

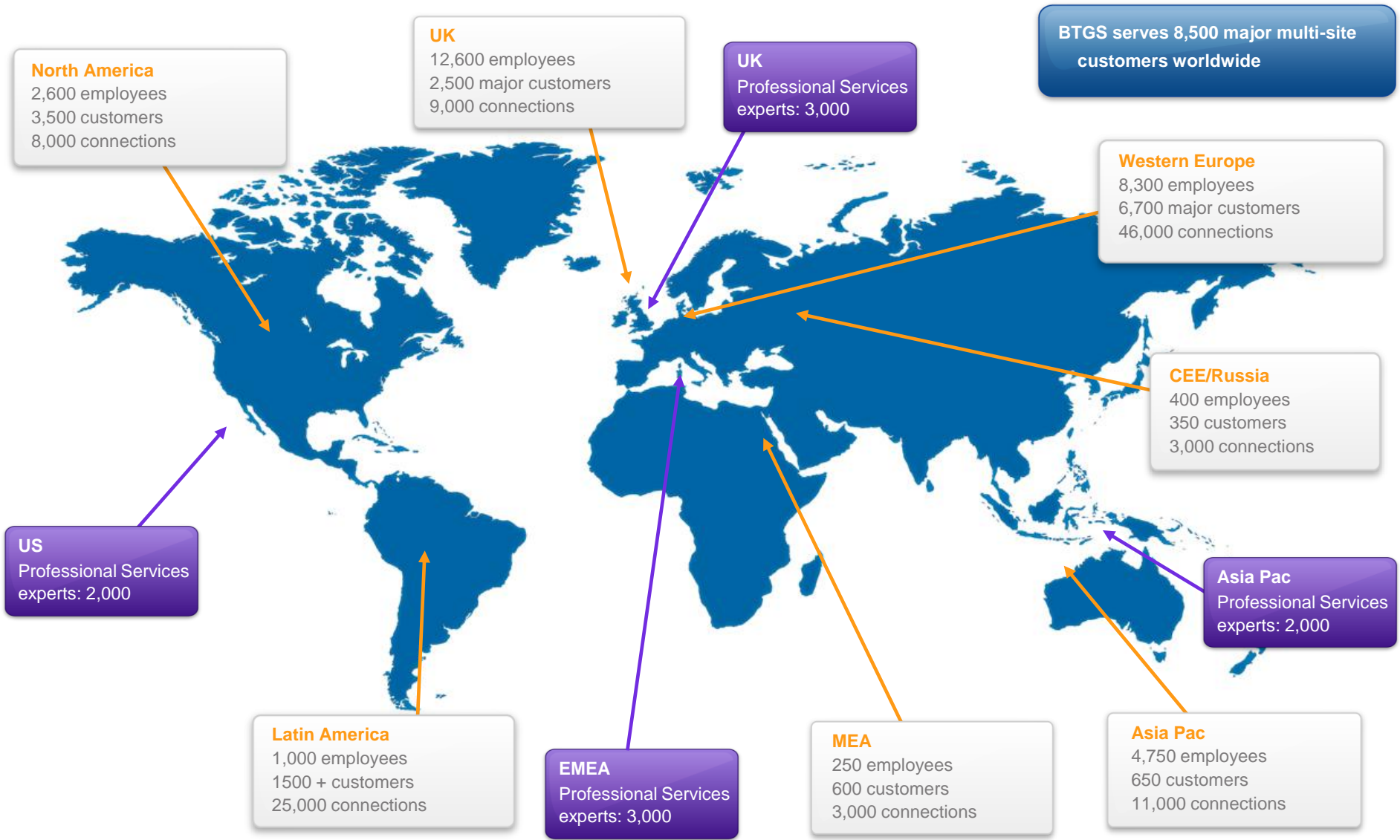
Regulation and access to bottlenecks ... it still matters to competition

Buenos Aires 4th November 2011

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BT Global Services



Delivering local to global





- Operating since 2002, headquartered in São Paulo, Brazil
- Commercial and operational capabilities across 22 Latin American markets
- More than 1,000 Employees, 25,000 connections and 180 Points of Presence
- +1500 customers including 30 major international companies
- 7 Network Operations Centers providing monitoring and proactive diagnosis on a 24x7 basis for customer's operations regionwide.
- 3 Datacenters located in Argentina, Brazil and Colombia.
- Customer growth of 34%*
- Customers from the Public Sector include:
 - Caixa – Brazilian Federal Lottery
 - Compartel & Meduca – Colombian and Panamanian programs for digital inclusion
 - CANTV – (Venezuela)
- One of the four BT's global sourcing centres in the world
- CSR: BT/Unicef Inspiring Young Minds in Brazil – FY0809



Regulation and investment

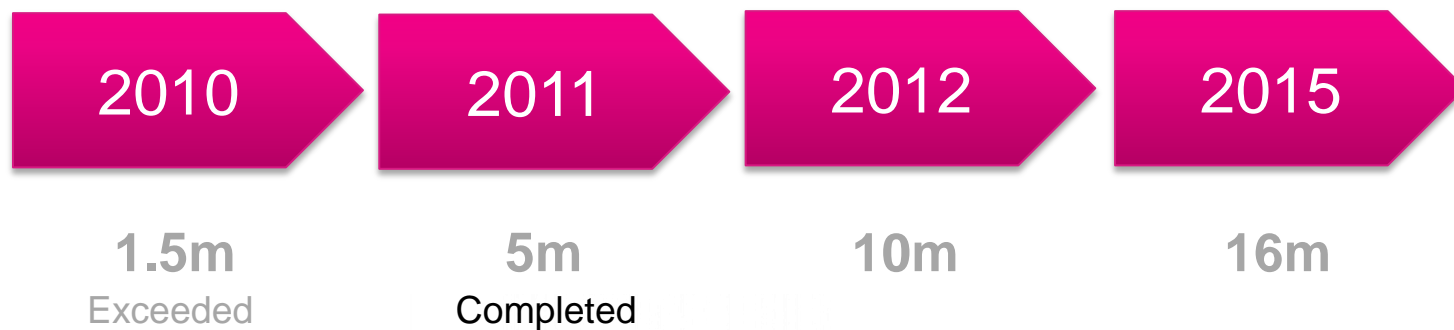
.... **Clarity** and **predictability** is what matters ...

BT is investing £2.5 billion to deliver fibre to two thirds of UK premises



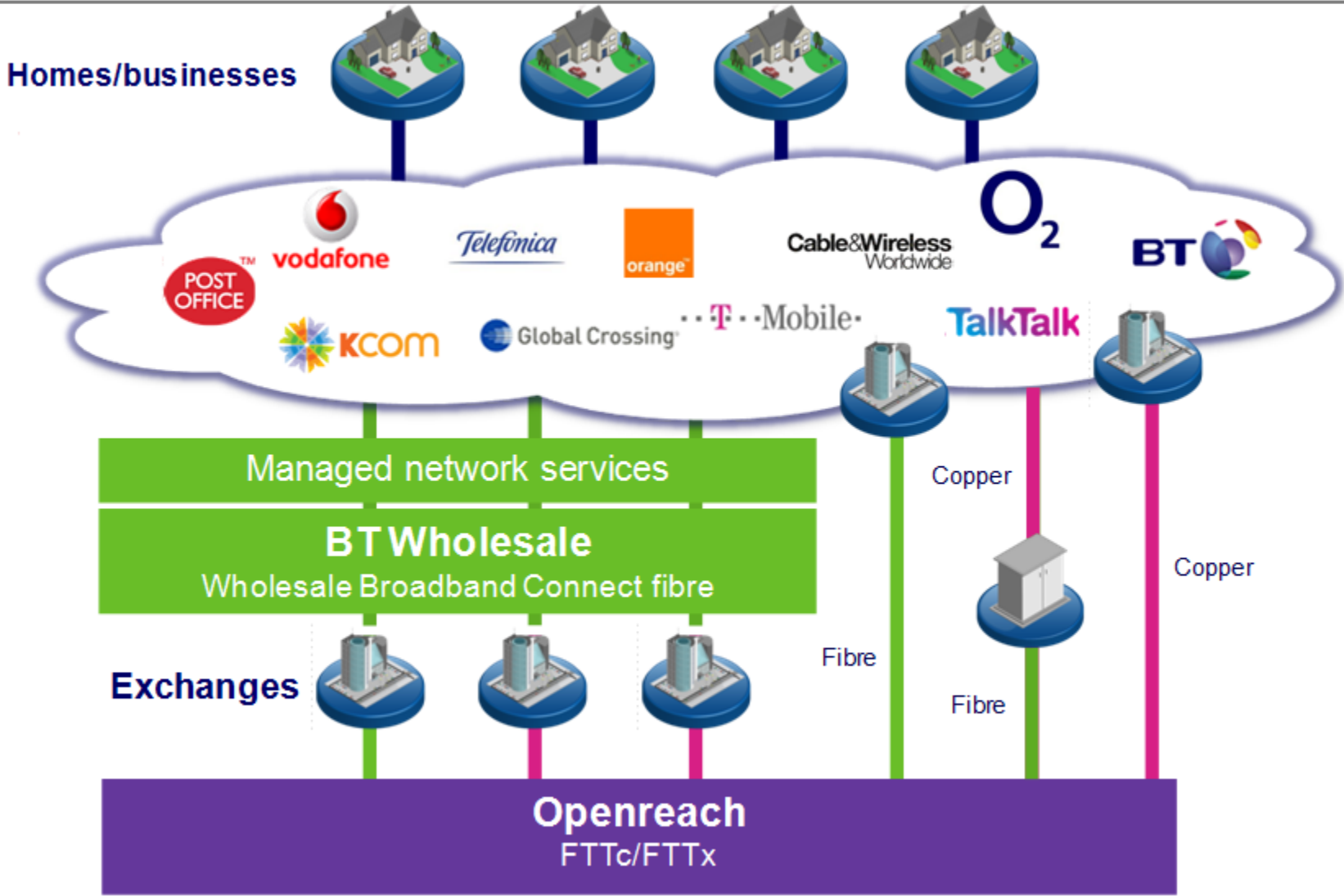
- More than **5 million** homes and businesses already passed
- Enabling about 250 cabinets and **80,000 premises a week**
 - Equivalent to a whole Singapore of deployed footprint every quarter
- Over 200,000 BT Infinity customers installed already (over 5000 a week)
- **50CPs / ISPs** already selling or trialling BT fibre services
- 12 pilot fibre to the premises sites, trialling speeds up to 100Mbps. Commercial launch by the end of the year

Target for premises passed



Super>fast broadband

We have built the network for **open access**, competition and consumer choice



Super>fast broadband

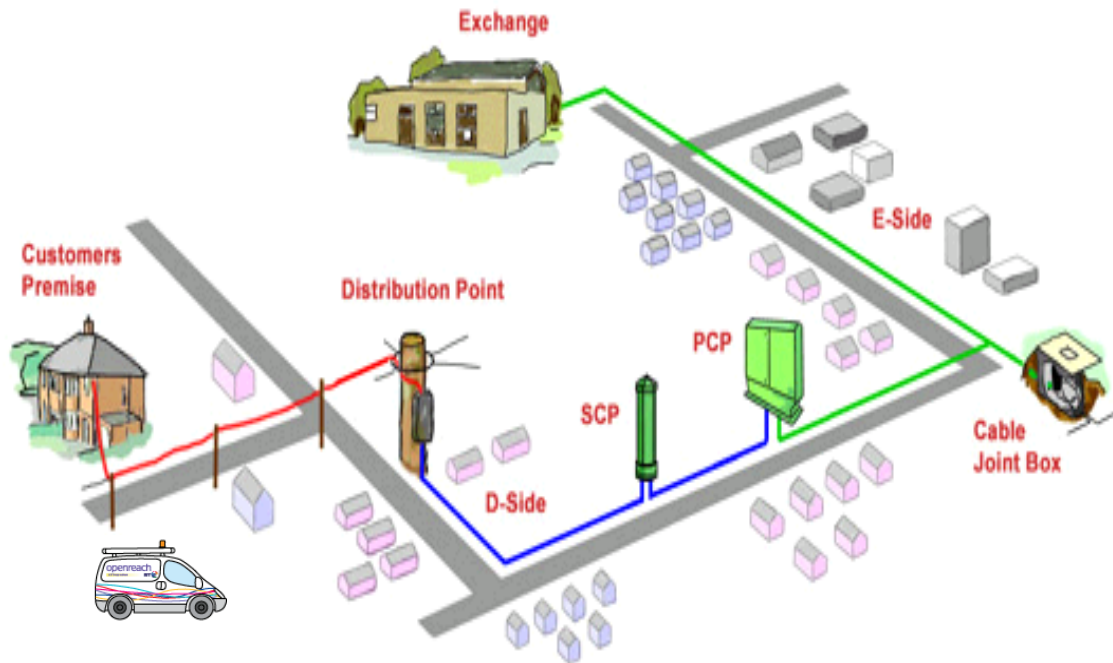
Regulation should provide flexibility and incentives for investment, so the industry can lead market evolution



- **Active exchange-based** products (GEA or “VULA”) are the basis for scale NGA delivery and wholesale competition – in line with the direction of Ofcom’s Telecoms Strategic Review
 - **GEA** is delivered by Openreach **on an identical basis** for all downstream customers (Equality of Input)
- Passive remedies are a limited complementary offer
 - **PIA and SLU** are delivered on a cost-oriented, non-discriminatory basis
 - Challenging economics but they may have a role outside BT’s footprint
- Future success depends on consistency and a level playing field
 - Investment needs to be encouraged by **reasonable access pricing**
 - **Reciprocal access** to others’ infrastructure and a wholesaling requirement are vital for effective competition and customer choice

Super>fast broadband

Openreach – BT's access and backhaul business



- ▶ £5bn revenue
- ▶ 32,000 employees
- ▶ 480+ CP customers
- ▶ 4.4m home visits a year
- ▶ c.£10bn assets (CCA)
- ▶ >24m end user connections

LLU, WLR, Ethernet, GEA, Service Products

Equivalent price and service to all our customers

Openreach and the UK model

Key elements of BT's Undertakings

- Establishment of “functionally separate” business unit: Openreach
- Focus on key access and backhaul bottlenecks
- Provision on an equivalence of inputs (EoI) basis
- Transparency, information sharing constraints and duty of confidentiality
- Clear separation between upstream and downstream divisions: operational separation, systems separation, asset register split and accounting separation
- Independent oversight and enforcement
- Next Generation Networks to be implemented in an “equivalent” manner

Equivalence of Input

- Same products & services
- Same time-scales, Ts and Cs, incl. price
- Same systems & processes
- Same reliability & performance
- Same commercial information
- Subject only to trivial or agreed differences

“Competition ready” stimulates growth

Content

Applications

Network

WiFi Access

Access

Get Ribbit! Free Sign Up

BT wholesale

BT Openzone wireless broadband

openreach

BT's network – open for all

merged IP network
network intelligence



BT Infinity

BT Vision 3D HD

Reviewing the benefits achieved

- More effective wholesale regulation with greater transparency and confidence for customers
- Providing the basis for effective and sustainable downstream competition
 - Increased take-up of new services and products
 - Establishment of vibrant and competitive CP market
 - Greater affordability
- New product development process and industry agreed prioritisation
- Clear focus on access and backhaul network - improved service levels and reduced fault rates
- Continued investment by BT and industry

UK Government continues to push UK ‘Superfast’ coverage and has announced its aims and level of support

“Best superfast broadband network in Europe by 2015”

Virtually all homes to have access to 2Mbps by 2015

Mixed technologies to achieve the coverage – fixed, wireless and satellite

£530m funding available within this parliament – with a further £300M beyond 2015

Four pilot areas in North Yorkshire, Highlands and Islands, Herefordshire & Cumbria

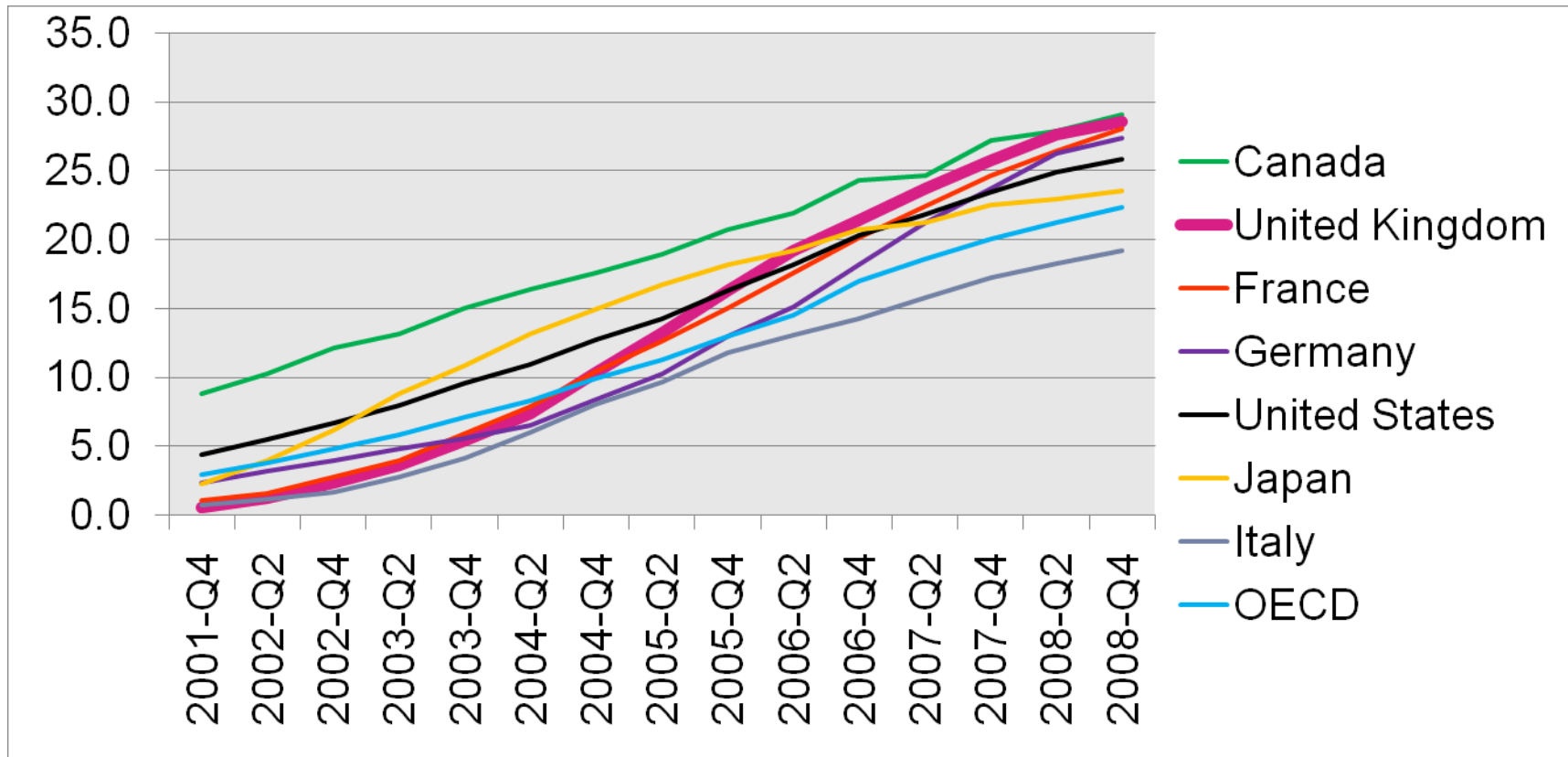
Access to utility infrastructure including BT’s ducts & poles

A “Community Hub” will bring a high speed link into remote villages, with the local community deciding how to provide the “last mile”.

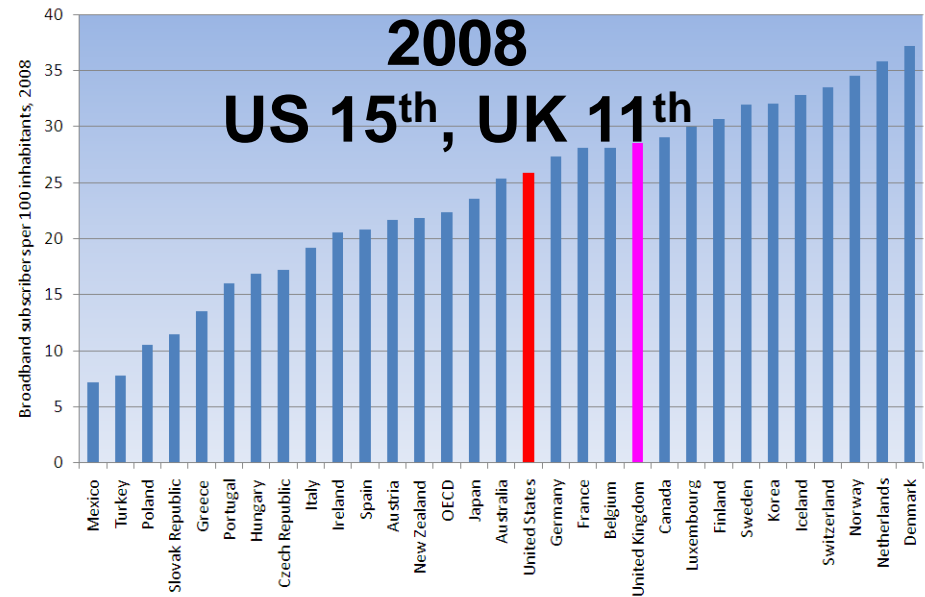
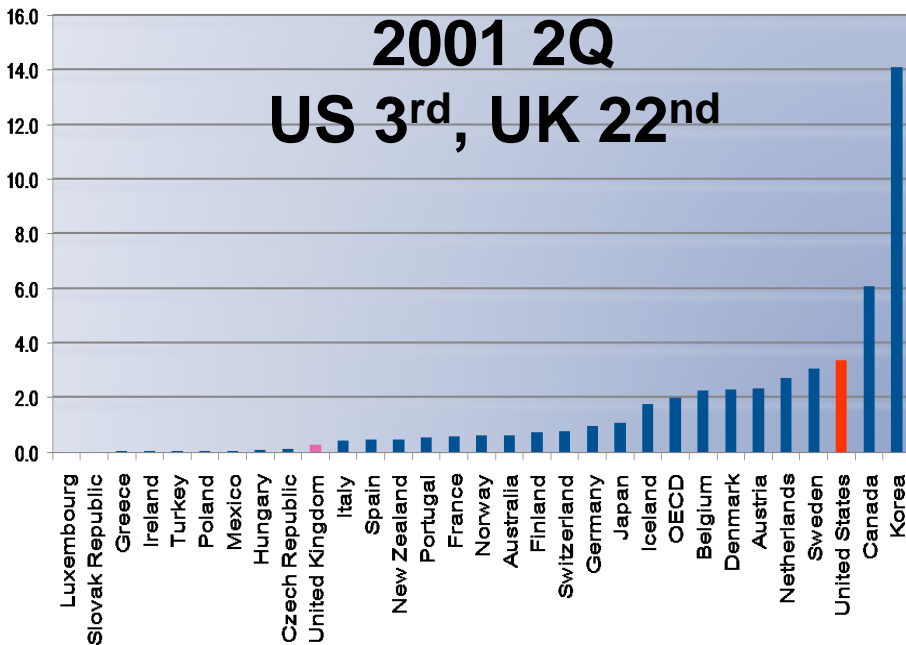
Effective regulation of access bottlenecks has driven accelerated broadband uptake in the UK





- Steeper rate of broadband penetration in UK versus USA.



Improved UK broadband performance enabled by effective regulation of access bottlenecks



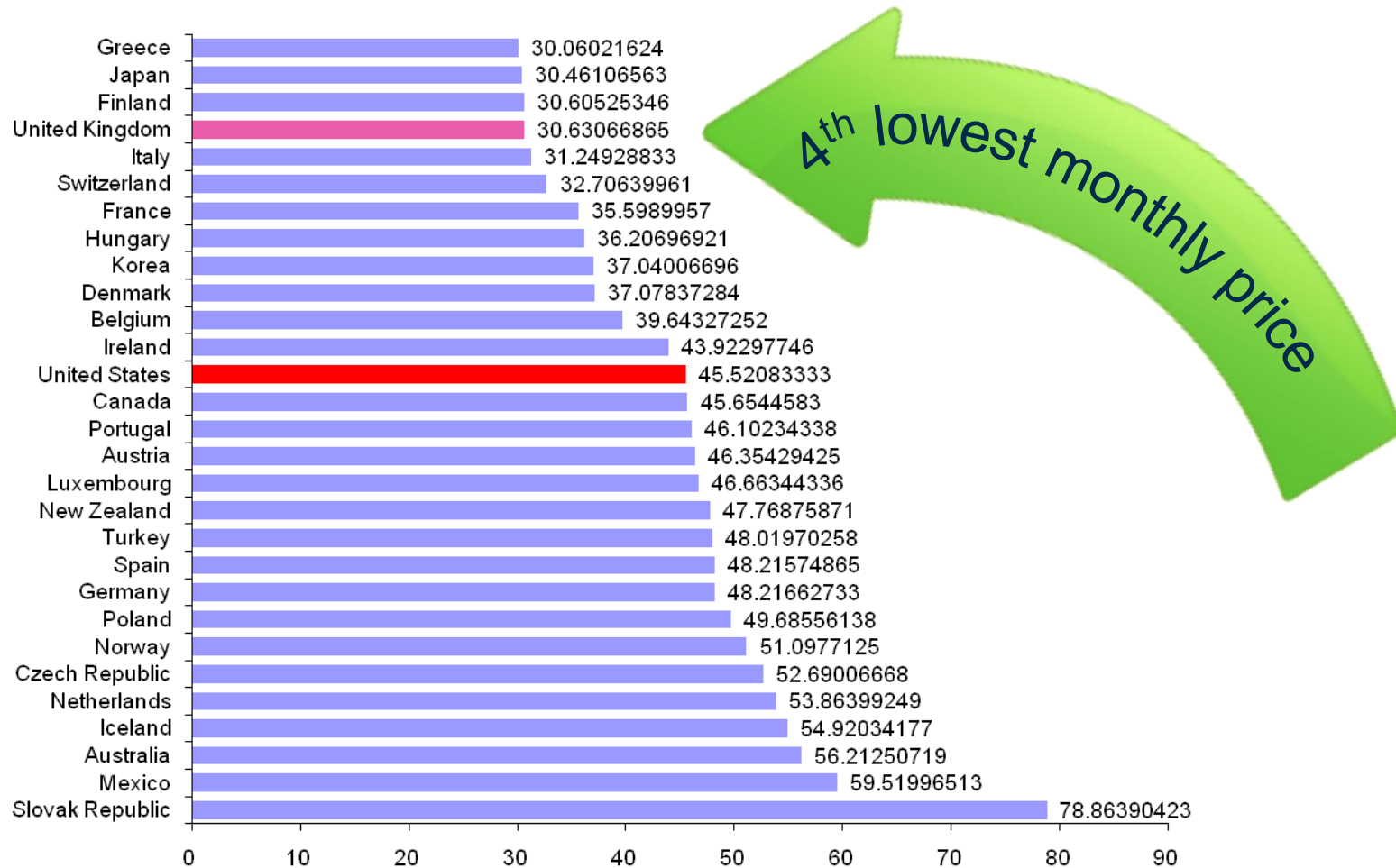
**UK is 11th in OECD ranking today whereas it was in 22nd place in 2001
USA ranks 15th whereas in 2001 it was in 3rd place**

 = UK
 = US

Intense intra/intermodal competition has lowered prices for broadband subscribers



Broadband average monthly subscription price, Oct. 2008, USD PPP

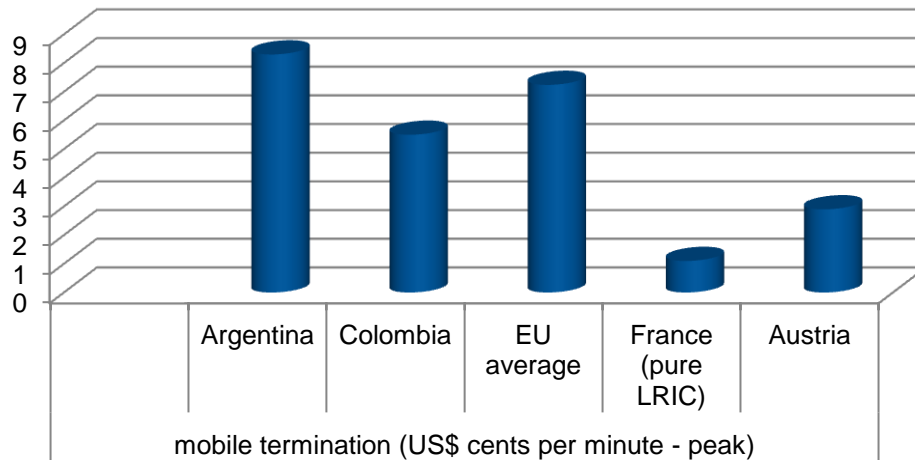
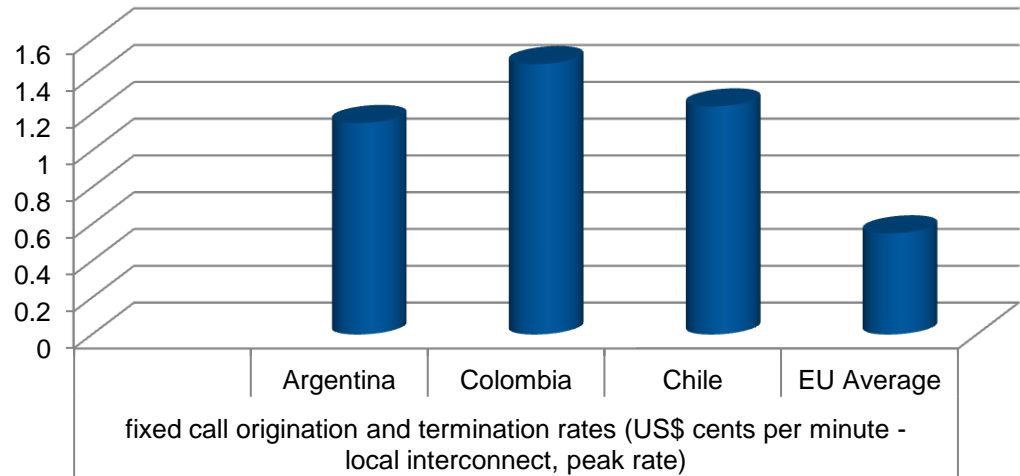


annexe

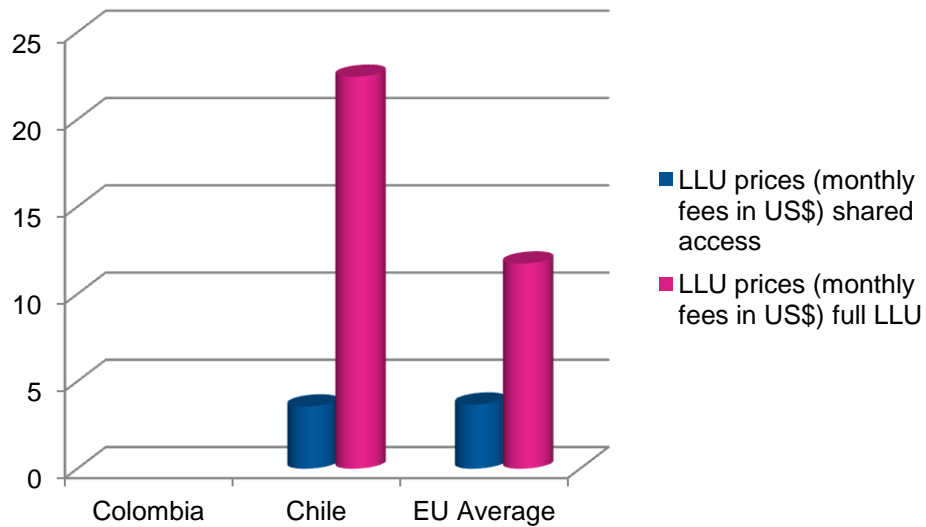
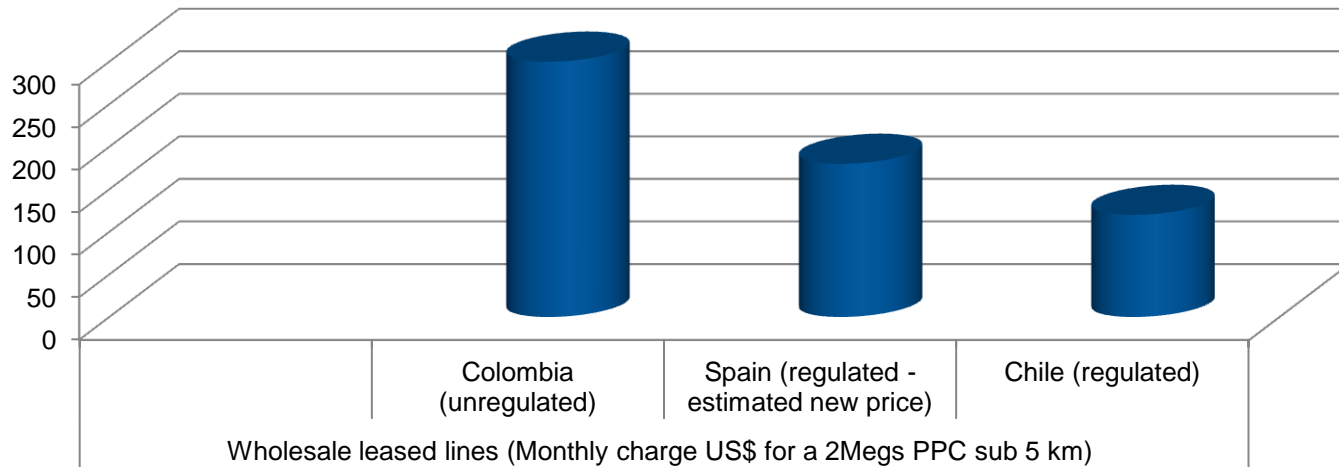
- Good progress towards openness and transparency of regulatory process.
 - Most countries have relaxed entry regulation significantly over the last decade
 - Demonstrated true commitment to open and public consultations in many cases.
- Yet much remains to be done.
 - Licensing still used to control entry and micro-manage markets
 - Pricing: rarely cost-oriented or competitive, at times merely recommended (see e.g. leased line pricing though changes are coming through).
 - Lack of transparency generally affecting competition
 - Margin squeeze is not uncommon.
 - No accounting separation or separation of any other kind.
 - No KPI.

- Most Latin American economies are **expanding rapidly**.
 - Global businesses are investing and depending more on Latin American operations.
 - Domestic **LATAM businesses** are becoming major players on the world stage and across Latin America.
 - **Both need** advanced telecommunications services deployed widely across Latin America.
 - Consumers need broadband access.
- Currently, Latin American fixed line business telecommunications services are more expensive and of lesser quality than in EU and other regions/countries
- **Need to drive improvements via competition.**
- **Wholesale access** on cost oriented and non discriminatory terms is key.

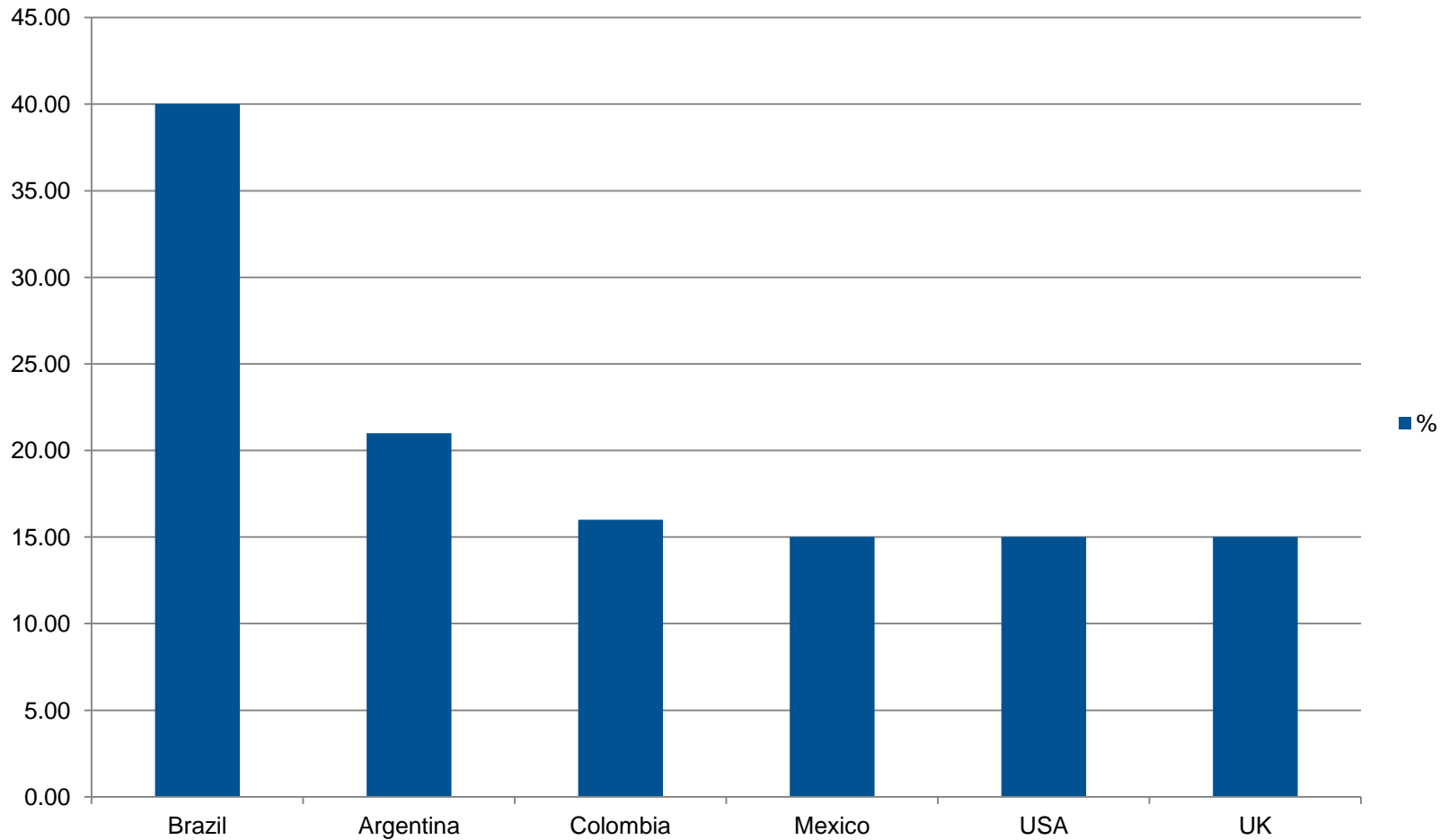
Selected wholesale access and interconnect rates – a comparison (1)



Selected wholesale access and interconnect rates – a comparison (2)



Telecoms Tax

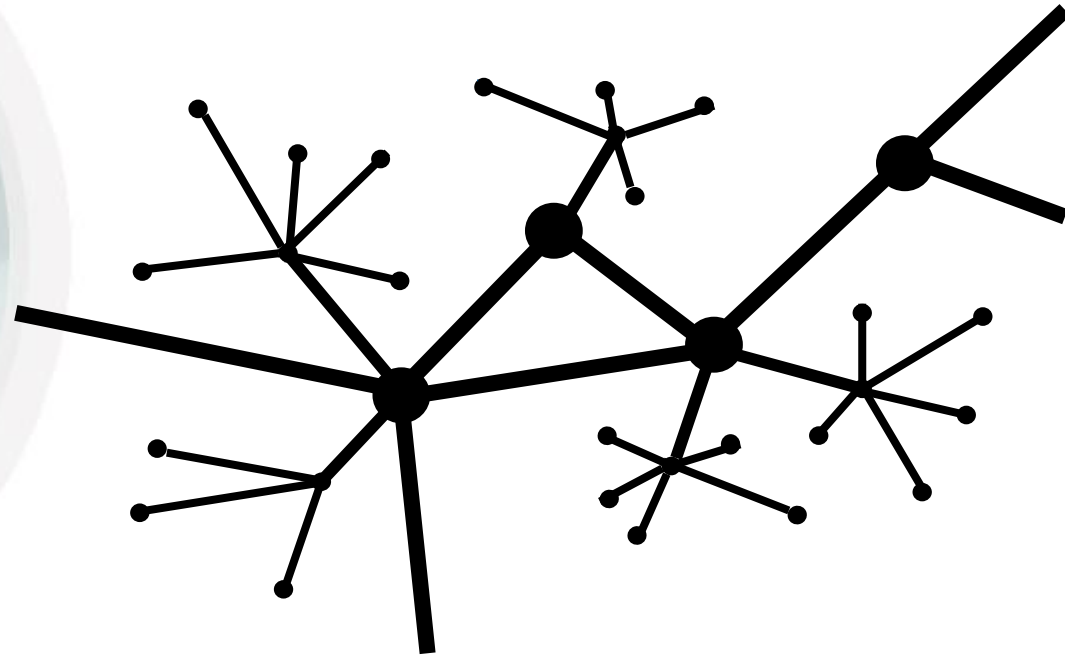


Wholesale access is **good** for competition and to maximise welfare

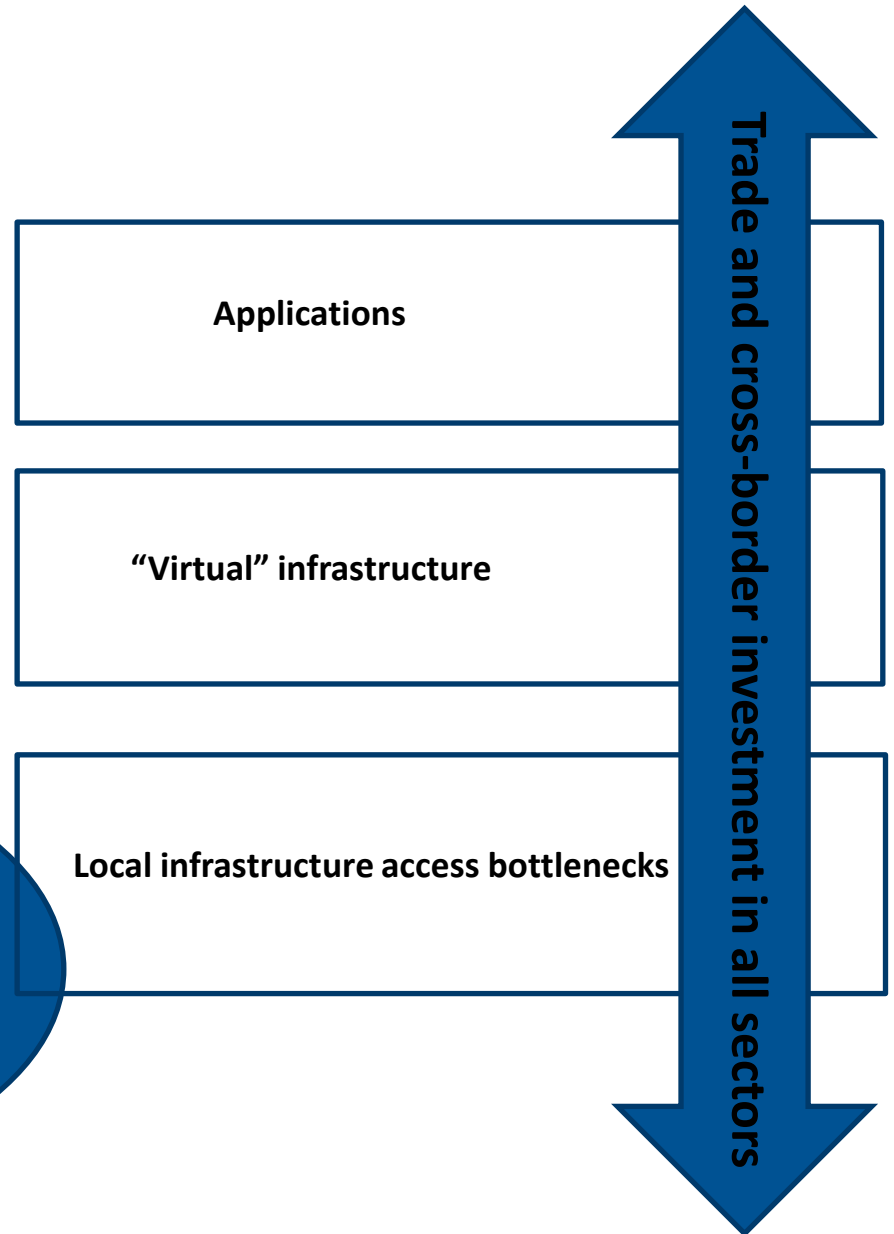
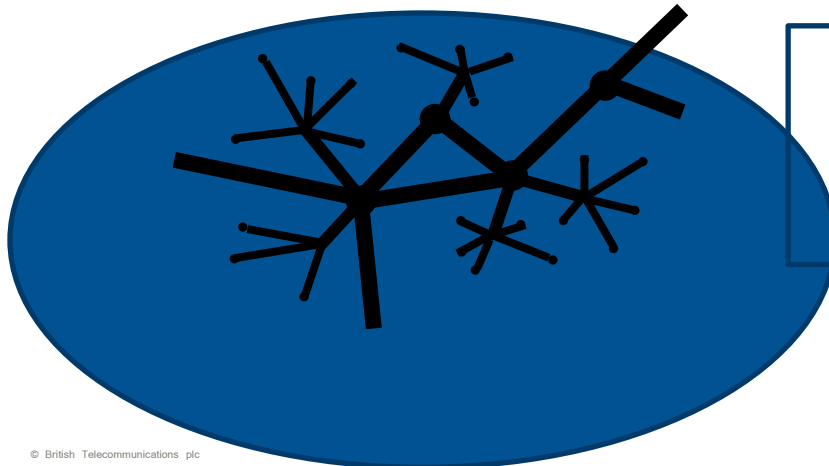
The relevance of wholesale access in the business ecosystem and for global trade



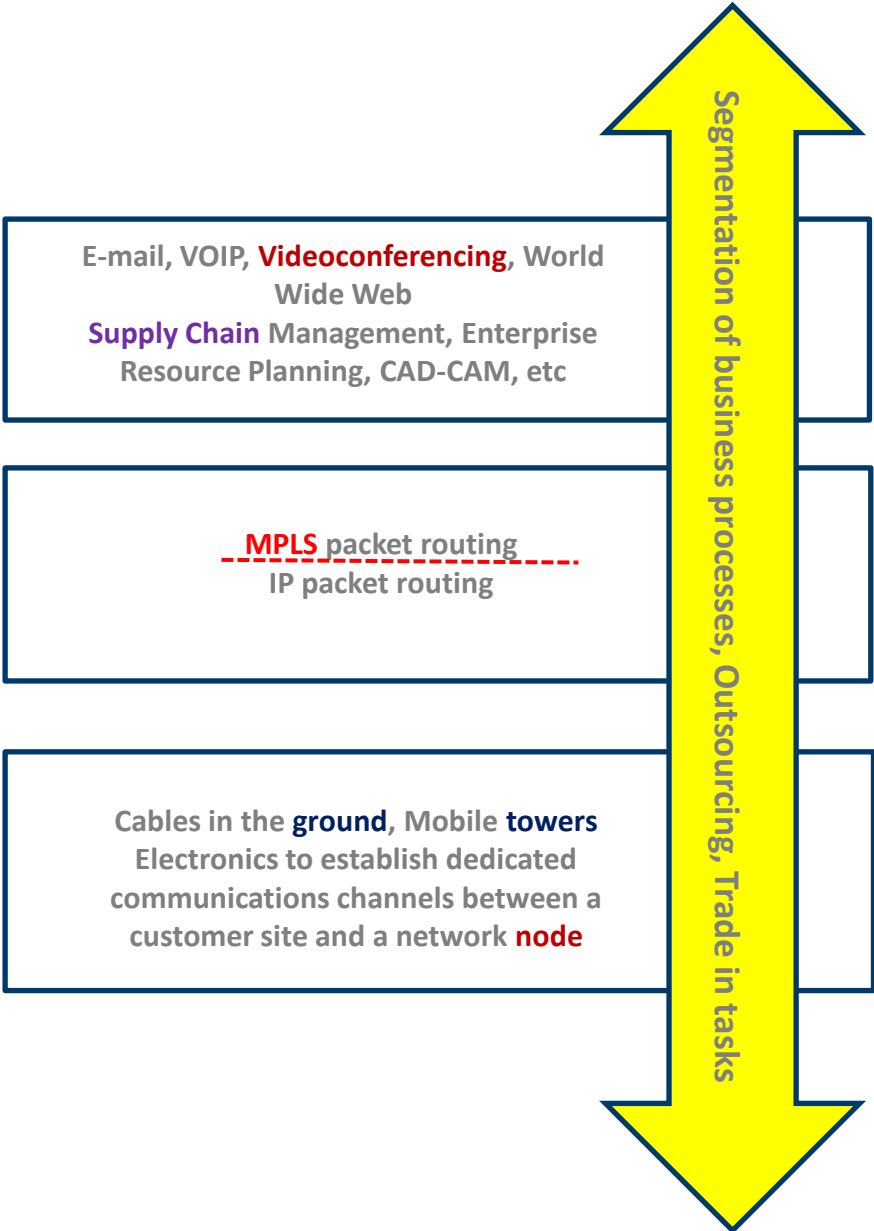
Electronic communications **networks** are commonly imagined in **two dimensions** as a collection of lines on a map.



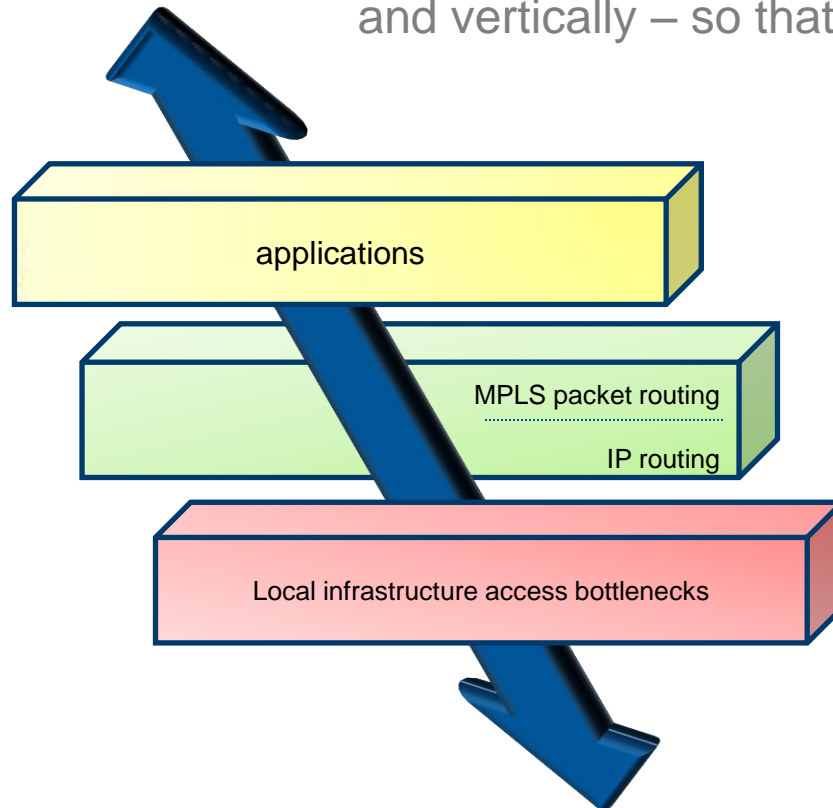
But the **network elements** which need to be located at a specific longitude and latitude in order to do their job can also be conceived as the bottom layer of a **wider pan-European/Global 3D ecosystem**



Inside the eco-system



welfare will be maximised when the ecosystem functions in a **seamless** manner – both horizontally and vertically – so that trade can be enabled



Interoperability is needed across borders (the 2D network dimension) ...

... And, more importantly, also **between layers in the system** (the 3D dimension).

And a variety of studies have quantified the potential benefits for the economy.




Indepen (for BT, INTUG EVUA) 2008	1.6% GDP
MICUS (for European Commission) 2008	0.71% GDP (approx 82bn a year)
Copenhagen Economics (Danish Study) 2010	7% GDP
McKinsey & Company (Global Institute) 2011	21% GDP*

* last five years growth in selected mature economies

- Global competition is intensifying
- The EU is lagging behind other competing economic zones
- Effective use of information and communications technologies can transform business performance
- EU Regulatory framework must promote competition in business markets, not just for residential consumers markets

Quantifying the impact of ubiquitous access to networks

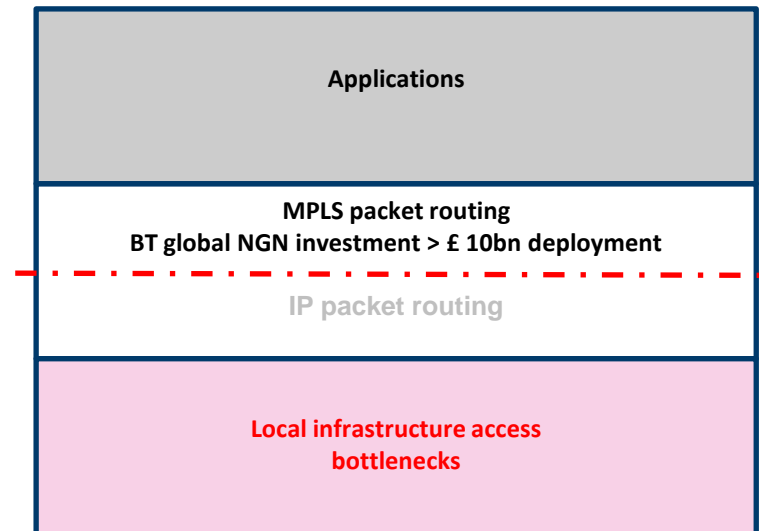
- In their follow-up study Indepen Consulting quantified the economic benefits from effective **pan-European** communications services.
- Their findings are based on in-depth **discussions** with five EU-based multinational enterprises and a survey of managers working in BT Global Services.
- The study **estimates** that ubiquitous access - ie provided on a competitive supply basis right across the EU - together with complementary measures, would generate benefits with a net present value of between €1100 billion and €1300 billion over the next 20 years. This equals
 - increase EU **GDP** by 1.6% to 2% each year from then on.
 - This increase is equivalent to an increase in wealth of **€430 to €510** per person per year in the long-term.
- The estimates do not include additional potential benefits:
 - improved macroeconomic **stability** from better supply chain integration and management,
 - and the potential for businesses to reduce their carbon footprint through better ICT connectivity

- **Ubiquitous** technical standard 
- Investment in **all layers** 
- Regulation of access **bottlenecks** 

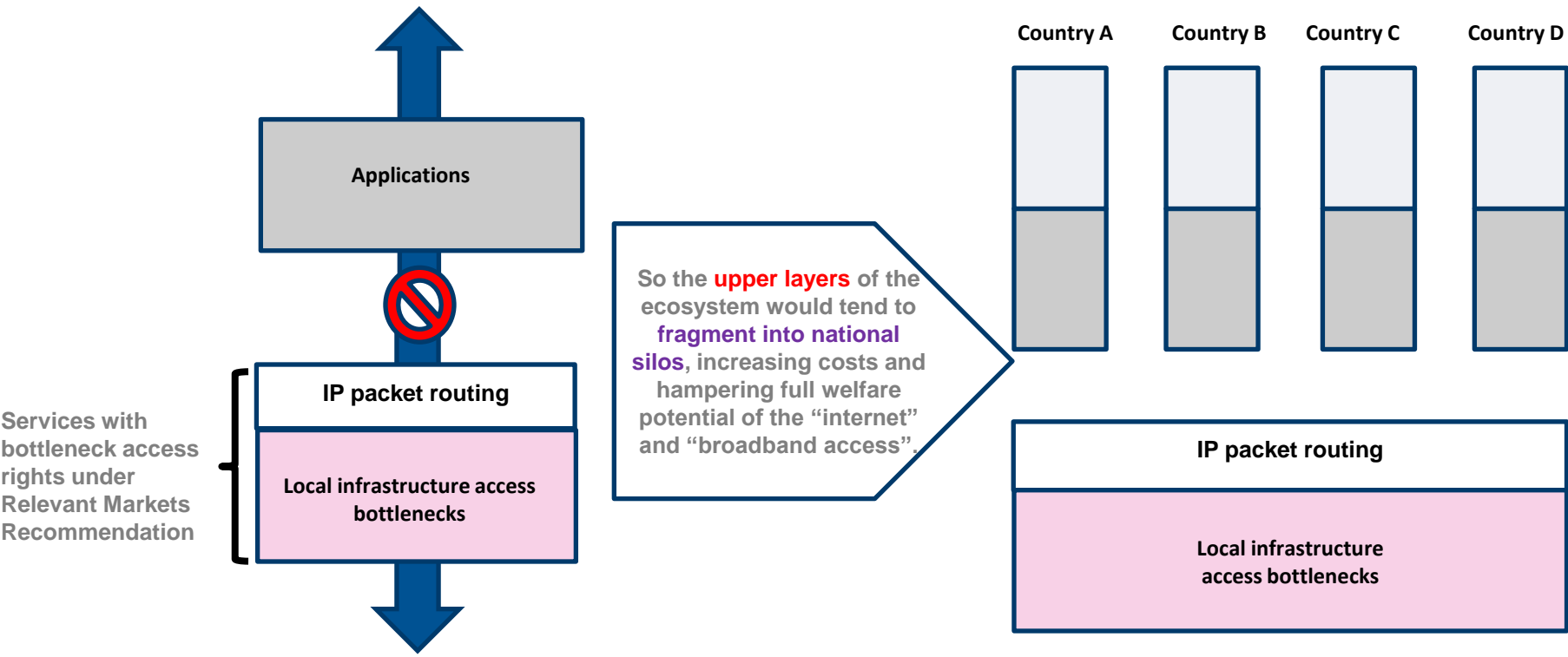
An ubiquitous technical standard (Internet Protocol) is already in use. But what is the situation regarding the other two items on the list?

Regulatory authorities are **far too often focused exclusively** on the bottom layer of the ecosystem—i.e. the deployment of fibre access networks for consumer broadband ...

Hence the **software platforms** needed by business (and governments) to provide a data transport service which is more reliable and more secure than the “**best efforts**” public internet are consequently often overlooked ... **Such platforms are nevertheless also expensive to build.**



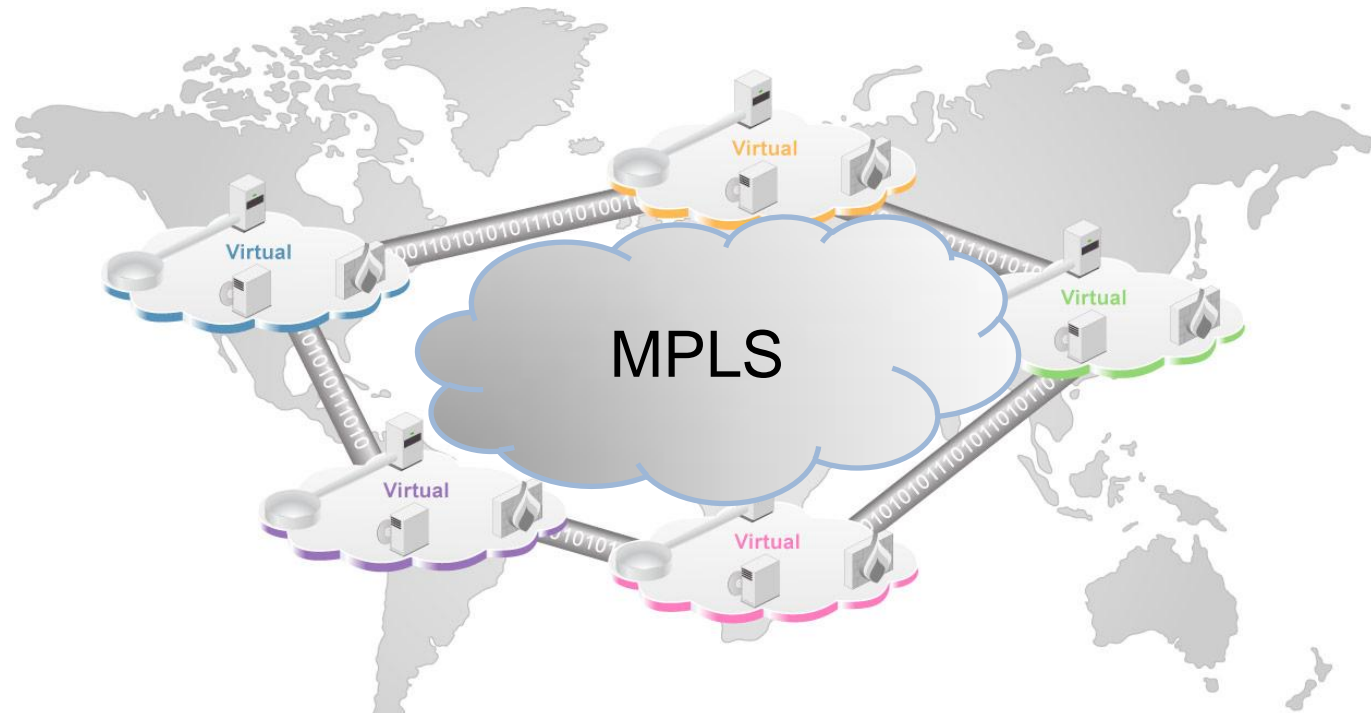
And in their absence, effective working of enterprise IT applications in different sites would be impossible.



What is Cloud Computing?

A set of applications managed and hosted remotely by a specialist partner

Delivered over a secure high quality network



IPVPNs a “private cloud” in the cloud

Access to them is being made more granular because of increasing **spread of broadband access** (fixed and mobile) and resilience of core. Class of services, differentiated QoS, network resilience, bespoke SLA etc at the core of the requirements

Wholesale Access Must Include Active Remedies such as bitstream and leased lines



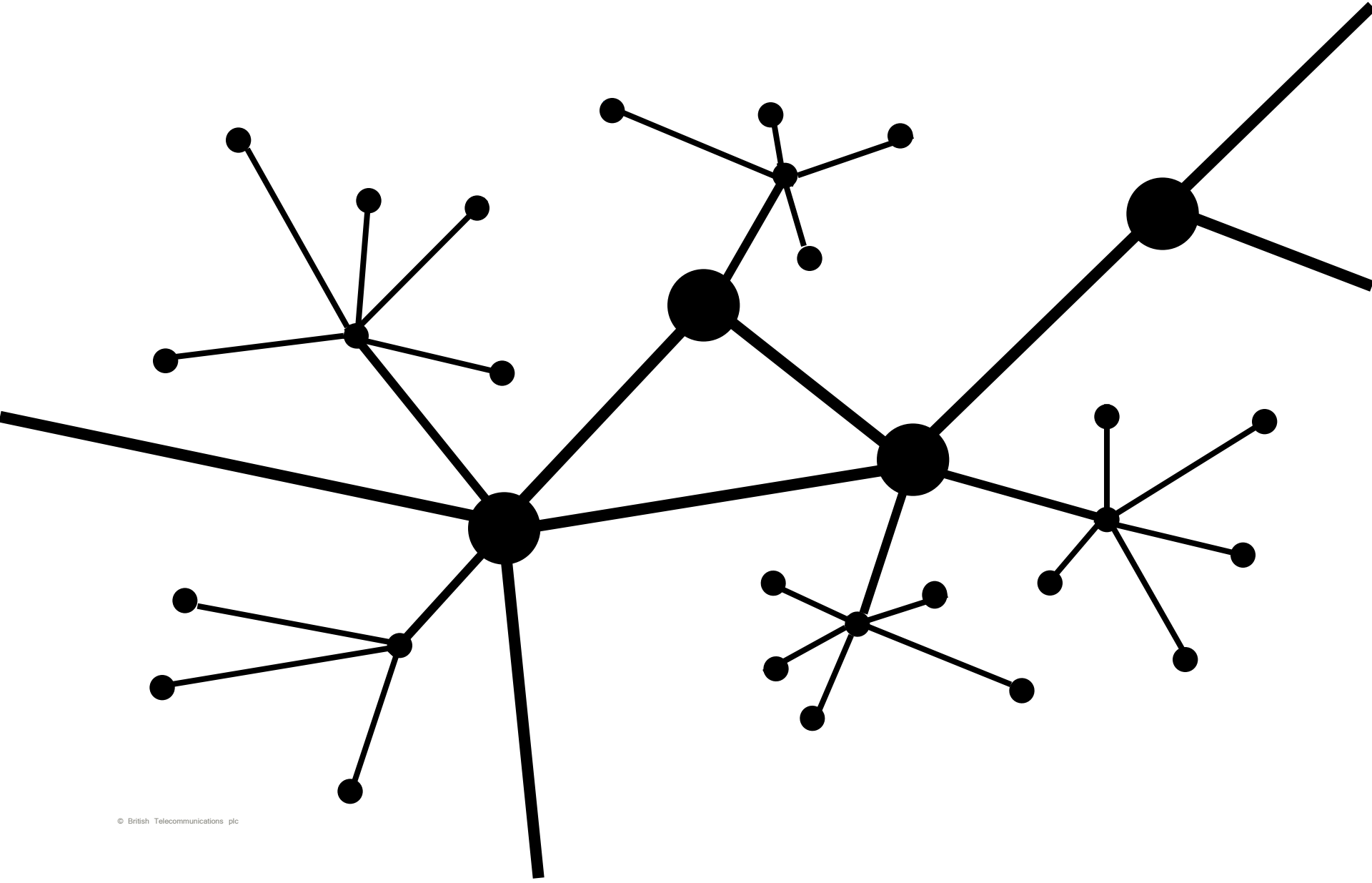
- **Benefits** for business.
 - Business services infrastructure competition is likely to emerge only in very **limited** geographies – one or possibly a handful of city centers where there is a sufficient density of business customers to warrant buildout.
 - Without **active** remedies creating service competition, small and medium-sized businesses located outside a city center are unlikely to have options other than the incumbent operators (ie operators with SMP).
 - **Multi-sited** businesses have the majority of their requirements outside city centers.
 - E.g. mining and oil and gas companies likely have many sites in remote areas. Retail goods companies have primary site distribution in urban, suburban and exurban locations (e.g. factories).
 - Without effective active remedies to create service competition, the bulk of inputs for business VPNs will remain **monopolistic** inputs characterised by high prices and low service quality and innovation.

Access Must Include Active Remedies

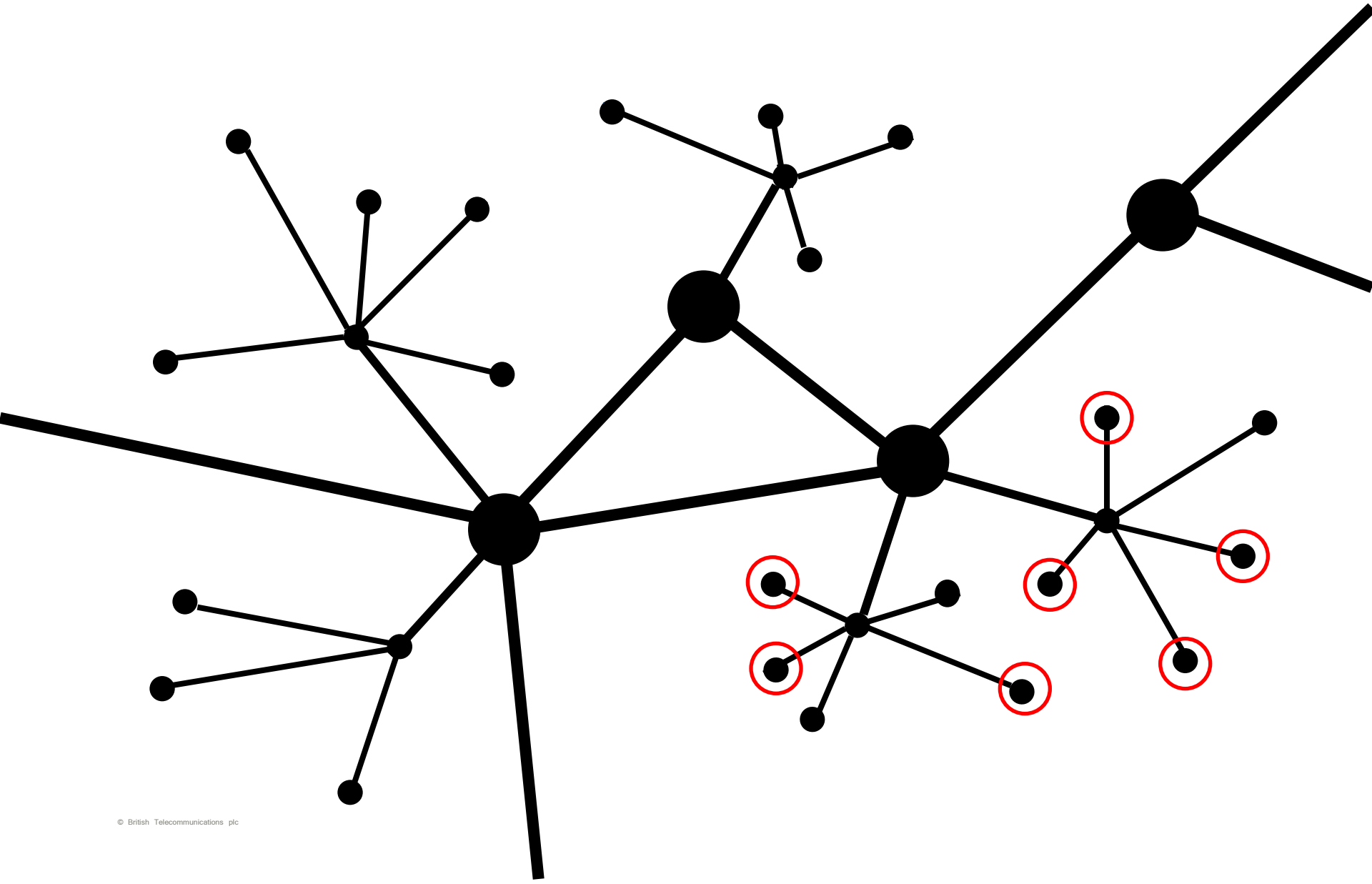


- **Benefits** for consumers.
 - In FTTN and FTTC deployments, it is unlikely that competitors will build out to street cabinets.
 - To achieve competition in NGA services, need active remedies.
 - **Active remedies** such as Bitstream services lead to more service competition, cheaper broadband and faster take-up of broadband. Increases network effects of broadband at a faster rate.

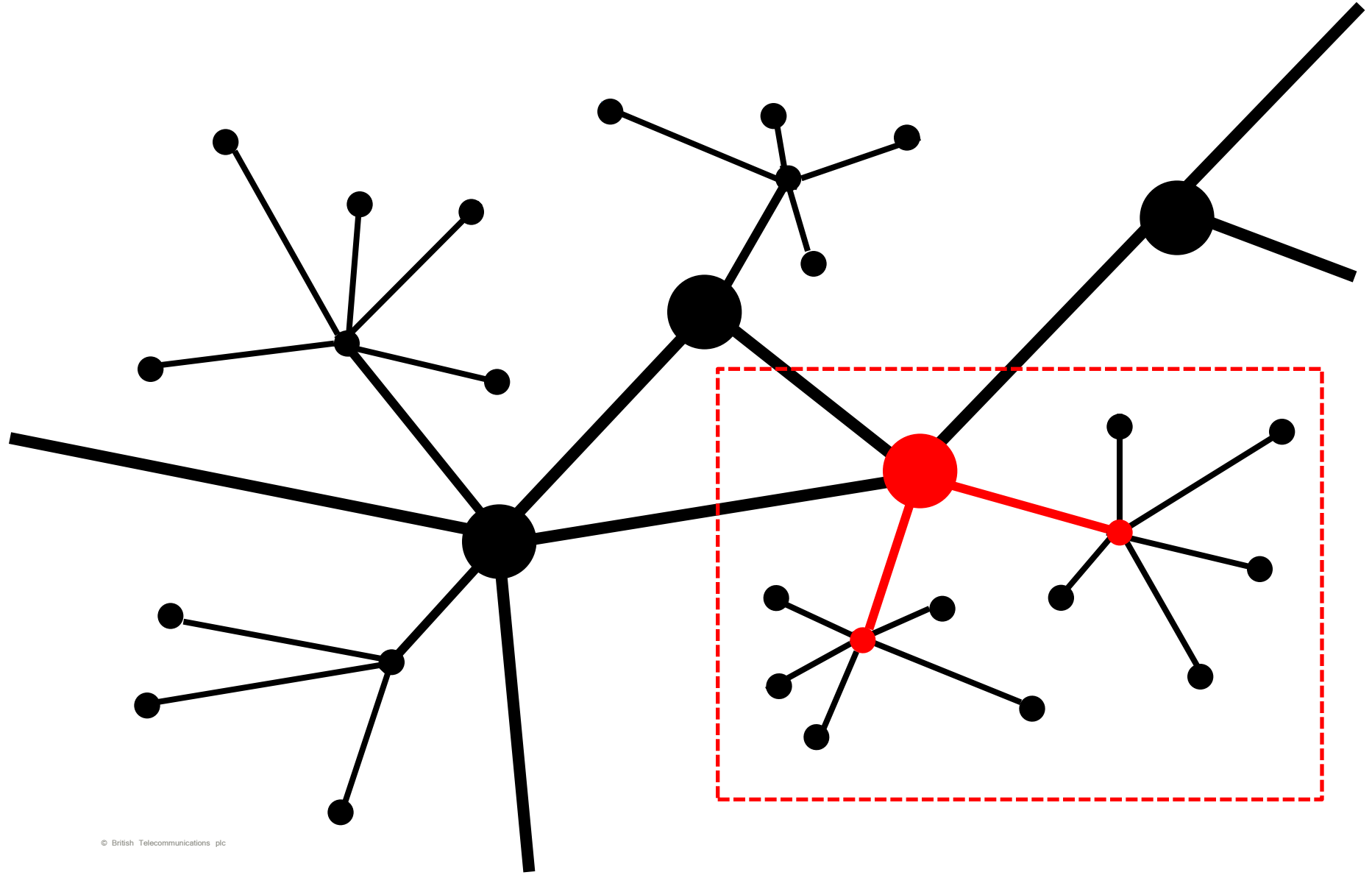
A return to the 2D network view clarifies the separate perspectives of mass-market and business operators.



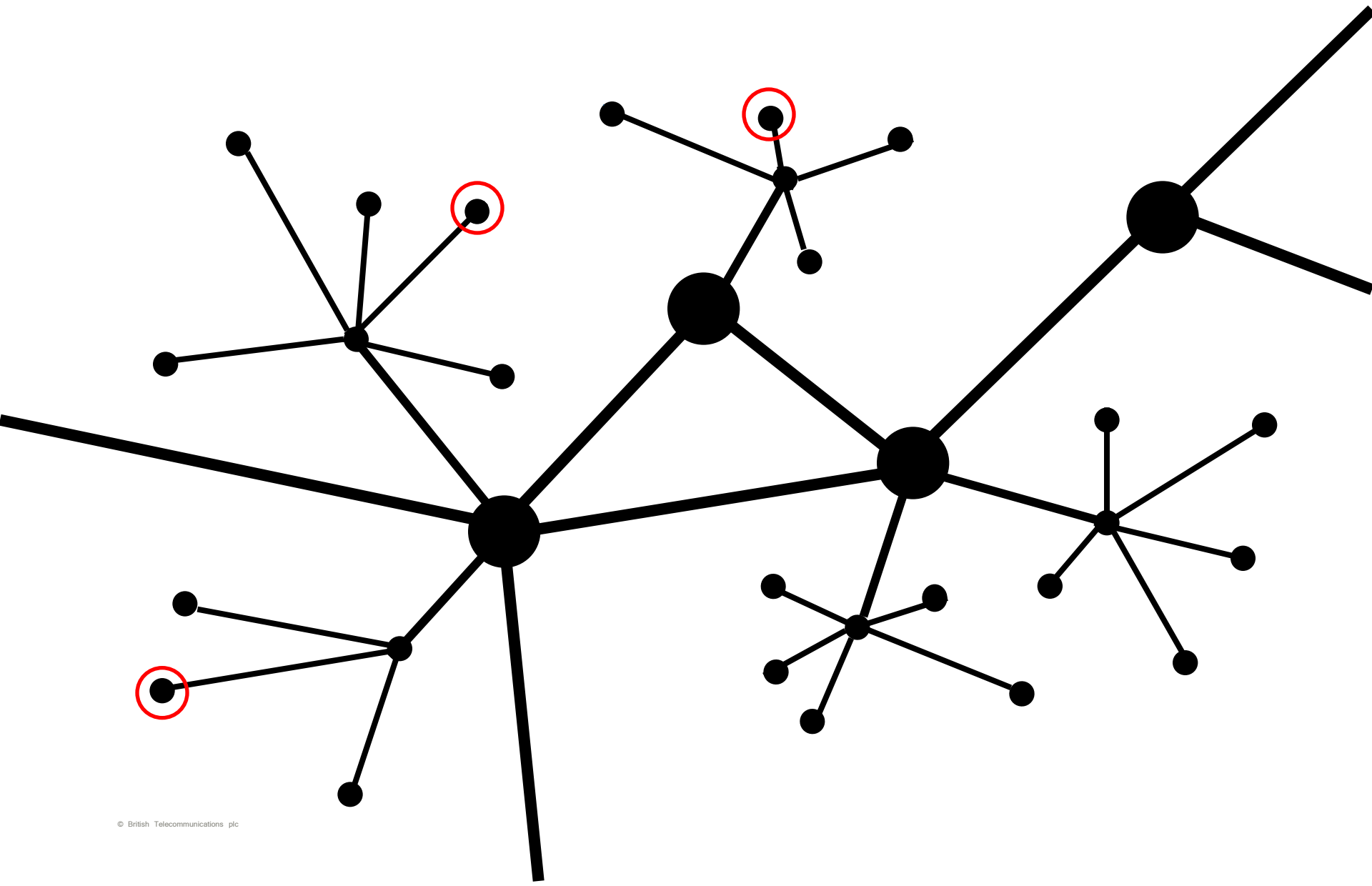
A mass-market operator with customers here ...



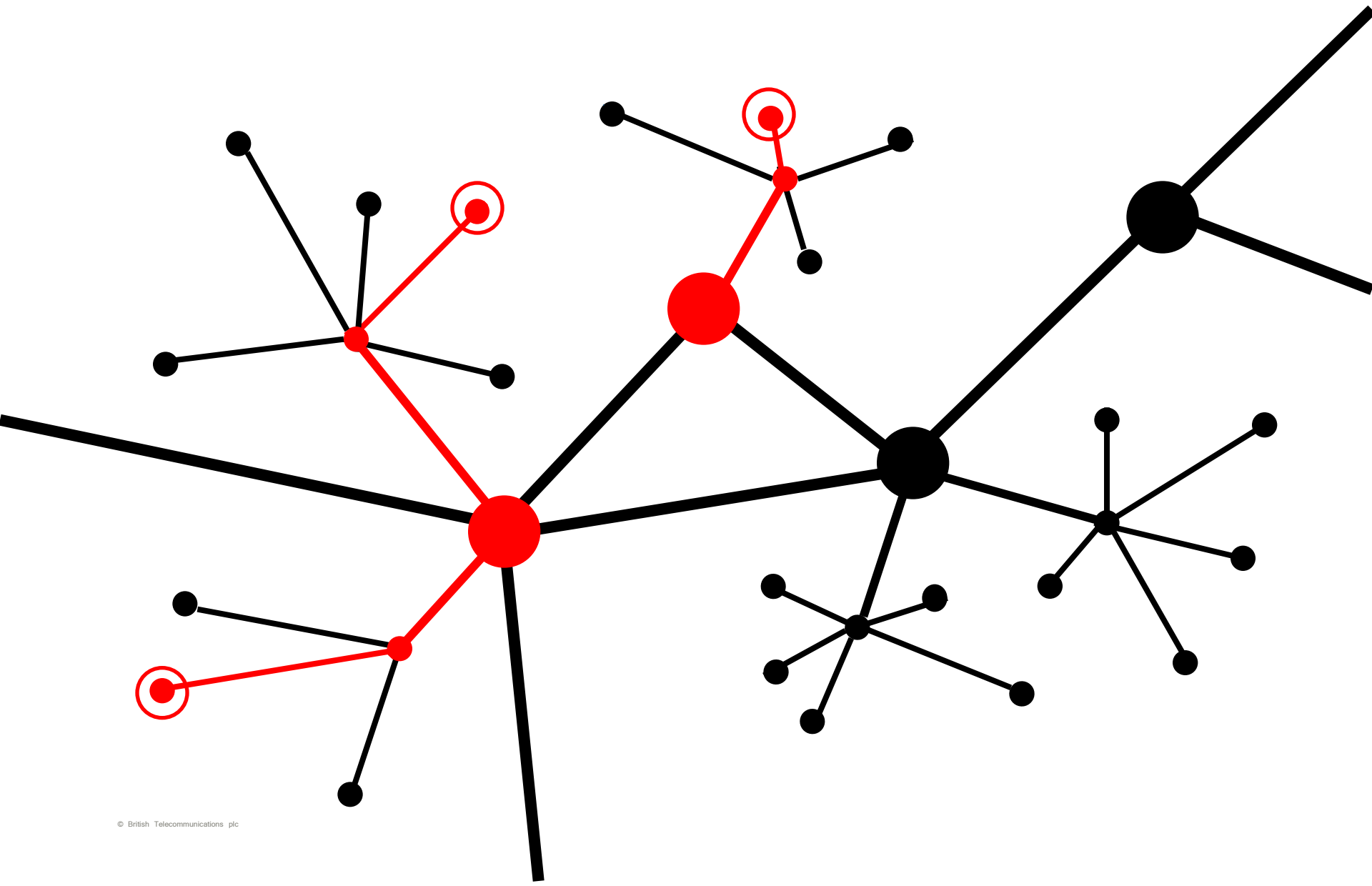
... is able to achieve economies of scale here.



But a business operator with customers here ...



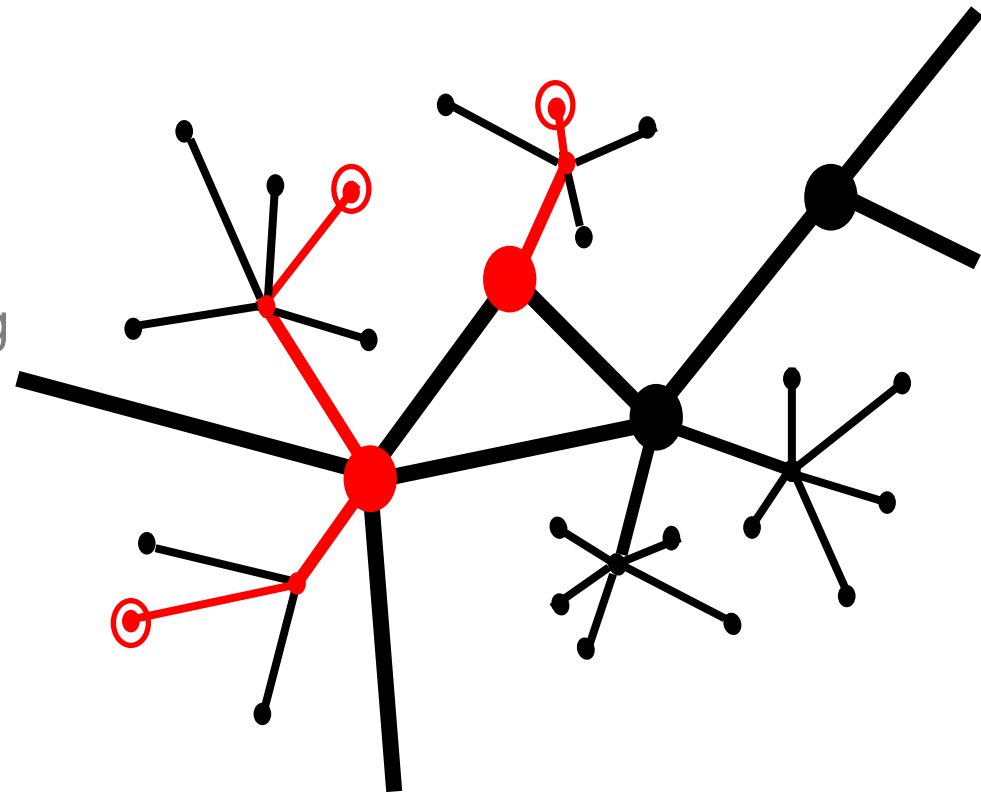
... will face enduring bottlenecks here.



... hence the relevance for suitable access remedies

So regulation **must ensure** non-discriminatory wholesale supply of these network elements ...

But **increasingly** this is becoming a **barrier** in all those places where the regulatory environment is skewed towards **promoting** competition in consumer broadband



Thank you

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