Shropshire Council Scrutiny Committee - Broadband

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Ian Binks
Ian.binks@bt.com
0121 230 2950

Setting the scene

BT invests over £2.5bn a year in building and maintaining modern networks which it opens up to other Communications Providers - creating one of the most open, competitive and innovative communications markets in the world - with wide reaching benefits for consumers and businesses throughout the UK

Lower prices. Communication services in the UK are 58% cheaper than combined average prices in the US and major European economies[1].

Higher consumer take up. 70% of UK households have a broadband connection[2]. Higher than 20 other European countries – including France, Italy and Spain.

Powering business. UK businesses drive more ICT value in the UK than businesses in the US or in any of the major European economies[3].

Creating modern jobs. The UK has a higher proportion of ICT related jobs than the US or any of the major European economies[3].
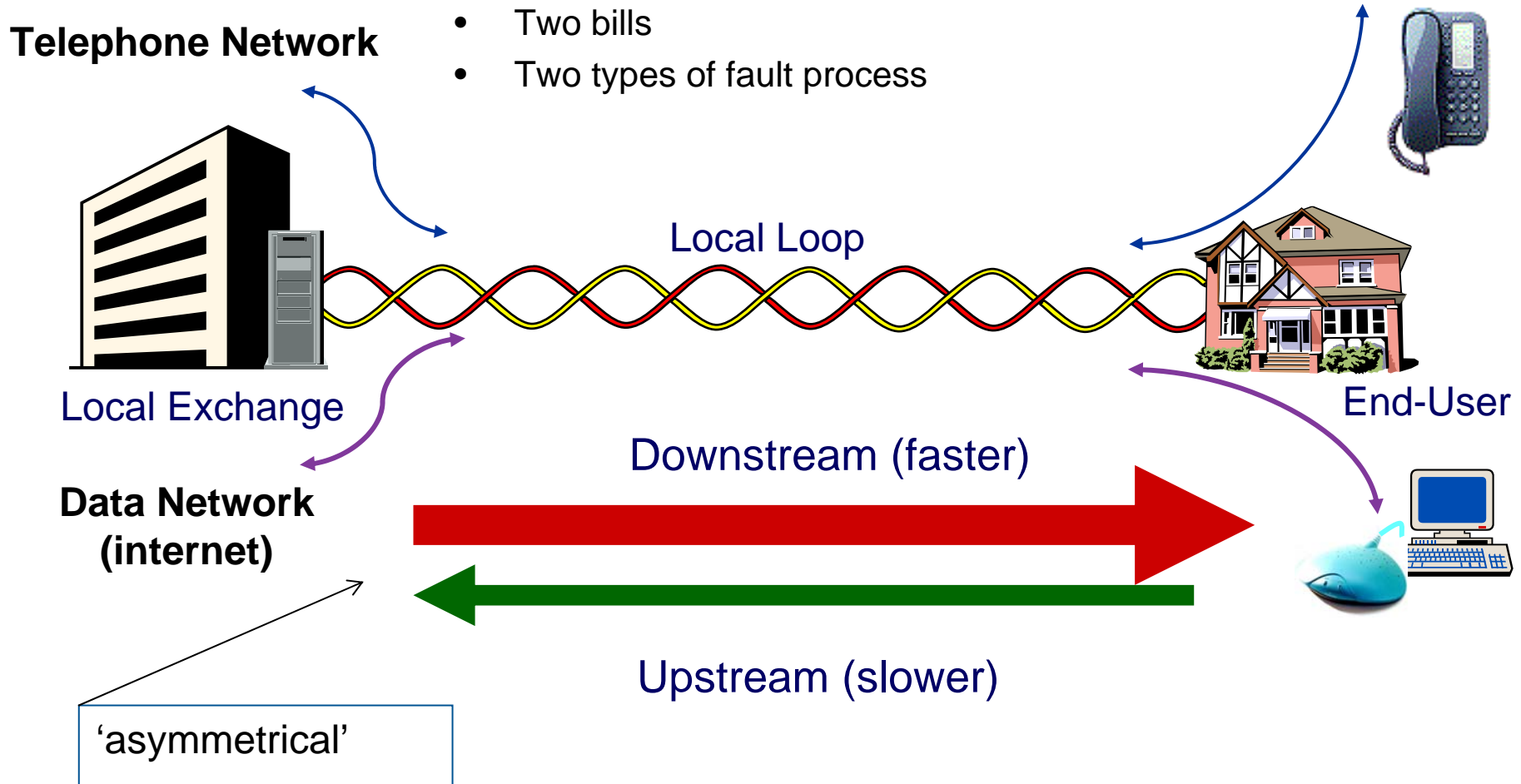
[1]Source: Ofcom (see back up slides)
[2]Source: OECD/Eurostat (see back up slides)
[3]Source: OECD (see back up slides)

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ADSL - Voice & Data - simultaneously

- Web access & talk on the same line at the same time

  - Two services over the same copper pair
  - Two bills
  - Two types of fault process

Telephone Network

Local Loop

Local Exchange

End-User

Data Network (internet)

Downstream (faster)

Upstream (slower)

'asymmetrical'

ADSL performance (asymmetrical digital subscriber line)

The performance of DSL on any given line in the access network is a function of the signal to noise ratio at the end of that line:

- **Signal** is affected by the
  - *length*
  - *quality*
  - *dimensions* of the copper (and sometimes aluminium) cable

- **Noise** can come from
  - network crosstalk (directly related to the "fill" level of the cables in use,)
  - sources in the home or premises (including home wiring)
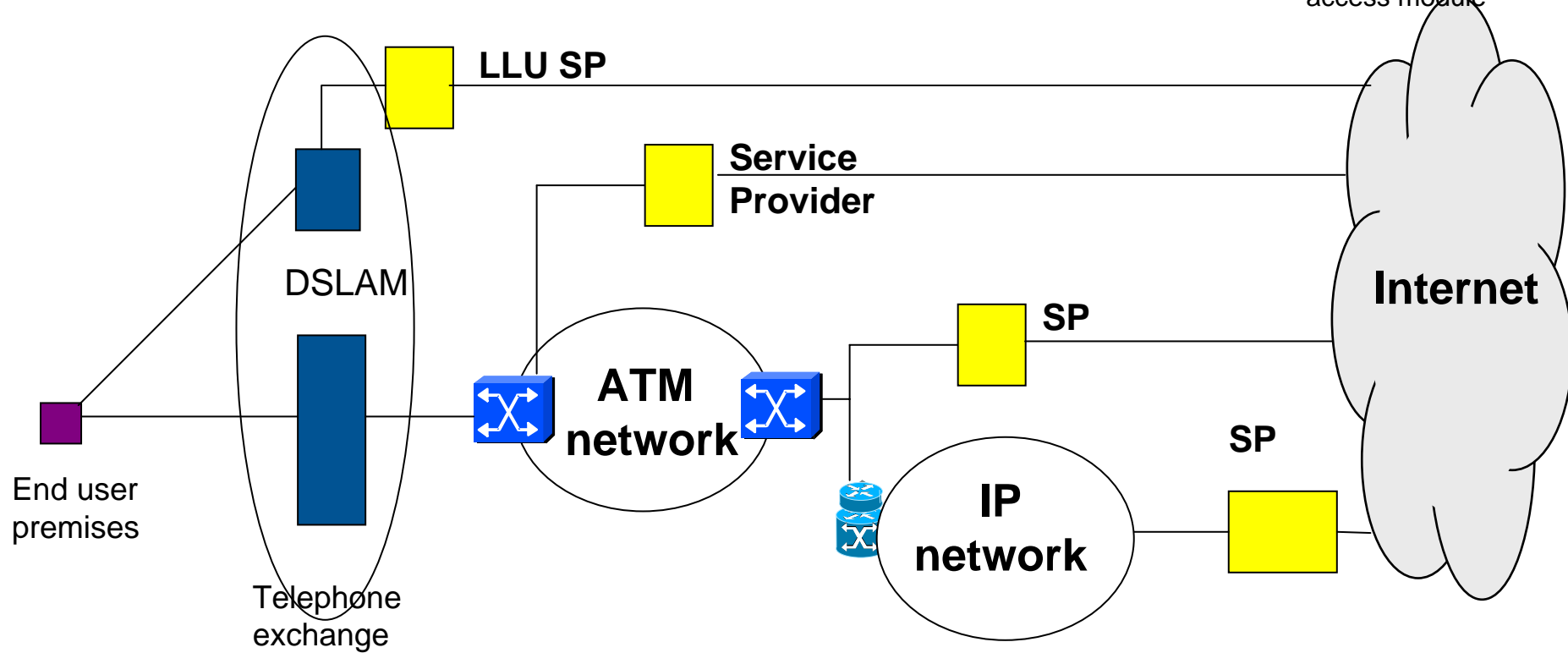 - sources in the environment e.g. RFI from other electrical equipment

ADSL is incompatible with some legacy technology in the local loop

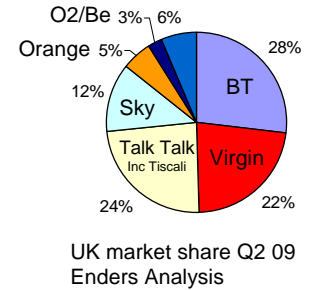(eg DACS and Line Concentrators)

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Internet access in the UK

LLU = local loop unbundled
DSLAM = digital subscriber local access module

LLU SP

Service Provider

DSLAM

Internet

SP

ATM network

SP

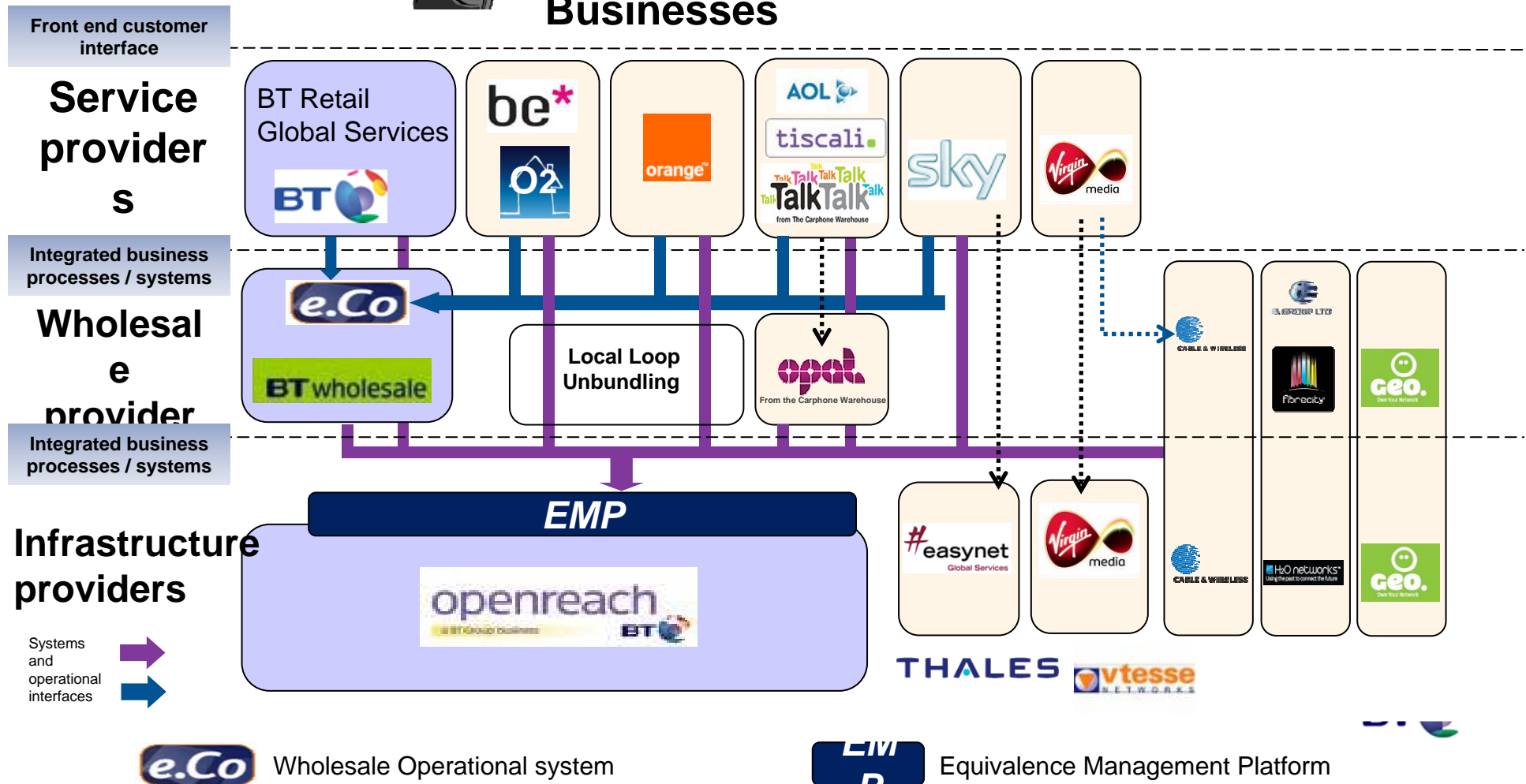End user premises

IP network

Telephone exchange

End-to-end network performance considerations
- Local loop
- Contention
- Network design and management
- Target website capacity

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The UK broadband market is competitive at all layers from end user services through to infrastructure: choice is high and prices low
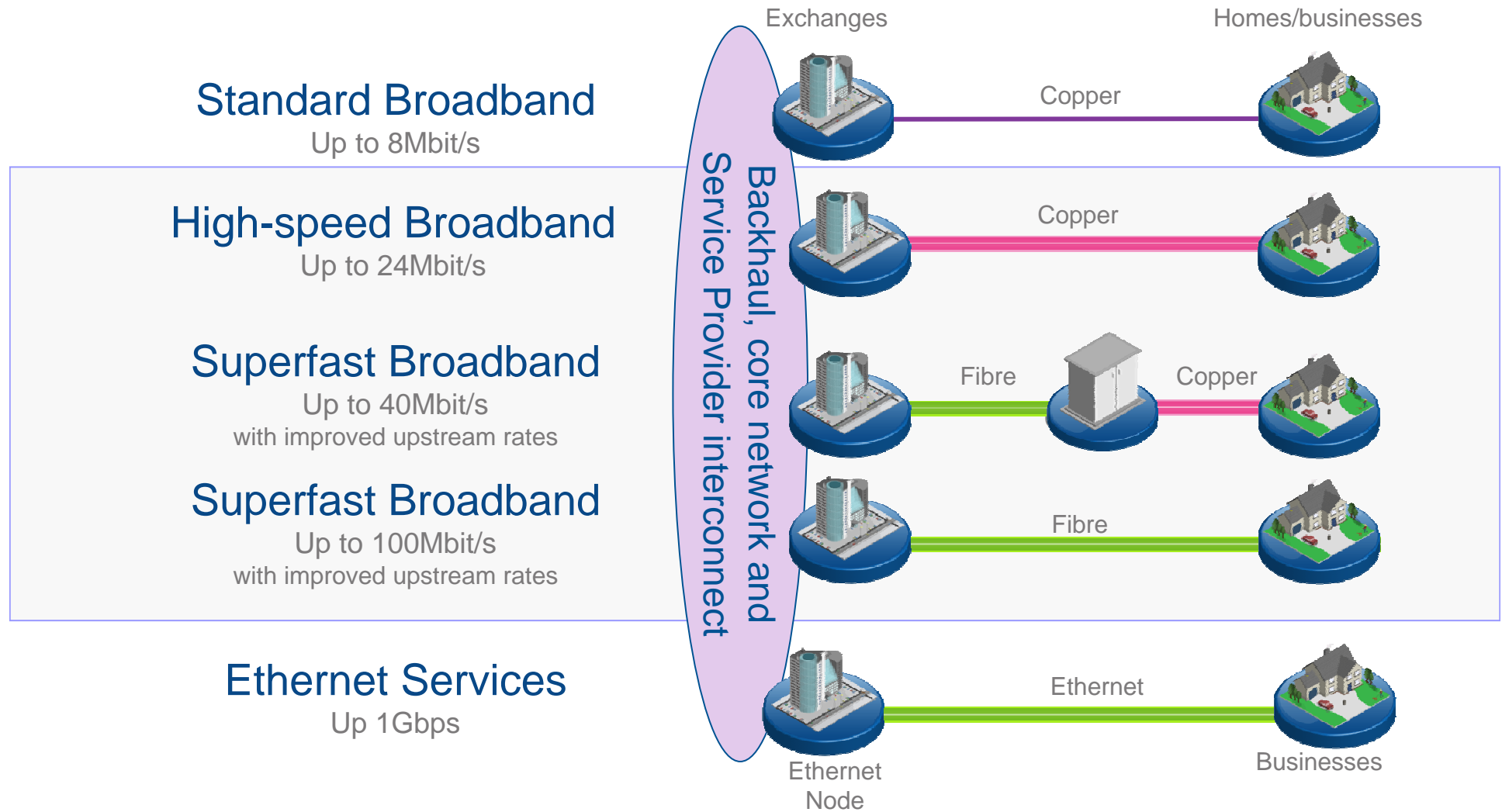
Broadband for Home & Businesses

UK market share Q2 09
Enders Analysis

Pie chart: BT 28%, Virgin 22%, Talk Talk Inc Tiscali 24%, Sky 12%, Orange 5%, O2/Be 3%, 6%

Front end customer interface

Service providers

BT Retail Global Services

be*
O2
orange
AOL
tiscali.
TalkTalk from The Carphone Warehouse
sky
Virgin media

Integrated business processes / systems

Wholesale provider

e.Co
BT wholesale
Local Loop Unbundling
opal From the Carphone Warehouse
CABLE & WIRELESS
GROUP LTD
fibrecity
GEO.

Integrated business processes / systems

Infrastructure providers

EMP

openreach a BT Group business

easynet Global Services
Virgin media
CABLE & WIRELESS
H2O networks
GEO.

THALES
vtesse NETWORKS

Systems and operational interfaces

e.Co   Wholesale Operational system
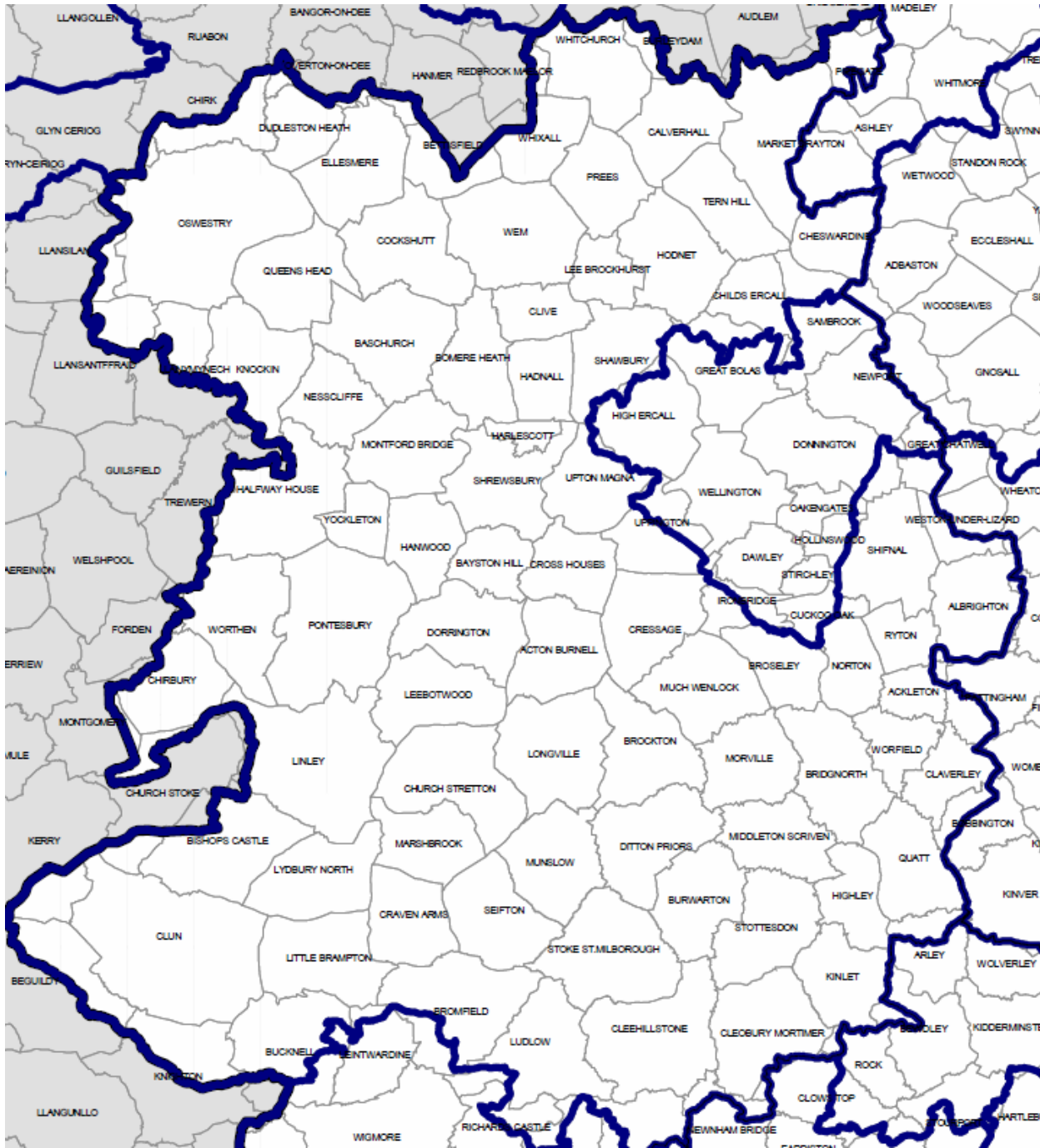
EMP   Equivalence Management Platform

Top Tips to boost broadband speed

- Check to ensure you are on an up to date deal with your service provider
- Check with local residents; is there an ISP who gives a better service in this area?
- Ensure microfilters are used on <u>every</u> socket, master and extension
- Check to see if an iPlate can help
  http://www.thinkbroadband.com/tools/bt-master-socket.html
- Test by plugging in router at the master socket
- Check all potential sources of electrical interference, in and out of the house. An AM radio tuned to 627KHz helps!

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BT is delivering a "mixed economy" of broadband products and services

Exchanges

Homes/businesses

Standard Broadband
Up to 8Mbit/s

Copper

High-speed Broadband
Up to 24Mbit/s

Copper

Superfast Broadband
Up to 40Mbit/s
with improved upstream rates

Fibre

Copper

Superfast Broadband
Up to 100Mbit/s
with improved upstream rates

Fibre

Ethernet Services
Up 1Gbps

Ethernet

Backhaul, core network and
Service Provider interconnect

Ethernet
Node

Businesses

Shropshire Exchanges

78 exchanges
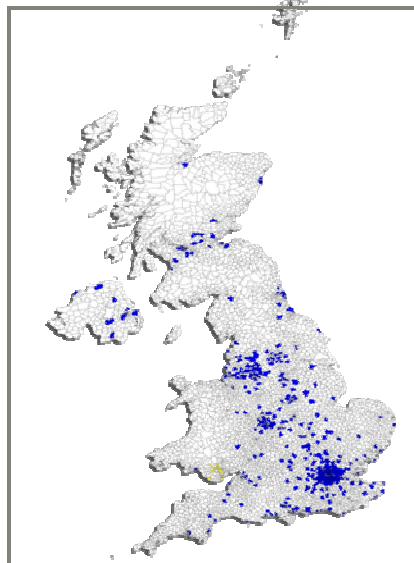~ 133,000 premises

All enabled for up to 8Mbps adsl max

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High Speed Broadband

ADSL2+ based service increasing downstream speeds to up to 20Mb/s

What is it

- ADSL2+ is a broadband access technology which increases headline downstream speeds from 8Mbit/s to up to 20Mb/s;

- Based on existing copper infrastructure;

- Available to Communications Providers from BT Wholesale as part of a managed broadband service - Wholesale Broadband Connect (WBC);

- Rolling out to BT Retail customers from July onwards;

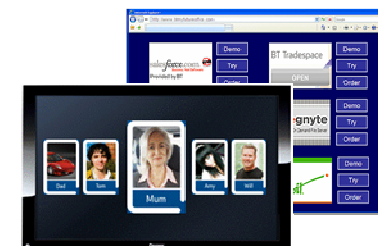### What are the benefits for consumers and businesses

- *Entertainment* - on demand TV to different devices throughout the home – multiple simultaneous services;

- *Enhanced online games* – players joining from around the world;

- **Faster, higher quality business applications** – web conferencing, file sharing;

- Delivers faster headline speeds and faster average speeds to more premises;
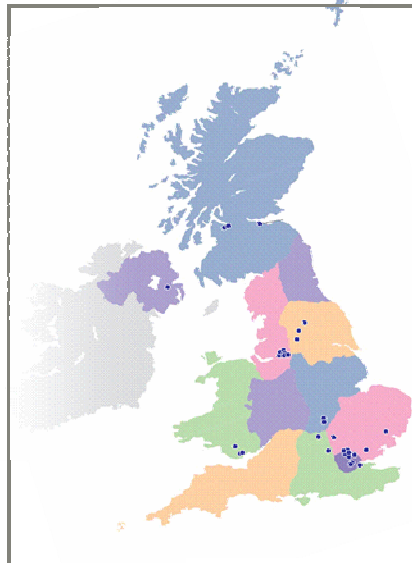- Increases the footprint for HD TV, fast uploading and small business applications;

Where is it be available – and when

- Broadband is currently available to >99% of UK homes – delivering downstream speeds of up to 8Mbit/s – 2Mbit/s or more to 85% of UK homes;

- Faster (ADSL2+) broadband is now across 40% of UK homes – rising to 75%;

Massive increase in broadband speeds and services

Superfast broadband

Fibre based services increasing downstream speeds to up to 100Mb/s

What is it

- Broadband access technologies which increases downstream access speeds to up to 100Mbit/s – FTTC (40Mb/s and FTTP 100Mb/s, up to 1Gbit/s in future);

- Available to Communications Providers from Openreach;

- CP's may use same wholesale backhaul and core network (WBC) for both ADSL2+ and Super>fast broadband – quicker and easier to launch services;

- Pilot in summer 2009 – commercial roll out early 2010;

Where will it be available – and when

- Accelerating roll out to an addressable market of over 1m premises by Spring 2010;

- Rolling out to 40% premises across UK by 2012; 66% by 2015

- Indicative - subject to detailed roll out plans;

What are the benefits for consumers and businesses

- *Entertainment* - multiple simultaneous HD TV channels – and other high bandwidth streams - throughout the home;

- *Learning and Support* – education, health, security and care;
- *"Thin clients"* – businesses will have access to the latest software without having to load it onto their PC's;

- *Community and Content sharing* – faster upload speeds making it easier to upload, easier to find, easier to use, easier to share;

- Faster headline speeds and faster average speeds than copper based broadband;
- Extends the footprint for HD TV, fast uploading, simultaneous streaming and bandwidth hungry services;
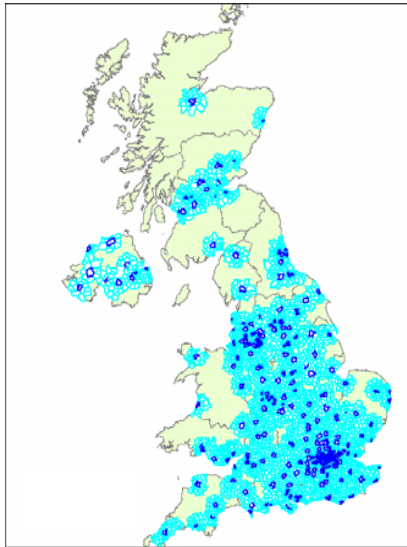
Fastest speeds available as customers want it

Ethernet

A transport technology which delivers business class access and connectivity

What is it

- A technology which provides fast (10 Mb/s to 1Gb/s), access to BT's data connectivity services - mainly fibre based but copper based solutions also being launched to maximise reach;

- A technology which supports BT's IP Virtual Private Networks – for businesses who want BT to manage their network connectivity and the applications that run over it;

- A technology which provides network connectivity over which businesses can run applications which they manage themselves;

Where it is available – and when

- 614 Ethernet nodes rolled out across the UK;

- Service within 5km of 90% of UK's business premises;

- Highest service reach in UK;

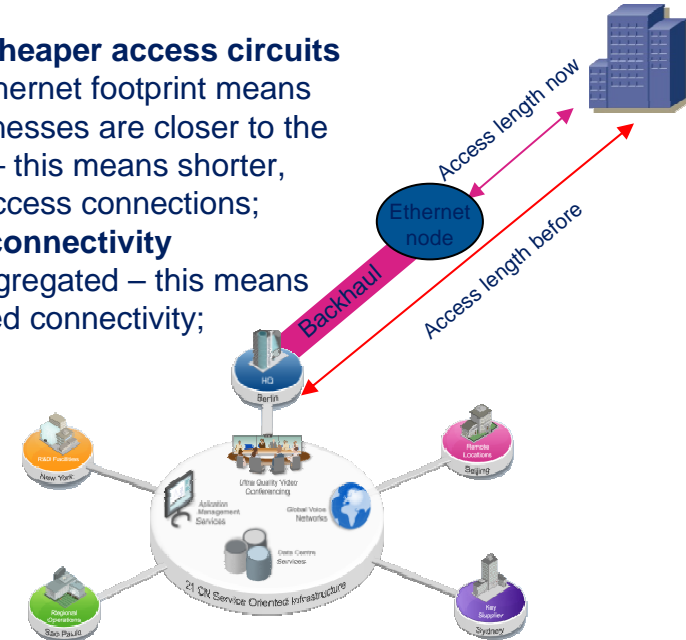- Already winning awards:

Best new service, 2009: BT Etherflow;

What are the benefits for businesses

Shorter, cheaper access circuits
- Larger Ethernet footprint means more businesses are closer to the network – this means shorter, cheaper access connections;

Cheaper connectivity
- Traffic aggregated – this means lower priced connectivity;

Big business tools at a prices small businesses can afford

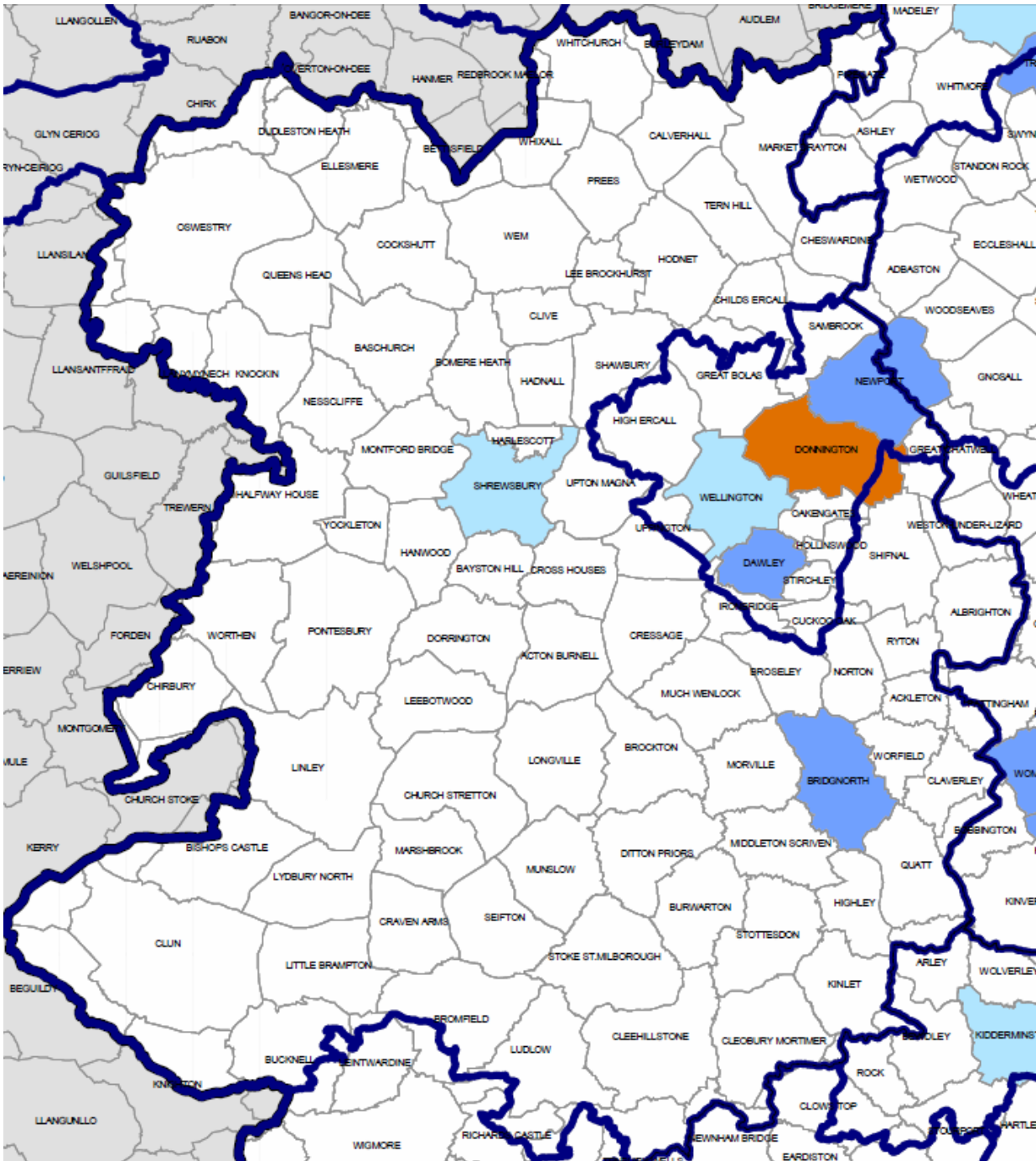*IP Virtual Private Networks (IP VPN's)*
- BT provides and manages connectivity and applications;
- Connects sites together flexibly and enables applications to be run between them, helping businesses run more efficiently;

Ethernet connectivity
- BT provides connectivity, customer manages applications;
- Bandwidth on demand and resilience options to enable customer to "right size" their connectivity;

Biggest Ethernet footprint in the UK

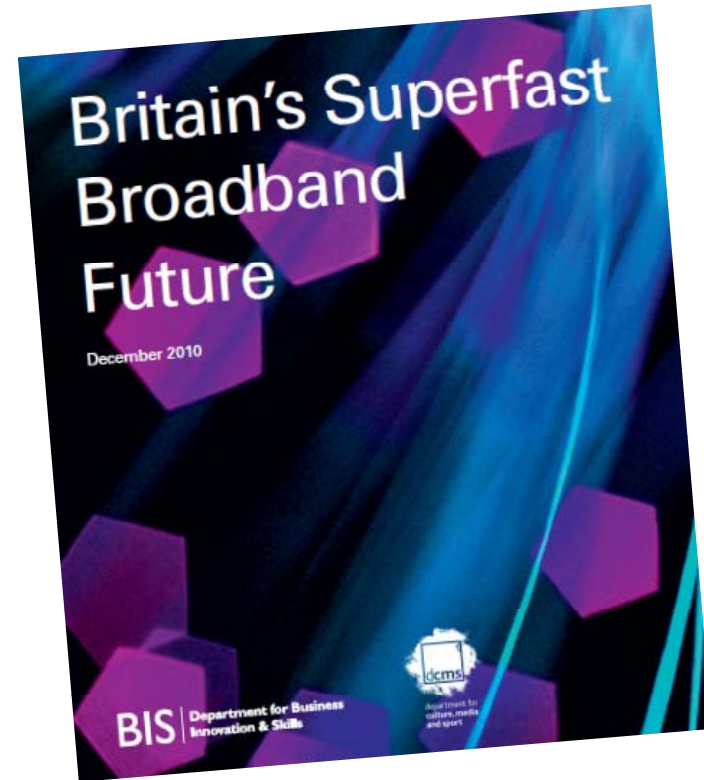# Shropshire Exchanges

2 scheduled WBC (up to 20Mbps

5 scheduled for Ethernet
• Bridgnorth
• Market Drayton
• Much Wenlock
• Oswestry
• Shrewsbury

10 LLU'd
Shrewsbury – 5
Rest – 1 or 2

Much has happened in the last 12 months

DIGITAL BRITAIN

digital

HM Government

An assessment and practical guidance on next generation access (NGA) risk in the UK
Final report

Britain's Superfast Broadband Future

December 2010

BIS | Department for Business Innovation & Skills

dcms | Department for culture, media and sport

BT

An opportunity

Shared Vision
Ensuring the UK is at the leading edge of the global digital economy

Public Private Partnership
Essential to go beyond the "commercial" areas

Customer Demand
Vital to engage citizens, businesses and other local stakeholders on the benefits

Open, Competition Ready
Giving customers choice on products, applications and service

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Addressing the challenge of the "final third"

Northern Ireland
Department of Enterprise, Trade and Investment
www.detini.gov.uk

- BT has pledged to invest £30m in the government's Next Generation Broadband Project
- FTTC technology to a majority of businesses with other fixed line solutions being used where appropriate
- 30,000 business and 250,000 consumers covered
- Wholesale level solution to ensure all Service Providers can access services at the same T&Cs and cost. Increased competition will benefit end users
- White label marketing campaign delivered prior to the enablement of an area to generate awareness of next generation broadband

DETI objective: "increase the availability of next generation broadband speeds to 85% of businesses by 2011"

Cornwall
CORNWALL COUNCIL

- Most ambitious rural broadband project in the world
- EU contribution of £53.5m, £78.5m BT investment
- 25,000 businesses and 263,000 premises covered
- Fibre access to 80-90% of local businesses and homes by 2014
- An array of service providers offering competition and innovation
- A mixed economy infrastructure comprising FTTP, FTTC, ADSL2+, wireless and satellite broadband
- Everyone to get improved speeds
- First 8 exchanges announced today

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The next 12 months… Infinite possibilities

- Thriving competition driving innovation, choice and services
- Well on the way to 10 million premises passed by 2012
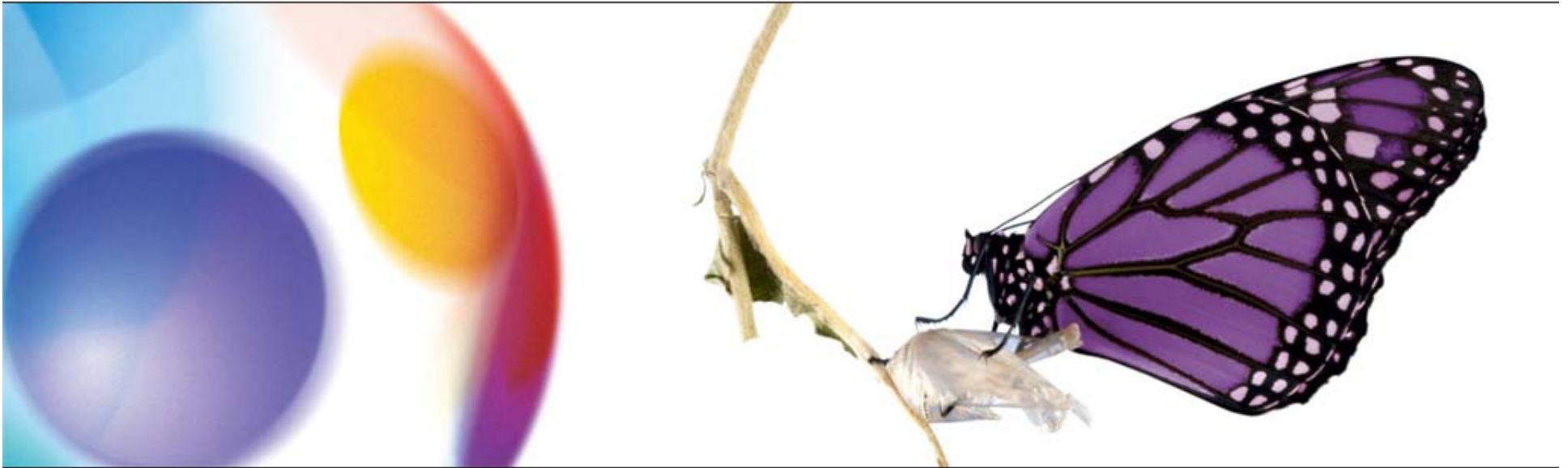- Commercial FTTP services bringing 100 Mbps to many
- Northern Ireland – job done!
- Big society in action: funding at a community and county level
- Public services over fibre – increased efficiency and improved delivery
- Shropshire Next Generation Access Broadband Roundtable
- Next Generation Access Broadband Plan for Shropshire

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Thank You