

Fibre investment and policy challenges

Regulatory approaches, remedies and incentives to invest

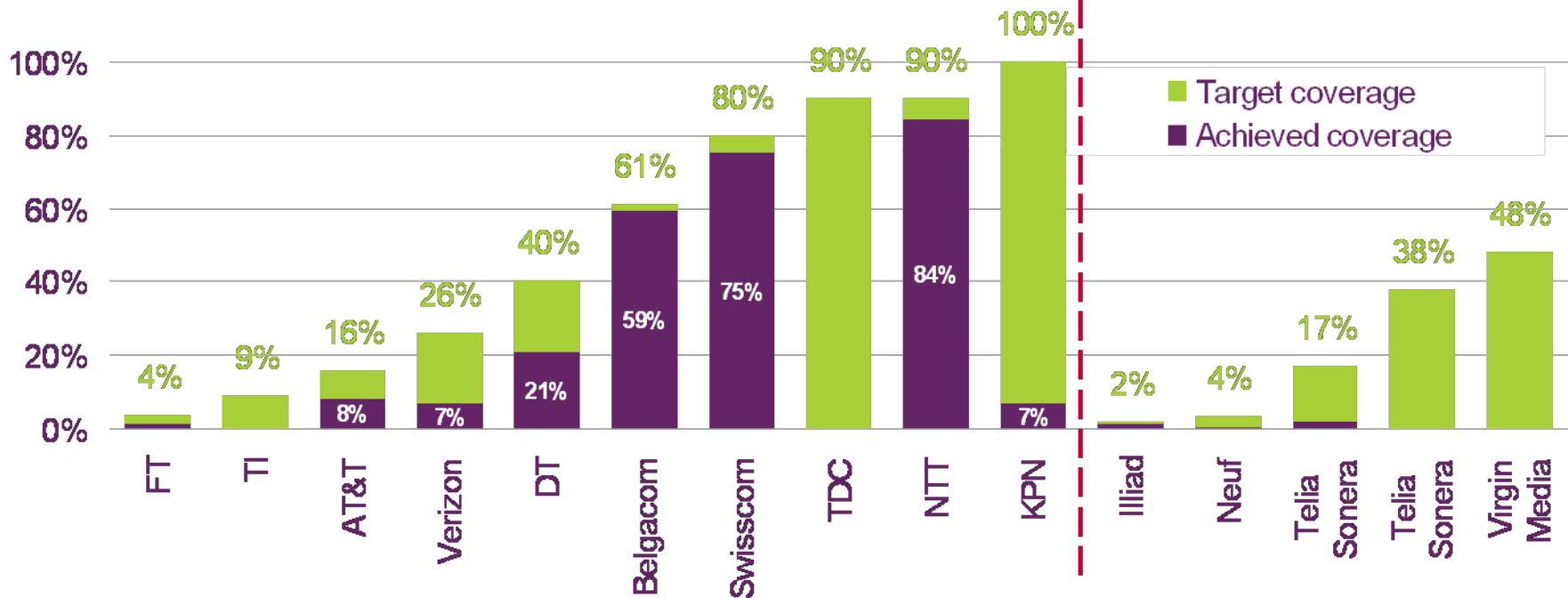
Clive Carter, Principal, Strategy
11 April 2008

We're seeing a wide range of different deployments: technologies, reach and timing all vary...

Planned deployments (Sep. 07)

Recently announced plans

Technology	FTTH/B	FTTC	FTTC	FTTH	FTTC	FTTC	FTTC	FTTC	FTTH	FTTC	FTTH/B	FTTH/B	FTTH	FTTH	Cable
Target date	2008	2010	2010	2010	2009	2008	2010	2010	2011	2010	2009	2009	2009	2013	2009



... in part due to the differences in the three main commercial incentives for investment

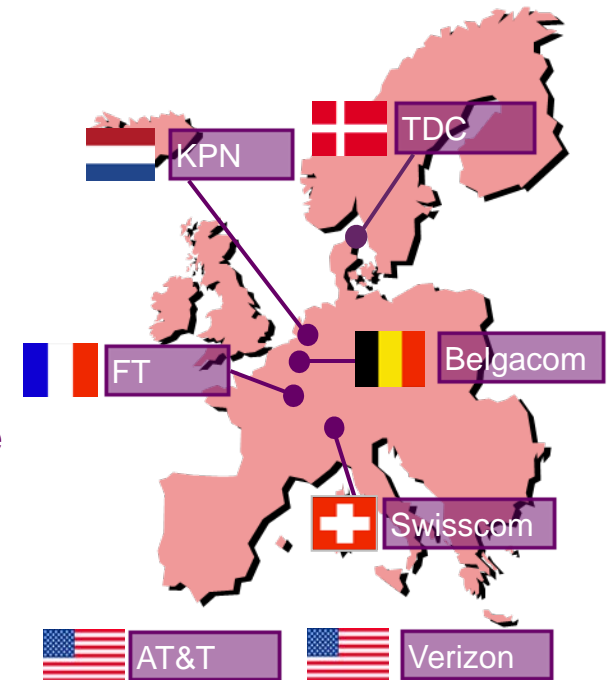
Revenue growth

- Willingness to pay for more bandwidth or other characteristics
- TV and high definition video services
- Wholesale opportunities may grow revenues
- Increasing focus on new commercial propositions and pricing structures

Cost reduction

- Capital cost savings from maintaining existing networks
- Operational cost savings – reduced failure rates
- One-off cash benefits e.g. from exchange location sale
- Avoidance of wholesale costs by LLUOs

Competition

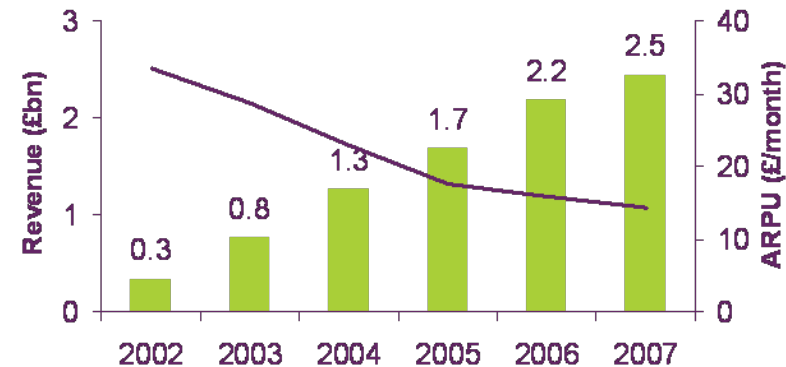


Although we recognise that regulation also has a role to play

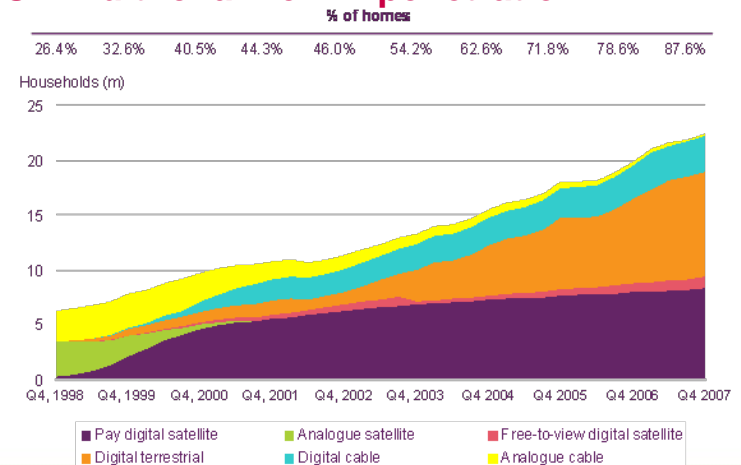
However, in the UK these incentives for investment are not as strong as elsewhere

- Significant demand, technology and cost uncertainty remains on the UK commercial case
- Less opportunities for revenue growth
 - Low willingness to pay for higher bandwidths
 - Mature multi-channel TV market and relatively high pay TV penetration at over 40%
- Fewer options for near term cost reduction
 - Exchange buildings already sold
 - BT already focussing on cost savings in its core network upgrade
 - No stated plans for network upgrade or closure of the existing network
- The competitive threat from cable and LLU in the UK may be more limited

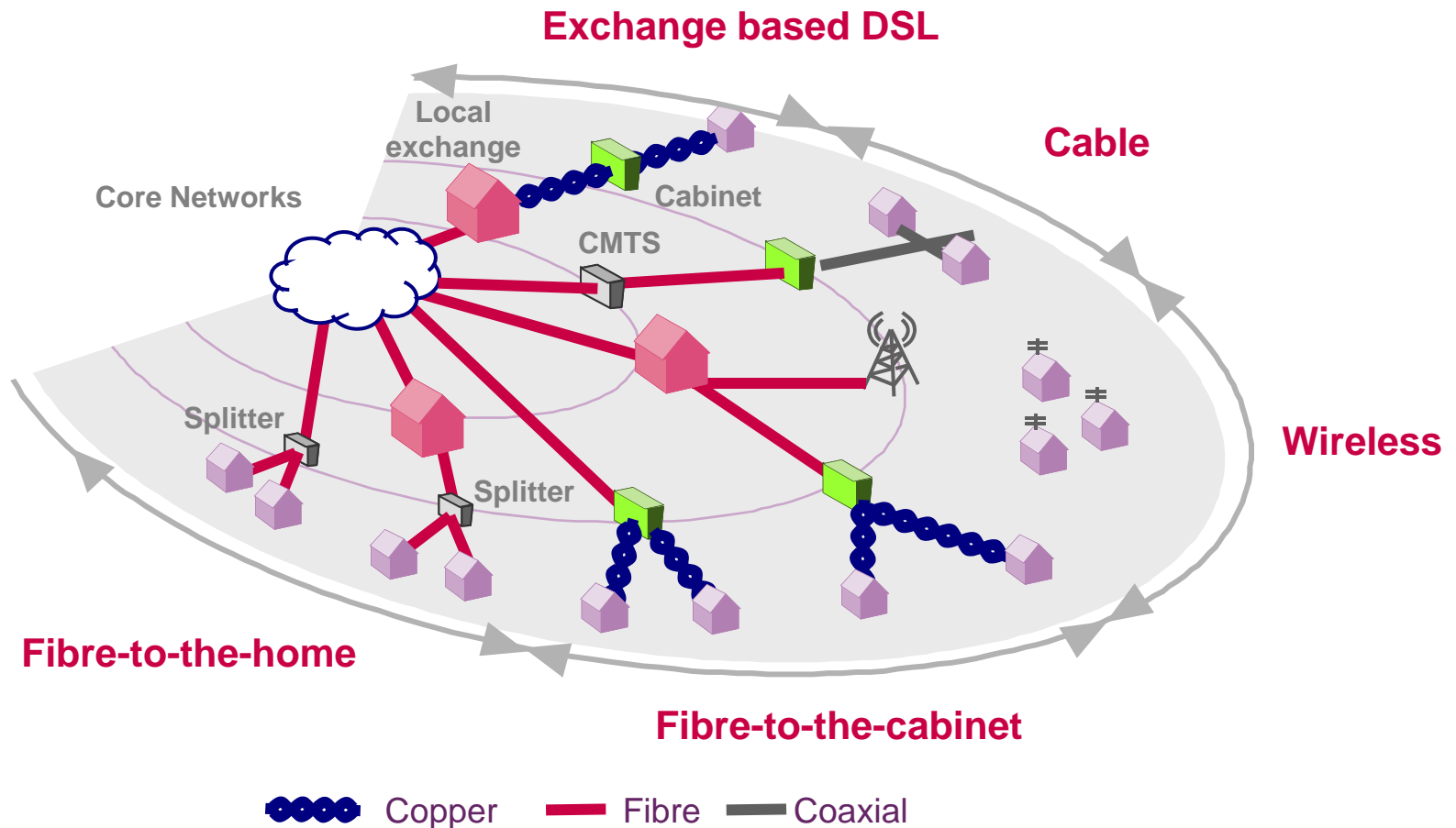
UK Consumer broadband revenues



UK multi-channel TV penetration



While next generation access can be delivered in many ways, we are most concerned by potential bottlenecks



We face a number of challenges as regulators in the presence of market power

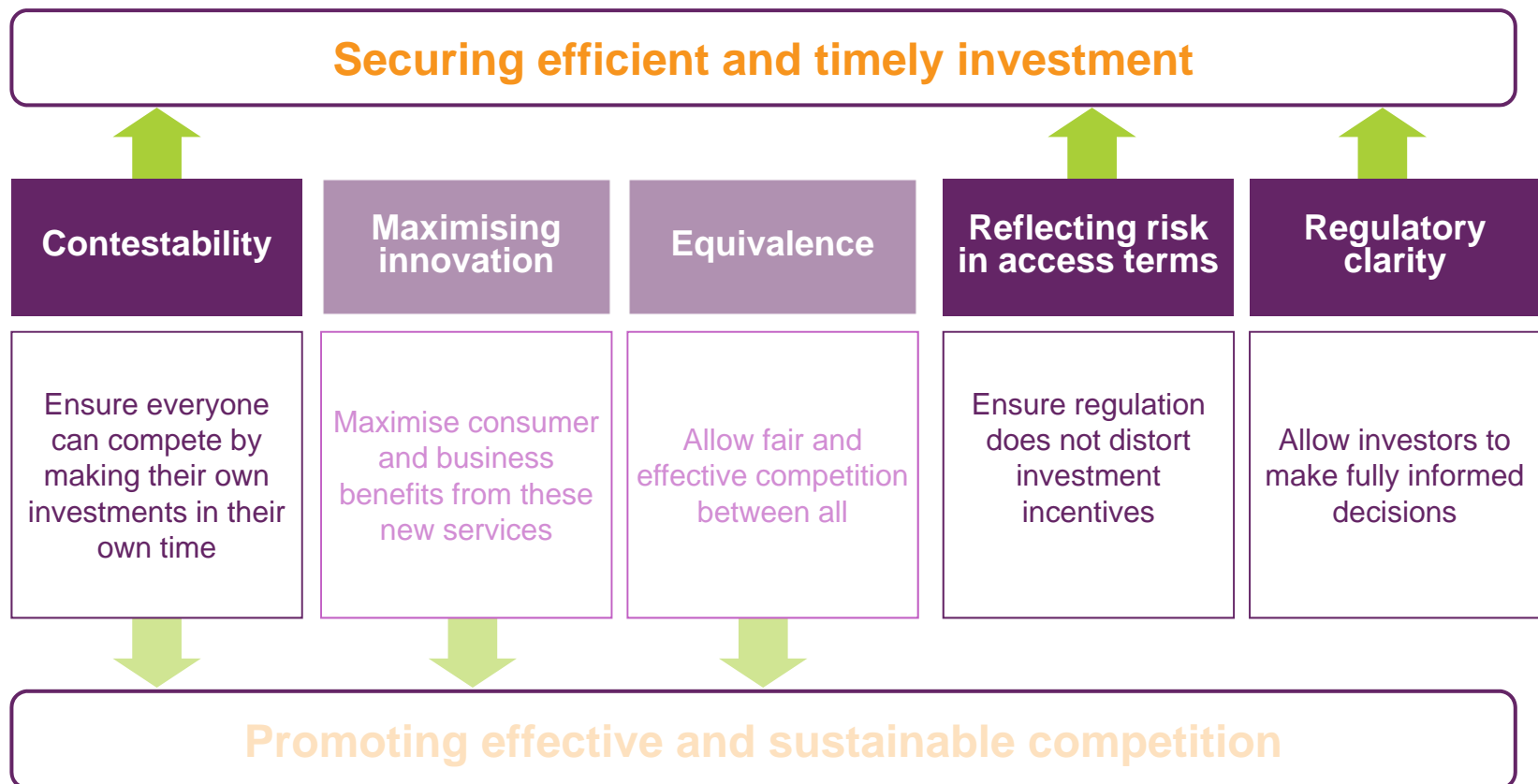
In advance of deployments, how do we ensure that there is timely and efficient investment in NGA networks?

Once NGA investments have been made, how do we promote competition in the case where NGA is an enduring economic bottleneck?

Following NGA investments, how should current regulatory policy evolve?

What is the role of regulatory or wider public policy in promoting next generation access deployment?

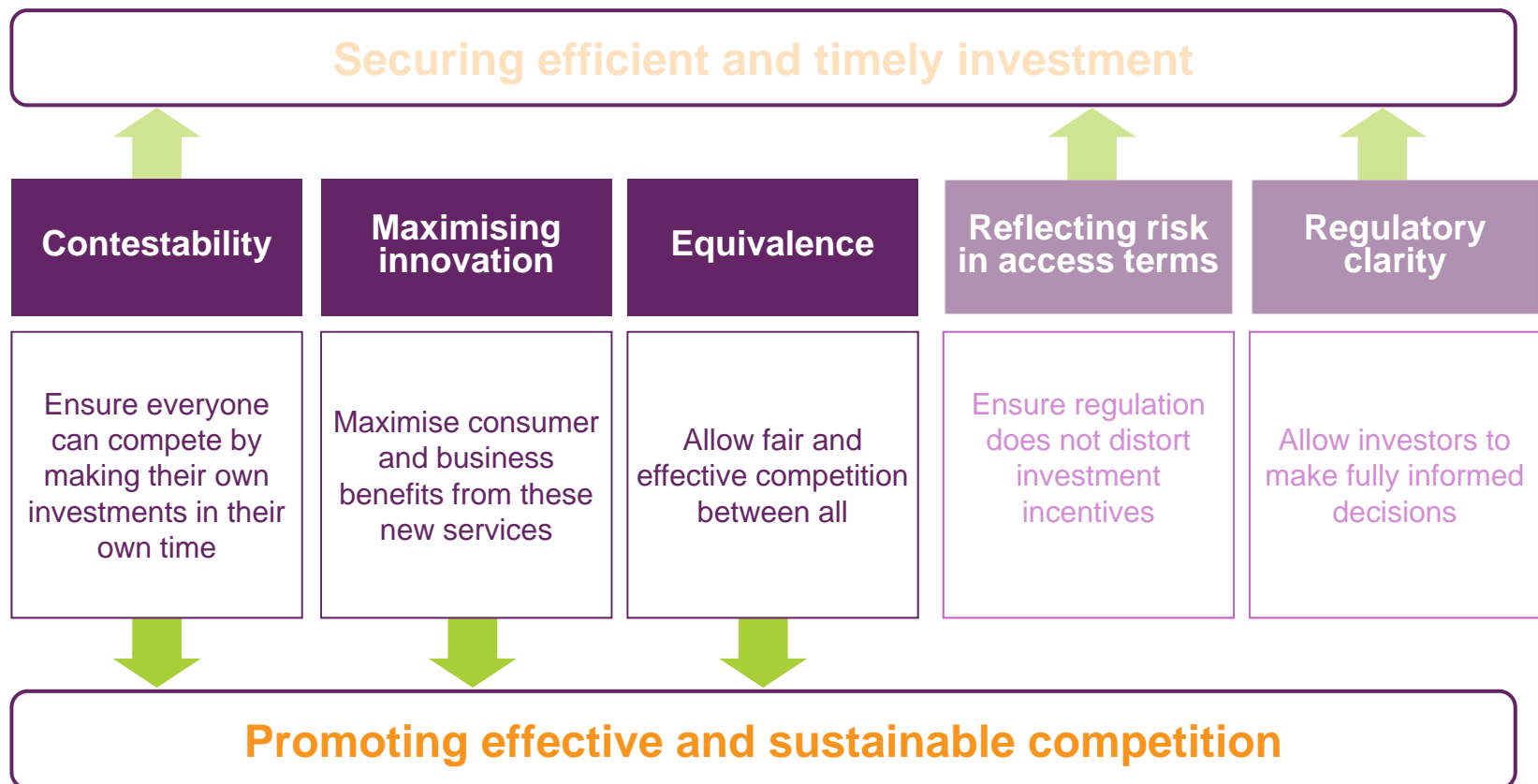
Investment incentives are expressly considered within our principles for regulation...



... including a number of options for reflecting risk in regulated access terms, all with pros and cons

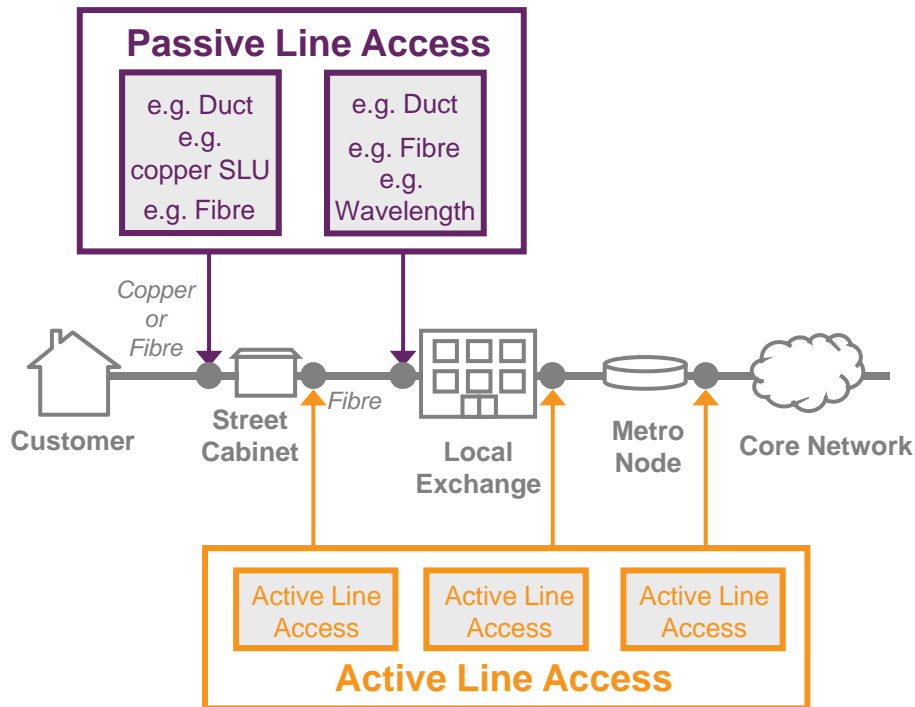
	Advantages	Risks
Adjusted cost of capital	<ul style="list-style-type: none"> • Similar to current approaches 	<ul style="list-style-type: none"> • High information requirements • Risk of incorrect adjustment
No price setting	<ul style="list-style-type: none"> • Industry assesses risk and prices it in • Returns not capped 	<ul style="list-style-type: none"> • Potential abuse of market power – margin squeeze
Anchor product regulation	<ul style="list-style-type: none"> • Pricing flexibility • Consumer protection • Pricing restraint 	<ul style="list-style-type: none"> • Need to define anchor • New approach

Once investment is made, how do our principles look to ensure effective and sustainable competition?



Unbundling is one remedy to market power in an NGA world, but there are others both at passive and active levels

Models for competition...



... each with advantages and disadvantages







- Passive products give the greatest scope for innovation, differentiation and competition...
- ... but suffer from poorer economics (manual interventions, fragmentation, scale economics)
- Active products have better economics (automation, scale economics)...
- ... but traditionally offer less scope for innovation

Our stated aim is to regulate at the deepest level possible where-ever this is both effective and sustainable

What the right option is depends in part on a country's specific characteristics

- Unlikely to be a single remedy for any one country, or even within counties
- Today there is a mix of both unbundling and bitstream
- It is difficult to say in advance what is right where – things change over time
- It is right that NRAs take a forward look on a case by case basis
- There is at the moment a lot of interest in how duct access may work

← Passive → Active

Country	Regulator	Regulatory remedies				
		Duct access	Dark fibre	Wave-length	SLU	Bit-stream
	BNetzA	✓ (backhaul)	✓ (backhaul)	✗	✓	✓
	ARCEP	✓	✓	✗	✗	✓
	CMT ⁽¹⁾	✓	✓	✗	✗	✓
	AGCOM	✓	?	✗	?	✓
	OPTA ⁽²⁾	✗	✗	✗	✓	✓
	BIPT	? (proposed)	? (proposed)	✗	✓	✓

Notes:

 Main area of NRA's focus / strategy

⁽¹⁾ CMT continues to explore a broad range of regulatory options

⁽²⁾ KPN has a commercial dark fibre product available for SLU backhaul

Functional separation is a mechanism to deliver competition, but should not preclude efficient investment

Issues

Impeding co-ordination and resulting investment

Opportunistic behaviour

Monopoly rents necessary to invest

Mitigations

Alternatives to vertical integration exist:

- Retailers share demand forecast with investor (UK airports / airlines)
- Bottleneck asset owner collates and publishes demand and capacity forecasts (UK electricity supply)
- Separation can provide transparent mechanisms for retail demand from any parties to flow through to supply

Long term or risk sharing contracts

These are not efficient investments, and would come at the cost of competition and its benefits

Next generation access may change a lot, but competition will continue to remain key

- We firmly believe the market is best placed to make decisions. But regulators do have a key role to play, with a lot of responsibility
- We need to ensure that regulation does not present barriers to efficient or timely investment, though we also need to make sure market power does not
- NGA changes many things in terms of networks, and maybe services, but not our overall aims to promote competition to drive customer benefits
- We need to ensure regulatory policy is aligned as well as possible with commercial incentives to get the best outcomes for consumers