What Members want from the IXP

A customers perspective

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Agenda

1. Who are we?
2. What are we trying to solve?
3. Let's make it happen
4. CGNAT static port allocation setup
5. Testing
6. Conclusion

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Decided it was a good idea to start an ISP and Leaptel is the result.

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Who is Leaptel?

- Small(ish) (~70k subscribers) retail service provider servicing mostly residential customers
- Just turned 10 years old!
- Privately owned
- Network throughput over 300G nationally aggregated daily

Why are IXPs important

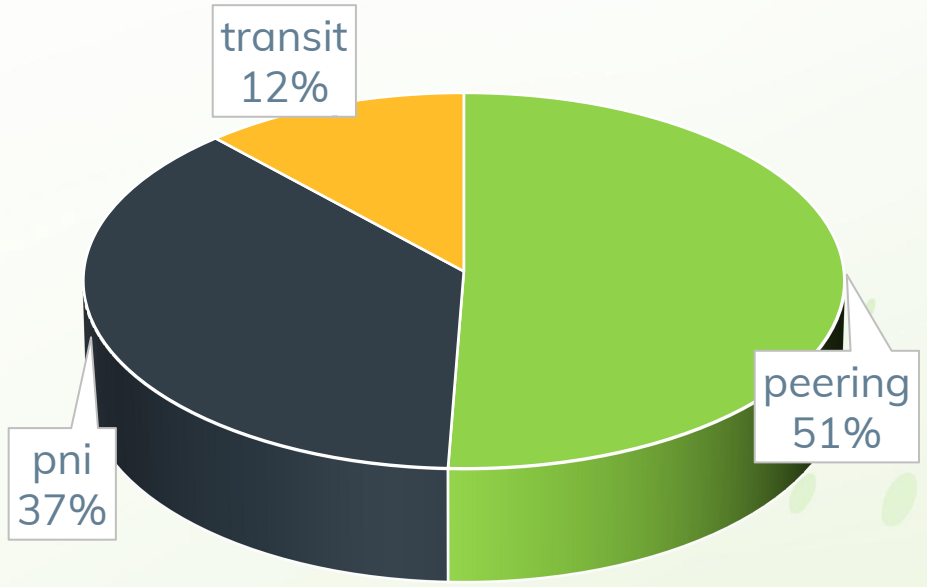
1. Settlement free peering
2. Playing field equalizer
3. Resiliency

How important is peering?

For Leaptel, 51% of traffic comes off peering (from within Australia)

PNI is 37% (Amazon, Cloudflare, Meta, Google, Netflix [caches])

Transit makes up 12% of our traffic



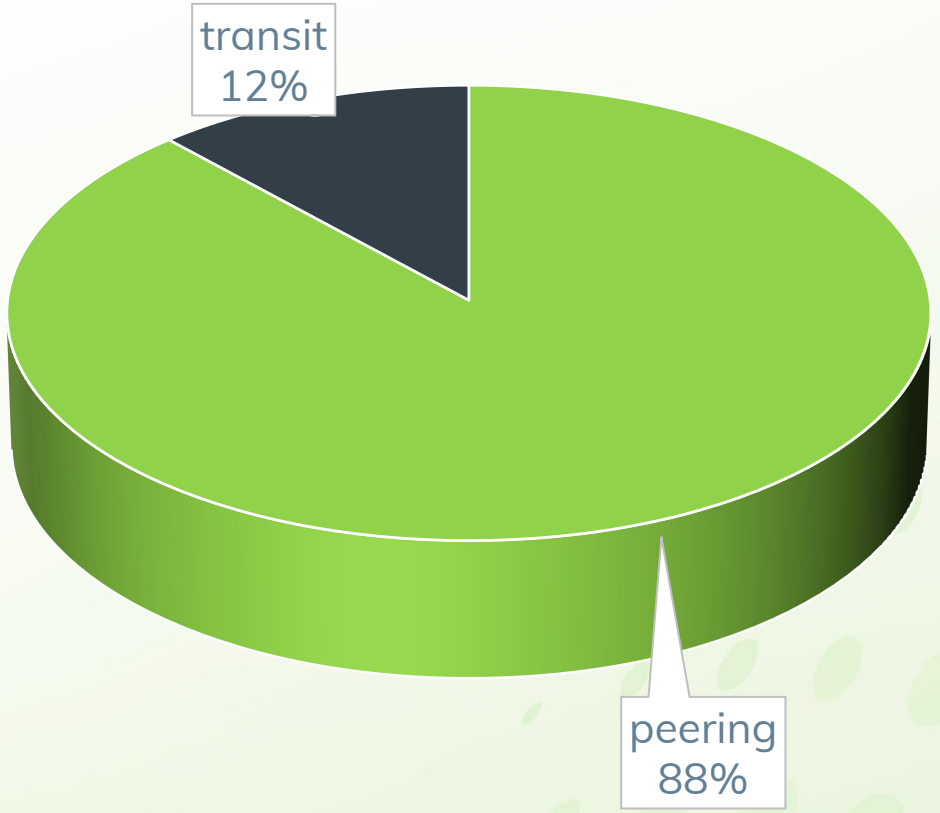
2 years ago we had no PNIs…

All of our PNI traffic exist on peering exchanges, so 2 years ago this would have looked like this.

With Google moving away from peering, unless a IXP has a workaround, our transit would be higher today.

It is just not possible for a new entrant in the market to complete with the big end of town without peering.

Any traffic we can not put over transit is extra $$$ to allow us to run our networks



So what do your members want?

Simplicity

- Available in major locations I am in
- Online and easy to follow process
- To avoid talking to people!
- Automation
- Quick turnup

Bonus points

- You actually check to see I am up
- You check to see how I am using the port and make recommendations on how I can improve throughput
  - Look at RPKI
  - Look at light levels
  - Communities for content
  - Bilats and how to get them
  - Port utilisation

Resiliency

- We want our peering providers to build reliable networks
- We want multiple networks for when things go wrong

Communication

- Communicate well
- Communicate often
- Give notice of changes especially if they are likely to have a member impact (both positive e.g. new content or member, and negative, outage or significant prefix increase)
- Give time – we are busy so tomorrow is not enough notice

Consistent

- We are all busy
- Do not be the odd one out, do things the same way in terms of bilats and route servers
- If you host a content cache, do not connect it to the route server if others are not doing the same thing.

Meta in Perth

- In Perth, 2 IXPs have Meta caches – IX Australia and EdgeIX
- According to Peering DB, AS63293, Meta cache is only on route servers in 2 locations world wide. Edge IX Perth and Accra Internet Exchange in Africa.
- As a network operator having things the same everywhere makes things simple. Having an exception is annoying and makes things difficult.
- It also leads to surprises

Meta Perth continued

14th May 2025 – Leaptel customers started reporting Facebook and Instagram in Perth and Adelaide slow. Yes, people do call support about this.

Leaptel quickly identified that traffic had dropped in IX Australia Perth exchange. (Shift of around 2-3G)

Traffic shifted over to Edge IX which we didn't know had a cache (and had not done a bilat as we have a small port)

Edge IX cache became overwhelmed with Meta traffic and was running hot!

Applying communities to route server allowed us to bypass the impacted cache.

Had the cache not been connected to the route server, the traffic would have shifted to Sydney (which is what we expected would happen) and no customers impacted.

What went wrong

IAA should have advised members that the cache was turned off

Meta should have identified their cache was maxing out and taken steps to ensure that the cache was not overwhelmed or bypassed

The Meta cache on Edge should not have been connected to the route server so a swing like this is less likely to just randomly occur

Leaptel needs to more closely monitor what peering exchanges are adding and removing from route servers to avoid surprises

The pursuit of more G is not the game

When you add content or members to the exchange we need to not just consider the graph going up but the actual member impact.

- Will our members have sufficient port capacity to receive the traffic, if not lets reach out and encourage them to upgrade!
- Would adding content / caches, would adding it to the route server be consistent with their experience elsewhere
- Will the content preform well
    - Content with not enough capacity might cause member impact
    - Can we handle a traffic shift
    - Do we have enough backhaul to manage a cache fill change

Thank you

Any questions?

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