Latency – possible issues for public policy and regulation

Policy-makers have been keen to set targets for increased availability of broadband Internet access for both fixed next generation (fibre) access and for 4G/LTE cellular wireless services, including the provision of state funding to support network construction in rural areas. Such initiatives have tended to set targets in terms of network download speeds, with some interest in upload speeds. Separately, there has been action to improve the accuracy of advertised speeds to reflect observed or crowdsourced speeds. However, there has been little interest shown in other technical characteristics, such as latency. Unusually, the Singapore regulator, publishes data on latency of commercial services, though it is unclear this does or can affect decision-making by consumers and may simple set a floor in performance. Some demand-side measures have been put in place to boost adoption, of a social and educational nature, for use of commercially available services.

Latency is a feature of political decision-making in the acceptability of satellite access, for example, the use of Ka band services in rural and remote Alaska and Australia. For terrestrial services, the architecture of interconnection, notably to the local loops of incumbent operators, affects latency but its design has largely been a matter of economic and competition analysis.

In the USA where infrastructure goes without regulated access, the design is left to operators. Similarly, without regulated access, cellular wireless operators are able to decide for themselves about the introduction of small/nano/pico cells for 3G and LTE or about “off-loading” traffic to Wi-Fi. These are financial issues, rather than speed or latency, provided coverage obligations are met.

Some commercial users are concerned by latency, notably those corporations outsourcing functions to distant countries, such as India. Traders on financial markets are extremely keen on low latency services in order that trading, especially where it is automated, is not slower than rivals.

For consumers, poor latency usually causes switching to a rival provider or abandonment of a service. There is little (if any) evidence that consumer behaviour will change to focus on latency, not least since broadband is one part of an ever larger multi-play bundle of services. Decision-making is already complex and latency is seldom an explicit or critical characteristic of a network.

Commercial drivers has seen the development of and considerable investment in a range of content delivery services (CDNs) and Internet exchange points (IXPs), which inter alia provide higher quality of service including reduced latency. Akamai and Sandvine generate data on the observed speeds and latencies. Nonetheless, deployment of CDNs and IXPs may be a lagging indicator of demand, especially in developing countries where demand and hosting facilities may be limited.

While gambling firms register in exotic places (e.g., Alderney), they need to have servers close to customers to offer high quality of service.

The only significant policy debate about latency has been linked to “net neutrality”, over the prioritisation by infrastructure owners of their own IP-based voice and video. It is argued this discriminates against over the top (OTT) providers and should be limited or banned, something which needs more work.

For the leading nations, low latency is an important technical characteristic, since it allows the development of innovative apps and services. Requiring analyses of network performance.