



Why Peering

This section of the Toolbox describes the importance of peering.

The Importance of Peering

In the previous section, we learned how Network Operators fit into the global Internet ecosystem.

We also learned that they can peer with other networks, or buy transit from other networks, or both.

Operators peer with each other to reduce costs, reduce latency, have “unlimited” bandwidth, and have direct relationships.

Costs

The commercial part of the Internet is highly competitive with many network operators vying to provide the highest quality service to their end users at the lowest possible cost.

Apart from staff and equipment costs, the other significant cost of providing Internet access is to actually obtain that access to the whole of the Internet.

The simplest way of getting access to the whole Internet is to pay someone else to do it for you. That's a typical transit service that a new network operator would buy. But it is expensive, and gets more so as traffic levels increase.

Peering has no traffic charges, and so the more peering an operator can achieve, the lower the cost of traffic charges paid for transit. This reduction in operating expenses (OpEx) means better value Internet access for customers, or more financial ability to invest in newer/bigger/better infrastructure for the network operator, or hiring more technically skilled staff, or a combination of all of these.

Latency

Quite often the path from the network operator through their transit provider may be more indirect than is possible if the operator is connected directly to the content provider themselves. Several Internet applications are latency sensitive (online games, e-sports etc), and so a good provider will be looking for all opportunities to improve the latency their customers are experiencing.

Bandwidth

Quite often the capacity available from the network operator through their transit provider might have limitations that the network operator hasn't anticipated or, if there is a rapid increase in usage, hasn't purchased from their upstream provider, resulting in reduced throughput, congestion, and packet loss. This reflects poorly on the network operator's credentials as a quality service provider.

If the operator is peered directly with the content provider, the capacity is usually provisioned over a direct cross-connect (fibre optic etc), with both entities being able to directly adjust capacity as required. Essentially a fibre cross-connect is only capacity limited by the equipment being used by each operator.

Relationships

Having a direct relationship with the content provider, rather than via a third party, can often mean that issues with content delivery being experienced by end-users can be more efficiently and effectively resolved, rather than having to work with the transit provider as an intermediary.

References

This content is sourced from many contributors, including:

- [Value of Peering Presentation](#) - Philip Smith
- Network Startup Resource Center
- Input from Mark Tinka, Kurt Erik Lindqvist, etc

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