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Peering Trends

We need your thoughts

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Overall Trends

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Capacity Expansion: IXPs are experiencing significant growth in capacity and traffic, driven by increased demand. This is leading to the deployment of higher port speeds (e.g., 100Gbps, 200Gbps, 400Gbps) to accommodate this growth.

Content Delivery Evolution: CDNs are playing a crucial role in the IXP ecosystem, but their peering policies are evolving, with some becoming more selective. There's also a growing emphasis on local content hosting and delivery.

Service Expansion: IXPs are expanding their service offerings beyond traditional interconnection to include services like cloud connectivity, DDoS mitigation, and route servers.

Diversification of Members: IXPs are seeing increased involvement from a wider range of organizations beyond traditional ISPs, including universities, enterprises, public sector entities, and CDNs.

Overall Trends

Increased Integration: There's a trend towards closer integration between IXPs and data centers

Automation and SDN: There's a growing discussion around the role of automation and Software-Defined Networking (SDN) in IXP operations, with a focus on improving efficiency and security.

Emphasis on Reliability and Trust: Reliability and trust are increasingly important for IXP success.

Regional Development: There are unique trends in different regions, with developing markets facing challenges in attracting larger players and a need for support.

SWOT Analysis

Strengths

1. Capacity Growth: IXPs are experiencing significant growth in capacity and traffic, driven by factors like increased video streaming and cloud adoption. This reflects increased reliance on IXPs.

2. Technological Advancements: There's a move towards higher port speeds (e.g., 100Gbps, 200Gbps, 400Gbps) and discussions around the role of SDN and automation in IXP operations.

3. Value Proposition: IXPs offer value through improved connectivity, reduced latency, and cost savings, making them attractive to various participants.

4. Community Building: IXPs facilitate collaboration and peering among different network operators and content providers.

5. Growing diversity of participants: IXPs are seeing increased involvement from various organizations, including ISPs, CDNs, hyperscalers, universities, enterprises, and public sector entities.

Weaknesses

1. Uneven Development: Challenges exist in attracting larger operators and content providers to smaller, community-led IXPs, especially in developing markets.

2. Hesitancy of Major Operators: Some tier-one operators are reluctant to peer and open their CDN prefixes, limiting potential benefits.

3. Complexity in Some Ecosystems: The African ecosystem, for example, is described as "somewhat complicated," posing challenges for IXP development.

4. Financial Sustainability Concerns: Ensuring the long-term financial sustainability of IXPs, particularly in regions like Africa, is a challenge.

5. Need for More Automation: Many IXP operations are still manual, highlighting a need for increased automation to reduce human error and improve efficiency.

Opportunities

1. Service Diversification: IXPs have opportunities to expand their service offerings beyond traditional interconnection, including cloud connectivity, DDoS mitigation, and route servers.

2. Closer Integration with Data Centers: There are opportunities for closer integration between IXPs and data centers to enhance connectivity and services.

3. Increased Regional Interconnection: Opportunities exist for increased interconnection between IXPs within regions to improve connectivity and reduce costs.

4. Leveraging Emerging Technologies: Embracing emerging technologies like SDN and automation can improve IXP operations, efficiency, and security.

Threats

1. Market Concentration: There are concerns about potential market concentration and dominance as the IXP ecosystem evolves.

2. Evolving Peering Policies: Shifts in CDN peering policies, such as increasing minimum traffic limits, could pose challenges for some IXPs.

3. Security Risks: IXPs face security challenges, including the need to stay updated with security patches and address vulnerabilities.

4. Competition: Increased competition, including from commercial IXPs, could threaten the sustainability of smaller or community-led IXPs.

5. Dependence on a healthy internet ecosystem: If the public internet falls, it may negatively impact IXPs.

SWOT Analysis

IXPs and the Internet Society

Perception of the Internet Society

Respondents generally acknowledge the Internet Society's positive contributions to the IXP ecosystem, particularly in Africa.

- The Internet Society is recognized for its role in knowledge sharing, training, and supporting the emergence of IXPs.
- There's a call for the Internet Society to continue its work but also to enhance its efforts, especially in building political ties within countries to facilitate project success.

Expected Role of the Internet Society

Respondents suggest that the Internet Society should play a more active role in supporting and developing IXPs globally.

Specific suggestions include:

- Providing technical guidance and best practices.
- Supporting smaller IXPs in adding value-added services like route views, root server deployment, recursive DNS resolvers, and time servers.
- Facilitating local peering discussions through events and workshops.
- Developing an IXP toolkit and mediation tools.
- Helping IXPs in Africa to create content and connect with international content providers.
- Supporting the sustainability of IXPs, particularly in Africa, by helping them become self-financing.

Collaboration with the Internet Society

Respondents expressed a desire for better collaboration between the Internet Society, IXPs, and IXP operators to achieve shared goals.

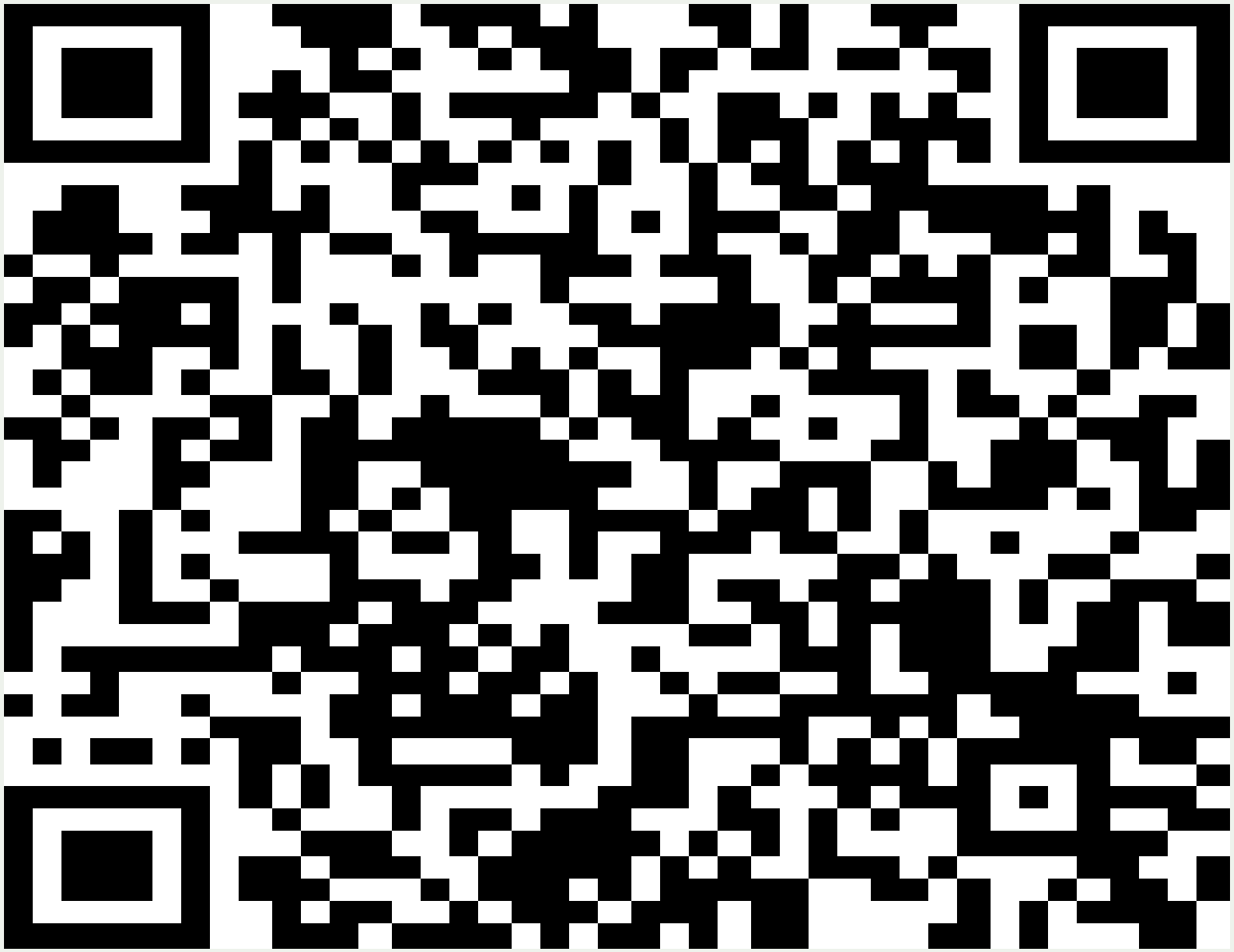
Suggestions for improved collaboration include:

- Integrating support activities into the Internet Society's methodology to aid the potential IXP community during the peering onboarding process.

- The Internet Society being perceived as neutral and providing workshops and access to experts in the field to assist with peering questions.

What did we miss?

Should you prefer to share in private and in confidence, please email Kreitem@isoc.org



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