

SOME PAST AND PRESENT GROWTH ISSUES AT IXPs IN EUROPE

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NAPLA 2009 / LACNIC XII - PANAMA CITY, PANAMA - 26 MAY 2009

The European IXP scene today

- Currently 110 active IXPs in Europe
- 290 locations in 100 cities across more than 30 different countries
- 2.8 Tbps of peak traffic (with 3 IXP above 400 Gbps and another 5 around 100 Gbps)
- 4.600 IXP participants
- 700 ASNs present at > 1 IXP in Europe
- 20 ASNs present at ≥ 10 IXPs in Europe

A few notes!

1. The following slides are simply my observations and are not meant to be used as 'advice' for change at your IXP!
2. Europe is different to Latin America
3. A multitude of different IXP models operate in Europe today
4. I am focusing on customer/traffic growth rather than infrastructure growth issues

Growth issues (I)

1. IXP staff resources: under staffed, volunteer based, “wrong” staff
2. Restrictions at IXPs e.g.
 - Only allowing local/national ASNs
 - No remote connections
 - No selling transit services over IXP

Growth issues (2)

3. High joining fees

4. Non 'neutrally' run IXP

5. Local/regional competition

- Other IXPs
- Low local transit prices

6. Lack of 'education'

- ISPs don't know what an IXP is!

Resolving growth issues (I)

People: There must be a 'want' or drive from the IXP staff and participants

- Get some marketing personnel
- Encourage 'human' peering:
participants need to get to know each other to better facilitate peering

Resolving growth issues (2)

Build inter-IXP relationships:

- Learn and share experience with other IXPs in your region
- The potential to exchange participants
- Invite and get invited to other IXP's general or annual meetings
- Organize events with other IXPs

Resolving growth issues (3)

Market and educate

- Present and participate at relevant Internet related events wherever you can
- Get your participants to spread the word of your IXP to others (“Connected to \$IX”)
- Work with your colocation operators
- Hold local IXP & peering workshops

Resolving growth issues (4)

Make it easier to join/reach your IXP:

- Ease up on joining restrictions
- Reduce paper work and joining procedure
- Abolish or reduce joining and annual fees
- ‘Try before you buy’ policy (3 months free)
- Have multiple colocations
- Allow remote peering (pseudowire connects)

Resolving growth issues (5)

Additional services at your IXP:

- Hosting Root-DNS servers and TLD name servers
- Private Interconnection assistance
- Private peering VLANs
- Remote hands 24/7
- Allow the selling of services by members over the IXP (possibly on a separate VLAN)

Resolving growth issues (6)

Give away free or reduced priced ports to those that you are trying to attract!!

- Those with high traffic volumes or expensive to reach ASNs
- Will this help your current participants? or your IXP as a whole? Ask your participants!

Resolving growth issues (7)

What can NAPLA do?

- Bring IXPs together: Physically or via mailing lists. Build the community
- Store information IXPs can share: Switch database, route server DB, other information about IXPs.
- Assist IXPs to get in contact with one another
- Provide information about IXPs to the public (Location, traffic, participants, services, etc.)

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