

# Russian Internet Transit and Regional Markets



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Eurasia Network Operators' Group  
Moscow, 6 June 2011

# Today's Presentation

- Renesys collects infrastructure data from hundreds of operators worldwide
- Growth of customer routes, peering, transit relationships can tell interesting market stories
- You, the operators, are the experts in this domain. Data by itself is insufficient.
- **Your interpretation is very valuable and feedback is welcome!**

# Agenda

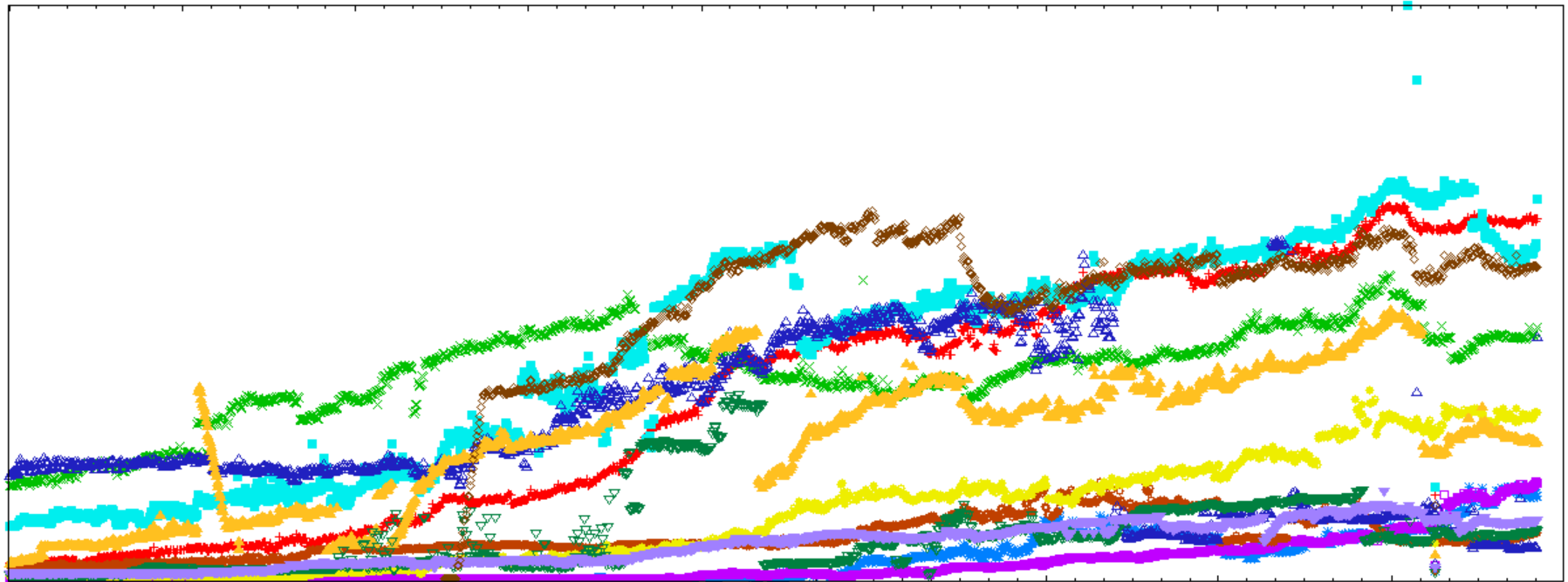
- A quick look at **domestic Internet market**
  - Key providers, competition across Russia
- A more detailed look at the **international markets** served by Russian transit providers
  - Caucasus region
  - Central Asia
  - Frontier markets (Iran, Iraq, Afghanistan)

# Key Observations

- **Great growth potential** for Russian operators that transform into transnationals
- **Strong price competition** on every border from other emerging transnationals
- Trends toward market liberalization have trained these competitors in the art of low-price competition
- Russian transit has some clear advantages, and can charge modest premium for them

# Domestic Market Evolution

Score in Russian Market



2007-01 2007-07 2008-01 2008-07 2009-01 2009-07 2010-01 2010-07 2011-01 2011-07

Rostelecom +  
 TransTeleCom x  
 Eurotel \*  
 MegaFon □

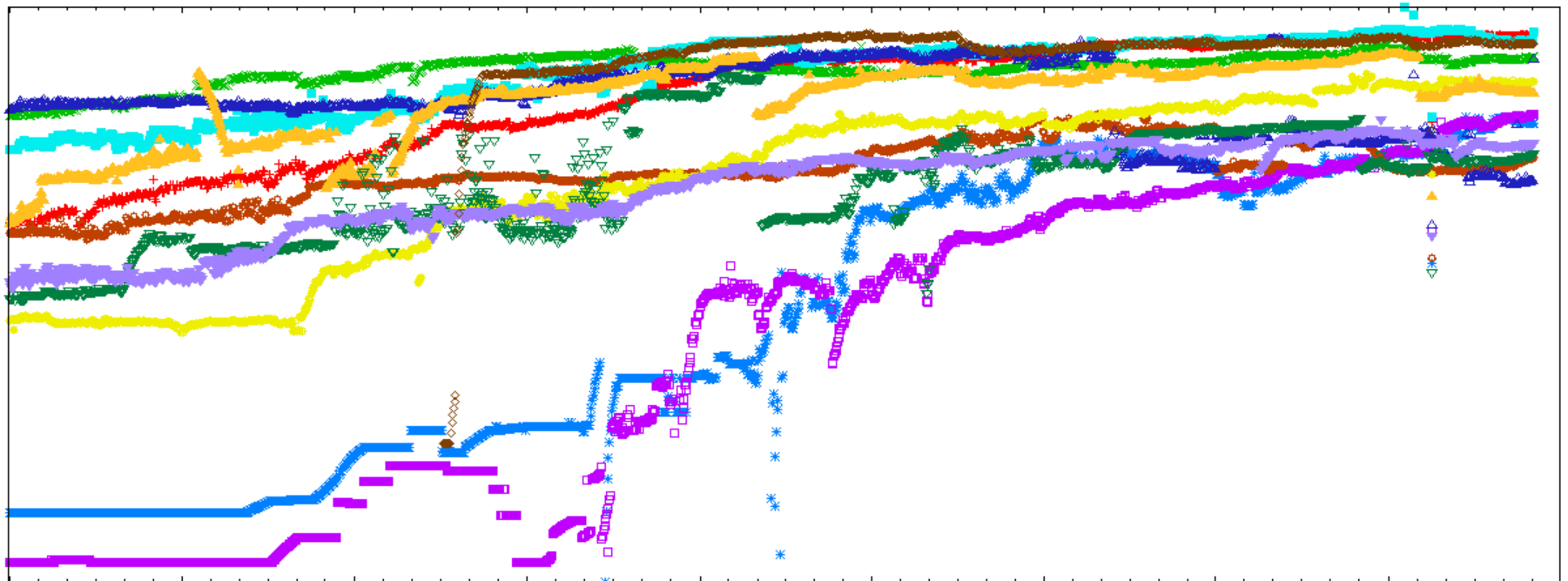
Vimpelcom ■  
 Runnet ◊  
 Synterra ●  
 RTComm ▲

COMSTAR-Direct ▲  
 MTC COMCOR ▼  
 Start Telecom ▼  
 ReTN.net ◊



# Domestic Market Evolution

Score in Russian Market (Log Scale)



2007-01 2007-07 2008-01 2008-07 2009-01 2009-07 2010-01 2010-07 2011-01 2011-07

Rostelecom +  
 TransTeleCom x  
 Eurotel \*  
 MegaFon □

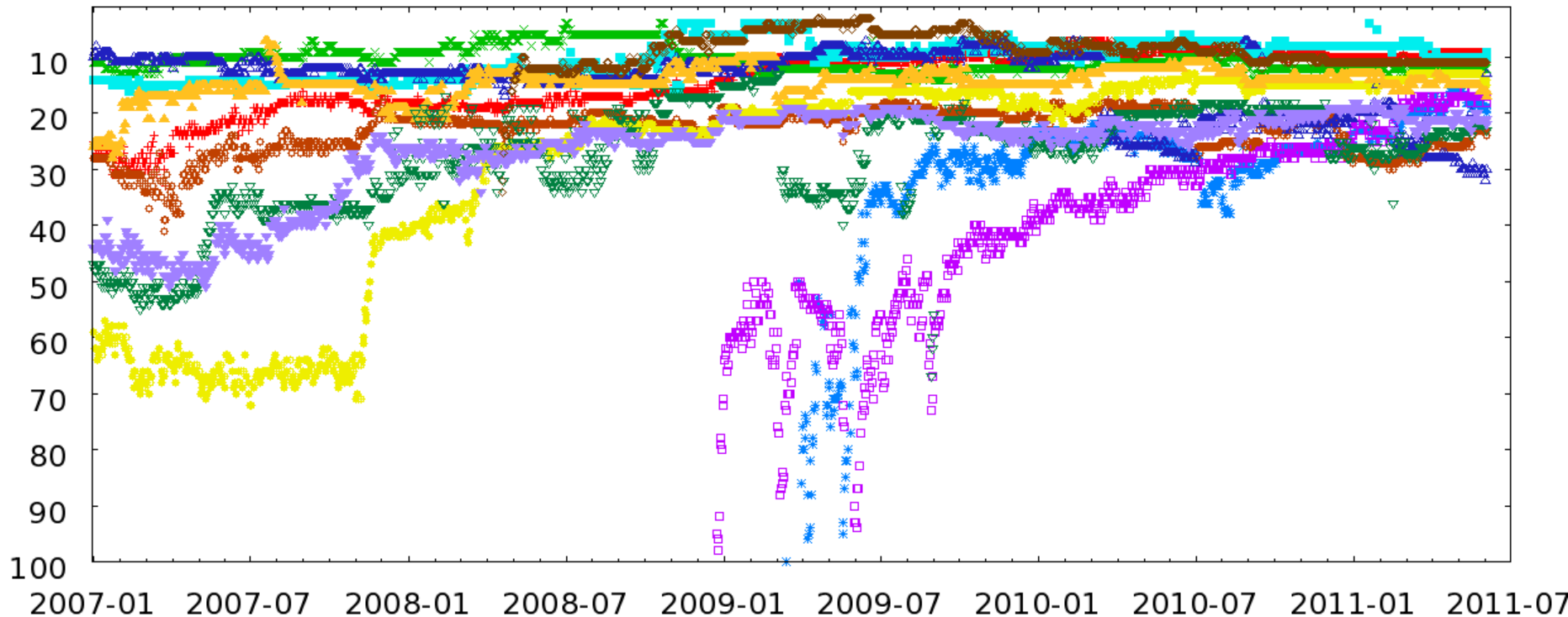
Vimpelcom ■  
 Runnet ◊  
 Synterra ●  
 RTComm △

COMSTAR-Direct ▲  
 MTC COMCOR ▽  
 Start Telecom ▼  
 ReTN.net ◇



# Domestic Market Evolution

Rank in Russian Market



Rostelecom +  
 TransTeleCom x  
 Eurotel \*  
 MegaFon □

Vimpelcom ■  
 Runnet ◊  
 Synterra ●  
 RTComm ▲

COMSTAR-Direct ▲  
 MTC COMCOR ▼  
 Start Telecom ▼  
 ReTN.net ◊

# Urban Share, Relative to National Share

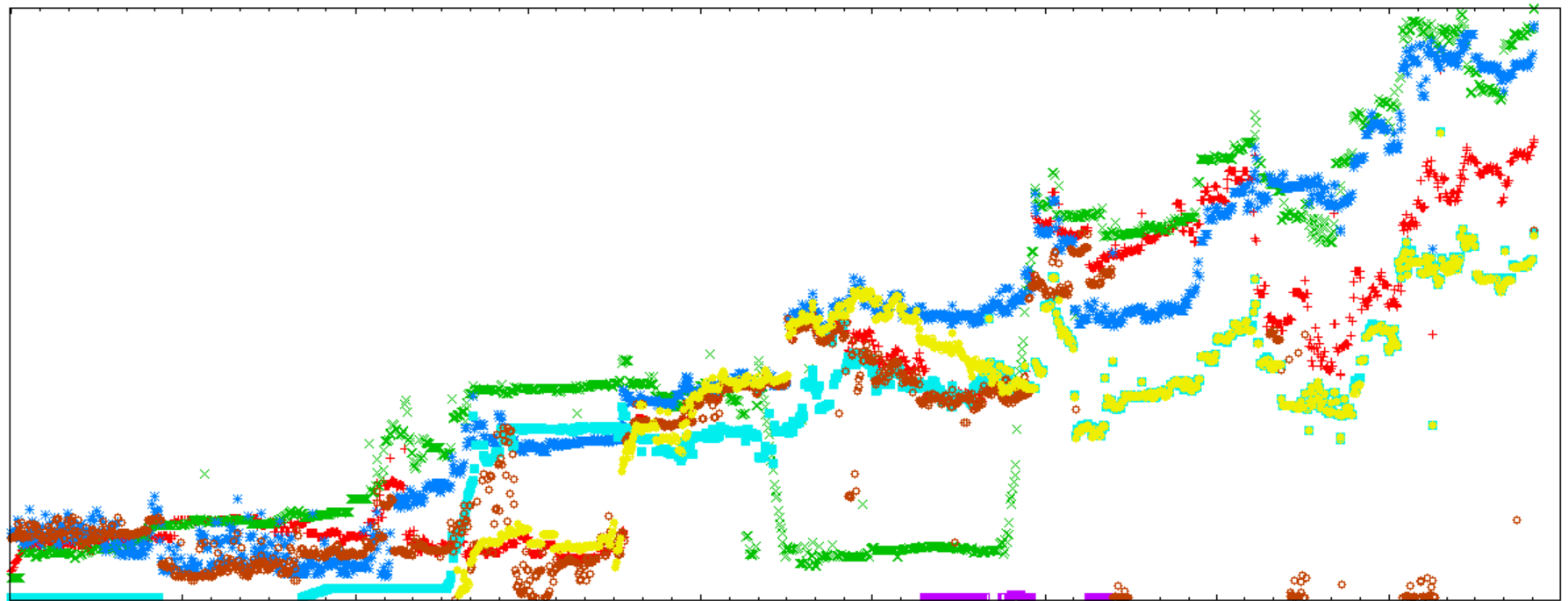
Vimpelcom Rostelecom ReTN TransTeleCom Synterra COMSTAR Megafon Eurotel

	Vimpelcom	Rostelecom	ReTN	TransTeleCom	Synterra	COMSTAR	Megafon	Eurotel
Rostov-na-Donu	61%	127%	53%	86%	96%	146%	76%	55%
Vladivostok	1%	214%	1%	277%	1%	0%	0%	0%
Perm	61%	183%	70%	127%	124%	62%	106%	103%
Yekaterinburg	83%	153%	60%	107%	119%	166%	4%	210%
Ufa	203%	205%	227%	278%	424%	4%	851%	7%
Samara	155%	113%	166%	186%	307%	40%	468%	67%
Nizhny Novgorod	99%	120%	151%	91%	181%	44%	244%	40%
Novosibirsk	100%	87%	110%	171%	210%	211%	351%	345%
Volgograd	181%	131%	192%	165%	357%	86%	684%	141%
Moscow	108%	56%	103%	49%	46%	90%	24%	18%
Krasnoyarsk	47%	174%	31%	160%	62%	259%	86%	424%
Omsk	43%	143%	50%	158%	93%	137%	191%	226%
Kazan	95%	90%	84%	212%	154%	67%	236%	110%
St Petersburg	107%	74%	165%	14%	91%	169%	36%	122%
Irkutsk	14%	195%	16%	215%	30%	359%	16%	593%
Chelyabinsk	63%	155%	70%	138%	139%	122%	89%	201%



# Natural Extension to Regional Markets

Score in Kazakh Market



2007-01 2007-07 2008-01 2008-07 2009-01 2009-07 2010-01 2010-07 2011-01 2011-07

Rostelecom +  
TransTeleCom x  
Vimpelcom \*

Runnet □  
Synterra ■  
RTComm ○

ReTN.net ●



# Russia's Regional Influence: On-Net %

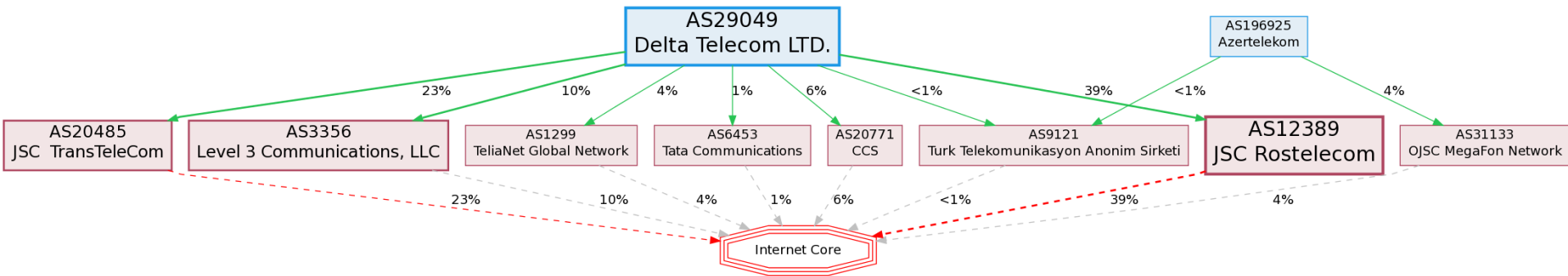
- 90%+
  - AZ, KZ, KG, BY
  - UZ, TJ, TM, RU
- 73% Armenia
- 50% Latvia
- 30-35% IR, GE, MD, UA
- 11% Iraq
- 9% Afghanistan



# 1. Caucasus Region

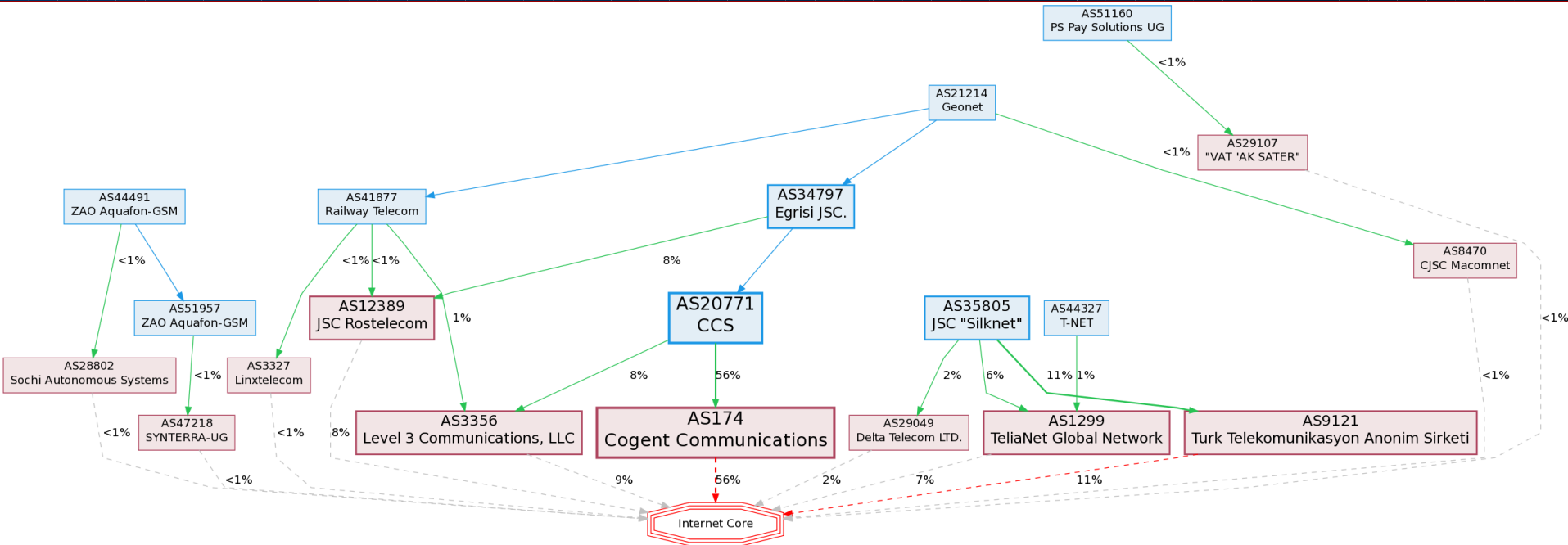


# Azerbaijan



- Plays East and West routes against each other
  - Tata, Telia, Turk Telekom, CCS, L(3) 22%
  - TransTelecom 23%
  - Rostelecom 39%
  - MegaFon 4%

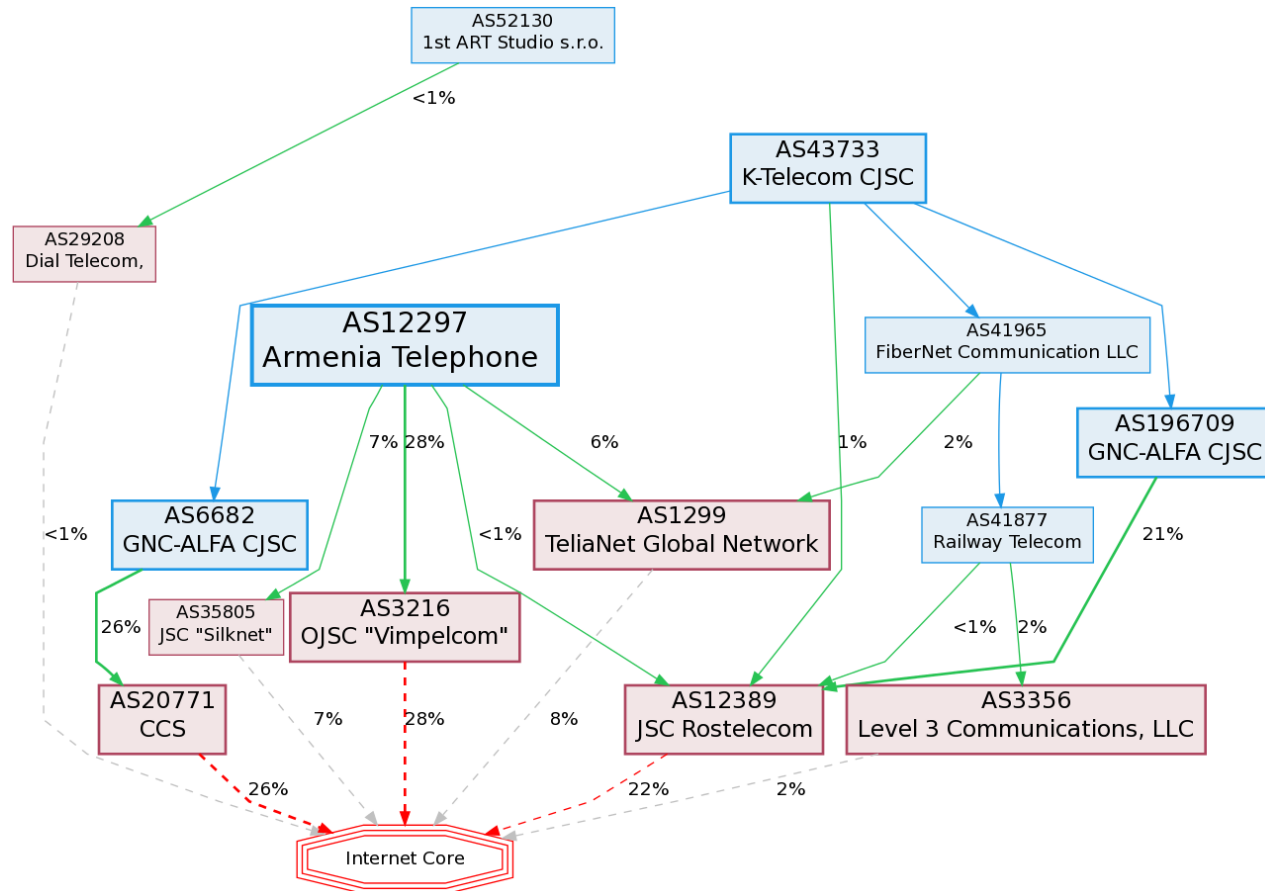
# Georgia



- Cogent 56%, Turk Telekom 11%,
- Level(3) 9%, Telia 7%
- Rostelecom 8%, Delta 2%

# Armenia

- CCS 26%
  - ... to Cogent, L3
- Vimpelcom 28%
- Rostelecom 22%
- Telia 8%
- Silknet (GE) 7%

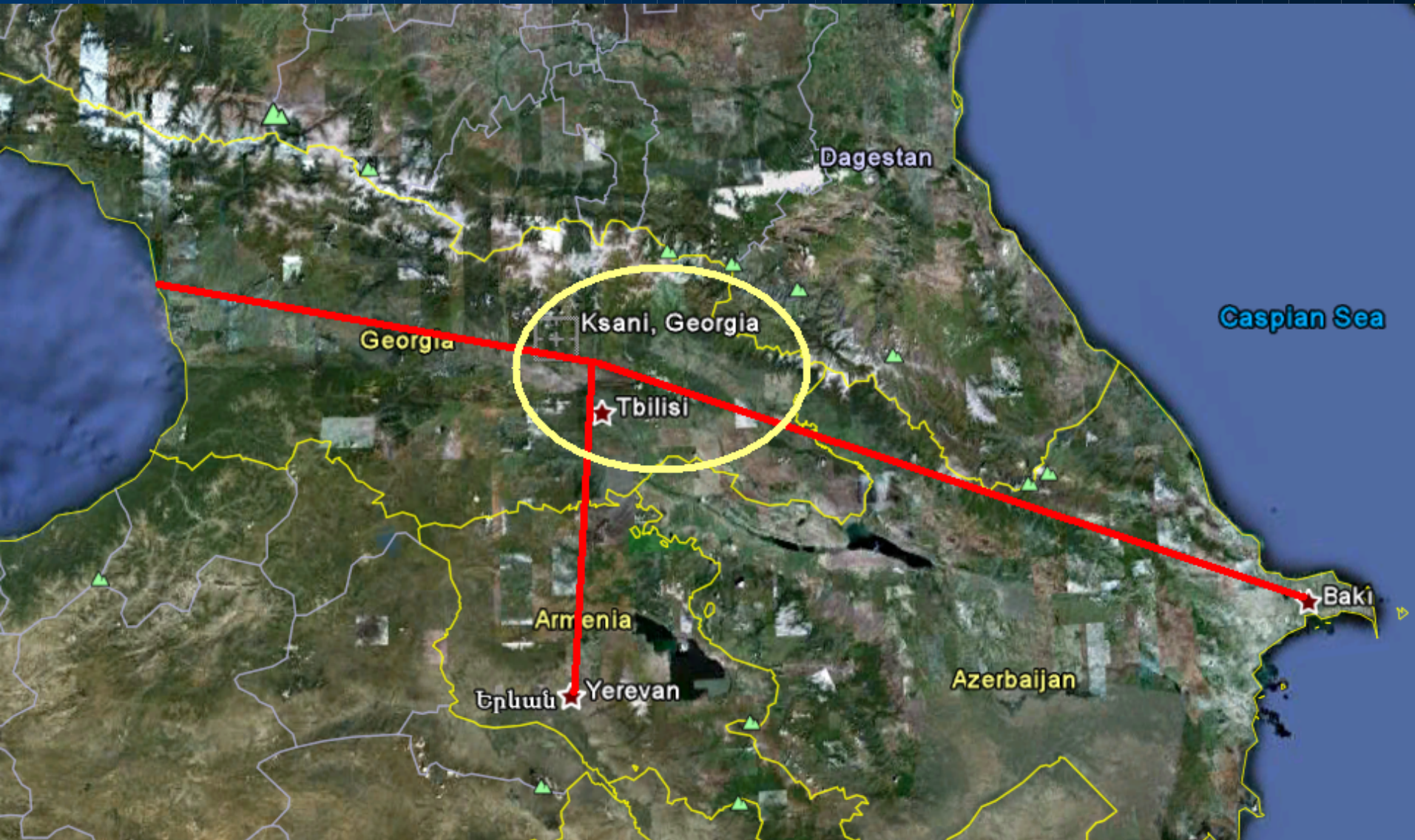


# Nothing is Simple in the Caucasus...

- Fiber cut near Ksani, Georgia
- Western routes to Cogent, Level(3) on CCS are lost on 28 March 2011
- Eastern routes to Azerbaijan take up some of the load
- ***Cheap != Safe***



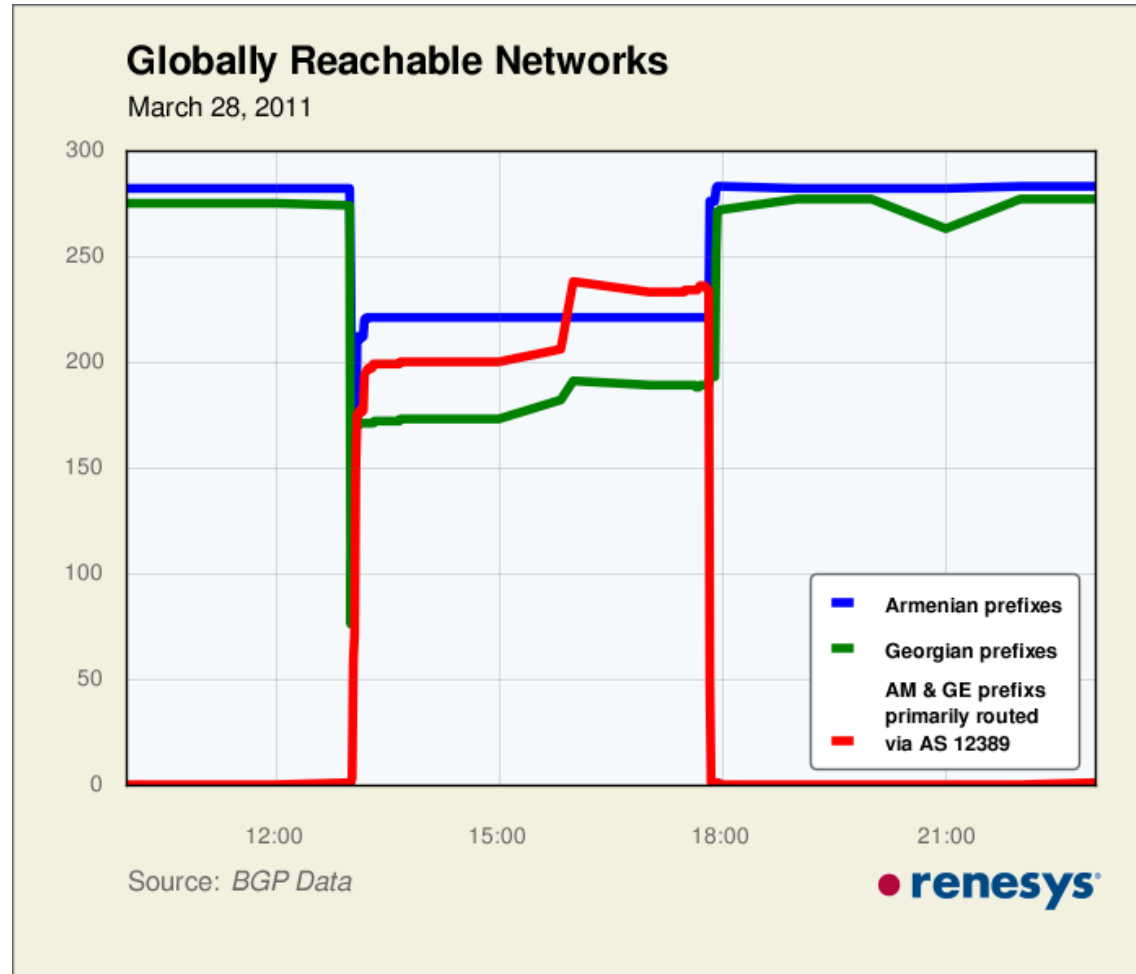
# Disruption





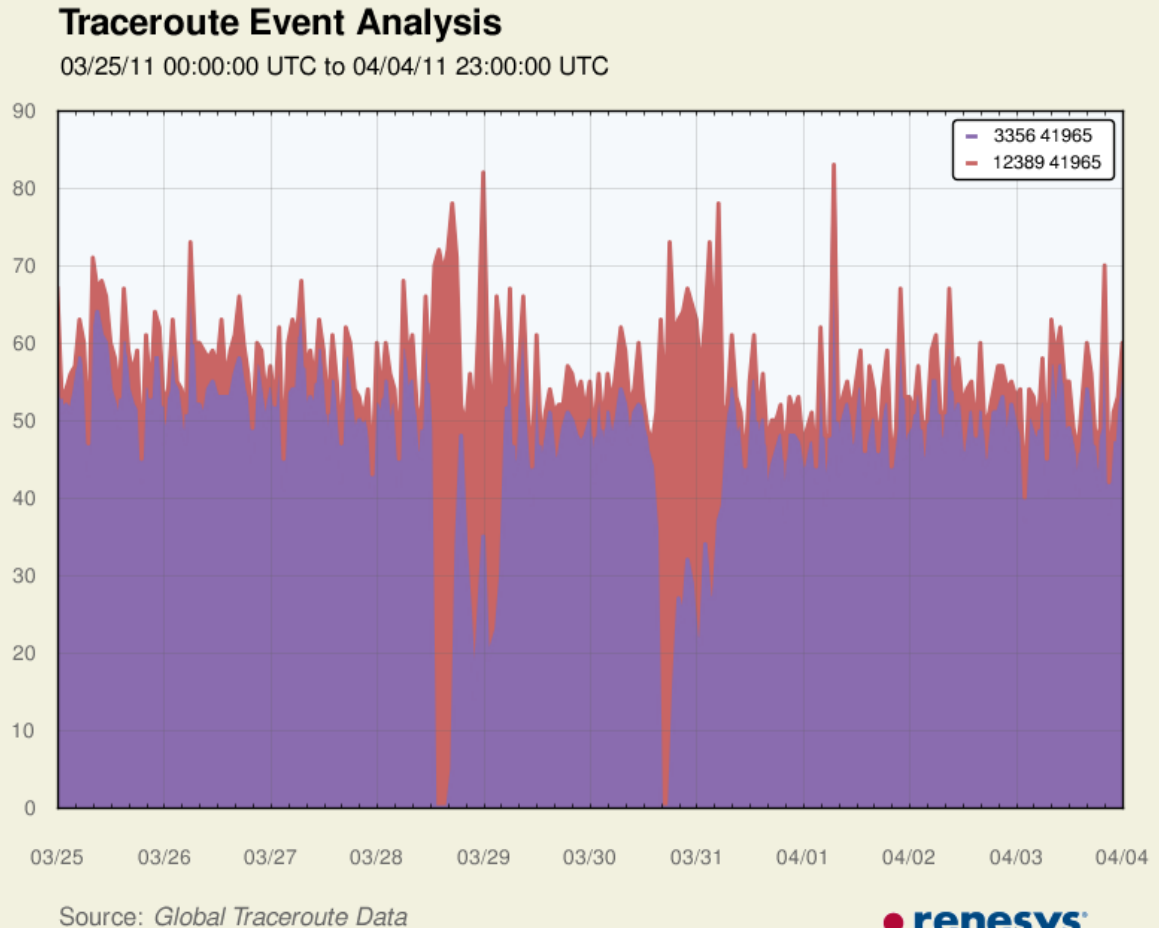
# Multiple countries impacted

- Reachable network counts drop promptly during initial event
- Surviving networks prefer Rostelecom routes (having lost Western-facing routes)
- Russian backup transit becomes primary .. briefly



# Traceroute illustrates path substitution

- Renesys traceroutes show Armenian FiberNet (41965) switching from Level(3) to Rostelecom during the initial outage .. and during the repair window days later

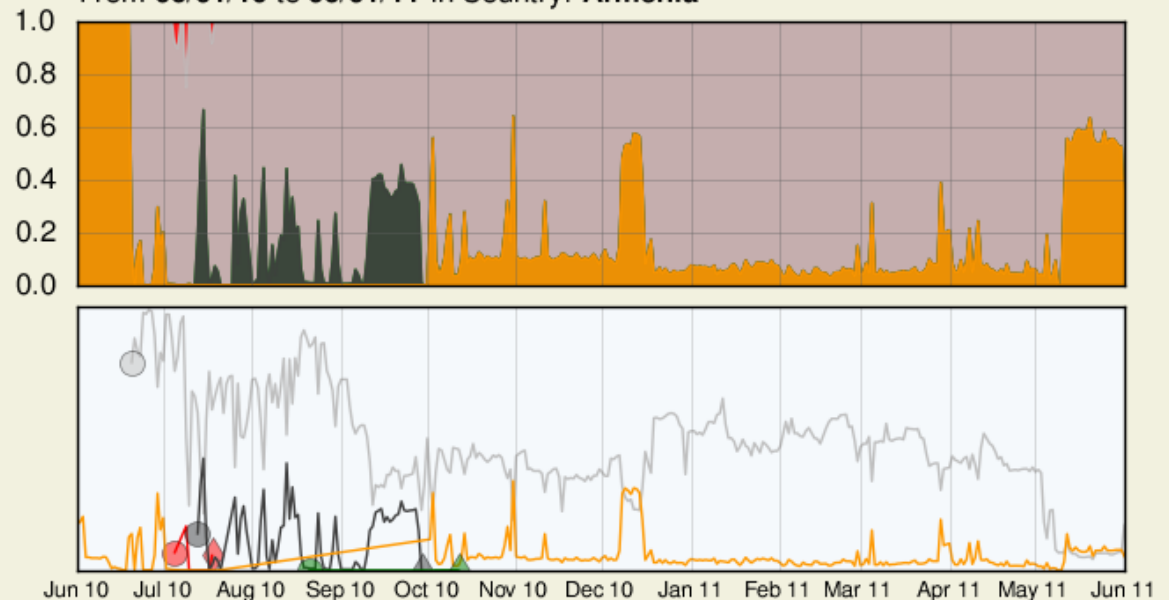


# Impact on Railway Telecom Armenia

- **Rostelecom** regains some of the transit share it lost to **CCS/Level3** in 2010
- Larger share of smaller total transit
- Events trigger reevaluation of risk and reexamination of transit diversity

## Transit for Railway Telecom (AS41877)

From 06/01/10 to 06/01/11 in Country: Armenia

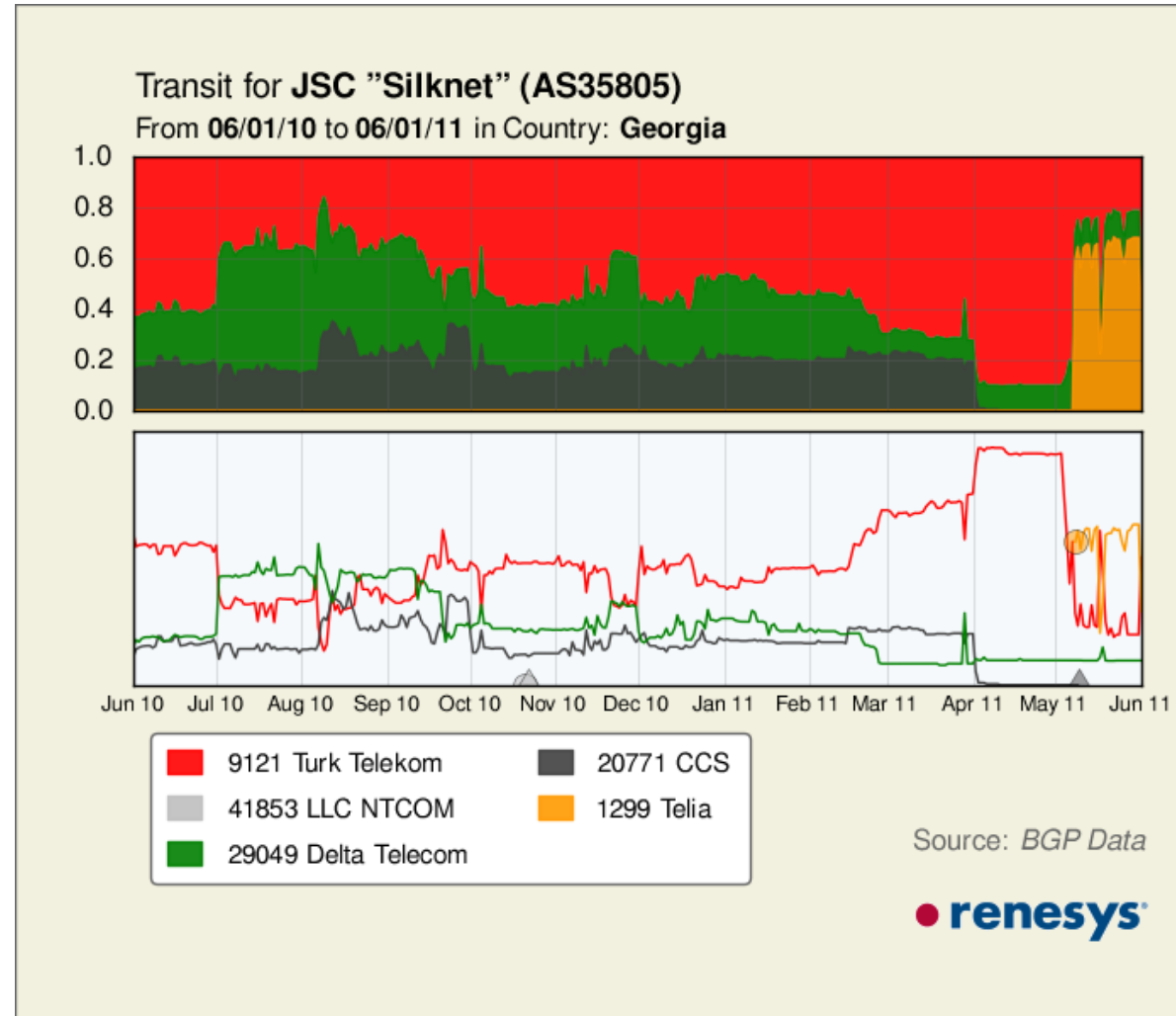


Source: BGP Data



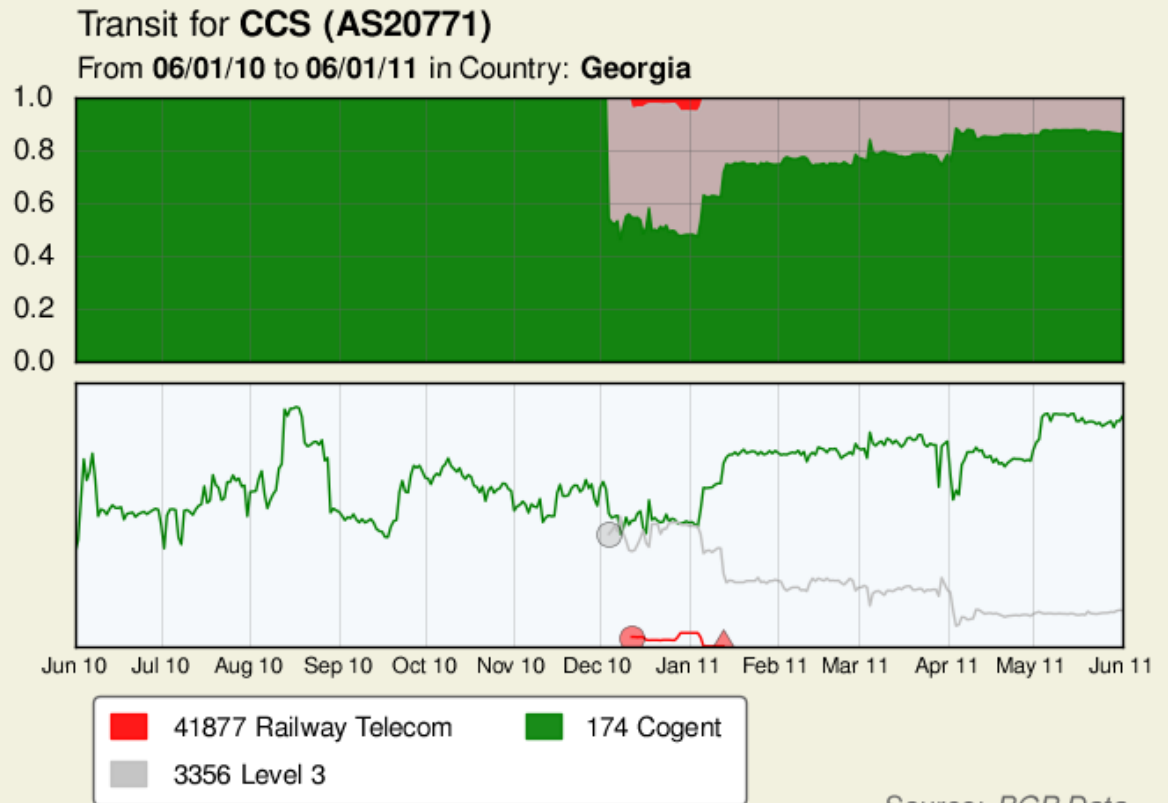
# Tariff dispute affecting routing?

- Silknet 35805, largest ISP in Georgia
- **Delta+Telia** via Baku replaces **CCS**, reduces **Turk Telekom** via western route
- *Georgian Railway's fiber tariffs are now in dispute*



# Caucasus Cable System (AS20771)

- Providing transit in Georgia, Armenia, and Azerbaijan (since 2011)
- Primary provider to GNC-Alfa
- Transit via **Cogent** and **Level(3)**

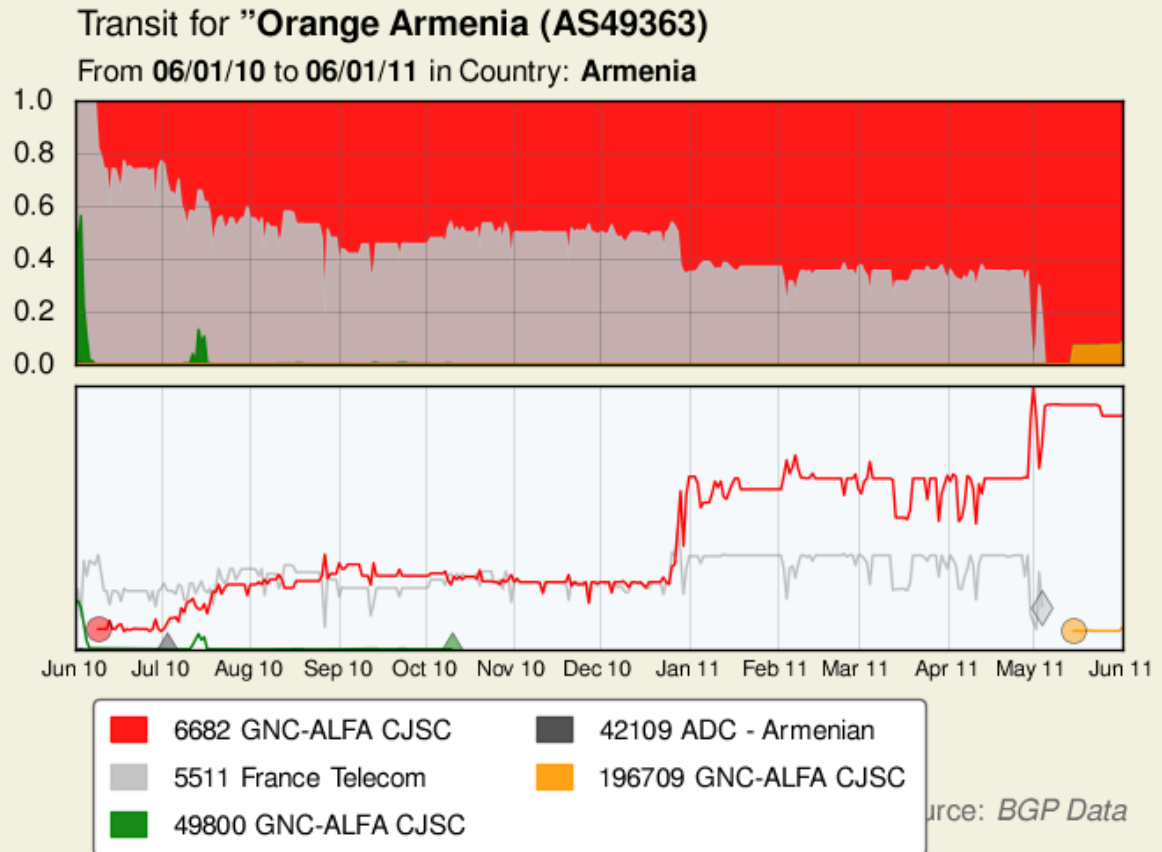


Source: BGP Data

**renesys**

# Armenian takeover candidate?

- **GNC-Alfa** seems incredibly successful, has CCS transit today
- Armenian-Iranian gas pipeline will increase diversity
- Orange Armenia chooses them for transit instead of Orange!!



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Photos

13

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## Hayastan Shakarian

Like

 Entertainer · [Armazi, Akhagoris Raioni, Georgia](#)

### Basic Information

**Location**
[Upatree, Armazi, Georgia](#)
**Affiliation**

Anti-Armenia

**Birthday**

August 6, 1936

**Biography**

Hayastan Shakarian is the single most powerful woman in (way) Eastern Europe.

With just the raw power of her arms and a wood saw she was able to bring the state of Armenia to its knees, crippling communications and disrupting the lives of its 3.3 million citizens.

Hayastan Shakarian, known as HaSh amongst her close friends, has lived through various conflicts in her glorious 75 years on Earth. She fought with the Red Army in WWII, rallying the weary men around her to lead a push into Nazi... [\(read more\)](#)

**Awards**

The Order of Victory

**Gender**

Female

**Personal Information**

Steal copper for a living. Part-time social activist. I keep people in check.

**Personal Interests**

Copper Jewellery  
 Spades and Shovels  
 Hand Saws  
 Sticking it to the Man

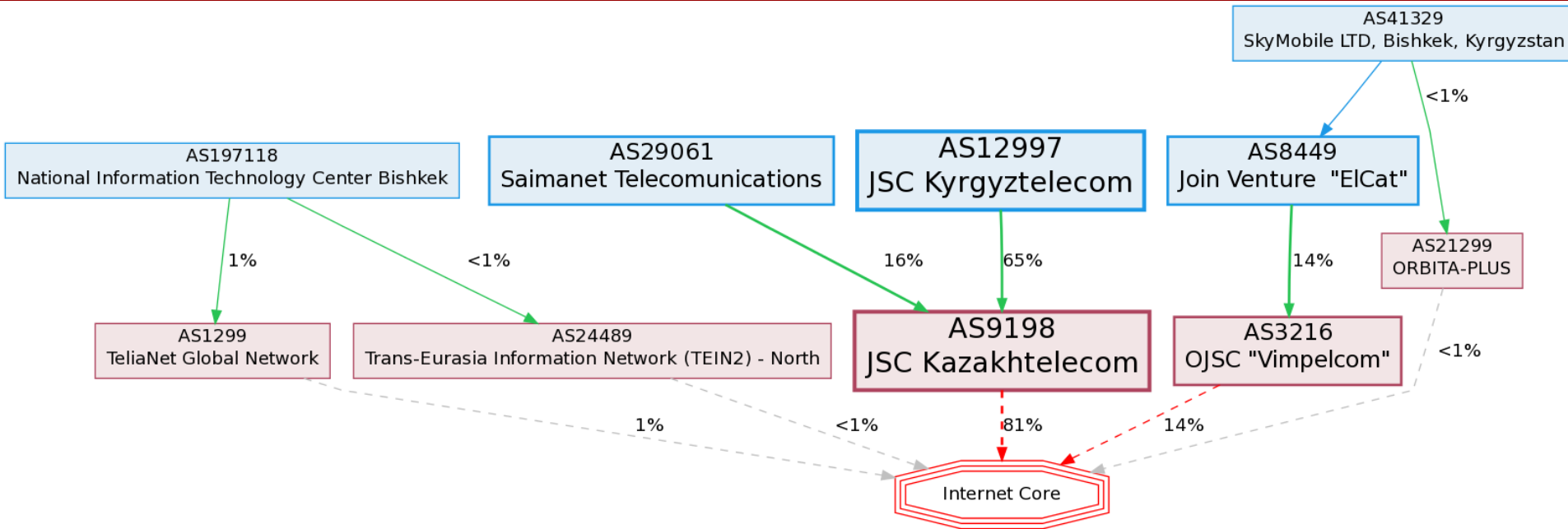
**Website**
<http://www.bbc.co.uk/news/business-13158351>

## 2. Central Asia



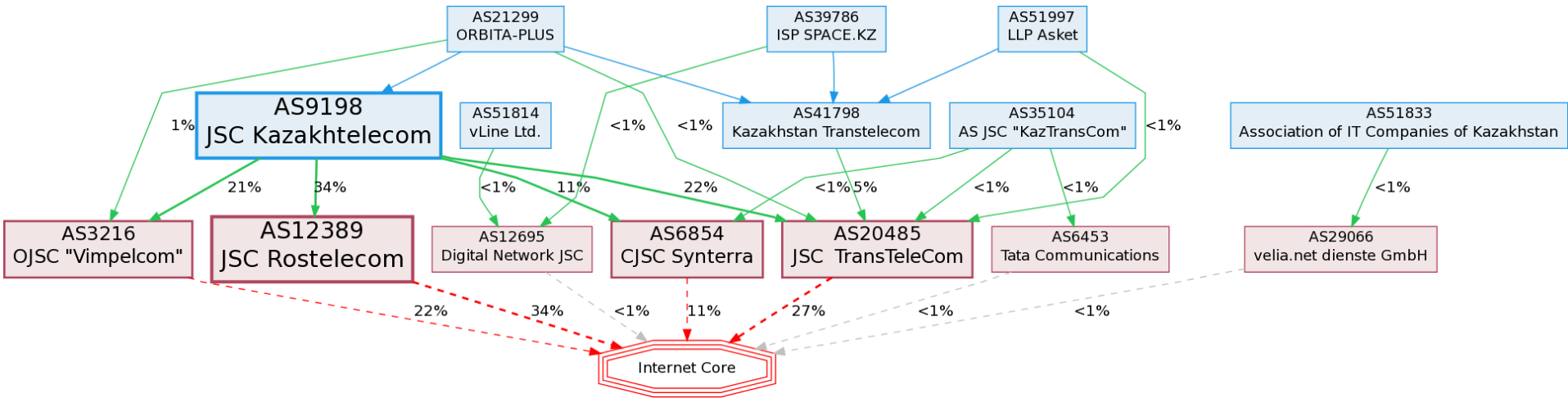


# Kyrgyzstan



- 81 % Kazakhtelecom
- 14% Vimpelcom
- ...

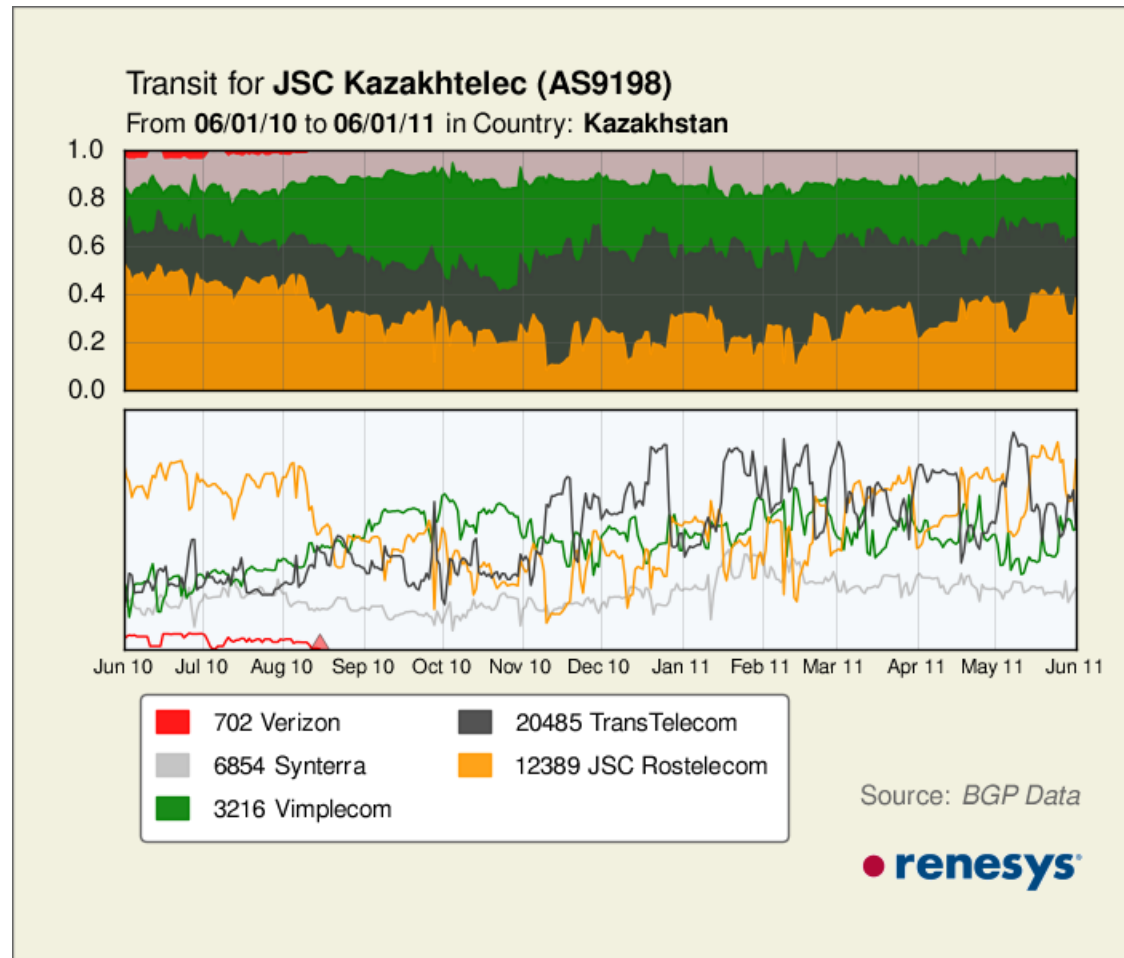
# Kazakhstan



- 34% Rostelecom
- 27% TransTeleCom
- 22% Vimpelcom
- 11% Synterra

# Kazakhtelecom (AS9198)

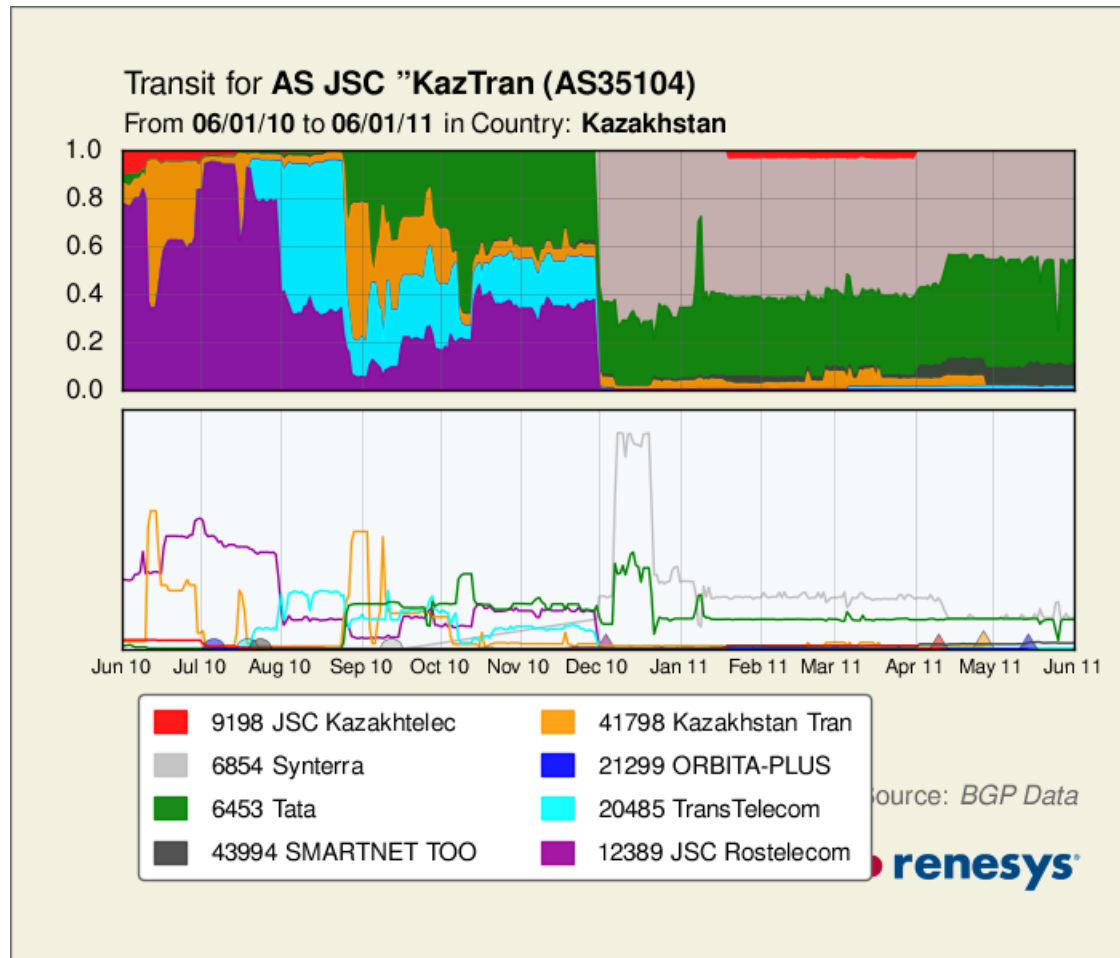
- Kazakhtelecom transit blend is very stable
- **Rostelecom**,  
TransTelekom,  
**Vimplecom**,  
Synterra



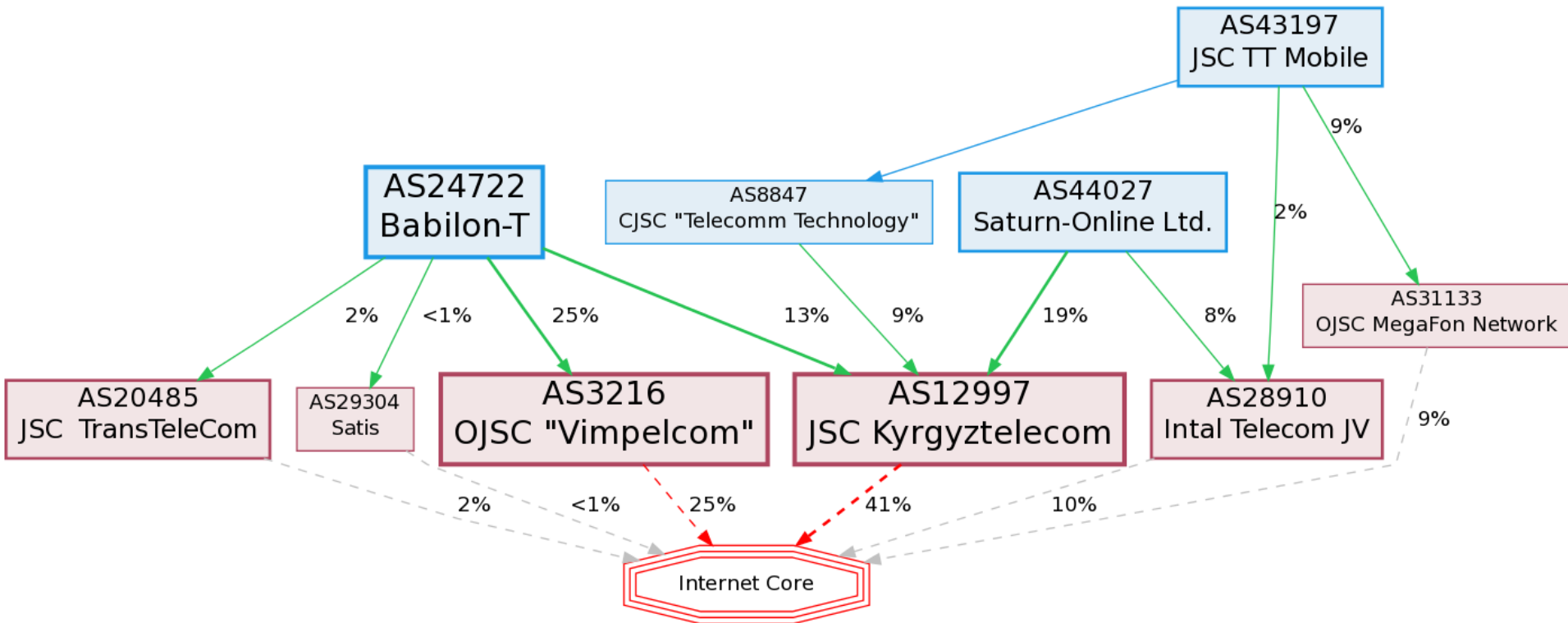
# KazTransCom (AS35104)

- Major shift in transit strategy at the end of 2010

- **Rostelecom**, **TransTeleCom** are reduced
- **Synterra** gains 60% almost overnight
- **Tata** is constant

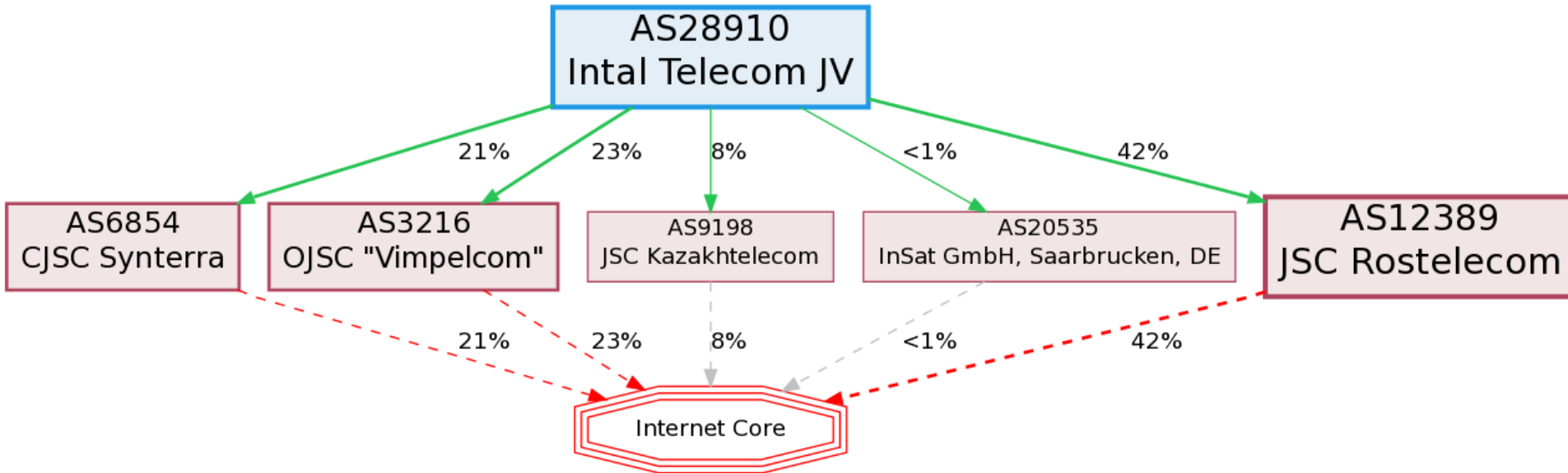


# Tajikistan



- 41% Kyrgyztelecom, 25% Vimpelcom
- 10% Intal (UZ), 9% MegaFon, 2% TransTeleCom...
- **renesys**

# Uzbekistan



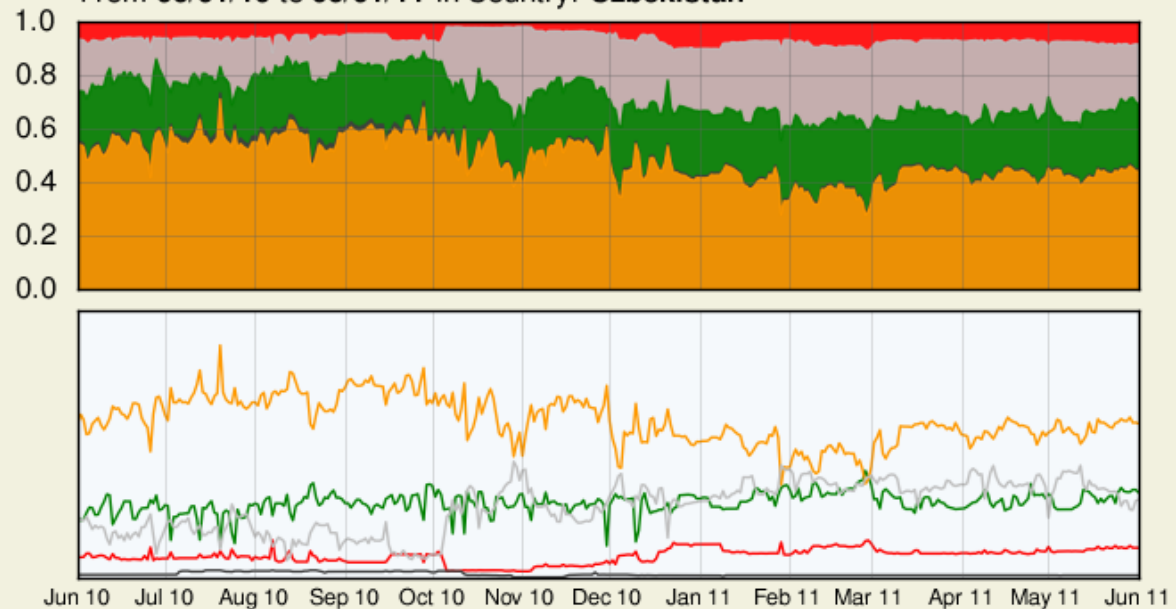
- 42% Rostelecom, 23% Vimpelcom
- 21% Synterra, 8% Kazakhtelecom
- Small amounts of Satellite Internet

# Uzbekistan

- The transit blend for Intal is remarkably stable over time
- **Rostelecom**, **Vimplecom**, **Synterra**, **Kazahtelekom**,
- ..and a bit of satellite

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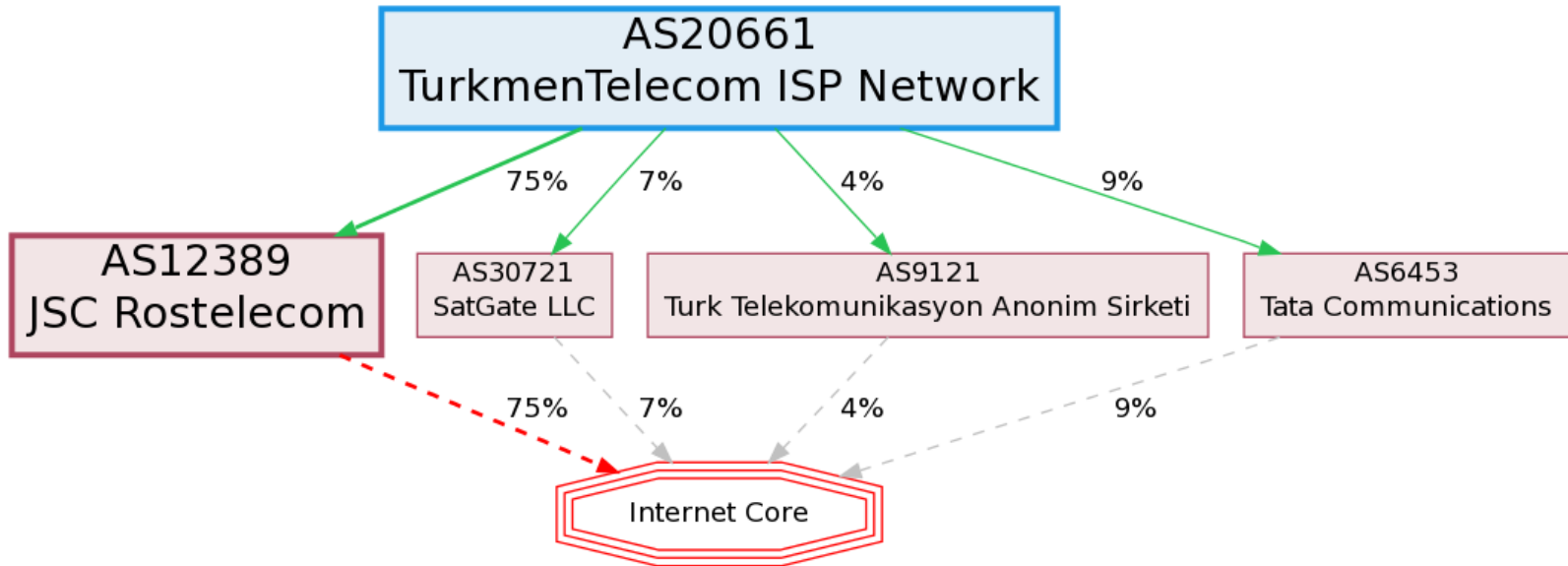
Transit for Intal (Uzbekistan) (AS28910)  
From 06/01/10 to 06/01/11 in Country: Uzbekistan



Source: BGP Data

• **renesys**

# Turkmenistan



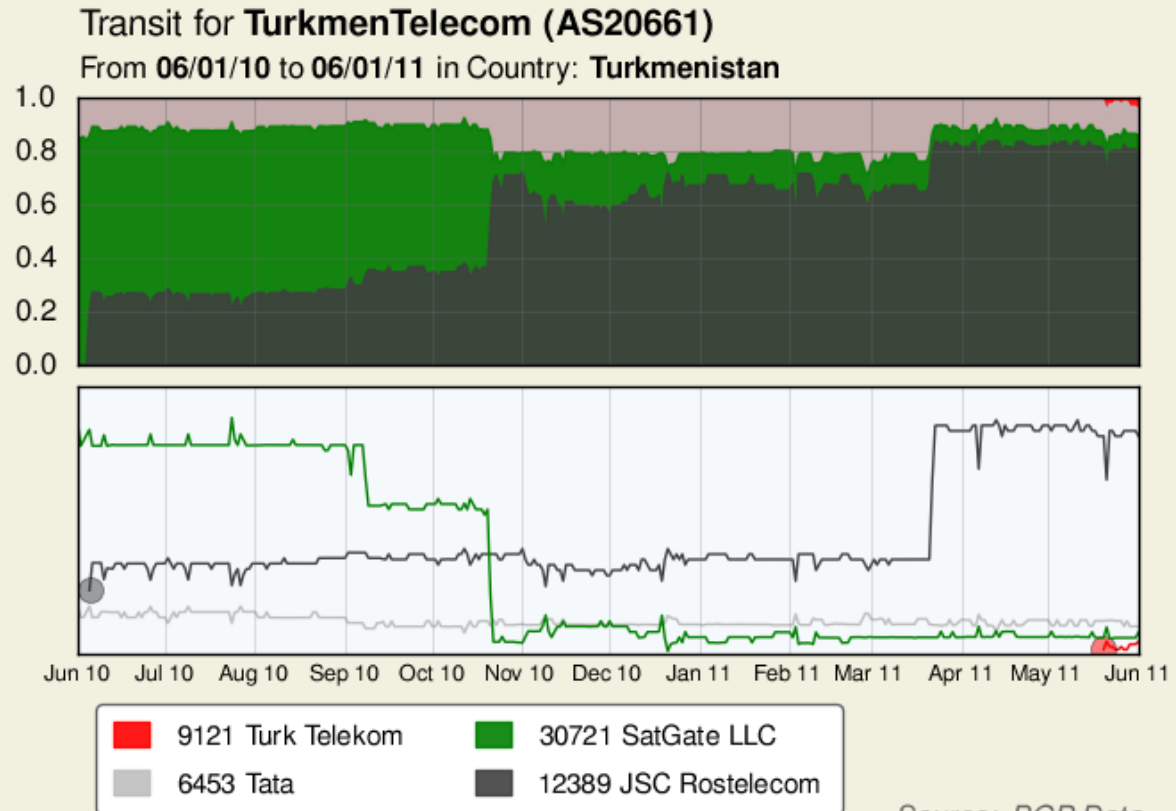
- 75% Rostelecom
- 7% satellite (!)
- 9% Tata, 4% Turk Telekom (new arrival in market)



# Turkmenistan

- **Satellite** being phased out, finally (60%+ in 2010)
- Thanks to **Rostelecom**
- But in the last days of May, **Turkish transit** appears .....

• **renesys**



Source: BGP Data

• **renesys**

# Turkmenistan

- 20 May 2011
- 12 networks in Ashgabat began receiving fresh transit from Turk Telekom
- Ministry of Communication, GRX prefixes included
- We'll see!

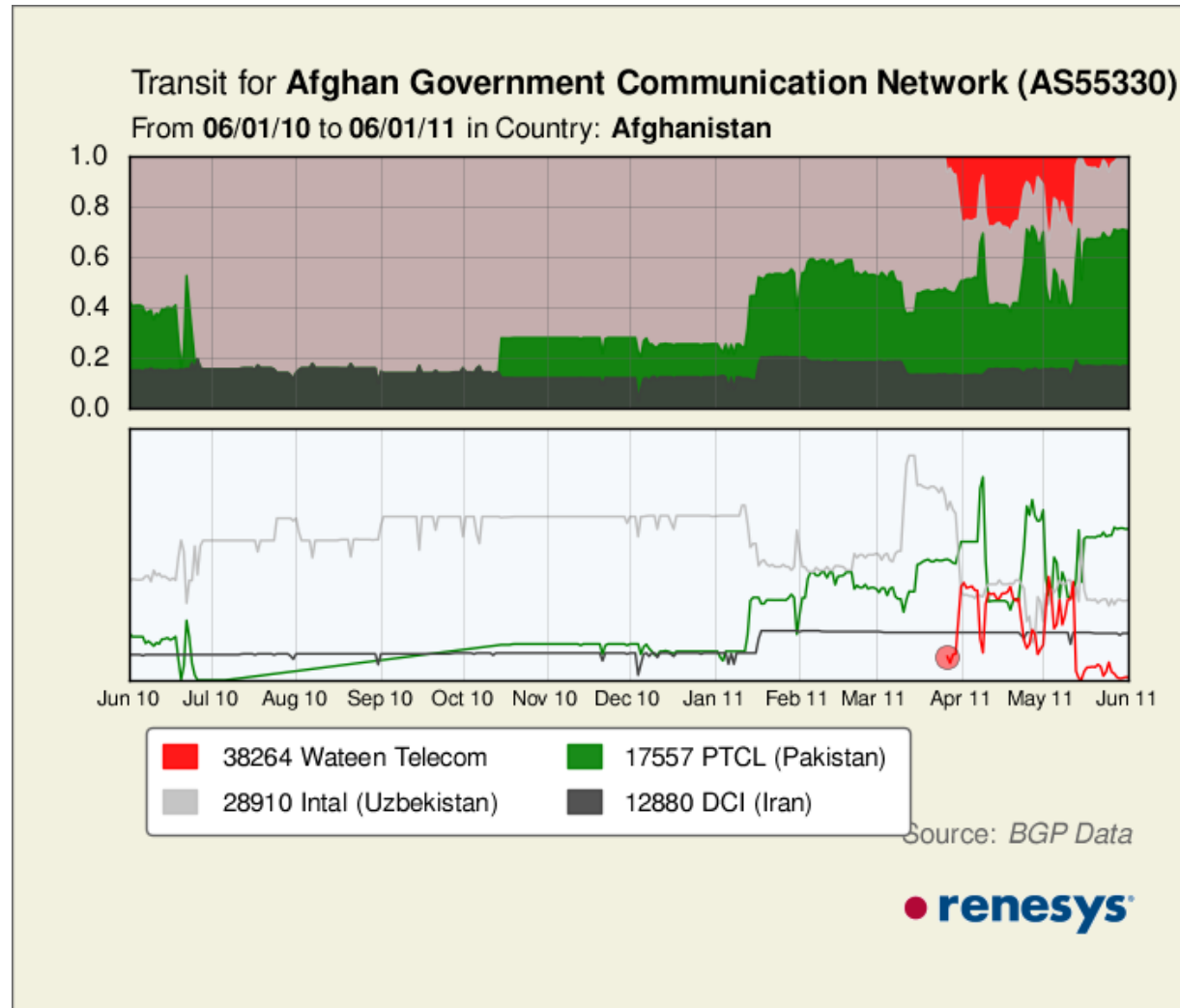
The screenshot displays the Renesys Market Intelligence web application. At the top, the logo reads "renesys | market intelligence". Below the logo is a navigation bar with tabs for "Dashboard", "New", "Internet Index", "Provider Report", "Network Watch", and "Market Watch". The "New" tab is highlighted in green. On the left side, there is a vertical menu with the following items: Profile, In the Rankings, Recent News (highlighted in yellow), Market Breakdown, Customers (with a minus sign icon), AS Customers, Critically Dependent, AS Customers, Transited Networks, Unstable Networks, Competitors, Prospects, Providers, and Selected Peers. The main content area is titled "Recent News (Turkmenistan)" and features a search icon and a question mark icon. Below the title, there is a star icon and the text "Turk Telekomunikasyon Anonim Sirketi" with "AS 9121" in a yellow box. A date filter shows "Friday, May 20" with "3 stories" to its right. Three news items are listed: 1. "Began providing transit to customer networks in Turkmenistan" with a plus icon and a star icon. 2. "New transit customer in Turkmenistan : TurkmenTelecom ISP Network AS 20661" with a plus icon and a star icon. 3. "New transit provider in Turkmenistan : Level 3 Communications, LLC AS 3356" with a globe icon and a star icon.

# 3. Iran, Iraq, Afghanistan



# Afghanistan

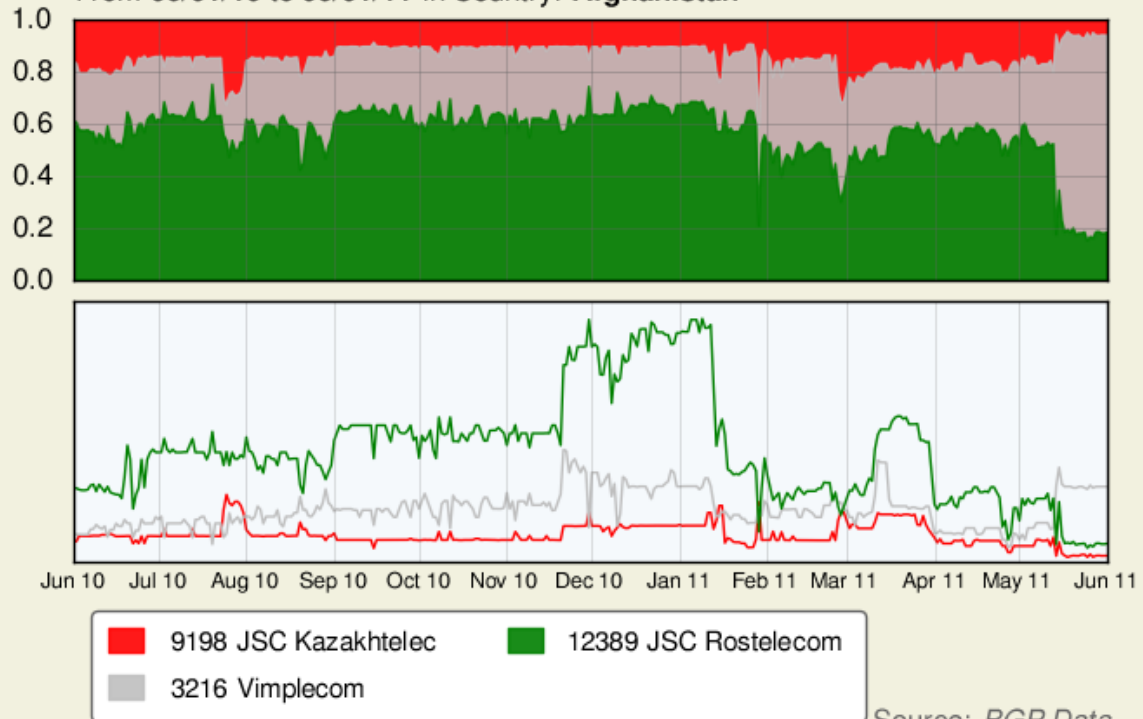
- **Pakistan** transit resumes after long fiber outage
- **Uzbek** transit via Russia scales back (expensive)
- **Iranian DCI** provides service only in Herat



# Afghanistan

- Intal's shrinking share of Afghan traffic routes more through **Vimplecom** these days
- **Rostelecom** and **Kazakhtelecom's** share has diminished

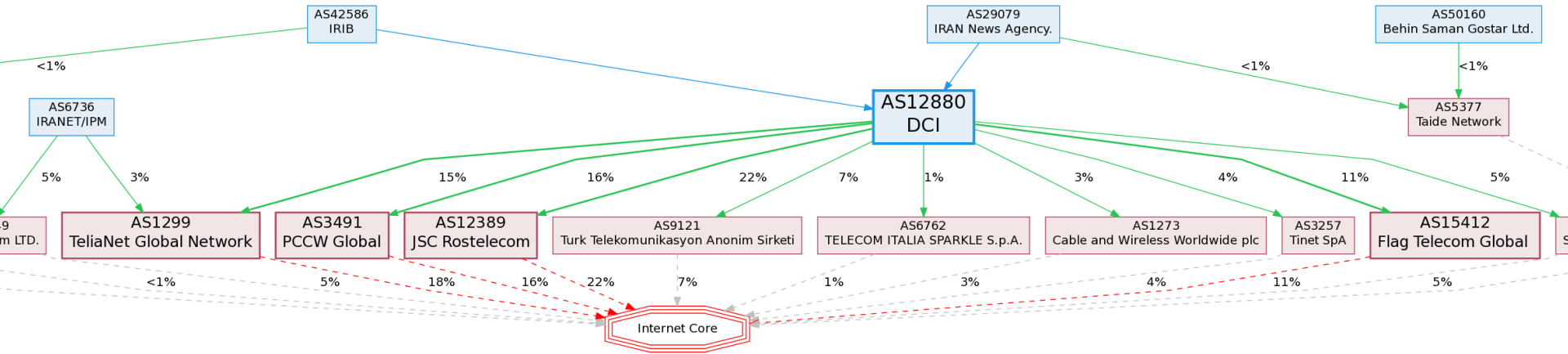
Transit for Intal (Uzbekistan) (AS28910)  
From 06/01/10 to 06/01/11 in Country: Afghanistan



Source: BGP Data

• **renesys**

# Iran



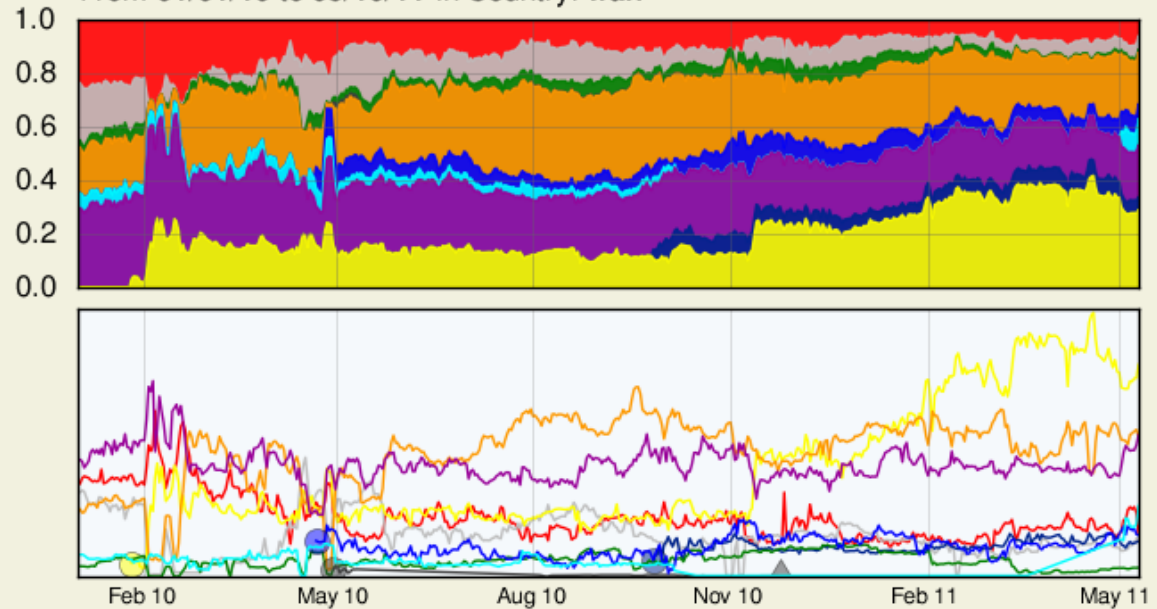
- Rostelecom has 22% of Iran on-net via DCI
- Down from ~40% last year at peak
- Relationship extends to Iraqi Kurdistan

# Iran transit diversity

- DCI does a really good job of balancing all competing transit alternatives
- Note return of **Flag** after months of absence
- **Russian transit peaks at ~40%**
- **Turkish transit waning?**

## Transit for DCI (Iran) (AS12880)

From 01/01/10 to 05/10/11 in Country: Iran



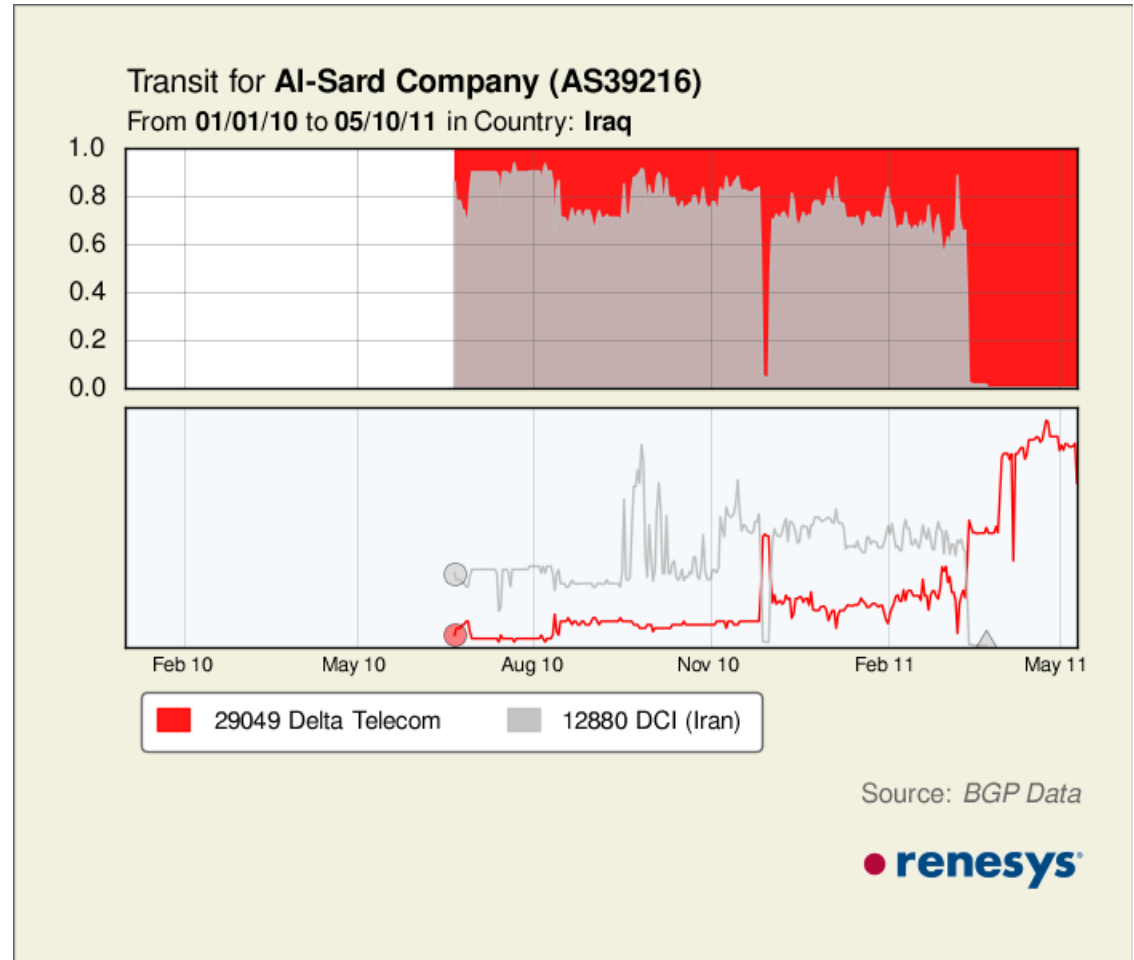
9121 Turk Telekom	3257 Tinet SpA
7473 SingTel	15412 Flag
6762 Telecom Italia	1299 Telia
4788 TM Net	1273 Cable & Wireless
3491 PCCW	12389 JSC Rostelecom

Source: BGP Data



# Iran direct transit waning in Iraq?

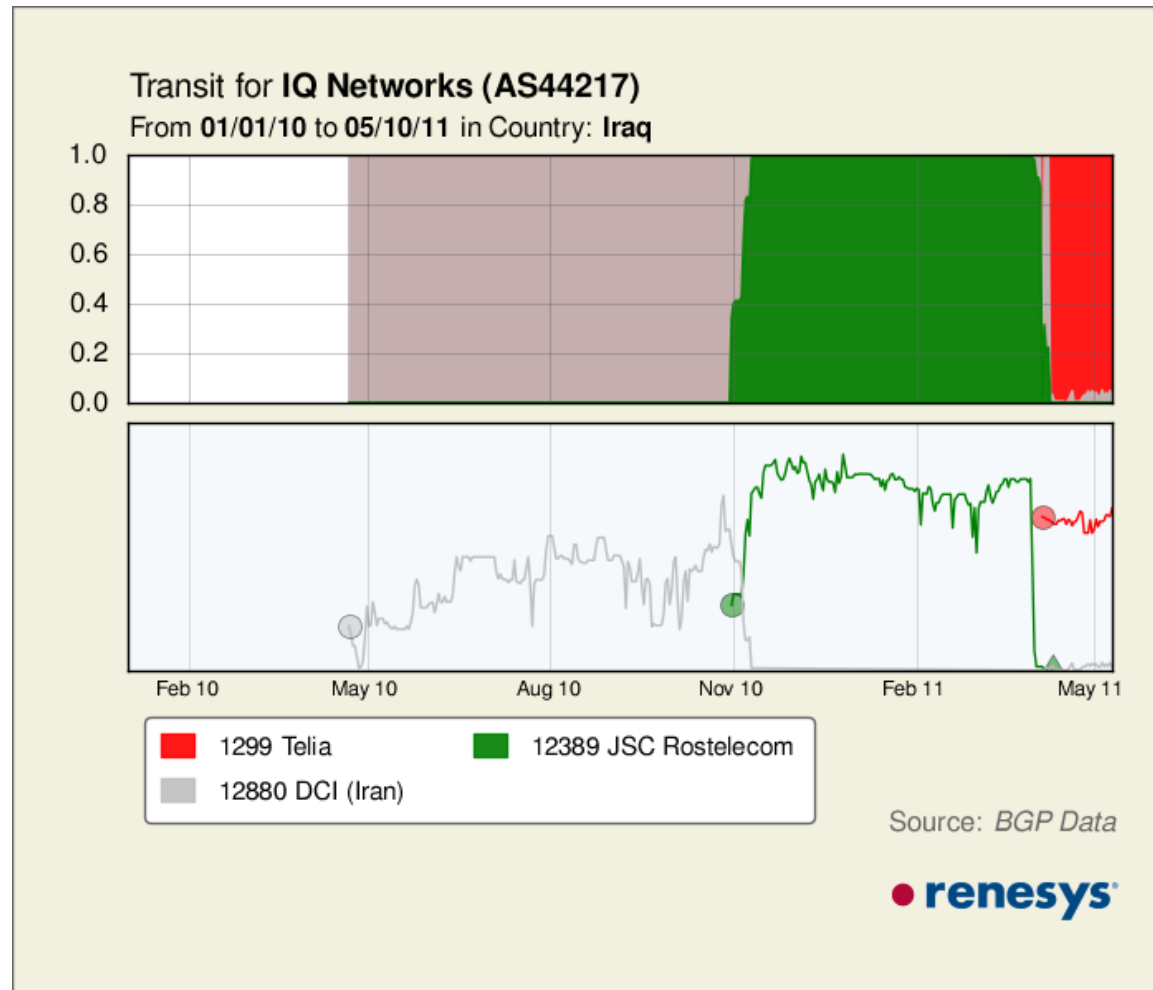
- Iran exports Internet to neighboring Iraqi Kurdistan
- DCI is out, **Delta Telecom** is in at Al-Sard group
- Rostelecom's Iraq customer base score up nearly 400% in 6 months as a result





# Iraq: still in flux for Russian providers

- **Telia** walks into Iraq and takes business from **Rostelecom**
- Russia, Telia, Turkey, and southern paths through the Gulf will compete for Iraqi traffic in 2012.



# Summary: Looking Forward/Outward

- Russian transit is perceived as a premium primary/backup throughout the region
- Significant potential for terrestrial routes between Europe and Asia, and into the Gulf
  - Lower latency
  - Faster repair
  - Fewer borders to cross
- Pricing pressures relentless, memories short
- Still, a source of significant future growth and regional influence for Russian providers.



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