

CEE WEATHER REPORT – Telecom



Six months' report on Central and Eastern Europe's telecommunication markets

2nd issue – January 2009

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Key trends

3G expansion ongoing in CEE

3G networks are being built up in all CEE countries. Investments in urban areas are likely to pay off, but the economic feasibility of fixed and mobile broadband coverage in rural areas is questionable.

CAPEX expected to remain stable

CAPEX levels are expected to stay high in the mid to long term. Fixed operators are investing in IP/NGN and fiber infrastructure and mobile operators are upgrading their backhaul, core and 3G networks. However, in the short term, given the likely pressure on operating cash flows from the weaker macro environment, operators might be forced to cut CAPEX in order to maintain dividends. At this time it is unclear how great an impact the financial crisis, especially restricted credit, will have on operators' investment behavior.

Privatization plans put on hold

Financial market uncertainty has led to the privatization of Telekom Srbija, planned for 2009, to be pushed back a year. The Serbian government will likely retain a 51 percent stake in the company after 2010. The privatization of Ukrainian incumbent Uktelecom had already been delayed several times before global financial markets collapsed. Given the country's uncertain political situation and the unease in financial markets, it is unclear when this privatization will take place.

	Bulgaria	Czech Rep.	Hungary	Poland	Romania	Russia	Serbia	Turkey	Ukraine
FIXED MARKET									
Revenues 2006 [EUR bn]	0.44	1.42	1.67	3.56	1.00	10.32	0.37	4.45***	1.74
Change [% 05/06]	-3.3	1.4	-3.3	-0.8	6.7	25.2	11.5	23.0****	5.1
Penetration 2006 [% of population]	34.7	28.3	44.1	37.4	20.0	33.5	38.2	26.0****	23.3
Change [pp 05/06]	0.5	-2.2	3.6	1.6	-0.3	2.1	1.6	n.a.	-0.2
Penetration BB 2007 [% of households]	11.1	40.4	33.3	23.5	26.8	9.1	8.4	24.0	4.8
Change [pp 06/07]	3.7	12.3	8.5	5.3	11.5	3.0	5.5	9.0	3.0
#1 fixed by country (by market share)	BTC	Telefónica O2	Mag. Telekom	TPSA	Romtelecom	SvyazInvest	Telekom Srbija	Turk Telekom	Uktelecom
Market share 2007 [%]	96.0	90.4	74.1	83.4	75.0	77.0	100.0	97.1	85.0
Change [pp 06/07]	-3.0	0.0	-3.6	-4.9	-10.0	n.a.	0.0	6.2	3.0
EBITDA margin 2007 [%]	34.0	44.8	36.0	42.3	37.0	37.0	34.4	45.1	31.7
Change [pp 06/07]	0.4	-1.0	-2.5	-1.8	-1.0	n.a.	-12.6	-5.0	8.2
MOBILE MARKET									
Revenues 2007 [EUR bn]	0.89*	2.99	2.20	6.30	2.52	13.91	n.a.	7.03	3.33
Change [% 06/07]	n.a.	13.5	5.7	16.6	19.4	18.7	n.a.	30.4	26.7
Penetration 2007 [% SIMs]	106.3	128.3	105.9	108.6	83.5	113.3	117.0	88.0	117.0
Change [pp 06/07]	4.0	7.5	7.0	12.5	5.0	7.9	45.0	16.0	5.0
ARPU 2007 [EUR]	11.6	21.0	19.2	12.6	10.0	6.7	11.0*	10.1	4.2
Change [% 06/07]	0.0	1.9	-1.0	-7.4	-2.9	5.6	n.a.	8.6	-8.1
#1 mobile by country (by market share)	MobilTel	T-Mobile	T-Mobile	Centertel	Orange	MTS	MTS	Turkcell	Kyivstar
Market share 2008 [% of subscribers]	51.0	39.9	44.0	33.3	39.9	35.3	59.9	55.9	42.3
Change [pp 07/08]	1.0	1.1	-1.0	-0.7	-2.1	2.3	-1.1	n.a.	-0.7
EBITDA margin 2007 [%]	55.6	50.3	42.2	39.1	53.4*	50.9	34.4	41.5	59.0
Change [pp 06/07]	-2.7	1.3	1.8	3.7	4.4**	0.3	-12.6	3.3	-0.4

*2006 **[pp 05/06] ***2007 ****[pp 06/07]

BB ... broadband TPSA ... Telekomunikacja Polska pp ... percentage points

Source: Unicredit, Analysys, Roland Berger



THIS ISSUE'S HIGHLIGHT

The broadband challenge

Fixed broadband penetration rates have experienced strong growth in Western and Eastern Europe. With customers now quickly turning to mobile broadband, operators need to find ways to meet demand. But can they translate greater demand into higher ARPU and larger margins?

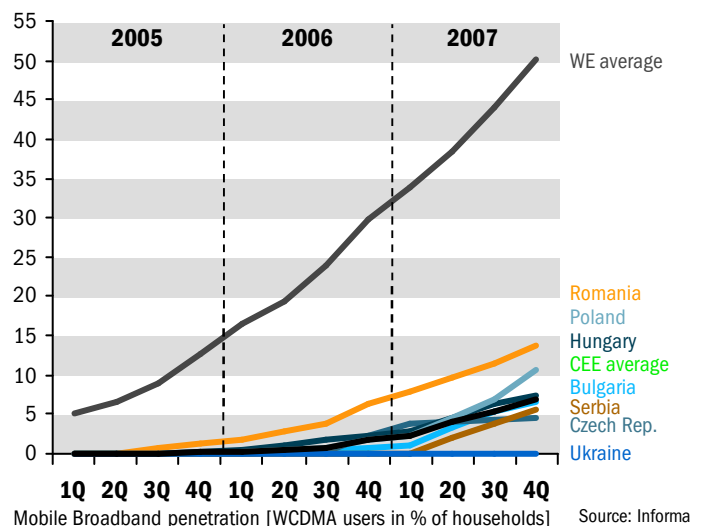
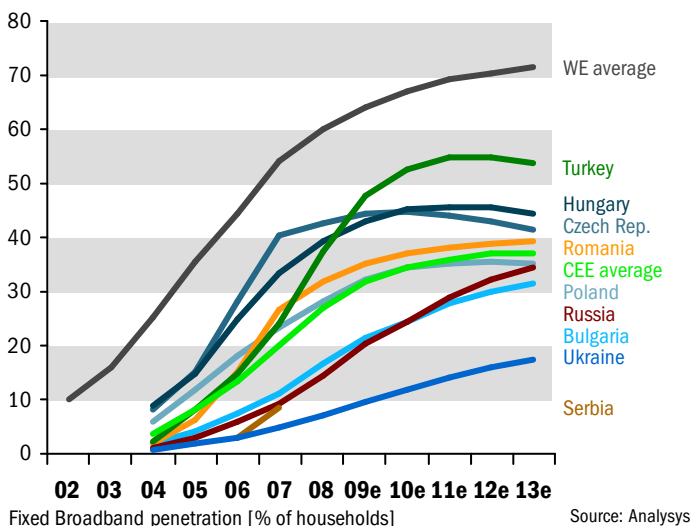
Data transmission technologies have struggled since the invention of the internet to keep pace with the almost exponential growth in bandwidth demand for computer and entertainment applications. The backbone network – the heart of an operator's network – is generally able to cope with soaring demand. It's the last mile that's the problem. It is here that bottlenecks for fixed and mobile (backhaul from the BTS – Base Transceiver Station) arise. In the past it was a little simpler. Dial-up access technologies such as POTS and ISDN, which are considered narrow band, made it possible for customers to connect to the internet in order to transfer e-mails or browse simple internet applications. The emergence of broadband technologies opened the floodgates for various new applications, spurring the use of the internet.

Fixed broadband usage has experienced strong growth in Western Europe over the past few years. DSL (Digital Subscriber Line) with all its variants (ADSL, ADSL2+, VDSL/FTTx, etc.) and cable (where the coaxial cable infrastructure for television is used) are the main technologies. In Western Europe, the fixed broadband penetration rate swelled to 60.0 percent of households in

2008 with a CAGR of roughly 43 percent from 4.9 percent in 2001. Growth over the next two to three years will remain steady, but a slowdown can be expected after that considering saturation levels. Substitution by mobile broadband technology will also contribute to the slowdown.

The situation in Central and Eastern Europe is different. The average fixed broadband penetration rate was 27.2 percent of households in 2008 and is expected to increase steadily in the coming years. Broadband penetration in CEE is rather low mostly because the fixed line penetration rate is low. A high fixed line penetration rate has historically been a prerequisite for a jump in broadband demand. Western European countries generally have the infrastructure in place to provide fixed broadband. This is not always the case in CEE. Substantial infrastructure investment will be necessary before fixed broadband penetration rates can rise. Customers in urban areas in CEE countries are the only ones to benefit so far. Telecom operators have invested in their fixed line networks in urban areas only and this is also where cable operators have been extending their network to increase coverage.

Broadband penetration in CEE





THIS ISSUE'S HIGHLIGHT

Mobile telephony is the main form of individual mass communication in CEE. We believe that mobile broadband has the potential to become the main form of broadband communication in CEE in the future, if the backhaul issue can be solved.

The 3G mobile standard WCDMA is most widely used currently in Europe for mobile broadband. It is based on Wideband CDMA (WCDMA) transmission technology and allows speeds of up to 14 Mbps with the HSPA (HSDPA for the downlink and HSUPA for the uplink) transmission protocol, depending on the number of users in a cell. Currently HSUPA is only offered by a few operators such as GLOBUL in Bulgaria. There was a strong jump in mobile broadband usage in Western Europe over the past four years and growth in CEE countries was also noticeable. Yet 3G penetration rates are still rather low. Strong mobile broadband growth can be expected in Western Europe and CEE in the coming years. UMTS is becoming available in all of the CEE countries compared in this study with the exception of Turkey. Operators in Russia are currently building up their 3G networks. The penetration rate of 3G (WCDMA) subscribers shown in this study includes users of UMTS broadband technologies like HSPA as well as 3G users who simply use their iPhone to surf the internet. Increasingly operators in Western Europe and CEE are offering broadband data services as a standard service, with no premium charged to customers. In this sense, broadband is following the path already blazed by voice services and SMS.

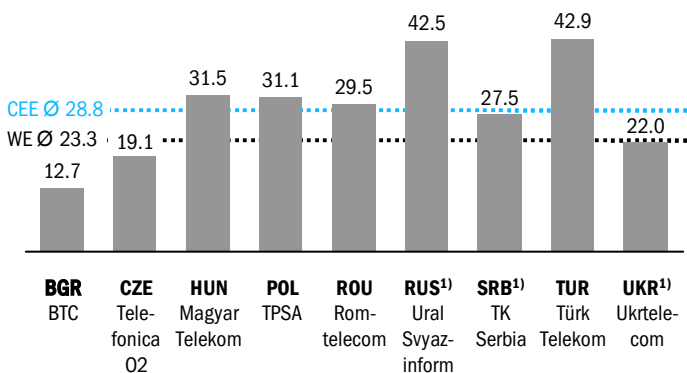
Flat rate tariffs, without any download limitations, are the norm today for fixed broadband connections both in Western Europe and CEE. A DSL connection with 6-8 Mbps bandwidth costs approximately EUR 23 per month in Western Europe and is currently the most widely and commonly used. Given network

conditions, the same service in CEE is still considered premium, costing roughly EUR 29. This 20 percent price difference can mostly be attributed to high prices for selected services in Turkey and Russia (see table). Considered from a different angle, namely by comparing prices based on GDP, a different picture emerges. Whereas the average monthly price in Western Europe makes up approximately 1 percent of the average monthly GDP per capita, it is 4 percent in CEE. In addition to the low penetration rate of fixed lines, high prices are a further reason for broadband penetration remaining low in CEE. When it comes to mobile broadband, operators in most countries compared in this study offer customers packages which include data volume, but the amount is limited. As with fixed broadband prices, the cost of mobile broadband in CEE is within Western European range. Coverage and performance is lower in CEE. HSUPA is rarely available for instance. In Austria, a customer can sign a UMTS contract with a downlink speed of 3.6 Mbps using HSDPA for about EUR 2.2 per Gigabyte download volume. A customer in the UK pays about EUR 3.8 for the same service. The average price a customer pays in CEE is EUR 3.7 as long as the extraordinarily high price for GPRS mobile broadband in Russia and Turkey, where Turkcell offers a GPRS/EDGE service for about 29.6 EUR per GB at a maximum downlink speed of 240 Kbps, is left out of the equation (Turkcell plans to launch 3G service mid of 2009). Serbian customers also pay unusually high prices for MTS-offered 3G services. But again if a comparison is made based on GDP per capita a more varied picture emerges. While the average price per GB accounts for about 0.4 percent of the monthly GDP per capita in CEE, it is only 0.1 percent in Austria. It is likely that customized tariffs soon will become available in CEE. These can already be found in some Western European countries.

Fixed broadband price comparison

DSL, Flat rate contract, 6-8 Mbps

Price per month incl. VAT [EUR]



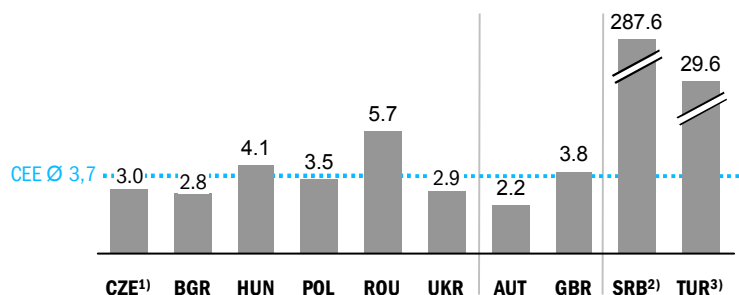
1) 1-2 Mbps connection

Source: Roland Berger, UniCredit

Mobile broadband price comparison

HSDPA, contract, 3.6 Mbps

Average price per GB incl. VAT [EUR]



1) CDMA 1 Mbps

2) 2 Mbps

3) GPRS/EDGE

Source: Roland Berger, UniCredit



THIS ISSUE'S HIGHLIGHT

No end in sight to growth in broadband demand

In the past, the popularity of broadband connections was driven by the newly won benefits for customers such as price/cost advantage, novelty functionality (faster e-mail downloads, Facebook, etc.) and time saving thanks to process acceleration. These days, information and entertainment applications – such as IPTV and media-rich applications like YouTube, video on demand and on-line gaming – are increasingly driving broadband growth. File sharing spurs growth too.

We expect a broadband penetration rate of 100 percent to be reached both in Western Europe and CEE from 2012 onward. The Netherlands already boasts a broadband penetration rate of roughly 80 percent. Legislative measures pushed by the European Commission could accelerate broadband penetration. So far the Commission has not yet introduced a European-wide program, but as part of its attempt to bridge the digital divide it has encouraged countries to improve coverage, especially in rural areas. The example of Norway shows how successful legislation can be to increase broadband use. The Norwegian government decided in 2000 that all households, companies and public entities should have access to a fixed broadband connection. An action plan was set up and the government spent NOK 850 million (EUR 94 million) to push broadband. Today Norway boasts a fixed broadband coverage of 99.8 percent. While local authorities were given funds to increase broadband access in their municipalities, they were given no restrictions on how to accomplish this goal. They were given complete freedom to choose between DSL, cable, wireless broadband or satellite.

We see no end in sight to the increase in demand for broadband. We also see no reason for bandwidth increases to slow. Bandwidth drivers are mostly multimedia and video content and gaming. The need for higher bandwidths and new applications reinforce each other.

Mobile broadband starts to compete successfully with fixed broadband

In Western Europe mobile broadband (UMTS) grew at a similarly strong rate as fixed broadband between 2005 and 2007. Within the next couple of years, however, mobile broadband growth is expected to outperform fixed broadband growth. Users, accustomed to fixed broadband, expect the same benefits from mobile broadband. The technologic advantage of fixed broadband, namely speed, will remain. Mobile broadband and fixed broadband are expected to coexist. Moving forward, mobile broadband is likely to experience strong growth rates, due to the following reasons:

- Strong affinity to mobile telephony; particularly in CEE, mobile services are sometimes cheaper and fixed ones are often not available

		Maximum speed ¹⁾ [Mbps]		Applications
		Downlink	Uplink	
Fixed				
ISDN		128 Kbps	128 Kbps	Basic Internet services, Video-conferencing
ADSL		12	1.3	PSP File sharing, Online gaming, VoD
ADSL 2+		24	1	VOIP, IP-TV (HD)
Coax (Cable)		50	20	Triple Play
VDSL		53	16	Triple Play
FTTH		>100	>100	All applications in parallel, high detail level
Wireless				
GSM/3G	EDGE Evolution	240 Kbps	118 Kbps	Voice, SMS, WAP
	HSPA	14.4	5.8	Streaming, Browsing
	LTE (HSOPA)	144	38	Online Gaming, HD Video
WIMAX		80	16.6	VOIP, IP-TV (HD)
CDMA	REL 0	2.4	0.15	Streaming, Browsing
	REV A	3.1	1.8	Streaming, Browsing, BB uploads
	UMB²⁾	288	75	Online Gaming, HD Video

1) Theoretical maximums, some technologies are slower in practice due to share of a fixed bandwidth channel among a population of users

2) Ultra Mobile Broadband

Selected last mile broadband technologies

Source: Roland Berger, UniCredit

- Familiarization with basic fixed line applications, usage is transferred to mobile (Western Europe)
- In Western Europe and CEE, mobile phones are a status symbol and serve as a personalized terminal
- In Western Europe and CEE, mobility is becoming more commonplace in everyday life (e.g. e-mails on BlackBerry)
- In Western Europe and CEE, technical progress and scale effects lead to lower prices

Mobile operators are actively pushing FMS (fixed-mobile substitution). One example of this is the giving away of mini laptops featuring integrated UMTS modems. In Austria, for instance, mobile operator Orange gave away free mini laptops (8.9 cm display size) when a 24-month HSDPA mobile broadband contract for a monthly fee of EUR 25 was signed.

Whereas mobile broadband is likely to become a complementary product to fixed broadband in Western Europe, we see the possibility of partial replacement of fixed broadband in CEE. Two main factors underpin our view: the CEE's low fixed line penetration rate, especially in rural areas, and price sensitivity. While CEE customers certainly choose products based on their communication needs, they also tend to purchase the least expensive product. Often this is the mobile offer. How will operators cope with this demand?



THIS ISSUE'S HIGHLIGHT

Three main options to meet demand for increased mobile bandwidth

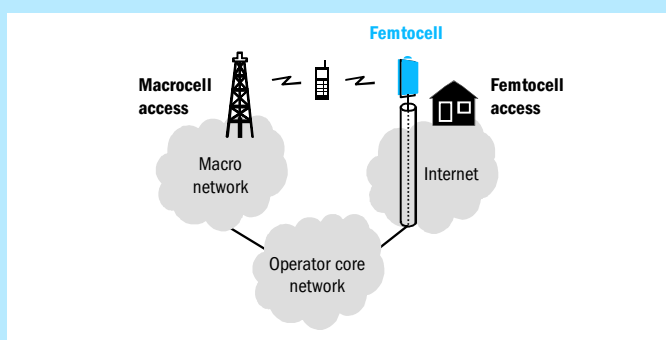
Faced with increasing demand for mobile broadband bandwidth, mobile operators are constantly expanding and upgrading their networks. With 3G UMTS currently being the most widely used technology in Europe, the question arises how to meet the challenge in the future. In the medium term, by which we mean in two to three years, we see three major options for operators: reduce the cell size, upgrade current networks to 3GPP LTE (Long Term Evolution, 3.9G) or switch to a different technology (most probably WiMAX).

Option 1: Reduce cell size

To improve performance, operators usually try to upgrade technology. Yet operators of a mobile network have another option at their disposal: they could reduce cell size and improve in-building coverage in order to improve performance. This would be especially effective in densely populated areas where advertised speeds are best case only and network congestion occurs often.

INFOBOX FEMTOCELLS

The femtocells approach makes use of a small, inexpensive in-house access point for 2G/2.5G/3G technology. Backhaul is provided over a residential DSL connection. The sender operates at a very low output level with a maximum of five or six connections possible at any one time.



Function of Femtocells (schematic)

The throughput per device is limited by the UMTS standard (e.g. 14.4 Mbps with HSPA), while the total throughput is limited by the backhaul network (e.g. DSL). However the concept is applicable to all mobile standards (including GSM and WiMAX).

Femtocells use the same spectrum as macrocells and thus allow handover to macrocells. Interference with the macro network is the major source of criticism against femtocells. How it could be integrated into an overall architecture remains open.

There are various methods to reduce cell size. Femtocells may be the method with the most punch. It is a small cellular base station, which is typically designed for use in residential or small business environments.

From a mobile carrier's perspective the advantages of femtocells are obvious: Secure customer relations, solve the backhaul issue and reduce backhaul costs (these are paid by the consumer) and improve technical network performance. One drawback is dependency. This technology makes mobile operators dependent on the fixed connection and infrastructure of other providers. It should be difficult to sell to consumers too. Barring higher bandwidth, it is hard to identify any advantage for users. Femtocells technology appears too complex to introduce for standard users and too many questions remain unanswered today. How will operators cope with system breakdowns? Who will pay for necessary equipment? How well would it really be accepted? How feasible is a roll out?

Options 2+3: Upgrade (LTE) or switch (WiMAX)

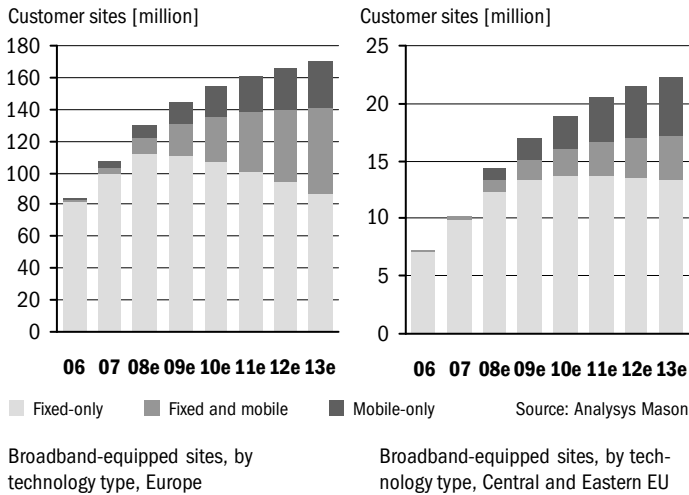
Operators also have the option of upgrading or switching technologies. Would they prefer to invest in a technology that evolves or are they willing to back a technological revolution? 3GPP LTE (Long Term Evolution, 3.9G) and WiMAX are technologies that could be employed in two to three years. From a technological point of view, WiMAX is the revolutionary alternative, but LTE would allow mobile operators to migrate from UMTS via HSPA to LTE in a more cost efficient manner. WiMAX 802.16e (the mobile version of WiMAX) will not be available before 2009. Russian operator Comstar is expected to launch its WiMAX 802.16e service for Moscow in 2Q09, the earliest, in a test phase. LTE cannot be expected before 2011 (on a broad scale; there are already pilots underway). Several factors make upgrading from current 3G technology to 3.5G/3.9G (HSPA/LTE) within the next two to three years more probable than switching to a new revolutionary technology such as WiMAX:

- Upgrading technology is less costly than building it up from scratch
- Backward compatibility means existing terminal and datacard bases probably can be used
- Functions of service layer do not have to be re-implemented
- Personnel and process costs may be lower as existing qualifications and partnerships can be used
- Integrating current technology in existing network infrastructure (OSS/BSS) would be easier

Several operators are currently postponing their WiMAX launches (e.g. Turkcell), mostly due to the expectation of LTE.



THIS ISSUE'S HIGHLIGHT



Broadband-equipped sites, by technology type, Europe

Broadband-equipped sites, by technology type, Central and Eastern EU

Fixed network operators continue to have the upper hand

Although mobile technologies enable operators to increase bandwidth, basically by offloading traffic, there are limitations to its applicability. As the example of femtocells shows, the advantages for the consumer are unclear. We do not see how mobile broadband can compete fully with fixed broadband in terms of bandwidth and reliability. This concern is particularly relevant in densely populated areas where advertised speeds are best case only. As mentioned before, these speeds cannot be achieved if too many users have to share bandwidth in the same cell. This underscores the fact that fixed network infrastructure is not only necessary to provide fixed broadband connections in the future, but could play a major role for mobile broadband technologies, too (backhaul traffic).

Increased bandwidth demand and fierce competition from cable operators may force fixed network operators to think about upgrading their access networks to fiber. Some operators are likely to ask themselves whether it is more cost efficient to invest in their own fixed network infrastructure or to lease. Operators will need to examine the regulatory environment in their home country to answer that question. Legislation requiring fixed network operators to open their new fiber infrastructure to other operators would clearly impact business models and investment payoffs. There is currently no standard regulatory framework within the European Union regarding this matter. Whereas the regulator protects the incumbent in Spain by not forcing it to open up its fixed network infrastructure, regulators in France, Italy, Sweden and the UK have managed to pressure operators into sharing their fiber access networks.

A different option being discussed currently at the EU level is the functional separation of the network. Time will show how this discussion evolves and which position the EU regulator adopts.

Regardless of the regulatory discussion, it seems that fixed operators (especially incumbents) will need to invest in their fixed infrastructure in order to successfully compete with cable operators. Cable operators are the only real competitors to incumbents. They potentially have a superior network, e.g. DOCSIS 3.0 with downstream speeds of over 100 Mbit/s, and can provide the same service at an extremely competitive price, thanks largely to their business model. In our view, fiber will be the infrastructure of the future because it is the only viable way for operators to meet rapidly growing demand for bandwidth. Only fiber allows long-distance data transmission with a limited number of amplifiers.

CONCLUSION AND OUTLOOK

Urban areas are the focus of attention for operators of broadband in CEE. The relevance of fixed network infrastructure in CEE, particularly in urban areas, will likely increase and having one will be the trump card of incumbents and other fixed network operators in the long run. Fixed network operators in CEE, like their Western European counterparts before them, will have to start thinking about investing in a fiber access network. Decisions taken by regulators, especially those in favor of making new infrastructure available to all operators, will heavily impact the business models and decisions of fixed network operators in CEE. Cable operators in CEE pose the greatest competition in CEE as well as in Western Europe. Their increasing strength will force fixed network operators to invest significantly in their fixed line infrastructure. Countrywide fixed network coverage, which is quite low in CEE compared with Western Europe, is probably not justifiable from an economic viewpoint. The digital divide remains wide. Similarly, the economic viability of mobile broadband based on 3G or WiMAX technology is questionable in rural areas in CEE in the long run. Unless mobile operators are given strong incentives it is difficult to envision mobile broadband being rolled out in these areas. CDMA might be an alternative. Mobile operators have to decide whether investing in fixed network infrastructure makes sense in urban areas in CEE. The question that remains is 'who is going to pay for all this?'

This will be the highlight of our next issue (#3) in June 2009.



COUNTRY COMPARISON

CAPEX in CEE

The telecom industry is highly CAPEX intensive due to the network and infrastructure involved and fast changing technology requirements. Telecom operators in Western Europe annually invest around 15 percent of revenues. Expenditures in Western Europe peaked in 2006 and have stayed at a constantly high level since then. The picture is similar in CEE. CAPEX/revenue peaked in 2007, with 15 percent. CAPEX of about 11-12 percent of revenue is expected in the long term. In Russia, the economy was booming and the telecom industry has experienced strong growth rates. To catch up with Western Europe, 25.2 percent of fixed revenues was invested yearly from 2005 to 2006. The CAPEX/revenue ratio thus is much higher in Russia. It remains to be seen what impact the financial crisis will have on all this.

Major investments have been made in the past years in:

- Fixed line broadband expansion: Last mile (e.g. Deutsche Telekom with FTTC/VDSL in Germany), and also backbone networks (especially fiber in Western Europe)
- 3G rollout and expansion: In Russia 3G was rolled out at the end of 2007 for MTS, Beeline and Megafon. Deutsche Telekom has acquired UMTS licenses in several CEE countries, including Croatia, the Czech Republic, Hungary and Slovakia. These licenses require a certain level of 3G coverage to be reached within a set time frame. This further drives up CAPEX
- General process automation: Automation is critical in order to reduce costs and re-engineer processes. Billing and CRM have drawn the most investment since they are so important for daily business. These systems also require large investment volumes
- NGN implementation: All major incumbents in Western Europe are transforming their networks to Next-Generation Networks (NGN) in order to provide ALL-IP functionality.

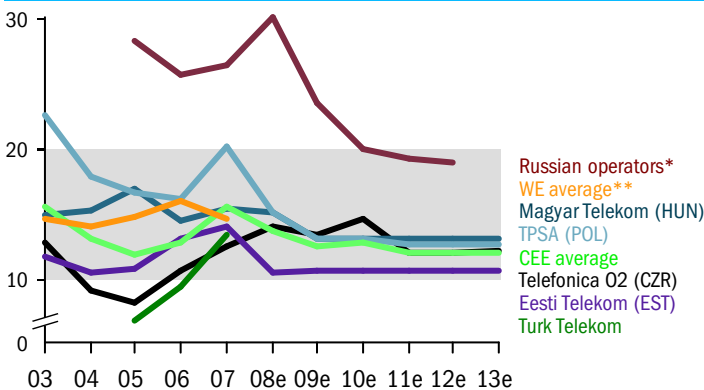
These topics will become important drivers for CAPEX both in CEE and Western Europe in the near future. Additionally, FTTx investments as a last-mile technology will increasingly play a major role, first in Western Europe and later in CEE. France Telecom, for instance, plans to invest up to EUR 4.5 billion to create a fiber optic network by 2012. Most incumbents in Western Europe plan to transform their networks to NGN by 2012 at the latest and this transformation is due to start soon in CEE. For non-incumbent operators such as cable operators, NGN transformation will be the major investment. Operators would be wise not to underestimate how much it will cost to maintain legacy services. While few telecom operators plan to phase out existing products with new ones in the short term, NGN will replace legacy services in the long term.

CAPEX is expected to stay at a rather high level because fixed operators must invest in fiber infrastructure, mobile operators will expand and upgrade their 3G networks and integrated operators will move to an NGN.

How the financial crisis might impact telcos and CAPEX

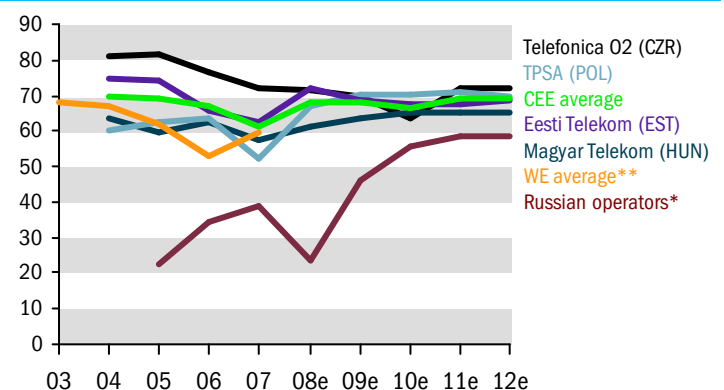
Telecom operators might be faced with a drop in revenues if the general economic slowdown is accompanied by reduced demand for telecommunication services. Consumers are unlikely to use voice services less, but they might think twice about purchasing fancy media packages. The rising cost of capital is likely to negatively impact earnings, which would result in dividend payments being slashed. The increased cost and restricted availability of credit will force operators to rethink their capital expenditure plans, causing the build-up of fixed and mobile communication networks to slow. This would hurt equipment manufacturers most. Time will tell.

Capex/Revenues [%]



* MTS, Vimpelcom, Uralsvyazinform, NW Telecom, Volga Telecom, Center Telecom, Southern Telecom, Sibirtelecom, Dalsvyaz, Comstar
 ** Deutsche Telekom, Telefonica, France Telecom, Telecom Italia

(EBITDA-CAPEX)/EBITDA [%]



Source: Unicredit, Analysys, Roland Berger

COUNTRY FACT SHEETS

Bulgaria



Three players remain in saturated mobile market

The aggregated revenues of Bulgaria's three mobile operators – MobilTel, GloBul and BTC – grew year-on-year by about 10 percent to EUR 275 million in the first quarter of 2008. While the average duration of phone calls rose steeply, all mobile operators saw revenue per user drop as a result of price cuts (e.g. MobilTel from EUR 10.3 in II/07 to EUR 9.9 in II/08). The three rivals have already launched 3G services and are expanding towards multimedia and internet applications. In their endeavor to challenge landline operator BTC, MobilTel and GloBul also offer combined fixed line and wireless packages that feature voice and internet services. In reaction to this measure, BTC started offering an ADSL + mobile voice package.

The dominant landline telecom BTC continues to lose revenues and subscribers from fixed line voice services. This loss can only partially be compensated for by growth in internet services. Over the course of 2008, the company lost about 300,000 fixed line subscribers. The financial report of BTC, which excludes the company's wireless arm, shows a collapse in revenue of 7.2 percent to BGN 226.5 million (EUR 115.8 million) in the first quarter of 2008, or just 42 percent of the revenues generated by the wireless operators. Since the two segments had roughly equal sales values in 2003, a significant shift clearly has taken place from landline to wireless telecom services over the past five years.

Regulator cancels tender for a fourth GSM license

The Bulgarian Regulator (CRC) cancelled the tender for the country's fourth wireless license, rejecting the sole bid by Liechtenstein-based TelCo AG. Initially eight companies were interested in obtaining a license to use a countrywide GSM 1800 network, but TelCo was the only firm to place a bid by the July 11, 2008 deadline.

The Bulgarian mobile market has practically reached saturation point. Considering the regulator's overly ambitious starting bid, the weak response to the license tender hardly surprised anyone.

Mobile Number Portability (MNP)

MNP, introduced in April 2008, has not lived up to the regulator's expectations. The procedure is too cumbersome, with clients having to visit the offices of their old and new mobile operators at least three times before MNP is set up. Not surprisingly, the number of users who have requested a mobile number transfer has been low. Bulgaria's M-Tel said that only 266 of its customers had taken advantage of MNP in April, the first month it was made available. By the end of June, 1 percent of all mobile phone subscribers had changed their accounts. Once a more efficient change procedure is introduced, more and more customers can be expected to use this service.

Fixed [#1]*	Market share [%]**	EBITDA margin 2007 [%]	Subscribers 2007 ['000]		Subscribers 2008 ['000]	
			Total	Broadband	Total	Broadband
BTC	96	34	~2,500	160	~2,200	n.a.
Mobile	Market share [%]**	EBITDA margin 2007 [%]	Subscrib. I/07	Subscrib. IV/07	Subscrib. I/08	Subscrib. II/08
MobilTel	51	56	4,431	5,099	5,058	n.a.
GloBul	39	n.a.	3,391	3,873	3,878	n.a.
Vivatel	10	n.a.	820	1,165	982	n.a.

* Number 1 player **Most recent 2008

Source: Company reports, IDG Bulgaria

Czech Republic



Operators push migration to postpaid

The mobile market in the Czech Republic continues to be dominated by three major players: T-Mobile, O2, and Vodafone. Although the market is very mature – mobile penetration was 128 percent at the end of 2007 – all players managed to increase their subscriber base during the past eighteen months. With the aim of increasing ARPU, operators continued to encourage customers to migrate from prepay to postpaid services. Total mobile ARPU (blended) in the Czech Republic reached EUR 20.5 in the first half of 2008, a year-on-year increase of 0.4 percent. The share of Telefónica O2's postpaid customers rose to 46 percent at the end of the second quarter of 2008, up from 42 percent a year earlier. Most operators achieved this sort of increase by offering tariffs to stimulate traffic, i.e. by offering low call rates to some user groups. To push migration, operators are also offering their customers contracts that attractively bundle different products together. In the first half of 2008, T-Mobile began to market T-Mobile ProfiNet, a converged solution aimed mainly at business customers. The package offers customers mobile, fixed line, voice and data services.

The number of fixed line connections continues to decline steadily. Telefónica O2 lost 269,000 fixed line subscribers in the first half of 2008. The rate of decline is beginning to slow. The number of broadband internet users has been growing, yet at a slower rate than in previous periods. Telefónica O2 saw the number of its broadband subscribers jump from 462,000 to 540,000 between the first half of 2007 and the first half of 2008, an increase of 16.8 percent. In the first half of 2008, operators proceeded to abolish the Fair Use Policy, by removing download limits for fixed broadband connections.

O2 so far the only 3G provider

Telefónica O2 is currently the only Czech operator with 3G network coverage based on UMTS/HSDPA technologies. Currently 3G coverage is limited to Prague and Brno, but plans exist to expand the signal to another 20 to 30 towns throughout the Czech Republic. More than 70 percent of the population should be covered over the next two to three years. Expanding 3G coverage is one of the main goals of the operator's future strategy. While the country is estimated to have had 0.35 million 3G subscribers in 2008, Business Monitor International anticipates this number to jump by a staggering 972.5 percent to 3.7 million by 2012. Over this period, 3G penetration rates are expected to skyrocket from 3.3 percent to 35.3 percent.

Fixed [#1]*	Market share [%]**	EBITDA margin 2007 [%]	Subscribers 2007 ['000]		Subscribers 2008 ['000]	
			Total	Broadband	Total	Broadband
Telefónica O2	90	45	2,207	526	1,938	540
Mobile	Market share [%]**	EBITDA margin 2007 [%]	Subscrib. I/07	Subscrib. IV/07	Subscrib. I/08	Subscrib. II/08
T-Mobile O2	40	50	5,109	5,200	5,273	5,313
Vodafone U:fon	39	46	4,683	4,967	5,159	5,186
	21	32	2,475	2,582	2,698	2,751
	0	n.a.	0	n.a.	32	60

* Number 1 player **Most recent 2008

Source: Unicredit, Informa, Roland Berger



COUNTRY FACT SHEETS

Hungary



Competition remains subdued as incumbent dominates markets

T-Com (Magyar Telekom) retained its leading position on the fixed line market, with a market share of 74 percent. The company had about 742,000 broadband users in the second quarter of 2008, an increase of 4 percent from year-end 2007. Even more impressive is its IPTV user growth. T-Com acquired over 15,000 subscribers in the second quarter, which translates into 600 percent growth within one year. Its starting base was small however. Hungary's virtual network operator Tele2 was acquired by Invitel in the period under review. Medium-sized operators like Externet, Eternet and TvNetWork continue to integrate smaller service providers with a few thousand clients.

In the mobile segment, market penetration has increased dynamically to reach 115 percent. T-Mobile is market leader with a market share of 44 percent. While all providers have seen an increase in client numbers, Vodafone lost market share to T-Mobile and Pannon. All operators see future growth potential with 3G/HSDPA services. Pannon recently invested about EUR 35 million in its 3G/HSDPA network.

Regulator intends to enhance competition

Hungary's Telecommunication Authority discussed in July 2008 the possibility of granting a license to a fourth mobile operator. Although the existing operators argue that the market is already saturated and there is no room for an additional player, a tender invitation has attracted four bids by the December 12 deadline. The four applicants for the 900/1800/2100 MHz GSM/UMTS license are Invitel Zrt, Hungary's second largest fixed line telecom operator, project companies Digi Kft and Mobinet Kft, Dream Com Kft, co-owned by listed ISP Externet, and telecom company Telecom 4, owned by foreign strategic and financial investors. Telekom 4 has been negotiating with mobile operators to launch MVNO services too. Service providers refuse to open their networks for MVNOs arguing that they have not yet been shown a mutually beneficial business model. The market entry could be supported with asymmetric ending fees and domestic roaming regulation. A decision to select winning bidders is expected in early 2009.

Fixed [#1]*	Market share [%]**	EBITDA margin 2007 [%]	Subscribers 2007 ['000]		Subscribers 2008 ['000]	
			Total	Broadband	Total	Broadband
Mag. Telekom	74	36	2,264	716	2,162	742
Mobile	Market share [%]**	EBITDA margin 2007 [%]	Subscrib. I/07	Subscrib. IV/07	Subscrib. I/08	Subscrib. II/08
T-Mobile	44	42	4,478	4,628	4,928	5,081
Pannon	35	41	3,417	3,873	3,964	4,039
Vodafone	21	n.a.	2,163	2,304	2,340	2,423

* Number 1 player **Most recent 2008 Source: Unicredit, Informa, Roland Berger, NHH

Poland



Growth slows in mobile sector, broadband impacted by price wars

Although Poland's mobile penetration rate reached 109.5 percent in the first half of 2008, the total number of subscribers fell slightly for the first time in the second quarter. Showing the signs of a mature market, growth in the mobile sector rose only by 4 percent from June 2007 to June 2008, down from the 19 percent growth clocked up during the year-earlier period. All major operators - PTK Centertel (Orange), Polkomtel, and PTC - reported a lull in subscriber growth. The number of PTC subscribers was 2 percent in this period, down from 15 percent the year earlier. PTK saw subscriber growth slow to 6 percent from 24 percent. Play, a new entrant, has emerged as the number four operator in the period under review, gaining a subscriber base of 1.5 million in its first year of operations. MVNOs with only 180,000 customers still remain on the periphery of the market.

Volumes grow as a result of BSA and broadband price pressure

The broadband market continues to grow at a rate of more than 20 percent annually. In the first quarter of 2008, the number of broadband subscribers increased by 5.2 percent to 3.6 million. Cable operators are experiencing the largest growth (7.2 percent) and are progressively encroaching on TPSA's market position as the largest player with 58 percent. UPC had 9 percent and Multimedia 6 percent of the market. Market growth for broadband was mainly driven by a decrease in prices of about 25 percent over the past 12 months - UPC dropped prices by 25 percent and TPSA by 22 percent. Since 3Q08 the price level is more or less stable. Only cable operators might lower their prices even more. TPSA continues its efforts to regain 244,000 of BSA (Bit-stream access) subscribers (approximately 10 percent of their subscriber base), launching discounted internet access under the Orange brand (priced 15 percent lower than TPSA's service). Current market developments suggest that operators will start offering additional bandwidth and value service to compete rather than lowering prices.

Netia, the alternative operator, has put broadband growth at the top of its agenda. By the end of 2008, it wants to have a subscriber base of 400,000. In the first quarter, it had 250,000 subscribers, or 7.1 percent of the market. Netia acquired Tele2 Poland, giving it a 10 percent share of the fixed voice market and it thus consolidated its position as TPSA's biggest competitor.

Fixed [#1]*	Market share [%]**	EBITDA margin 2007 [%]	Subscribers 2007 ['000]		Subscribers 2008 ['000]	
			Total	Broadband	Total	Broadband
TPSA	78	42	8,950	2,154	8,366	2,328
Mobile	Market share [%]**	EBITDA margin 2007 [%]	Subscrib. I/07	Subscrib. IV/07	Subscrib. I/08	Subscrib. II/08
Centertel	33	39	12,737	13,487	14,007	13,900
Polkomtel	32	39	12,477	13,000	13,536	13,480
PTC	31	37	12,325	12,700	12,986	12,830
Play	4	n.a.	0	~1,000	~1,300	~1,500

* Number 1 player **Most recent 2008 Source: TPSA, BRE Bank Securities, Reuters, PAF

COUNTRY FACT SHEETS

Romania



Mobile telephony continues to develop, competition heats up

The fixed line market is dominated by two major operators (accounting for 97 percent of total subscribers): the incumbent Romtelecom and alternative player RCS&RDS. The latter, also the country's largest Pay TV operator, continues to attract a growing number of subscribers (1 million by mid-2008). Competition also heated up in the fixed telephony market, with the entrance of mobile giants Vodafone and Orange. Due to higher call tariffs, however, fixed voice offers from mobile operators mainly attracted people with no access to wireline networks.

With a penetration rate of 118 percent in June 2008, the mobile telephony market in Romania continues to expand. Some 6.4 million new customers signed up for mobile telephony services over the past five quarters. The market leaders – Orange and Vodafone – lost market share to Cosmote and RCS&RDS. While Cosmote has 4.6 million subscribers and managed to attract 2.6 million new subscribers over the past five quarters, it remains a distant No. 3 player. RCS&RDS gained 0.8 million new customers over the past three quarters.

Market convergence reshapes competitive landscape

Telecom operators are expanding into previously unexplored areas, as they look for new growth drivers and try to find ways to lessen the impact of increased competition in their core businesses. Romtelecom's shrinking fixed telephony revenues bolstered the launch of DTH and internet services, while RCS&RDS rolled out the first Quad-Play offer on the local market.

Three out of four mobile operators provide mobile broadband services. Cosmote, lacking a 3G license, is forced to bypass 3G and launch WiMax instead. Together with Romtelecom, Cosmote recently started offering a package that bundles broadband internet with mobile services. All four mobile operators have diversified into fixed telephony, targeting residential clients, SMEs and areas with limited coverage. Orange started offering Quad-Play in early 2008, by entering a strategic alliance with CaTV operator UPC Romania. A fierce Quad-Play price battle is waging between operators. Orange/UPC offers customers a package including internet (fixed broadband), fixed phone, Cable TV and mobile telephony that starts from about EUR 19.6 per month. RCS&RDS' Quad-Play offer starts from EUR 18.4 per month and Cosmote/Romtelecom price their starting package at about EUR 28.4. Differences exist between the various packages offered by these competitors.

Fixed [#1]*	Market share [%]**	EBITDA margin 2007 [%]	Subscribers 2007 ['000]		Subscribers 2008 ['000]	
			Total	Broadband	Total	Broadband
Romtelecom	71	37	3,032	360	3,021	500
Mobile	Market share [%]**	EBITDA margin 2007 [%]	Subscrib. I/07	Subscrib. IV/07	Subscrib. I/08	Subscrib. II/08
Orange	40	53 (06)	8,270	9,880	10,010	10,088
Vodafone	36	47	7,950	8,810	8,920	9,256
Cosmote	18	8	2,000	3,580	4,200	4,600
Telemobil	3	n.a.	830	630	650	650
RCS&RDS	4	n.a.	n.a.	~800	800	1,100

* Number 1 player **Most recent 2008 Source: Unicredit, Informa, Roland Berger

Russia



Voice stagnates, while mobile and fixed broadband picks up

Growth for new fixed voice lines slowed to 2 percent in 2008, as a result of fixed-mobile substitution. Russia boasts a mobile penetration rate of nearly 130 percent, with growth of 14 percent posted last year. Growth in mobile ARPU (USD 10-15) fell to 8 percent in 2008 from 16 percent the previous year. A decrease in MoU, very low average price per minute, and a low share of value-added services in the ARPU were the reasons for the growth slowdown. Mobile operators have almost exhausted regional expansion as a route for growth. The biggest operators, however, continue to grow by acquiring regional players.

The market for long-distance calls grew by 7 percent to USD 3.2 billion from USD 3 billion. Rostelecom, the state-owned long distance operator, is no longer the only player on the market. Thanks to deregulation, new companies such as MTT, Transtelecom and Golden Telecom have entered the market. Rostelecom continues to dominate the market with 78 percent. MTT has 9 percent of the market and GT has a 7 percent share. Facing competition, Rostelecom has started lowering prices. Its EBITDA margin fell as a result to 21 percent.

The opposite trend is being seen in the broadband market. It is showing high growth of around 50-80 percent a year, mainly in the country's regional markets. Some 60 percent of new subscribers are from areas outside of Moscow and St. Petersburg. Currently the penetration rate in Moscow is 31 percent. Regional areas have a penetration rate of nearly 20 percent. Using state telephone networks, Svyazinvest is deploying xDSL technology. Major competitors provide FTtx. In Moscow the FTtx share already is estimated to be over 50 percent.

3G roll out

Since the end of 2007, MTS, Beeline and Megafon have started to roll out 3G networks in the north west of Russia. 3G networks are being test run in several areas, including Samara, Kazan, Novosibirsk and Yekaterinburg. The ARPU of 3G services is estimated to be around USD 12 (compared to about USD 10 of existing GSM ARPU), according to experts. SkyLink, the present 3G operator in Moscow, uses the CDMA-1000 format. It has an ARPU of USD 55 and 230,000 subscribers. SkyLink's ARPU is so high because most of subscribers are business customers and no other offers are available.

Fixed [#1]*	Market share [%]**	EBITDA margin 2007 [%]	Subscribers 2007 ['000]		Subscribers 2008 ['000]	
			Total	Broadband	Total	Broadband
Svyaz-Invest	77	37	29,237	1,270	29,485	2,583
Mobile	Market share [%]**	EBITDA margin 2007 [%]	Subscrib. I/07	Subscrib. IV/07	Subscrib. I/08	Subscrib. II/08
MTS	35	51	51,500	57,430	59,900	61,380
VimpelCom	24	52	38,600	42,221	42,079	42,500
MegaFon	22	49	31,355	35,991	36,967	38,705
Others	18	n.a.	24,531	28,909	30,392	31,220

* Number 1 player **Most recent 2008 Source: Unicredit, Informa, Roland Berger

COUNTRY FACT SHEETS

Serbia



Move toward market liberalization in the fixed line business

The (de-)regulation and liberalization of Serbia's telecommunication market has dominated activity within the fixed line business over the past six months. Telekom Srbija still holds onto its monopoly for fixed voice services. The fact that Telekom Srbija managed to increase the number of fixed line subscribers by 2 percent in 2008 is testimony to the immaturity of the fixed line business in Serbia. Telekom Srbija, however, faces strong competition in the broadband business, especially regarding the access side where it has less than 50 percent of subscribers. The incumbent continues to have a virtual monopoly on international interconnections since only one other ISP exists. After years of being delayed, measures to increase fixed line competition should finally be implemented in 2009. Issuing voice and Wimax licenses, liberalizing international interconnections and forcing Telekom Srbija to use regulated, cost-based pricing are some of the planned measures.

The mobile market is reaching saturation point. The penetration rate grew to 124 percent in the second quarter of 2008. MTS and Telenor saw 2-3 percent subscriber growth in every quarter of 2008. VIP mobile's growth slowed to 11 percent in the second quarter from 19 percent in the first quarter of 2008. While subscriber growth can be negatively influenced by new rules that require the registration of all subscribers, the commercial effect should be negligible.

Telekom Srbija privatization delayed until 2010

The government's plan to privatize a minority stake of the incumbent Telekom Srbija looked like it was moving in the right direction with the appointment of Morgan Stanley as an advisor at the end of September. While a privatization plan was expected to be laid out by the end of 2008 - with the IPO anticipated for 2009 - Telekom Srbija recently announced that the privatization will not take place until 2010. Uncertainty in capital markets probably informed this decision. Following the privatization, the Serbian government is expected to retain a 51 percent stake in the company. In addition to a domestic listing, shares also will be listed on a major European stock exchange. The state currently owns 80 percent of the company. The Greek incumbent OTE, which is controlled by Deutsche Telekom, owns the remaining 20 percent.

Fixed [#1]*	Market share [%]**	EBITDA margin 2007 [%]	Subscribers 2007 ['000]		Subscribers 2008 ['000]	
			Total	Broadband	Total	Broadband
Telekom Srbija	100	34	2,891	139	2,945	~ 170
Mobile	Market share [%]**	EBITDA margin 2007 [%]	Subscrib. I/07	Subscrib. IV/07	Subscrib. I/08	Subscrib. II/08
MTS	60	34	4,535	5,260	5,392	5,553
Telenor	33	42	2,636	2,920	2,987	3,047
VIP mobile	7	-92	0	508	602	667

* Number 1 player **Most recent 2008

Source: Roland Berger

Turkey



Greater competition up ahead for main operators

Over the past decade, the Turkish telecommunications market has seen mobile usage grow and fixed line usage stagnate. The country's mobile penetration rate was 88 percent and mobile ARPU reached EUR 10.1 at the end of 2007. The ADSL broadband market has the highest growth rates, while the number of fixed line subscribers is decreasing. Turk Telekom experiences revenue growth thanks to its internet and mobile divisions, but the number of its fixed-line subscribers is decreasing. In the first half of 2008, it lost 400,000 subscribers.

The Turkish market is dominated by two strong players. Turk Telekom is the incumbent fixed line operator commanding 95 percent of the market. Turkcell is the largest mobile company with a market share of 57 percent. Turkcell also owns Telkom, an alternative operator that targets the fixed line market. Both Turkcell and Turk Telekom are very profitable with EBITDA margins of over 40 percent. Turkcell's mobile competitors are Vodafone and Avea. During the past year all three operators managed to increase their subscriber base. Turkcell saw the number of its subscribers rise year-on-year by 10.4 percent to 35.1 million in the first quarter of 2008. Vodafone's subscriber base swelled 22.7 percent to 16.9 million in the same period. Avea's subscriber base grew 27.5 percent to 10.5 million.

Further liberalization will change the landscape

Alternative operators have emerged as part of the liberalization process pushed by EU regulations. Turk Telekom, the incumbent and dominant market player, has not lost much market share (barring international traffic) because the liberalization process is progressing slowly. Further liberalization steps such as limiting interconnection fees and liberalizing short-distance local calls may increase competition. These steps should lead to the establishment of a wholesale market.

Despite objections by Turkcell, the telecommunications authority has recently pushed for a lower rate on interconnection fees. Turkcell posted lower ARPU last year although its voice transfer per user increased. By November 2008 all three mobile operators successfully obtained a 3G license. The auction of a fourth UMTS licence has been cancelled due to a lack of bidders. Turkcell was the only bidder in the previous 3G tender held in 2007 because the remaining operators were pessimistic about their chance of competing effectively without the introduction of mobile number portability (MNP). As a result Turkey brought forward the introduction of MNP to November 2008 in a move that appears to have satisfied Vodafone and Avea. Regulation regarding WIMAX and MVNOs are expected to create new players in the market.

Fixed [#1]*	Market share [%]**	EBITDA margin 2007 [%]	Subscribers 2007 ['000]		Subscribers 2008 ['000]	
			Total	Broadband	Total	Broadband
Turk Telekom	97.1	45	18,200	4,500	17,800	5,200
Mobile	Market share [%]**	EBITDA margin 2007 [%]	Subscrib. I/07	Subscrib. IV/07	Subscrib. I/08	Subscrib. II/08
Turkcell	56	42	31,800	35,400	35,100	35,400
Vodafone	27	19	13,800	16,100	16,935	n.a.
Avea	17	22	8,250	9,900	10,515	11,000

* Number 1 player **Most recent 2008

Source: Unicredit, Informa, Roland Berger

COUNTRY FACT SHEETS

Ukraine



Zero rate price plans and 3G licensing move the sector

As the mobile market approaches maturity – it reached 120 percent at the end of the third quarter of 2008 – the penetration rate these days only shows modest increases. Rather than attempt to lure new customers, mobile operators shift their focus toward improving ARPU. Astelit was the first to launch free calls inside its Life network. This move was quickly copied by other large mobile operators. MTS and Kyivstar have introduced "zero rate" price plans that encourage existing subscribers to talk more. Operators generate additional revenue with side services, not included in the monthly package. Utel, which is owned by the fixed line incumbent Ukrtelecom, saw the number of users jump impressively in 2008. User increase has risen by approximately 20-30 percent per month since the beginning of the year. The Ukrainian government plans to issue three licenses for 3G networking. MTS, Kyivstar, Beeline and Life are interested in obtaining a license as their 3G services are currently offered via Utel roaming. Enabling these operators to gain a license would mean new services being offered, raise data transmission levels and enhance mobile broadband. Tez Tour, a large tourism operator in Eastern Europe, has launched a mobile virtual network service TezGSM. Incoming calls in roaming modus are free and the cost of outgoing calls to Ukraine is a quarter that charged by other mobile operators.

Ukrtelecom privatization to counter financial crisis

The privatization of the telecom incumbent, which has been delayed several times, might be back on the agenda. According to government officials, funds are needed now to counter the impact the global financial crisis has had on the Ukrainian financial market. The central bank was forced to inject U.S. dollars into the market after investors withdrew funds.

The Cabinet of Ministers endorsed the terms of the privatization of 67.79 percent of Ukrtelecom in April 2008. According to the First Vice Prime Minister Oleksandr Turchynov, several firms are keen on participating in the privatization process, including Japanese ones.

Ukraine's broadband market has an estimated size of 1 million subscribers. Ukrtelecom's ADSL broadband service Ogo! is a great success, accounting for about 20 percent of the market. Low rates and a unique selling proposition are regarded as its key success drivers. Ukrtelecom's director of public affairs recently announced investment plans of UAH 1 bn (EUR 96 m) for the year 2009. The majority of the funds will be used to develop the broadband service Ogo!. Volia Cable has 180,000 subscribers and Optima-Farlep has roughly 60,000 subscribers.

Fixed [#1]*	Market share [%]**	EBITDA margin 2007 [%]	Subscribers 2007 ['000]		Subscribers 2008 ['000]	
			Total	Broadband	Total	Broadband
Ukr-telecom	85	32	10,100	170	10,200	250
Mobile	Market share [%]**	EBITDA margin 2007 [%]	Subscrib. I/07	Subscrib. IV/07	Subscrib. I/08	Subscrib. II/08
Kyivstar	42	59	23,300	23,544	23,687	23,700
MTS	35	50	20,752	19,920	19,614	19,500
Astelit	18	-14	5,793	9,045	9,350	10,000
Beeline	4	18	2,311	1,968	1,971	2,100
Others	1	n.a.	46	530	650	700

* Number 1 player **Most recent 2008

Source: Unicredit, Informa, Roland Berger

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