DAB+ OR MOBILE?

Access
Broadcast radio has always been free to access.
Access to mobile data requires a mobile operator, paying either on a pay as you go or fixed monthly contract. Data costs vary depending on the subscription level.

Battery consumption
Research from the EBU found that the energy consumed by DAB+ on a smartphone in one hour was 6.8J.
Comparatively, Spotify used up 59.9J in the same period of time. Power consumption of other audio apps can be found here.

Capacity (peak time listening etc)
Peak-time listening in the UK sees 15.9 million people listening to the radio at the same time. As radio networks broadcast on a one-to-many approach the number of people listening makes no difference to the service.
Mobile network performance depends on proximity to the nearest cell and its capacity. At rush hour busy areas and large events it’s often not possible to watch video or stream music.

Cost to broadcasters
Research from the EBU found that DAB costs for a national broadcaster are around £1m per annum, and around £88k for a regional broadcaster.
The cost to deliver audio streams over IP varies by the broadcaster and the level of traffic. Research from the EBU estimates that a national broadcaster could spend up to £59,682p/mo to deliver its share of daily listening of 1:30 per day over IP.

Cost to listener
Access to broadcast radio is always free to the listener. Receivers are now available from £10 or less than £50, a receiver with sliderhand functionality.
Based on the average listening time across the EU of 2:29 a day, this would require around 2-2.5B of data per month per user.

Coverage
A DAB+ transmitter covers a much wider area compared to mobile cells, while also delivering the same quality of service out to the edge of coverage. Coverage with DAB+ in Band 16 is much better compared to mobile in 800/900MHz and therefore lower transmitters are required.
While coverage varies by network and country, radio networks traditionally have a much wider reach compared to mobile.
Mobile coverage will start to appear on more trains over the coming years and a network of small cells may provide in-building coverage comparable to DAB+.

Future-proof
DAB+ is the newest version of the DAB standard and allows for more stations and capacity per multiplex. World-first research shows that DAB+ would allow the transmission of more data and work with companies delivering innovative new services over DAB+.
The next generation of mobile is 5G and, while it is still to be fully defined, it is likely to provide higher data rates at a lower latency. In this way, DAB+ will remain relevant and allow a network, putting people closer to cell sites to deliver the best service.

Gatekeepers
There are no gatekeepers standing between a listener and their favourite radio stations – this is one of the fundamental strengths of radio.
Access to radio over IP requires a subscription or fee to a service to be delivered, which may choose to list stations based on commercial agreements or prioritise traffic for certain services.
If 5G becomes a mobile alternative platform for audio streaming the business case may be able more towards a more direct link to the listener with no gatekeeper. The KPIs from the service provider in future may be no different to those offered from a DAB+ operator today.

Infrastructure cost
Research from the EBU modelled the ‘average’ costs for a national broadcaster. On DAB+ this would be around £2m per cap with £1m extra per year. £1.2 Milton over ten years.
The same research calculated the cost of data for a broadcast radio station if they used IP instead of broadcast radio. The costs were £9.8m per year - 80% over ten years.

Interactivity
Hybrid radio uses DAB+ for audio and IP for images, text and additional services. Devices with an IP connection can then also link back to station or advertiser websites.
Based on RadioDNS guidelines, using hybrid radio would require around 1.12M of data per month, if all listeners were on hybrid.
A data connection allows listeners to link back to station or advertiser websites or take part in competitions.
This can be combined with DAB in certain devices, a dedicated app for the LG Stylus 2 uses live interactivity in action.

Mobility
DAB was designed as a mobile technology and is well suited to be used at home and on the move.
While cellular networks were designed for mobility, some users have experienced problems when listening to audio and being handed over to a busy cell site. Mobile coverage will have to improve to deliver existing streaming services and this could have an impact on its ability and willingness to deliver radio.

Multimedia
DAB+ can deliver images and text using slideshow. Slideshow lets broadcasters build closer relationships with listeners, providing them with extra information and bringing the station and shows to life with artwork or even photos from the studio.
3G and 4G carry a wide range of services, from music and social media to location based services.
Data and battery consumption vary by application.
5G will change the network architecture and localised content and caching will aim to reduce end device power requirements.

Net neutrality
All services on a multiplex are given equal priority regardless of station or audience size.
Net neutrality is the principle that ISPs should enable access to all content and applications regardless of the source, and without imposing or blocking particular protocols or websites. This varies by country and there is no guarantee it won’t costs vary depending on the subscription level.

Reliability
Radio network broadcast on a one-to-many approach rather than one-to-one. This means that the number of people listening makes no difference to the service.
Radio is also reliable in emergency situations, with redundancy and backup systems to ensure transmissions continue. It is also more cost effective to deliver this reliably, both for fewer transmitters sites compared to the mobile network.
In emergencies and times of crisis, the mobile networks have traditionally failed to cope with the extra demand.

Scalability
National Coverage with DAB+ is very cost effective using SFN transmitters, provided spectrum is available.
It’s possible to deliver around 18 stations on a multiplex. Adding a new multiplex requires additional spectrum and availability varies by country.
Expanding requires new transmitter sites, which can be shared with existing towers or set up as new.
Adding capacity is often achieved through network densification with ‘small cells’ used to deliver improved data rates.
Adding coverage for a larger area requires setting up a new basestation or, for remote areas, small cells can be used.

Some operators are looking at eMBMS (LTE broadcast) however this is only designed for a set area such as a stadium, rather than coverage across a city or region. It will also require extensive investment in the network that mobile operators are currently unwilling to fund.

Services
It’s possible to deliver traffic, news and weather information over DAB+ to listeners or drivers. In tunnels, emergency warnings can be delivered to all cars.
Mobile data can be used to access a wide range of service and applications and mobile devices can use GPS and other connection when required.

Mobile streaming
Access to mobile data requires a mobile operator, paying either on a pay as you go or fixed monthly contract. Data costs vary depending on the subscription level.