DE CIX

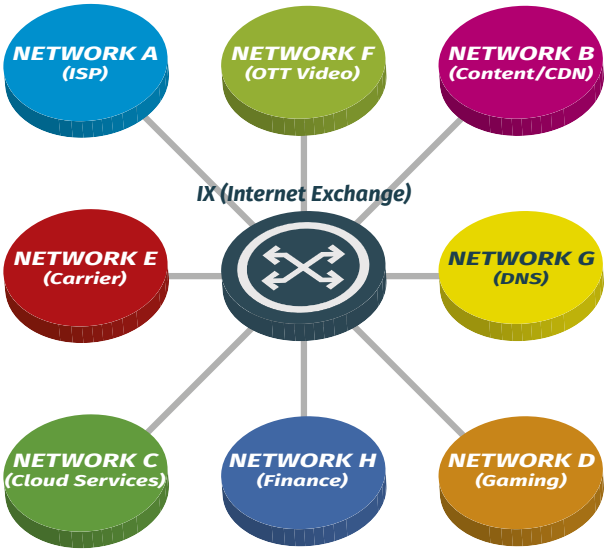
10! reasons...

... why you should peer

Peering gives you an impressive set of advantages. In short, peering

- → ***raises your revenue***,
- → ***decreases your costs*** *on the money spent on your IP borders,*
- → ***lowers the latency*** *from your network to others,*
- → ***increases the throughput*** *to other networks,*
- → ***improves your connection to major players*** *like Apple, Google, Microsoft, and many more,*
- → ***increases the stability*** *of your network,*
- → ***makes partnerships possible*** *for products like MPLS or voice,*
- → ***improves the user experience*** *in terms of speed and stability,*
- → *means* ***being part of a whole interconnection ecosystem***,
- → *and last but not least, it is a* ***quality seal*** *which can be used for marketing.*

Examples: Who is connected to an IX



Where networks meet

www.de-cix.net

1 Peering raises your revenue

If you are an ISP or carrier, you typically have some, or many, BGP downstream customers behind your ASN. These customers typically have more than one upstream on their edge, and this means you are in competition with others in terms of delivery of the most traffic in order to get the most revenue from this customer.

If not steered manually by the customer, there is exactly one reason that decides who delivers the most traffic to the customer: the logic of BGP. The network who can deliver the shortest AS paths to most, or the most used prefixes, wins the largest amount of traffic.

Peering helps you to shorten the AS paths to other networks compared to classical IP transit – where it can happen that your target network is an AS, is behind an AS, behind that AS, behind the next AS, ..., behind your IP transit upstream. With peering you can get direct or closer routes to interesting (high volume) networks.

2 Peering decreases your cost

Peering is the better alternative to transit as you have more control and better quality. In many cases all over the world, the cost of traffic via a peering exchange is also cheaper. Exceptions are possible depending on the region of purchase and on the volume of usage of peering and transit ports. But beyond the cost discussion, peered IP traffic has in any case the better quality level and gives you all the benefits that are described in this paper.

3 Peering lowers the latency

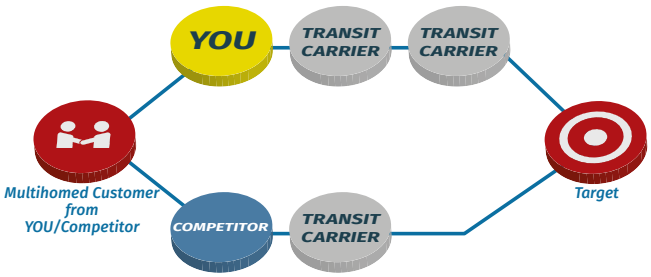
Internet quality is all about latency, packet loss ratio, and throughput. Having shortcuts to everything which is close by is mission critical.

Latency is one of the most important factors on IP networks in terms of stability and applications like VPN, MPLS, gaming, terminal server usage, voice connections, VoIP connections, DNS, HTTP, streaming and many others.

With transit, in most cases you have an unknown, unpredictable, non-transparent path along which your data flows. With peering, you get in control over where your network exchanges IP with other important networks. You control where to handover the traffic (which city / which IX) and you have control over your backhaul and the peering

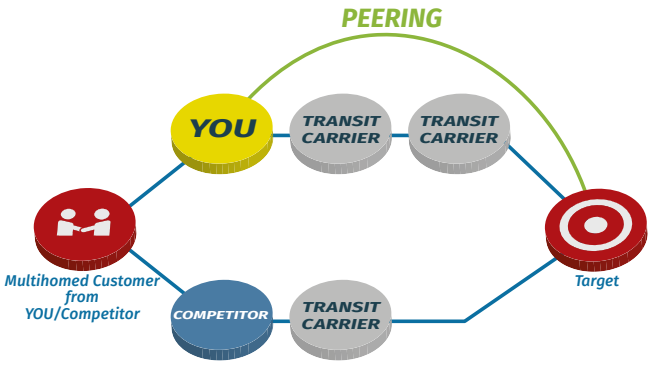
How the shortcut works and why you get more traffic from or to your customer and therefore more revenue

Not taking care of AS path length: Less revenue



→ **COMPETITOR** *wins ... has the shorter path*

With peering: More revenue



→ **YOU** *win ... your path is the shortest possible*

Possible schema with and without peering

→ *possible schema without peering*

→ *possible schema with peering*

port usage. As the other network is also in control, it means that together with your peering partner and the IX team, you have a controlled end-to-end handling of your valuable traffic streams.

4 Peering increases throughput

Transport of data via public transit carriers flows via a private network interconnect (PNI) between the involved Tier1 or Tier2 IP carriers. PNIs mean cost, work, maintenance, and organization between those carriers. So upgrades of PNIs between large carriers do not always happen in time. Running traffic over saturated PNIs will nevertheless work for a while. Even without a noticeable latency or loss – depending on the case.

But it will bring in any case a limited rate per user. So if your users are watching videos or television services via the Internet, it can result in many buffering phase interruptions and a bad user experience.

With peering, you are in control of your points of interconnection where both you and the IX ensure enough port bandwidth. If you have enough peering bandwidth, your users are close to having unlimited possible throughput to the other networks. The limit in this case is just the service the user bought from you, and not the overcrowded PNI traps of public Internet transport.

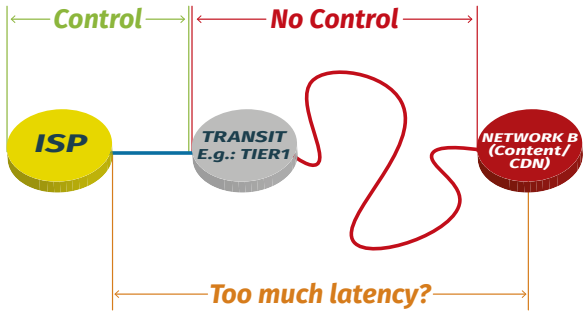
5 Peering improves connection to major players

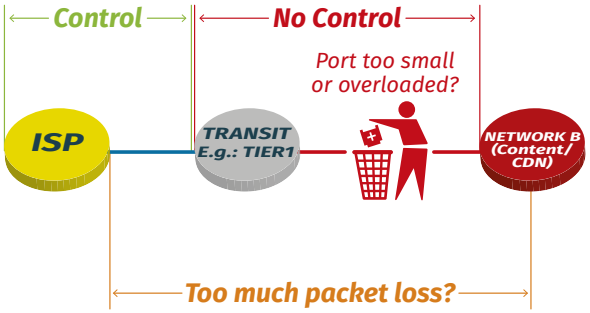
Major content players like Google, Akamai, Microsoft, Amazon, Ebay, Facebook or other leading players at eyeball, gaming, voice and other vertical markets know that peering is the key to having a good network performance. These networks belong to the most densely-peered networks in the world. You find these networks typically at each important IX, and especially at the world's leading IXs like the ones operated by DE-CIX.

6 Peering increases the stability of your network

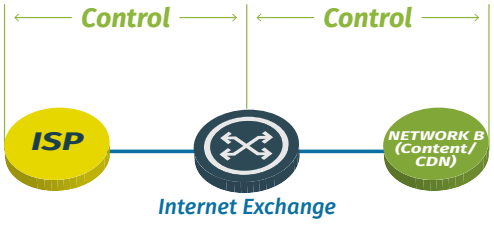
While buying IP transit is always just a best-effort method, peering gives you direct access to many of your traffic partners without having other networks in between.

What is the problem with using just IP transit?





With the help of peering:



Result:
→ *No packet loss*
→ *Lowest latency*
→ *Highest throughput*

List of some of the most peered networks in the world

AS #	Company	Present at
13335	Cloudflare	190 IXs
6939	Hurricane Electric	181 IXs
42, 3856	Packet Clearing House	159 IXs
20940	Akamai Technologies	148 IXs
15169	Google	144 IXs
8075	Microsoft	130 IXs

(Source: PeeringDB; own research; April 2018)

Peering locations are in many/most networks central POPs of their network. This means redundancy on backhauling, router hardware, and peering ports.

Peering presences are at the heart of the world's most important content/gaming/streaming/social... networks and are therefore treated well. By getting direct connection to peering places, you secure the traffic routes to these most important networks. If there is any failure in peering, you are backed up by your IP transit.

Aside from this, you also have a better working network, as you have less latency, fewer jitter problems, less packet loss, and more throughput – which has a strong impact in the stability of a network.

7 Peering makes partnerships possible

With peering, you have a direct network-to-network situation with e.g. several hundreds of networks in Frankfurt, with just one connection to DE-CIX.

This means you have hundreds of possible partners for the exchange (buying/selling) of MPLS connections (known as: MPLS NNI).

You can target hundreds of networks without organizing or buying additional expensive fiber patches or ending up in problems with different, not matching data center locations. So it is possible to go for an easy, cheap, and quick start for these premium services.
Further, you can also go for dedicated VLAN connections to other members if you need a logical separation of the handover of these services.

8 Peering improves the user experience

Peering has a lot of advantages compared to IP transit-only designs. Your users will have a better experience with your services as they will work better, more stably and faster because of better latency, less packet loss, and higher throughput.

Note:

"There is exactly one reason that decides who delivers the most traffic to the customer: the logic of BGP."

Additional revenue:
Connect your customers to the cloud

DE-CIX offers additional services like DirectCLOUD, where you can connect your customers directly to cloud service providers like AWS, Microsoft Azure etc.

In other words, the typical advantages of peering are

- → *saving money*
- → *shortening the traffic path*
- → *having no unknown 3rd party infrastructure between you and target*
- → *having more control over traffic flow*
- → *having a better quality of peered path*
- → *more traffic = more money from your multihomed BGP customers*
- → *possible and easy traffic cooperations*
- → *more fine-tuning possibilities (localpref / metric / ...)*

and by joining DE-CIX: getting additional access to events (GPF/EPF...) to meet peers, and being part of a whole new ecosystem around peering!

9 Peering means being part of a whole interconnection ecosystem

Peering exchanges are the enabling component for a whole interconnection ecosystem around them.

While the peering exchange itself is a small niche topic for those who operate it, the ecosystem around it offers a very broad range of possibilities for doing business: You have large demands on data center space, backhauling, IP transit, voice and VoIP business, CDN clusters, maintenance and operational staff, MPLS and much more. In Frankfurt, this is a billion US$ market, as it is at other world hubs.

So joining an IX opens up a lot of new opportunities.
DE-CIX will help you with your ideas on questions regarding this.

10 Peering is a quality seal which can be used for marketing

Last but not least: Many network providers use their IX membership as a quality seal for their customers and prospects to emphasize that they care about quality. Go ahead and use the DE-CIX logo as part of your marketing strategy. DE-CIX is a world renowned trademark which will assist your message about ensuring a well-operated network.

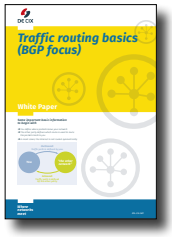
Conclusion

Questions?

If you have questions or any suggestions for these guidelines, please contact ***bernd.spiess@de-cix.net****.*

Recommended reads

→ ***10 useful tips on how to maximize the benefits of peering***
Bernd Spiess, peering expert for several years, developed 10 tips for peering; from optimizing routing data base entries to prefix aggregation.



→ ***Traffic routing basics (BGP focus)***
Learn more about inboud and outbound routing, how a router decides which path is best, localpref, MED and AS-PATH rules, and best practices.

Take a look at ***de-cix.net/academy***