

u3a Computing Club

Alan Hopwood, 6 January 2022

Presentation

**Implications of Landline
Removal**

Coverage

Implications of Landline Removal

- What has been announced?
- Current (old) system
- Future System (what is changing)
- Implications for the normal household
- Changing over

The Announcement

Implications of Landline Removal

- The Public Switch Telephone Network (PSTN) is aging and will reach the end of life in December 2025.
- In 2015, BT announced that they will be switching off the PSTN and ISDN in 2025, marking the biggest change in the telecoms industry for over 30 years
- The Public Switch Telephone Network allows calls to be made over copper telephone lines and fibre telephone lines using analogue signalling and is known as “traditional telephony”.
- Links
 - <https://www.futureofvoice.co.uk>
 - <https://www.ageuk.org.uk/information-advice/money-legal/consumer-issues/changes-to-landline-telephones/>

The Current System

Implications of Landline Removal

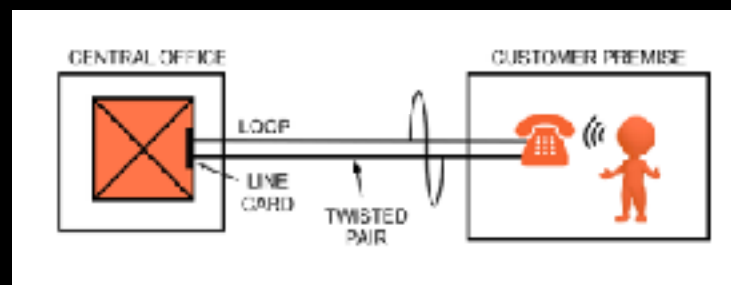
Our networks are made up of a mishmash of systems

- POTS: Plain Old Telephone System
- ISDN: Integrated Services Digital Network
- Internet Network
- Local Loop/last mile: twisted pair copper cable (plus fibre for some)

POTS (Plain Old Telephone Service)

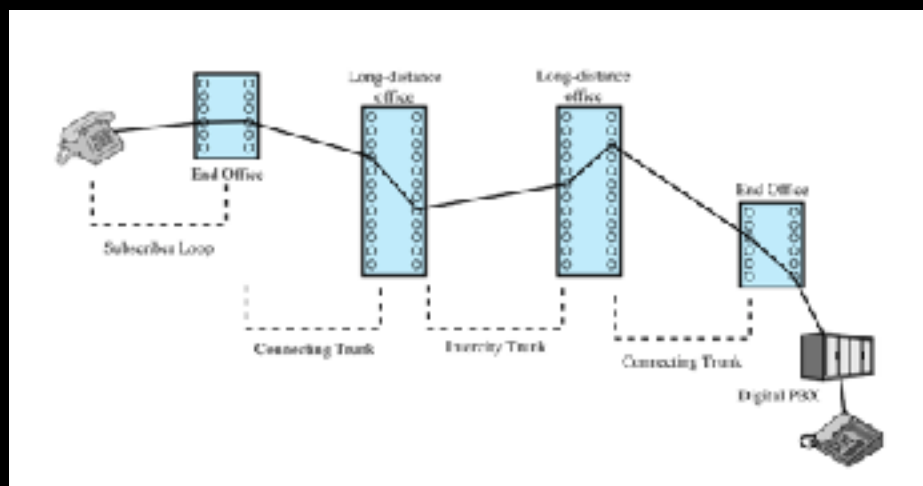
Implications of Landline Removal

Analogue connection to local exchange

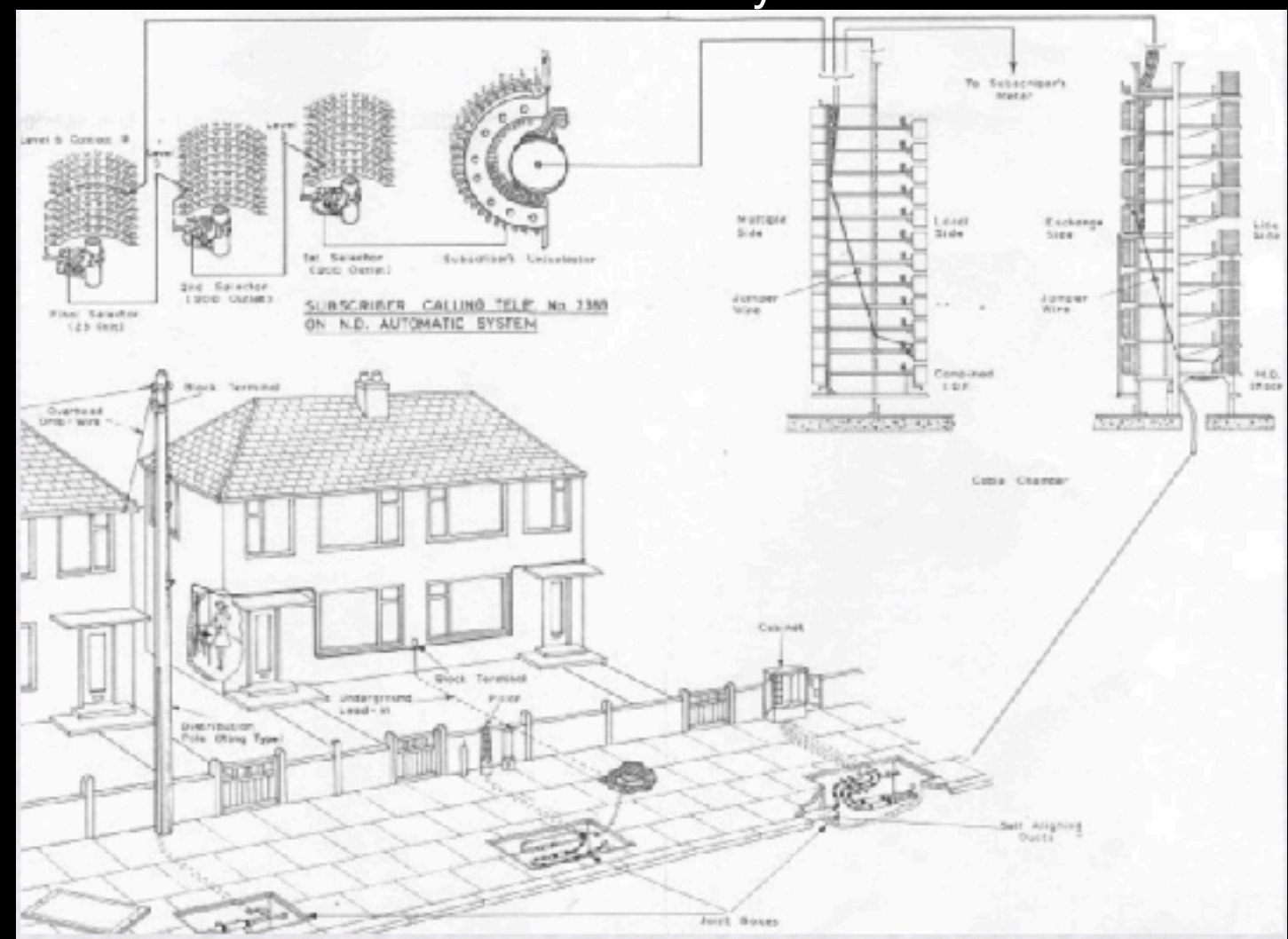


With 50v DC provided from the exchange

Circuit switching through the network



Although modern exchanges are now digital, they still switch circuits like this old mechanical system

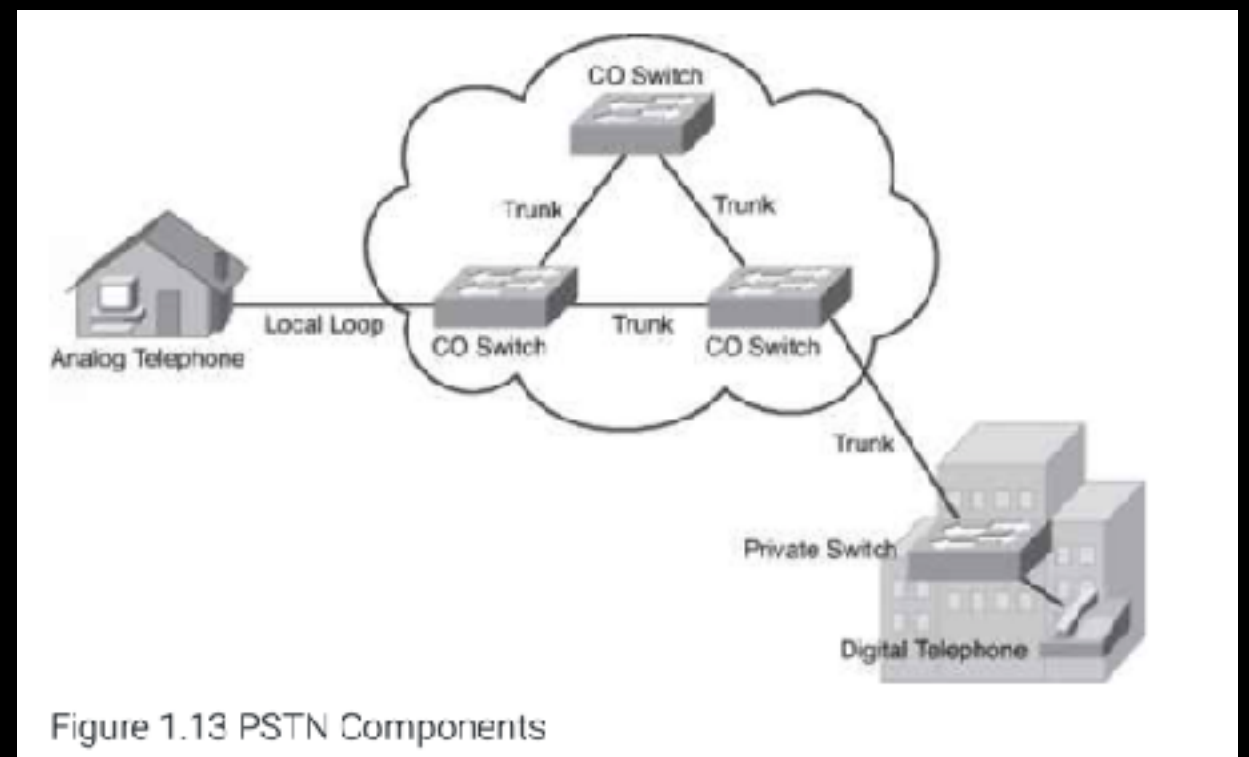
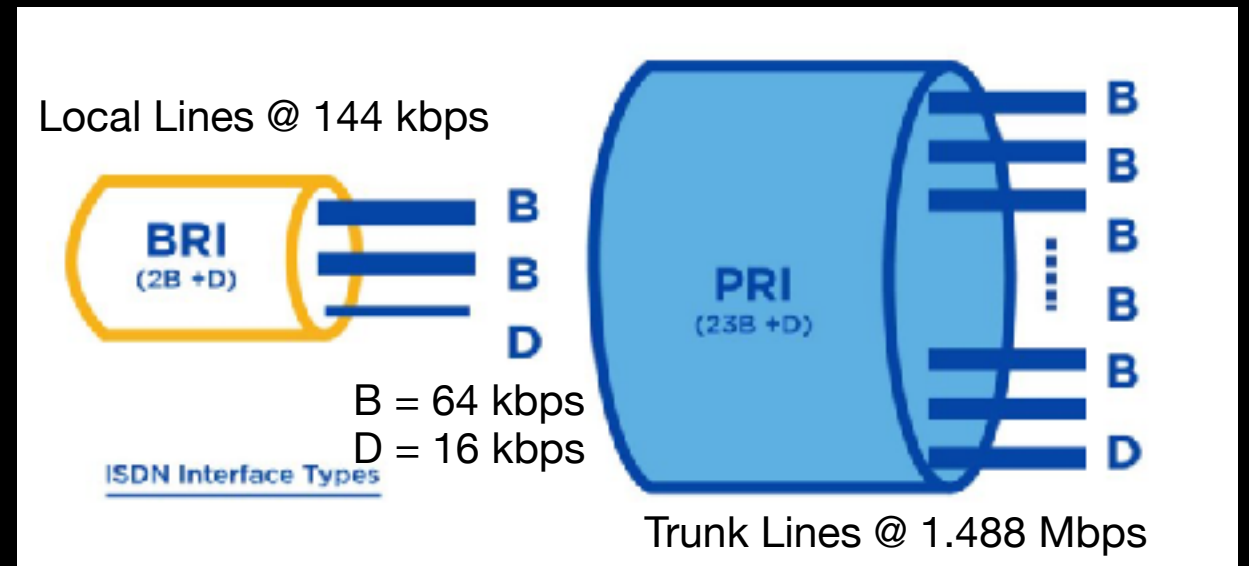


Explore more on the website:
<https://www.britishtelephones.com/gpo/street.htm>

ISDN

Implications of Landline Removal

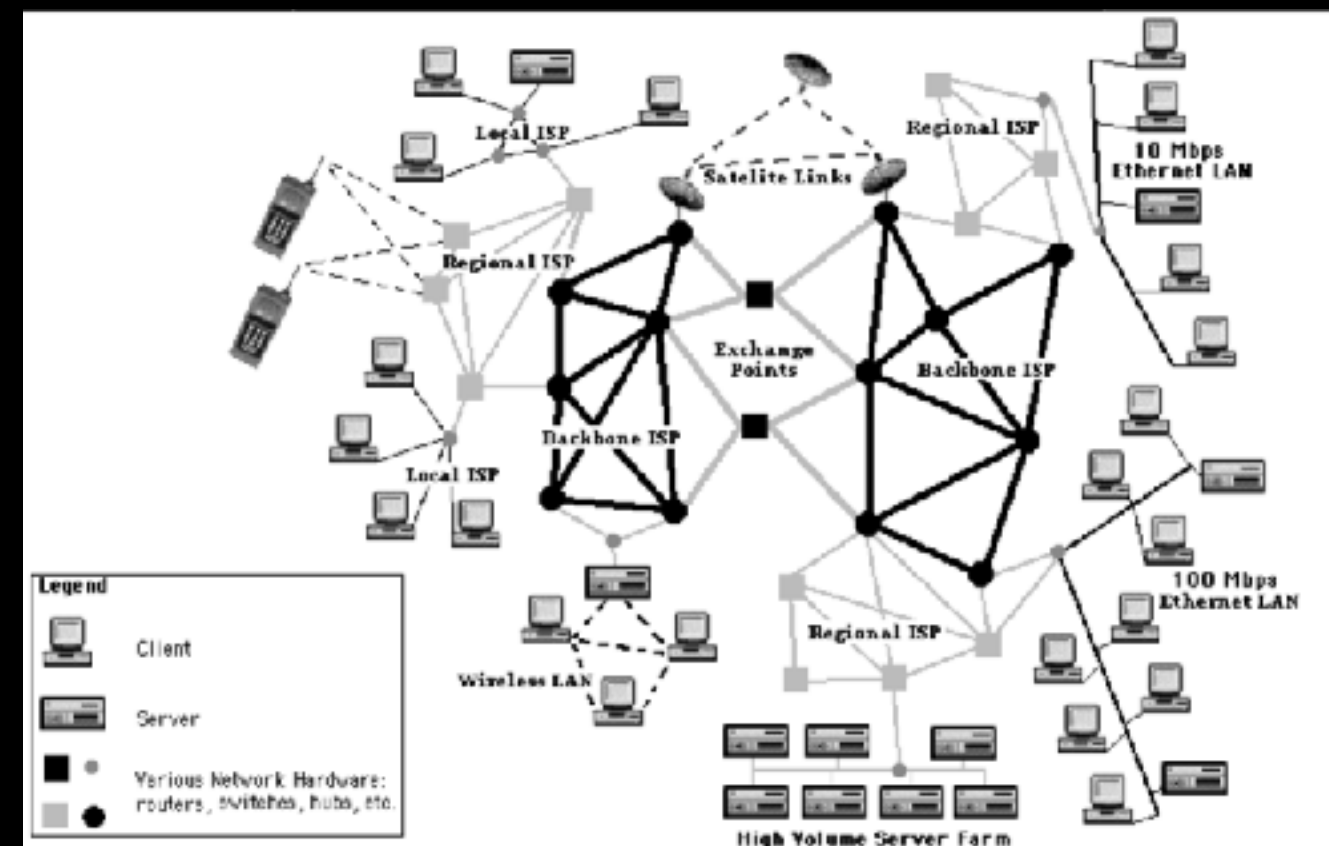
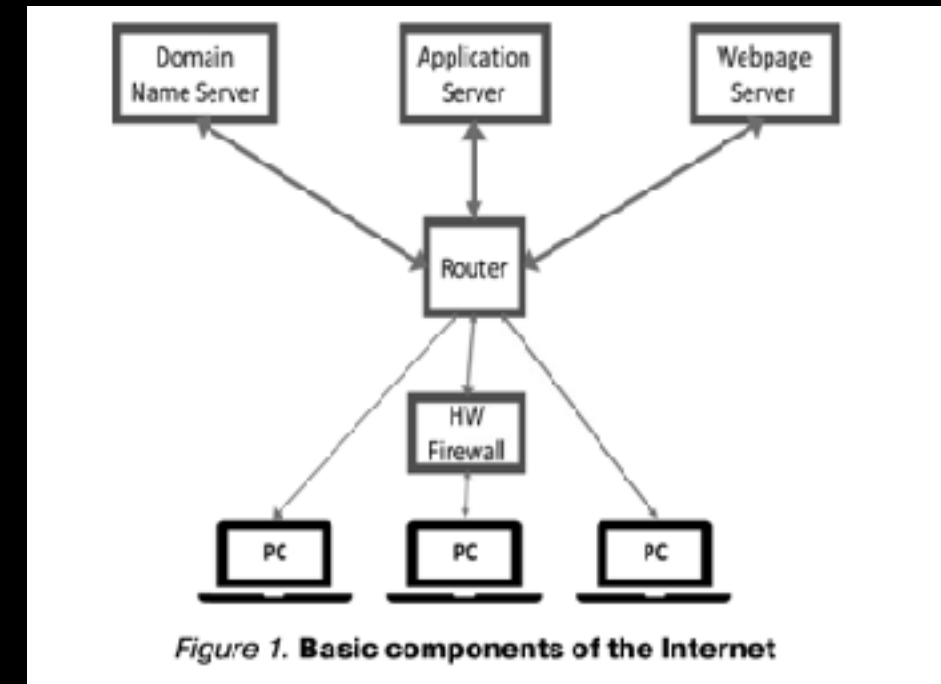
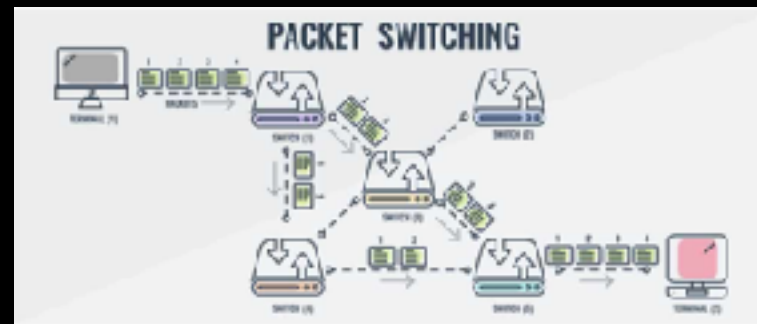
- ISDN was introduced in 1985 as a major upgrade of the telephone system
- Integrated Services Digital Network (ISDN) converts voice signals into 64kbps data streams (B channels)
- Trunk lines carry the multiplexed B channels and ISDN telephone exchanges interconnect the B channels.
- Businesses (primarily) can have a BRI (Basic Rate Interface) provided on old style copper local connection to provide 2x64Kbps for voice or data plus 1x16kbps control or data channel.
- Homes (typically) have an analogue connection to the local exchange.



Internet Network

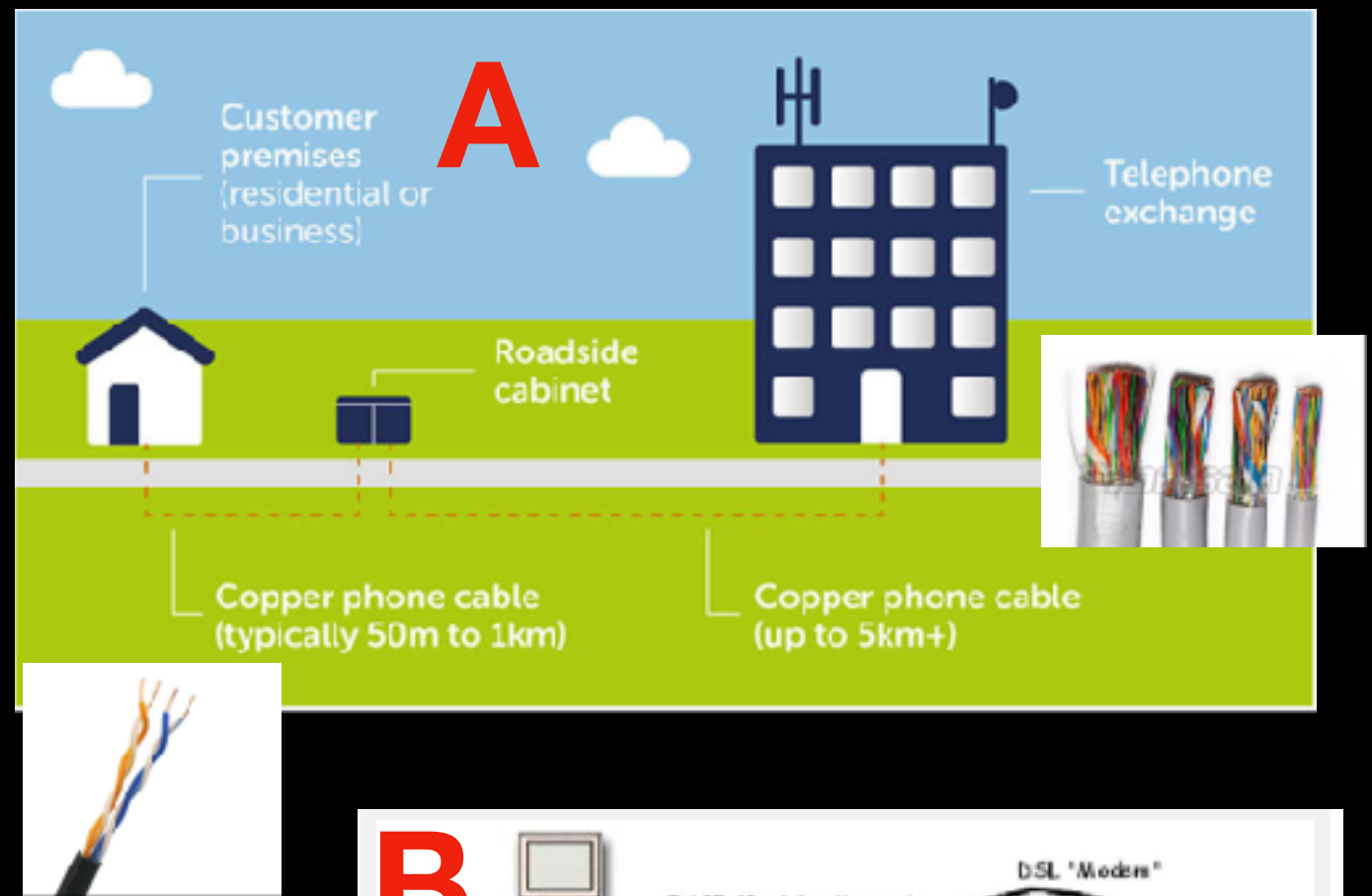
Implications of Landline Removal

- The internet is a packet switching network based on the Internet Protocol (IP)
- specialist computers for different functions
 - routers
 - name servers
 - application servers

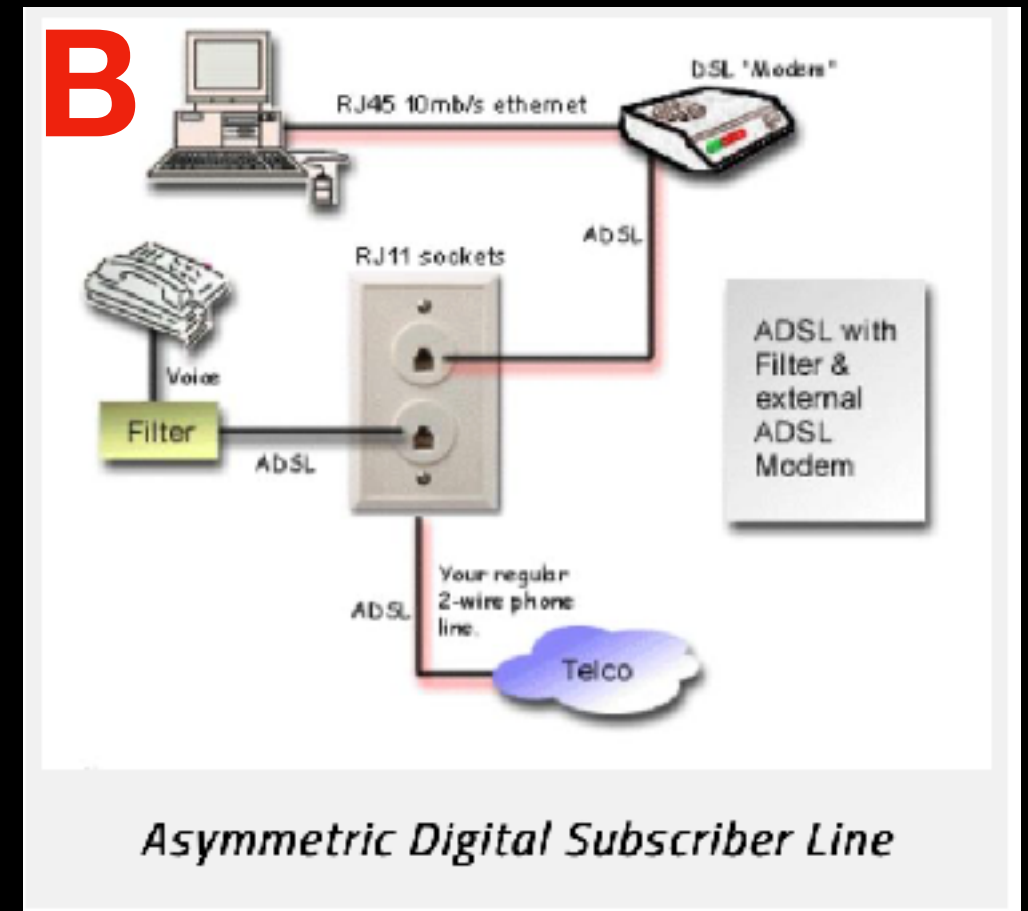
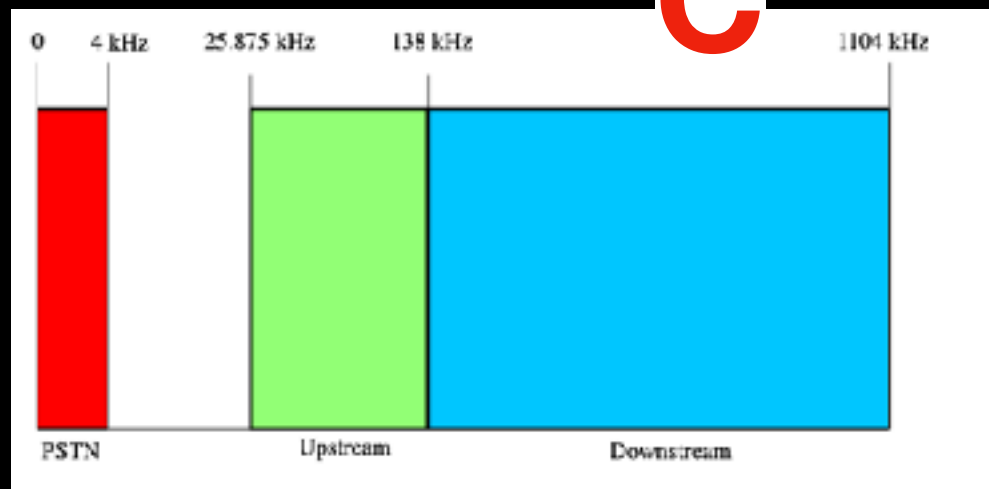


Local Loop / Last Mile

- Based on copper twisted pair cable, designed to transmit voice frequencies - 300Hz to 3.4KHz
- ADSL (Asymmetric Digital Subscriber Line) piggy-backs on the same cable
- Uses 26.075 kHz to 137.825 kHz for upstream and 138–1104 kHz for downstream communication
- Modem data rate depends on local conditions (distance, cable quality, connections)
- My ADSL line provides 37Mbps Down & 7Mbps up



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Future System / what is changing

Implications of Landline Removal

- Local Loop:
 - Broadband connection only - no separate analogue channel for voice
 - Increasingly fibre optic to the home
 - no power supply from the local exchange
- Voice network
 - Will use VOIP (voice over Internet Protocol, ie data packets rather than circuits)
 - analogue voice is digitised, encoded and split into packets of data with sequence and addressing.
 - A virtual connection is made equivalent to telephone circuit
 - data and voice share the same IP networks

Implications on the home

Implications of Landline Removal

- Need:
 - An internet connected router in the home.
 - Power for the router to work! No 50v dc from the exchange.
- Telephones and internet access share the same router.
- Will have the same provider for telephone and internet access

Considerations for Changeover

Implications of Landline Removal

- Select a provider with very reliable network and responsive help desk.
- Consider options for home power outage:
 - Mobile phone for most people
 - provider will have a battery backup solution if required.

OFCOM Guidance to Providers

- **Providers should have at least one solution available that enables access to emergency organisations for a minimum of one hour in the event of a power outage in the premises;**
- The solution should be suitable for customers' needs and should be offered free of charge to those who are at risk as they are dependent on their landline;
- Providers should i) take steps to identify at risk customers and ii) engage in effective communications to ensure all customers understand the risk and eligibility criteria and can request the protection solution; and
- Providers should have a process to ensure that customers who move to a new house or whose circumstances change in some other way are aware of the risk and protection solution available.

Changeover

Implications of Landline Removal

- Internet provider will provide new router with telephone socket
- Your telephone number will be “ported” to the provider’s IP telephone system - similar to changing telephone provider previously.
- When your provider informs you that your number has been ported, unplug telephone from the wall and plug into your router.

And Then.... more changes

Implications of Landline Removal

Culture secretary Nadine Dorries has announced that 2G and 3G mobile networks are to be phased out of use across the UK by 2033 as part of government measures to increase the security of telecoms supply chains.

Thank You