# MSK-IX after 1 Tbps
## Peering Evolution

Moscow, 2013

# MSK-IX



- Professional and neutral peering services provider with 18+ year experience

- Internet Exchanges at **9** major Russian cities: SPB-IX, MSK-IX, RND-IX, STW-IX, SMR-IX, KZN-IX, EKT-IX, NSK-IX, VLV-IX

- Moscow IX peak traffic 1+ Tbps
- Participants headcount :
  - ✓ Moscow IX – 369 total / 275 unique (Euro-IX)
  - ✓ All IXs -  608 total / 500 unique

# Russia(n) Today

**Russian**:

- **2**nd content language
- **3**rd by web-sites counter
- **6**th among TOP 1000 web-sites

**Internet resources**

- **2**nd by ASN count
- **12**th / **17**th by IPv4 / v6 volume

**Digital society**

- **1**st Internet audience in Europe
- **38**th by Internet penetration

**Hidden potential or challenge ?**



| Russian Alphabet | | | | | |
| --- | --- | --- | --- | --- | --- |
| Letters | English sound | Letters | English sound | Letters | English sound |
| А а | a | К к | k | Х х | kh |
| Б б | b | Л л | l | Ц ц | ts |
| В в | v | М м | m | Ч ч | ch |
| Г г | g | Н н | n | Ш ш | sh |
| Д д | d | О о | o | Щ щ | shch |
| Е е | e or ye | П п | p | Ъ ъ | (the hard sign) |
| Ё ё | o or yo | Р р | r | Ы ы | y |
| Ж ж | zh | С с | s | Ь ь | (the soft sign) |
| З з | z | Т t | t | Э э | e |
| И и | i | У у | u | Ю ю | yu |
| Й й | y | Ф ф | f | Я я | ya |

MSK IX

# Peering Infrastructure & Participants

**Moscow / St.Petersburg**

- M-9 (Butlerova 7) Moscow telehouse with ~400 networks inside. No generator, limited raw power feed.

- Dynamic growth of Moscow DCs. Tens (claimed as Tier 2-3), few certified.

- 10-20 providers per professional DC (AVG).

**Regions**

- Very few carrier-neutral professional DCs in regions;

- Content & Services mostly far away (colo at Moscow/St.Petersburg and abroad).

**Opportunity for decentralization and regional growth!**

# Peering Reach Evolution

**Connect locally**
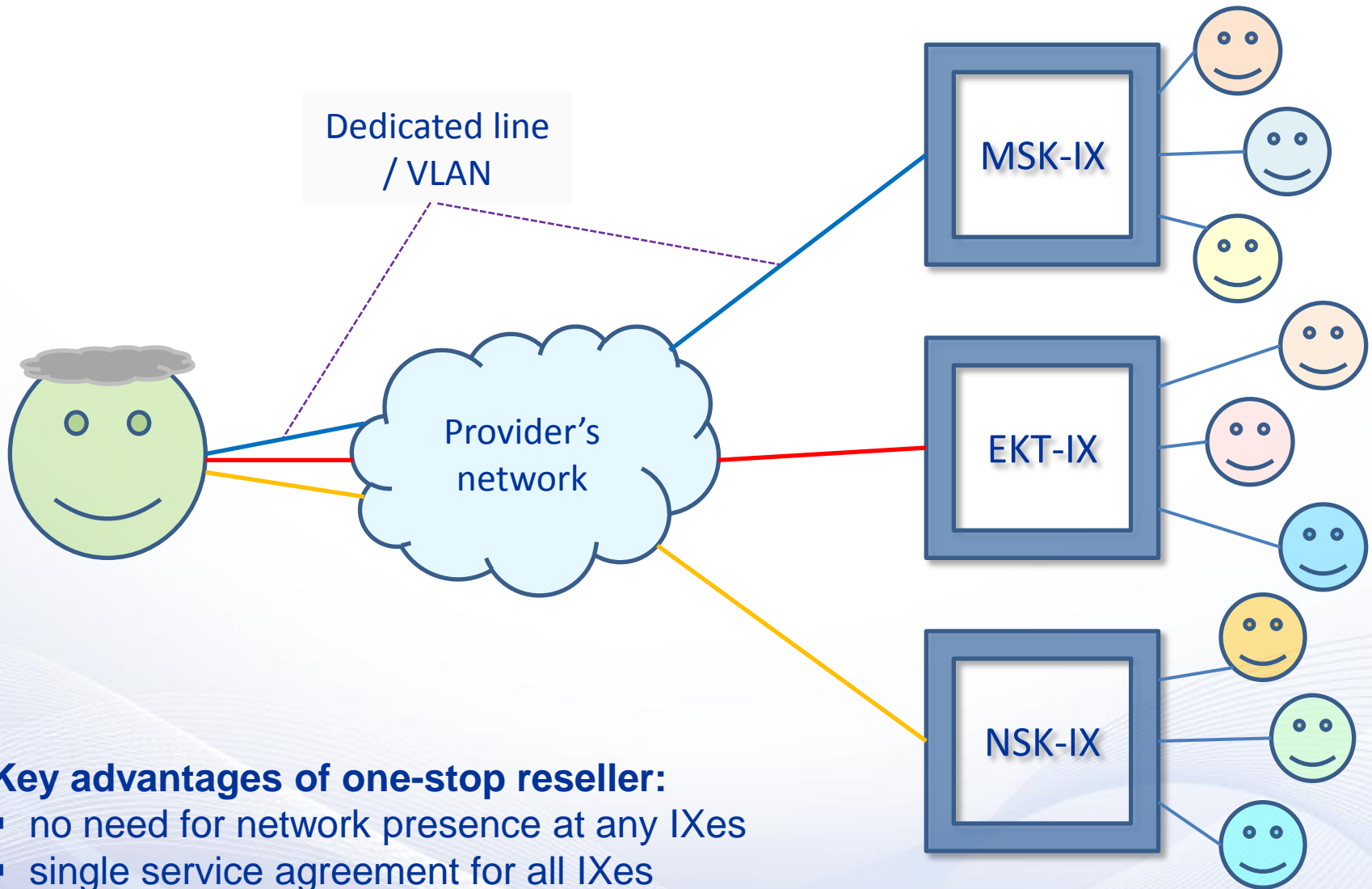- Directly into nearest IX node
- Through last mile fiber

**Hire a dedicated line**
- Remote IX connection via private circuit

**Get connected**
- Remote connections to multiple IXs via MPLS Cloud / dedicated lines

MSK IX

# Peering Reselling



Dedicated line / VLAN

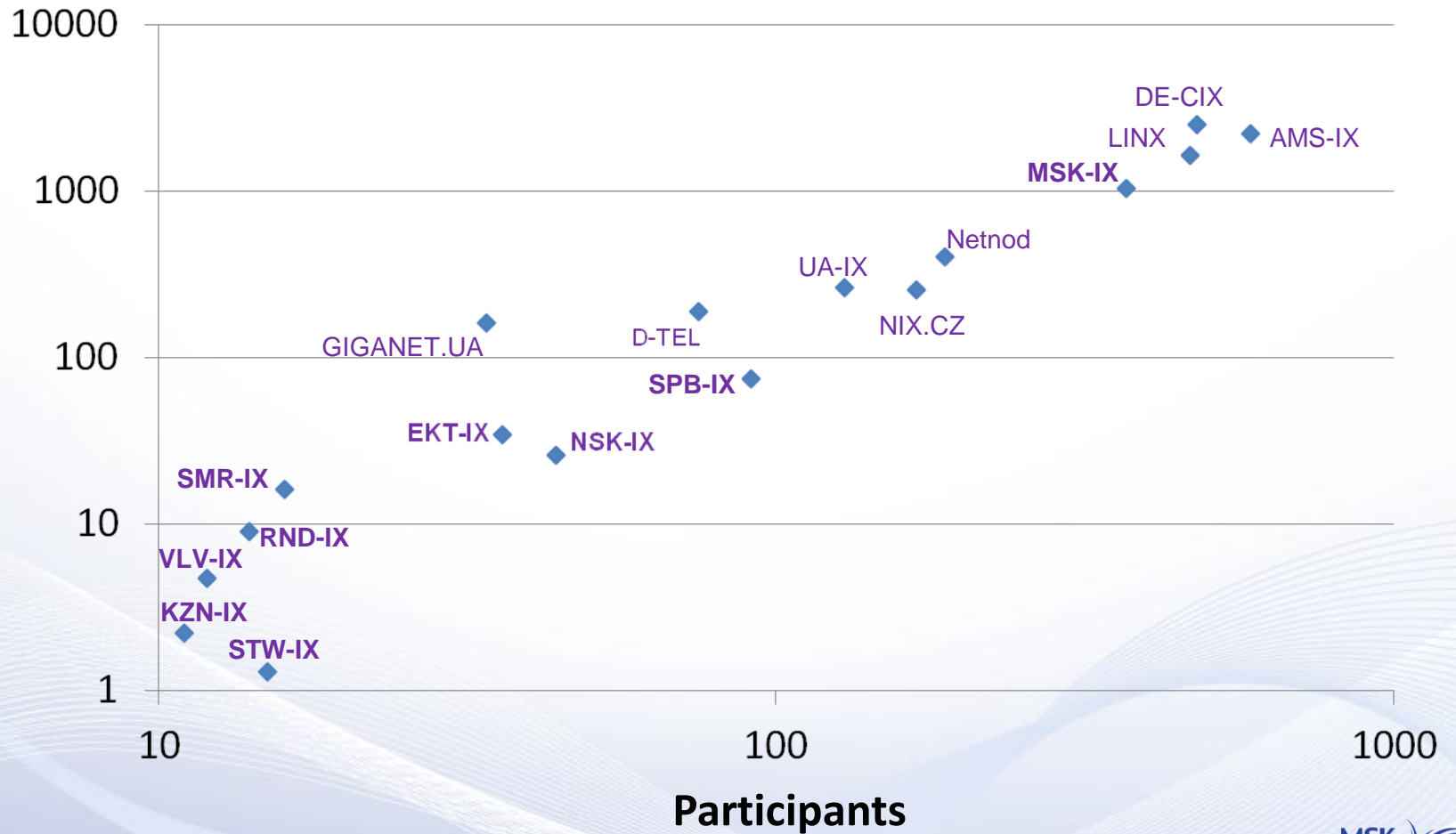Provider's network

MSK-IX

EKT-IX

NSK-IX

**Key advantages of one-stop reseller:**
- no need for network presence at any IXes
- single service agreement for all IXes
- simple and easy connection management

# Peering Scale



Peak traffic, Gbps (y-axis) vs Participants (x-axis). Scatter plot showing: DE-CIX, LINX, AMS-IX, MSK-IX, Netnod, UA-IX, NIX.CZ, D-TEL, GIGANET.UA, SPB-IX, EKT-IX, NSK-IX, SMR-IX, RND-IX, VLV-IX, KZN-IX, STW-IX

# Peering Impact

**Traffic QoS:**
- **Local peering**
- **Remote peering**
- **Quality transit**

**Costs:**
- **Cheaper routes better**
- **Peering cheaper transit**
- **Traffic prioritized based on cost and service**
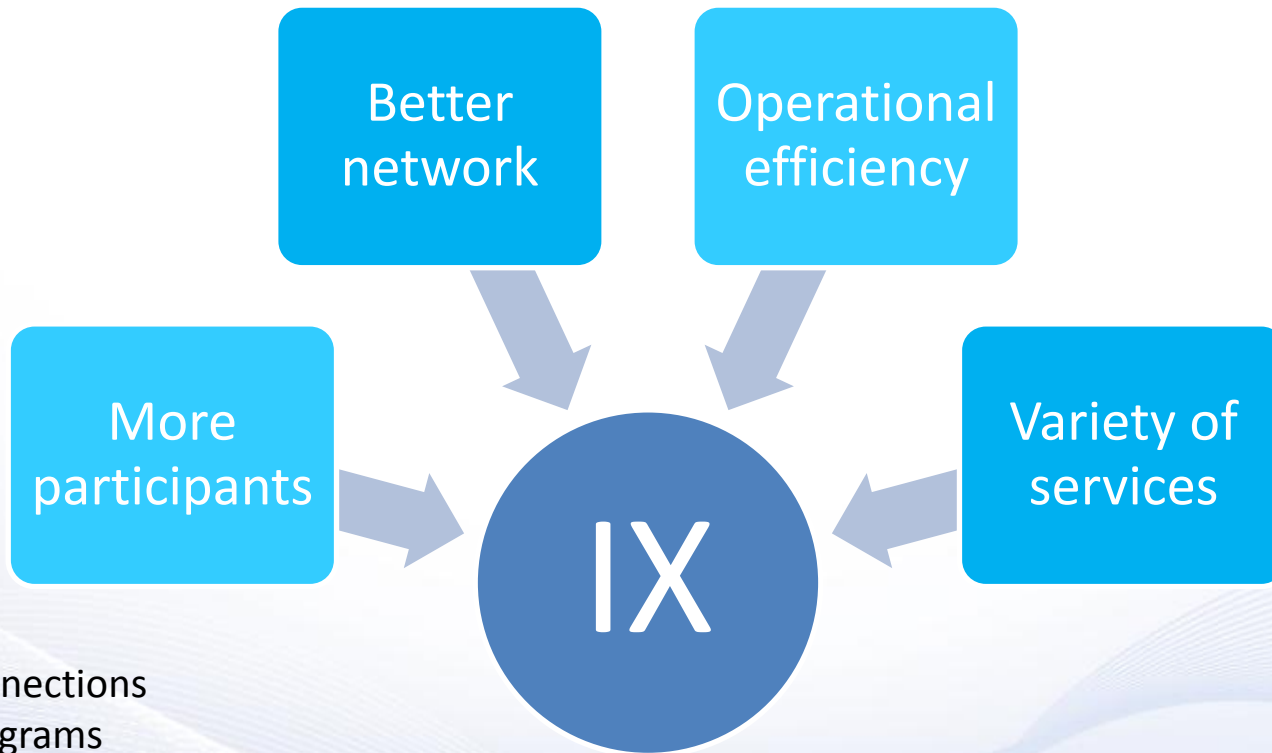
**Logistic:**
- **Variety of services**
- **Single contract**
- **Simple ordering**
- **SPOC**

# Peering Upgrowth

- Reach to network rich points
- Resilience and capacity

- Sustainability
- Resources sharing



- Remote connections
- Reseller programs

- Colo
- PNI
- Others

# Thank you for attention!



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**Вопросы**