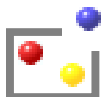


**MARKET REPORT FOR OPERATOR  
RUSSIAN VOICE OVER IP MARKET**

**Prepared for: OPERATOR**

**March 20, 2000**



**J'son & Partners**  
Management Consultancy

**Armyanskiy Pereulok 11/2a  
101960 Moscow - RUSSIA  
tel: +7 095 925 7245  
fax: +7 095 925 9177  
Internet: [json@json.ru](mailto:json@json.ru)**

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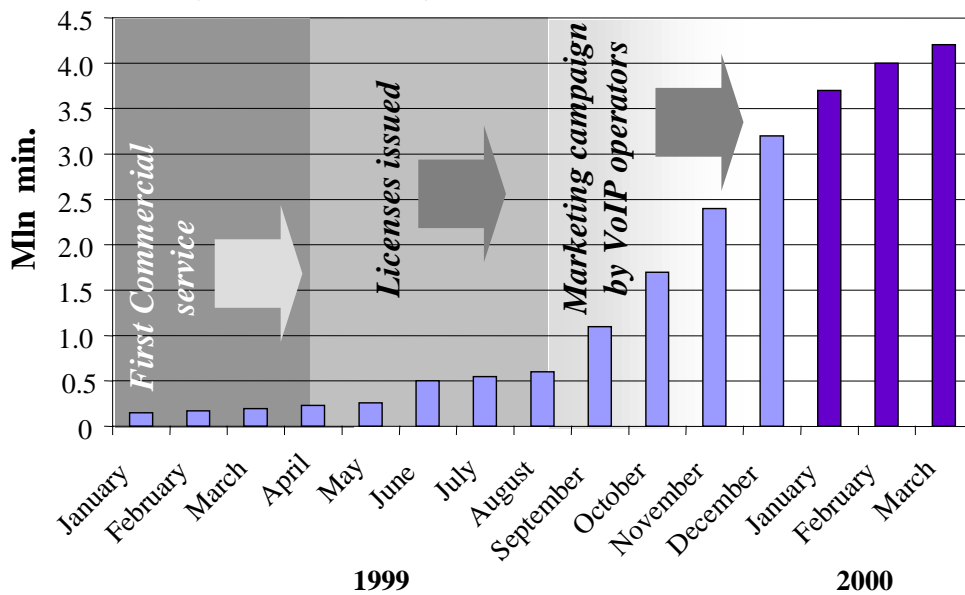
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**1. SUMMARY**

The Russian IP-telephony market is far from maturity. Currently the total monthly traffic of all VoIP operators in Russia is evaluated at approximately 4 mln billable minutes of international and domestic long distance traffic.

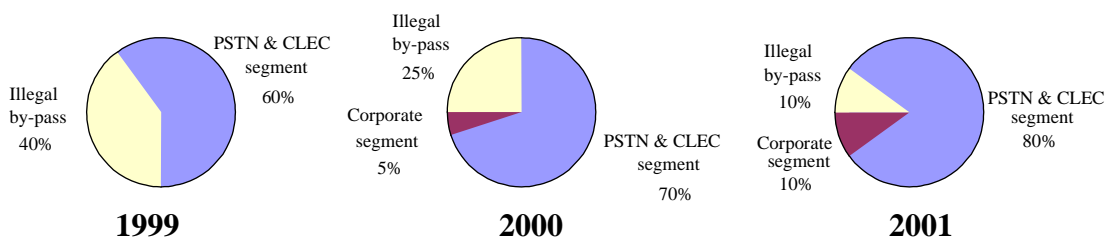
The IP-telephony market in Russia might be said to have started in 1999, when the Ministry of Communications finally clarified the regulatory status of VoIP service and issued the first few licenses. Unlike in other developed economies, proliferation of IP-telephony in Russia has been to a large extent driven by the alternative ILD operators, who used VoIP set-up as a loop hole to by-pass national ILD and DLD monopoly carrier Rostelecom. The VoIP operators thus take over the market share from conventional carriers, rather than generate incremental traffic.

**Russian VoIP Market (Billable Minutes)**



Following the commencement of fully legitimate VoIP service and the diversification of several CLECs into IP-telephony business, the market has been growing at a rate of 20-30% per month. Furthermore the share of pirate and semi-legitimate operators is shrinking rapidly. It is expected that the number of licensed VoIP operators will grow to over 120 towards the end of the year, while the share of “shadow” service providers will decrease to less than 25%.

**VoIP Market Break-down**



**The Russian VoIP market in 2000 is expected to grow by 180% and reach USD 12.4 mln in terms of the total turnover. IP-telephony operators are projected to carry 41.5 mln of billable minutes or 1% of the total ILD and DLD traffic on the Russian PSTN network.**

## 1.1 MAIN TRENDS

The following main trends in the IP-telephony sector have been identified as a result of the operators survey in Moscow and the regions.

**IP-telephony tariffs have been decreasing steadily (in dollar terms) over the last 18 months. It is expected that the VoIP offering<sup>1</sup> will become increasingly competitive compared to the conventional PSTN service notwithstanding rouble devaluation.** As Rostelecom and regional PTTs adjust their ILD and DLD tariffs to the consumer price index more and more corporate and individual users are likely to opt for VoIP solution. The IP-telephony had in a sense a false start in Russia in the second half of 1998. By that time several alternative operators had managed to develop sufficient technical platforms to carry voice over IP transport. However the sharp devaluation of the local currency and PSTN tariffs made IP-telephony only marginally competitive with a cheap PSTN service. Situation started to turn around in mid 1999, when Rostelecom reviewed their ILD tariffs and brought them almost to the pre-crisis level. Currently the average PSTN end-user ILD tariff is estimated at USD 0.75 per minute, while VoIP average charge is only USD 0.35 per minute<sup>2</sup>.

**Quality of service is currently the main obstacle for the further growth of the VoIP segment.** Since digital infrastructure on the main ILD routes and particularly within the country remains to be fairly expensive, the overwhelming majority of IP-telephony operators still use an open Internet environment for VoIP connectivity. That inevitably drives the quality of voice service down and has a very negative effect on reliability. Only 25% of the total IP-telephony traffic is being carried via dedicated IP backbone bearers at the moment. As Rostelecom and other carrier's carriers offer more affordable transport to international destinations and main cities inside Russia, VoIP will clearly take over conventional switched voice service. In fact, some CLECs are already using IP platform to deliver their voice traffic to the major hubs, where they can break-out into international networks. Sovintel, for example reportedly use VoIP on three European routes.

**Russian VoIP segment remains to be highly fragmented with over 70 license holders and about 40 fully operational VoIP platforms in Moscow and the regions. However, there is no clear leader on the market,** who can potentially consolidate VoIP traffic within a single transport network and offer to the regional operators an affordable transit solution. Rostelecom is well positioned to take this niche. It has been offering VoIP services through its regional outfits and is determined to further diversify into IP-telephony. There are a few alternative providers keen to compete for the market share with Rostelecom, including Global One and Concert as well as Golden Telecom and Direct Net.

**IP-telephony remains to be a segment with relatively high regulatory uncertainty.** The key regulatory act – “The Ruling Document on IP services”, which covers VoIP has yet to be officially adopted. In addition to that, a new concept for the development of IP-telephony services is expected to be developed by Q3 2000 in a concerted effort of MoC, Rostelecom and principal Russian telecom operators.

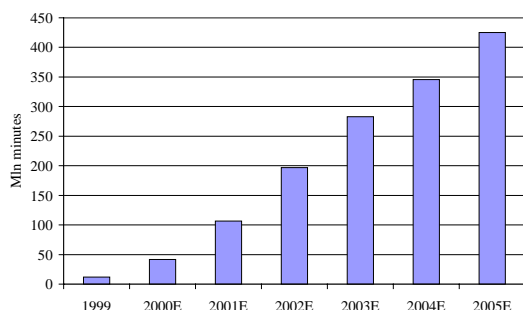
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<sup>1</sup> Denominated as a rule in hard currency.

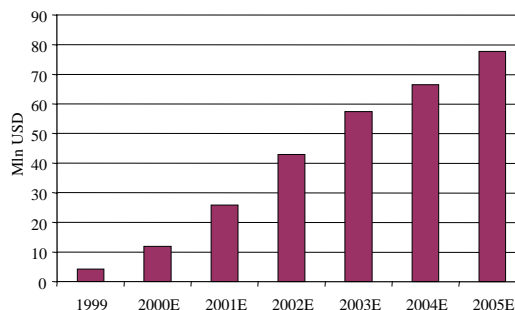
<sup>2</sup> Based on the limited data collected through the survey of 15 VoIP operators.

It is expected that in the long term Russian VoIP operators will take over a substantial market share in the ILD and DLD segments, much like in the rest of the world, where packet switched voice may very well become a dominant protocol towards the end of the decade.

**Russian Voip Market. Total Billable Minutes Of ILD And DLD Traffic**



**Revenues Of IP-Telephony Operators In Russia**



There are three main drivers behind the VoIP growth in Russia:

- Pricing:** Since VoIP can more efficiently use backbone capacity on the majority of the existing PSTN routes and particularly within corporate networks, IP is going to be price competitive compared to switched voice solutions. As VoIP reaches the critical mass and the rest of the world migrates on the packet switching (30-50% of the long distance traffic world-wide is likely to go via IP transport 2005-2007), IP-telephony solution will become cheaper than conventional switching platforms.
- Liberal regulation:** In the shorter term VoIP will be a facility for the Russian operators to break the Rostelecom monopoly and play into the premium market segments such as ILD. Indeed VoIP offers a legitimate solution for Rostelecom by-pass. Currently the by-pass traffic is evaluated at 35-40 mln min. Assuming that 50% of this traffic could migrate on the VoIP platform, the IP-telephony volume will grow to almost 110 mln min in 2001.
- Growing IP population:** The proliferation of IP technologies will facilitate the growth of IP-telephony traffic volumes. With the expansion of ISPs and the growing Internet audience the VoIP operators will get easier access to a wider customer spectrum. In practical terms VoIP providers have many synergies with ISPs and can sell their service on the back of Internet access. The pre-paid IP access cards in particular can be sold along with VoIP calling cards<sup>3</sup>. Based on world-wide trends, 50-60% of the IP subscribers tend to use corporate and residential VoIP applications. Assuming there are 4 mln dial-up customers in Russia in 2005 (and each of the IP users generates on the average at least 2 min of proper international traffic and 100 min DLD traffic), the IP-telephony volume could potentially reach 425 mln min per annum in 2005.

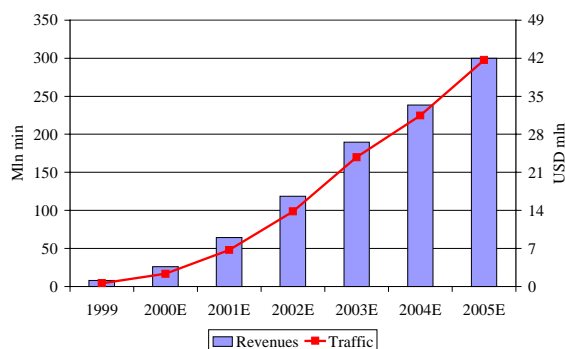
**If the current trend holds and the IP-telephony tariffs decrease slightly, while the PSTN charges grow marginally in dollar terms, VoIP market share is likely to further grow through to the year 2005 and reach up to 9-10% of the total Russian ILD and DLD market.**

<sup>3</sup> One of the leading VoIP providers in Russia – OSS have already started marketing their calling cards in a package with their pre-paid IP dial-up access services. They also promote the service through other ISPs.

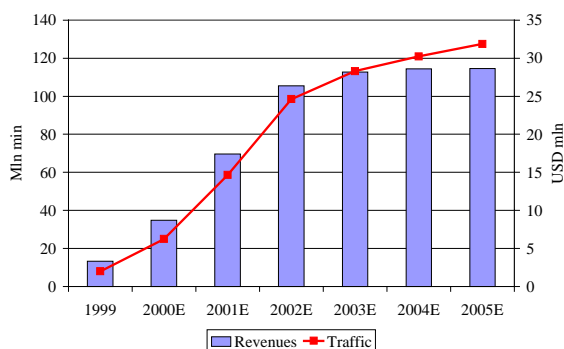
## 2. MARKET SIZE AND PROJECTIONS

Russia is likely to lag behind most of the developed economies in terms of IP-telephony traffic volumes. Given the present situation and world-wide trends, Russia is unlikely to catch up with other European countries until 2010, as far as the penetration of IP-telephony service is concerned. While VoIP is projected to get 40% of the world ILD and DLD market share by 2007, in Russia it will most likely account for only 20% of the toll traffic.

**DLD IP-telephony in Russia.  
Expected Scenario**



**ILD IP-telephony in Russia.  
Expected Scenario**



### Summary Projections

#### ILD IPT traffic, mln min

	1999	2000E	2001E	2002E	2003E	2004E	2005E
<b>Pessimistic scenario</b>	7.9	12.5	23.4	39.4	50.3	53.2	56.6
% of Rostelecom ILD	2.3	3.6	6.5	10.5	12.9	13.1	13.5
<b>Expected Scenario</b>	7.9	24.9	58.6	98.4	113.1	120.9	127.4
% of Rostelecom ILD	2.3	7.1	16.3	26.3	29.0	29.8	30.3
<b>Optimistic Scenario</b>	7.9	49.8	93.7	142.2	165.2	175.7	186.9
% of Rostelecom ILD	2.3	14.2	26.0	37.9	42.4	43.4	44.5
Average ILD IPT tariff, USD	0.42	0.35	0.30	0.27	0.25	0.24	0.22

#### DLD IPT traffic, mln min

	1999	2000E	2001E	2002E	2003E	2004E	2005E
<b>Pessimistic scenario</b>	4.2	8.3	19.2	39.4	75.4	98.8	132.2
% of Rostelecom DLD	0.1	0.2	0.5	1.0	1.8	2.4	3.1
<b>Expected Scenario</b>	4.2	16.6	47.9	98.4	169.7	224.5	297.4
% of Rostelecom DLD	0.1	0.4	1.2	2.5	4.1	5.3	6.9
<b>Optimistic Scenario</b>	4.2	33.2	76.7	142.2	247.8	326.3	436.1
% of Rostelecom DLD	0.1	0.9	2.0	3.6	6.0	7.8	10.1
Average DLD IPT tariff, USD	0.26	0.22	0.19	0.17	0.16	0.15	0.14

Even within the most pessimistic scenario, IP-telephony operators are projected to earn over USD 12 mln by 2003 on ILD traffic. In a more likely scenario the IPT turnover is projected to exceed USD 28 mln in 2003, the average ILD tariff offered by IP-telephony operators decreasing from roughly 40 cents in 1999 to about 25 cents in 2003.

## 2.1 COUNTRY SPECIFIC TRENDS

Apart from the existing handicap between Russia and the rest of the world (Russian VoIP market literally did not exist until mid 1999), there are several country specific factors, which will affect the expansion of VoIP networks in Russia.

The following table describes peculiarities of the Russian network and business environment.

<p>The revenue collected on the majority of existing PSTN routes can hardly justify investment into terrestrial digital backbone let alone IP transport. The length of the route requires massive investment, while traffic volumes are not sufficient to generate any substantial revenues. Except from 10 major cities (already on fiber-optic terrestrial backbone) the majority of Electrosvyazes generate merely 1-2 mln minutes of proper DLD traffic per month.</p>	<p style="text-align: center;"><b>Distribution of Russian DLD traffic among regional operators</b></p>
<p>Severely underdeveloped local infrastructure may further complicate the introduction of modern VoIP techniques. The obsolescent local access networks in the regions may deteriorate the quality of the service at the end user level beyond the critical threshold. It is highly unlikely that VoIP operators can address any market outside the capital cities in 89 Russian PSTN service areas (with big ABC prefixes).</p>	<p style="text-align: center;"><b>Rostelecom backbone network</b>      <b>Local access PSTN network</b></p>
<p>Although Russia has a fairly large IP population the IP penetration is so low that the data traffic accounts for merely 6% of the total traffic volume<sup>4</sup> and incumbent operators do not yet feel an imperative to migrate on the packet switched technologies.</p>	

**It is expected that the share of Russian IP-telephony traffic in the total originating ILD and DLD traffic will remain significantly lower than in the rest of the developed European economies. Furthermore, international connectivity will retain a dominant share of the VoIP market through to year 2002-2003, when domestic traffic may exceed international.**

<sup>4</sup> Including local and long-distance traffic.

## 2.2 PROJECTION TECHNIQUES

J'son & Partners used two approaches to independently project market growth in the IP-telephony segment:

- **Bottom-up approach** is based on the detailed market survey among the existing VoIP operators. Using insider intelligence on plans and projections, as well as actual traffic growth figures collected from the VoIP operators, J'son & Partners build extrapolations to forecast VoIP volumes and tariffs for the next 3-5 years. It was assumed that VoIP is unlikely to get more than 45% of the current ILD market segment and 10% of the DLD traffic (taking into consideration the regulatory and general market limitations described above).
- **Top-to-bottom approach** is based on extrapolating European trends. It was assumed that Russia is lagging 2.5-3 years behind other developed economies in terms of VoIP penetration. Thus the target penetration (as percentage of VoIP traffic in the total originating DLD and ILD traffic) was set at 5-6% for 2003 and 9-10% for 2005. Most recent world-wide projections<sup>5</sup> indicate that IP-telephony can take as much as 5.6% of the total toll traffic in 2000 and further grow to 20% in 2005.

The following table outlines the key performance indicators and projections by selected VoIP operators in Russia:

### Survey Results

Operator	Region	Average Monthly Traffic, Thsd Min	Current Market Share	Projected 2000 Traffic, Thsd Min
RGC	Moscow, St.Petersburg, Yuzhno-Sakhalinsk and other 9 regions	1,000*	N/A	28,800*
OSS	Moscow, St. Petersburg, Ulan-Ude, Samara and CIS	500	13%	6,000
Sitek	Moscow, St.Petersburg, Nizhni Novgorod, Samara, Kiev and CIS	400	10%	4,800
Tario	Moscow and 65 sites of presence	300	8%	3,600
Elvis-Telekom	Moscow	300	8%	3,600
Incomtel TG	Moscow	250	6%	3,000
Zond Holding	Moscow	150	4%	1,800
Trans TS	Moscow	100	3%	1,800
Rinet	Novosibirsk	50	1%	600
Telecom Systems	Orenburg	20	1%	240
Dion	Chelyabinsk	20	1%	240
NP Maginfocenter	Magnitogorsk	5	-	60
Other	Regions	300	8%	3,600

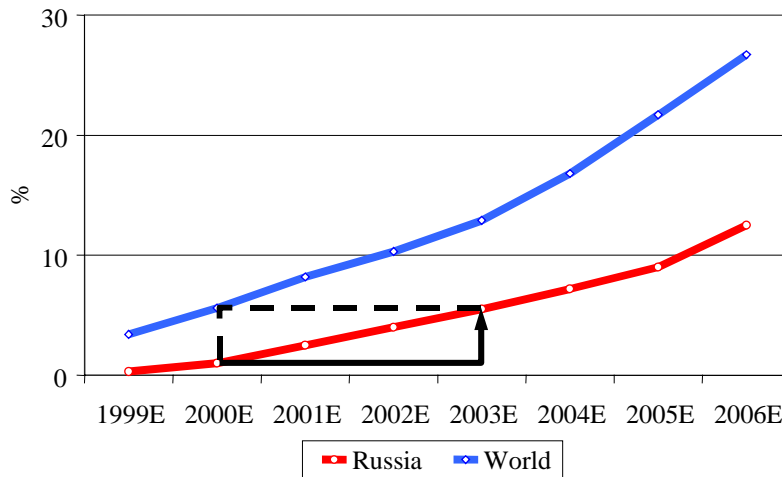
\* Transit traffic

<sup>5</sup> Based on IDC, MCI, Forrester Research.



Assuming that the operators polled account for 70% of the total legitimate VoIP segment<sup>6</sup> and the “shadow” traffic is currently about one third of the total IP-telephony traffic, the overall DLD and ILD traffic could be evaluated at 42 mln minutes in the year 2000. Furthermore, based on the sales records to date and present growth rates, one may expect that the VoIP traffic should increase by factor of 7 annually and exceed 280 mln min by year 2003. This projection agrees with the “helicopter view” picture from the global markets.

**Share of VoIP in the Total ILD and DLD Traffic**



Assuming Russia is lagging 2.5-3 years behind the rest of the world (which is definitely the case in IP growth), it is perfectly conceivable that 9-10% of the total Russian long distance traffic will migrate onto IP platform by 2005.

In addition to this general projection, several variations have been explored to the base line scenario. Under the most pessimistic assumptions the VoIP volume will grow in 2000 by less than 50% and the share of VoIP in 2005 will reach only 4% of the total long-distance traffic. That may very well happen, if the first wave of VoIP users will be scared off by a terrible quality of service. Indeed, the sale of VoIP pre-paid cards seem to have stabilized in the first quarter of 2000. The existing customers can theoretically desert their VoIP providers as soon as their cards expire.

Under the opposite scenario the existing VoIP operators will be joined by Rostelecom, who are likely to enter the market in co-operation with Central Telegraph and cannibalize a good deal of its own ILD and DLD revenues to stay on top of the market and retain the overall market share. In that case Russia is projected to quickly catch up with the world-wide trend and VoIP can take up to 9-10% of the total toll traffic.

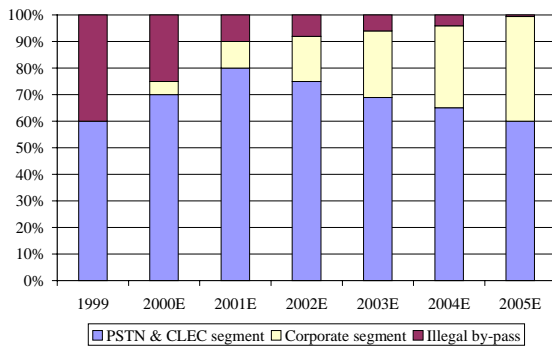
**Overall IP-telephony is projected to account for least 13.5% of the total Russian ILD traffic and 4% of the DLD traffic. The share of IP-telephony in total proceeds from long distance telephony are likely to reach about USD 60 mln in 2003 with further growth towards 2005 at a rate of 15-20%.**

<sup>6</sup> J'son & Partners interviewed 15 operators out of about 35-40 existing operators (total number of license holders is about 55 as of December 1999).

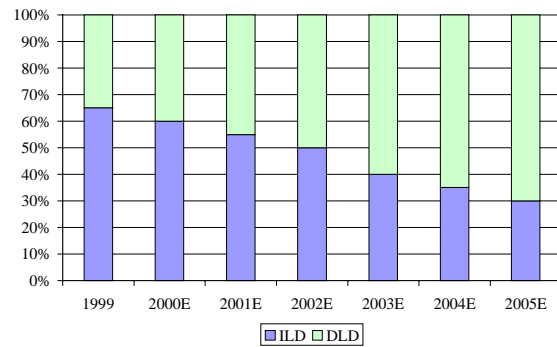
**The breakdown of the VoIP market is also likely to change substantially over the next 3-5 years. Very much like in the rest of the developed economies, the share of the corporate users will grow faster than PSTN segment.**

It will take Russian regional PSTN operators some time before they can get rid of the obsolescent switched voice technologies and implement fully fledged VoIP network nodes in their respective regions. In the meantime corporate clients will happily use IP as a cheaper alternative to corporate voice solutions. Eventually the PSTN will be the dominant user of VoIP platform, as the majority of traditional carriers opt for packet switched environment. However this is more applicable to the US and the most advanced European markets (such as the UK). The Russian market is unlikely to see the implications of this global long-term trend within the next few years.

**IP-Telephony Applications. Traffic Breakdown (PSTN, corporate, shadow)**



**DLD Vs. ILD Traffic in IP Network Environment**



One of the key developments on the domestic market will be the growth in DLD volumes carried via IP transport network. There is a truly unlimited room for growth, compared to what is currently being addressed by the VoIP operators.

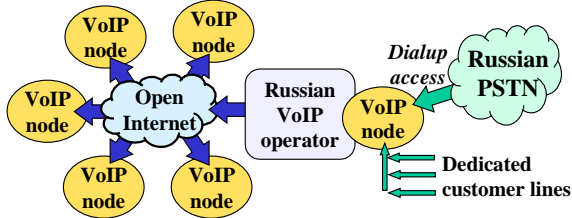
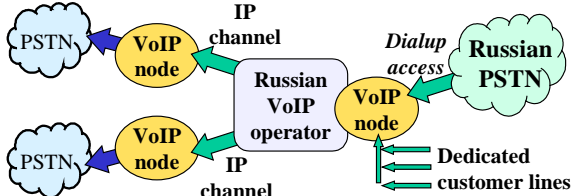
Eventually domestic long-distance IP-telephony will grow faster than ILD, long-haul routes to Siberian and Far-East destinations are expected to be the first PSTN infrastructure elements migrating on IP platform.

### 3. OPEN INTERNET AND DEDICATED IP TRANSPORT

There is a variety of VoIP offerings on the Russian market. However there are three distinguished network configurations that have been used by the operators, corporate users and even CLECs smuggling Russian international traffic from the country and terminating inbound ILD by-passing Rostelecom. At a certain level of generalization the following three main transport mechanisms exist in VoIP business:

- **Open Internet** environment with its well known deficiencies, narrow bandwidth and poor quality, needless to say low reliability,
- **Dedicated IP transport** (point-to-point) to connect VoIP access nodes in different countries and/or regions,
- **Global VoIP platforms** offering their services wherever they have points of presence and network access nodes.

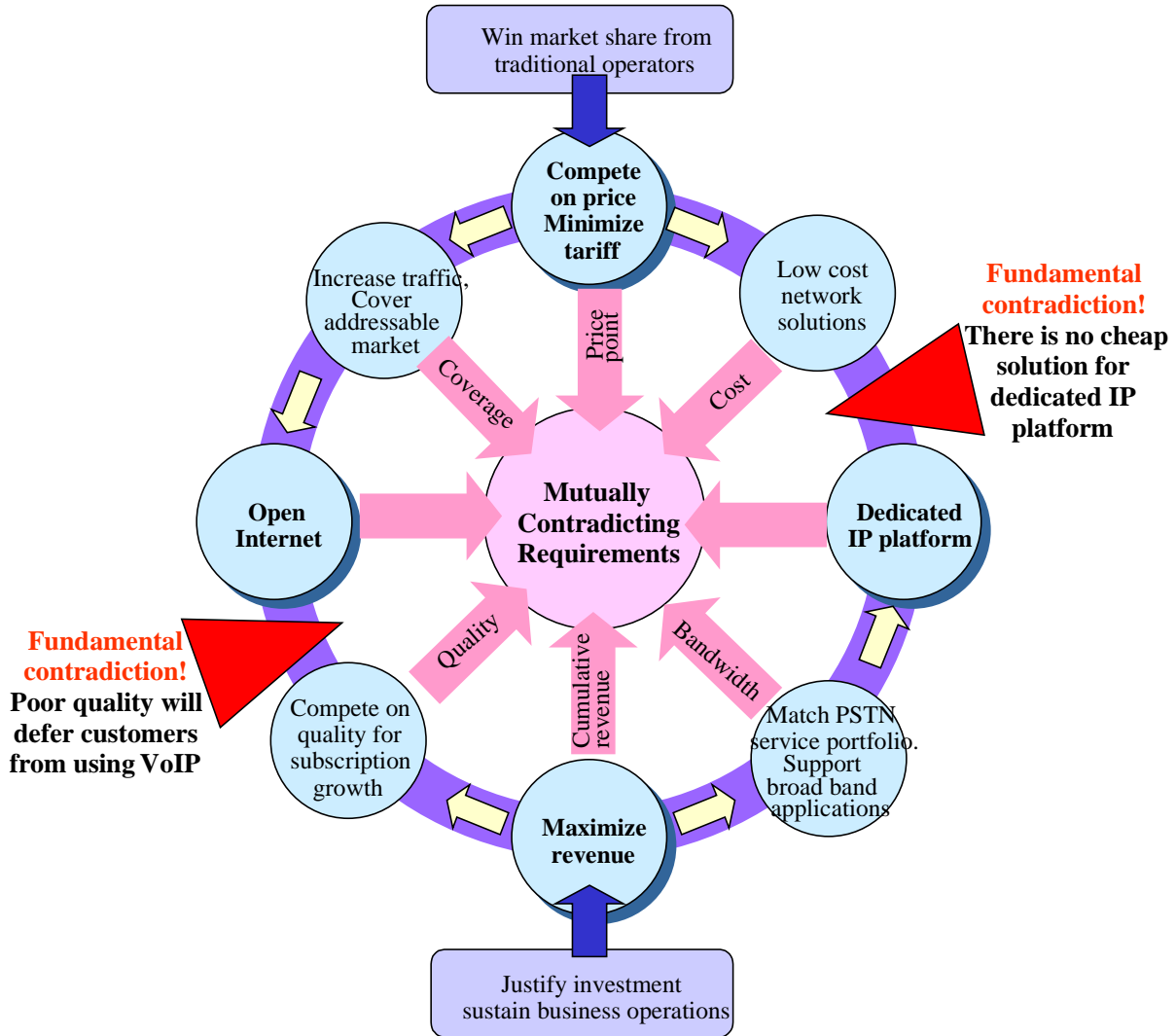
The following table summarizes strong and weak points of the above solutions:

DESCRIPTION OF NETWORK CONFIGURATION	STRENGTHS AND WEAKNESSES
<p><b>OPEN INTERNET</b></p> 	<p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>• Low cost</li> <li>• Minimum exposure to capital investment</li> <li>• Easy to implement</li> <li>• Offer the widest possible coverage internationally and within Russia</li> </ul> <p><b>Weaknesses:</b></p> <ul style="list-style-type: none"> <li>• Poor quality (voice distortion, narrow band modulation, interference, lost packets)</li> <li>• Low reliability (unsatisfactory call completion rate, no bandwidth guaranteed)</li> <li>• Interconnect problems for the reciprocal inbound traffic</li> </ul>
<p><b>DEDICATED IP PLATFORM</b></p> 	<p><b>Strengths:</b></p> <ul style="list-style-type: none"> <li>• High quality and reliability of service</li> <li>• Potentially can support a number of value-added services and all traditional applications available for the traditional switched voice operators</li> </ul> <p><b>Weaknesses:</b></p> <ul style="list-style-type: none"> <li>• High operating cost and initial investment into infrastructure</li> <li>• Limited coverage (direct routes must be established to all counterparts)</li> </ul>

It should be noticed here that almost literally all Russian VoIP operators use a combination of both open Internet environment and dedicated IP transport to support connectivity. Indeed there are few routes, where dedicated IP bearer could be justified and operators resort to open Internet solutions. As a result, the quality of an average VoIP call is hardly competitive to the

conventional PSTN network. It is extremely important for the emerging operators to keep a reasonable balance between several critical aspects of the operation.

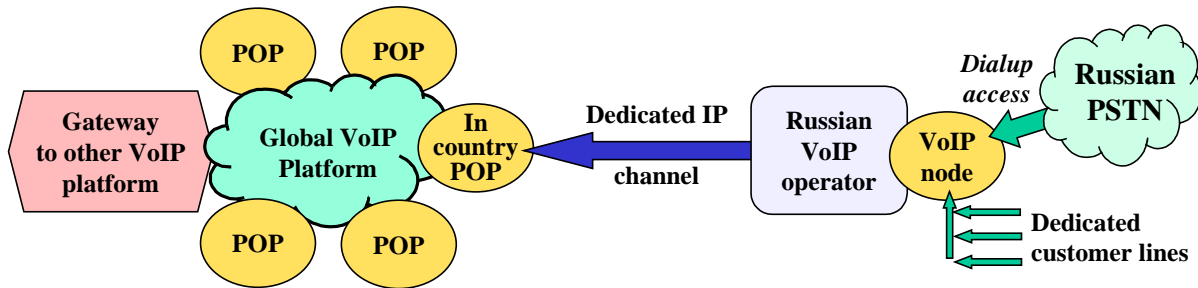
### Factors Affecting VoIP Operation



Compared to dedicated VoIP transport, global VoIP platforms offer the same level of quality and reliability at a reasonable cost. Furthermore, through global VoIP providers Russian operators can significantly increase their coverage. In a sense, Russian VoIP operators can potentially use the global providers very much like Russian CLECs use international carriers to transit their traffic to a variety of destinations<sup>7</sup>.

<sup>7</sup> Sovintel and Comstar transit a good deal of their traffic through BT, while Combellga has a transit arrangement with Cable & Wireless. Russian CLECs deliver the mixed voice traffic to the major international hubs of the above operators (using dedicated bearers). The traffic is then broken-out into individual streams and put through to the required destinations on the global network platforms offered by international carriers.

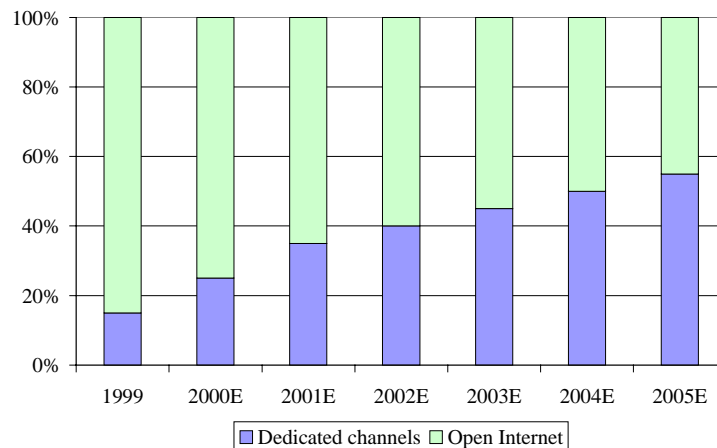
## Global IP Platforms



At the moment there are only a few global platforms available to the Russian VoIP operators. Delta Three and ITXC in particular have been marketing their global capabilities and there are operators, who reportedly use them to deliver VoIP traffic to international destinations. However, one important pre-requisite for the access to such global platforms is the ability of the national VoIP operator to efficiently terminate the reciprocal in-bound traffic. At the moment the termination of inbound traffic on the Russian PSTN appears to be a common weakness among the VoIP operators in Russia.

It is expected that with the development of national and international VoIP backbone networks the share of the traffic carried via open Internet will gradually decrease to less than 50% in 2004-2005.

## IP Transport Vs. Open Internet



**It is expected that a few and probably even a single carrier's carrier for IP-telephony traffic will soon emerge on the Russian market to reconcile what appears to be currently irreconcilable: low cost and high quality, wide coverage and guaranteed bandwidth.**

Rostelecom is very well positioned to take this niche within Russia, with RGC coming as a second most advanced carrier so far. On the international front there is no pronounced leader at the moment, but as the market becomes more and more mature, there will be plenty of room for such carriers as OPERATOR to play into the game.

## 4. REGULATORY ENVIRONMENT

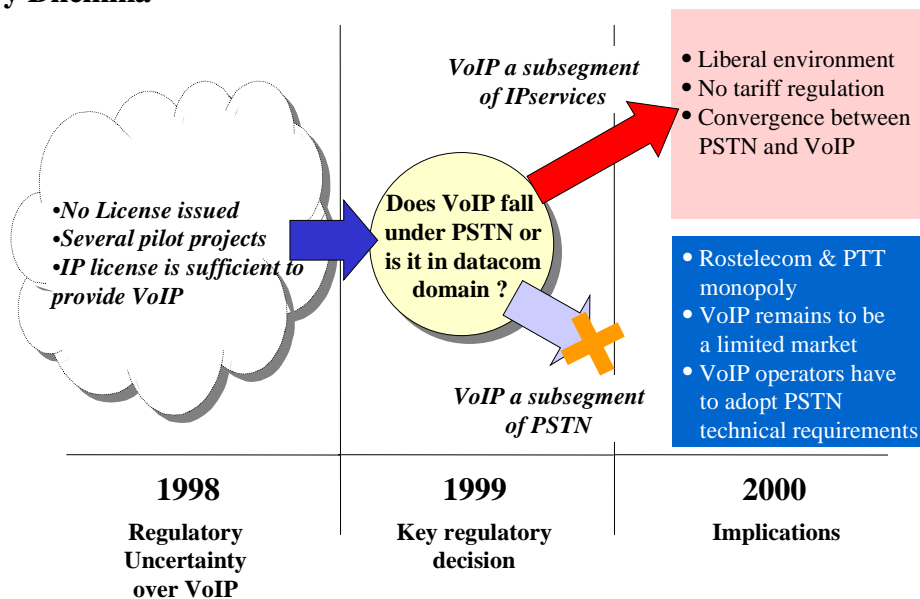
Until very recently, there has been very little regulatory certainty around VoIP. The Ministry of Communications was apparently not prepared to address the key issues to do with packet switched voice services and delayed the release of the principal regulatory acts until mid 1999. The following three fundamental changes took place in 1999.

- The Ministry of Communications (at that time State Committee on Communications) worked out the template license conditions for the prospective VoIP licenses. First 30 licenses were issued to the contenders who had been lining up for the VoIP permission since 1998.
- Central Research Institute for Telecommunications (TsNIIS) developed the technical specification for homologation of VoIP equipment in Russia (RD 45.046-99). The Ministry of Communications officially adopted this technical spec on November 12, 1999.
- The Ruling Document on IP Communications, the principal by-laws regulating the key internetworking issues in IP environment has been amended to include Section 7.2 (“Packet switched voice service”). The new edition of the Ruling Document has yet to be approved by the regulatory authorities, but it is a matter of bureaucratic routine now rather than a fierce regulatory dispute.

**The most important breakthrough achieved by the Russian proponents of IP-telephony was that the regulatory authorities classified VoIP as a totally separate market segment, where PSTN standards and requirements could not be possibly applied. The fundamental difference between PSTN and VoIP segments is thus that VoIP will be liberalised segment without single carrier’s carrier monopoly, limitations on ILD and DLD connectivity and state tariff regulation.**

The following Diagram illustrates the fundamental regulatory dilemma that was resolved very much in favor of commercial VoIP operators.

### Regulatory Dilemma

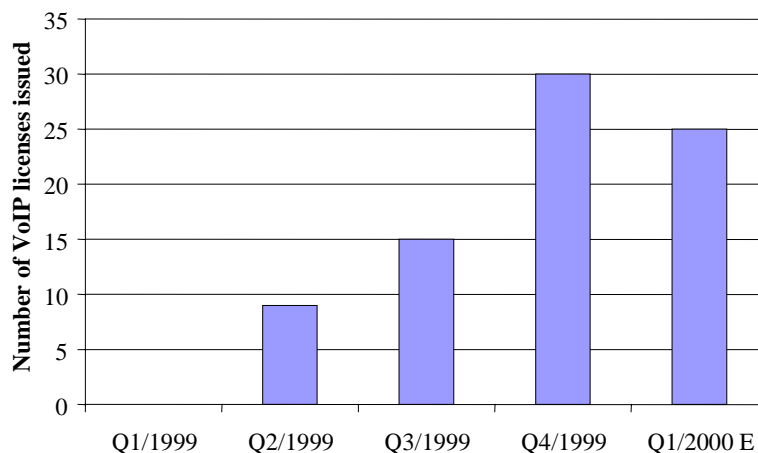


It was unequivocally accepted by the regulatory authorities that neither PSTN regulation on interconnect and traffic routing (Order by the Ministry of Communications # 54 dated from March 28, 1995), nor PSTN standards (should apply for VoIP operators. Among other things that gives VoIP operators the following main advantages:

- Alternative VoIP operators have no restrictions as to where they collect the originating voice traffic. Indeed, since VoIP interconnect with PSTN is not restricted, IP-telephony companies can use dial-up rotaries to channel toll traffic from PSTN and by-pass Rostelecom.
- VoIP can be used as a legitimate facility to terminate traffic on the Russian PSTN without paying ludicrously high settlement rate to Russian ILD monopoly operator – Rostelecom. VoIP will help a whole range of alternative operators to legalize their existing by-pass and re-file operations.
- Theoretically VoIP operators can introduce their own numbering (address) plans in parallel to PSTN numbering and use IP address as a network identification. In that case VoIP operators will be totally independent from whatever regulatory limitation could be imposed on telephony service provider.
- The emerging IP-telephony operators have a lot of flexibility when it comes to tariffs. They do not necessarily have to observe tariff schemes imposed by the Ministry of Communications on regional PTTs and Rostelecom. Theoretically the billable unit for VoIP could be kilo-segment of data transferred or an individual packet, rather than a minute of conversation. This is particularly attractive option for corporate applications – the pauses in conversation do not count and are not being charged for.
- IP-telephony service may or may not meet the quality requirements set for the conventional PSTN service.

Not surprisingly, the new segment instantly became very attractive for small and medium size alternative operators, who would like to expand their operation, but were reluctant to challenge Rostelecom monopoly in ILD and DLD. The explosion of interest to VoIP translated into unparalleled growth in the number of applicants and new license holders.

### New VoIP Licenses Issued by Ministry of Communications



**It is expected that the new VoIP license holders will first of all route their existing ILD traffic via IP platform. Simultaneously there will be an explosive growth in inbound VoIP traffic, since international operators will rather terminate their Russia-destined traffic through VoIP operators, than deal with Rostelecom, who offer almost literally prohibitive termination rates.**

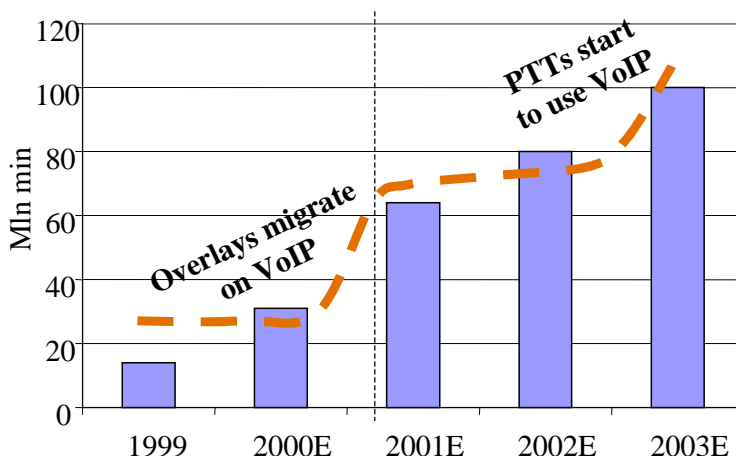
It will also be the case with the traffic to CIS destinations. The following table summarizes the arbitrage that VoIP operators can potentially get on the inbound ILD traffic (based on the average termination rates offered by selected Russian CLECs, Rostelecom and VoIP providers).

**ILD Termination Rates (US cents per minute)<sup>8</sup>**

DESTINATION	Termination Rate Charged By Monopoly ILD Operators	Termination Rates Asked By Us Based Operators	Termination Rates Offered By Russian Overlays	Termination Rates Offered By IP-Telephony Operators
Moscow & St.Petersburg	40	5	4	2.5
Rest of Russia	40	16	14	11
Armenia	38	18	18	-
Azerbaijan	40	17	16.5	12
Georgia	60	22	20.5	14
Ukraine	40	14.5	14	11

Based on the case study of a typical VoIP operator, conducted by J&P in February 2000, one may expect very substantial increase in incoming VoIP traffic in short and medium terms.

**Incoming International VoIP Traffic**



<sup>8</sup> Based on the limited number of bids and offers analyzed (PGE, Direct Net, Global One, Sovintel, Comincom, Rustelnet, Aerocom, Caprocks and other).



**It is expected that the new regulation will be adopted to effectively canonize the internetworking principals that have been developing over the last 12-18 months in VoIP environment.**

The three most powerful and influential supporters of the new regulation are Rostelecom, Central Telegraph and Systema Telecom. The above companies convinced regulatory authorities that a new VoIP concept should be developed and adopted in the Russian telecommunications industry. The new concept is being drafted by Giprosvyaz to be submitted to the Ministry of Communications this summer (at least until September 1, 2000).

Based on the first draft, the new concept promises to be a truly revolutionary regulatory act that could pave the way for the further VoIP expansion. The concept will effectively abolish state control over the industry and Rostelecom monopoly on ILD and DLD voice services. It, for example, contains the following fundamental clauses:

- VoIP shall be supported as a facility to lower ILD and DLD tariffs
- The Ministry of Communications shall gradually give up on the strict tariff control and introduce free competition in ILD and DLD communications
- Packet switched voice service shall be introduced on the PSTN and a new integrated network shall be developed in Russia to support a variety of voice and data applications. Conventional PSTN network shall finally merge with the new service platform.
- Common technical specification, standards and quality requirements shall be worked out for the national VoIP network in Russia.

**If the new concept is adopted by the Ministry of Communications, that could give a new momentum for the development of IP-telephony and open new unparalleled opportunities for international operators.**