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Mid-term forecasting of electronic communication markets development in Croatia

LOT 3 Framework contract Beneficiaries EUROPEAID/119860/C/SV/multi

"Mid-term forecasting of electronic communication markets development in Croatia"

Letter of Contract N. 2006– 0707-0315

Report A

report on the situation on the telecommunications sector and importance of telecommunications in the Croatian economy

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Lot 3: Telecommunications and Information Technologies

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Table of contents

1 List of tables, figures and boxes

1.1 List of tables:

1.2 List of figures:

1.3 List of Boxes:

2 Major Findings

2.1 With regards to the present market and the developments 2006 until 2008:

- The total market for telecommunications services had a value of nearly 2 billions Euros in 2008

- Nearly every household has a fixed telephony access (36.6 % of the population); the mobile density amounted 132.6 % (or 1.3 mobile subscriptions per Croatian citizen) and the internet density was close to 30 % of the population.

- The market for mobile telephony has been the major driver of the growth of the Croatian telecommunications market.

- Tele2 is already since 2006 faced with heavy losses due to the lack of economies of scale which are decisive for a successful operation in a mobile telephony market.

- Markets for fixed telephony, internet access and leased lines are absolutely dominated by the incumbent HT. In particular the market for Internet Access where HT holds a market share of over 80 %.

- Competition from Croatian origin does not play any role of importance in the markets for fixed telephony, internet access and leased lines. There operations are limited and this is mainly due to a lack of economies of scale, management capabilities, technological lead HT, etc.

2.2 With regards to the expected developments 2009 until 2011:

- It is expected that the market for telecommunications services will only show a modest increase of 90 millions Euros till a level of close to 2.1 billions Euros (2069 millions).

- Major reason for this modest market growth will be the decrease of the market for fixed telephony which is expected to decrease with a rate of 6 to 7 % annually. Decrease is mainly caused by the substitution of fixed telephony by mobile telephony and the more intensive use of the various broadband facilities.

- Major driver for the growth of the telecommunications market will still be the mobile telephony market. Although it is expected that the mobile traffic will show a decrease, major growth will come from new services as mobile broadband which will generate new traffic revenues.

- It is doubtful in how far Tele2 still will be active on the Croatian market for mobile telephony. This is mainly because of their weak financial results until now on the Croatian market

- It is realistic to expect that the Croatian market for fixed telephony and Internet Access will be faced with a process of consolidation. Less players will be active, mainly because of financial reasons. Many of the present market players will not be able to realise the economies of scale needed to survive in a capital intensive market as the telecommunications market.

- HT is and will remain the dominant market player in the markets for fixed telephony and internet access. Its strategic position will only be strengthened through the large scale implementation of new broadband technologies as Fiber-To-The-Home (=FttH) and Fiber-To-The-Building (=FttB).

- Broadband Access through the CATV network will remain a limited market due to the fragmented character of the CATV market.

2.3 With regards to the contribution of the Communications Sector to the Croatian Economy:

- The direct contribution of the telecommunications sector (excluding Internet Access because of no consistent and reliable data) to the Croatian Economy was 868 millions of Euros in 2008 r 1.8 % of the GDP.

- It is not expected that this percentage will show an increase in the coming years. This is mainly due to the modest growth of the telecommunications market.

- About 5 % of the Croatian labour force is active within the telecommunications sector . It is expected that due to the capital intensive character of the telecommunications market, that this share will show a gradual decrease in the years 2009 until 2011.

- Te Croatian Post and Telecommunications Sector ranks at a third place when it comes to the foreign investments carried out in Croatia in the period 1993 until 2008. The majority of these investments were done in the period 1999 until 2001.

2.4 With regards to Croatia and the other countries in the region:

- Croatia scores fairly well when it comes to the prices for ICT services in comparison with other countries in the region. The main minus is that the prices for mobile telephony are belonging to the highest in the region.

- Croatia scores also fairly well when it comes to the use of ICT by enterprises with more than 10 employees. It scores less when it comes to E-government usage, where it just leads Romania.

- According the researches of the World Economic Foundation and the Worldbank the main problems that Croatia has with its ICT markets are the independency of the judicial system, the lack of ICT clusters and ICT companies within the Croatian Economy and also the slow absorption of technology by local enterprises.

- More or less identical are the complaints about the institutional pillar which encompasses elements as burden of government regulation, the efficiency of the legal framework, the judicial independence and also Foreign Investments Developments and technology transfer.
- It goes without saying that these elements may hamper the development of the Croatian ICT market.

3 Objectives of the project

The global objective of the project is to assure further strengthening of regulatory rules of the telecommunications market in Croatia (in compliance with the EU *acquis*), which will contribute to its further development.

In the Terms of reference there are two specific objectives mentioned:

To provide an overview of the entire telecommunications market in Croatia including both historical data and future projections in order to provide access to the information necessary for focusing research and development efforts and developing new products and business strategies.

To provide strategic assessment of the role of regulatory rules (laws, bylaws, decisions) in the telecommunications sector with the main focus on the role of competition in delivering benefits for customers.

Emphasis on broadband

In discussions with the beneficiary it was asked and agreed that the project would put emphasis on the broadband development as this is of vital importance to the development of the information society in Croatia.

4 The Economy

4.1 The Macro-Economic Developments incl. Forecasts according the IMF

The global economic crisis has begun to affect Croatia's economy, bringing to an end a multi-year expansion fuelled by strong credit growth. The economy now faces strong headwinds from the ongoing financial turmoil that has triggered a sharp decline in the volume of capital inflows, and from the sharp economic slowdown in the euro-area and the region that is increasingly taking a toll on export demand.

The IMF expects a considerable decline in economic activity in 2009. While GDP growth estimates at this point are subject to an unusual degree of uncertainty, the GDP growth projection of -2 percent in the revised budget, although possible, would require a recovery starting in the second half of the year. According the IMF, downside risks dominate and economic activity could contract more sharply. Domestic demand would be the key driver, with weakening private consumption and a large drop in investment. Import contraction is expected to outpace the fall in exports, and the current account deficit would narrow to about 6.5 percent of GDP. Growth is expected to remain sluggish in 2010, with the strength and pace of recovery depending, inter alia, on regional economic and financial conditions.

Croatia's financial system has weathered relatively well the first impact of the global storm thanks to skilful management and timely measures. In particular, financial market jitters and a sudden deposit outflow in the second half of October 2008 was arrested and reversed quickly by measures to increase deposit insurance coverage.

Moreover, a revised and more realistic budget was adopted in April 2009. However, a tight financing-negative growth environment in the period ahead threatens to exacerbate long-standing domestic imbalances. Private sector indebtedness (mostly external or foreign currency denominated) swelled during a period of ample liquidity, with a large part of the financing supporting non-tradable sectors and private consumption. External financing needs are very large and fragile balance sheets constrain policies.

Box 1: Recent developments (April 2009) according the Economic Institute of Zagreb.

- Croatian economy has entered recession.
- GDP dropped by 0.4 percent in the fourth quarter 2008.
- Personal consumption has contracted stronger than previously expected.
- Investments in fixed capital still resist recession.
- Government consumption not yet affected.
- Severe decline in foreign trade; imports hit more than exports.
- Industrial production and retail trade volume retain steep downward trends.
- Rising unemployment.
- Average wage continues to grow, although slightly slower than before.
- Credit growth in line with the central bank's target; foreign debt continues to rise.
- Inflationary pressures ease.
- Budget revision came early this year; public debt on the rise again.

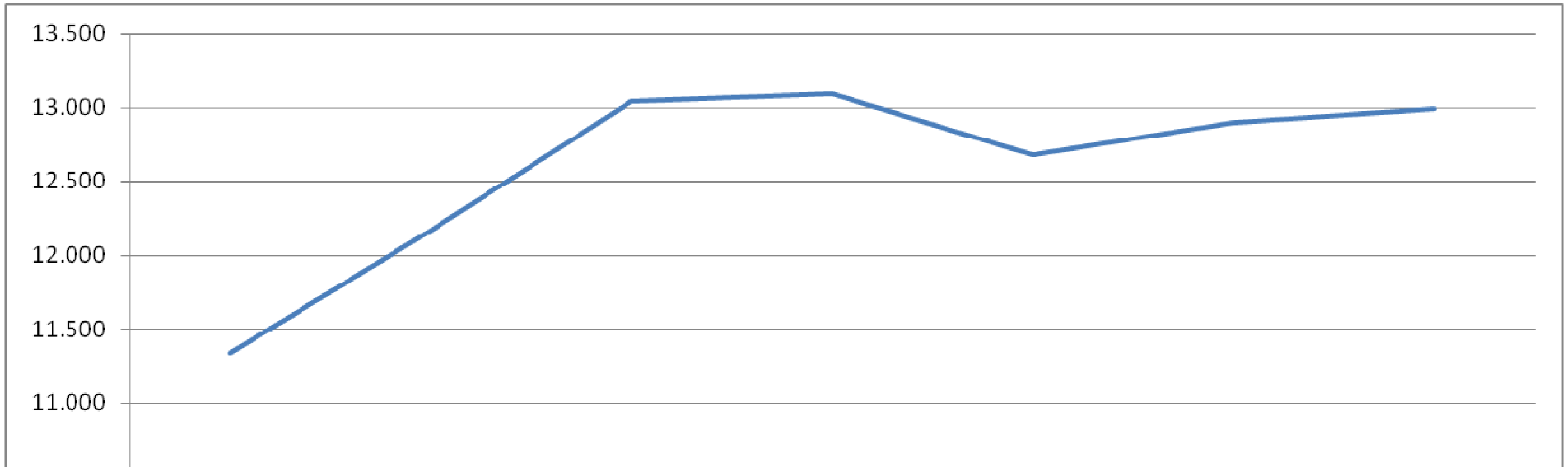
Source: Croatian Economic Outlook, April 2009.

In the table on the next page these data are summarised.

Table 1: Macro Economic Overview Republic of Croatia and forecast 2009 and 2010

							Forecast	
		2004	2005	2006	2007	2008	**2009**	**2010**
Population	Persons	4.439	4.442	4.44	4.436	4.436	4.436	4.436
Gross domestic product, current prices	Billions of Euros	32.778	35.747	39.085	43.217	47.382	41.881	42.041
Gross domestic product per capita, current prices	Euros	7,379	8,042	8,807	9,655	10,682	10,510	10,768
Gross domestic product based on purchasing-power-parity (PPP) per capita GDP	Euros	11,336	12,167	13,038	13,086	12,674	12,894	12,983
Inflation, average consumer prices	Index, 2000=100	109.5	113.2	116.8	120.2	127.5	130.7	134.3
Current account balance	Percent of GDP	-4.605	-5.75	-6.703	-7.587	-9.403	-6.498	-4.089
External debt as % of GDP	Percent of GDP	80.0%	82.4%	85.5%	87.8%	90.6%	91.7%	91.8%
Unemployment rate	%	18.5%	18.0%	17.0%	14.7%	13.5%	14.5%	14.2%

Figure 5: Gross Domestic Product based on purchasing- power- parity (PPP) per capita GDP (Euros)



5 The Telecommunications Market

5.1 The Market for Telecommunications Services.

The Croatian market for telecommunications services reached a level of nearly of 2 Billions Euros in 2008. Major growth has been realized by the market for mobile telephony which counts for over 56 per cent of the entire telecommunications services market.

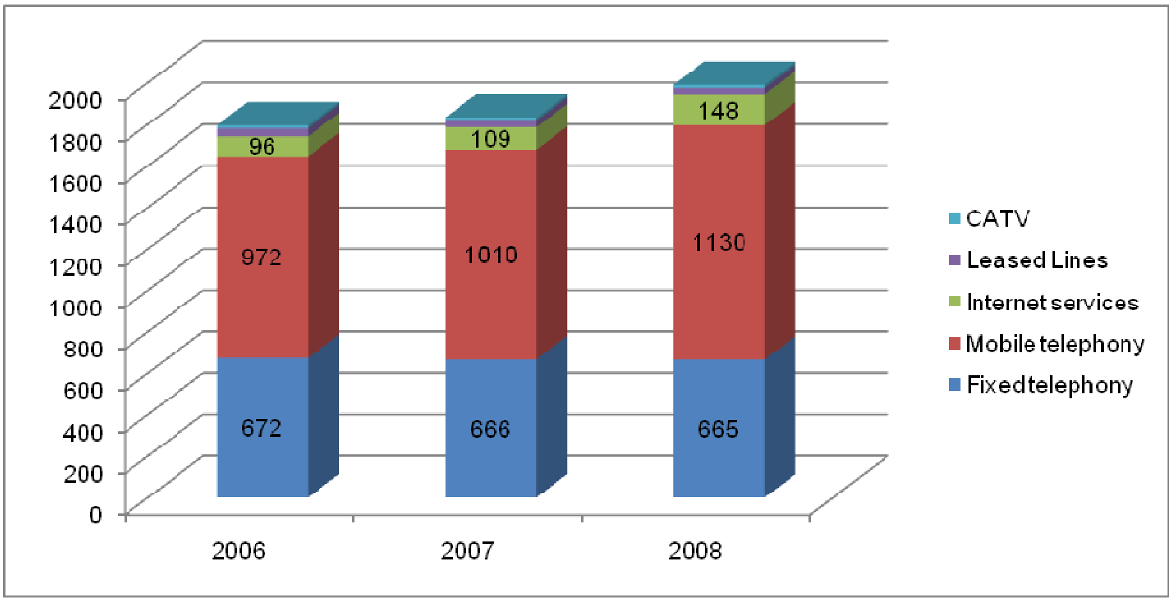
Although its share in the entire telecommunications market is still limited to a 7 %, the market for internet access has also shown an impressive Composed Annual Growth Rate (=CAGR) growth of over 24 %. Within this market it is mainly the market for ADSL-access with a CAGR of over 58 % while the market for dial-up internet access is decreasing with a rate of over 22 %.

The market for fixed telephony, and in particular the traffic revenues, are showing a negative growth with a CAGR of – 9.0 %. Reason for this negative growth is that also in Croatia, people are using more and more their mobile for local and domestic calls. Lower prices and a population which has more communications media at its disposal in comparison with five or six years ago are the major reasons for this decrease.

Table 2: The Market for Telecommunications Services* (Millions of Euros)

	2006	2007	2008	% cagr
Fixed telephony	672	666	665	-0.5%
of which:				
Traffic revenues	414	358	343	-9.0%
Connection and subscription revenues	208	191	191	-4.2%
Others (data comm., CPS, LLU, interconnection)	50	117	132	62.5%
Mobile telephony	972	1010	1136	8.1%
of which:				
Traffic revenues	869	860	942	4.1%
Connection and subscription revenues	103	150	188	35.1%
Internet Access	77	98	127	24.2%
Of which revenues for:				
Dial-up revenues	24	17	11	-32.3%
ADSL	32	55	80	58.1%
Leased lines	16	18	26	27.5%
CATV Internet	1	2	3	73,2%
Other forms of access	1	1	2	41.4%
VoIP	3	5	5	29.1%
Leased Lines	41	32	31	-13.0%
CATV	12	12	14	8.0%
Total Market	**1774**	**1818**	**1974**	**5.5%**

Figure 6: The Market for Telecommunications Services (Millions of Euros)



The number of fixed telephony subscribers is about 1.6 million subscribers while the number of mobile subscribers is close to 6 million. It is realistic to expect that in the coming years the number of residential fixed telephony subscribers will decrease. The number of mobile subscribers will still show a growth although the rates will not be as impressive as they were in the last four to five years.

The reasons are mainly laid down in the high penetration degree among households of fixed telephony access and the high saturation degree mobile telephony has already reached in Croatia. At present it is already close to 1.5 mobile telephone subscription per individual.

Fixed telephony will more and more being faced with a substitution of fixed telephony by mobile telephony. The fixed telephony access will become a major tool for the citizens and business of Croatia for various forms of fixed Broadband Access (ADSL, VDSL but also FttH and FttB).

Taking in to consideration the first commercial launch of ADSL in the beginning of 2004, one can say that the growth in the number of broadband subscribers can be called 'impressive'. ADSL is more and more replacing the 'internet dial-up' for creating an access to the world-wide-web of computers.

Fixed telephony has reached in 2008 a level of nearly every household having a fixed telephony access. Mobile telephony density has reached a level of over 130 % of the Croatian population. This high level of mobile telephony density means that in many people use more than one mobile subscription. In the report on consumer survey (report D) we found that this is the case for almost 30% of the people that have a mobile phone.

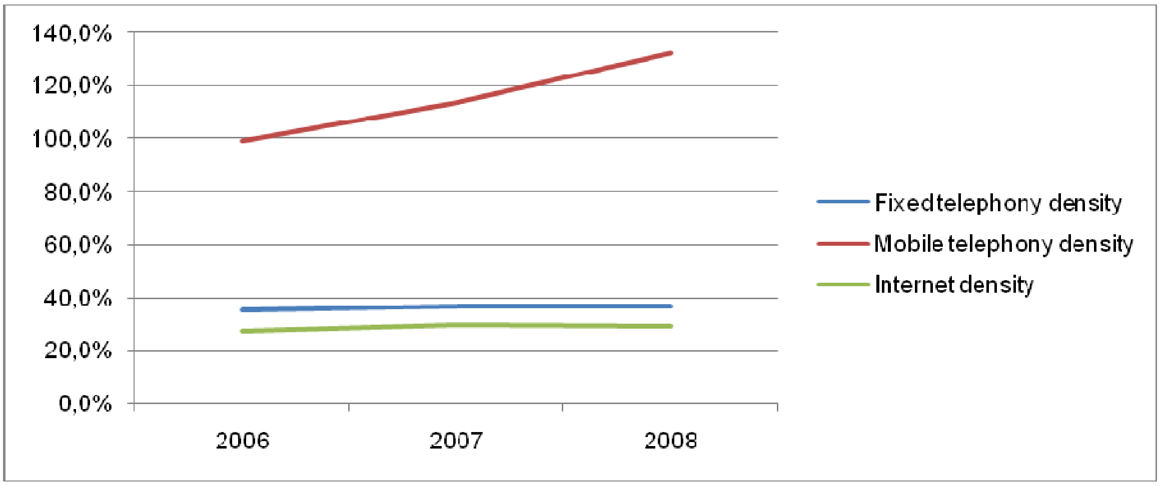
The internet density has reached a level that many households in Croatia have access to the Internet. In the same study we found that this is the case in almost 70% of the households. As already mentioned it is realistic to expect that in the coming years broadband access will to a large extent replace the ‘dial-up’ access.

Table 3: Telecom subscribers in Croatia

		2006	2007	2008	% cagr
Fixed telephony	000's of subscribers	1,572	1,628	1,622	1.6%
Mobile telephony	000's of subscribers	4,395	5,035	5,880	15.7%
Internet-broadband	000's of subscribers	244	387	523	46.4%
Internet-dial up	000's of subscribers	981	937	777	-11.0%
Total Internet	000's of subscribers	1,225	1,324	1,300	3.0%
Fixed telephony density	% of population	35.4%	36.7%	36.6%	1.6%
Mobile telephony density	% of population	99.1%	113.5%	132.6%	15.7%
Total Telephony density	% of population	134.5%	150.2%	169.1%	12.1%
Internet dial-up density	% of population	22.1%	21.1%	17.5%	-11.0%
Internet-broadband density	% of population	5.5%	8.7%	11.8%	46.4%
Total Internet density	% of population	27.6%	29.8%	29.3%	3.0%
Mobile telephony subscribers as % of fixed telephony subscribers	% of fixed telephony	279.6%	309.3%	362.5%	13.9%
Internet subscribers as % of fixed telephony subscribers	% of fixed telephony	77.9%	81.3%	80.1%	1.4%

Source: HAKOM

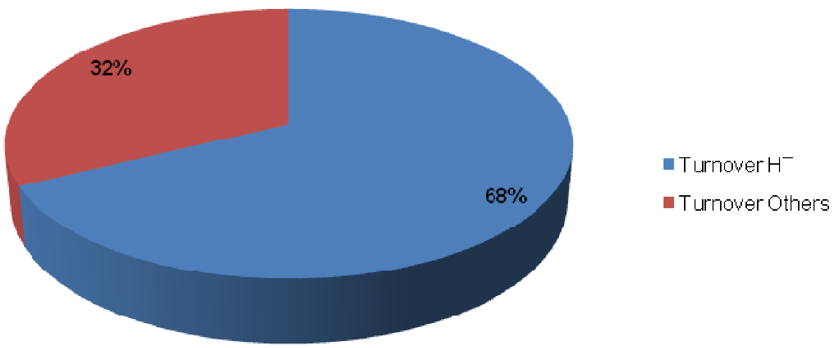
Figure 7: Development Tele-density and Internet density



The development of the Croatian telecommunications market described above is in line with the developments in other European countries. In particular, a substitution of fixed telephony, a slow down in the growth of mobile subscribers and the substitution of internet dial-up by broadband access.

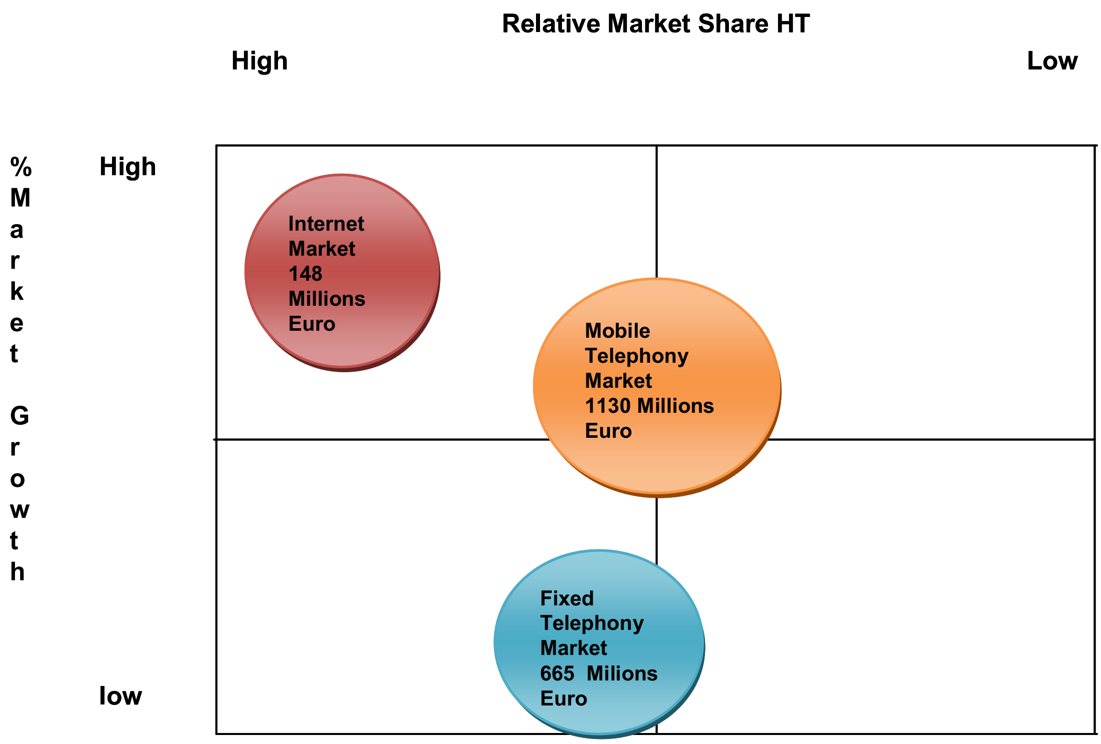
However, characteristic for the Croatian telecommunications market is the absolute dominance of the incumbent HT in the entire telecommunications market. In 2008 its share of the entire telecommunications market was over 68 %.

Figure 8: The overall Market share of HT in the Croatian Telecommunications Market, based on revenues-2008



This strength of HT is in fact valid for all of the major segments as fixed telephony, mobile but in particular the strategic important internet access market.

Figure 5: Strategic Mapping Position HT in the Croatian Telecommunications Market.



Until 2011 an annual growth of the market for telecommunications services is forecasted with a growth rate of 1.6 % until a level of about 2068 millions of Euros. This modest growth will mainly be realised by the market for mobile telephony and the internet access market. Fixed telephony will decrease with at least 6 to 7 per cent annually.(See the various overviews per market segment for the detailed assumptions)

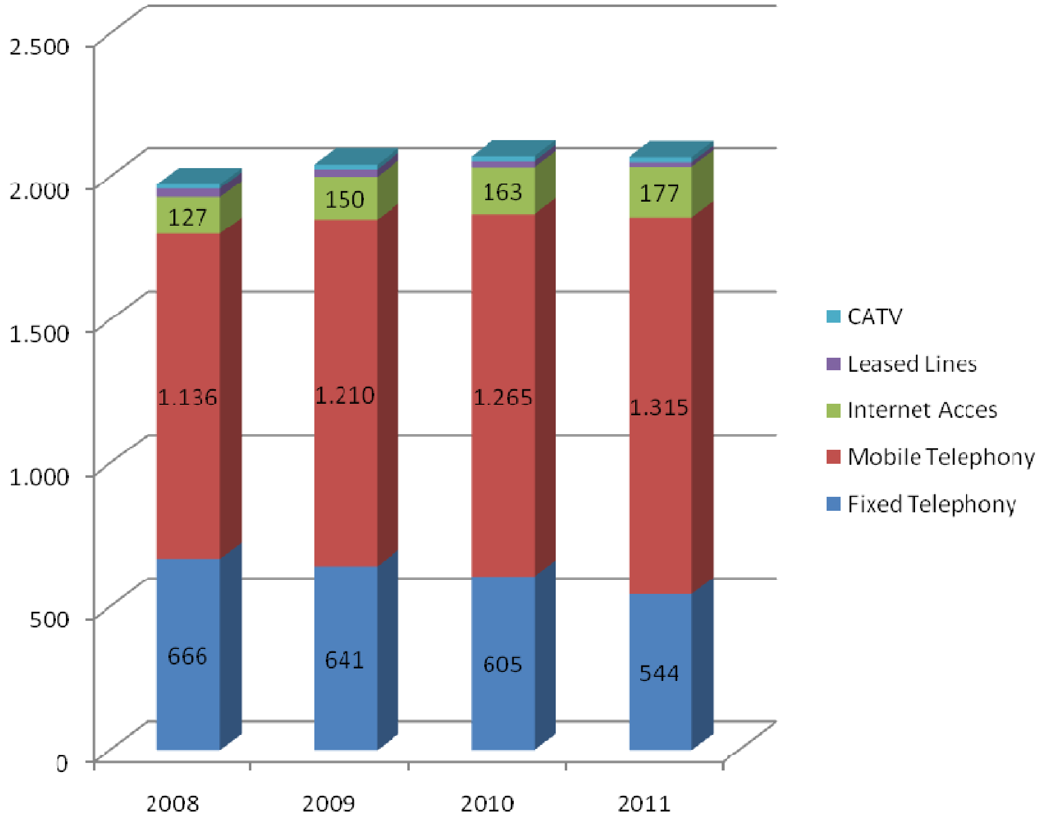
Mobile telephony will remain the major telecommunications market with a share of over 63 % of the entire telecommunications market while the share of fixed Internet access will remain at about 8 to 9 % of the entire market.

It is not expected that there will be some real changes in the dominant position of HT. HT will remain the major player on the market for telecommunications services with a share of at least above 60 %.

Table: 4: Forecast of the Telecommunications Market until 2011

			Forecast		
	2008	**2009**	**2010**	**2011**	**% cagr**
Fixed Telephony	**666**	**641**	**605**	**544**	**-6.5%**
of which:					
Fixed Telephony Traffic	343	320	290	250	-10.0%
Data communications	10	8	6	4	-26.3%
Subscription revenues	188	185	180	170	-3.3%
Interconnection Traffic	38	42	45	40	1.7%
Other categories	87	86	84	80	-2.8%
Mobile Telephony	**1136**	**1210**	**1265**	**1315**	**5.0%**
of which:					
Traffic revenues	948	990	1020	1040	3.1%
Other revenues	188	220	245	275	13.5%
Internet Access	**127**	**150**	**163**	**177**	**11.7%**
of which:					
Dial-up	11	7	4	3	-35.2%
ADSL	80	100	110	105	9.5%
Leased Lines	26	24	15	10	-27.3%
FttH/FttB	0	6	20	45	173.9%
Other forms of Access	5	7	9	11	30.1%
VOIP-traffic	5	6	5	3	-15.7%
Leased Lines	**31**	**26**	**21**	**15**	**-21.5%**
CATV	**14**	**16**	**17**	**17**	**6.7%**
Total	**1974**	**2043**	**2071**	**2068**	**1.6%**

Figure 6: **The market for telecommunications services and its forecast for 2009 until 2011(Millions of Euros)**



5.2 The Fixed Telephony Market

At the moment a total of 10 operators are active within the Croatian market for fixed telephony. Major players are the incumbent HT and also the two alternative operators Optima and Metronet. The remaining seven operators are relatively small and vary in turnover from 2 millions Euros until 11 millions Euros and in number of employees from 8 (Voljatel) until 55 (Amis Telekom). Their service offering is often limited to a handful of subscribers.

Box 2: The major players within the Fixed Telephony Market

- **Deutsche Telekom** is the majority owner of **T-Hrvatski Telekom** with a 51% stake. Following the sale of shares to present and former employees of T-Hrvatski Telekom and Croatian Post in June 2008, the Government of the Republic of Croatia reduced its holding from 9.5% to 3.6%. Croatian War Veteran's Fund owns 7% of shares while private and institutional investors hold 38.4%. The organization of the Company is based on division into corporate and business functions. Together with four Corporate Units (CEO, CFO, CHRO, GCTO/CIO), the role of which is to integrate business and management of the whole Company, T-HT has two Business Units:
    - Business Unit for Fixed Network and Broadband Operation (T-Com), organized within Croatian Telecom Inc. as a legal person
    - Business Unit for Mobile Communications Operation (T-Mobile), a separate legal person organized as a limited liability company one hundred percent owned by Croatian Telecom Inc.

  In its session on 4 May 2009, the Supervisory Board of T-Hrvatski Telekom approved a proposal by T-HT's Management Board to begin preparations to combine T-Com and T-Mobile into a single business unit.

  After the acquisition in 2006, **Iskon Internet d.d.,** one of the leading alternative providers in Croatia, became a member of T-HT Group. Within the Group, Iskon continues to develop the increasing segment of customers who prefer alternative products and who were not intensively served by T-HT until 2006.

- **Optima Telekom,** alternative operator whose shares are in hands by Mr. Matija Martic (67,7 % of the share holding) while the remaining shares are in hands of banks, insurance companies, etc.

- **Metronet,** alternative network provider and whose shares are mainly in hands of private investors and venture-capitalists.

Although the total volume of fixed telephony traffic still shows an increase over the period 2006 until 2008, it is in particular that the ´residential´ segments or ´traffic forms mainly used by the residential subscribers´ are showing a decrease. In particular the traffic within the own network , the traffic from fixed to mobile as well as mobile to fixed and in particular the internet dial/up traffic. Reasons for this are besides the substitution of fixed telephony by mobile telephony also the substitution of dial-up internet access by broadband access.

An indication of the increasingly competitive character of the Croatian market for fixed telephony is perhaps shown at best by the increase in the traffic volumes of the category ´to and from other domestic fixed networks´ and the increase of the ´interconnection traffic´. However, the traffic volumes carried out by the various competitors of HT are still relatively small.

In terms of value, the fixed telephony traffic shows a slight decrease and in particular the revenues generated by fixed telephony traffic. The small decrease of the fixed telephony market is mainly caused by the increase of the CPS and LLU revenues as well as the revenues from the interconnection traffic. In particular, these market segments which are a result of the a few years ago started liberalization of the Croatian telecommunications market. However, their share in the overall fixed telephony market is still limited.

There are some doubts regarding to the data on CPS and LLU revenues provided by HAKOM. The CPS and LLU revenues realized by the incumbent HT sounds not logic as this would imply that for e.g. the incumbent is also offering CPS facilities to its own subscribers. In 2008 the CPS revenues of HT already were Euros 23 millions. It may be that the amounts are double quoted.

The number of fixed telephony subscribers showed in 2008 a slight decrease in comparison with 2007. The growth in the residential telephony subscribers is nearly halted and showed in 2008 a decrease in comparison with 2007 while the number of business subscribers is still increasing. It is expected that in the coming years the number of residential fixed telephony subscribers will decrease more and more due to the substitution of fixed telephony by mobile telephony.

Table 5: The Fixed Telephony Market

	2006	**2007**	**2008**	**% cagr**
Total Traffic (Mio's of minutes)	**11832**	**11450**	**13356**	**6.2%**
of which:				
Within own network	3992	3530	3189	-10.6%
To and from other domestic fixed networks	1453	1501	2408	28.7%
Fixed to mobile	627	610	568	-4.8%
Mobile to fixed	249	245	219	-6.2%
International (incoming and outgoing)	859	924	1019	8.9%
Value Added Service	69	76	68	-0.7%
Total Internet dial-up	3083	2331	1627	-27.4%
Interconnection traffic	1500	2233	4258	68.5%
Total Revenues (Mio's of Euros)	**672**	**666**	**666**	**-0.4%**
of which:				
Fixed telephony traffic	414	358	343	-9.0%
Data communications (ATM, frame relay, etc.)	19	16	10	-27.5%
Connection revenues fixed telephony	6	4	3	-29.3%
Subscription revenues fixed telephony	175	187	188	3.6%
CPS revenues	33	61	60	34.8%
LLU revenues	0	5	19	94.9%

	2006	2007	2008	% cagr
WIMAX subscriptions	0	3	5	66.7%
Revenues from interconnection traffic	25	32	38	23.3%

Source: HAKOM

Table 6: The Fixed Telephony Subscribers

	2006	2007	2008	% cagr
Lines (000's of lines)	1839	1839	1860	0.6%
of which:				
Analogue lines	1524	1536	1568	1.4%
ISDN lines	303	275	262	-7.0%
FGSM, WIMAX	12	28	30	58.1%
Fixed Telephony Subscribers (000's)	1571	1628	1622	1.6%
of which:				
analogue-residential	1361	1389	1400	1.4%
analogue- business	163	184	190	8.0%
ISDN-residential	40	47	25	-20.9%
ISDN-business	7	8	7	0.0%
Fixed telephony subscribers by customer category (000's)	1572	1628	1622	1.6%
of which				
Fixed telephony-residential	1402	1436	1425	0.8%
Fixed telephony business	170	192	197	7.6%
Other services (000´s):				
CPS-subscribers	426	236	491	7.4%
Unbundled local loop subscribers	2	38	196	889.9%
WIMAX-subscribers	12	8	30	58.1%
Other access technologies	NA	0	36	0.0%

Source: HAKOM

Figure 7: **Fixed Telephony Traffic Volumes by Segment (Millions of minutes)**

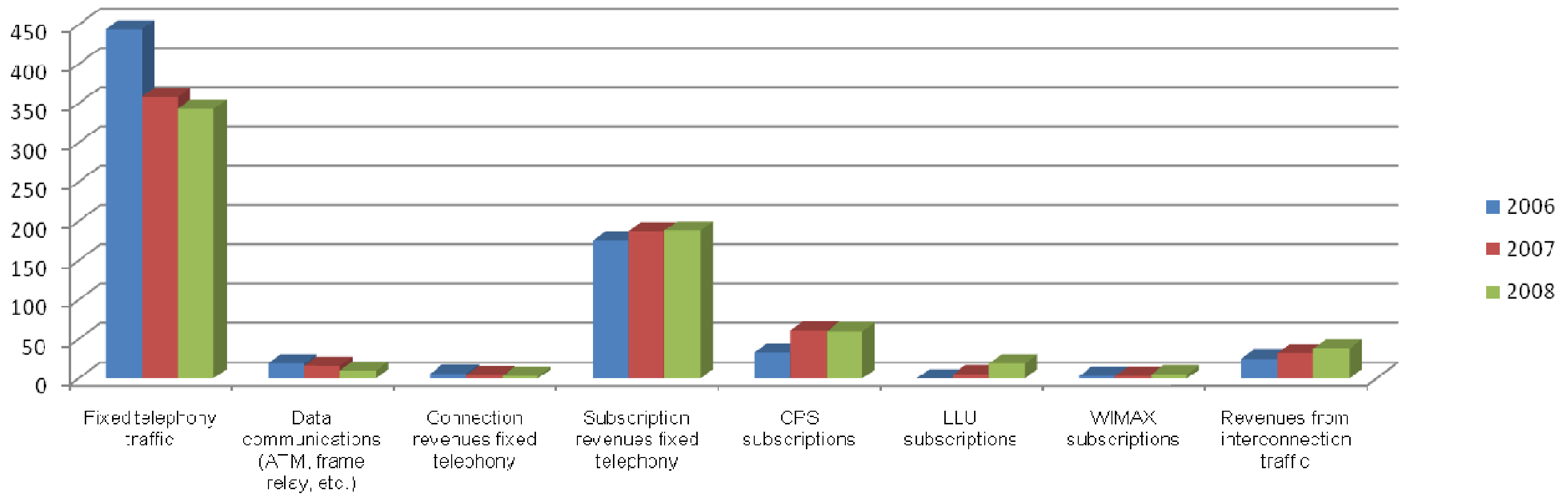
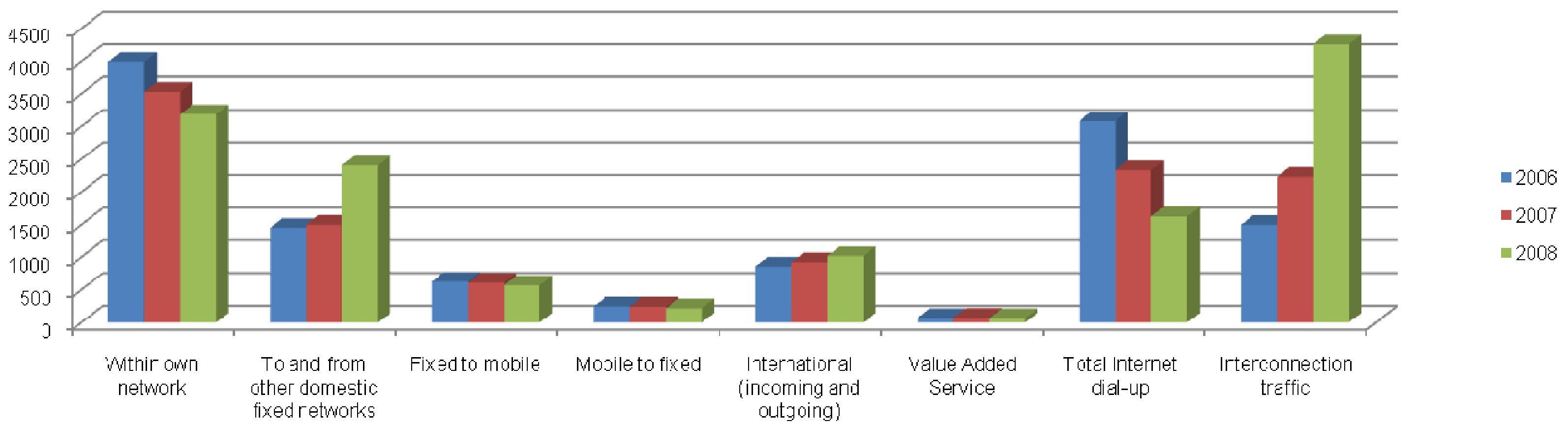
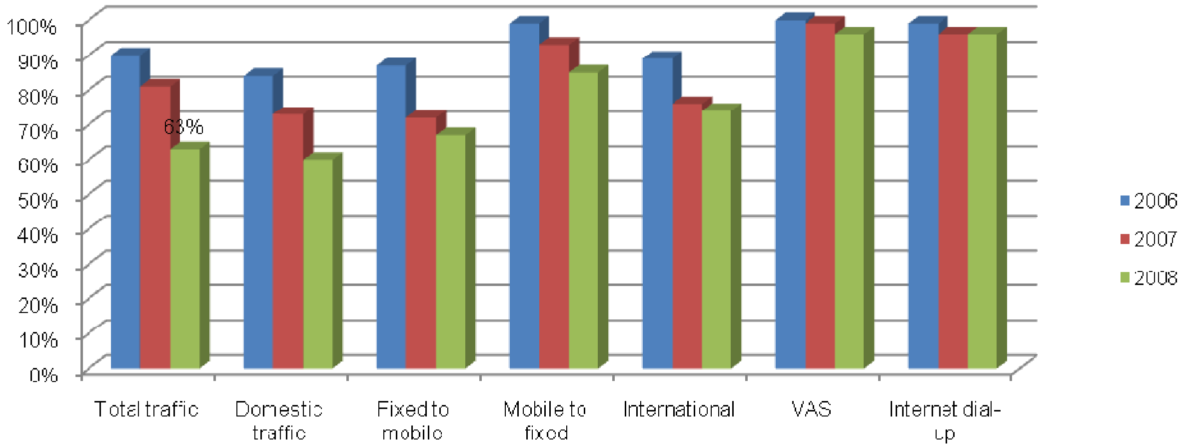


Figure 8: **The Fixed Telephony Market by Major Segment (Millions of Euros)**



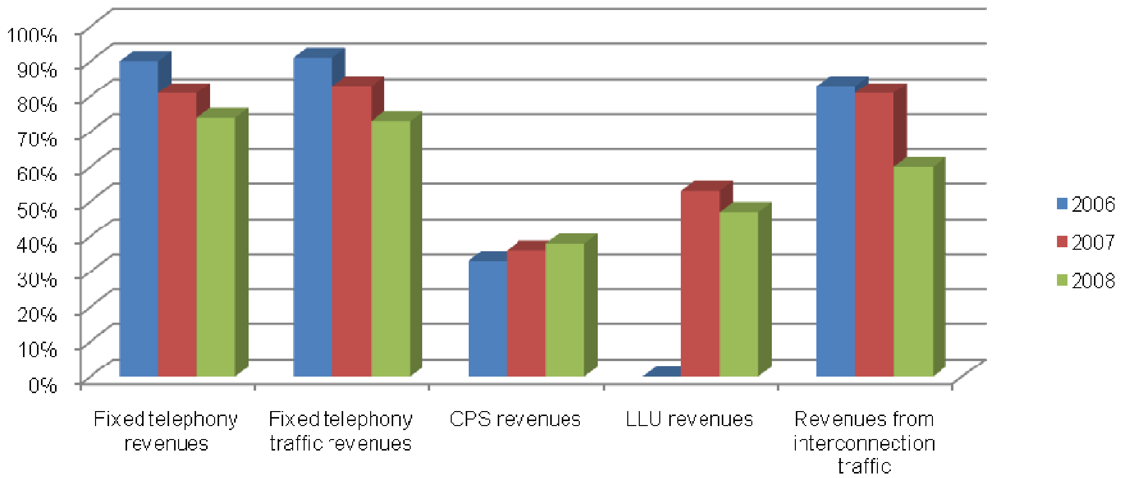
When it comes to the various fixed telephony traffic markets, one can conclude that the HT share is decreasing in all sub-markets but it still had at the end of 2008 a share of 63 % of the total fixed telephony traffic market.

Figure 9: Market shares of HT in the Markets for Fixed Telephony Traffic and based on traffic volumes.



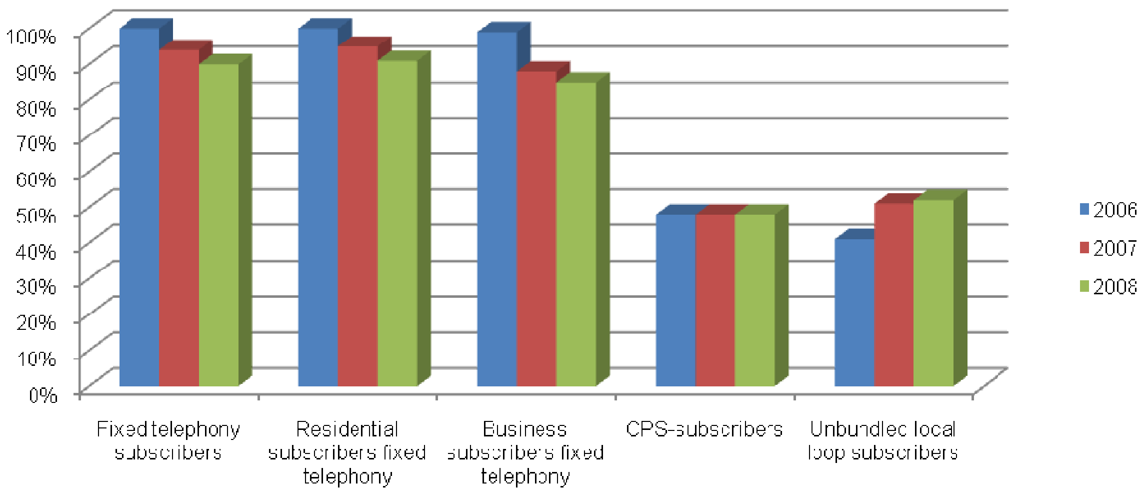
In terms of value, the share of HTis even more. HT has a share of over 70 % in the markets for fixed telephony traffic and the total market for fixed telephony revenues. But as said there is place for some caution regarding the CPS revenues as it is unclear how these revenues were defined by HAKOM.

Figure 10: Market shares HT in the markets for Fixed Telephony by major segment and based on revenues (Millions of Euros)



Although the number of telephone subscribers showed a slight decrease in 2008, the share of HT in the total number of fixed telephony subscribers is 90 % while their share among business subscribers is still 85 %.

Figure 11: Market shares HT by Subscriber Ccategory

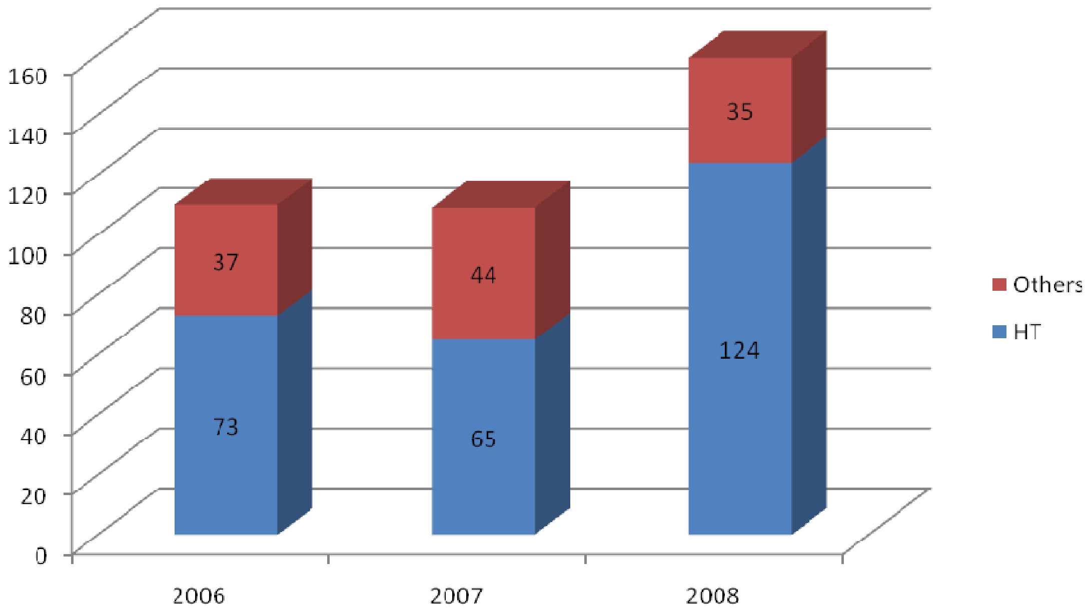


Regarding the financial performance of the various fixed telephony operators, it is that HT has a lead in comparison with its competitors when it comes to revenues per line, costs per line and lines per employees. Besides marketing and management capabilities, financial strength, etc., decisive is of course the economies of scale HT is able to realize and which is of course easier with a 90 % share of the subscribers.

Table 7: Financial Performance HT within the market for Fixed Telephony and in comparison with its major competitor

Being the incumbent implies also being the largest investor in fixed telephony infrastructure and equipment. HT was in 2008 responsible for over 75 % of the investments carried out in the fixed telephony infrastructure. In how far investments in broadband access technologies and infrastructure are included in these amounts is unclear as HAKOM does not have a proper view on the accounting principles used by HT and to which extent investments in the broadband infrastructure are included.

Figure 12: The Investments in the Fixed Telephony Infrastructure and equipment by operator (Millions of Euros)



Box 3: Assumptions forecast market for fixed telephony

General

- Fixed telephony access will function more and more as broadband access.
- Use of fixed telephony will be limited because of more intensive use other communication means as broadband.

Prices

- No price increases are expected.
- Due to increasing competition stabilization of prices and even in segments as interconnection a decrease of 4 to 5 %.
- No increase of costs of monthly subscription.

Subscribers

- An annual decrease in the number of residential fixed telephony subscribers of 2 %
- A stabilization of the number of business fixed telephony subscribers

Traffic

- An annual decrease in the traffic within the network of at least 10 %
- An annual increase of the traffic ´to and from other domestic´ networks of 20 %
- An annual decrease in the traffic of fixed to mobile and mobile to fixed of 8 %
- An annual increase of the international traffic volumes of 8 %
- An annual decrease of VAS traffic of 10 %
- An annual decrease of the Internet dials up traffic of at least 30 %
- An annual increase of the interconnection traffic of 60 %

Taking into consideration the actual status of the fixed telephony market in Croatia and also the changes in consumer behaviour as for e.g. a more intensive use of various forms of communications as mobile telephony but also broadband, it is not expected that the market for fixed telephony will show an increase in the coming two years. Due to in particular the lower traffic volumes (with the exception of interconnection traffic) it is expected that in the next years the market for fixed telephony will show an annual decrease of at least 5 %.

Table 8: The forecast of the Fixed Telephony Market 2009 until 2011 (Millions of Euros)

			Forecast		
	2008	**2009**	**2010**	**2011**	**% cagr**
Fixed telephony traffic	343	320	290	250	-10.0%
Data communications	10	8	6	4	-26.3%
Subscription revenues	188	185	180	170	-3.3%
Interconnection Traffic	38	42	45	40	1.7%

Other categories	87	86	84	80	-2.8%
Total	672	**641**	**605**	**544**	**-6.8%**

There are many small players active in the market for fixed telephony, it is expected that their number will be reduced with at least 2 or 3 operators. An element as ´economies of scale´ will become more and more decisive and it is therefore realistic to expect that HT will remain the absolute dominant market player in the market for fixed telephony

5.3 The Mobile Telephony Market.

Since the mid of 2005, three mobile operators are active on the Croatian Market for Mobile Telephony. Until that time, the market was dominated by T-Mobile and VIPnet.

Box 4: The Major Players within the Mobile Telephony Market

- **T-Mobile**, a business Unit for Mobile Communications Operation of Croatian Telecom, a separate legal person organized as a limited liability company one hundred percent owned by Croatian Telecom Inc.
- **Vipnet** is the first private GSM operator in Croatia. In September 1998 Vipnet was granted concession of the second GSM network in Croatia and its network started operating in July 1999. he company is in 100% - ownership of Mobilkom Austria and is a member of Mobilkom Austria group, whose members are Mobilkom Austria (Austria), Si.mobil (Slovenia), Mobilkom Liechtenstein (Liechtenstein), Mobiltel (Bulgaria), Vip mobile (Serbia), Vip operator (Macedonia) and Velcom (Belarus).
- **Tele2**, a majority shareholding of the Swedish Tele2 AB and with the remaining shares in hands of 9 local private investors and venture capitalists

The Croatian market for mobile telephony services was in 2008 over 1.1 billions of Euros and it showed an annual growth of over 8.0. % in the period 2006 to 2008. The total traffic revenues were about 77 % of the entire market revenues. Other revenues encompassed mainly subscription fees and the sale of mobile terminals by the mobile operators.

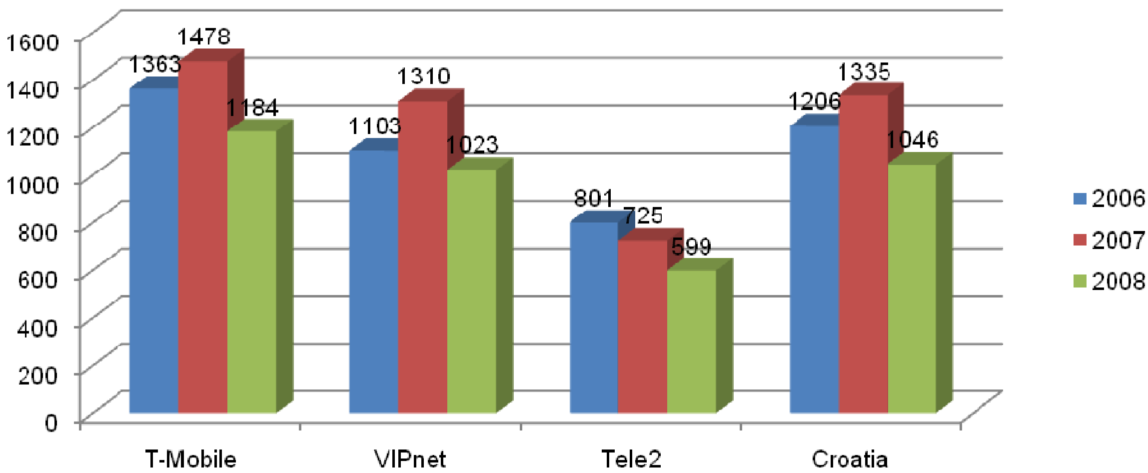
Table 9: The Mobile Telephony Market

		2006	2007	2008	% cagr
Gross Revenues	Mio's of Euros	1,088	1,113	1,228	6.2%
Traffic revenues	Mio's of Euros	869	860	948	4.4%
Other revenues	Mio's of Euros	219	253	280	13.1%
Investments infra structure and equipment	Mio's of Euros	126	113	147	8.0%
Employees	absolute	2,148	2,166	2,205	1.3%
Mobile Telephony subscribers	000's	4,395	5,035	5,880	15.7%
By contract form:					
Subscribers-pre paid	000's	3,435	3,824	4,398	13.2%
Subscribers post-paid	000's	960	1,211	1,482	24.2%
By Technology:					
GSM	000's	4,321	4,768	5,014	7.7%
UMTS	000's	75	267	865	239.6%
Mobile density	% of population	99.1%	113.5%	132.5%	15.6%
Traffic	Mio's of minutes	5,300	6,722	6,152	7.7%
SMS sent	Mio's of SMS	2,511	2,724	3,876	24.3%
MMS sent	Mio's of MMS	19	22	44	50.5%

Like in the West-European markets for mobile telephony, the average traffic volume per subscriber showed in 2008 also a decline. The decrease in the average traffic per subscriber served by Tele2 started already in 2007.

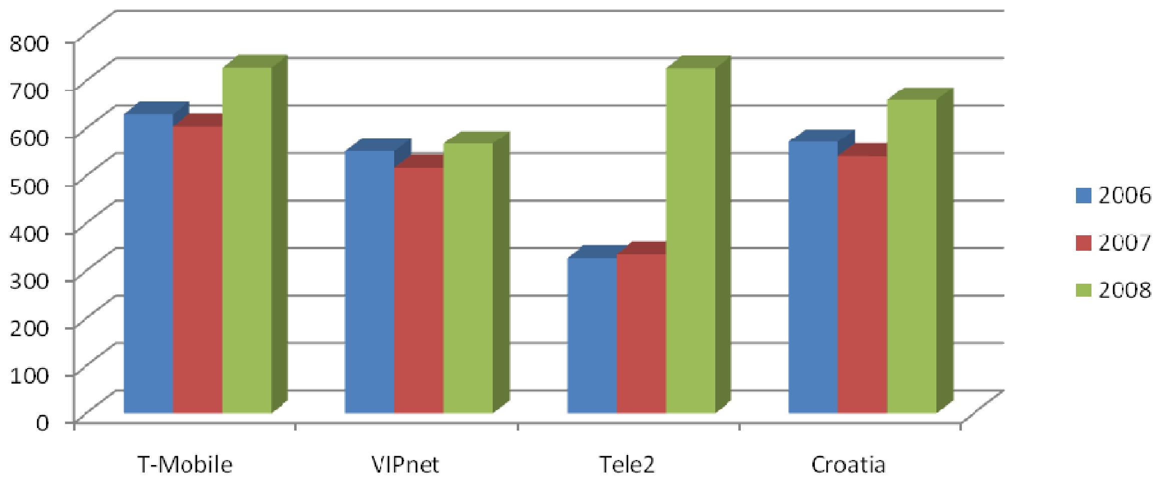
The voice traffic per subscriber of the Tele2 subscriber remained under the average traffic throughout Croatia. In fact, the voice traffic of the Tele2 subscriber was in 2008 only 50 % of the traffic of the T-Mobile subscriber.

Figure 13: Mobile Telephony Traffic in Minutes per Subscriber and by Operator



Regarding the number of SMS messages sent per subscriber and per operator it can be concluded that this form of mobile communications increased for all operators in 2008 and in particular for the subscriber to the Tele2 services. However, the share of Tele2 within the total number of SMS sent in 2008 is still around 13 %.

Figure 14: Number of SMS Messages per Subscriber and by Operator



T-Mobile is the market-leader when it comes to the number of mobile subscribers with a share of 46 % followed by VIPnet with 42 % and Tele2 with a share of 12 %. It has to be remarked that T-Mobile is the leading operator in especially the market segment of post-paid subscribers with a 55 % share while the positions in the market for pre-paid subscribers are more or less equal to each other (44 % VIPnet and 43 % for T-Mobile).

Figure 15: Market Shares Mobile Telephony Subscribers by Operator.

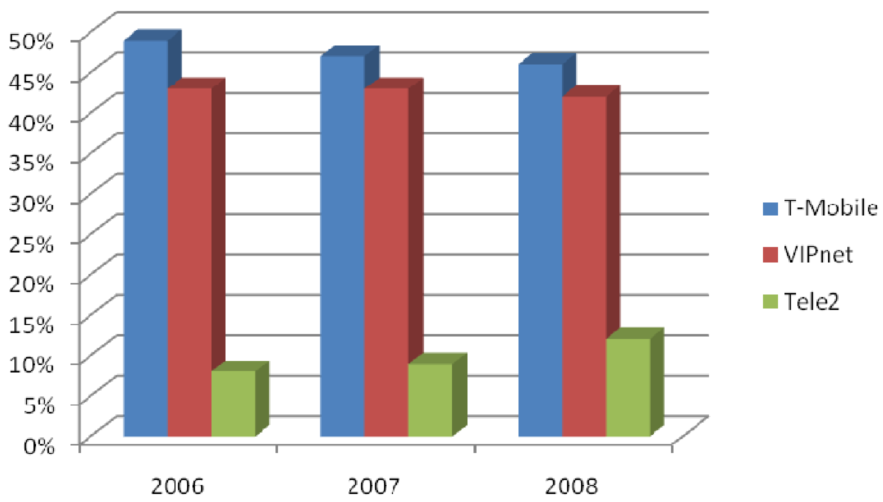
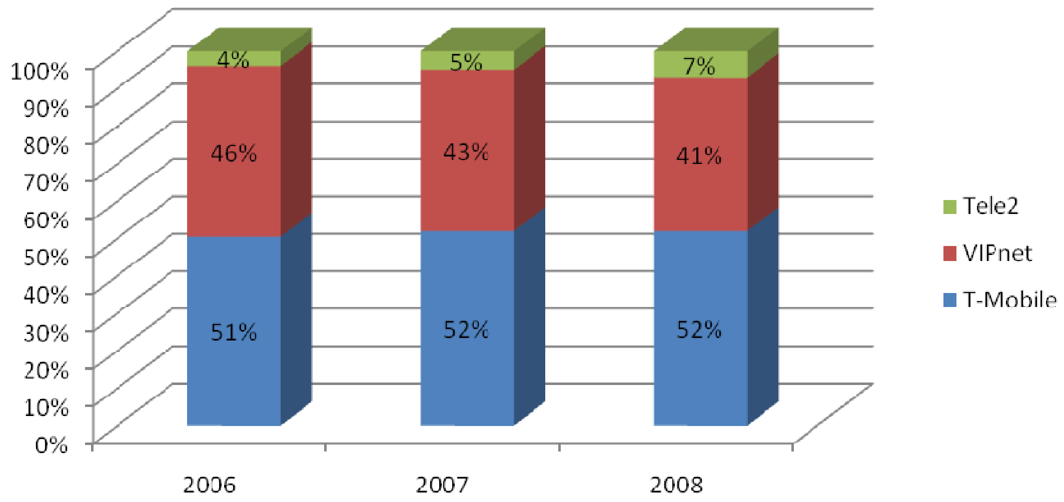


Figure 16: UMTS Subscribers by Operator (000's of subscribers)

Expressed in terms of value, it is T-Mobile which is already for the last 3 years the leading mobile operator in Croatia, followed by VIPnet with a share of 41 % and which market share decreased from a level of 46 % in 2006. Tele2, has a share of about 7 %. The question remains in how far this market share of Tele2 will be sufficient taking into consideration the huge investments needed in mobile telephony are decisive for reaching economies of scale and this in a market where the Average Revenue Per User (=ARPU) is steadily decreasing till a level of 14 to 15 Euros per month.

Figure 17: Market Shares Mobile Telephony Market based on Revenues.



Based on the financial results of the various operators and expressed in terms as revenues and costs per employee, it is that one has to conclude that the financial performance of Tele2 has been relatively weak throughout the last 3 years and that realizing 'economies of scale' is still a problem. Costs per employee have hardly decreased since 2006 and the revenues per employee are not covering the costs at all.

Table 10: Revenues and Costs per Employee by Mobile Operator (000's of Euros)

	2006		2007		2008	
	Revenues	**Costs**	**Revenues**	**Costs**	**Revenues**	**Costs**
T-Mobile	522	384	551	405	587	300
VIPnet	475	344	458	356	485	229
Tele2	817	1835	780	1493	1058	1832

Source: HAKOM

In the period from 2006 until 2008, the majority of the investments in the mobile telephony network were carried out by VIPnet and T-Mobile. The last one doubled its investments in 2008. Majority of the investments undertaken by VIPnet and T-mobile were for the set-up of a mobile broadband infrastructure.

Figure 98: Investments Infrastructure and Equipment by mobile operator (Millions of Euros)

Box 5: Assumptions Market Forecast Mobile Telephony

General:

- Competition among the 3 players will become more intensive. The market for mobile broadband will become the new battle field.
- T-Mobie and VIPnet will have a technological lead and also the leading market players. Tele2 will remain a niche player or even disappear from the market because of financial reasons.
- It is doubtful if a new operator will enter the mobile telephony market in the coming years. This mainly because of the economies of scale one has to realize taking into consideration the huge investments an operation in a mobile market requires.

Subscribers:

- The number of mobile subscribers will still increase with a level of 10 % annually.
- There will also be a gradual shift from pre-paid subscribers to post-paid subscribers. It is expected that at the end of 2011, post-paid subscribers will count for about 40 % of the entire group of mobile telephony subscribers.
- Mobile broadband will be gradually picked up ny the mobile subscribers and it is expected that at the end of 2011 there will be among 1 million mobile broadband subscribers (post and pre paid) in Croatia.

Prices:

- Prices will remain stable.
- No real price decrease in the costs for mobile broadband.

Traffic:

- Mobile voice traffic will show an annual decrease of about 5 % .
- SMS traffic will still show a growth of 8 % annually.

It is expected that the market for mobile telephony will increase the coming years until a level of about 1.4 billions Euros. This is mainly due to the introduction of mobile broadband services.

Table 11: Forecast of the Market for Mobile Telephony (Millions of Euros)

		Forecast			
	2008	**2009**	**2010**	**2011**	**% cgar**
Traffic revenues	948	990	1020	1040	3.1%
Connection and subscription revenues*	188	220	245	275	13.5%
Total	1136	1210	1265	1315	5.0%

*= incl. mobile broadband subscriptions

The question in how far Tele2 will still be a player on the Croatian market for mobile telephony in 2011 is difficult to answer. In particular because of its low market share which seems to be insufficient to cover the high costs that go together with operating in a market where economies of scale are decisive.

5.4 The market for Internet Access

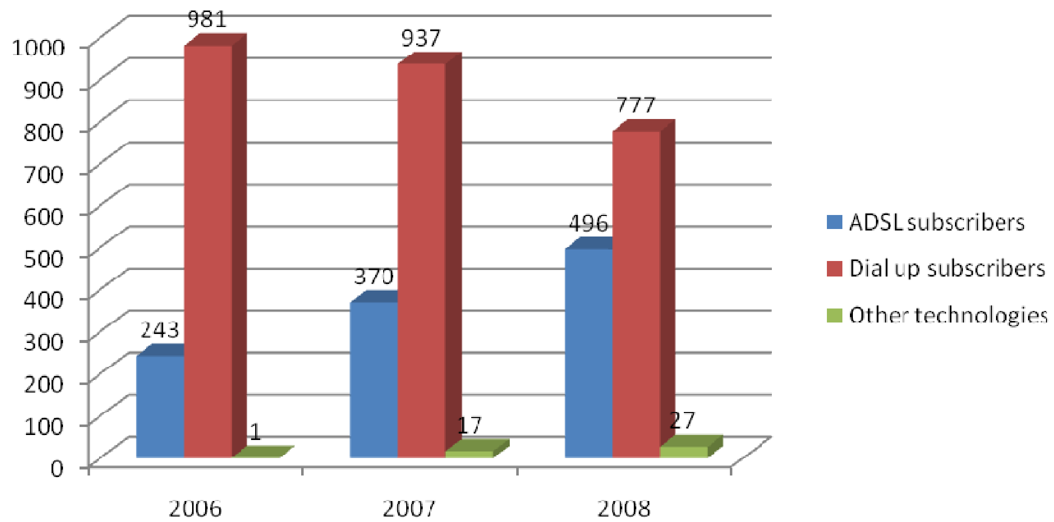
Table 12: The Market for Internet Access

Box 6: The major players in the market for Internet Access

- **T-Com**, the Business Unit for Fixed Network and Broadband Operation (T-Com), organized within Croatian Telecom Inc. as a legal person
- **Iskon Internet d.d.,** one of the leading alternative providers in Croatia, and a member of the HT Group. Iskon Internet is offering triple play services. Throughout the country.
- **Optima Telekom,** alternative operator whose shares are in hands by Mr. Matija Martic (67,7 % of the share holding) while the remaining shares are in hands of banks, insurance companies, etc.
- **Other players in** the market for Internet Access are formed by over 40 internet service providers which are mainly active on a local and regional level. Their size in number of employees is varying from 2 till 6 or 7 at most.

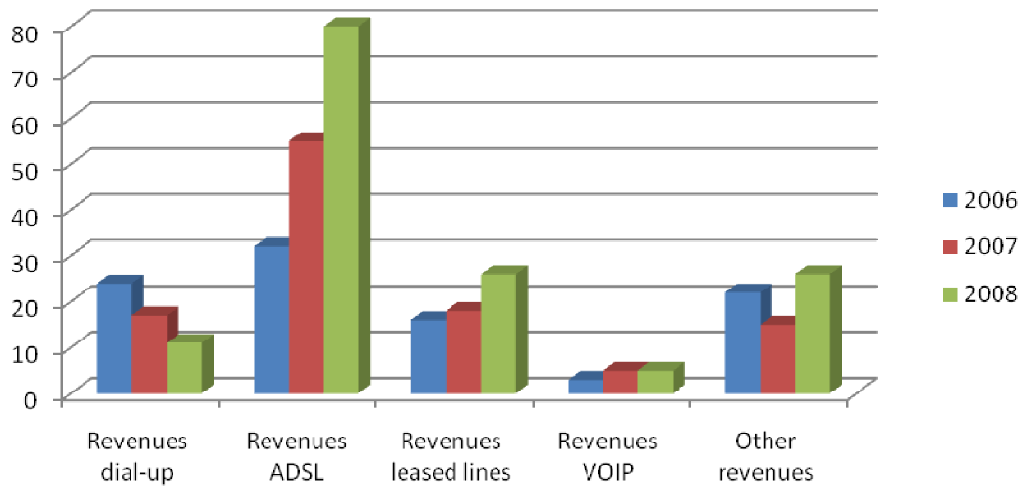
At the end of 2008, there were a total of 1, 3 million Internet subscribers in Croatia and of which nearly 60 % still had a dial-up connection. The number of ADSL subscribers was close to half a million. However, it has to be remarked that the number of ADSL subscribers showed an impressive growth in the period 2006 until 2008. Its number doubled from 243 thousand in 2006 till 496.000 in 2008. Characteristic for Croatia is the low level of Internet subscribers making use of for e.g. the CATV-network and this is mainly due to the character of the CATV market where many players are active at a local and regional level. The opportunities of a CATV network as a broadband access were until recently not used.

Figure19: Internet Subscribers by Access Technology (000's of subscribers)



In terms of value, the market for Internet Access amounted a 148 millions Euros in 2008. The revenues from ADSL subscription were about Euros 80 millions. Revenues for dial-up internet access are decreasing and count at the moment for only 7 to 8 per cent of the Internet market.

Figure 20: Internet Revenues by Access Technology (Millions of Euros)



It is characteristic for the Internet market in Croatia that HT has an almost absolute dominance. When its fully owned subsidiary ISKON is included, the market share of HT is far above 90 per cent. This is valid for the market expressed in terms of subscribers but also in terms of value. A reason for this absolute dominance is besides the advantage of having the control and ownership of the fixed telephony infrastructure also the weak management and marketing capabilities of the competition. Also the lack of a competitive access technology as CATV is in fact a benefit for HT.

Figure 21: The Market shares on the ADSL market based on number of subscribers.

In terms of revenues the share of the competitors in the ADSL market is limited to only a few percent. It is not expected that this will change in the coming years despite the introduction of LLU which by itself has not lead to a real competitive broadband market. It shows again, besides having at its disposal the national fixed telephony infrastructure, also a lead of HT in technology and marketing.

Figure 22: The market shares on the ADSL market based on revenues.

An illustration of the strong position of HT in the Internet market is the high revenue per ADSL subscriber and this in comparison with its competitors. It has been the highest since 2006 and it even increased with nearly 40 Euros till the level of 173 Euros in 2008.

Figure 23: Revenues per ADSL-subscriber and by major operator (Euros)

The overall market share of HT in the Internet market and considered in terms of value is 85 % and it increased from a level of 70 % in 2006. In terms of revenue, the competition hardly plays any role.

Figure 24: Market share HT on the entire Internet market and based on revenues

It is not expected that the role and position of HT as the major provider of Internet Access will really change in the coming years. HT is already at the moment starting with the large scale installation of FttH in the major cities of Croatia. Alternative operators will always being faced with a backlog of their competitive position as they will for their service supply being dependent on the HT network infrastructure. There is simply at a nationwide level not a real alternative access facility available as for e.g. a high developed CATV-network.

Box 7: The plans of HT with regards to FttH.

T-Hrvatski Telekom started the program of accelerated expansion of broadband Internet access by investing into further development of optical infrastructure in order to bring optical fibers to customers' homes and buildings, thus ensuring even higher access speeds, higher data transmission capacity and better service stability. Planned implementation of infrastructure based on FttH/FttB solutions – optical fiber to the home/optical fiber to the building – T-HT plans to ensure an even better quality of the existing services and open possibilities for development of new, even more sophisticated and technically demanding services.

Optical network services are used at present by a limited number of some two hundred test customers in four major Croatian cities. They are testing VoIP, ADSL and IPTV service. According to the plans, approximately 50,000 customers should be connected to optical network, whether through FttH or FttB solution, by the end of 2009.

T-HT plans to invest more than a billion Kuna into development of fixed infrastructure in 2009, primarily in expansion of optical access network. Annual investments of T-HT into modernization of fixed and mobile network represent 95% of all investments on the Croatian telecom market. T-HT plans further investments into access network with the aim to migrate to a unique IP platform.

Box 8: Assumptions Market Forecast Internet Access.

General:

- FttH will become commercially available in the 2nd half of 2009 in the 4 largest cities of Croatia VOIP for local and national calls will become a standard item in the various broadband connection packages.
- Although the number of CATV-Broadband subscribers is expected to double at least in the coming years, it will remain a niche market due to the fragmentised character of the market. Too many small scale players in too many regions

Subscribers:

- Year-end 2009 there will already be 50.000 FttH connections in Croatia. At the end of 2011 there will be about 150.000 FTHH connections in Croatia. Mainly in the largest cities because of status fixed network and availability of business subscribers.
- ADSL will reach its limits in number of subscribers and at the end of 2010 it is expected to be around 650.000 and from 2010 onwards 'early' ADSL subscribers will start with the replacement of their ADSL connection by a FttH connection.
- A stabilization in the number of ADSL subscribers from 2011 onwards and a gradual decrease from 2012 .
- Dial-up subscribers will reach a bottom level of about 200.000 subscribers in 2011. Dial-up Internet access will remain an access tool for those areas which are difficult to connect by ADSL or FttH.
- Leased lines as a tool for internet access will be replaced by FttH or FTTB.

Prices:

- ADSL subscription prices will show an annual decrease of at least 4 to 5 % due to the introduction of FttH.
- More 'triple play' (internet, video and telephony) packages will be introduced against prices of about 25 euro per month.

It is expected that the market for Internet Access including VOIP traffic will increase in the period 2009 until 2011 until a level of about 177 millions Euros. Major reason is as already mentioned the introduction of FttH and also the substitution of ADSL by FttH from 2010 onwards. For reasons as investments needed and having the disposal of an own network infrastructure, it is realistic to expect that HT will remain the absolute market leader in terms of value and subscribers. The role of the various alternative providers will therefore be limited to a few market niches.

Table 13: Forecast for the market for Internet Access (Euros millions)

		Forecast			
	2008	**2009**	**2010**	**2011**	**% cgar**
Dial-up	11	7	4	3	-35.2%
ADSL	80	100	110	105	9.5%
Leased lines	26	24	15	10	-27.3%
FTTH/FTTB	0	6	20	45	173.9%
Other forms of access (incl. CATV-Internet)	5	7	9	11	30.1%
VOIP-traffic	5	6	5	3	-15.7%
Total Market	127	150	163	177	11.7%

5.5 The Market for Leased Lines

The market for leased lines had in 2008 a value of about 31 millions Euros and it is showing a decrease since 2006. Major reason is besides the increasing use of the various broadband opportunities, a lower price of the lines offered and a shift in the demand. In particular an increase in the use of leased lines with a transmission capacity of > 2Mbit/s instead of lines with a lower capacity.

Table 14: The market for leased lines

	Indicator	**2006**	**2007**	**2008**	**% cagr**
Revenues	Mio's of Euros	41	32	31	-13.0%
Costs	Mio's of Euros	NA	7	9	28.6%
Investments	Mio's of Euros	9	14	NA	0.0%
Employees	Absolute	NA	39	43	10.3%
Leased Lines installed	Absolute	7838	9299	6170	-11.3%
of which:					
< 2 Mbit/s	Absolute	6364	7457	3635	-24.4%
> 2 Mbit/s	Absolute	1474	1842	2535	31.1%

Source: HAKOM

The number of players active in this market is in fact limited to a handful of providers and the leading provider is HT. Although its market share expressed in terms of value decreased with more as 40 points, it still has a competitive advantage due to its ownership of the national telephony infrastructure. The role of companies as OIV , a subsidiary of the Radio and Television Company Croatia, and the alternative providers as Metronet and Optima is limited.

Table 25: Market shares Leased Line Market

For the coming years a decrease in the demand for leased lines is forecasted until a level of about Euros 15 million in 2011. The use of leased lines with a capacity of < 2 Mbit/s will be limited to a few customer groups as police, fire works, medical transport, etc or in short customer groups with a specific demand for reasons as security of voice, etc.

The market for leased lines with a capacity of> 2Mbit/s will see a stable demand for use in for e.g. backbone networks of the various operators active in Croatia but also again a demand by those user-groups which have specific requirements for reasons as security etc. However, the demand will remain low as the present broadband infrastructure and the envisaged implementation of fiber in the fixed telephony network will become more and more real alternatives for the traditional leased line.

Table 16: Forecast of the Market for Leased Lines (Millions of Euros)

			Forecast		
	2008	2009	2010	2011	% cagr
Revenues	31	26	21	15	-21.5%

5.6 The CATV Market

The total CATV market in Croatia had a value of about 15 millions Euros in 2008 while the total number of subscribers amounted close to 136 000 of which 19.000 subscribers are using the CATV network also for having access to the Internet.

Table 17: The CATV market

	Indicator	2006	2007	2008	% cagr
Revenues	Mio's of Euros	12	12	14	4.1 %
Costs	Mio's of Euros	NA	18	19	5.6 %
Investments	Mio's of Euros	NA	4	NA	NA
of which:	Mio's of Euros				
Infrastructure and equipment	Mio's of Euros	NA	3	NA	NA
Employees	absolute	NA	225	284	26.2 %
CATV subscribers	000's of subscribers	131.2	133	135.7	1.7 %
of which					
Internet subscribers	000's of subscribers	1	10	19	335.9 %

Source: HAKOM

It is important to remark that in Croatia, television is mostly broadcasted by conventional terrestrial means and reaches about 80% of households. About 15% of households have cable and 23.5% receive their programmes by satellite. The cable sector is dominated by the Austrian cable operator B.net, which bought the two main market players Digital City Media and Adriatic Cable, in 2007. In addition, two IPTV services were operational in 2006, one provided by Vodatel (eTV) and the other by T-HT (Maxtv).

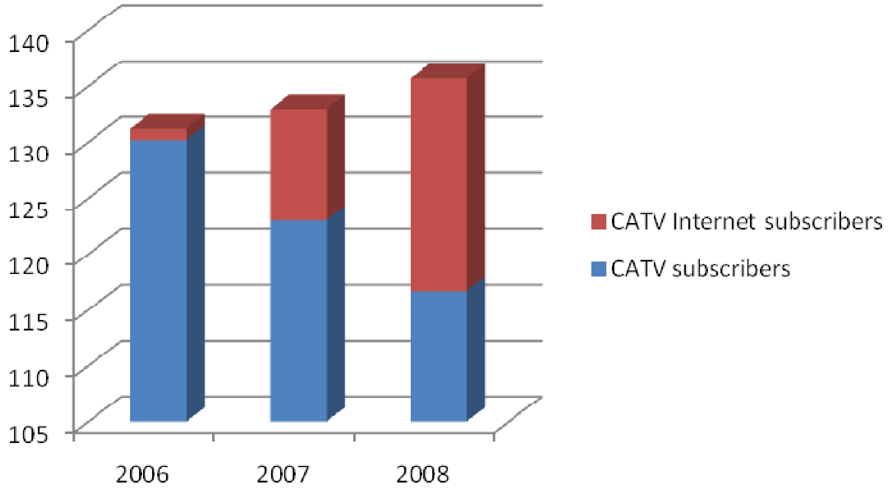
Box 10: Major players on the Croatian CATV-market.

- **B.Net Hravatska,** a subsidiary of the Austrian Kabelsignal AG, which on its turn is a shareholding of EVN, the largest energy supplier in Lower Austria. B.Net Hravatska has a share of over 70 % of the CATV subscribers in Croatia and, in terms of value, a market share of close to 80 %.
- **Other players** in the Croatian CATV market are formed by a total of 18 local and regional active CATV providers.

It is this weak and fragmented character of the CATV market is the reason that the CATV sector has never been able to become a real alternative to the ADSL supply by HT. Many CATV providers are only regionally active and their size in number of employees is often below 10.

Although the number of CATV-Broadband subscribers is expected to double at least in the coming years, it will remain a niche market due to this fragmentisation.

Figure 25: CATV and CATV subscribers in Croatia (000's of subscribers)



A growth of the CATV market until a level of about Euros 20 millions is forecasted. It is expected that the number of CATV subscribers will increase until a level of 146.000 while the number of CATV-Internet subscribers will increase till a level of about 50.000 subscribers. However, it has to be stressed that CATV will remain a niche player in the market for e.g. Internet Access. The reasons is not only the fragmented character of the market but also the cheap alternative that FttH will become for TV reception and various advanced forms of Internet supply. Even though in principle cable companies can offer Internet access at a lower price than telephony operators, it is likely that the market players have been simply too late with the offering of Internet facilities through the CATV-network.

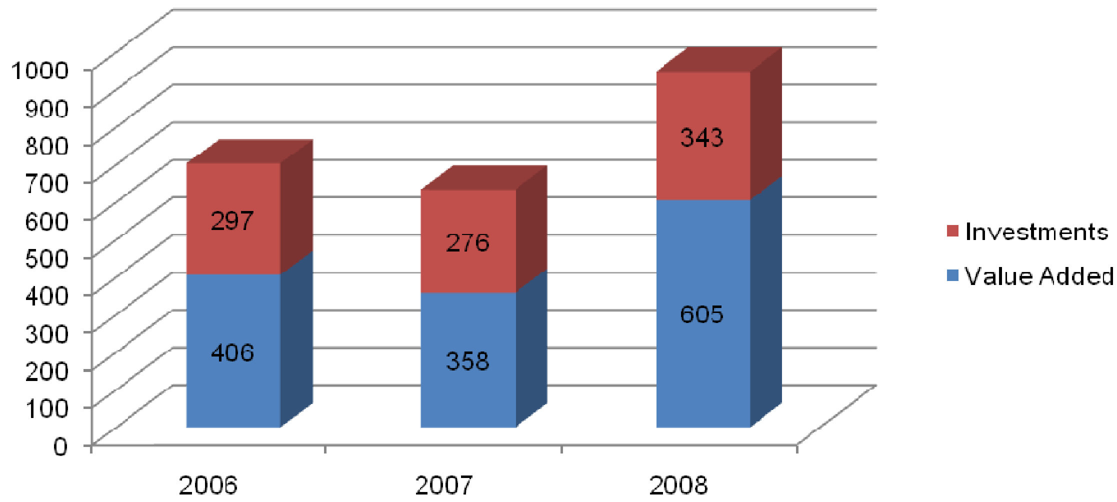
Table 18: The forecast of the CATV market.

			Forecast		
	2008	2009	2010	2001	% cagr
CATV revenues	14	16	17	17	6.7%
CATV subscribers	135.9	139	143	146	2.4%
of which					
CATV Internet subscribers	19	30	40	50	38.1%

6 Contribution of the Communications Sector to the Croatian Economy

The direct contribution of the telecommunications sector to the Croatian Economy (expressed in GDP) is estimated at a total of 866 Millions of Euros. This contribution is excluding the contribution of the market for Internet Access due to the lack of reliable and consistent statistical data. Also not taken into account are the sales of mobile terminals by the various operators and items as other revenues for which a proper definition was not available

Figure 26: The Contribution of the Communications Sector (excl. Internet Access) to the Croatian Economy (Millions of Euros)



Based on the calculations, it is possible to conclude that the highest contribution to the Croatian Economy comes in particular from the mobile telephony sector. This is mainly due to the capital-intensive character of this sector.

It is also clear that one of the largest contributions to the Croatian economy comes from HT which is the largest investor in telecommunications equipment and infrastructure and which has also, through its dominant market position, the largest Value Added in its operations.

Although its contribution to the GDP has increased over the last three years, It is expected that expressed in a % of the GDP, the contribution to the Croatian Economy will remain more or less at the same level. This is because of the shrink of the GDP in 2009 and the minimal growth in 2010.

Table 19: The Contribution of the Communications Sector to the Croatian Economy.

		2006	2007	2008	% cagr
Total Revenues	Mio's of Euros	**1697**	**1720**	**1847**	**4.3%**
of which:					
Fixed telephony	Mio's of Euros	672	666	666	-0.4%
Mobile telephony	Mio's of Euros	972	1010	1136	8.1%
Leased Lines	Mio's of Euros	41	32	31	-13.0%
CATV	Mio's of Euros	12	12	14	8.0%
Minus Costs	Mio's of Euros	**1395**	**1447**	**1316**	**-2.9%**
of which:					
Fixed telephony	Mio's of Euros	515	515	572	5.4%
Mobile telephony	Mio's of Euros	860	907	716	-8.8%
Leased Lines	Mio's of Euros	5	7	9	34.2%
CATV	Mio's of Euros	15	18	19	12.5%
Gives Value Added	Mio's of Euros	**302**	**273**	**531**	**32.6%**
of which:					
Fixed telephony	Mio's of Euros	157	151	94	-22.6%
Mobile telephony	Mio's of Euros	112	103	420	93.6%
Leased Lines	Mio's of Euros	36	25	22	-21.8%
CATV	Mio's of Euros	-3	-6	-5	29.1%
Plus the Investments	Mio's of Euros	**297**	**276**	**343**	**7.5%**
of which:					
Fixed telephony	Mio's of Euros	118	113	159	16.1%
Mobile telephony	Mio's of Euros	167	145	163	-1.2%
Leased Lines	Mio's of Euros	9	14	15	29.1%
CATV	Mio's of Euros	3	4	6	41.4%
Gives the Total contribution to the Croatian Economy	Mio's of Euros	**599**	**549**	**874**	**20.8%**
of which:	Mio's of Euros				
Fixed telephony	Mio's of Euros	275	264	253	-4.1%
Mobile telephony	Mio's of Euros	279	248	583	44.6%
Leased Lines	Mio's of Euros	45	39	37	-9.3%
CATV	Mio's of Euros	0	-2	1	
Total direct contribution					
as % of GDP	Percentage	**1.5%**	**1.3%**	**1.8%**	**9.7%**
of which:	Percentage				
Fixed telephony	Percentage	0.7%	0.6%	0.5%	-12.9%
Mobile telephony	Percentage	0.7%	0.6%	1.2%	31.3%
Leased Lines	Percentage	0.1%	0.1%	0.1%	-17.6%

		2006	2007	2008	% cagr
CATV	Percentage	0.0%	0.0%	0.0%	0.0%
Source: HAKOM, DZS					

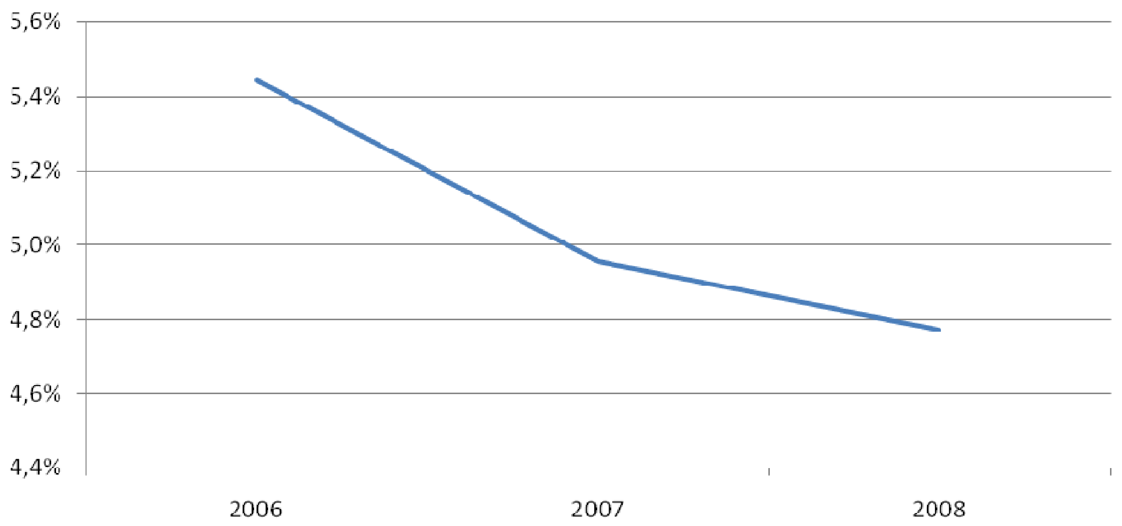
Looking to the contribution of the communications sector to the national labour force, one can conclude that about 5 % of the Croatian labour force has a job in the communications sector (excl. Internet Access of which reliable data are missing).

It is expected that this share will gradually decrease the coming years due to the more and more capital intensive character of the communications sector.

Table 20: The Importance of the Communications Sector for the Labour Market

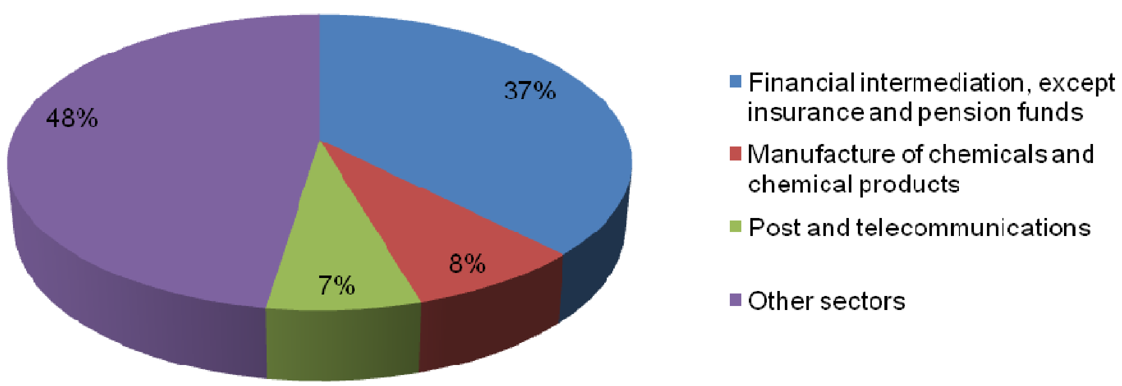
		2006	2007	2008	% cagr
Employees active	Absolute	9413	8721	8499	-5.0%
of which:					
Fixed telephony	Absolute	7018	6291	5967	-7.8%
Mobile telephony	Absolute	2148	2166	2205	1.3%
Leased Lines	Absolute	37	39	43	7.8%
CATV	Absolute	210	225	284	16.3%
Active labour force	000's	1,729	1,759	1,781	1.5%
Employees Communications Sector	Percentage	5.4%	5.0%	4.8%	-6.4%
as % of national labour force					
of which:	Percentage	4.1%	3.6%	3.3%	-9.1%
Fixed telephony	Percentage	1.2%	1.2%	1.2%	-0.2%
Leased Lines	Percentage	0.0%	0.0%	0.0%	6.2%
CATV	Percentage	0.1%	0.1%	0.2%	14.6%
Source: HAKOM and DSZ					

Figure25: Employees Communications Sector as % of National Labour Force



Of all the foreign investments carried out in Croatia since 1993, about 7 % founded its destination in the Post and Telecommunications sector. The majority of these investments were undertaken in the period 1999 until 2001.

Figure 28: Total Foreign Direct Equity Investments and Reinvested Earning from Direct Investments in Croatia -1993 until 2008 and in millions of Euros



Source: National Bank of Croatia

7 Benchmarking ICT markets Croatia.

7.1 The ICT price basket.

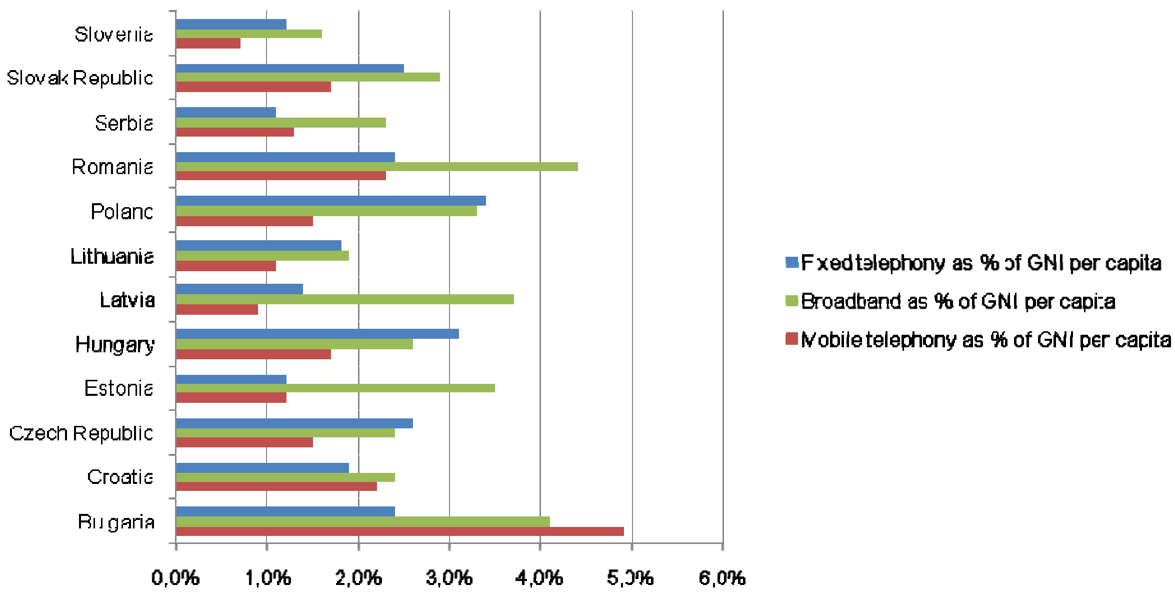
A comparison of the various prices for ICT services undertaken by the ITU shows that Croatia can not be qualified as a country in the region with high ICT prices. The costs for ICT services in Bulgaria, Romania, Hungary and Poland are higher. However, prices for mobile telephony in Croatia are high compared with other countries but prices for broadband access are on their turn belonging to the lowest in the region.

Table 21: ICT Price Basket 2008

	ICT Price Basket Value	Fixed (% of GNI per capita)	Mobile (% of GNI per capita)	Broadband (% of GNI per capita)	GNI per capita (US$)
Bulgaria	3.8	2.4	4.9	4.1	4,590
Croatia	2.1	1.9	2.2	2.4	10,460
Czech Republic	2.2	2.6	1.5	2.4	14,450
Estonia	2.0	1.2	1.2	3.5	13,200
Hungary	2.5	3.1	1.7	2.6	11,570
Latvia	1.8	1.4	0.9	3.7	5,560
Lithuania	1.6	1.8	1.1	1.9	9,920
Poland	2.7	3.4	1.5	3.3	9,840
Romania	3.0	2.4	2.3	4.4	6,150
Serbia	1.5	1.1	1.3	2.3	4,730
Slovak Republic	2.4	2.5	1.7	2.9	11,730
Slovenia	1.2	1.2	0.7	1.6	20,960

Source: ITU

Figure 109: Benchmarking ICT Price basket Croatia with other countries in the region- 2008



7.2 The usage of Internet by enterprises.

With regards to the use of internet and broadband recent and reliable data are missing within HAKOM but also for e.g. within the Central Statistical Office. Some data have been published by for e.g. Eurostat. These data show that nearly all enterprises with more than 10 employees have access to the Internet. Also here Croatia takes a strong position. The same is also valid if one looks to the per cent of enterprises which has received order on-line. A weak position is there when it comes to the E-Government Usage by the enterprises. It is here that Croatia scores fairly below countries as Czech Republic, Estonia, Lithuania, Slovakia and Slovenia.

Table 22: The use of Internet by enterprises

	Enterprises having access to the Internet (> 10 employees)	Enterprises having received orders on-line (> 10 employees)	E-Government Usage by enterprises
Bulgaria	83%	2%	53%
Croatia	97%	16%	52%
Czech Republic	95%	15%	70%
Estonia	96%	11%	75%
Hungary	86%	4%	56%
Latvia	88%	6%	51%
Lithuania	94%	22%	83%
Poland	93%	8%	56%
Romania	67%	3%	37%
Slovakia	96%	8%	82%
Slovenia	97%	5%	85%

Source: Eurostat, March 2009

7.3 Benchmarking ICT Croatia based on Network Readiness, Global Competitiveness and Ease of Doing Business Index.

Remarkable results are shown in the regional benchmarking that has been carried out and which is based on the Network Readiness Index and the Global Competitiveness Index of the World Economic Forum: the Ease of Doing Business Index of the World Bank.

Although Croatia scores a better network readiness index in comparison with countries like Bulgaria, Poland, Romania and Serbia, it seems that it is lagging behind with countries as Slovenia, Estonia, and Hungary.

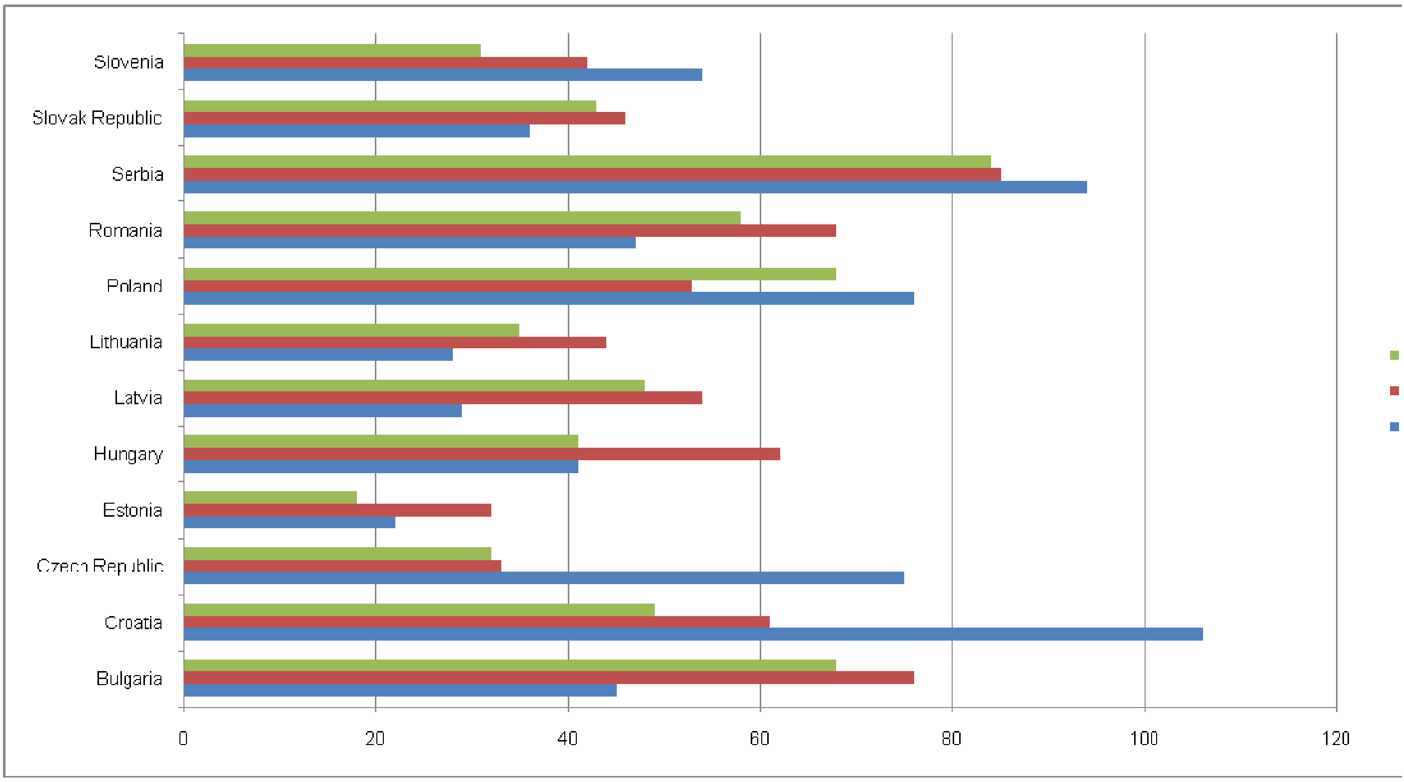
Major problems with regards to the ICT Readiness Index seem to be the independency of the judicial system, the lack of ICT clusters and companies within the Croatian Economy and also the slow absorption of technology.

With regards to the Ease of Doing Business Index Croatia scores relatively weak when it comes to the start of a new business, dealing with for e.g. construction permits, protection of foreign investors, registry of property and employing workers.

The Global Competitiveness Index ranks Croatia also at a modest 61st ranking and behind countries as Slovenia, Slovak republic, the Baltic States. A especially weak position is in particular the institutional pillar which encompasses elements as burden of government regulation, the efficiency of the legal framework, again the judicial independence but also Foreign Investments Developments and technology transfer.

It goes without saying that these elements hamper the development of the Croatian ICT market. Crucial is the absence of a real ICT sector (with the exception of a company as Ericsson) which encompasses more than the supply of basic ICT services as fixed and mobile telephony and broadband access.

Figure 30: Benchmarking IT Croatia, Global Competitiveness and Ease of Doing Business-2008 (low index means a good ranking)



Annex 1: Analysis Fixed Telephony Market

Annex 2: Mobile Telephony Market

Annex 3: Analysis Internet Access Market