



Optimise Enhance Extend
Improving seamless connectivity at Heathrow

Rob Pengilley Head of B2B Services

The evolution of music formats.....



A look at the past.....

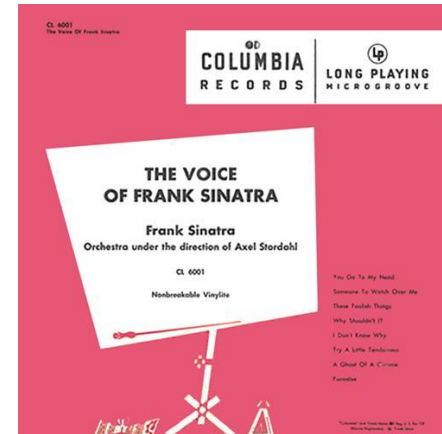


1877 - Phonograph Cylinder

Edison cylinder was the earliest commercial medium for recording sound.

1948 - Vinyl LP

The long-playing 33 1/3rpm micro-groove vinyl record is born. Introduced by Columbia



1963 - Compact Cassette

The compact cassette developed in '63 is essentially the same as the one that we now know.

And a glimpse into the future.....



1964 – 8 Track Tape

This isn't a Nintendo Cartridge !, this is 8-track; with 8 parallel soundtracks, aligned to 4 stereo programs, this hand-sized bundle solved the portability problem of records

1971 - Floppy Disk

We've all upgraded to USB drives and Dropbox but once upon a time floppy disks ran the world!



1982 - Compact Disc

Phillips kick-started a project to develop an optical audio disc intended to supersede the incumbent vinyl format.

And that's how we got here.....



1992: MP3

The MP3 was originally developed in the early '80s by researcher **Karlheinz Brandenburg**. His post-doctoral work expanded on pre-existing codecs for compressing audio.

1999 - Napster

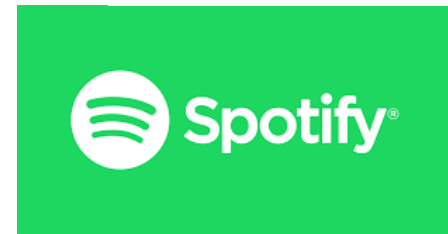
Napster allowed for free peer-to-peer file sharing of MP3 audio files that resulted in **widespread copyright infringement and outrage** from the music industry.



2002: Streaming

With 24/7 internet accessibility expanding thanks to mobile, developers and entrepreneurs saw the opportunity. listening to, and discovering, music without having to actually download files or purchase songs.

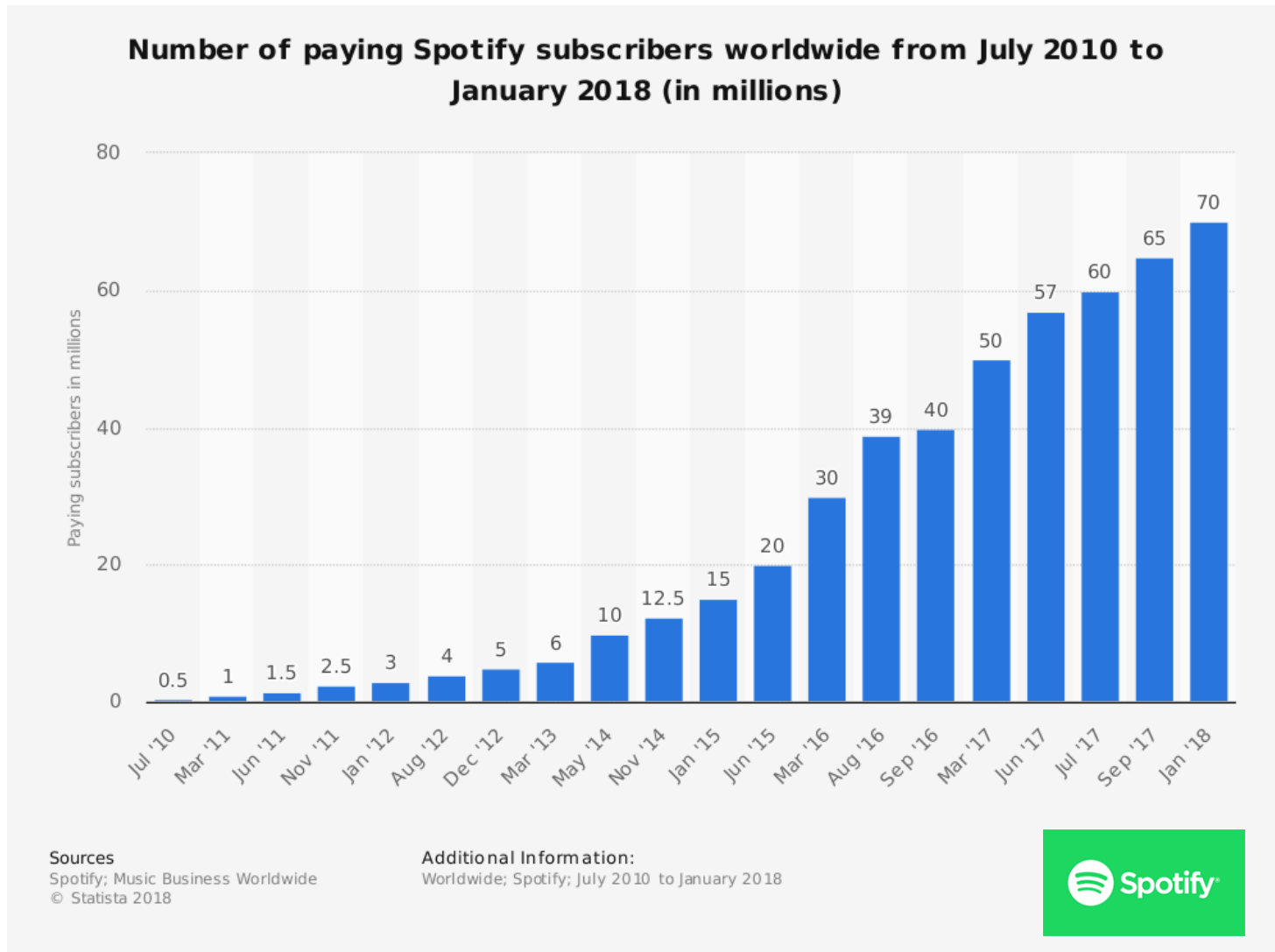
The digital streaming revolution.....



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The rise of paying Spotify subscribers



So.....

What has this got to do with Commercial Telecom Services at Heathrow ?



Optimise, Enhance, Extend

Optimise
Common Infrastructure

Optimise
IPTV/SKY

Enhance
CCTV

Optimise
Billing



Enhance
Broadband
Services

Extend
Coverage of ITS

Enhance
Telephony

Enhance
Security Features

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 **SITA**
Commercial Telecoms

Optimise – Common Infrastructure

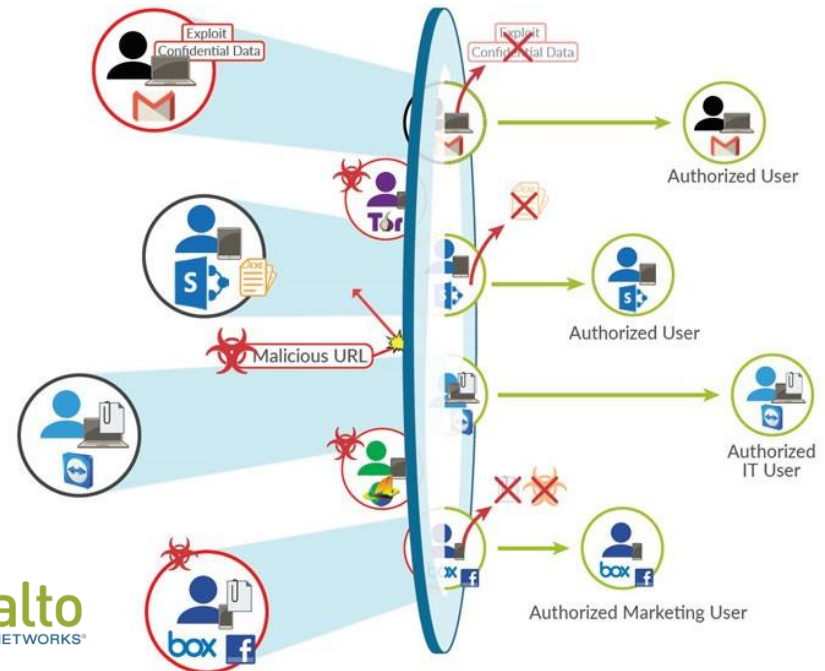
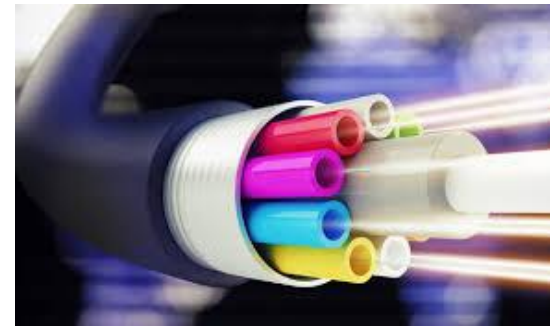


- Over 1700 Common Beacons deployed across the 4 Terminals
- Locus map integration
- Beacon registry and published APIs
- Omniserv – 1st customer (PRM provider)

Enhance - Broadband services.....

Enhancements to the Broadband infrastructure will provide;

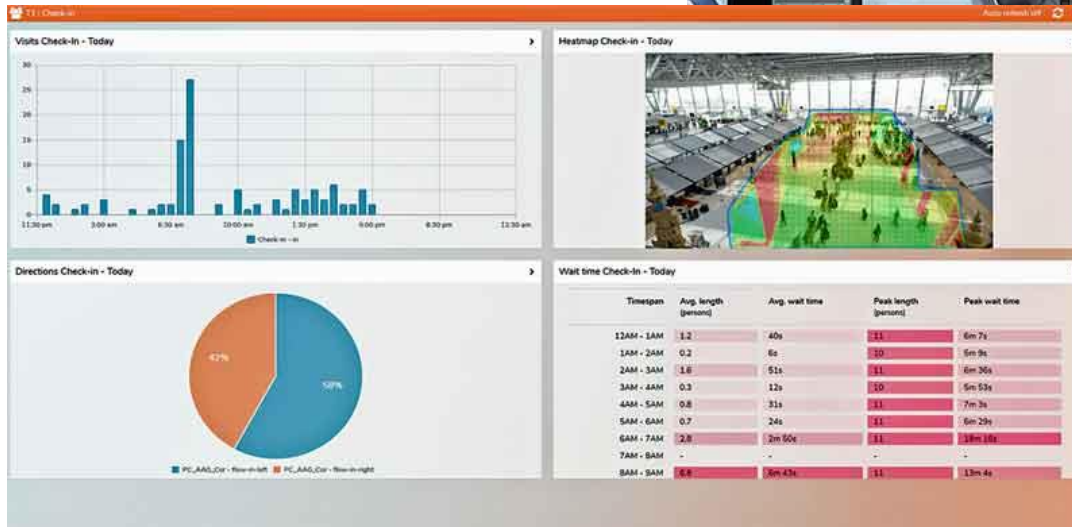
- Additional Bandwidth Options
- Increased Capacity to support more customers
- Improved resilience and performance
- The Future 'TO BE'.....
 - Private, Public & Managed Options
 - More Flexibility on Bandwidth Increments
 - Ability to add optional security features
 - Threat prevention (content filtering)
 - URL filtering (ability to block specific web sites)
- Timeframes.....
 - Higher capacity connectivity – End May / Early June
 - Infrastructure upgrade – June
 - Enhanced Broadband - September



Enhance - CCTV.....

Enhancing the existing CCTV offering;

- Leverage HAL investment in CCTV
- High capacity image video streaming
- Soft client offering for CT customers



Genetec

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SITA Commercial Telecoms

Extend - IT services.....

Extending IT services beyond the Passenger Terminals;

- Airfield and perimeter location coverage
- Fixed location and vehicular options



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Network design and deploy	Vehicle installation	Monthly Service Charge
£3.5K One off*	£3K per vehicle	£120 per AP**
Estimated Price Extend your VLAN/VPN Extend your SSID Need only once	4G Robust Modem Wireless AP Ancillary hardware Installation and testing	20MBS Downlink 2MB/5 uplink 24x7x365 No data cap

Final pricing for the above will be subject to survey.

- * The one off charge will be applied for a vehicle, or a fixed location on new designs.
- ** Covers connectivity and ongoing maintenance support for related hardware elements (Access Point and 4G Modem).



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