June 2008

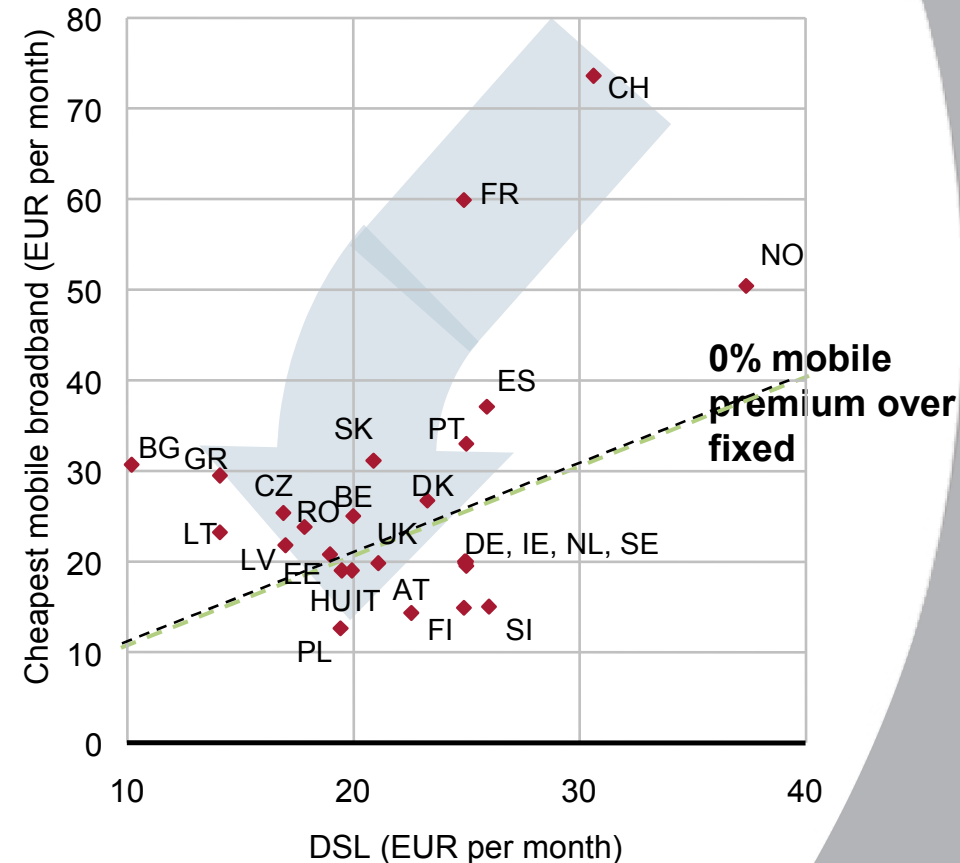


* Estimates based on: state of networks, price points relative to GDP, price points relative to fixed, mobile-only households, number and type of MNOs

Flat-rate pricing at levels below fixed has driven uptake

- Austrian mobile broadband is substantially cheaper than Telekom Austria's DSL, which has essentially been re-invented as triple play
- Play in Poland offers the cheapest mobile broadband (EUR12.60 for 5GB per month)
- Lowest prices are offered by new entrant 3G-only players
- French and Swiss markets are not yet at a take-off point
- Norway is a high-cost, high-GDP market

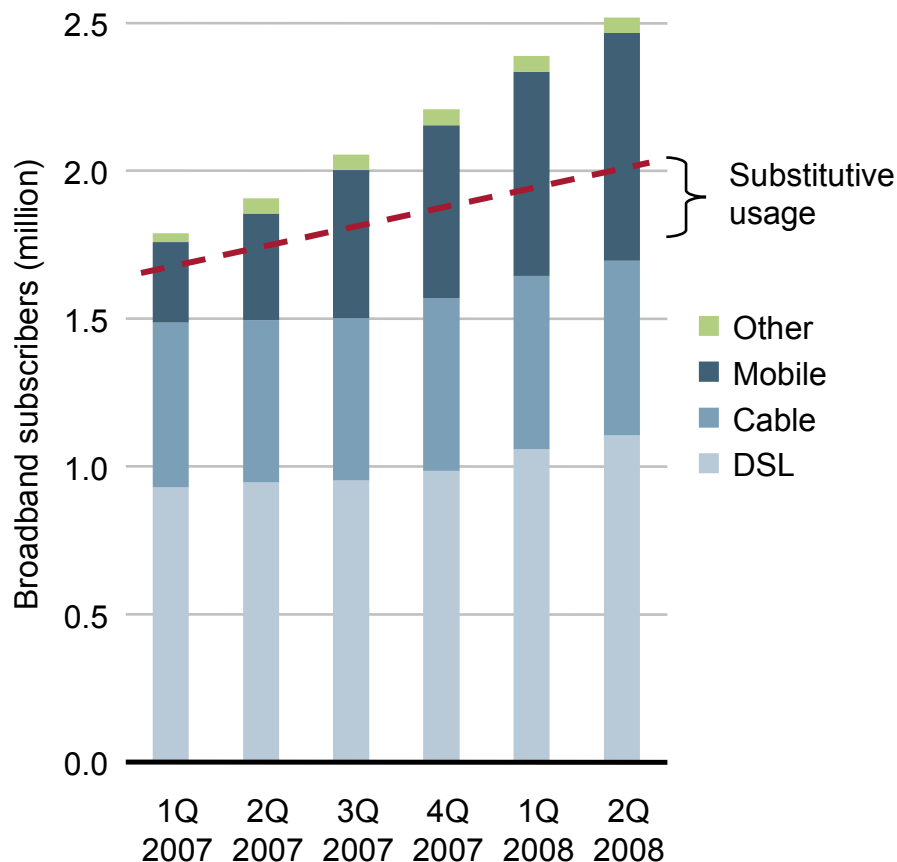
Mobile broadband and DSL price comparison, June 2008



* Based on incumbent DSL and cheapest MNO offering including at least 3GB download per month, at June 2008

Mobile broadband is not simply a complementary service

**Broadband subscribers in Austria
1Q 2007– 2Q 2008**



- In Austria, fixed broadband penetration was static for three quarters in 2007:
 - strongly suggests high proportion of substitutive and new users
- In the UK, at 1Q 2008, about 32% of mobile broadband subscribers used it instead of fixed broadband; in the 16–24 age group, this proportion was as high as 47%*
- In May 2008, 3 UK was reported as saying that about 50% of its subscribers were using mobile broadband in place of fixed
- In Finland, the proportion of fixed broadband users that would be prepared to change to mobile broadband if the prices of the two were the same fell from 30% to 20% during 2007**

Operator channel strategy is changing ...

Get a WiFi laptop with mobile broadband

Web exclusive

Acer laptop worth £349.99
 FREE USB modem stick
 WiFi HotSpot access
 Surf as much as you like at no extra cost

~~397~~ × 280


all for £30/month

[Find out more >](#)

1 2 3 4

Le saviez-vous ?
 "Vous pouvez souscrire cette offre même si vous n'êtes pas client mobile SFR"

Je veux **une solution Internet tout en un** :
 un ultra-portable + une clé + une formule Internet 3G+ pour me connecter à Internet partout, instantanément



Etape 1 Choisissez votre Ultra-Portable et votre connexion Internet 3G+

Le 1er ultra-portable avec Clé 3G+ intégrée !

Exclusivité SFR

EeePC 901 3G+ **Connectivité 3G+ intégrée**

- 5 heures d'autonomie
- Ecran 8,9"
- Mémoire Intégrée 16 Go

A partir de **279€**(1)

[En savoir plus](#) [Choisir](#)

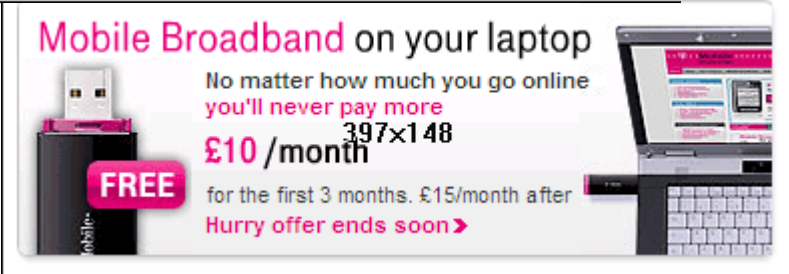
Mobile Broadband on your laptop

No matter how much you go online you'll never pay more

~~397~~ × 148

FREE £10/month for the first 3 months. £15/month after

[Hurry offer ends soon >](#)



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Con la Chiavetta 3 hai Internet ovunque ti trovi.

19€ AL MESE

100 ore di Internet fino a 7,2 Mbps. A 19€ al mese.



... with more focus being placed on new computing devices

**Mobile Internet Device
(MID)**



**Ultra mobile PC
(UMPC)**



Netbook



Tablet PC



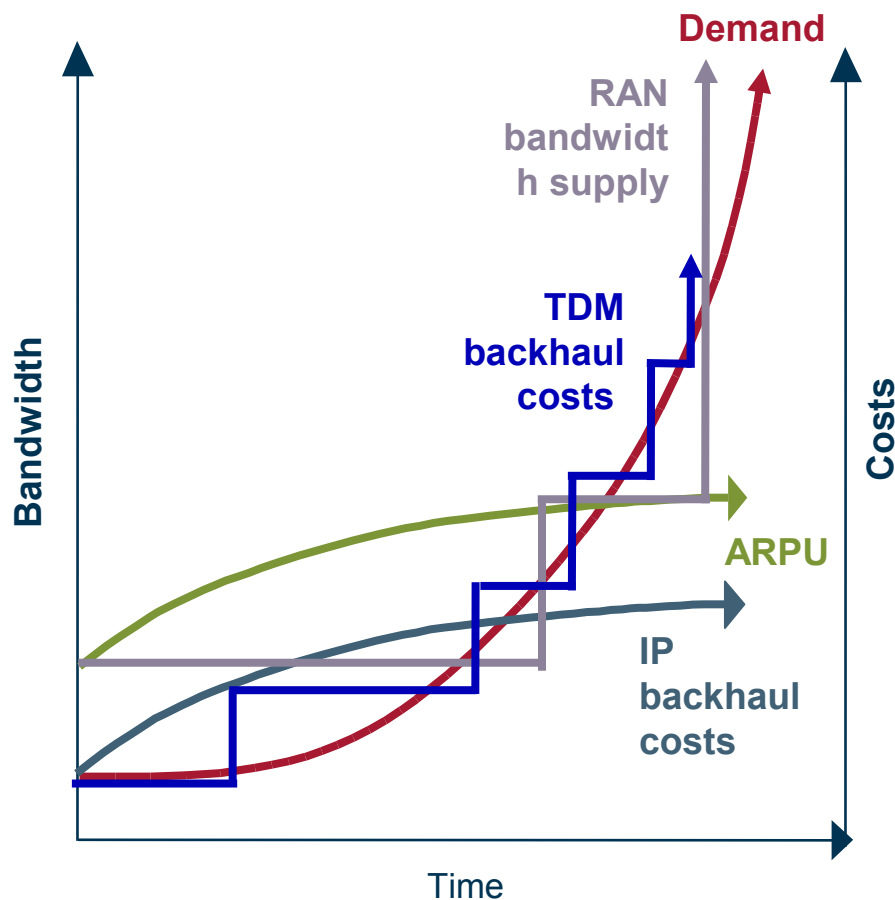
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Network investment to support fixed levels of data traffic is inevitable



- Backhaul investments will enable a significant flattening of the cost curve:
 - TDM-to-IP migration
 - more point-to-multipoint topologies
- With fixed Ethernet, the cost of backhaul typically increases 2–3 times when bandwidth increases 10 times (compared with 4 for TDM)
- Operators should see a step change in RAN air interface bandwidth supply:
 - extension bands at 2.6GHz
 - re-farming of 2G
 - HSPA > HSPA+ > LTE migration
- With these investments, traffic levels >1Gbyte per customer per month can be supported

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But what about a handset-driven ecosystem?

- 900 million PCs worldwide
- 1.3 billion Internet users
- 1.5 billion TV households
- 3.3 billion mobile subscribers*

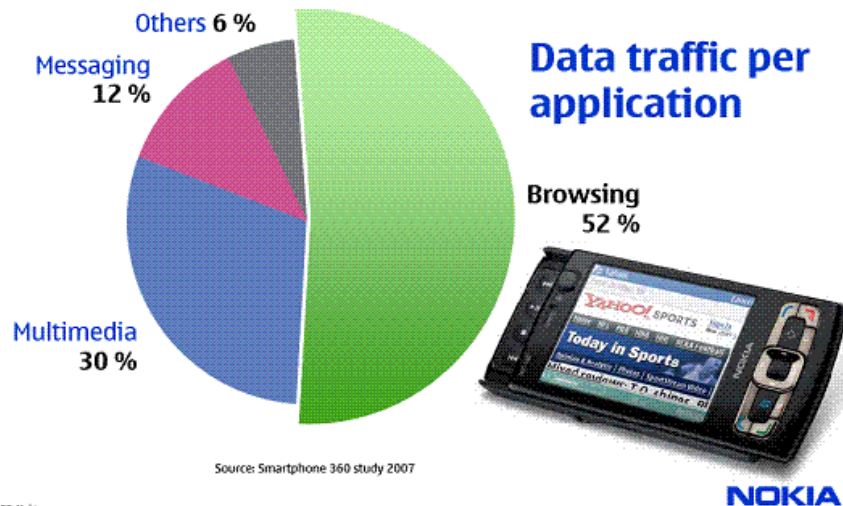
- 44% of UK adults use SMS daily, compared with 36% who use the Internet**
- 2 billion texts sent in China on New Year's Day
- Texts sent per US subscriber exceeded voice calls for the first time in 2008

- Twice as many people would keep their mobile as their TV, if forced to choose
- 78% of people have their mobiles on at all times***

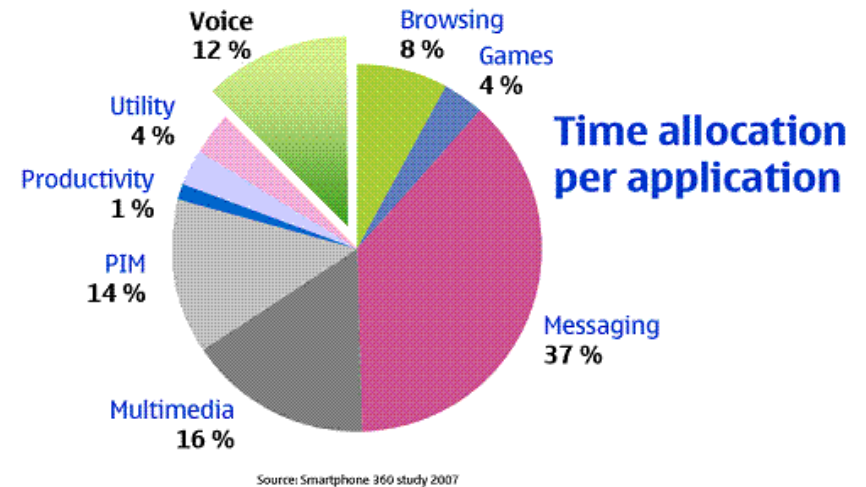
- Average time to report a lost wallet: 26 hours
- Average time to report a lost mobile: 68 minutes***

Device data usage has yet to impact network traffic

Browsing on mobile is a reality



Voice is 12% of mobile usage



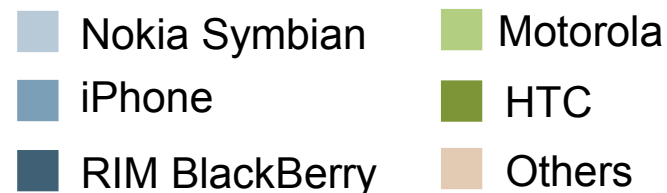
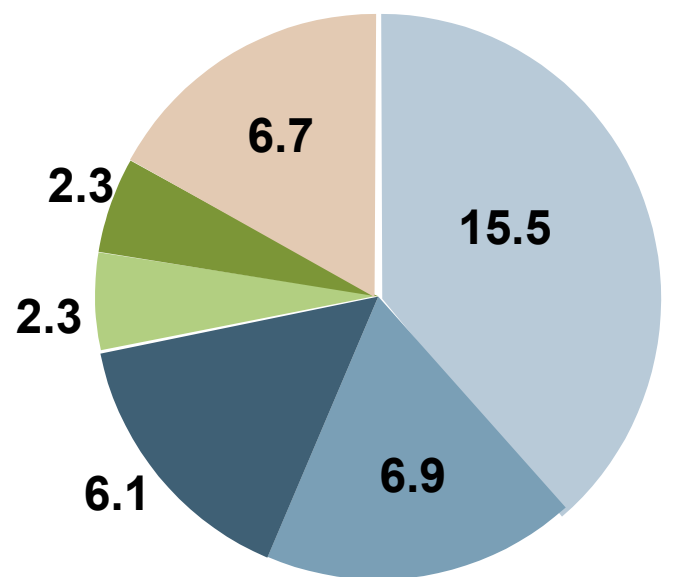
Smartphone users make four times more use of Internet and multimedia services than basic phone users

Source: Nokia, 'Entertainment: A Glimpse of the Next Episode' 2007, based on 9000 interviews worldwide with consumers who own a mobile phone (not restricted to Nokia devices), aged 16–35

Smartphones still represent a small proportion of the market

- Out of 3.5 billion handsets in the market today, 156 million are Symbian phones*
- Total global handset shipments in Q3 were 299 million**
- 13% of global handsets shipments in Q3 08 were smartphones***

Shipments of smartphones (million)
June to September 2008



Touchscreen UI's should increase smartphone penetration ...



LG Vu



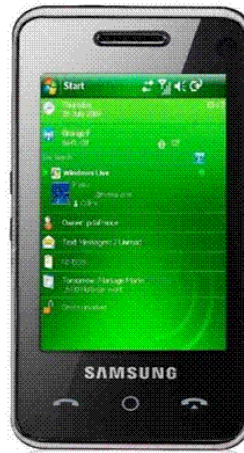
Nokia 7700



HTC Touch



Neonode N2

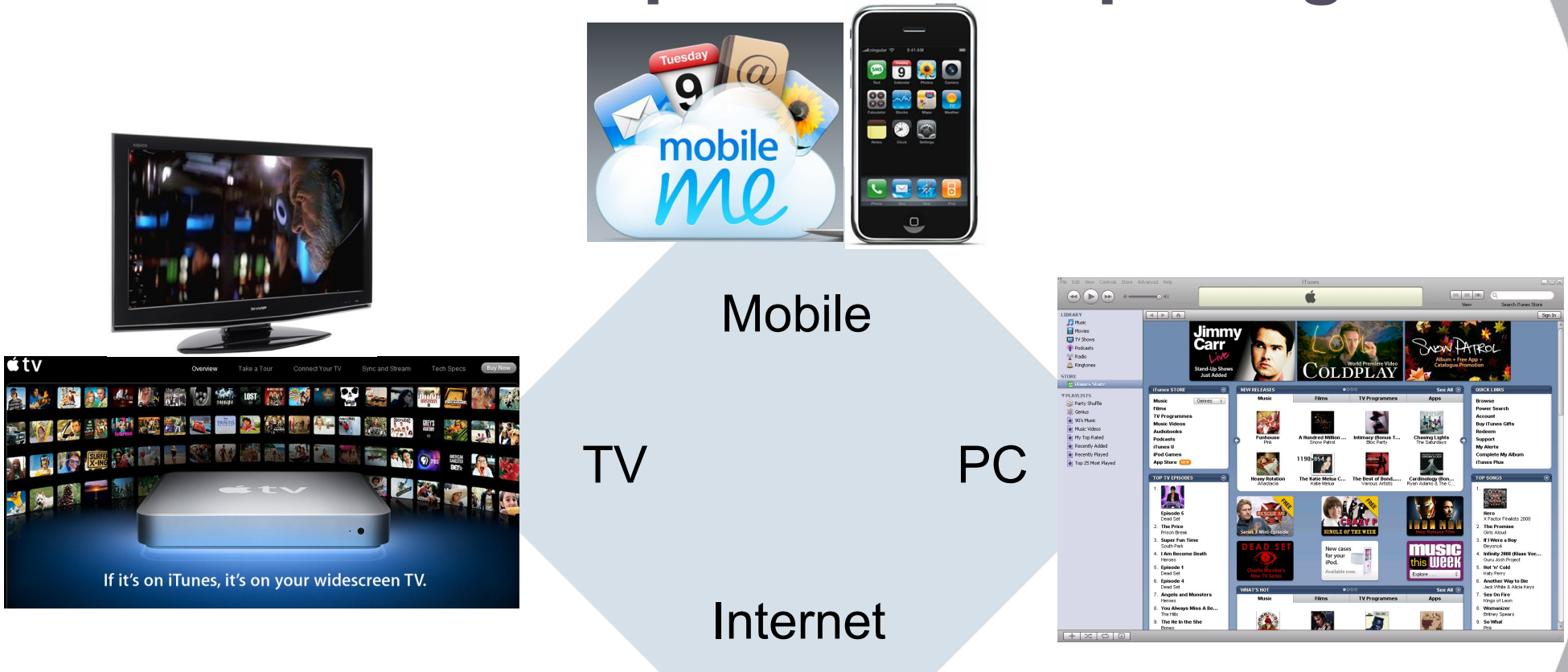


Samsung i900 Omnia

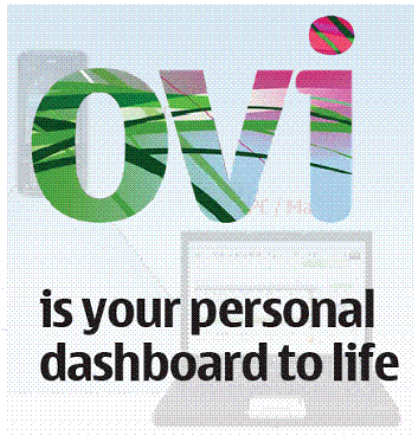


LG Glimmer

.. but Apple's vision of integrated content consumption is compelling



Nokia seeks to transform its relationship with its customers ...



• Web



• Mobile

• PC / Mac



- Ovi extends Nokia's market-leading position in mobile devices in two directions:
 - content aggregation (music, photos, maps and so on)
 - devices (PC and the Internet)
- Several acquisitions have supported service delivery in music, games, maps, social networking, music and advertising
- Their control of the mobile device configuration gives Nokia an unprecedented opportunity to define and deliver a seamless multi-device content environment for users

... and in particular with those in developing markets



Nokia Life Tools – Agriculture

Reliable and comprehensive information delivered regularly to your mobile device in one package

Be empowered with tailored information delivered in synch with the cropping cycles. Get information on weather, agriculture tips & techniques and market prices and improve productivity and earnings.



"With Nokia Life Tools, we strive to contribute towards empowering people with the right tools to help them make informed decisions in their daily lives,"
Jawahar Kanjilal, Global Head of Emerging Market Services, Nokia

Common themes ...

- Pricing
- Network economics
- Device + connectivity + aggregation = experience

.. but many visions of the “Open Mobile” ecosystem

- Plain vanilla Internet browsing on laptops
- ‘Real’ Internet browsing on smartphones
- Full video streaming to a fully functional, simple to operate device like the iPhone
- Integration of access to personal and public content through a common UI across TV, PC, Web and mobile
- Delivery of agricultural prices to the farmers of India on a \$50 phone to enable them to sell their produce at the best price on a given day