Mobile streaming

- Access: Broadband has always been free to access.
  - Access to mobile data requires a mobile operator, paying either 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. Radio networks broadcast on a one-to-one approach so 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 around busy stations, it can be slower as 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 estimated that a national broadcaster could spend up to $9.8m/year to deliver its share of daily listening of 1.30 per day per user.

- Cost to listener: Access to broadcast radio is always free to the listener. Receivers are now available from €10 or less than €20.
  - A receiver with slideshow functionality was designed as a mobile technology and is well suited to use at home and on the move.

- Coverage: A DAB+ transmitter covers a much wider area compared to mobile cell sites, while also delivering the same quality of service out to the edge of coverage. Coverage with DAB+ in Band III is much better compared to mobile in 800/900Mhz and therefore lower transmitters are required.
  - Quality mobile data services require both capacity in a cell and degrades as the user gets further away. For those in remote areas it is therefore difficult or expensive to receive a good service. While 5G is still to be defined, it will require a much more dense network to deliver the consistently high data rates promised.

- Future-proof: DAB+ is the newest version of the DAB standard and allows for more stations and capacity per multiplex. Worldwide DAB and its technology has been proven to work together and 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. 5G will therefore provide a much denser 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 station - this is one of the fundamental strengths of radio.
  - Access to radio over IP requires a subscription or fee to a service provider, which may choose to list stations based on commercial agreements or prioritise traffic for certain services.

- Infrastructure cost: Research from the EBU modelled the ‘average’ costs for a national broadcaster. On DAB this would be around 112MB of data per month, if all listening was over hybrid.
  - The research calculated the cost of data for a broadcast if they used IP instead of broadcast. The costs were $9.8m/year - similar over ten years.

- Interactivity: Hybrid radio uses DAB+ and audio and IP for images, text and additional services. Devices with IP connection can then also link back to station or advertiser websites.
  - A data connection allows listeners to link back to station or advertiser websites or take part in competitions.

- Mobility: DAB was designed as a mobile technology and is well suited to use 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 into a busy cell site.

- Multimedia: DAB+ can deliver images and text using slideshow. Slideshow lets broadcasters establish 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.
  - 5G and 4G carry a wide range of services, from music and radio to messaging, social media and location-based services. Data and battery consumption vary by application.

- 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 favouring or blocking particular products or websites. This varies by country and there is no guarantee it won’t costs more than $108m over ten years.

- Reliability: Radio networks broadcast on a one-to-one 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 battery backups to ensure transmissions continue. It is also more cost effective to deliver reliable data for fewer transmitters sites compared to the mobile network.

- 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.

- 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 services and applications and mobile devices can use GPS and other connectivity when required.