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Oct 5th 2006

Euro-IX update

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Serge Radovcic

05/10/2006

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What is Euro-IX?

- European Internet Exchange Association
- Formed in May 2001
- The association's aim is to further develop, strengthen and improve the Internet Exchange Point (IXP) community.
- Since January 2005 Euro-IX has invited IXPs outside of Europe to join the association

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Euro-IX affiliated IXPs

- 38 affiliated IXPs:
  - Europe: 32
    - From 31 cities in 20 countries
  - Asia: 3
    - JPNAP, JPIX & NIXI (India)
  - USA: 3
    - Terremark, Switch and Data & Equinix

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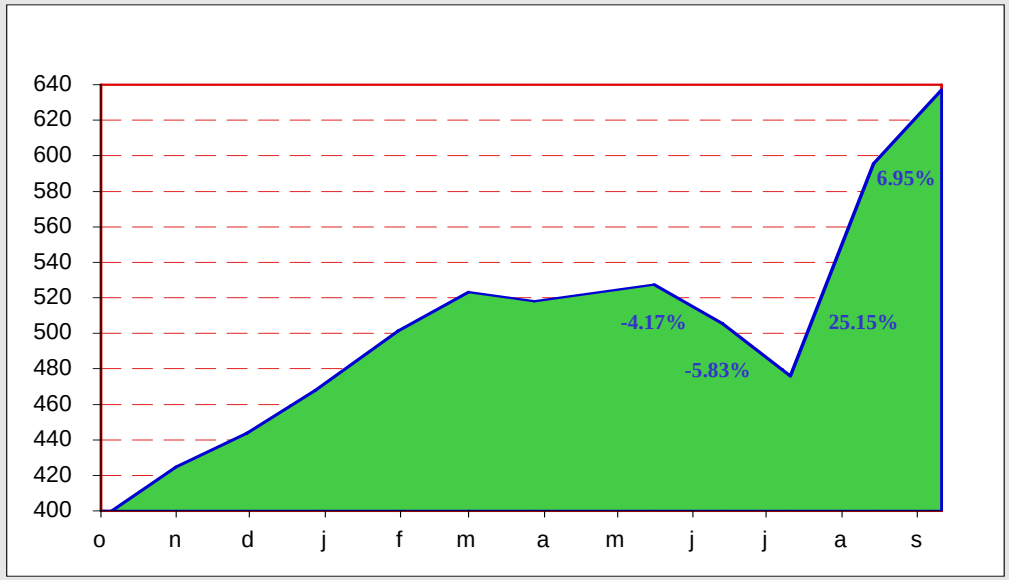
Euro-IX IXP statistics

- Combined European member IXP peak traffic has risen from:
  - **392 Gbps** in Oct ’05 to **518 Gbps** in Apr ’06 (+32% in 6 months)
  - **518 Gbps** in Apr ’06 to **637 Gbps** in Oct ‘06
    (119 Gbps or 23% increase in past 6 months)



- 245 Gbps or 62% increase in the last 12 months
- A ‘record’ traffic increase of 25.15% in the month of August

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Euro-IX Patrons

- Since 1st of July 2006 Euro-IX invited industry related (non-IXPs) to become affiliated with Euro-IX as Patrons
- The Patronage proposal is aiming to build a stronger and more intimate relationship between IXPs and switch vendors (as well as other industry related organisations)
- Our current patrons:
  - **Force10 Networks**
  - **Cisco Systems**
  - **Glimmerglass**
  - **Foundry Networks**
- Interested? Talk to me serge@euro-ix.net

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Euro-IX Forums

- Euro-IX Forums are designed to bring together all Euro-IX member IXPs in one location to discuss relevant topics of interest.

- Our last forum in Dublin brought together some 30 IXPs from 21 different countries

- **The 9th Euro-IX Forum**:
  Date: 23 - 24 Oct 2006
  Location: Frankfurt Germany
  Host: DE-CIX

29 IXPs have already registered to attend. Please contact me if you are an IXP whom is interested in attending.

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Joining Euro-IX

- If there are any IXPs that would like to join Euro-IX:
  - Please take a look at:

http://www.euro-ix.net/ixp/joining/

or contact

Serge Radovcic: serge@euro-ix.net

Some more statistics.....

- I have been gathering statistics from not only the Euro-IX member IXPs but from all of the known ‘IXPs’ in Europe.

- Total number of known IXPs is **99 in 66 cities** in some **31 European countries**

- France: 13 IXPs (9 in Paris)
- Germany: 12 IXPs
- United Kingdom: 12 IXPs (8 in London)

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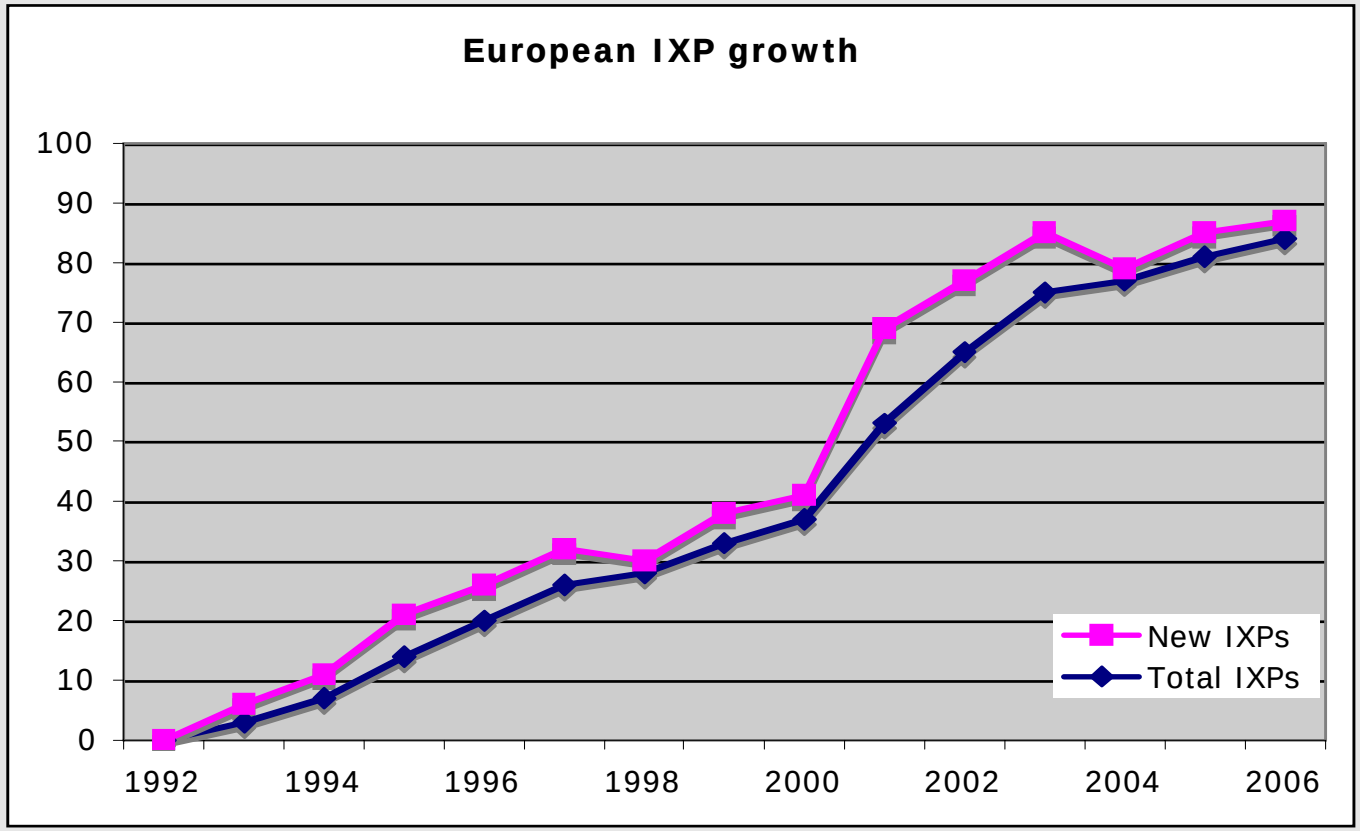
IXP growth in Europe (1)



2001 +16 IXPs
2002 +12 IXPs
2003 +10 IXPs

} These 3 years saw the establishment of 45% of today's IXPs!!

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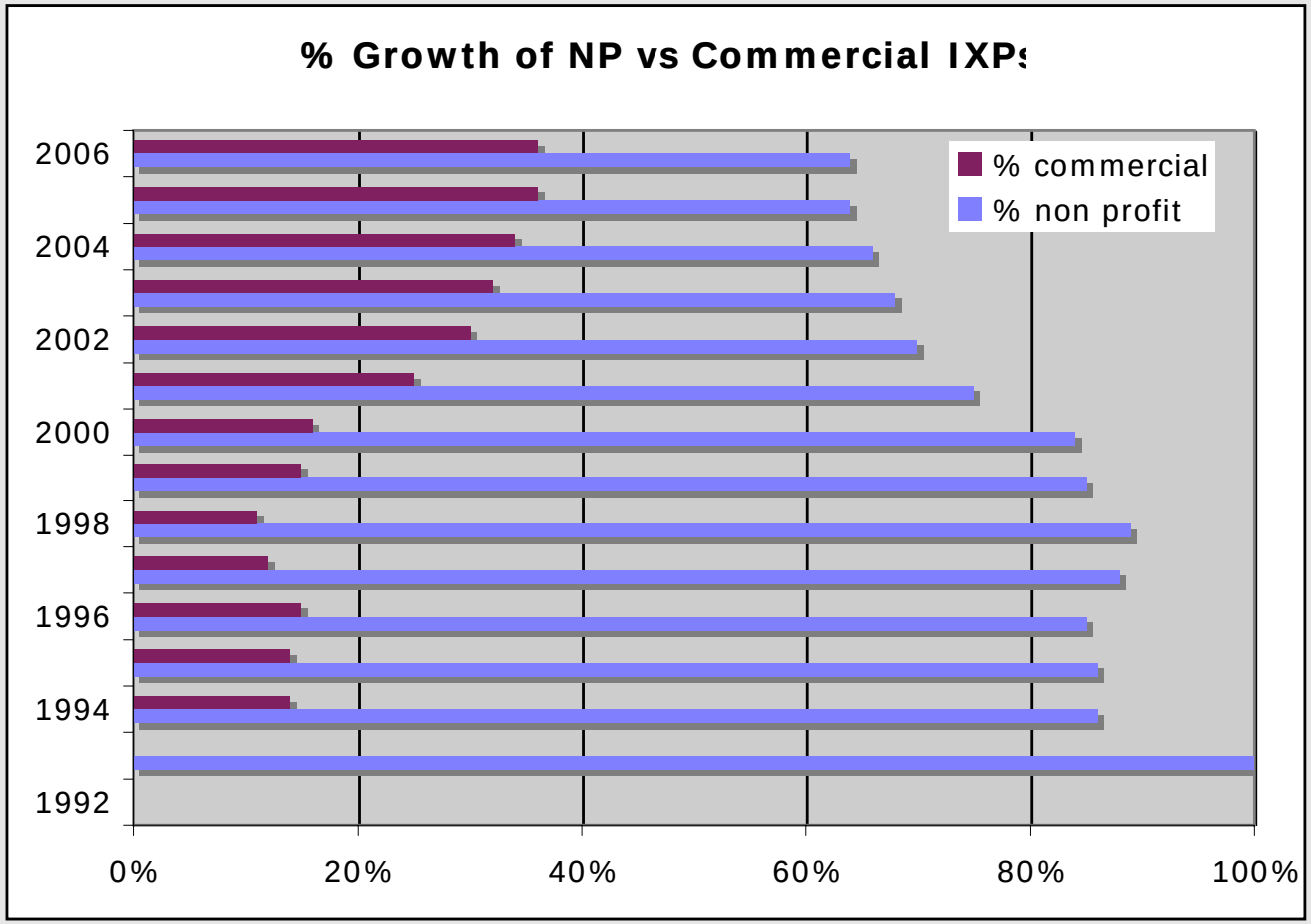
IXP growth in Europe (2)



Today 1 in 3 IXPs are of a commercial nature

Aggregated peak traffic per country

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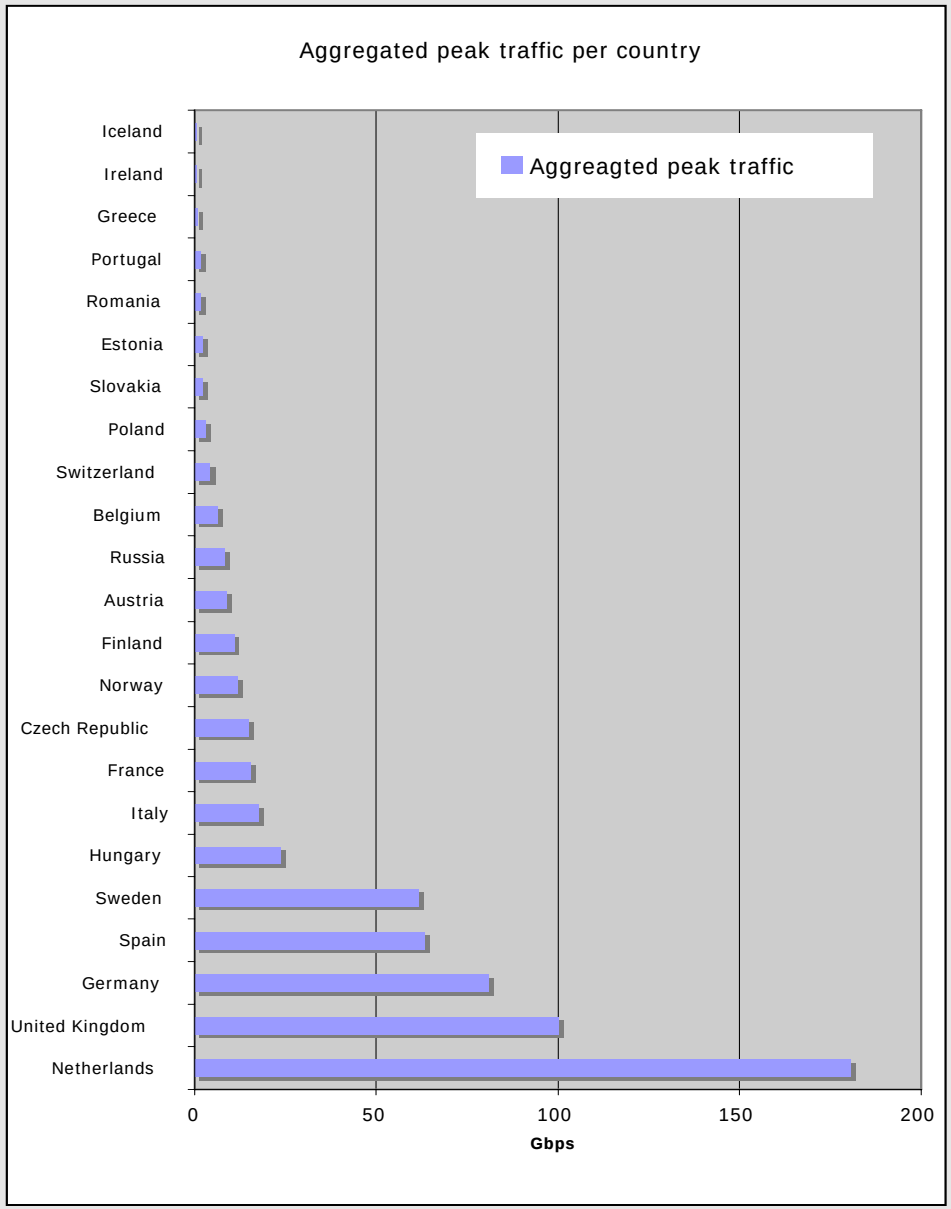

Aggregated peak IXP traffic per city

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Ranking	City	Country	Traffic Gbps	% of total
1	Amsterdam	Netherlands	179,40	28,79%
2	London	United Kingdom	99,91	16,04%
3	Frankfurt	Germany	72,97	11,71%
4	Madrid	Spain	63,00	10,11%
5	Stockholm	Sweden	40,17	6,45%
6	Budapest	Hungary	23,80	3,82%
7	Paris	France	15,60	2,50%
8	Prague	Czech Republic	15,00	2,41%
9	Oslo	Norway	12,00	1,93%
10	Milan	Italy	11,90	1,91%
11	Malmoe	Sweden	11,10	1,78%
12	Helsinki	Finland	10,93	1,75%
13	Vienna	Austria	8,95	1,44%
14	Moscow	Russia	8,24	1,32%
15	Gothenburg	Sweden	6,57	1,05%
16	Brusells	Belgium	6,50	1,04%
17	Zurich	Switzerland	4,30	0,69%
18	Munich	Germany	4,00	0,65%
19	Sundsvall	Sweden	3,96	0,64%
20	Torino	Italy	3,10	0,49%

Note: Captured at the end of August 2006 from publicly viewable IXP traffic statistics. Does not include PI traffic.

IXP traffic per million inhabitants

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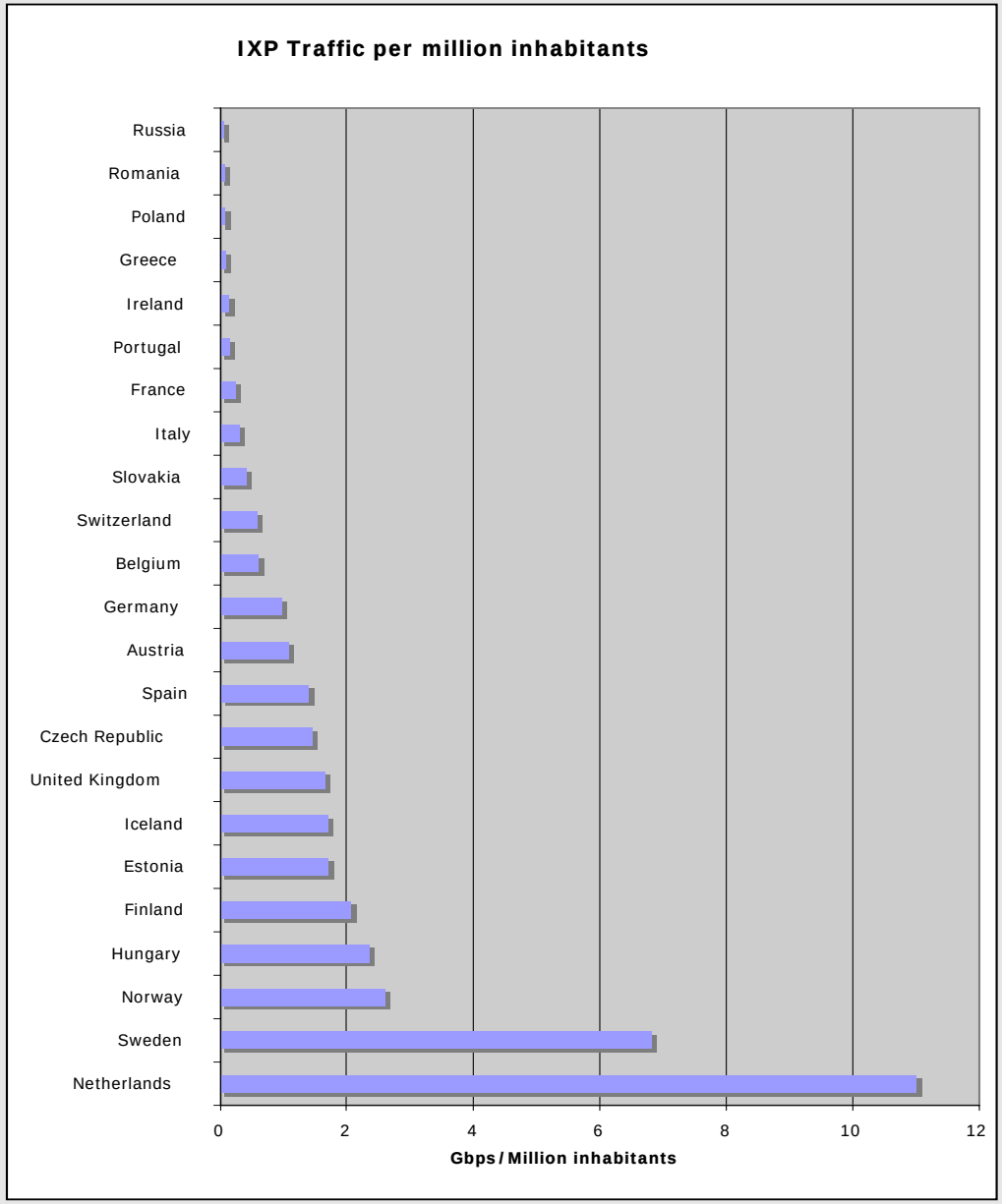

Gbps/Million inhabitants

Average peak traffic per ASN per country

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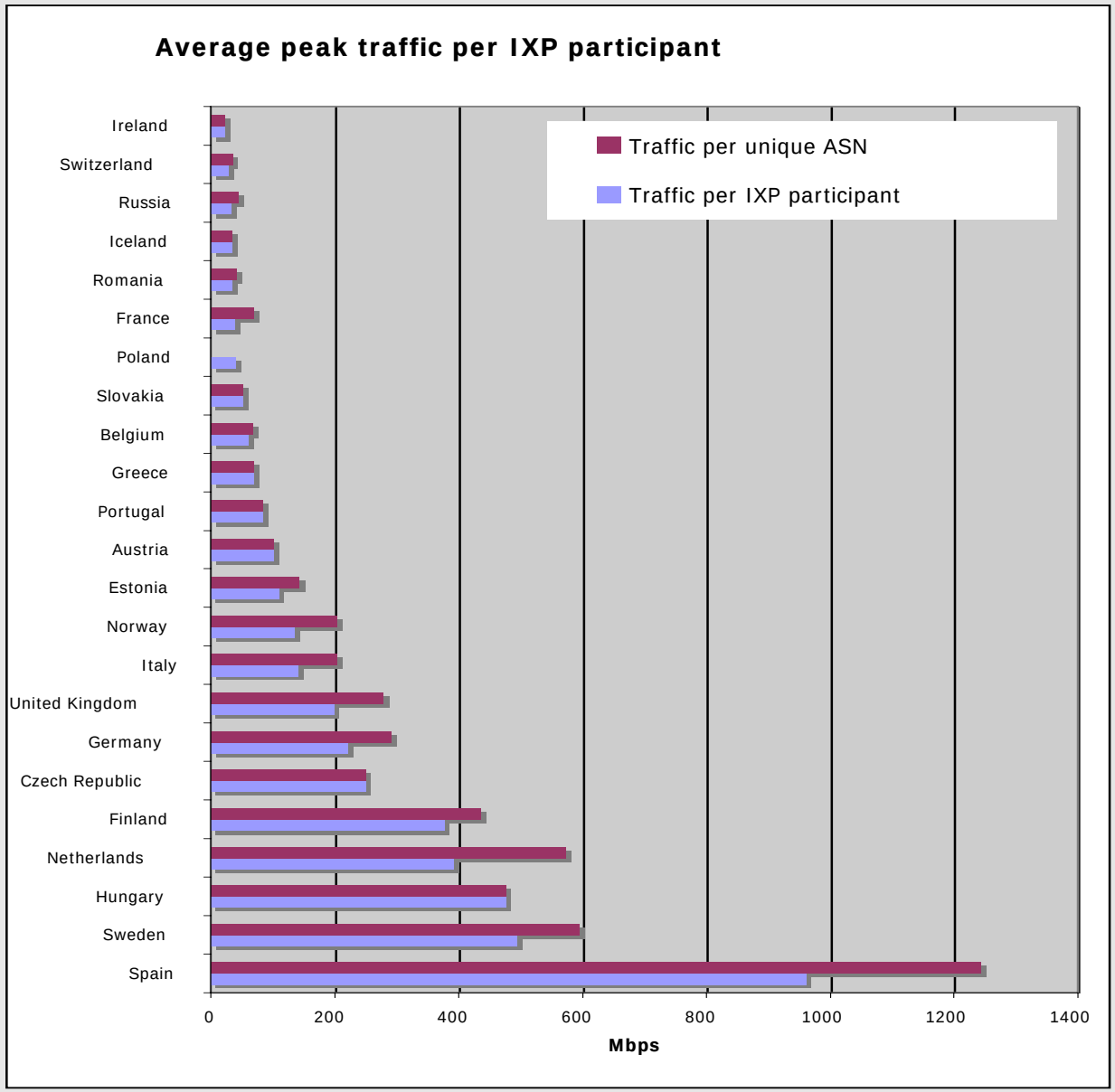

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ASNs present at multiple European IXPs

No IXPs	No of ASNs	ASN
21	1	8220
18	1	2686
16	1	174
15	3	702, 6830, 8928
14	1	4589
12	2	5400, 13237
11	3	286, 3257, 3303
9	7	-
8	8	-
7	7	-
6	20	-
5	25	-
4	46	-
3	83	-
2	221	-
> 1 IXP	**429**	

53% of European IXP participants peer at more than one European IXP while the remaining 47% only peer at one European IXP

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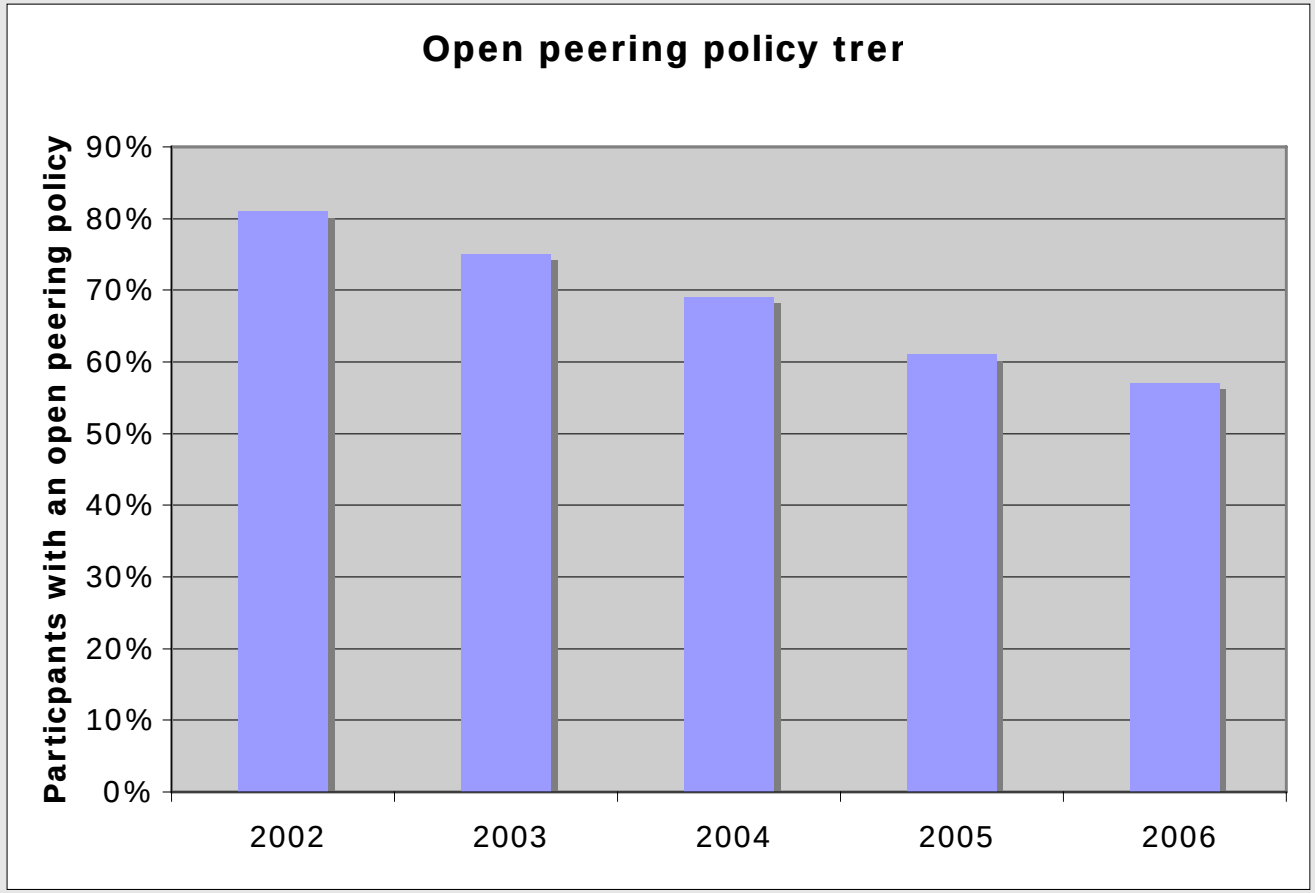
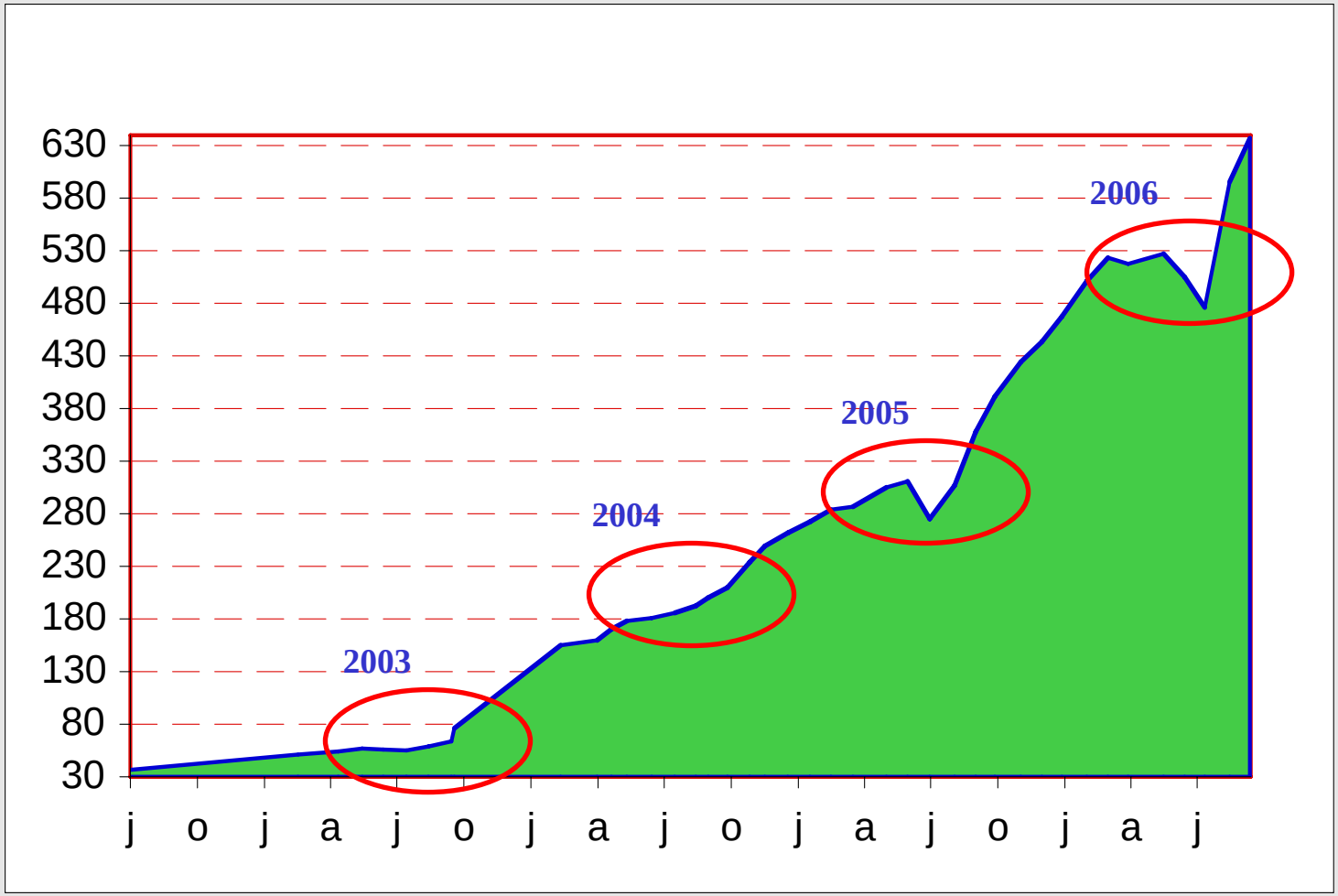
‘Open’ peering policy trend



Trend in IXP summer traffic (1)



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Trend in IXP summer traffic (2)

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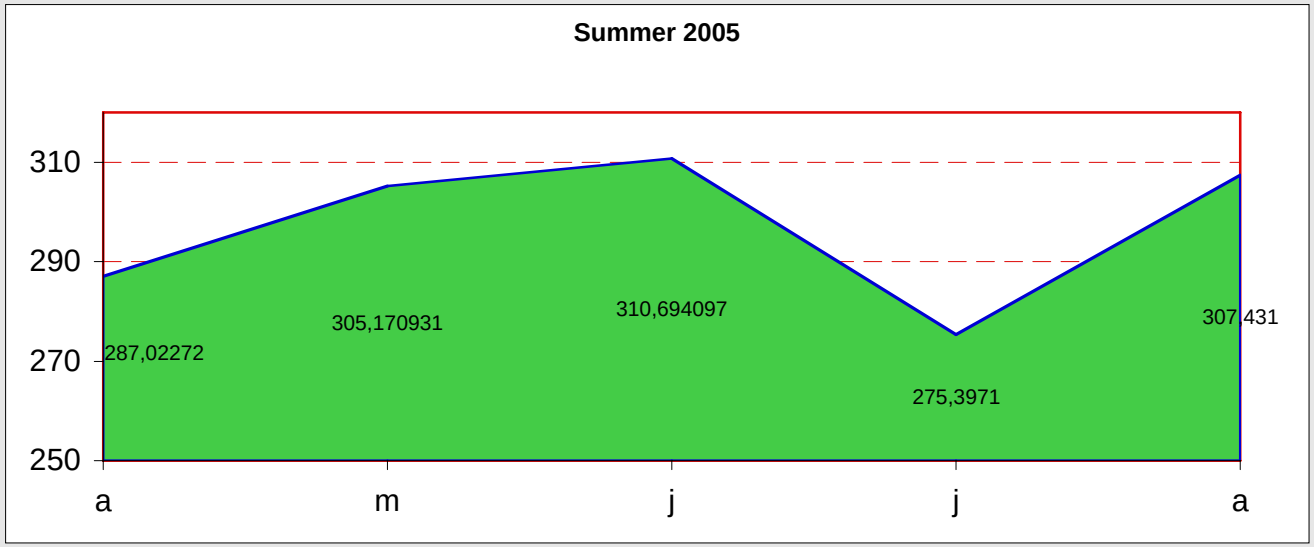

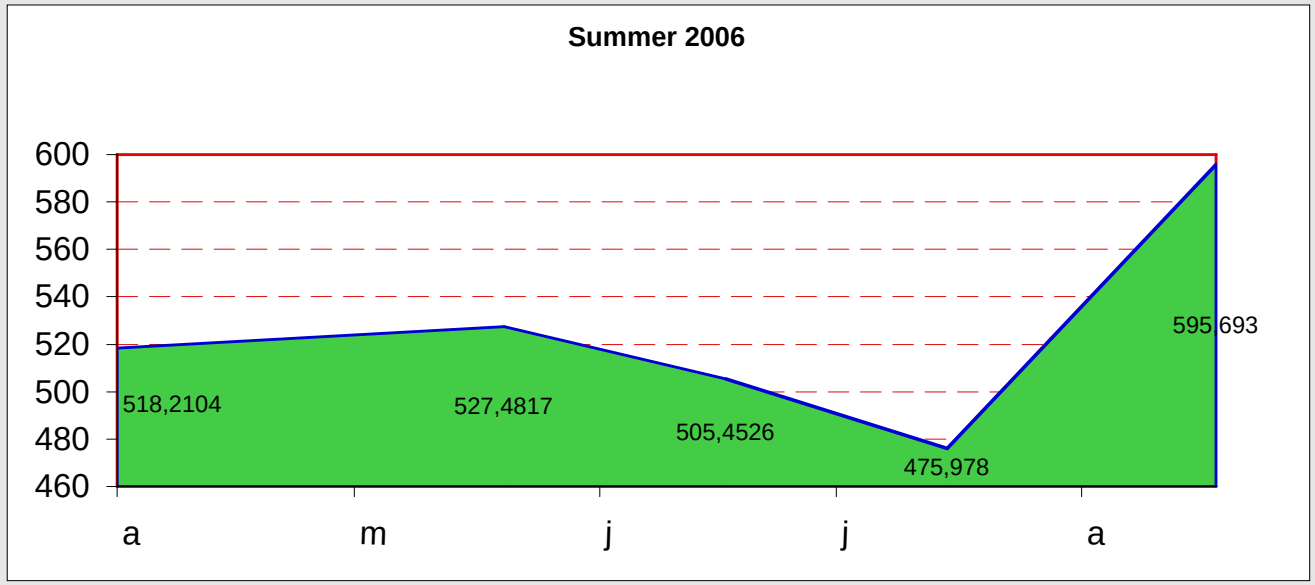

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Thank you

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info@euro-ix.net