VANIX

VANCOUVER INTERNET EXCHANGE

BUILDING REGIONAL RESILIENCE AND NETWORK SOVEREIGNTY

CRRBC WEST 2025 – NOVEMBER 12-14, 2025

PRESENTER: SCOTT JAMIESON

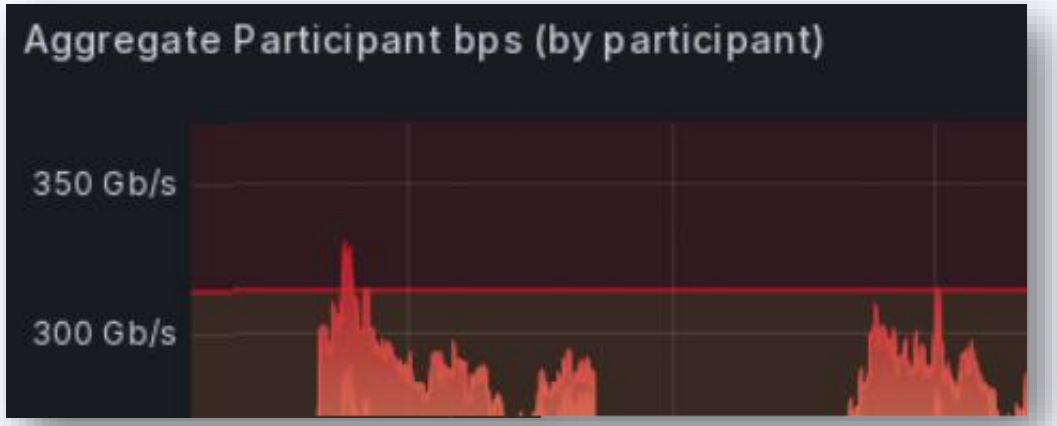
WHAT IS AN INTERNET EXCHANGE?

Internet Exchanges are part of Canada's telecommunications infrastructure, functioning as fundamental building blocks of a high-quality and high-performing Internet for all Canadians.

WHAT IS PEERING?

- Not-for-Profit Exchange
- Operated by Industry Professionals
- Diverse organizations dedicated to improving the Internet in Canada through collaboration and cooperation.
- An oasis of neutrality and key technology portal between Canada and the world.

VANIX
VANCOUVER INTERNET EXCHANGE



72 Participants

5 Locations

9 Sponsors

300+ Gbps Traffic

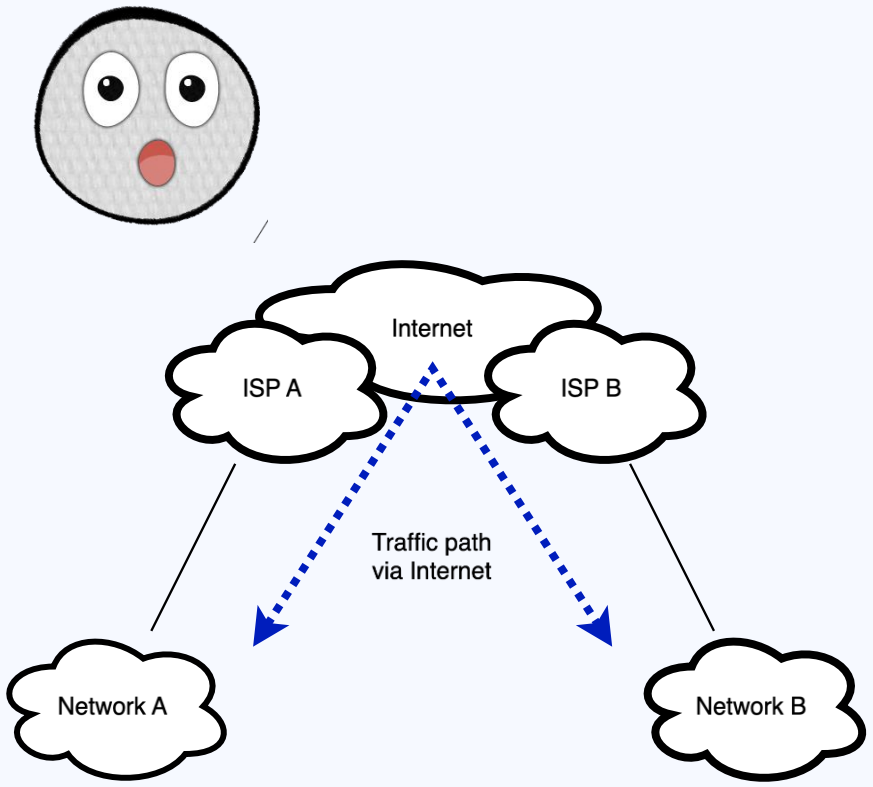
HOW VANIX OPERATES

Sponsors who provide in-kind infrastructure;

A team of **volunteers** who perform most day-to-day operations, and an all-volunteer board of directors;

And our **participant networks** who pay a service fee to cover equipment and other costs.

VANIX SPONSORS

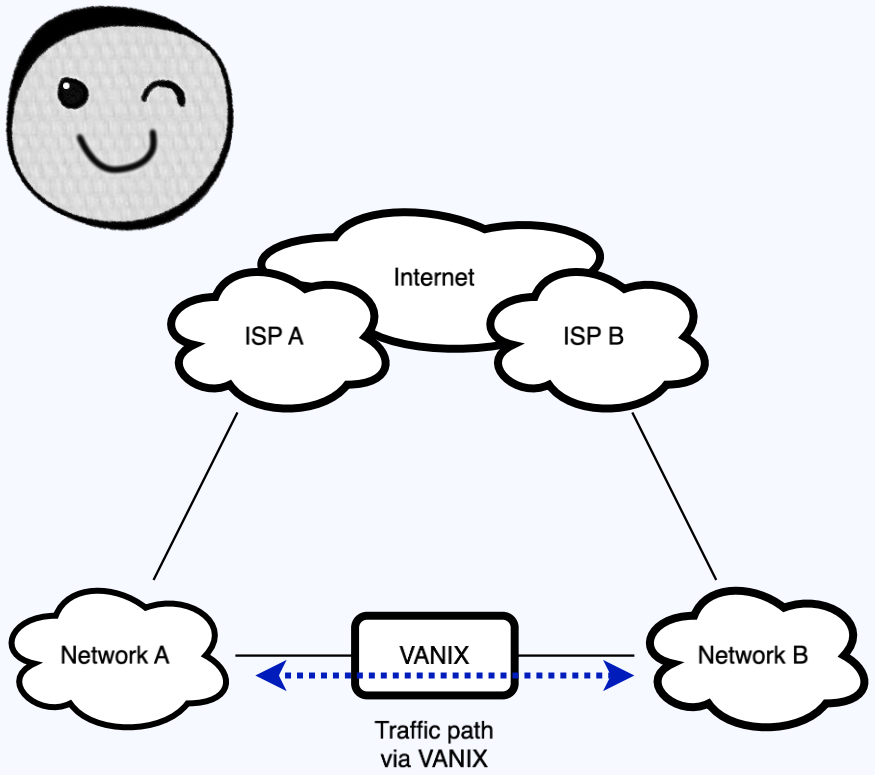


Without an Internet Exchange

Traffic between networks sometimes takes the **highest cost** and **slowest path**;

Traffic probably **leaves your region** (and possibly even leaves the country);

Limited and unknown **alternative routes** if network connectivity is disrupted.



With an Internet Exchange

Traffic between connected networks takes a **low cost** and fast **direct** path;

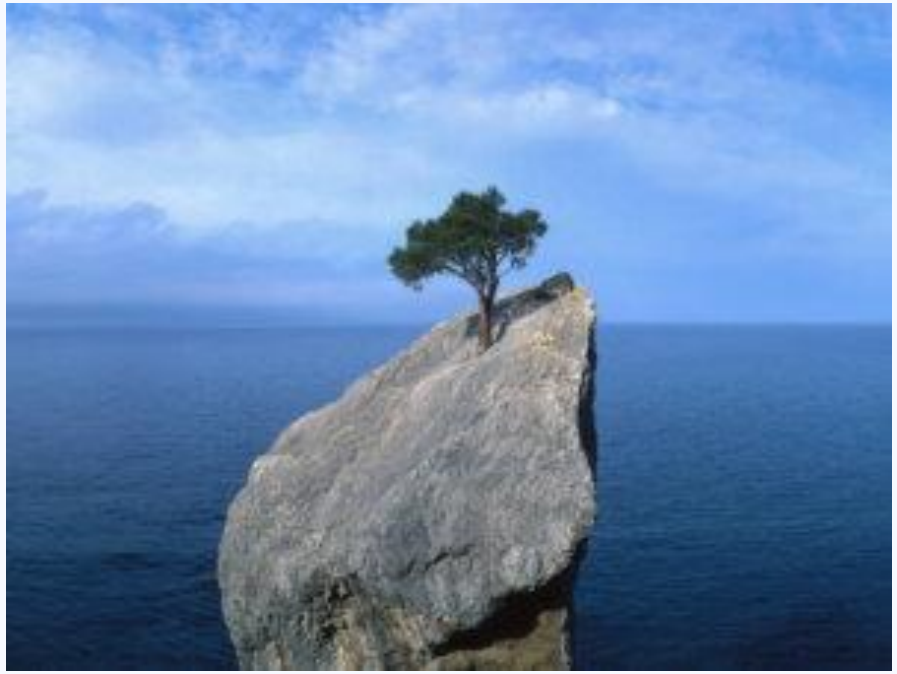
Traffic stays **in-region**;

Improved **diversity**; traffic can still fail over to Internet, if required.

OUR PRIORITIES

1. increasing Incumbent Participation in Canadian Internet Exchanges
2. Fostering Industry and Volunteer Engagement
3. Educating the Peering Community
4. Solidifying Corporate Governance
5. Increasing Market Awareness
6. Effective Organization of Volunteers
7. Developing a Corporate Strategy
8. Keeping Peering Infrastructure Current

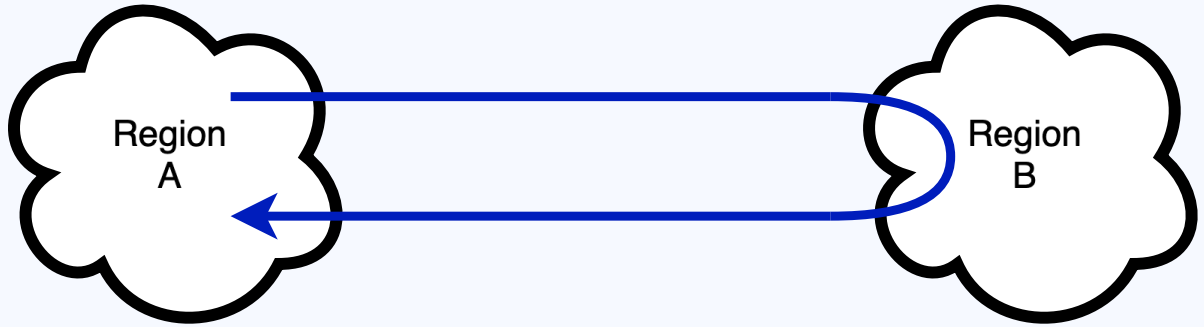
CANADIAN INTERNET RESILIENCE



NETWORK "TROMBONING" IN BC

A network "trombone" occurs when traffic is **looped** through a distant location.

Tromboning reduces regional network resilience, by introducing an **unneeded** dependency.

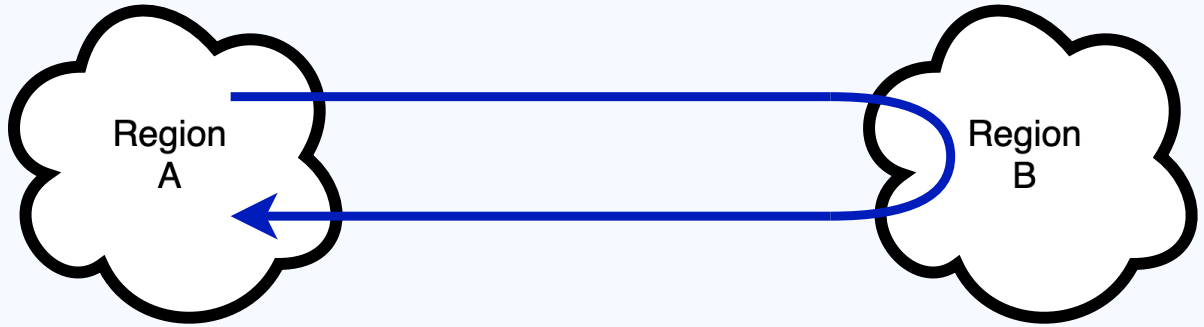


NETWORK "TROMBONING" IN BC

Examples:

A lot of BC-to-BC traffic trombones through the **Seattle** in the US;

A lot of northern BC traffic trombones through the Okanagan region.



OUTAGE EXAMPLES

In February 2020, a **rockslide** in Boston Bar destroyed a single fibre cable. Most Bell customers in the Lower Mainland lost phone service, as call were being switched through Alberta.

The 2021 Pacific Northwest **floods** caused multiple landslides and washed out several roadways, damaging many fibre connections. Connectivity eastward was extremely limited for several days. A lot of links had to be rerouted to the US, and then over to Alberta, and back into BC.

Complete Rogers outage July 8, 2022, for 15 hours. Not strictly a "regional" **outage** but having an entire network go away for a half day is now a risk that must be considered.

Forest **fires** have damaged major fibre cables in BC every year since 2023 (probably earlier too).

RECOMMENDATIONS

Keep network traffic **within** the region, when possible, by using an Internet Exchange.

The Internet Exchange also provides an interconnection **eco-system** that can attract additional service providers to your region.

Internet resiliency is Internet **sovereignty**. If your service depends on another sovereign entity, it is not resilient.

HEAD WINDS

CHALLENGES TO THE USE OF INTERNET EXCHANGES IN BC

New ISPs in Canada can't easily get portable **IPv4** address ranges. They usually must get IPs from their upstream ISP and typically can't use these IPs for Internet Exchanges.

Canada needs to aggressively move towards **IPv6** to give new ISPs a chance to connect to an IX.

CHALLENGES TO THE USE OF INTERNET EXCHANGES IN BC

Low **population** density outside the Lower Mainland.

VANIX has been monitoring public databases for registered networks in BC and looking for **clusters** where a new IX could be founded. Kelowna-Kamloops is the only location we've identified for a second IX in BC at this point.

CHALLENGES TO THE USE OF INTERNET EXCHANGES IN BC

Geography.

While a network in Fort Nelson could buy a 10 Gbps link to Vancouver and connect to VANIX, the **cost** of the link would make it more expensive than Internet Transit.

While Kamloops would be closer, it is still over 1000 km.

LOOKING AHEAD

We're connecting our community with a

CIRA NET GOOD GRANT

Learn about the program
cira.ca

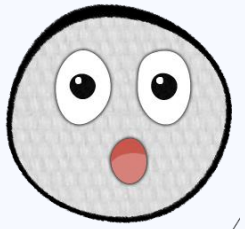
net good BY cira

#WeAreNetGood

OKANAGAN IX PLAN OF INTENT

VANIX is **founding a new IX** in the Okanagan region.

We are looking to **assemble a few anchor networks** to help launch the IX.



OKANAGAN IX PLAN OF INTENT

It will take several years for a new IX to achieve a **critical mass** of networks and traffic.

It took VANIX more than **10 years to grow from 1 Gbps to 300 Gbps** of participant traffic.

OKANAGAN IX PLAN OF INTENT

If you are interested in participating either as a network, sponsor or volunteer, please reach out to **info@vanix.ca**

Or if you would like information on how to start your own IX. We are a not-for-profit, so we don't have any trade secrets to protect.

REFERENCES

REFERENCES

- ***"Assessment of Rogers Networks for Resiliency and Reliability Following the 8 July 2022 Outage – Executive Summary"***
  - https://crtc.gc.ca/eng/publications/reports/xona2024.htm

- ***"Guidelines for Evaluating Internet Access Resilience in Canada"***
  - https://ised-isde.canada.ca/site/spectrum-management-telecommunications/sites/default/files/attachments/2023/CFDIR-Guidelines-Evaluating-Internet-Access-Resilience-v1-ENG.pdf

Questions?

You can also email questions to sjamieson@vanix.ca or tsamplonius@vanix.ca