

## More than one Yota of difference

Russian WiMAX service provider Yota succeeds by offering an innovative service—and exporting it abroad



- With 350,000 subscribers, Yota is one of the fastest growing WiMAX service providers—and one with a highly innovative business model.
- Yota continues to expand. In Russia, its network will cover 180 cities by 2012. It has just launched a network in Nicaragua, and next on its list are Belarus and Peru.
- At Yota, the focus is not on technology, but on the customers: making sure they have the devices, applications, and bandwidth they want, making it easier for them to sign up, and giving them a compelling service.

Yota is busy these days. The first Russian service provider to deploy a mobile WiMAX network, Yota has signed up over 350,000 customers in the six months since its commercial launch in June 2009 (Table 1). It continues to sign up 3,000 customers a day, and it is the first service provider to have launched a WiMAX/GSM smartphone. While expanding domestically, Yota has also soft-launched a WiMAX network in Managua, Nicaragua, and is planning for networks in Belarus and Peru.

Yota's success is remarkable for a greenfield service provider new to the telecom market, deploying a new technology and a new type of service. The company has avoided the approach, common among emerging market operators, of focusing on basic fixed broadband connectivity in underserved areas. Instead it offers mobile broadband connectivity in cities where 3G is available, and where wireline broadband, including residential fiber in some areas, is available and cheap.

This paper explores what made Yota's achievements possible and what lies at the core of its unique market approach. We look at the market in which it operates, at how it is building and expanding its network, and at the services, devices, content, and applications it offers its customers. Finally, we widen the scope to follow Yota's activities in markets outside of Russia and to look at its future prospects.

## Winning market share in the Russian market

Russia has one of the highest levels of WiMAX activity worldwide. More than 20 operators have declared ambitious deployment plans, often backed by deep-pocket investors or parent companies.

While the Russian market has great growth prospects, it is also a challenging one (Table 2). Outside Moscow and St. Petersburg, broadband penetration is still very low (6.4% of the population, compared to 20% of the population in Moscow). Yota targeted these two urban areas initially for a mobile broadband service intended for the affluent and technology-savvy customer segment. As it moves to second-tier cities, it will face a more price-sensitive, but largely underserved, market, where broadband may not be available or may be offered only by an incumbent provider. As it has entered some markets, Yota has seen the established operators lower their fees in anticipation.

The Russian wireline broadband market is very competitive. In Moscow and St. Petersburg, multiple service providers offer broadband services over different access technologies (DSL, fiber, fixed wireless), often at rock-bottom prices. In this market, Yota does not aim to be the lowest-cost provider, betting that customers are willing to pay for the benefit of unlimited access, mobility, premium content, and superior customer service.

**Table 1. Key Yota facts as of December 2009**

Key Yota facts as of December 2009
Commercial launch: June 2009
Spectrum: 30–40 MHz in the 2.5 GHz band
Customers: more than 350,000
Average traffic per customer: 10 GB/month
Employees: 1,200
Domestic coverage: Moscow, St. Petersburg, Ufa (commercial), Sochi and Krasnodar (soft launch)
Vendors: Samsung (WiMAX radio access network [RAN]), Cisco (fiber backhaul, core), Bridgewater (authentication, authorization and accounting [AAA])
Population covered: 23 million
Backhaul: built 3,000 km own-fiber backhaul network with up to 180 Gbps bandwidth
Devices supported: more than 50 laptop models, 1 WiMAX/GSM smartphone, 2 laptop dongles, 2 desktop modems with Wi-Fi
Service plans: US\$29 for laptops or desktop modems, US\$16 for smartphones
Investment: US\$470 million for Russian market invested to date, plus an additional US\$350 million for further Russian expansion and US\$500 million for international deployments
Ownership: WiMAX Holding Ltd., with a 25.1% share owned by Rostekhnologii State Corporation
International markets: Belarus, Nicaragua (soft launch), Peru
2012 target: service available in 180 Russian cities with a population of more than 100,000

Source: Yota

Fixed wireless and wireline operators are not Yota's only competitors. Because Yota primarily targets mobile users who want a broadband connection everywhere they go, Yota also competes with cellular operators, although their propositions to subscribers vary. After years of operation, cellular operators boast excellent coverage, but they charge premium prices. With the more advanced WiMAX technology, Yota offers higher data speeds at lower per-MB prices than cellular operators. But it cannot yet compete on nationwide coverage.

3G has been introduced only recently in Russia, and so far only in urban areas. Construction of 3G networks in Moscow was approved in December 2009, and three operators (Mobile TeleSystems, Vimpelcom and Megafon) launched their 3G networks in early 2010. Despite a mobile penetration well over 100%, cellular data revenues are still low compared to those in developed countries. As a result, competitive pressure forces Yota to keep prices relatively low compared to mobile WiMAX operators in developed countries. In the markets where 3G is available, Yota has not seen any impact of the 3G service availability on its customer take-up, suggesting that Yota has been successful at differentiating its services from those offered by mobile operators.

**Table 2. Russian telecoms market**

Russian telecom market
Broadband penetration: 6.4% of population, with approximately half of subscriptions in Moscow and St. Petersburg. In Moscow, broadband penetration is over 20% of population, equivalent to more than 60% of households
Internet penetration: 32%
Mobile phone penetration: 144%
Fixed phone penetration: 23%
3G networks recently launched in urban areas
Mobile average revenue per user (ARPU): US\$9
Data ARPU: 17%, or US\$1.53
Other mobile WiMAX operators: Comstar (commercial, 2.5 GHz), Freshtel (soft launch, 3.5 GHz), Synterra (commercial, 2.5 GHz, mostly pre-WiMAX)

Source: ITU, mobile operators, Ovum, Russian Federal State Statistics Service, WiMAX Forum, Yota

There are many fixed broadband wireless access (BWA) and WiMAX operators in urban areas, but they are mostly niche market operators, each with fewer than 10,000 subscribers. Three other IEEE 802.16e WiMAX operators, Comstar, Freshtel and Synterra, have announced network launches. They have not released subscriber numbers, but their marketing efforts are much less aggressive than Yota's.

## A new breed of mobile broadband service provider

Dennis Sverdlov, Yota's General Director, tirelessly promotes Yota's vision to audiences worldwide. His focus is not on what WiMAX—or technology in general—allows a service provider to do; instead, he talks about what customers want, and what they are willing to pay for. The challenge for a service provider is to find the most suitable technologies to meet these requirements—and Sverdlov believes that WiMAX fits the bill. While this may seem like an obvious approach, it can be revolutionary for operators accustomed to loudly advertising the technology they use—3G, WiMAX, or LTE—rather than the services that they sell.

Perhaps not surprisingly, Yota insists it is not a WiMAX operator. It claims to be a mobile service provider that decided to use WiMAX to meet the needs of its customers (Yota is very careful not to refer to them as subscribers). Yota does indeed have a strong commitment to WiMAX, but the distinction reflects the company belief that a successful service provider needs much more than a good RAN to attract customers.

“This approach has led Yota's management team to work sometimes against the accepted wisdom of what can and cannot be done, and chart a new path,” says Shane Kwon, Senior Manager in the CIS/EMEA Sales and Marketing Group at Samsung, who has been working with Yota during the rollout of the network. The prevalent IT and consulting—as opposed to telecom—background of Yota's management has been instrumental in creating a customer-centric culture focused on results and with little respect for legacy offerings. Risk taking and acknowledgement of unresolved problems are equally encouraged.

### What makes Yota stand out among mobile data operators?

“A group of young, ambitious people excited to be in a startup company but with limited telecoms background, supported by brave investors, focused on a single goal: to provide great service to their customers,”

says Dennis Sverdlov,  
Yota’s General Director.

Yota’s vision is based on few simple tenets:

- Simplicity
- Unlimited access
- Mobility
- Focus on services

Innovation at Yota springs from the team’s commitment to execute on these principles, no matter what it takes.

## Building the network

Since launch, Yota has promised unlimited, high-speed, mobile access to its customers. Careful planning was necessary to meet customers’ expectations.

The planning started with the backhaul. Yota wanted to use fiber but was unable to find a suitable service provider that both had fiber connectivity to most planned urban cell sites and could provide effective support services. To ensure it had the required backhaul capacity and service-level guarantees, Yota decided to build its own backhaul network, which links all urban and most suburban cell sites through fiber. Yota uses just a few microwave links in suburban locations where fiber is not available. Yota’s 3,000 km backhaul network can carry up to 180 Gbps and provides 200 Mbps per cell site. While this is more throughput than the current RAN can generate, it will allow Yota to increase RAN capacity without having to upgrade the backhaul.

The buildout of the backhaul network required a substantial investment—about half of the capex invested to date in the project was allocated to backhaul. The financial reward of this approach became apparent when Yota announced its operational break-even point less than 6 months after its commercial launch. Yota essentially

traded a heavier up-front investment in capex for much lower recurrent monthly opex. This is in contrast to operators saddled with monthly backhaul fees for T1/E1 lines, leased fiber, or spectrum for microwave backhaul. For most operators, backhaul costs are a significant operational expense<sup>1</sup>, but not for Yota.

With the backhaul in place, Yota started to deploy the RAN WiMAX network with IEEE 802.16e equipment from Samsung. From the very beginning, Yota decided to work with a single vendor in all markets to speed up the deployment process. Using the same equipment, Yota has been able to expand to new markets and to take advantage of experience gained in previous installations. This approach, which worked well given Yota’s initially limited staff resources for installation, has also been followed in the international expansion. Samsung is providing the WiMAX base stations in Nicaragua and Belarus.

The network expansion in the served markets is still ongoing to improve coverage and to increase capacity. Today, Yota estimates it has 3,000 base stations in Moscow alone, with a density of up to 10 base stations per 1 km<sup>2</sup> in some areas. Most base stations in urban areas are on buildings’ roofs.

**Table 3. Yota’s chronology**

Yota’s chronology
September 2008: Moscow and St. Petersburg soft launch
April 2009: Business users commercial launch
June 2009: Residential users commercial launch in Moscow and St. Petersburg
August 2009: 100,000 customer mark reached
October 2009: Ufa commercial launch
October 2009: 200,000 customer mark reached; operational break-even point reached
November 2009: Sochi and Krasnodar soft launch
December 2009: Soft launch in Managua, Nicaragua

Source: Yota

To provide better indoor coverage, Yota has started to install picocells in public buildings like airports and malls, but dealing with real estate owners can be challenging and picocells do not always provide cost savings over the macro cell network. According to Yota, the lower power of picocells makes them less well suited for outdoor coverage.

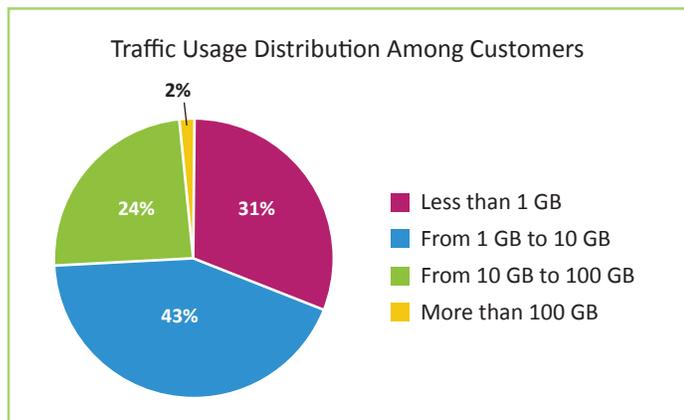
<sup>1</sup> For instance, Vodafone’s leased lines backhaul costs represent 21% of cell site opex according to the operator estimates.

## Traffic: too much of a good thing?

Yota customers are heavy users, and the traffic they generate is increasing at a fast pace. In May 2009, the average traffic per customer was 8 GB/month—a mere seven months later, average traffic per customer had reached 10 GB/month. As is typically the case, only a small percentage of users generate most of the traffic—26% of its users generate more than the average 10 GB/month in May 2009 (Figure 1).

High traffic levels are a sign that customers use the service extensively and value it. As long as customers are few, high traffic levels are easily accommodated within the infrastructure. As customer numbers increase, congestion rapidly becomes an issue if the network capacity does not grow.

**Figure 1. Traffic usage distribution among customers**



Source: Yota

All wireless operators—especially successful ones that see rapid customer growth—have to address the overall growth in data traffic regardless of what technology they use. Yota has been more open than most operators in discussing this issue.

Traffic growth is mainly driven by video content. Cellular operators have also discovered that video is a major contributor to network congestion. For a WiMAX service provider like Yota, the increase in traffic from video content has an even more profound impact than for cellular operators: most WiMAX devices are laptops, with large screens and capable of handling high video resolutions, which raises the throughput requirements of these devices.

Because video is a main driver of the demand for service, Yota is committed to supporting high-quality video streams, and to not throttling video or assigning a lower priority to it.

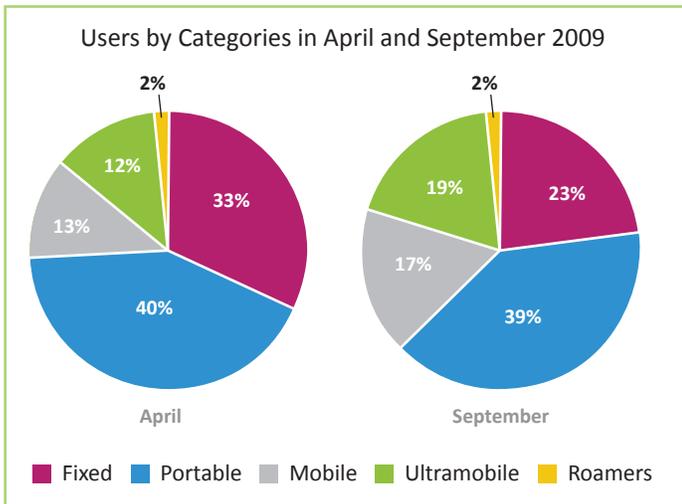
The levels of traffic Yota experiences are 20% higher than those generated by DSL customers. According to Yota's estimates, the traffic generated by their customers is 100 times the data traffic generated by GPRS, EDGE and 3G customers. Network capacity limitations by themselves explain, to a large extent, the lower traffic level for cellular customers. The higher usage compared to DSL customers is interesting, however, because DSL is more often shared among multiple PCs in a household or office than WiMAX is. A likely reason for the difference is the impact of mobility on usage and the prevalence of traffic caps for DSL plans in Russia.

Mobile broadband is still a new service. Service providers are still learning how to best market it and price it. Customers are learning, too—and finding out that mobility is highly valuable.

Yota and other WiMAX operators have started to see distinct user profiles emerging. Data collected by Yota in April and September 2009 (Figure 2) show that the percentage of fixed customers—those who always access the network from the same cell site—quickly decreases over time as customers learn to make wider use of their connection and log in from multiple locations.

The increasing maturity of the market means more online time and further increases in traffic, spread over a wider geographical area. Portable users represent the largest group (39% of customers in September 2009). They typically access the network from different locations, but during the connection they are typically stationary. For instance, students may use their laptop in class, at home, in a coffee shop, or when visiting friends. Mobile and ultramobile users access the network from a higher number of locations and they spend a shorter time on average at each location, or they may use their devices while they are in moving vehicles or simply walking. This is a profile that is especially common among smartphone users, but it is not limited to them. Finally, Yota considers roamers those customers who access the networks in different cities (e.g., Moscow and St. Petersburg) in different Russian states—a service that is included in the service plan.

Figure 2. Users by categories in April and September 2009



Source: Yota

## Expanding capacity

What can be done to accommodate the additional traffic generated by new customers and to support increasing individual traffic levels?

According to Yegor Ivanov, Vice President of Business Development at Yota, the network was planned to support a contention ratio (or oversubscription) of 10, which is generous compared to prevailing practice among broadband service providers worldwide. Currently, Yota's customers generate traffic levels that require a contention ratio of 3—and Yota expects this figure to decrease as individual traffic levels grow. Adding base stations will increase the capacity, but eventually profitability is compromised. Ivanov estimates that Yota needs 100 customers per base station sector to be profitable.

Even if the additional capex required to install additional base stations were available, spectrum availability would quickly become a barrier. In some areas in Moscow, there are already 10 base stations per km<sup>2</sup>, and such high density can easily lead to interference. Ivanov estimates that Yota would need to deploy six times as many base stations to meet the expected demand in the long term. To do so, Yota would need additional spectrum.

This position reflects an increasing realization among WiMAX and LTE operators that they need large spectrum allocations—more than the 30 MHz that they initially considered sufficient—to support wireless broadband services.

Yota is also working to increase the capacity of each base station by deploying multiple input, multiple output (MIMO) and beamforming (BF). Furthermore, Yota has announced a trial of WiMAX Release 2.0 (IEEE 802.16m) for late 2010 and expects to upgrade to the new technology in 2011. WiMAX 2.0 is expected to more than double the capacity of base stations.

More base stations, more spectrum, and higher base station capacity will make it possible for Yota to increase network capacity as it signs up new customers. But will this increased capacity be enough to keep pace with the growth in traffic? If not, will Yota decide to introduce fair-usage policies or traffic caps, or to manage traffic from heavy users and during peak hours?

## Reaching out to customers

During the initial phase of a market launch, Yota makes its service available for free, to get potential customers interested and committed beyond the initial phase. A restricted group of friendly users receive a free device in exchange for feedback on network performance. However, free service before commercial launch is available to everybody who applies; but as a sign of commitment, users have to buy their own device (i.e., laptop dongle, WiMAX laptop, smartphone, or desktop modem).

This gives Yota the opportunity to optimize its network during the installation phase on the basis of real data from users—where they are, what they do, what can go wrong. While the network is still being rolled out, Yota believes, it is fair not to charge users, because the service provider cannot guarantee the coverage and performance levels that customers expect from commercial paid service.

In Krasnodar, 6,000 people signed up on the first day the free service became available. Yota had to stop user device sales during the first month because traffic already exceeded the planned level of network capacity at commercial launch.

In the markets where service is commercially available, the only choice that Yota customers need to make is which device to use—no further decision on contract options is needed. For each device type—e.g., smartphone or laptop—there is only one plan (either Yota Max or Yota Mini), which includes unlimited service and is offered on the same terms to all customers (Table 4). The only exception is a daily pass that occasional users can purchase for 24 hours of access to the network.

Simplicity is one of the most important guiding principles at Yota. The service has to be simple to buy, connect, and use. Yota Mini and Yota Max fees must be paid at the beginning of every month to keep the service active. There is no penalty for discontinuing or temporarily deactivating the service, and there is no signup fee. Because there is no long-term contract and the service is prepaid, customers' credit history is not verified, making it easier and cheaper for Yota to sign up customers. The signup process is similar to that for pay-as-you-go cellular accounts.

The customer has the freedom to buy a device online or from a store, and directly from Yota or from an independent retailer. Devices are not subsidized, and the service plans available are the same regardless of the retail channel chosen.

To further simplify the process, customers can choose among a variety of payment options (Table 5). They can pay directly at the store, by credit card, by short message service (SMS), at automated teller machine (ATM), or at a cash machine. Because this is predominantly a cash market, many customers pay for their subscriptions at instant payment terminals, as they do for their mobile phones.

Service simplicity becomes a competitive differentiator for Yota against providers that offer only long-term contracts and complex service bundles. Yota is committed to investing in its customer care and to creating a customer-centric corporate culture.

**Table 4. Service plans**

Plan	Description
<b>Yota Mini</b> RUB900 (US\$29)	<b>For laptops and desktops:</b> Unlimited internet access Yota Music, Yota Video Demo, Yota TV, Yap-Yap
<b>Yota Max</b> RUB500 (US\$16)	<b>For smartphones:</b> Unlimited internet access Yota Music, Yota Video Demo, Yota TV, Yap-Yap Use as modem for laptop connection allowed
<b>Yota Day</b> RUB60 (US\$1.60)	Unlimited internet access for 24 hours

Source: Yota

**Table 5. Payment options**

How to pay for service: making it easy for customers
Instant payment terminals
Bank ATMs
Yota's offices, stores and customer service centers
Electronic money (Yandex Money, Webmoney, RBK Money, MoneyMail, WebCredits)
Credit cards
Internet banking
SMS
Bank transfer (business subscriptions)

Source: Yota

**A crucial link: the retailer**

As a greenfield operator, Yota had no brand reputation at launch. Because it did not intend to get customers by offering the lowest-cost service, it had to plan its go-to-market strategy carefully. Yota engaged in an aggressive—and effective—advertising campaign, which included radio ads and outdoor ads (plastering slogans such as “Yota 4G is everywhere” on billboards, bus stops, bridges, and buildings). But Yota realized it could not succeed on its own. It needed to leverage the footprint and customer reach of retailers.

“Establishing a strong retail partner portfolio before launch was essential. It gave us the leverage we needed for quick customer sign-up from the beginning,” says Igor Torgov, Vice President of Yota. Agreements with major retailers were signed nine months ahead of launch. They included incentive schemes for sales associates and revenue-sharing with the stores. Yota then established an indirect sales group to ensure proper product placement in stores and to train sales associates to provide accurate information and advice to customers. While the subscriber growth suggests that this approach is working, Torgov wishes that Yota had put even more up-front effort into tracking in real time the success of specific marketing promotions and ensuring up-to-date coverage maps. “A better back-end system would have enabled us to see right away what initiatives were most effective and where.”

## Going the extra mile: devices, content, and applications

While each device type has only one service plan available, customers can have their pick of devices, ranging from a dongle for US\$65 to a netbook for US\$330 to a WiMAX/GSM smartphone for US\$850 to a high-end, WiMAX-enabled laptop for more than US\$2,500 (Table 6). Yota worked with multiple device vendors to ensure that, from the beginning, customers would have access to a wide choice of devices. “We work very closely with device vendors, from the design stage all the way to the development of applications. This is crucial to the development of the services we bring to the market, as well as a valuable learning experience for us,” says Sverdlov.

The WiMAX/GSM phone that Yota developed with HTC specifically for the Russian market has attracted international attention in the industry. The phone was available at launch and is still, worldwide, the only WiMAX/GSM phone available. Despite the price, Yota and its retail partners have sold 35,000 of the phones to date.

The phone’s service plan is extremely flexibility for both customer and service provider. The phone acts as two separate devices housed in the same hardware. The customer buys the phone, signs up for Yota service, and then, independently, signs up for cellular service. To activate the cellular service, the customer simply installs a Subscriber Identity Module (SIM) card in the phone. In most cases, customers use their existing cellular subscription, and all they have to do is to transfer their current SIM card to the new phone. This approach allows customers to keep their mobile plans and simply acquire the additional Yota service on the smartphone. No barrier to adoption is created by forcing customers to move to a different operator or a different plan.

The independent GSM interface is a huge advantage for Yota, too. Many operators are reluctant to offer WiMAX/cellular phones because cellular and WiMAX operators are competitors, and therefore not interested in establishing a partnership or a roaming relationship with each other. Or, because the WiMAX operator is tied to one mobile operator, it tries to steer subscribers to sign up for a plan that includes that partner. Customers who want to keep their existing mobile plan often find this approach irritating.

By leaving the smartphone unlocked, Yota did not need to establish partnerships or even roaming agreements with cellular operators. Complex plans that bundle WiMAX and cellular services (which typically have different service features, such as traffic allowances) were unnecessary. Furthermore, Yota did not need to worry about handoffs between interfaces. Having skirted these barriers, Yota was able to offer a WiMAX phone at launch.

Despite the funding and efforts devoted to supporting the HTC smartphone, “the WiMAX-connected laptop is the device that will dominate in the market,” Ivanov said. While there is a clear increase in the use of smartphones and wireless data, Yota customers prefer to use their laptops as their main device, even though the phone can be used as a modem to provide an internet connection to the laptop. For this reason, Yota strove to work with many manufacturers to provide a wide choice of over 50 laptop models with a built-in WiMAX module, which on average adds only US\$10 to the total cost of the device. Ready-to-go WiMAX laptops make it more convenient for users to sign up for service. To further facilitate adoption among laptop users, Yota now offers to install WiMAX modules in the laptops of new customers.

Looking toward the future, Yota is also exploring how to take existing consumer electronics devices with a USB slot—such as navigation devices—and make them “Yota ready.”

**Table 6. User devices**

Device type	Description and price
<b>Laptops, netbooks</b>	Over 50 laptops with built-in WiMAX module from Acer, Asus, E-machines, Lenovo, MSI, Samsung, Toshiba (RUB9,990 to RUB75,000; US\$330 to US\$2,500)
<b>Smartphone</b>	HTC MAX 4G (RUB26,000; US\$845)
<b>Dongle</b>	4G USB Samsung dongle (RUB1,990; US\$ 65)
<b>Portable desktop modem</b>	Yota Egg, Wi-Fi access point with WiMAX modem (RUB5,990; US\$195)
<b>Business gateway</b>	Asus Mobile WiMAX/Wi-Fi Center 4 RJ-45 connectors, 2 phone lines (RUB9,500; US\$310)

Source: Yota

Content and applications are another area in which Yota has made substantial effort in multiple directions:

- **Partnerships with content providers.** Paramount, Disney, Universal, and Sony pictures are Yota's video content partners. Yota is the exclusive provider in Russia of digital content from Universal and Disney studios. In addition to the on-demand video service, Yota has a catalogue of over 800,000 music titles, available to customers for streaming. EMI, Warner Music, Universal Music, and Sony Music are the main music partners. According to Yota, this is the largest catalogue of digital content in Russia. Yota has revenue-sharing agreements to promote active collaboration with these content providers.
- **Access to content as an integral part of the service plan.** Access to music and selected other content is included in the basic subscription at no additional charge.
- **In-house development of content distribution and communication applications.** Yota Star Lab is the R&D unit tasked to work on the Yota portal and new applications, including a VoIP service to be launched in the near future.

All these efforts arise from Yota's ambition to be not just a broadband operator, but also a service provider, an independent content provider, and an application distributor—a combination intended to differentiate Yota from its competitors. This is a challenging path that many cellular operators have followed unsuccessfully in the past—although in those cases the lack of success was mostly due to operator attempts to limit subscriber access through a walled-garden approach. Again, Yota's approach is innovative, as it includes additional services to attract new customers and retain existing ones, without limiting or discouraging access to third-party applications.

#### Coming soon at Yota

Yota is busy planning for new services to sustain the momentum and reach an even wider set of customers.

An expansion of the **music service** is planned for 2010. The standard service already includes music streaming from an extensive catalogue. In the future, customers will also be able to download tracks to their devices, still without incurring additional fees. Not only will give users additional flexibility, it might also lead to a lower load on network resources, since people tend to listen repeatedly to their favorite music.

In the same timeframe, Yota will introduce **pay-per-view movie** rentals. The proposition is simple: for \$2.50, users can download a movie, keep it for 40 days, and have 48 hours to watch it from the time they start viewing it. Users will receive movie recommendations on the basis of their previous movies rented, music preferences, and internet activity. Even more interestingly, they will have a three-screen option: the same movie can be watched on three devices (e.g., phone, laptop, and set-top box). Yota will keep track of the viewing history and the user can resume playing on any device from the point at which the movie was paused. Not all these devices need to have WiMAX connectivity—for instance, the set-top box can be connected over the internet with a wireline broadband connection.

**VoIP** is also on Yota's near-term roadmap. Not only will Yota integrate popular applications like Skype, Google Talk, and Goggle Voice, it will also provide fixed-line and cellular termination for a fee, and free Yota-to-Yota calls.

Yota has also started to work on location-based services (LBS), to integrate third-party content and applications and to launch a custom LBS client.

The focus for these services is primarily the consumer market, which accounts for 98% of Yota subscribers. Yota plans, however, to increasingly offer services that are specifically targeted at **business users**, such as static internet protocols (IPs), virtual private network (VPN) support, quality of service (QoS), and traffic prioritization, and it expects to increase the percentage of business customers in its customer base to 6% to 8% by the end of 2010.

## Yota's expansion to new markets

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Over US\$500 million in funding has been earmarked for international rollouts. Yota is actively exploring opportunities in other markets in CIS, Latin America, and Asia, and has announced three deployments to date:

- **Nicaragua.** In December 2009, three months after being awarded a license for 60 MHz of spectrum in the 2.5 GHz band in Nicaragua, Yota announced the soft launch of a network in Managua. During the initial stage, the network supports only wireless data connectivity, but the addition of VoIP services is expected shortly. "Along with mobile high-quality data services, the focus of the service in Nicaragua is on affordable fixed voice connectivity, for which there is a huge demand in the country," says Ivanov. Yota retains 75% of ownership in the Nicaraguan operation, with the remaining 25% owned by a local partner who provides support in local market knowledge, government relations, legal issues, distribution, and retail. According to Ivanov, "a local retail player is an extremely valuable partner, as it can leverage a deep knowledge of the domestic market to drive adoption."

While the market approach is quite different from that in Russia, Yota relied on the experience acquired in its first market to build the WiMAX network. To facilitate the knowledge transfer, Yota sent a country manager and marketing and radio frequency (RF) experts to Managua to work with the local staff. Yota built its own fiber backhaul first, then added the WiMAX base stations in the RAN. The flat terrain in Managua made it possible to deploy the network in a very short time—all it took for initial 100% coverage of the city was the installation of 20 greenfield cell sites.

- **Belarus.** Yota has a 60 MHz spectrum allocation in the 2.5 GHz band. It plans to offer service in mid-2010 as a fully owned subsidiary.
- **Peru.** Having recently won a license in the 2.5 GHz band, Yota plans to roll out services under the Yota brand. As in Nicaragua, Yota plans to retain a controlling equity stake (88%) in the local company.

These three deployments illustrate key strategic principles of Yota's international expansion. When entering a market, Yota has no commitment to replicate the Russian business model. Instead, it develops a new approach, taking into account the local characteristics of demand, competition, and performance requirements.

At this time, Yota is primarily interested in partnerships in which it can retain a controlling role and be responsible for the network rollout. Spectrum requirements are equally important. Yota is particularly interested in the 2.5 GHz band and will consider opportunities only in countries where sufficient spectrum is available. Initially it required 30 MHz; but in light of the traffic demand seen in the Russian market, Yota has reevaluated its position, and requires a minimum 60 MHz of spectrum allocations in order to enter a market.

## Looking at the future

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Yota has identified and tightly targets an attractive market segment of users who need a ubiquitous broadband connection and who are underserved both by wireline broadband operators (no mobility) and cellular operators (insufficient bandwidth and/or high per-MB cost). Its proposition of simple, unlimited, mobile access resonates with this audience, as the impressive growth in the number of customers attests.

Contrary to a widespread belief that emerging markets are not yet ready for mobile broadband access, Yota has demonstrated that, at least in some of these markets, users are willing to pay a premium for mobility and high-bandwidth connectivity. "People want the freedom that only mobility brings. This is true in every market, regardless of the availability of wireline broadband," says Sverdlov. The results so far prove that this is the case, at least in Russia.

Fueled by revenues from customers, Yota reached the operational break-even point after only five months of commercial service. Such an achievement is rare for a greenfield service provider. Typically customer acquisition costs are high, because the service providers invest heavily in marketing to get a brand established and increase the number of customers.

Will Yota be able to maintain its momentum over the coming years?

Several challenges lie ahead:

- Maintain the current growth rate in customers, by successfully moving beyond the early adopters and addressing the larger, more price-sensitive consumer market.
- Add capacity to the network and manage the data flows to accommodate the rapidly increasing traffic volume.
- Secure additional funding to expand the network in Moscow and St. Petersburg, and to meet the goal of 180 cities covered by 2012.
- Upgrade to WiMAX Release 2.0 when equipment becomes available to increase capacity and throughput.
- Face increased competition from cellular operators—which are expanding and improving 3G service and coverage—and from other mobile WiMAX operators.
- Avoid losing focus in the current markets by being overly aggressive in international expansion.

Yota has built an innovative business model designed to capitalize on the growing demand for mobile broadband access. This model has won the attention of WiMAX operators in both emerging and developed markets. As Yota grows, it will have the opportunity to demonstrate that this model is sustainable—and that it can be successfully implemented in other markets.

Let's Yota!

## About Senza Fili Consulting



10Senza Fili Consulting provides advisory support on wireless data technologies and services. At Senza Fili we have in-depth expertise in financial modeling, market forecasts and research, white paper preparation, business plan support, RFP preparation and management, due diligence, and training. Our client base is international and spans the entire value chain: clients include wireline, fixed wireless and mobile operators, enterprises and other vertical players, vendors, system integrators, investors, regulators, and industry associations.

We provide a bridge between technologies and services, helping our clients assess established and emerging technologies, leverage these technologies to support new or existing services, and build solid, profitable business models. Independent advice, a strong quantitative orientation, and an international perspective are the hallmarks of our work. For additional information, visit [www.senzafiliconsulting.com](http://www.senzafiliconsulting.com) or contact us at [info@senzafiliconsulting.com](mailto:info@senzafiliconsulting.com) or +1 425 657 4991.

## About the author

This paper was written by Monica Paolini, the founder and president of Senza Fili Consulting. She is an expert in wireless technologies and has helped clients worldwide to understand technology and customer requirements, evaluate business plan opportunities, market their services and products, and estimate the market size and revenue opportunity of new and established wireless technologies. She has frequently been invited to give presentations at conferences and has written several reports and articles on wireless broadband technologies. She has a PhD in cognitive science from the University of California, San Diego (US), an MBA from the University of Oxford (UK), and a BA/MA in philosophy from the University of Bologna (Italy). She can be contacted at [monica.paolini@senzafiliconsulting.com](mailto:monica.paolini@senzafiliconsulting.com).