



ADSL Broadband

- how it works
- the local network
- the bigger picture
- the local picture

Ian Binks

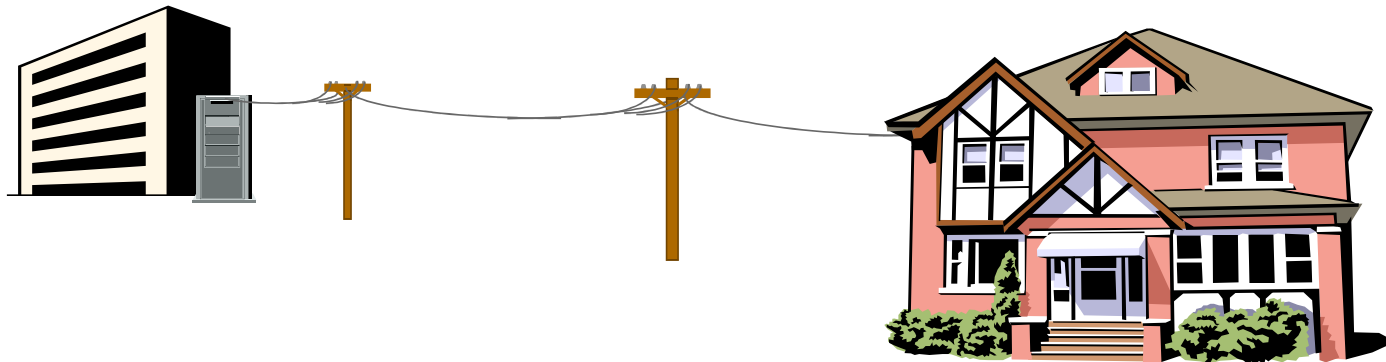
ian.binks@bt.com

0121 230 2950



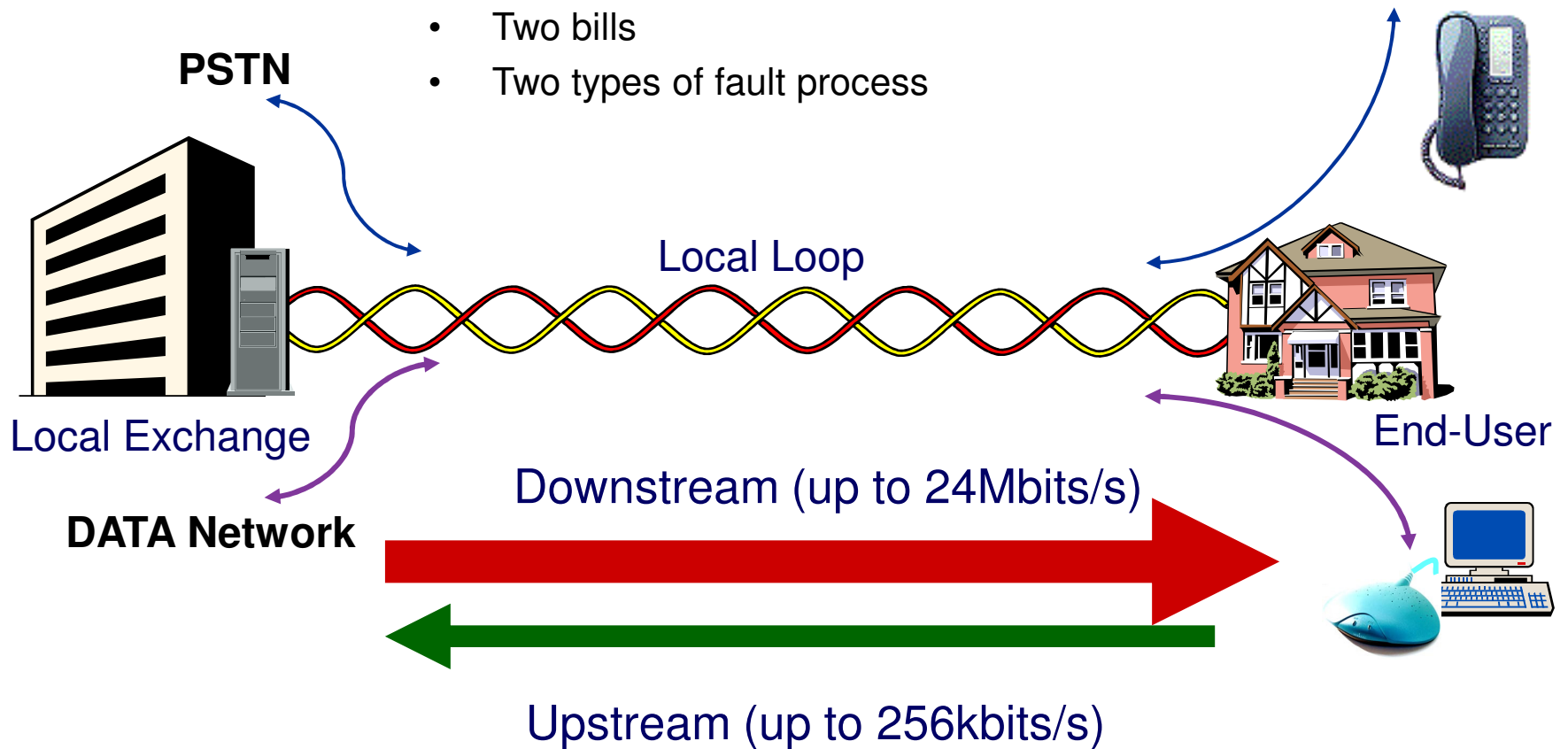
How does it work?

- ADSL Broadband is delivered over a standard telephone line
- Digital Subscriber Line (DSL) is a technology for bringing high-bandwidth information to homes and small businesses over ordinary telephone lines



Voice & Data

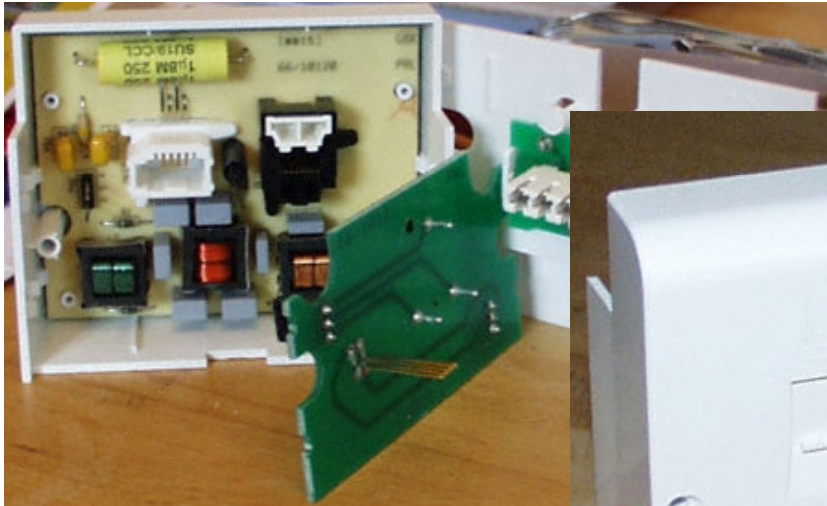
- Web access & talk on the same line at the same time
 - Two services over the same copper pair
 - Two bills
 - Two types of fault process



End-user splitters (filters)

- Two main types

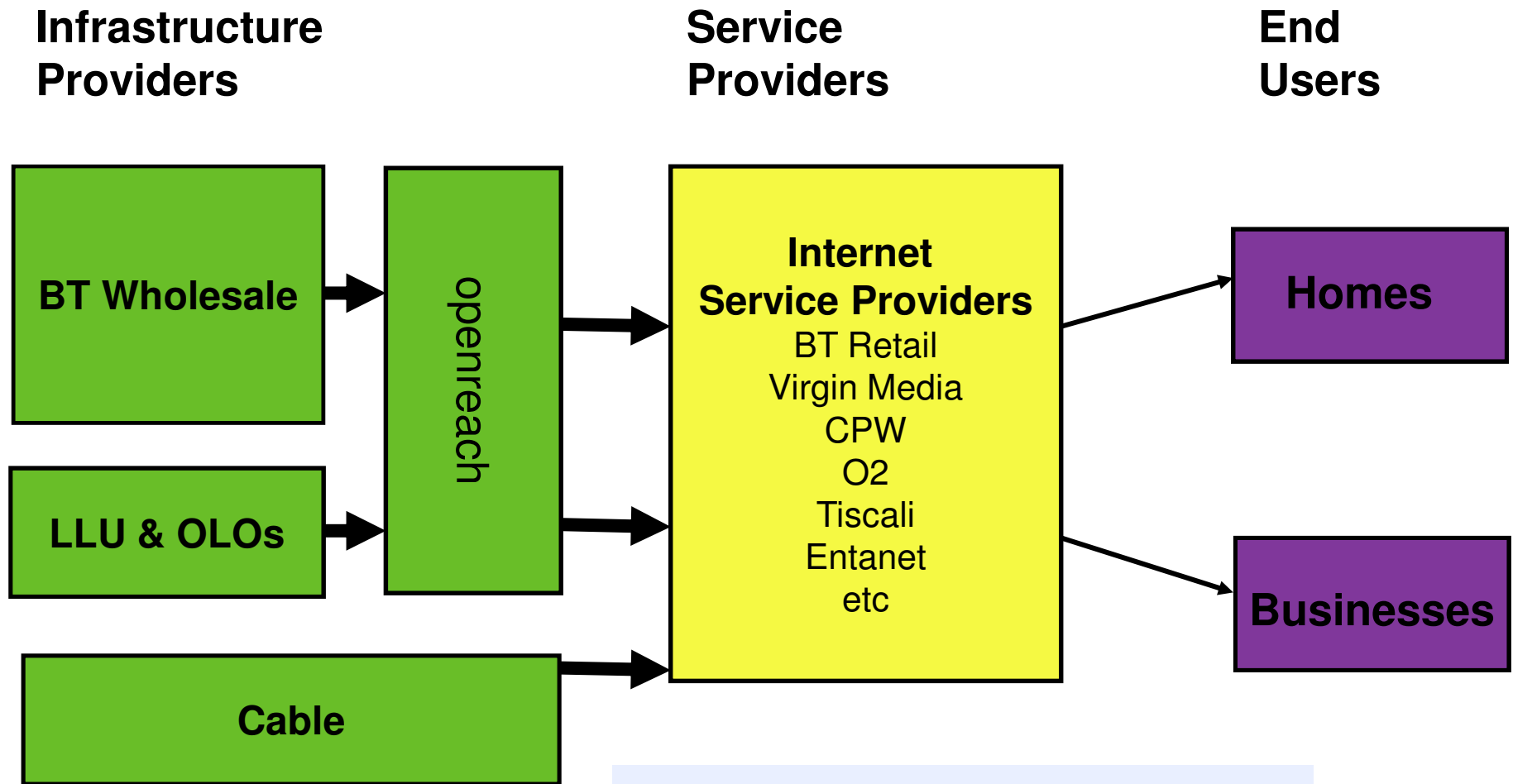
NTE2000 Service Specific Front Plate



Micro Filter

Micro filters typically supplied by ISP

UK market structure



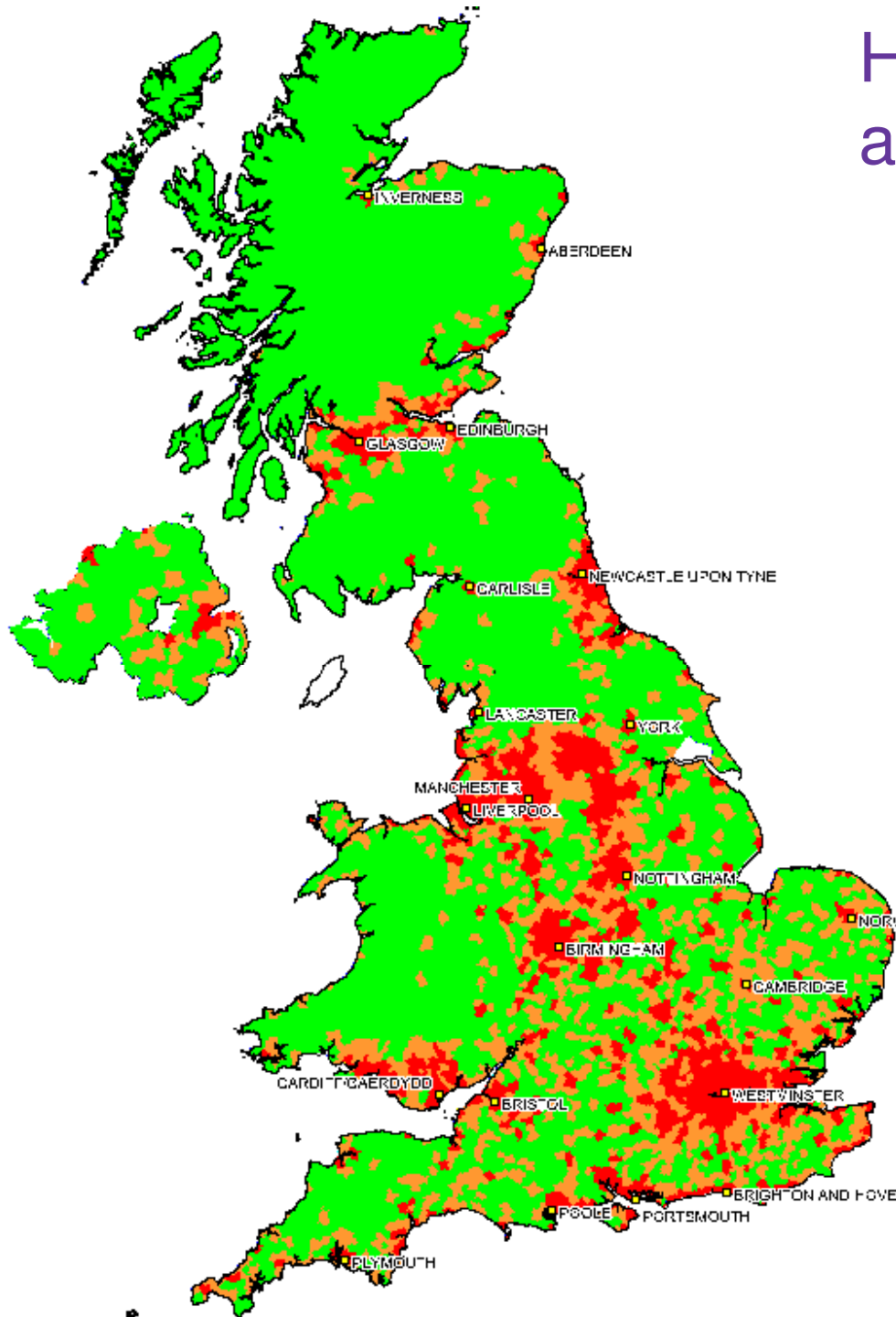
BT is both a wholesaler and a retailer

UK Broadband: Status update

- Over 99% of BT exchange lines are capable of delivering a 256Kbit service (Ofcom definition of broadband)
- Availability is greater than other G8 countries
- 85% of BT exchange lines are capable of delivering 2 Mbit/s
- BT Group will make Next Generation Access available to 40% of UK homes by 2012 (Virgin has similar plans)

...but this doesn't feel true for everyone- particularly rural communities

How rural communities are connected



	% UK households	% UK Exchanges
Rural	7.5%	50.7%
Suburban	18.2%	24.2%
Urban	74.3%	25.1%

Average size of Exchange

Urban = 14.2k

Suburban = 3.6k

Rural = 0.7k

- Urban
- Suburban
- Rural

DSL performance

- 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 and 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
- Geographic coverage achieved at any given speed also depends on
 - the legacy topology of the access network
 - the statistical distribution of line lengths

Added rural challenges:

- Sparsity of dwellings
- Geographical obstacles
- Planning, conservation and environmental factors

Points of Help

- Potential speed, check on <http://eco.btwholesale.com/broadband1/>
- Customer wiring quality
 - <http://www.thinkbroadband.com/> Very useful site, lots of info
 - <http://www.Thinkbroadband.com/faq/sections/radsl.html#235> Good set of FAQs
 - <http://www.pcpro.co.uk/features/205881/double-your-broadband-for-free.html?searchString=double+your+speed> Specifically addresses speed issues
 - <http://www.thinkbroadband.com/files/broadband-max-myths-and-legends.pdf> this has a particularly useful section on how to repair home wiring
 - <http://www.thinkbroadband.com/news/3859-top-10-tips-on-how-to-improve-your-broadband-speeds.html>

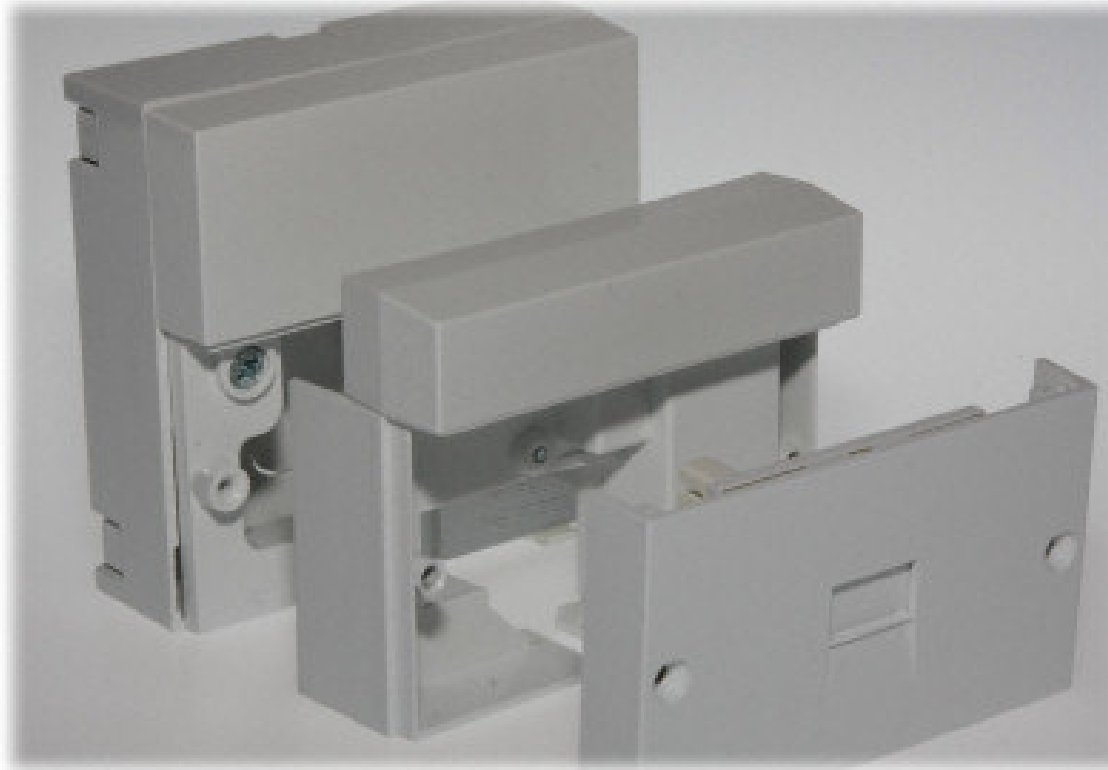
<http://www.samknows.com/>

iPlate

(<http://www.thinkbroadband.com/tools/phone-socket-identification.html>)



iPlate



<http://www.dabs.com/>

Developments

- Lord Carters' Digital Britain Report
 - Telephone levy
 - Universal Service Commitment
 - Final Third
 - Next generation access
- Broadband Extender Technology
- Satellite & Avanti
- Wireless/Wimax/Wifi

Considerations

- Timescales to deliver
- Sustainability
- Reliability
- Customer experience
- Price
- Choice

Thank you