



Key Russian Wholesale Providers

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ENOG5, St Petersburg

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Welcome to ENOG5!

The Russian regional marketplace is one of my favorite to study.

Today we'll take a brief tour of four of the top domestic wholesale providers, to show how they're evolving.



Methodology

Renesisys measures the Internet by:

- Peering with over 400 NSPs worldwide, in both IPv4 and IPv6 (peer with us!)
- Tracerouting to ~1.5M hosts from over 100 locations worldwide

Methodology

Today we'll look at the ASN customers and transited prefixes of each of the four, as seen in BGP.

We'll also look at the way Russian providers have renamed their ASNs over time: a key signal of their intent to unify network operations and integrate acquisitions.

Russian Wholesale Market Leaders

★ Russia IPv4 Internet Index Ratings ?				
IPv4 Customer Base: Wholesale — Russia				
1	★	Rostelecom	12389	<div style="width: 100%;"></div>
2	★	MegaFon	31133	<div style="width: 100%;"></div>
3	★	TransTelecom	20485	<div style="width: 100%;"></div>
4	★	Vimpelcom	3216	<div style="width: 100%;"></div>
5	★	TeliaNet Global Network	1299	<div style="width: 100%;"></div>
6	↑ 1	★ Level 3	3356	<div style="width: 100%;"></div>
7	↓ 1	★ RETN Limited	9002	<div style="width: 100%;"></div>
8	★	CJSC "ER-Telecom Holding"	9049	<div style="width: 100%;"></div>
9	★	OJSC Rostelecom	35400	<div style="width: 100%;"></div>
10	↑ 1	★ Cable and Wireless Worldwide	1273	<div style="width: 100%;"></div>
11	↓ 1	★ CJSC Rascom, St.Petersburg, Russia	20764	<div style="width: 100%;"></div>
12	↑ 2	★ MTS OJSC	8359	<div style="width: 100%;"></div>
13	↓ 1	★ Telecom Italia Sparkle	6762	<div style="width: 100%;"></div>
14	↑ 1	★ OJSC Rostelecom	44237	<div style="width: 100%;"></div>
15	↓ 2	★ Tata Communications	6453	<div style="width: 100%;"></div>
16	↑ 1	★ Cogent	174	<div style="width: 100%;"></div>

Rostelecom (AS12389)



IPv4 In the Rankings (Russia)

★ Rostelecom

AS 12389

IPv4 Ranking Summary

Customer Base: #7 ↑ 1 52%

Retail: #2 86%

Wholesale: #1 100%

Backbone: #9 ↑ 2 28%

Peering Base: #81 ↑ 25 35%

Growth: #5 49%

Leading wholesale provider in Russia

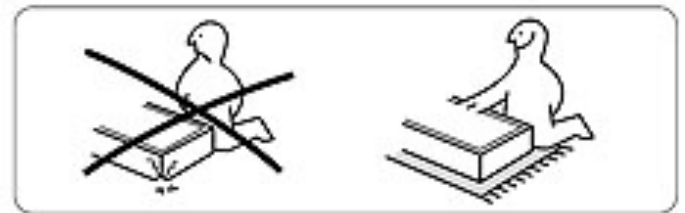
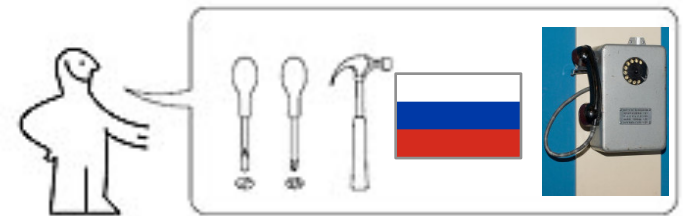
- **499** IPv4 ASN customers
- **7,433** transited IPv4 networks
- **23** IPv6 ASN customers
- **185** transited IPv6 networks

Rostelecom Has Been “Reassembled”

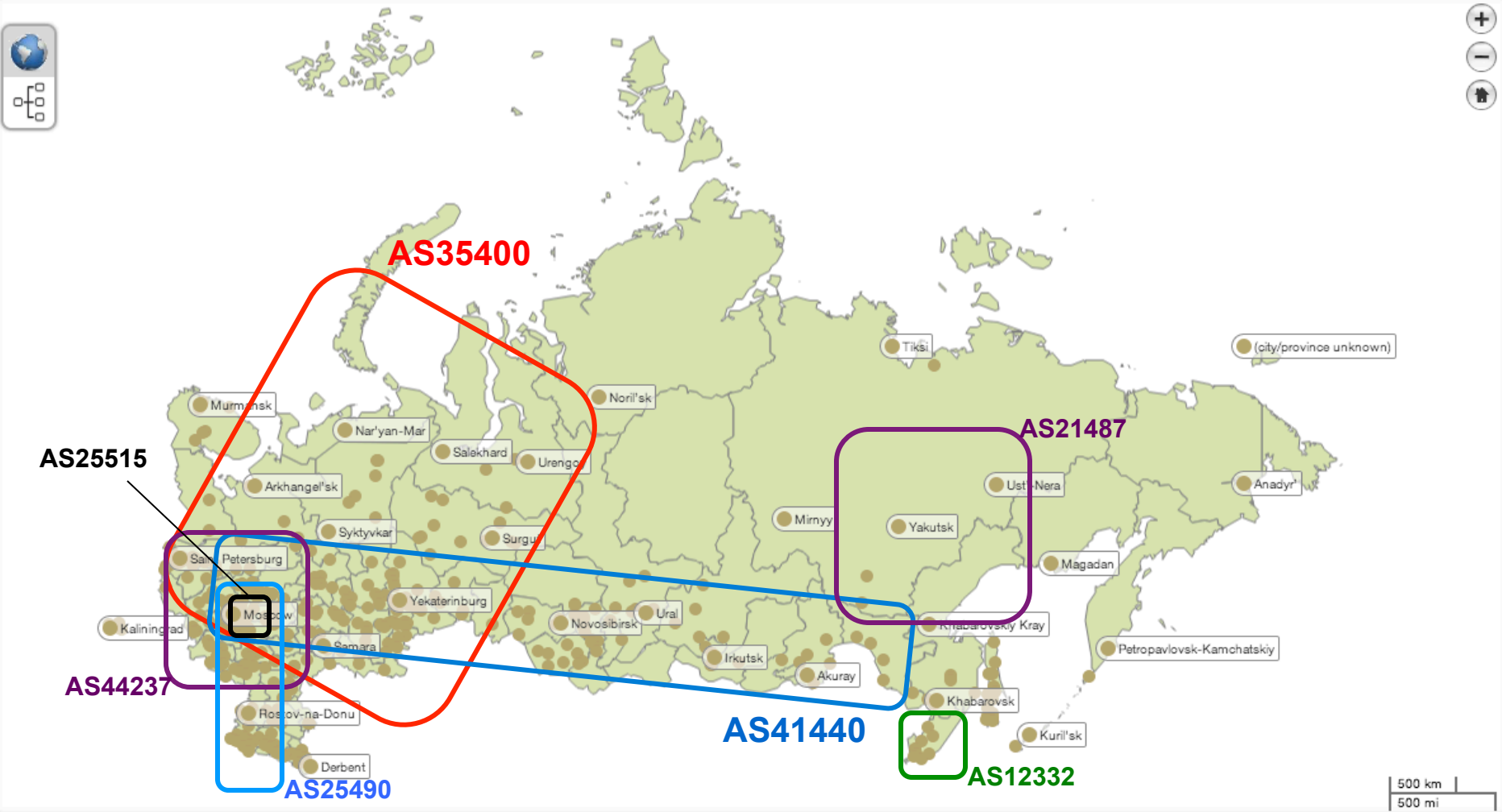
- 83 registered ASNs:

2878 3239 5573 6828 8382 8443 8568 8570 8594 8675 8997 12332
12380 12389 12705 12730 12846 13056 13118 15468 15500 15759
16054 16287 20519 21017 21378 21487 24612 24665 24699 24783
24789 25008 25405 25436 25490 25510 25515 28719 28802 29456
30749 30974 31094 31353 31496 33934 34137 34168 34205 34267
34297 34449 34584 34875 34974 35125 35177 35389 35400 35516
35531 38985 39054 39229 39407 41134 41440 42091 42362 42448
42548 42825 43132 43468 43574 43975 44237 44467 48780 56341
196747

- No apparent move to reduce the number of ASNs in use (compare Megafon’s acquisition of Synterra)
- Rostelecom lagged the “troika” of mobile providers in growth through 2009
- By 2011, had reabsorbed regional subsidiaries controlled by Svyazinvest
- Svyazinvest itself may be next in line



Rostelecom's Routing is Regional



ASNs Re-Registered as “Rostelecom”

April 2011

AS8997 OJSC North-West Telecom
AS2878 VolgaTelecom Ulyanovsk branch

August 2011

AS8443 Far East Telecommunications Company
AS8570 Lipetsk regional NIC
AS8594 Omsk region Electric Communications
AS8675 Centertelecom, Tula branch
AS12332 Far East Telecommunications Company
AS12380 North-West Telecom Branch Lensviaz
AS12705 Uralsviazinform
AS12730 Central Telecommunication Company
AS12846 AltaiTelecom
AS13056 CenterTelecom
AS13118 CenterTelecom
AS15468 CenterTelecom Kaluga branch
AS15500 VolgaTelecom
AS15759 TOMSKTELECOM
AS16054 Sibirtelecom
AS16287 Kemerovo branch Sibirtelecom

August 2011 (continued)

AS20519 BALTNET
AS21017 JSC CenterTelecom
AS21378 CenterTelecom Tver branch
AS21487 Far East Telecommunications
AS24612 Volgatelecom, Penza branch
AS24699 CenterTelecom
AS24783 North-West Telecom
AS24789 Velikij Novgorod and Novgorod Area
AS25008 VolgaTelecom Orenburg
AS25405 VolgaTelecom, Nizhny Novgorod
AS25436 CAIT Kirov VolgaTelecom
AS25515 Central Telecommunication Company
AS28719 Uralsviazinform
AS29456 Central Telecommunication BELSVYAZ
AS30749 North-West Telecom
AS31094 Uralsviazinform, Tyumen branc
AS31496 North-West Telecom
AS34137 Far east Telecommunications Company
AS34168 CenterTelecom
AS34205 Far East Telecommunications Company
AS34267 Central Telecommunications Bryansk

More ASNs Re-Registered as “Rostelecom”

August 2011 (continued)

AS34297 Yuzhno-Sakhalinsk Internet eXchange
AS34449 Mordovian Republic
AS34584 Khabarovsk Telecommunication Center
AS34974 Dalsvyaz Kamchatka Branch
AS35125 Smolensk branch CenterTelecom
AS35400 Interregional Organization Network Tech
AS35516 Central Telecommunication Company
AS35531 Kurgan branch Uralsvyazinform
AS38985 Gorno-AltaiTelecom
AS39054 Buryat branch Sibirtelecom
AS39229 Volgatelecom Saratov branch”
AS39407 Chita Sibirtelecom
AS41134 Central Telecommunication, Orel branch
AS41440 Sibirtelecom backbone
AS42091 Sibirtelecom, Khakass subsidiary Abakan
AS42825 VolgaTelecom branch in Udmurtia Republic
AS43468 VolgaTelecom Chuvashia
AS43574 Dagsvyazinform
AS43975 Macro region VolgaTelecom network
AS44237 Central Telecommunication

October 2011

AS31353 Petersburg Transit Telecom

December 2011

AS28802 Sochi Autonomous Systems
AS33934 Volgograd Electro Svyaz
AS35177 Svyazinform

May 2012

AS25510 ATRI-COM LLC
AS42548 Karachaevo-
Cherkesskelektrosvyaz

August-December 2012

AS3239 Uralsvyazinform,
Chelyabinsk
AS56341 ENTER, LLC
AS35389 KrasLan Krasnoyarsk
AS24665 Yuzhno-Uralskaya
Telefonnaya Companiya

January 2013

AS5573 KRASNET Regional
Telecommunications Network
AS6828 Uralsviazinform
AS25490 Southern Telecomm Company

February 2013

AS42362 Sevosetinelectrosvyaz
AS42448 Electrosvyaz Republic Adygheia
AS43132 Kabbalktelecom

March 2013

AS8382 Irkutsk Central Telegraph

May 2013

AS34875 MFIST / UralSvyazinform

Legacy ASNs

AS12389 Rostelecom Backbone
AS48780 StPetersburg/Murmansk

New ASNs

AS196747 Moscow hosting

MegaFon (AS31133)



- Second-ranked wholesale provider in Russia
- **326** IPv4 ASN customers
- **4,730** transited IPv4 networks
- **22** IPv6 ASN customers
- **31** transited IPv6 networks

MegaFon ASN Mergers: Synterra, Peterstar

Backbone ASNs

AS31133 Megafon

Pre-2011 regional ASNs

AS6854 Synterra (retains name)

AS25159 SonicDuo Moscow

AS31163 Mobicom Kavkaz

AS31195 Mobicom Khabarovsk

AS31205 Mobicom Siberia

AS31208 Mobicom Central

AS31213 Megafon North-West

AS31224 Megafon Urals

AS31268 Megafon GPRS Roaming

December 2011

AS50928 Synterra-Siberia CJSC

AS42891 CJSC Chermetresurs

AS43841 CJSC Kansstel

AS47218 SYNTERRA-UG

March 2012

AS12396 Internet-Arkhangelsk

AS20632 PeterStar

AS20663 Internet-Arkhangelsk

AS25290 ZAO PeterStar

AS29648 Synterra-Ural Ltd

AS34552 CJSC Telephone Company Ural

AS35298 JSC Kam-telecom

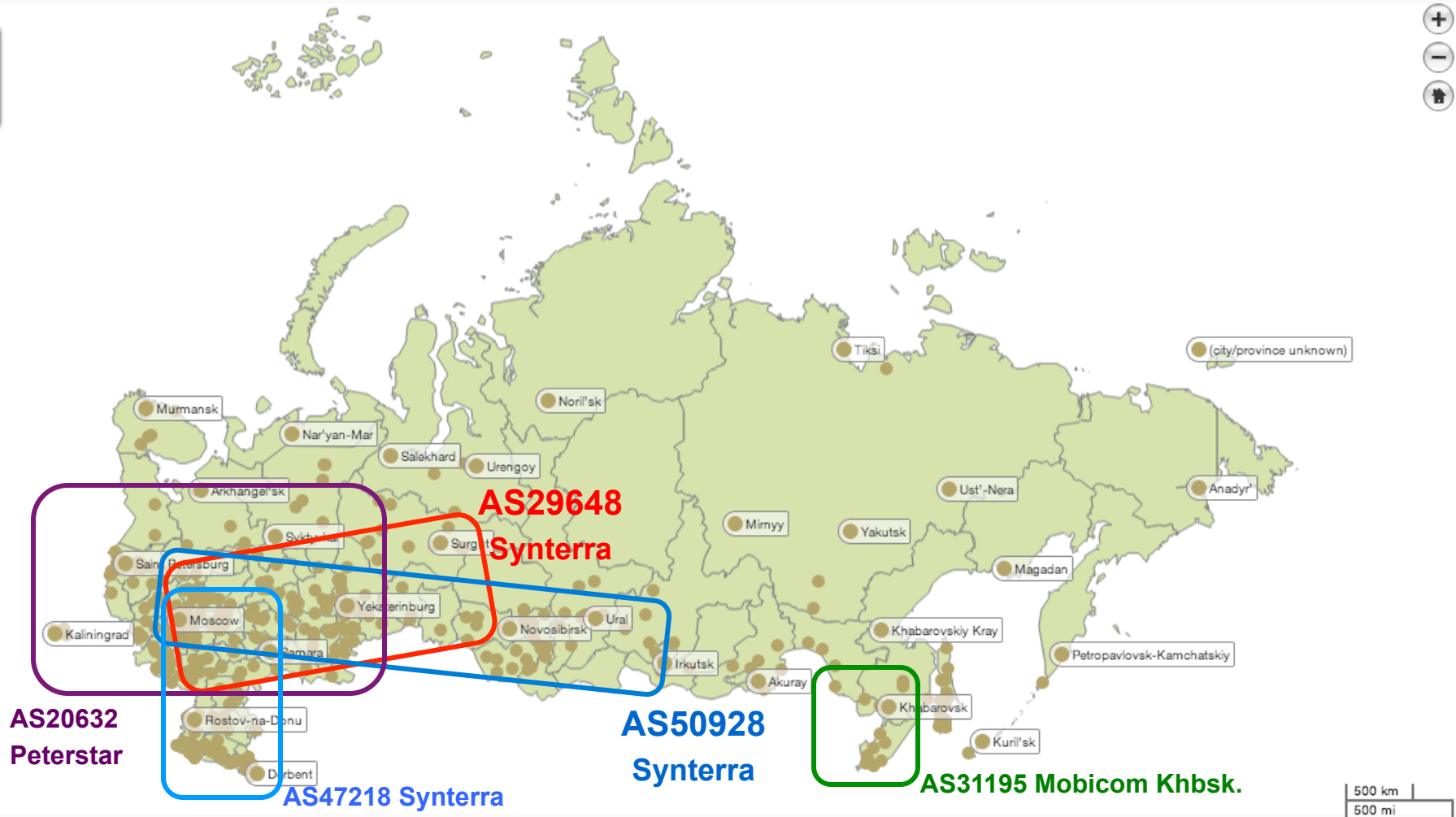
AS41976 JSC Nord-West

Telecommunication and Information
Company

November 2012

AS48615 Priozerskie Domovye Seti Ltd.

Some Megafon Regional Legacy ASNs



Transtelecom (AS20485)



IPv4 In the Rankings (Russia)

★ TransTelecom

AS 20485

IPv4 Ranking Summary

Customer Base: #10 ↑ 1 33%

Retail: #3 79%

Wholesale: #3 49%

Backbone: #11 ↓ 1 20%

Peering Base: #33 ↑ 2 54%

Growth: #262

- Third-ranked wholesale provider in Russia
- **442** IPv4 ASN customers
- **10,449** transited IPv4 networks
- **22** IPv6 ASN customers
- **60** transited IPv6 networks

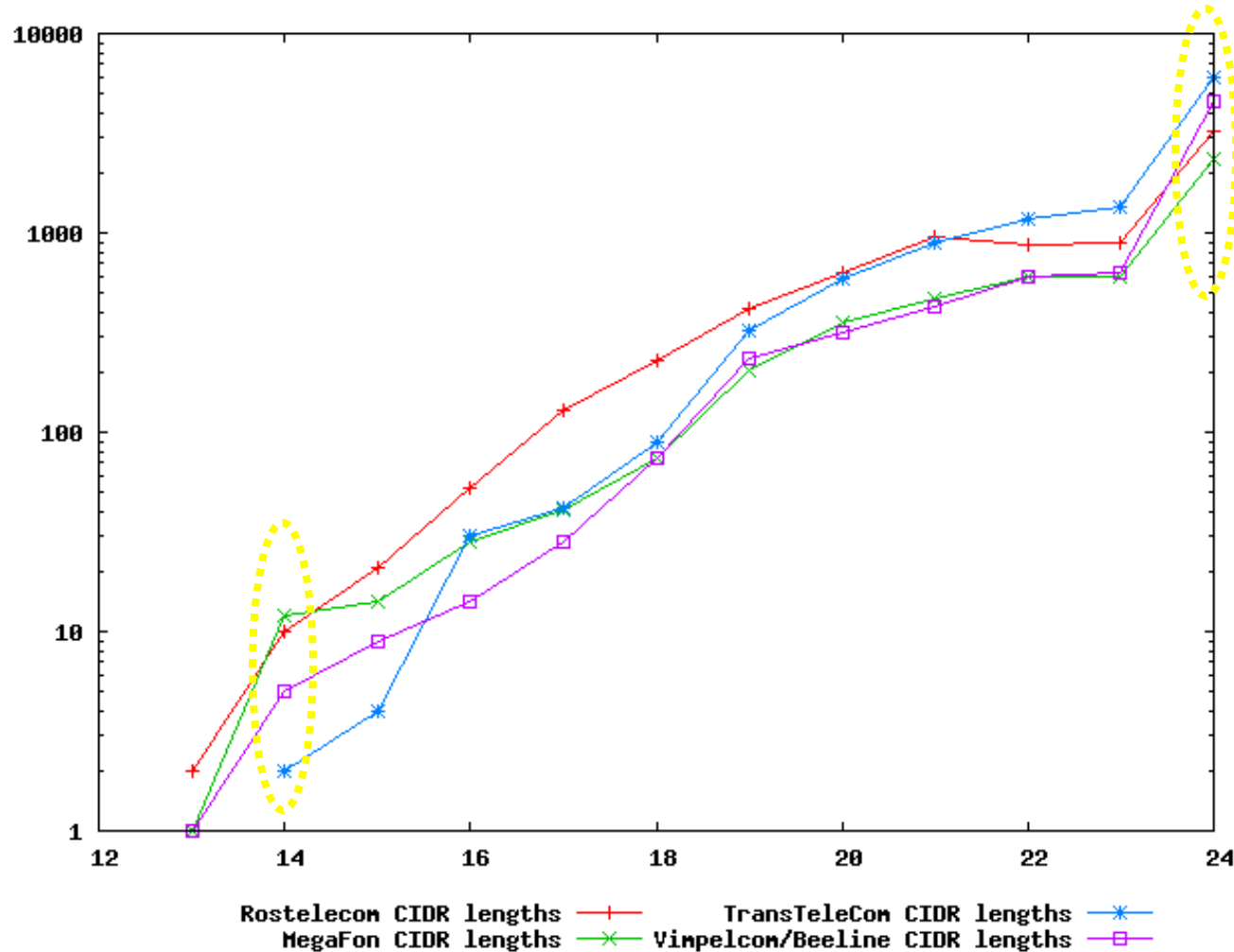
TTK has most advertised networks, but ..

Rostelecom transits a significant number of larger blocks (/15 to /20) on behalf of multihomed customers

Transtelecom transits more small blocks (/22 to /24) than the others

Vimpelcom is close behind, fourth in most CIDR lengths but #2 in their set of transited /24s

MegaFon has the most highly aggregated downstream transit cone



Vimpelcom/Beeline (AS3216)




IPv4 In the Rankings (Russia)

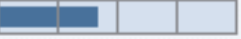
★ Vimpelcom

AS 3216


IPv4 Ranking Summary

Customer Base: #14  21%

Retail: #4  76%

Wholesale: #4  41%

Backbone: #16 ↓ 2  9%

Peering Base: #51 ↓ 6  43%

Growth: #260 

- Fourth-ranked wholesale provider in Russia
- **520** IPv4 ASN customers
- **6,900** transited IPv4 networks
- **17** IPv6 ASN customers
- **27** transited IPv6 networks

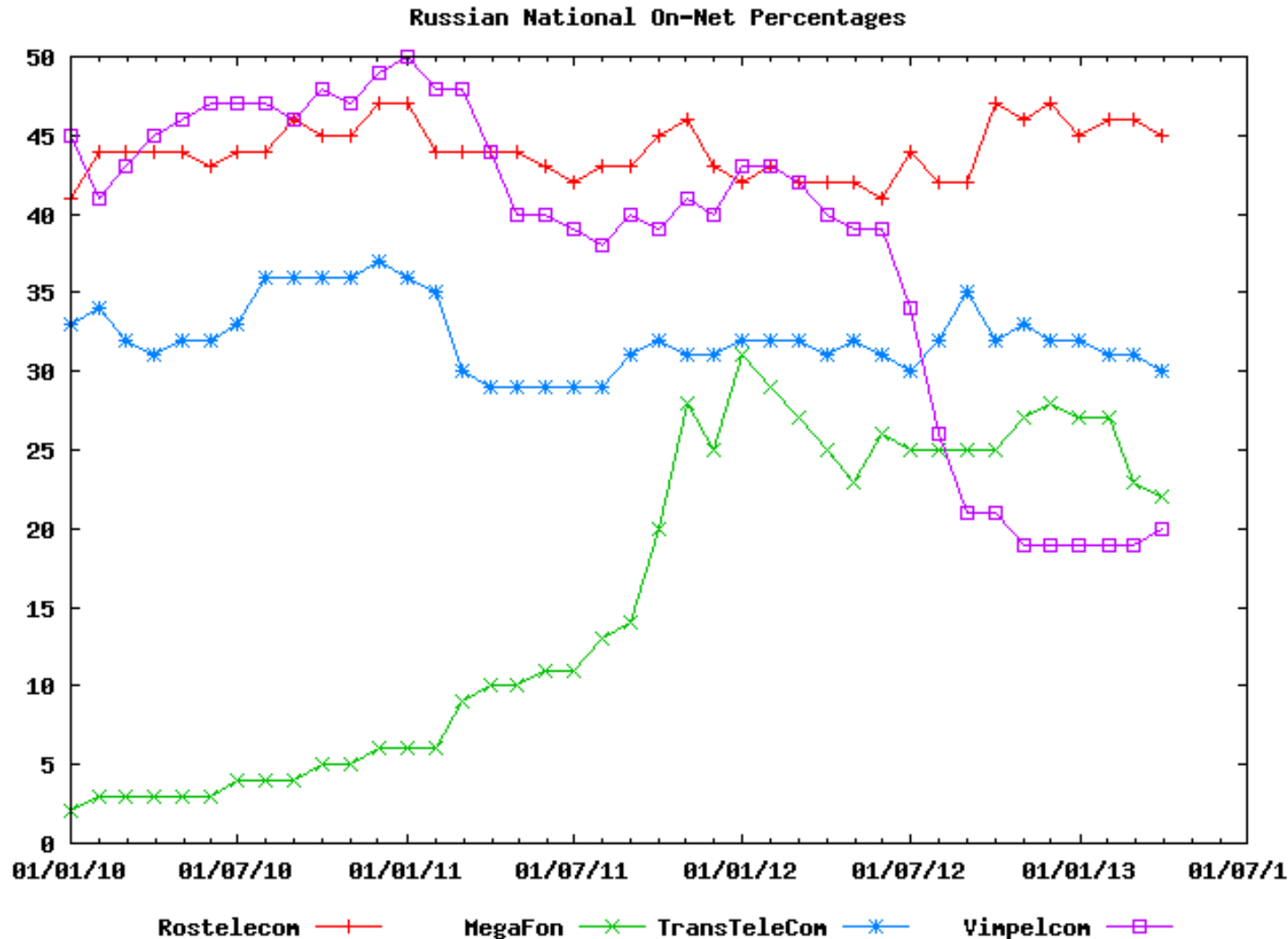
National On-Net Percentage Estimates

Rostelecom has steady 40-45% of Russia on-net.

Transtelecom, too, has steady 30-35%

MegaFon had high growth during acquisitions, now flat at 20-25%

Vimpelcom dropped from 40% to 20% in 2012, after MegaFon was reclassified as a Vimpelcom peer at the end of June.



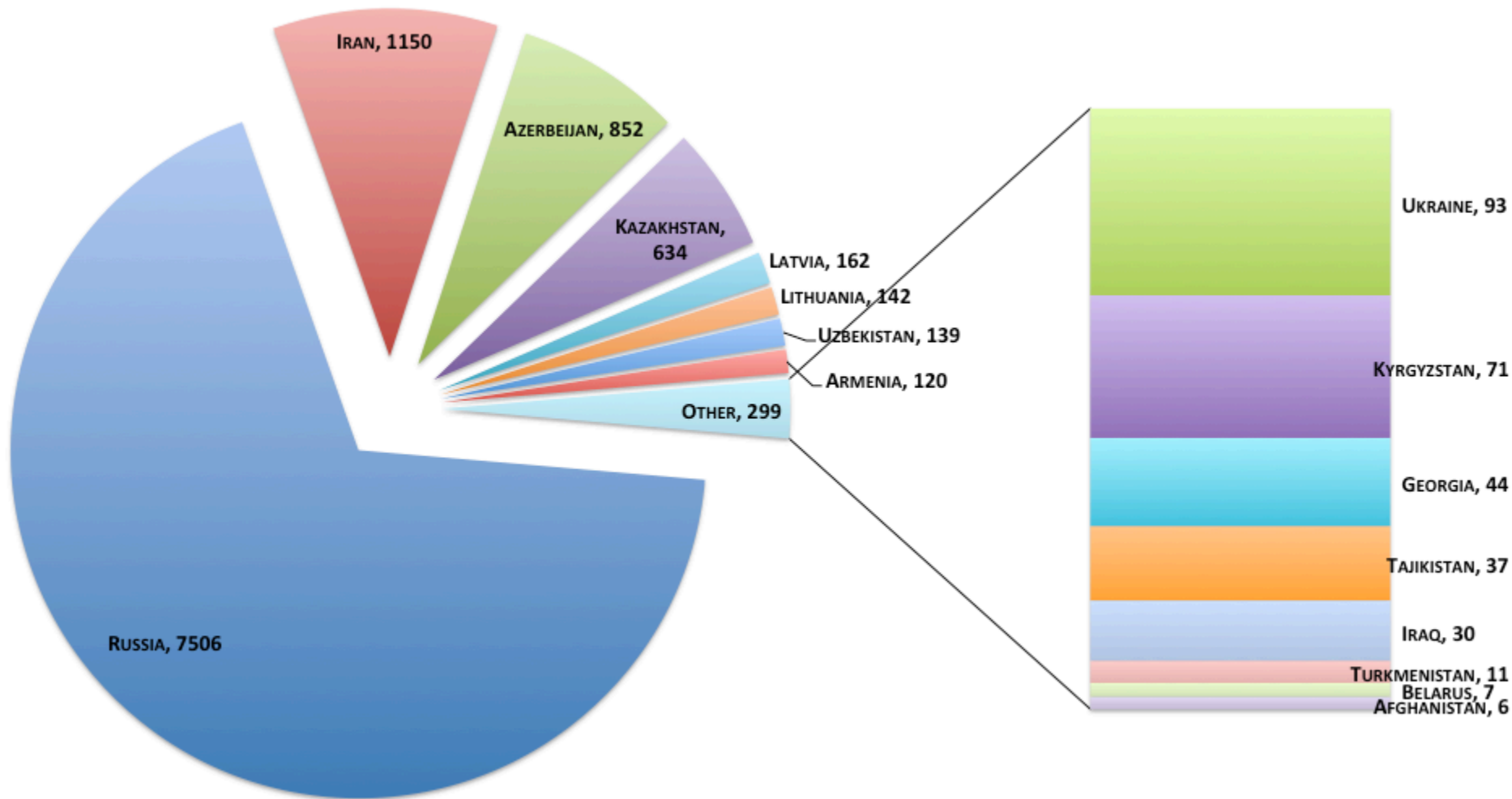
Major Cities Draw on All Four Providers

	Rostelecom	TTK	Megafon	Vimpelcom
Chelyabinsk	77	37	3	7
Moscow	29	25	20	30
Nizhny Novgorod	52	33	14	10
Irkutsk	56	56	8	3
Krasnoyarsk	84	32	12	19
Samara	57	41	39	29
Kazan	29	44	31	29
St Petersburg	14	25	16	28
Omsk	62	31	62	2
Novosibirsk	52	69	52	3
Perm	64	12	3	2
Rostov	33	31	14	23
Yekaterinburg	65	22	22	22
Ufa	54	41	40	47
Volgograd	55	38	21	27
Vladivostok	94	34	3	1

Estimated percentages of Internet market on-net with each provider in each city (May 2013)

- Rostelecom now has the broadest coverage, with more than 50% on-net in 12 of 16 cities
- St Petersburg and Rostov tend to go direct to Western Europe instead
- Vladivostok relies almost exclusively on Rostelecom service

Rostelecom's International Footprint



Geographic Network topology

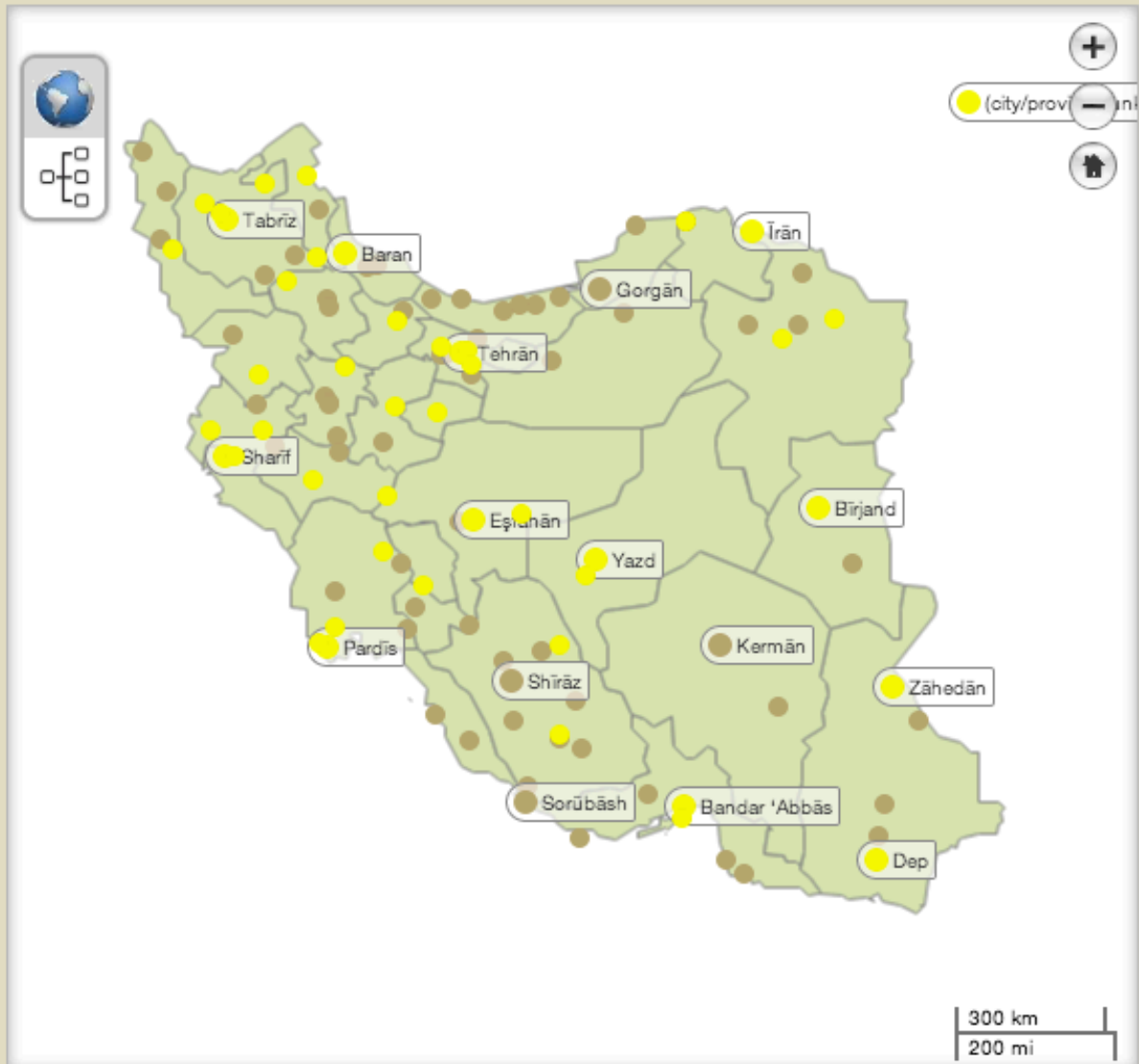
Update topology map

Selection

Cities/Provinces

AS Organizations

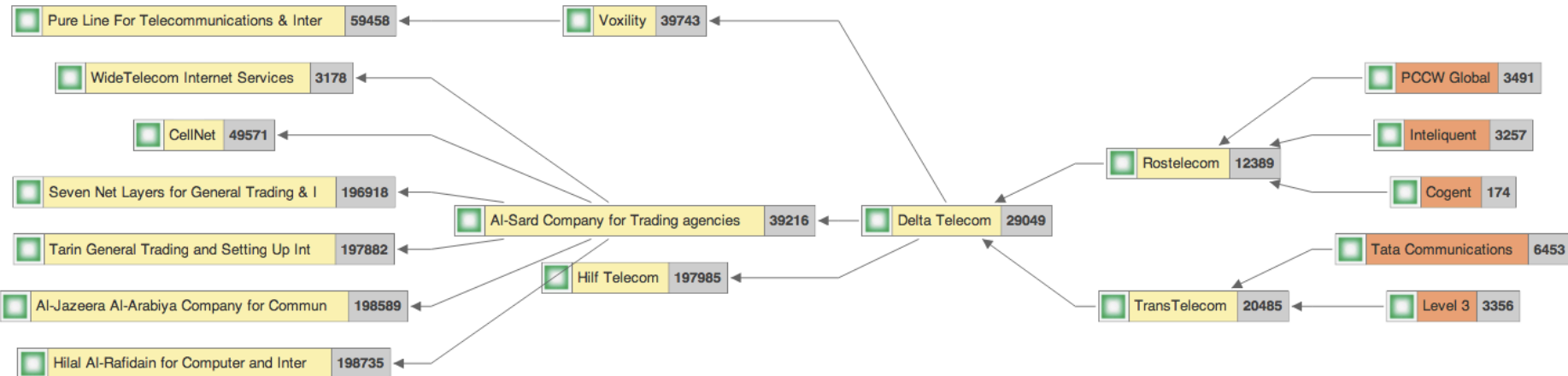
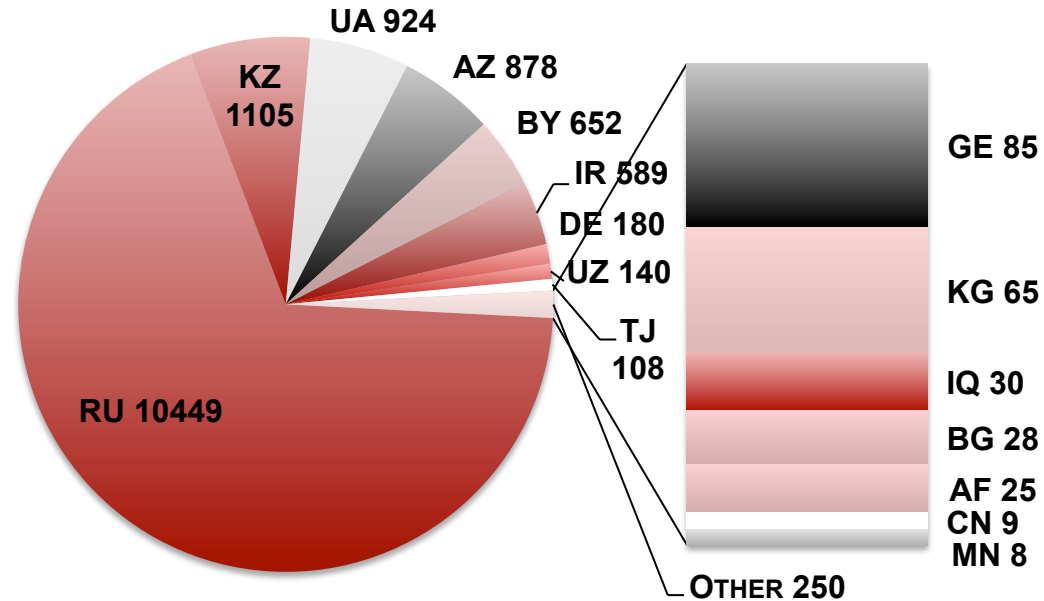
- 35285 Research Center of Theoretical Physics
- 6736 Research Center of Theoretical Physics
- 42907 Research Institute Of Petroleum Industry
- 42337 Respina Networks & Beyond
- 9002 RETN
- 57218 Rightel Communication Service Compa
- 61055 Roshangar Rayaneh Tehran
- 56749 Roshangaran Ertebatat Rayaneh Brouje
- 12389 Rostelecom
- 39571 Sadad Informatics
- 57674 Sahlan ICT Group
- 60811 Saipa Yadak
- 43487 Saman Electronic Payment Kish PJS
- 58333 Saman Insurance
- 59589 Saman System Pardaz Kish
- 58142 Samaneh Sama Pishro Persian Commu
- 57816 Samen Ertebat Asr
- 59573 Sari System Bandarabas



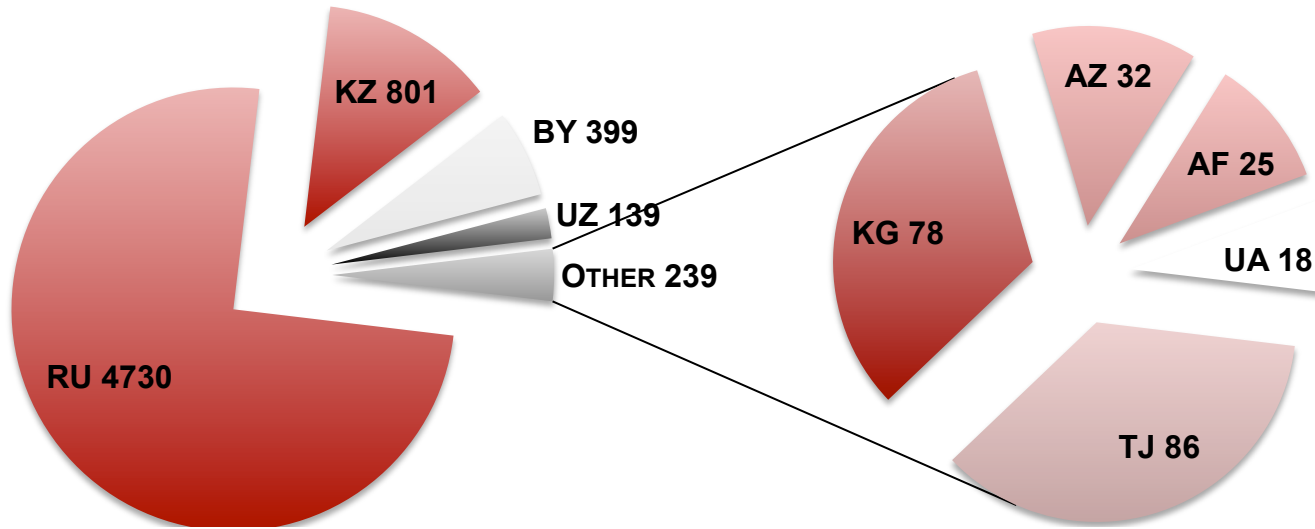
TransTelecom International Footprint

Transtelecom maintains dedicated ASNs in many countries, with transit to Europe flowing through AS20485.

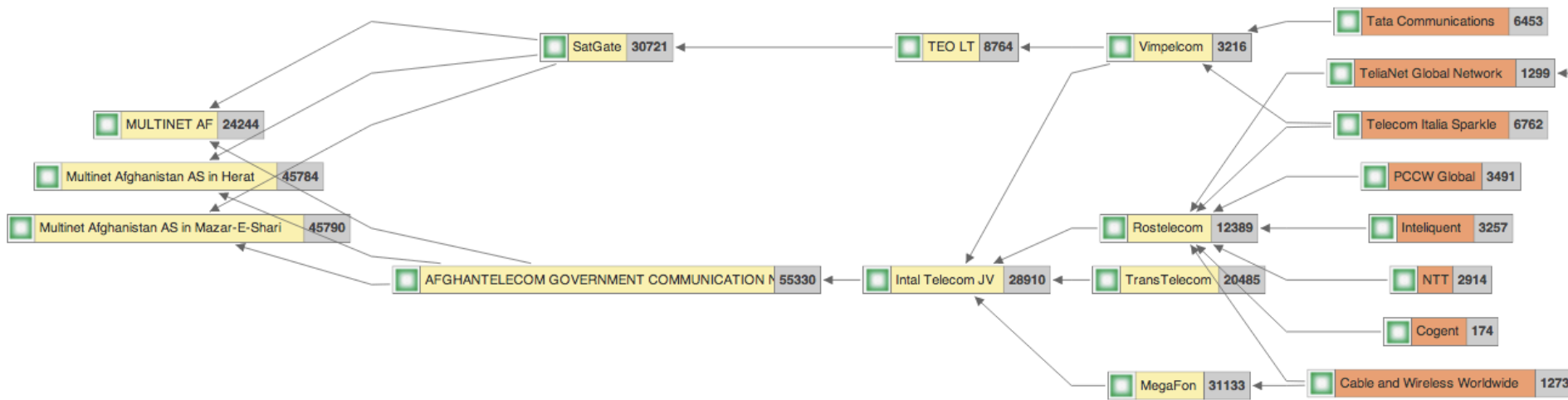
Below, Russian transit through Baku into Iraqi Kurdistan.



MegaFon International Breakdown

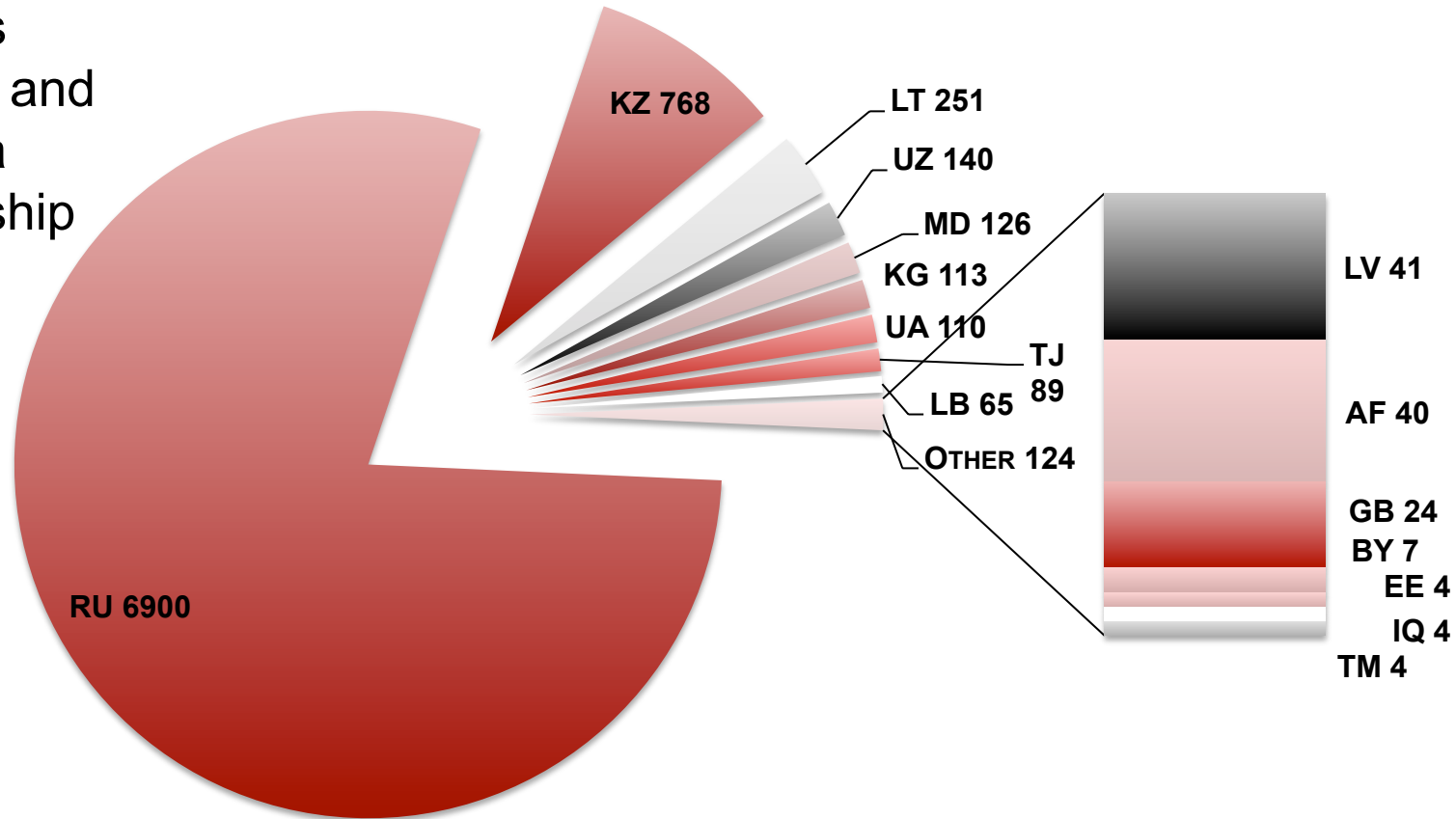


Below: Russian transit into Afghanistan via all four wholesalers we've studied today.



Vimpelcom/Beeline International

Small counts in many countries outside Russia and Kazakhstan via transit relationship with satellite provider Teo LT.



Looking Forward

What comes next for Russia's domestic wholesale market? A lot depends on the future of LTE.

We haven't seen significant terrestrial transit opening up between East Asia and Russian providers, nor demand for low-latency routes (yet).

Terrestrial paths to the Gulf will continue to tempt buyers tired of submarine cable problems. Will EPEG pay off?

And next time, shall we talk about IPv6?

renesys® market intelligence® IPv6

view our IPv4 data

Dashboard

Registrations

Internet Index

Provider Report

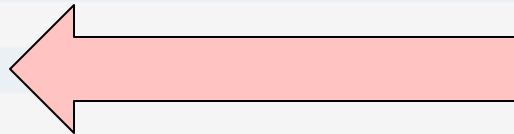
Network Watch

Market Watch

★ Russia IPv6 Internet Index Ratings

IPv6 Customer Base: Wholesale — Russia

1	★ RETN Limited	9002	<div><div></div></div>
2 ↑ 1	★ Cogent	174	<div><div></div></div>
3 ↓ 1	★ Hurricane Electric	6939	<div><div></div></div>
4 ↑ 1	★ MTS OJSC	8359	<div><div></div></div>
5 ↓ 1	★ TeliaNet Global Network	1299	<div><div></div></div>
6 ↓ 2	★ Level 3	3356	<div><div></div></div>
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12	★ Cable and Wireless Worldwide	1273	<div><div></div></div>
13 ↓ 2	★ Init Seven AG	13030	<div><div></div></div>
14 ↓ 1	★ RUNNet	3267	<div><div></div></div>
15 ↓ 1	★ CJSC Rascom, St.Petersburg, Russia	20764	<div><div></div></div>





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