



The future structure of the EU telecoms industry

A presentation to HSBC clients

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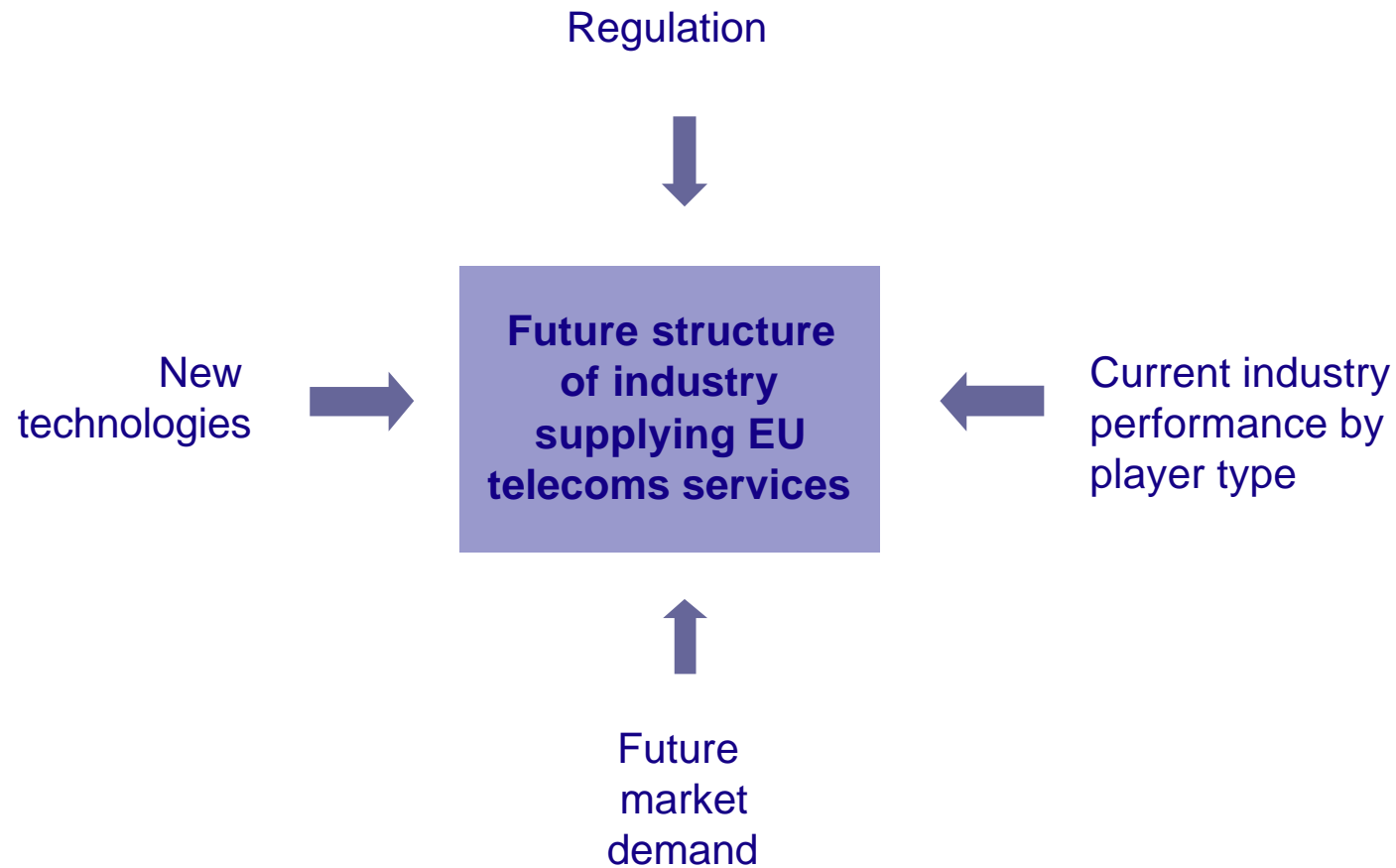


Objectives and agenda

- Objectives
 - *What will the EU telecoms industry look like by 2011?*
 - *What types of players will win (and lose) ?*
- Agenda
 - *Drivers for change*
 - *Future regulation in the EU*
 - *Next generation fibre access*
 - *Fixed mobile convergence*
 - *A scenario for 2011*



Drivers for change





Regulation as a driver

		<i>Up to early 1980s</i>	<i>80s and early 90s</i>	<i>Late 90s on</i>
EU	Monopoly	All	Most	None
	Competitive	None	Mobile + UK	All
US	Monopoly	All	Local	None
	Competitive	None	Long distance and mobile	All

■ Licensing of multiple mobile operators

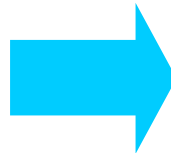
- Removal of monopoly rights
- Requirement to interconnect on all operators
- Requirements on fixed incumbents
 - *Cost based call termination*
 - *Cost based access to services eg call origination and carrier selection*
 - *Cost based access to network elements eg ULLs*

Main changes in industry structure so far driven by regulation



New technology as a driver - 1

- Moore's law improves price performance of network components by 15%++ each year
- IP taking over rapidly for all communications
- All information in digital form



- Broadband access rapidly approaching 50% of households
- Voice call revenues below 20% of incumbent revenues
- FMS growing rapidly >30% of voice telephony mobile
- Internet is an integral part of daily life
- Services come more in bundles
- Convergence is now happening rapidly:
 - *Fixed and mobile networks*
 - *Internet and telecoms services*
 - *Telecoms and broadcast platforms*



New technology as a driver - 2

Convergence means:

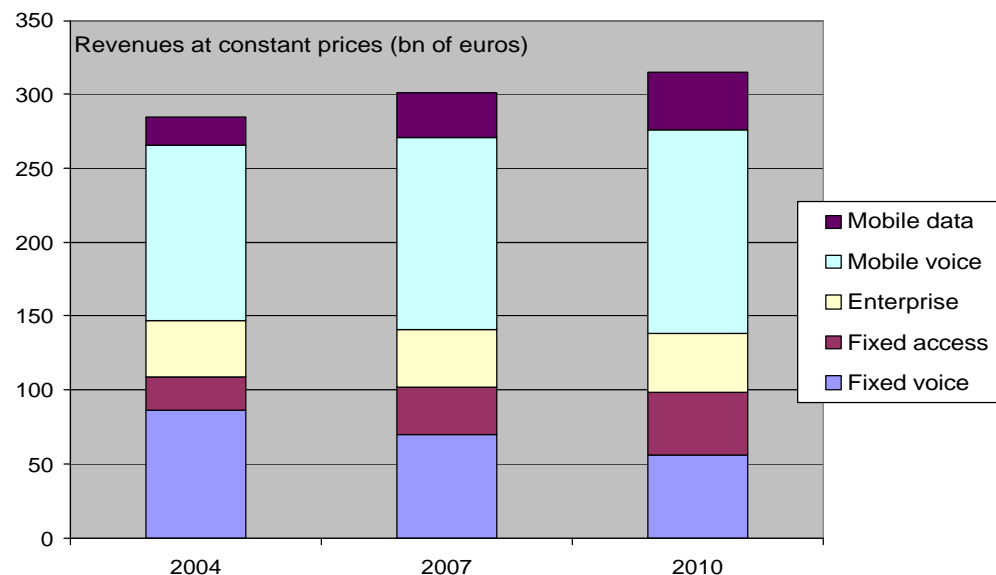
- *Entry from global ISPs to leverage their worldwide customer base*
- *Traditional telecoms players acquiring or partnering with media players*

Google Talk	August 2005	Google announces combined instant messaging/internet phone system
Microsoft & Telio	August 2005	Microsoft acquire Telio in order to provide VOIP services
eBay & Skype	Sept 2005	eBay acquire Skype to offer VOIP services in a \$2.6 billion deal
Microsoft & Yahoo	October 2005	Microsoft MSN and Yahoo plan to link instant messaging platforms
TIM & Mediaset	October 2005	Telecom Italia Mobile (TIM) and local media firm Mediaset announce agreement to launch digital terrestrial TV on mobile phones in 2006
BSkyB & Easynet	October 2005	Satellite TV provider BSkyB acquire internet service provider Easynet
3 Italy & Canale 7	November 2005	3 Italy announced its acquisition of Canale 7, an Italian TV channel, to deploy a DVB-H network for mobile broadcasting



Market growth and industry performance as drivers

- Moore's law means more for less for end users so...
- ...market growth is limited – even for mobile operators
- Profit performance is variable across player types
- Most fixed AltNets should exit when current plant is no longer competitive



Source: Ovum Euroview

<i>Player type</i>	<i>EBITDA %</i>
Fixed incumbents	30 to 40%
First generation MNOs	35 to 40%
Second generation MNOs	15 to 25%
Mature CATV operators	30%
Fixed AltNets	<10%

Source: Ovum Euroview



Future regulation in the EU

- Regulation is a prime determinant of industry structure
- EU regulation now under review
- What should happen?
- What will happen?



EU regulation now under review

- Current regulatory framework became EU law in July 2003
- Most member states transposed into national law in 2004 or 2005
- Regulators are still carrying out the required market reviews
- Review of framework now underway
- To be completed by end 2006
- Any changes will start to affect markets in 2010 or 2011



My view on what should happen

- EU regulation to date has worked well to:
 - *Open up monopoly supply*
 - *Force a rebalancing of voice telephony prices to cost*
 - *Lead to substantial improvements in efficiency of old monopolists*
- But problem is now one of investment:
 - *Major investment required for move to NGNs*
 - *Current regulatory framework supports service based competition at expense of investment*
 - *Regulators like Ofcom recognise the problem but constrained by current framework*
- Need for radical review of framework which enables:
 - *Incentives for NGN investment*
 - *Freedom to experiment in bundled offers*
 - *Freedom to phase out legacy wholesale products rapidly*

Principles of UK TSR

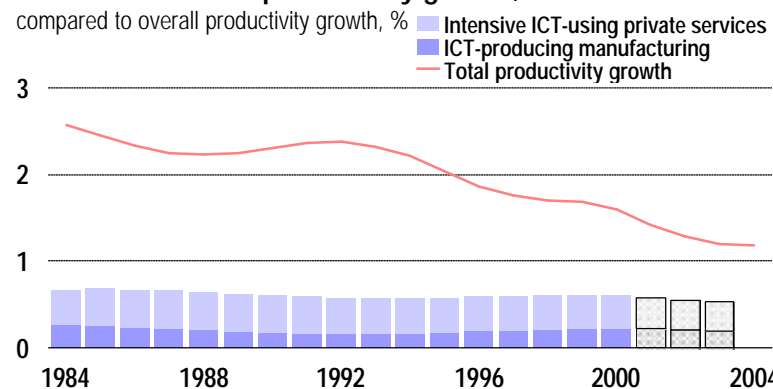
- *Promote competition at deepest level*
- *Focus on equality of access below this level*
- *Withdraw from regulation above it*
- *Create an investment friendly climate*



Is current EU regulation delivering?

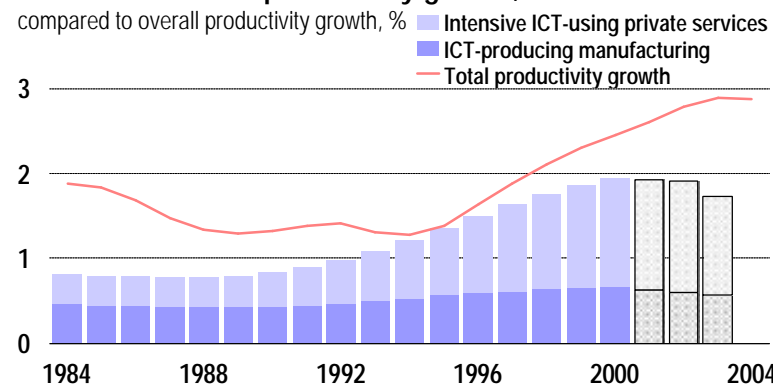
- European Commission claims it is but...
- ...EU ICT makes 25% of contribution to economic growth made by US ICT
- ...Telecoms is 50% of ICT and must be produced locally
- ...EU investment in telecoms (as a % of GDP) is at 50% of US levels and the gap is widening

ICT contribution to productivity growth, EU-15



Source: DG for Economic and Financial Affairs (Feb 2005), Indepen

ICT contribution to productivity growth, US



Source: DG for Economic and Financial Affairs (Feb 2005), Indepen



My view on what will happen

- Review will lead to only minor changes:
 - *MNOs want to keep status quo – predictable and favourable to them*
 - *Most NRAs have not yet mastered the current framework*
 - *AltNets depend on maintaining service based competition for their survival*
- As a result:
 - *Regulation in EU will remain strongly influenced by arbitrage based competition*
 - *Investment in EU telecoms will continue to lag US and Asia Levels*
 - *Arbitrage based service providers will survive longer in EU than elsewhere*

■ Ofcom CEO on UK AltNets

“fragmented and under capitalised”

“duplicating assets in some areas but under investing overall”

“too many operators chasing the same, high margin, customers”

“does not look like the basis for sustainable competition”



Next generation fibre access in the EU

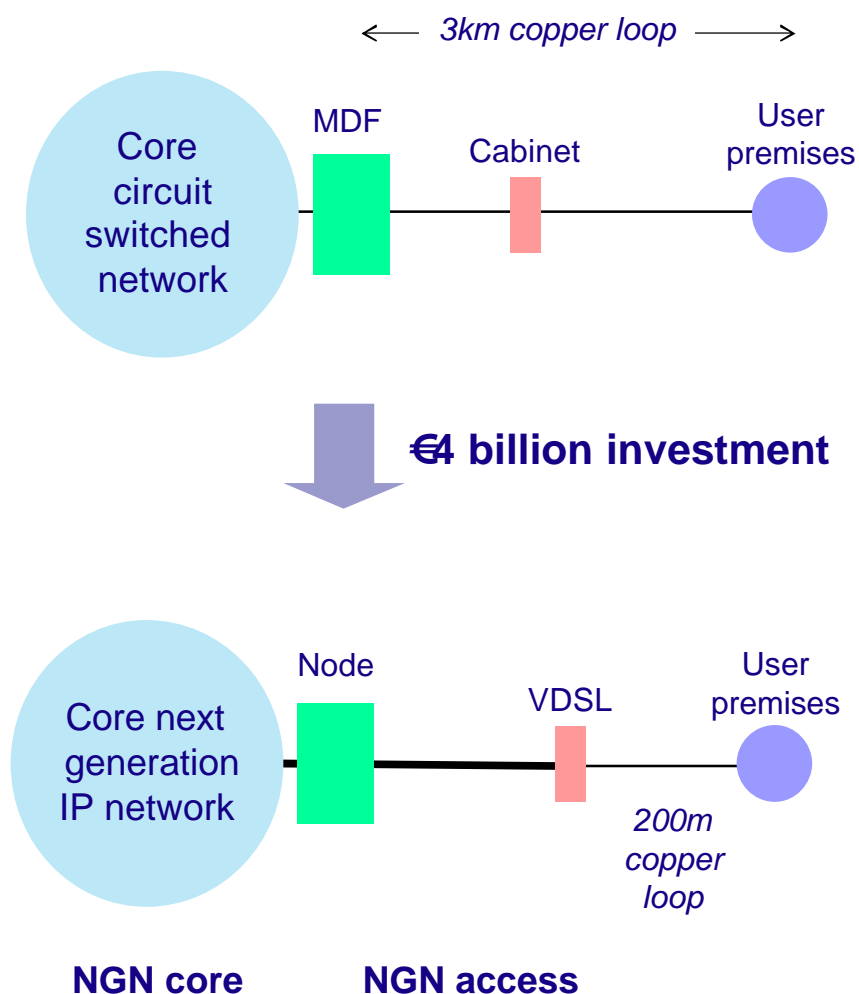
<i>Measure</i>	<i>Japan</i>	<i>US</i>	<i>EU</i>
FTTH/FTTC connections (millions)	3	10	0.6
Investment to 2010 (€bn)	38	17	??
Homes passed by 2010 (millions)	30(1)	40	??

(1) Connected

- EU lags behind its trading rivals in fibre rollout
- Key issue - how to create regulatory certainty to get major investment going?



NG access investment is risky



- Core NGN investment is easy to justify:
 - Major cost savings
 - Eg BT's 21CN
- Access NGN investment is risky:
 - Demand and technology uncertainty
 - When will HDTV take off?
 - Will ADSL2++ suffice?
- Key issues:
 - How to create regulatory certainty?
 - What to do about LLUsers?



The three main options for regulation

- 1 Forbear from regulation for N years
Does it lead to remonopolisation?
What is N?
What happens when regulatory holiday is over?
- 2 Regulator sets cost based price for access
Does it lead to under investment by incumbents?
How to take account of:
options value of rental?
risk of project failure?
asymmetry of regulatory error?
- 3 Require non discriminatory access but allow investor to set access price
What constitutes non discriminatory access?



NG Access in Germany

- Nov-05 Government agree DTAG VDSL fibre investment free from regulation for 3 years on grounds it is an emerging market
NRA published broadband access market review with VDSL excluded
European Commission expresses "serious doubts" about the review
- Dec-05 NRA includes VDSL in market "unless it proves not to be a substitute for other access forms in these markets"
- Jan-06 DTAG goes ahead with €3 bn investment on grounds that NRA ruling exempts triple play services from regulation
- Feb-06 NRA starts consultation on how to deal with emerging markets

Conclusions:

- *DTAG is investing in NG Access but...*
- *...there is as yet no regulatory certainty on NG Access investment there*

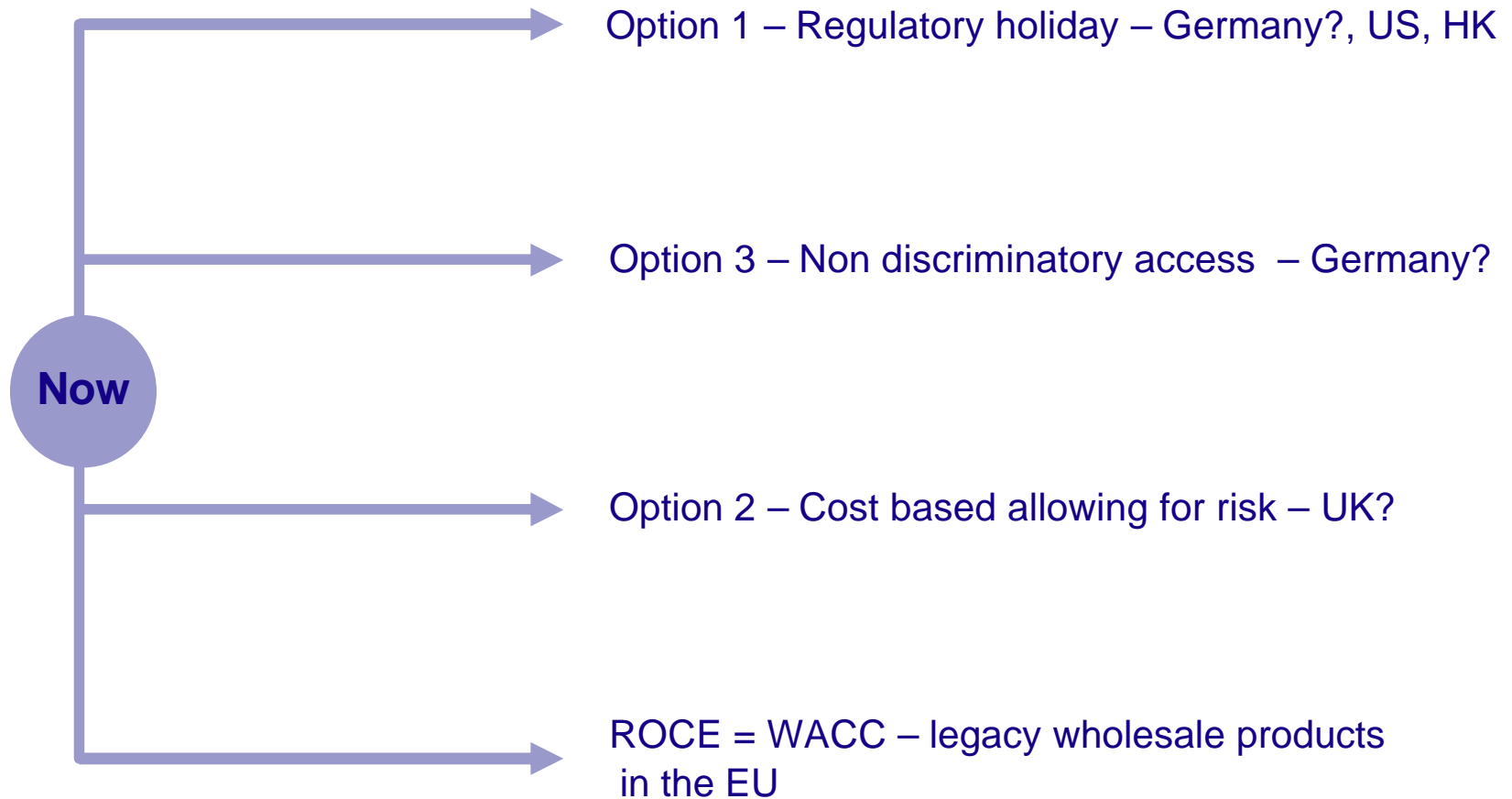


NG Access in the UK

- BT is not (yet) interested in VDSL:
 - *Sky and Cable companies too strong in pay TV market*
 - *ADSL2+ good enough for BT*
- TSR has defined conditions for access to BT's local loops and debate in UK is over
- BT's main interest is now getting access to incumbent's loops in other countries
- So BT speaks like an AltNet rather than an incumbent on this issue
- Ofcom is very clear it will not accept Option 1 in the UK



Which way for next generation access in the EU?



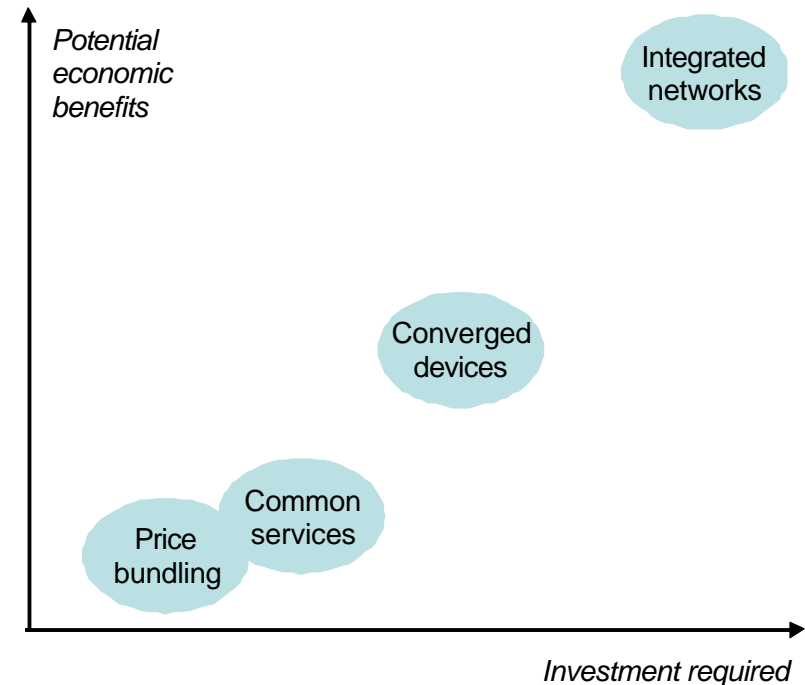


The impact of fixed mobile convergence



The four stages of FMC

- Stage 1 : bundling
 - *discounts on combinations of fixed and mobile services - often with one bill*
- Stage 2: common services eg
 - *one number service, one voice mail*
- Stage 3: converged device
 - *seamless handover of calls as user moves in and out of fixed services home zone*
- Stage 4: network integration
 - *common IMS (IP multi-media system) and IP transport supporting radio and wireline access networks*





The status of the four stages

Stage	Status	Driver
1 Bundling	Common practice by integrated operators	Reduced churn and to enable cross selling
2 Common services	Common practice by integrated operators	Reduced churn and to enable cross selling
3 Converged devices	Mostly in trial phase	Reduce or reverse FMS
	BT Fusion most advanced	More efficient use of RAN and spectrum
4 Converged networks	Not yet but some operators reintegrating fixed and mobile networks eg TI	Better service and lower unit costs
		More efficient use of RAN and spectrum



FMC – implications - 1

- Demand still uncertain – but momentum is growing daily
- Stage 3: converged devices:
 - *All the service control lies in the mobile network*
 - *So BT Fusion is a distribution channel for Vodafone*
- Stage 4: converged networks:
 - *All main operators going to NGNs*
 - *Big competitive advantage to operators which integrate mobile services*
 - Higher volume of traffic over which to spread fixed costs
 - Opportunity to offer wide range of integrated “anytime anywhere” services ie...
 - ...quadruple play operators win over triple play operators
 - *Only operators which own both fixed and mobile infrastructure can do this*



FMC – implications - 2

- All integrated operators in EU get a big boost eg
 - *DTAG, Telefonica, Telecom Italia*
- Problem of remonopolisation with FMC – how will the regulators react?
- What happens to pure fixed incumbents like BT:
 - *Buy H3G UK?*
 - *Acquired by one of big 4 UK MNOs?*
- What happens to Vodafone?
 - *Second biggest MNO behind integrated incumbents in most of EU*
 - *FMC could substantially weaken its position*
 - *Needs to cover the threat*
 - *Expect acquisition of fixed AltNets*

Possible remonopolisation of markets

Market	Now	2011
Fixed	Incumbent dominant	Incumbent dominant
Mobile	Effective competition	Incumbent dominant



EU industry structure – a scenario for 2011

- FMC becomes of major importance
- EU NRAs will require non discriminatory access to incumbent's fibre and major investment will take place
- EU regulation will change little following the 2006 review



The winners and losers

<i>Player type</i>	<i>Position by 2011</i>	<i>Winner or loser?</i>
Pure fixed incumbents eg BT	Merge with MNO to offer FMC over NGN	Potential loser
Integrated fixed incumbent eg DTAG	Run integrated fixed and mobile NGNs	Major winner - unless strong regulated reaction
Pure MNO eg Vodafone	Acquire AltNets for broadband access	Potential loser
AltNet eg C&W	Rapidly disappearing - despite favourable regulation	Major loser
Cable operator eg ntl	Partnering with MNO	Potential loser
Global ISPs eg Google and ITS companies eg IBM	Applications based competitor using incumbents NGN	Winners