Role of Peering in Building the Internet of Tomorrow

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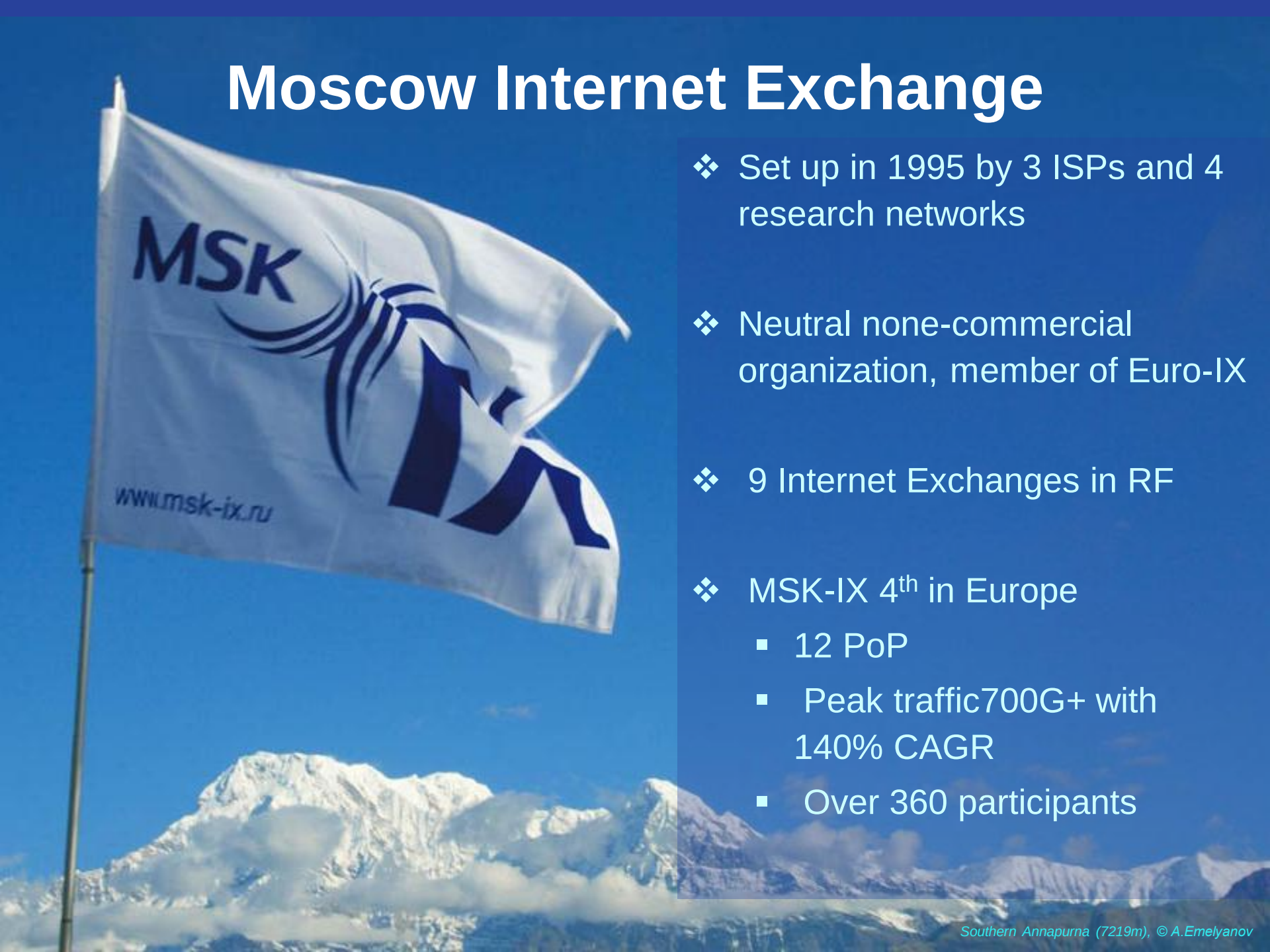
Moscow Internet Exchange

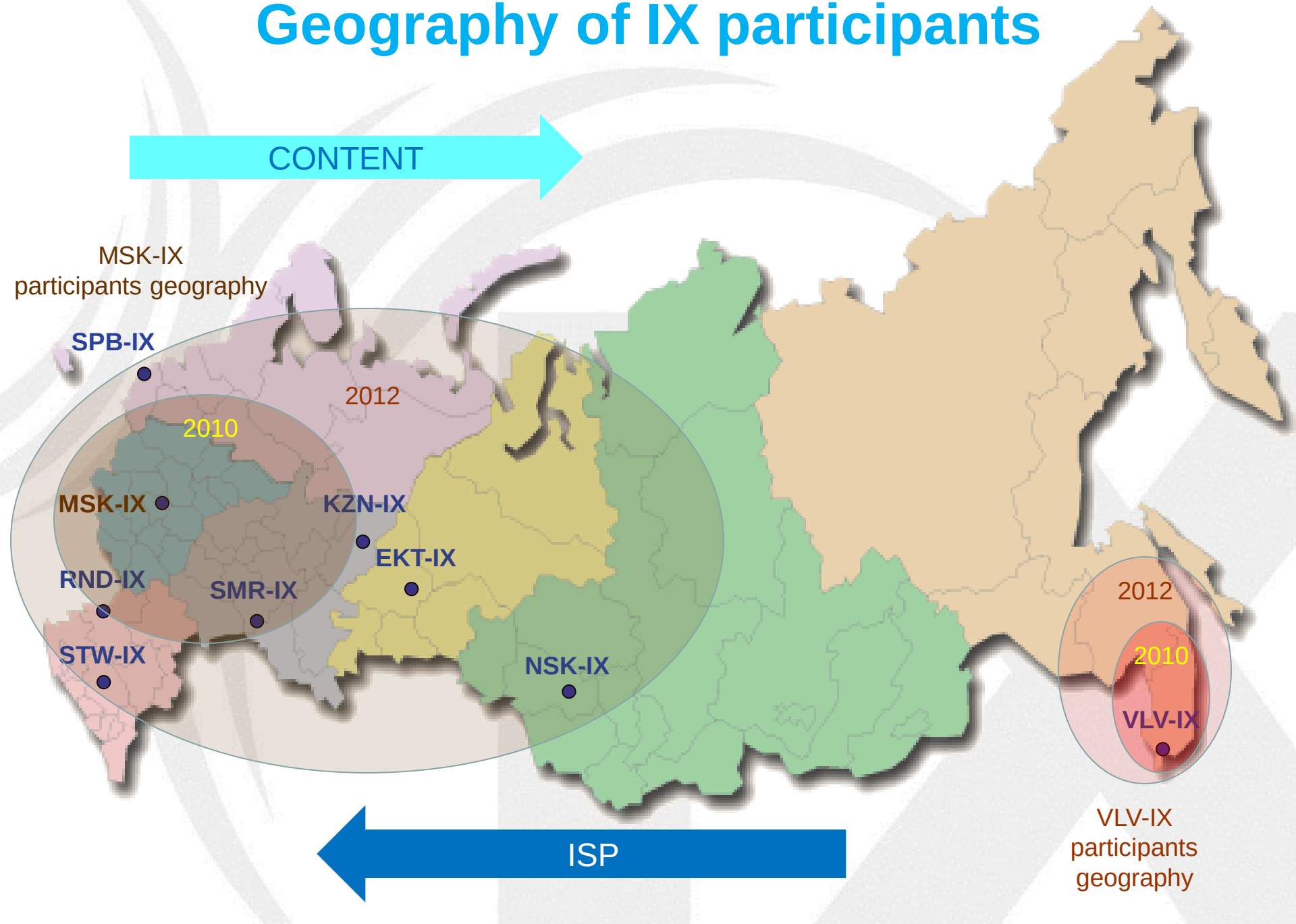


- Set up in 1995 by 3 ISPs and 4 research networks
- Neutral none-commercial organization, member of Euro-IX
- 9 Internet Exchanges in RF
- MSK-IX 4th in Europe
  - 12 PoP
  - Peak traffic700G+ with 140% CAGR
  - Over 360 participants

Southern Annapurna (7219m), © A.Emelyanov

IX.ru across Russia

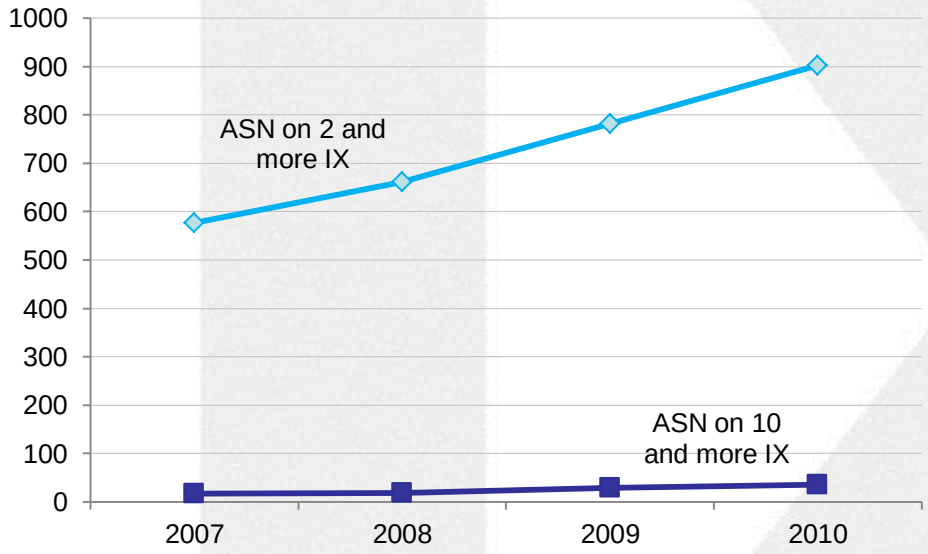
Geography of IX participants



Traffic localization

- **Our participants' data:**
  - ✓ **60% on MSK-IX for large financial corporation headquartered in Moscow;**
  - ✓ **27-53% per city through 4 regional IXes for large ISP *(varies from city to city)***

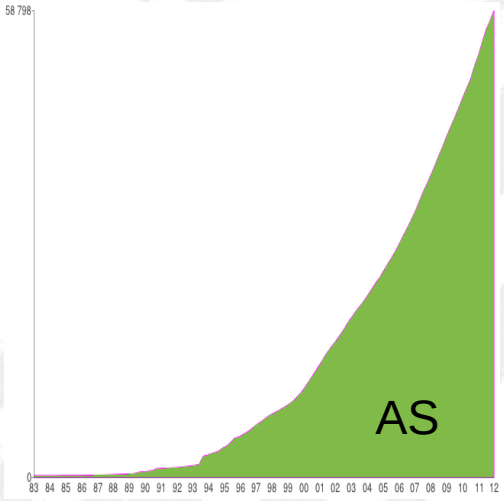
- **Euro-IX data shows growing number of ASN connected to 2+ IX**

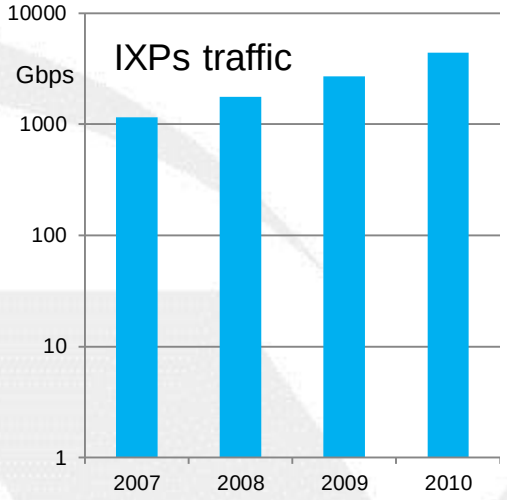


As per data of Euro-IX, ER-Telecom and Alfa-Bank

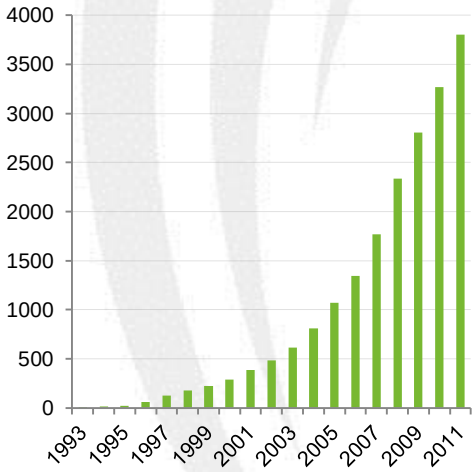
ASN and IXP traffic

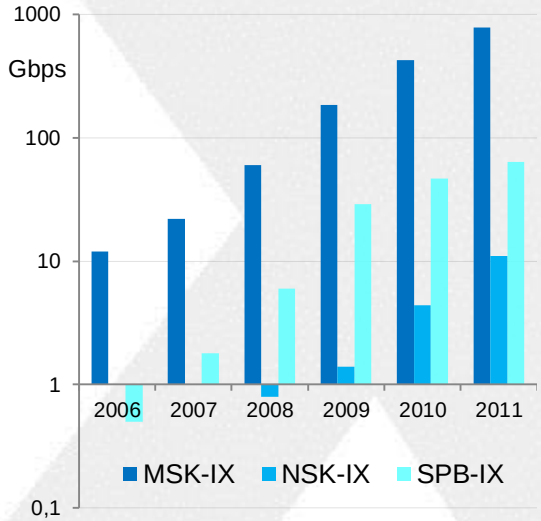
World





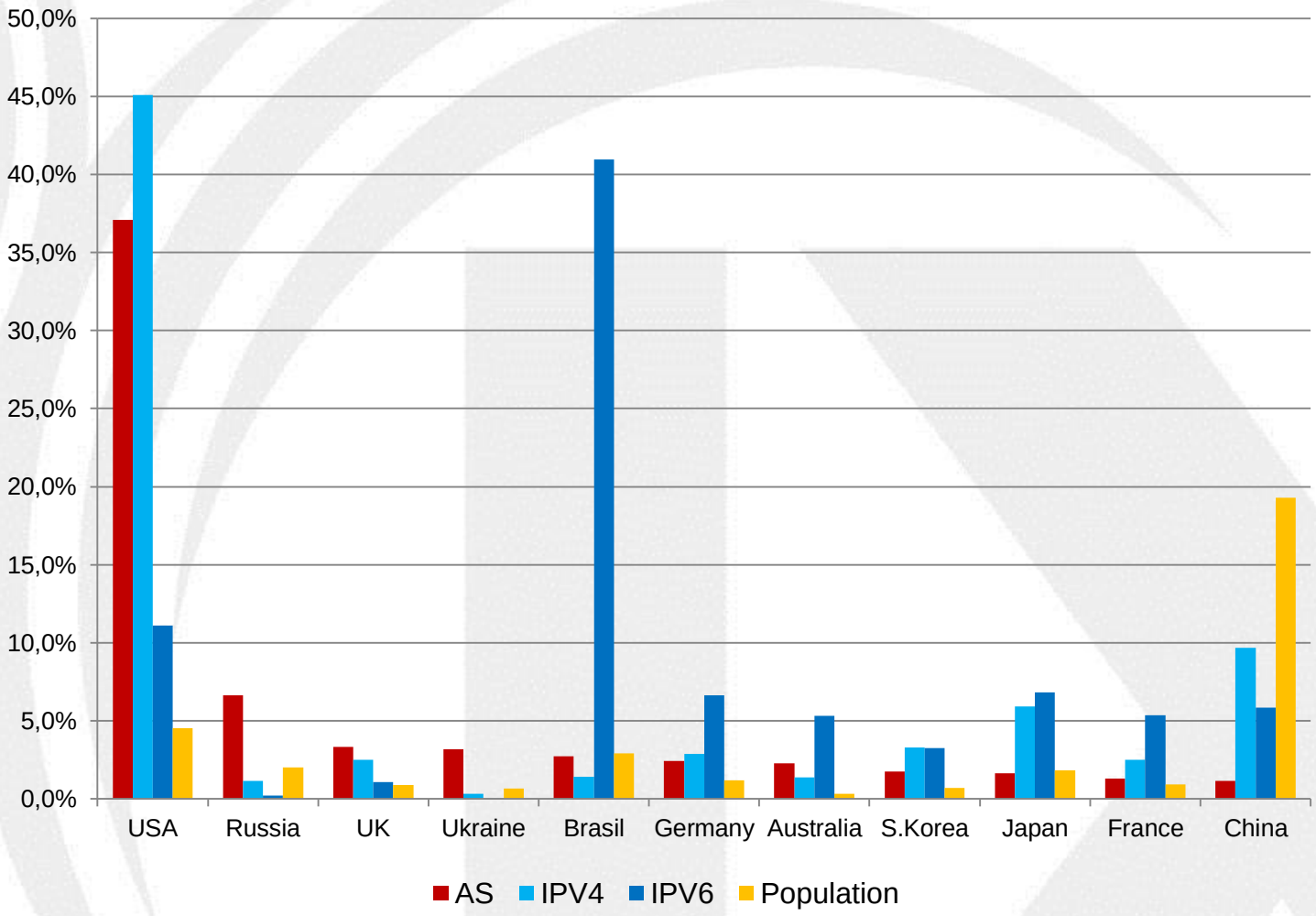
Russia





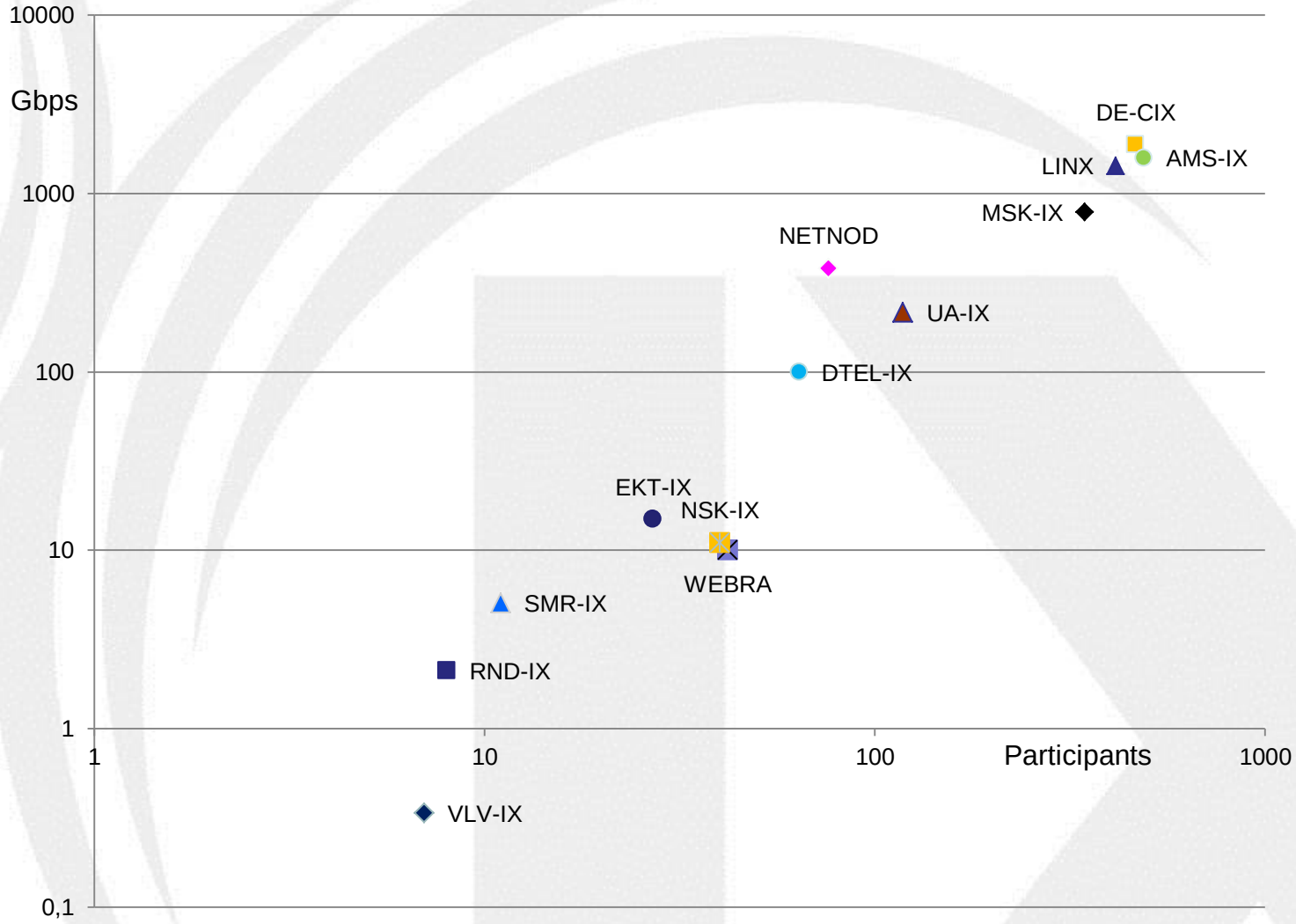
As per data of RIR Delegations & RIPE NCC Allocations, MSK-IX and Euro-IX

Resources of Internet



As per data of RIR Delegations & RIPE NCC Allocations & CIA

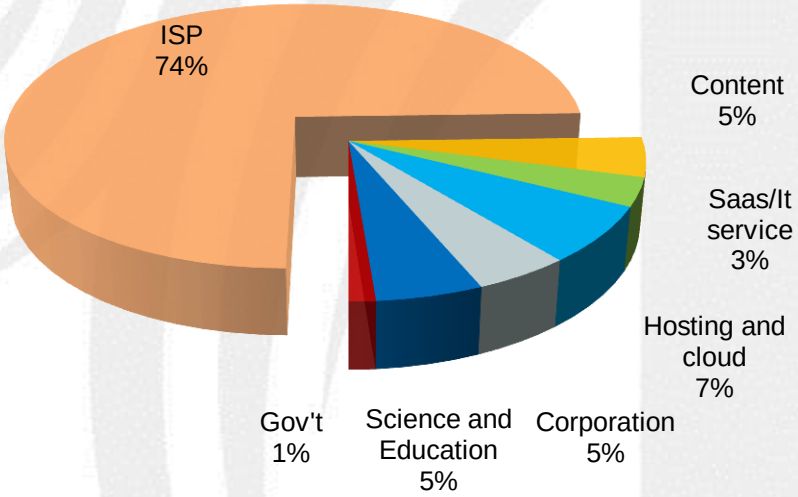
Internet eXchanges



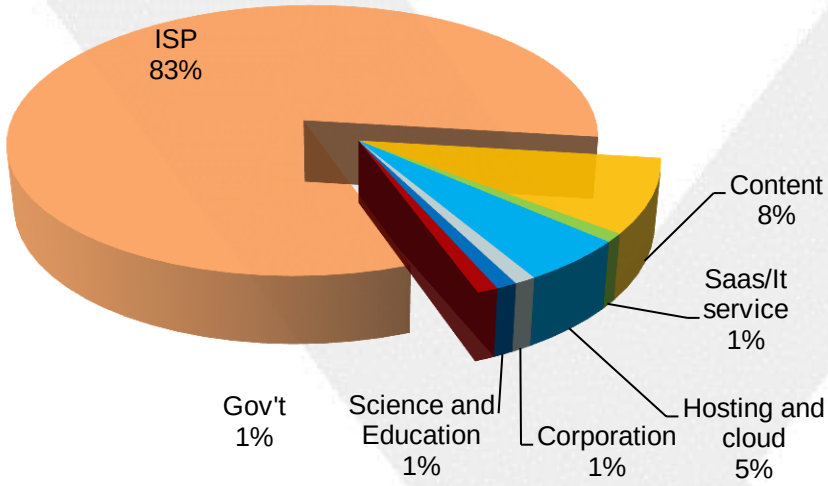
IX participants

Based on MSK-IX statistics

Traffic split



Participants split



Priorities of IX participants

ISP

- **Attitude to IX:** business
- **Interested in:** subscribers and cooperation within industry
- **Priorities:** cost – speed - uptime

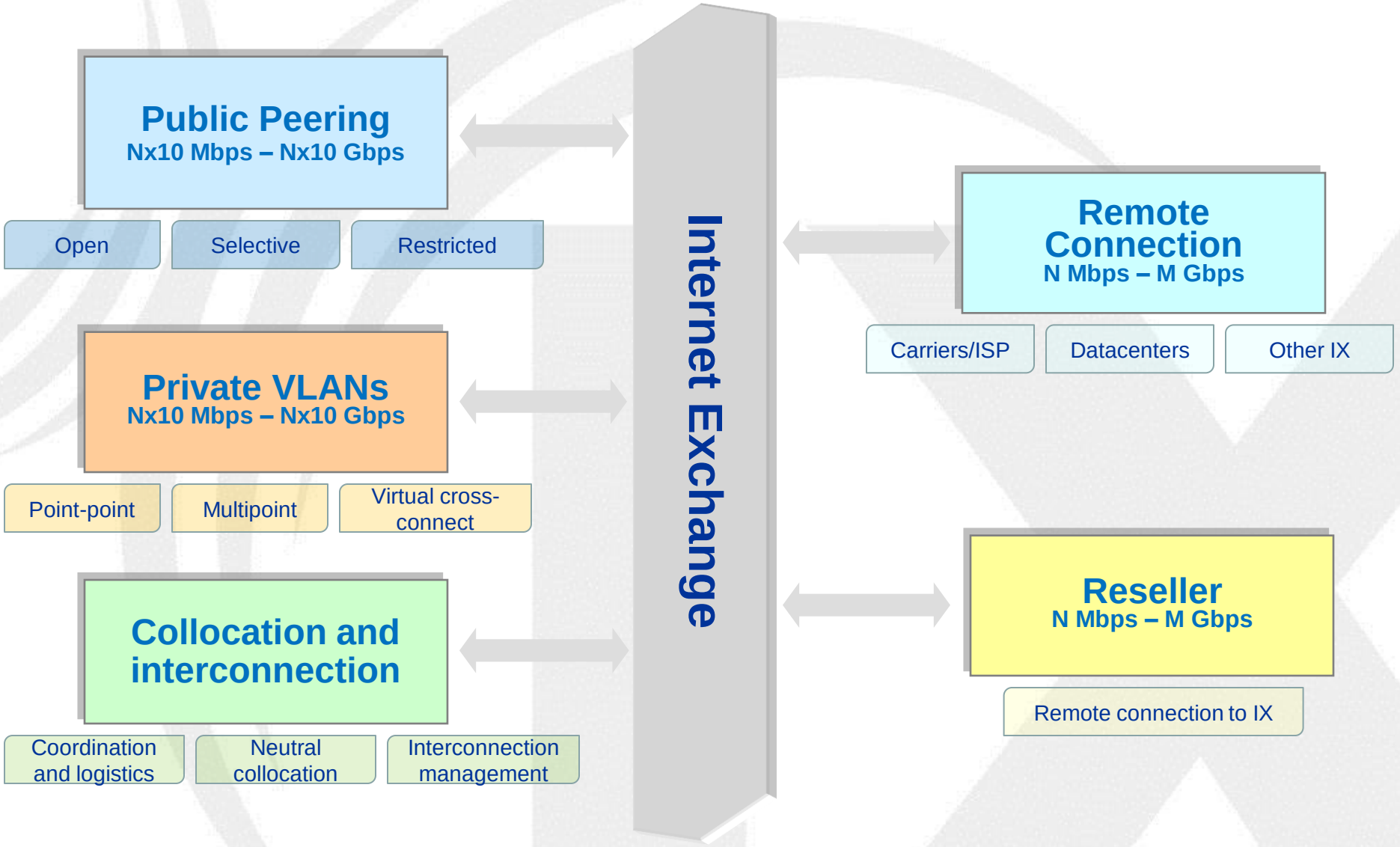
Internet businesses

- Consumer
- Internet users (world)
- Min latency & max speed – uptime - cost

Corporate Networks

- Consumer
- Communication with clients and business partners
- Uptime – min latency & max speed - cost

IX services

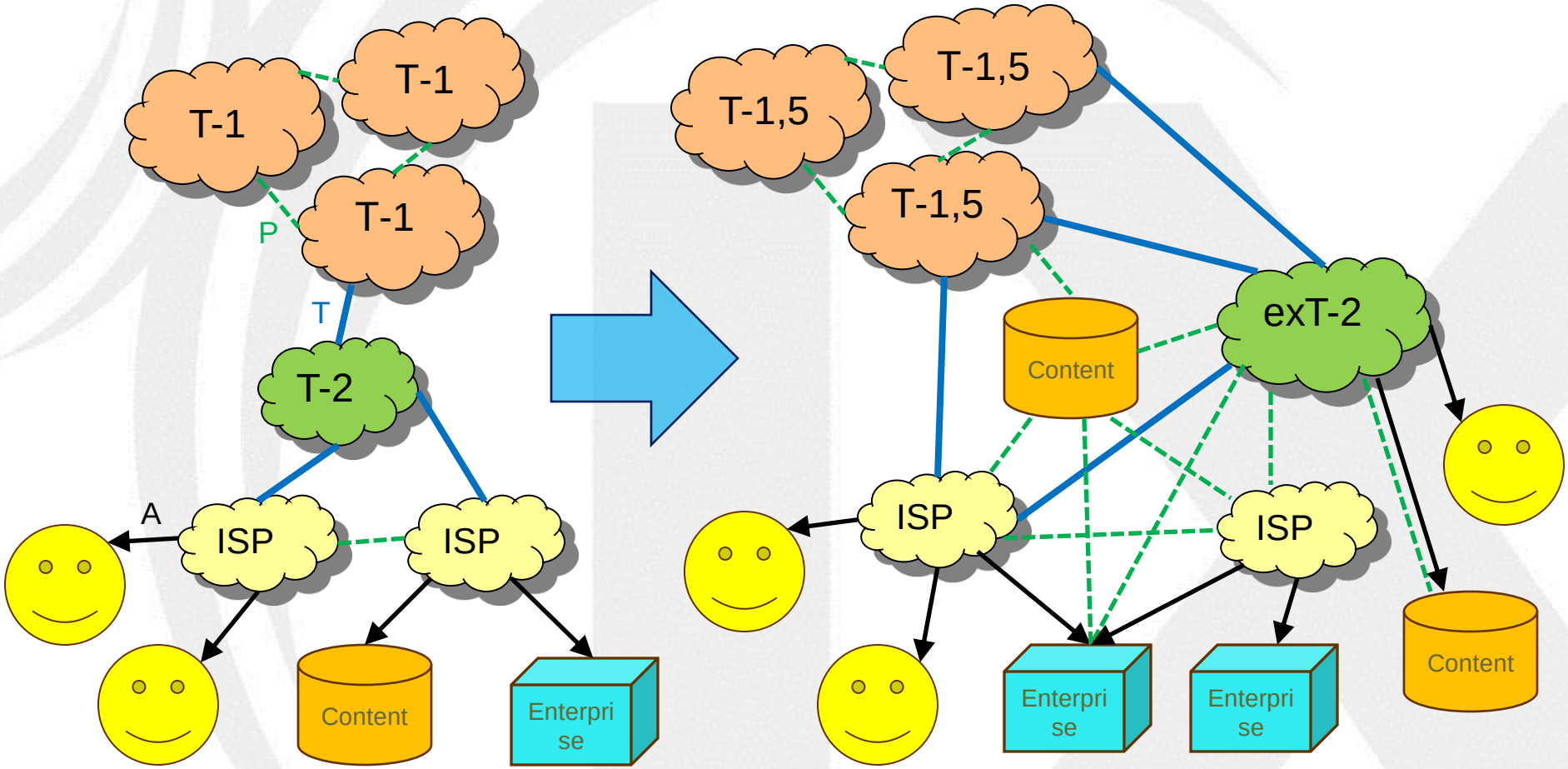

Public Peering
Nx10 Mbps – Nx10 Gbps
Open
Selective
Restricted
Private VLANs
Nx10 Mbps – Nx10 Gbps
Point-point
Multipoint
Virtual cross-connect
Collocation and interconnection
Coordination and logistics
Neutral collocation
Interconnection management
Internet Exchange
Remote Connection
N Mbps – M Gbps
Carriers/ISP
Datacenters
Other IX
Reseller
N Mbps – M Gbps
Remote connection to IX

Transformation Potential

- **70% traffic of Internet nodes already bypassing Tier-1s. Here are main factors contributing to that:**
  - ✓ **Emergence and fast growth of large content providers and CDNs that penetrated most of regional segments of Internet including numerous IX,**
  - ✓ **Excess capacity offering on the market as well as decline in interest to full IP transit,**
  - ✓ **Growth of IX service quality as well as coverage makes public peering easily accessible and soundly saving**
- **Huge number of enterprise networks that are buying IP transit from providers at the moment, however potentially some of which could turn to peering**
- **Growing number of Internet businesses striving to provide comfortable navigation and unified access to services across the globe by any means**

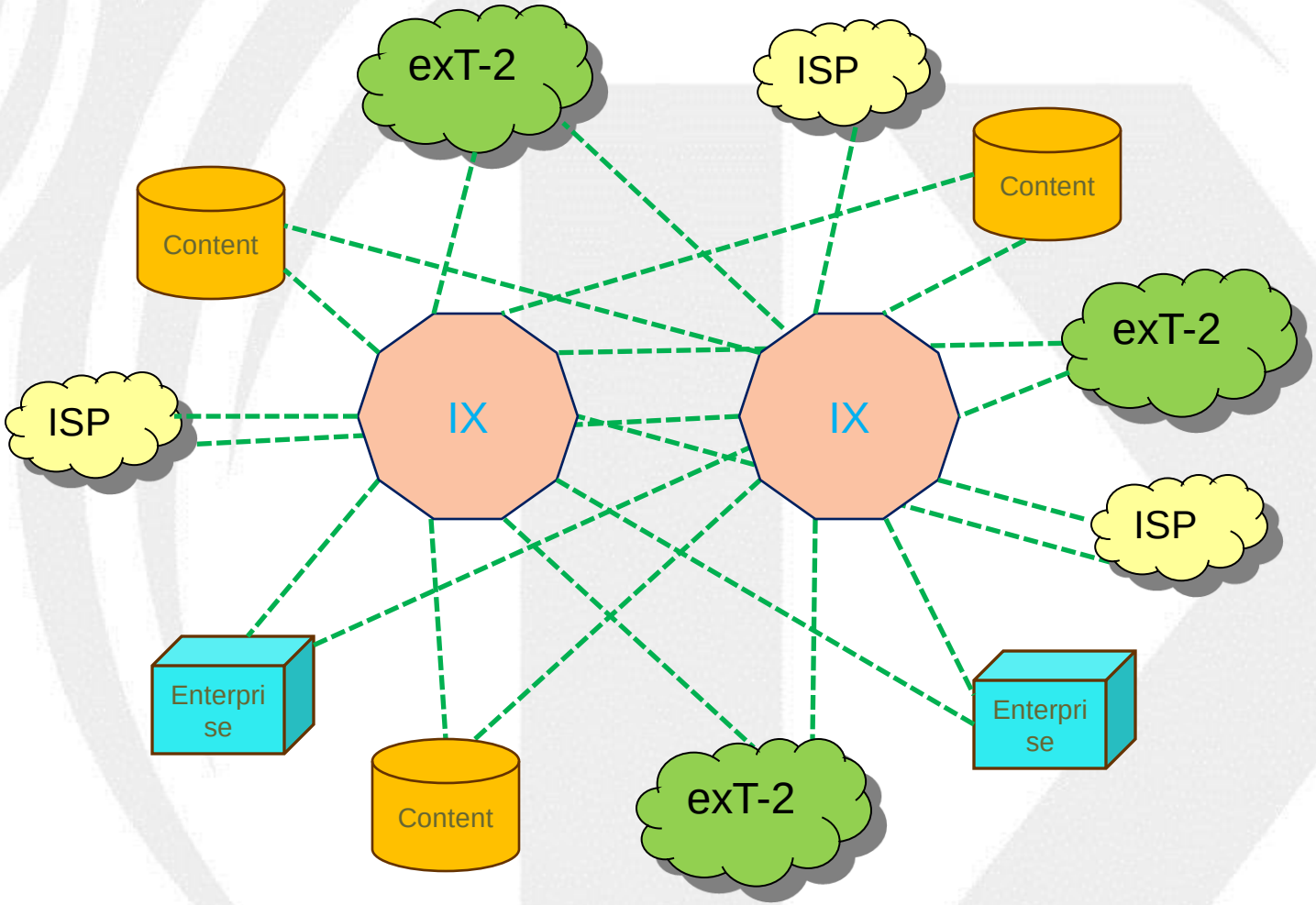
Future of the Internet

- **Transformation from Hierarchical Internet into Flat Internet**



Future IX Role

- Consolidation points of connectivity, peering and interconnect
- Neutral collocation and other services for participants



Thank you for attention!

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