"There is no reason anyone would want a computer in their home."

Ken Olson, president/founder of Digital
Executive summary

This paper is introduced by some statistical data on the Republic of Croatia, currently the newest member of the EU. These numbers are supposed to provide you with an overview of the local market and its tendencies. If you are looking for additional information you can find it here: http://www.dzs.hr/ (look for Hrvatska u brojka). Followed by the numerical introduction, you can find ICT regulations set up by the Republic of Croatia, protecting investors and the ICT sector respectively.

If you are looking to getting involved in the ICT sector, you would be advised to consult the third part, where you will be able to find a list with contact details of every public actor you might be interested in contacting before opening a business in Croatia.

The cluster organizations are the key to entering the ICT sector in Croatia. In the 4th part you will encounter a list with all the ICT clusters available in Croatia.

The next section deals with technologies and the Internet and combining these two elements in order to improve your enterprise once you are settled down in Croatia.

The 6th part is concerned with telecommunications, providing useful information and contact details for telecommunication providers.

Furthermore, this report gives you information for the radio and television sector in Croatia with contact information and an analysis of the local market.

Major ICT companies are attracted to Croatia's rising ICT market. This study is taking advantage of this fact by giving you information details to help you get involved more easily. Obviously, the ICT market would have no future if Croatia could not educate future employees, so this study is also focusing on ICT in the educational sector.

Finally, the report is showing Croatia's future investments in the ICT sector. To close this chapter the most interesting wholesalers in Croatia and their contact info are listed.

If you are looking for additional information such as:

- software production companies
- small shop
- web design companies
- or any ICT company

Please do not hesitate to contact us at office@beltrade-croatia.com
## Table of contents

1. A Few numbers on Croatia 4

2. List of Current ICT Regulations in Croatia 14

3. Public ICT Actors and Programs in the Republic of Croatia 18

4. Cluster Organizations of ICT companies in Croatia 26

5. Internet in Croatia 29

6. Telecommunications in Croatia 44

7. Television and radio 58

8. Important IT companies in Croatia 72

9. IT Education in Croatia 78

10. Future investments 84

11. Business opportunities in Croatia – Call for tenders 86

12. Computer wholesalers 87

13. Television and video equipment wholesalers 91
1) A Few Numbers on Croatia

On July 1st, 2013 the Republic of Croatia became the 28th member of the EU. This event is a break point to the path of the country in the following years.

Croatia is a country of 4 429 000 inhabitants. It is a democracy whose official language is Croatian, but many people speak English (49%) and other foreign languages, mainly German (34%) and Italian (14%). The capital is Zagreb. Other main cities are Osijek, Rijeka and Split.

In 2013, the GDP of Croatia was about 46 billion Euro (316 billion HRK or 56.44 million USD). The figures for 2013 pointed out that the GDP contracted 0.2% in the second quarter of 2013 over the previous quarter, and contracted about 0.6% on an annual basis. Despite the fact of this uncertainty, there are positive numbers ahead for 2014, arguing that Croatia will have a growth of 0.9%, leading the country to a recovery that has been in hold for the crisis that has spread all over the Eurozone.

Unemployment is relatively high and, according to official sources, reached 18.3% of the workforce in 2013. Despite government efforts to stimulate employment with various programs of incentives for employers, the level of unemployment remains a significant social and economic burden. Although this indicators is worthy to mention that Croatia has a high skilled and educated workforce in different fields, and talking about IT, it is well known for having a good and competitive background.

The national money is the kuna (HRK). The average monthly paid off net salary is 5 311 HRK (720 euros). The local working week duration is 40 hours (plus 10 extra hours).
Yazmin Vallejo

Raiffeisen Bank International AG (2013)

Currency: kuna

Gross Domestic Product and Budget

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2012</th>
<th>2013e</th>
<th>2014f</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real GDP growth, % p.a.</td>
<td>0.0</td>
<td>-2.0</td>
<td>-0.5</td>
<td>1.0</td>
</tr>
<tr>
<td>Nominal GDP, €bn</td>
<td>44.9</td>
<td>45.0</td>
<td>46.0</td>
<td>48.2</td>
</tr>
<tr>
<td>Per capita GDP, PPP basis, €</td>
<td>15,000</td>
<td>15,000</td>
<td>15,300</td>
<td>15,500</td>
</tr>
<tr>
<td>Growth in industrial output, % p.a.</td>
<td>-1.2</td>
<td>-5.5</td>
<td>-1.5</td>
<td>2.0</td>
</tr>
<tr>
<td>Consolidated budget deficit, % of GDP</td>
<td>-5.0</td>
<td>-4.1</td>
<td>-4.2</td>
<td>-3.8</td>
</tr>
</tbody>
</table>

Inflation and Employment

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2012</th>
<th>2013e</th>
<th>2014f</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jobless rate, annual average, %</td>
<td>18</td>
<td>19.1</td>
<td>19.3</td>
<td>19.1</td>
</tr>
<tr>
<td>Average monthly gross wage, €</td>
<td>1049</td>
<td>1047</td>
<td>1027</td>
<td>1024</td>
</tr>
<tr>
<td>Consumer price inflation, annual average, % p.a.</td>
<td>2.3</td>
<td>3.4</td>
<td>3.2</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Balance of Trade and Current Account

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2012</th>
<th>2013e</th>
<th>2014f</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goods exports, €bn</td>
<td>9.8</td>
<td>9.8</td>
<td>9.9</td>
<td>10.3</td>
</tr>
<tr>
<td>Goods imports, €bn</td>
<td>15.9</td>
<td>15.8</td>
<td>15.6</td>
<td>16.0</td>
</tr>
<tr>
<td>Current account deficit, €bn</td>
<td>-0.4</td>
<td>-0.1</td>
<td>-0.2</td>
<td>-0.3</td>
</tr>
<tr>
<td>Current account deficit, % of GDP</td>
<td>-0.9</td>
<td>-0.3</td>
<td>-0.3</td>
<td>-0.5</td>
</tr>
<tr>
<td>Foreign debt, % of GDP</td>
<td>101.7</td>
<td>100.5</td>
<td>98.9</td>
<td>96.5</td>
</tr>
</tbody>
</table>

Rates of Exchange and Interest Rates

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2012</th>
<th>2013e</th>
<th>2014f</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local currency/USD average</td>
<td>5.3</td>
<td>5.8</td>
<td>5.6</td>
<td>5.6</td>
</tr>
<tr>
<td>Local currency/€ average</td>
<td>7.1</td>
<td>7.5</td>
<td>7.5</td>
<td>7.5</td>
</tr>
<tr>
<td>3-month money market rate (ZBOR), average, %</td>
<td>3.2</td>
<td>3.4</td>
<td>1.64</td>
<td>2.8</td>
</tr>
</tbody>
</table>

Country Ratings

<table>
<thead>
<tr>
<th></th>
<th>S&amp;P</th>
<th>Moody’s</th>
<th>Fitch</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BB+</td>
<td>Ba1</td>
<td>BB-</td>
</tr>
</tbody>
</table>

Key economic figures: Croatia

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012e</th>
<th>2013f</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal GDP (EUR bn)</td>
<td>43.4</td>
<td>47.5</td>
<td>44.8</td>
<td>45.9</td>
<td>45.9</td>
<td>46.0</td>
<td>47.9</td>
</tr>
<tr>
<td>Real GDP (% yoy)</td>
<td>5.1</td>
<td>2.1</td>
<td>-6.9</td>
<td>-1.2</td>
<td>0.0</td>
<td>-1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Industrial output (% yoy)</td>
<td>5.6</td>
<td>1.6</td>
<td>-9.2</td>
<td>-1.5</td>
<td>-1.2</td>
<td>-3.5</td>
<td>-1.0</td>
</tr>
<tr>
<td>Producer prices (avg, % yoy)</td>
<td>3.4</td>
<td>8.4</td>
<td>-0.4</td>
<td>-4.3</td>
<td>6.4</td>
<td>5.0</td>
<td>4.1</td>
</tr>
<tr>
<td>Consumer prices (avg, % yoy)</td>
<td>2.9</td>
<td>6.1</td>
<td>2.4</td>
<td>1.1</td>
<td>2.3</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Avg gross industrial wages (LCY, % yoy)</td>
<td>5.6</td>
<td>6.2</td>
<td>1.4</td>
<td>-0.5</td>
<td>1.0</td>
<td>0.2</td>
<td>0.5</td>
</tr>
<tr>
<td>Unemployment rate (avg, %)</td>
<td>14.8</td>
<td>13.2</td>
<td>14.9</td>
<td>17.4</td>
<td>18.0</td>
<td>18.5</td>
<td>18.3</td>
</tr>
<tr>
<td>General budget balance (% of GDP)</td>
<td>-2.5</td>
<td>-1.4</td>
<td>-4.1</td>
<td>-4.9</td>
<td>-5.5</td>
<td>-4.3</td>
<td>-3.5</td>
</tr>
<tr>
<td>Public debt (% of GDP)</td>
<td>32.9</td>
<td>29.2</td>
<td>35.1</td>
<td>41.2</td>
<td>45.1</td>
<td>52.2</td>
<td>53.7</td>
</tr>
<tr>
<td>Current account balance (% of GDP)</td>
<td>-7.3</td>
<td>-9.0</td>
<td>-5.1</td>
<td>-1.0</td>
<td>-1.0</td>
<td>-1.4</td>
<td>-1.5</td>
</tr>
<tr>
<td>Official FX reserves (EUR bn)</td>
<td>9.3</td>
<td>9.1</td>
<td>10.4</td>
<td>10.7</td>
<td>11.2</td>
<td>12.0</td>
<td>12.3</td>
</tr>
<tr>
<td>Gross foreign debt (% of GDP)</td>
<td>77.7</td>
<td>85.4</td>
<td>101.0</td>
<td>101.2</td>
<td>99.6</td>
<td>103.6</td>
<td>100.8</td>
</tr>
<tr>
<td>EUR/HRK (avg)</td>
<td>7.34</td>
<td>7.22</td>
<td>7.34</td>
<td>7.29</td>
<td>7.43</td>
<td>7.56</td>
<td>7.55</td>
</tr>
<tr>
<td>USD/HRK (avg)</td>
<td>5.35</td>
<td>4.91</td>
<td>5.26</td>
<td>5.49</td>
<td>5.42</td>
<td>5.69</td>
<td>5.81</td>
</tr>
</tbody>
</table>

Source: Thomson Reuters, CNB, CBS, Raiffeisen RESEARCH
ICT Overview in Croatia

Croatia's entrance into the EU in July 2013 is and will be a key driver of ICT growth, facilitating increased trade between European markets. Over the next years, the process of EU convergence, which still has far to go, will drive spending on IT projects. Funds such as the EU Cohesion fund are already providing funding for IT projects related to modernization initiatives in both public and business segments. However, a modest recovery in private consumption will be insufficient to drive a significant economic recovery in Croatia in 2014, with fiscal consolidation and weak investment spending set to weigh on
headline growth at just 0.6% in 2014. As the government remains the major investor in ICT in Croatia.

The government is expected to be the fastest-growing Croatian IT spending vertical over the 2013-2017 period, due largely to EU-driven modernization projects, which could see the government's IT spend double by 2015. The combined government sector also remains the largest spender on IT products and services, unsurprising bearing in mind that the state still owns a wide range of companies across sectors like transport, telecoms, oil and gas, media and insurance.

The Croatian government will be the most important player within the ICT growth; this is important to know if we want to have a wide view of this sector. Some key figures are showed below:
Effective Government

The extent to which government succeed in satisfying their online users and achieve re-use and fulfilled expectations.

- **Impact**: Average of likelihood of re-use and agreement with perceived benefits.
- **eGovernment efficiency**: Average of eGov user satisfaction and fulfillment of expectations.
- **eGovernment use**: People who have used eChannel in contact with government.

Key Enablers

The extent to which key IT enablers are integrated (available) in the Life Event service models.

- **SLO**
- **eID**
- **SSO**
- **eSafe**
- **Authentic sources**
- **eDocuments**

User Centric Government

How mature are services?

<table>
<thead>
<tr>
<th>Online Availability</th>
<th>Online Usability</th>
</tr>
</thead>
<tbody>
<tr>
<td>HR</td>
<td>HR EU27+</td>
</tr>
<tr>
<td>General</td>
<td>General</td>
</tr>
<tr>
<td>57</td>
<td>63</td>
</tr>
<tr>
<td>74</td>
<td>70</td>
</tr>
<tr>
<td>Business</td>
<td>Business</td>
</tr>
<tr>
<td>52</td>
<td>67</td>
</tr>
<tr>
<td>75</td>
<td>70</td>
</tr>
<tr>
<td>Employment</td>
<td>Employment</td>
</tr>
<tr>
<td>54</td>
<td>64</td>
</tr>
<tr>
<td>73</td>
<td>71</td>
</tr>
<tr>
<td>Education</td>
<td>Education</td>
</tr>
<tr>
<td>65</td>
<td>67</td>
</tr>
<tr>
<td>72</td>
<td>70</td>
</tr>
</tbody>
</table>

Reasons for not using eGovernment services

- Not aware of existence relevant websites/online services: 30%
- Preferred to have personal contact: 48%
- Expected to have things done more easily by using other channels: 20%
- Concerns about protection and security of personal data: 15%
- No skills/knowledge to get what I wanted/needed via the Internet: 2%
- Could not find or access the information or services: 24%
- Services will require personal visits/paper submission anyway: 37%
- Abandoned the service because too difficult to use: 7%
- Abandoned the service because of technical failures: 6%
- Did not expect to save time by using the Internet: 7%
- Other reasons: 9%

Who is using eGovernment?

- **HR**
  - BELIEVER: eGov User eChannel Preference: 24% 14% 39% 24%
  - DROP-OUT: eGov Users: 0% eChannel Preference: 0%

- **EU27+**
  - BELIEVER: eGov User eChannel Preference: 32% 14% 16% 36%
  - POTENTIAL USERS: eGov User: 0% eChannel Preference: 0%
  - NON-BELIEVER: eGov Non-User: 0% eChannel Preference: 0%

Another sector that will present major changes in the coming years is the telecommunications market, which has been shaped by the country's bid to join the European Union, resulting in market liberalization and creation of a regulatory environment conducive to competition and will be one of the largest IT-spending verticals in Croatia, accounting for around 25% of total ICT spending. Telecoms companies such as Vipnet are rolling out LTE mobile services, which will continue to drive IT spending on both the Capex and Opex sides. IT spending accounts typically for around 20% of total Croatian bank Capex/Opex spending. In 2013, spending on IT was be driven by support of new services and customer acquisition and key trends included mobile banking and some other services.

Alternative operators have entered the market and launched competing services in the fixed-line market. Both alternative operators and the incumbent are investing in network infrastructure to support bandwidth-intensive services such as broadband access and triple play.

Tablets and smartphones also received a boost from the roll-out of high-speed mobile networks in the country. Tablets have already emerged from their early-adopter phase and while they are not yet mainstream devices, take-up will grow as more services tailored to tablets are introduced in Croatia.

Talking about mobile devices we have that according to GfK survey „Retail and Technology“ a total of 122,000 smartphones were sold in Slovenia, 349,000 in Croatia and 266,000 in Serbia, noticing that the largest growth in sales was in Croatia (+61% year-on-year), followed by Serbia (+52%) and Slovenia (+30%). As for mobile phones in Slovenia and Croatia, sales were down 18 percent, with the fall in Serbia at 14 percent. In Slovenia, tablet sales were up 160 percent, in Serbia 530 percent, while in Croatia they were up by 780 percent. During the first half of this year, 33,569 tablets were sold in Slovenia, 35,157 in Serbia and 172,089 in Croatia.

Some of the future trends are that by 2020 Croatia will have six times more smartphones than it has today, according to a study by Nokia Solutions and Networks, the results of which were published by Poslovni Dnevnik. The annual study shows that, for the first time, sales of smartphones has overtaken sales of classic phones. Although it does not specify how many smartphones there are currently on the Croatian market, unofficial estimates range from 500,000 to 1 million units. The study also reveals that in the last two years, the number of mobile internet users has jumped by 60 percent, and in the past year by 70 percent. As a result, per capita consumption by 2020 will be 1 GB of data traffic per day, claims Nokia Solutions and Networks.


Another useful resource is by following the PPT link on the Internet and the document will download automatically:

KEY FIGURES
Competitive labor costs

Average personnel costs are below the other EU27 average and, as such, ensure cost-effectiveness in companies' business activities.

<table>
<thead>
<tr>
<th>Labor Cost per Hour in ICT Industry in Croatia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacture of computer, electronic and optical products</td>
</tr>
<tr>
<td>Telecommunications</td>
</tr>
<tr>
<td>Computer programming, consultancy and related activities</td>
</tr>
<tr>
<td>Information service activities</td>
</tr>
</tbody>
</table>

**Skilled Workforce**

Croatia offers investors a highly educated, qualified, productive and motivated workforce (according to International Investment Climate Survey).

<table>
<thead>
<tr>
<th>Qualification</th>
<th>Median 2012</th>
<th>Median 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualifications of the employees</td>
<td>2.29</td>
<td>2.64</td>
</tr>
<tr>
<td>Quality of the education</td>
<td>2.60</td>
<td>2.77</td>
</tr>
<tr>
<td>Productivity</td>
<td>2.61</td>
<td>2.52</td>
</tr>
<tr>
<td>Motivation</td>
<td>2.62</td>
<td>2.43</td>
</tr>
</tbody>
</table>

*(1) very satisfied / (6) very unsatisfied*

SOURCE: German-Croatian Chamber of Industry and Commerce Survey
State of the art infrastructure

Croatia fixed communication network is 100% digitalized, and it is the most modern out of all CEE countries' networks. Broadband penetration rate totals to 28.26% compared to the OECD countries' average of 25.9%.

Innovative Society

Innovative hub out of which many pioneering patents have emerged.

Croatia has one of the highest proportion of enterprises with innovation activity in the region.
2) List of current ICT regulations in the Republic of Croatia

Legislation in the IT sector of the Republic of Croatia is in accordance with the European. The legislation is separated into different groups of laws:

- **eGovernment Legislation**
  **Current status**

  There is no specific eGovernment legislation in Croatia; however, the country has a comprehensive framework of laws and regulations in place for exercising eGovernance which is supplemented by the Electronic Document Act (OG150/2005), the Information Security and Confidentiality Act (NN 79/2007), the Act on the Right to Access Information (NN 172/03) and the implementation of the Convention on Cybercrime (OG 173/2003).

- **Freedom of Information Legislation**
  **Law on Freedom of Information (NN 172/03)**

  The Law on the Freedom of Information was adopted on 15 October 2003 and aimed at facilitating and ensuring access to information to natural and legal entities through the openness of public authorities. It regulates the right of access to information held, managed or controlled by public authorities, lays down the principle of access to information, exceptions to the right of access to information and procedures for the exercise and protection of the right in question.

- **Data Protection/Privacy Legislation**
  **Law on Personal Data Protection (NN 103/03)**

  The Law on Personal Data Protection was adopted in June 2003, implementing the relevant EU Directive (95/46/EC). It foresees that personal data may be transferred cross-border and processed in another jurisdiction, to the extent that this jurisdiction can ensure an adequate level of protection. The law was amended once on 20 October 2006 (NN 118/06), while the last amendment took place on 3 April 2008 (NN 41/08).

- **E-Signatures Legislation**
  **Electronic Signature Act (NN 10/02 / NN 80/08)**

  Yazmin Vallejo
Croatia was one of the first countries to include digital signatures in its legislation. The Electronic Signature Act has been supplemented by a series of ordinances and regulations, such as the Regulation on the scope of operations, content and responsible authority for operations of electronic signature certification for State Administration bodies (NN 146/04).

- **E-Commerce Legislation**
  
  **Law on Electronic Commerce (NN 173/03)**
  
  The Law on Electronic Commerce regulates the provision of information society services and IT services providers' liability. It lays down the rules concerning the conclusion of contracts in electronic form. Its provisions do not apply to data protection, taxation, and notary activity, representing clients and protecting their interests before the courts.

  The law was first adopted on 15 October 2003 (NN 173/03) and amended on 20 May 2008 (NN 67/08), while its last version was voted on 13 March 2009 (NN 36/09).

- **E-Communications Legislation**
  
  **Electronic Communications Act (NN 73/2008)**
  
  The Electronic Communications Act ensures the realization of the essential principles and objectives in the area of electronic communications, such as further consolidation and simplification of the existing legislative framework in electronic communications and the application of other solutions in accordance with best practices in EU Member States.

- **E-Procurement Legislation**
  
  **Public Procurement Act (NN 110/07 / NN 125/08)**
  
  The Public Procurement Act (NN 110/07) and accompanying regulations and ordinances (NN 125/08), regulate the conditions of and procedures for public procurement which precede the conclusion of contracts on the procurement of goods and services and the contracting of works with the objective of securing the effective utilization of budgetary and other of encouraging a free market for tendering.

- **Re-use of Public Sector Information (PSI)**
  
  **Current status**
  
  Currently, there is no specific legislation concerning the re-use of PSI. Re-use of electronic content is addressed by the Electronic Document Act(OG 150/2005), enacted in December 2005, which defines the legal procedures related to the development, trade, use and storage of the information of an electronic document. Moreover, the Croatian Information and Documentation Referral Agency (HIDRA) ensures the availability of public official data, information and documents, and furthermore promotes its use.
Foreign companies are protected with intellectual property rights (patents, copyrights and design):

- Patent Act
- Trademarks Act
- Copyright and Related Rights Act
- Industrial design Act
- Act on Geographical Indications
- Designations of Origin of Products and Services
- Act on the Protection of Topographies of Semiconductors
- Semiconductor Products
- Act on Representation in the Field of industrial Property

Croatia adopted the document Open Source Software. The government recognizes the importance of the policy of development as well as the use of open source software in the public sector. For the record, in 2005, European Union shared 660 000 euros with Croatia and other countries for improving further developments of open source software.

Croatia’s technology, communications and media (TCM) market has been liberalized since 2002.
The Croatian Constitution allows the free profit repatriation, the free transfer of invested capital. A foreign company is also recognized as a local company. In addition, these companies profit from tax incentives. Croatia helps foreign companies with the creation of new jobs and the training of new employees. With the investments, companies may certainly need equipment. The import thereof is tax free and companies have favorable conditions for infrastructure facilities. The Bilateral Agreements to avoid double taxing can be found here: http://www.porezna-uprava.hr/en/propisi/obrasci.asp?id=b02d3#. The countries concerned are: http://www.porezna-uprava.hr/en/propisi/doubleTaxation.asp?id=b02d2.
3) Public ICT actors and programs in the Republic of Croatia

a) The Croatian Chamber of Economy

The Croatian Chamber of Economy (http://www2.hgk.hr/en/), chaired by Mr. Luka Burilović, is much involved in the IT sector by creating favorable conditions for a rapid growth of this sector in the Republic of Croatia: participation in many projects, development of regulations and creating credit worthiness of companies. The Chamber is in charge of the promotion of the IT sector at the international level.

Together with the Faculty of Electrical Engineering and Computing, HGK created an IT sector database in 2008. It is helpful as it connects potential business partners with each other.

Contact:
http://www.hgk.hr/
Rooseveltov trg 2, 10000 Zagreb
Phone: +385 1 45 61 555
Fax: +385 1 48 28 380
hgk@hgk.hr

b) E-Croatia Program
Let’s introduce the E-Croatia program (http://www.e-hrvatska.hr/hr). This program was created in 2004 by the Croatian Government and its implementation started the same year. Their aim is to have a modern public administration by the time Croatia becomes a full member of the European Union. The E-Croatia program follows the guidelines of the Action Plan of e-Europe 2005.

For an easy access to these services, the country is developing broadband availability. Development of services and contents is encouraged by the Croatian government and a competitive price market. Furthermore, the involvement of local communities is encouraged in the development of broadband data transfer through private and public partnerships as well as by financing the construction of infrastructure for high-speed Internet for Croatian citizens.

Igor Lucic (the CEO of the program) is working on implementing the E-Croatia program in as many areas as possible. Education (e-education), Health (e-health), Government services (e-government). The avoidance of the red-tape and assisting Croatian citizens are the main goals of the program.

E-Croatia does not only focus on administration. The development of business opportunities and the creation of a good work environment for e-business is also the goal of this program. The government services online will help everyday-life of companies in Croatia.

In 2010, this program enabled 16 Croatian ICT companies to access to the largest international ICT fair: CEBIT.

Contact:
http://www.e-hrvatska.hr
Gajeva 4, 10 000 Zagreb

Yazmin Vallejo
c) HITRO.HR program

The HITRO.HR program was created in 2005 (One-Stop-Shop Program). This program allows Croatian entrepreneurs to register their own business within a 24 hours delay.

In addition, with the aim to make entrepreneurs’ lives easier, you can find other services like: e-CRAFT, e-REGOS (Central Registry of Insured Persons), e-CADASTRE, e-HZMO (Pension Insurance) and e-HZZO (Health Insurance).

This also includes, Tax Administration services (e-VAT, Electronic Tax Book Keeping Card and service enabling the users to electronically submit reports of receipts from the dependent labor).

E-Corner service is a HITRO.HR service which allows entrepreneurs to help raising the level of use of computers.

Up to now, HITRO.HR is recognized by domestic and foreign investors as a place of first contact for the registration of a business. There are currently 65 HITRO.HR service offices throughout the country, with more than 20,000 newly established companies, 800 of them owned by foreign investors.

Contact:
http://www.hitro.hr/Default.aspx
Vukovarska 70, Zagreb
Tel: 0800 0080

Yazmin Vallejo
d) CORDIS

CORDIS is the Community Research and Development Information Service for Science, Research and Development. As the official source of information on the seventh framework program (FP7) calls for proposals, it offers interactive web facilities that link together researchers, policymakers, managers and key players in the field of research.

CORDIS main missions are the following:

- To facilitate participation in European Research activities;
- To enhance exploitation of research results with an emphasis on sectors crucial to Europe's competitiveness;
- To promote the dissemination of knowledge fostering, the innovation performance of enterprise and the societal acceptance of new technology.

The so-called FP7 program is part of CORDIS (7th Framework Program for Research and Technological Development). The total budget of this program is 50 billion euros. This program complements national research programs with a “European added value”.

Contact:
http://cordis.europa.eu/fetch?CALLER=MSS_HR_NEWS_HOME_EN
Tel: +352 2929 42210
cordis-helpdesk@publications.europa.eu

e) HIT
In 2006, The Republic of Croatia established The Croatian Institute of Technology (HIT). This institution supports and directs Croatia’s developments, advises and provides support in the field of intellectual property and technology transfers. The institution also promotes participation in European research and development projects. In the international context, HIT promotes the Croatian technology production as well as research and development potential.

HIT finances and implements the IT project. In addition, HIT monitors the impact of technology in Croatia.

The current president of this institution is Pero Munivrana. HIT has several departments: Finance, TEST Program (incentives for Croatian Technology program), Business Research, Technological Forecasting, Technology Transfer and International Cooperation.

Contact:

www.hit.hr
Planinska 1, 10 000 Zagreb
Tel: +385 1 5494 721
Fax: +385 1 5494 720

Pero Munivrana
Tel: +385 1 5494 721
pero.munivrana@hit.hr
f) BICRO

Croatia has a Business Innovation Center. Created in 1998 by the government, its aim is to improve technology development in the country but also support innovative programs.

Contact:
http://www.bicro.hr/
Planinska 1, 10 000 Zagreb
Tel.: +385 1 2352 601
Fax: +385 1 2352 615
ured-bicro@bicro.hr


g) HAKOM

The Croatian Agency for mail and electronic communication (HAKOM) has its seat in Zagreb. It is the National regulatory agency for the pursuit of regulatory and other jobs. HAKOM is an independent, non-profit entity with public authorization. HAKOM’s work is public. The founder of HAKOM is the Republic of Croatia, the Croatian Parliament holds founding rights as entrusted by the Croatian government. According to the law, HAKOM is governed by 7 members of the board. The president and vice-president are suggested by the Croatian government and chosen by the Croatian Parliament for a mandate of 5 years.

Contact:
http://www.hakom.hr
h) Croatian Information Technology Association (CITA)

Is the umbrella organization of Croatian ICT experts founded in 1975, ever since it has been acting continuously with the goal to create the conditions for faster and more efficient introduction and application of ICT:

- by advocating the status and the quality of profession
- by initiating and implementing the projects of mutual interest
- by promoting and using open systems
- by encouraging and organizing the participation of the young in ICT
- by exchanging skills and experiences in using ICT
- by organizing professional gatherings

The organizations ECDL Croatia and EUCIP Croatia are active within CITA. CITA has got the license for carrying out the certification users of personal computer according to ECDL standards (www.ecdl.com) and (www.ecdl.hr), and the certification of professional ICT experts (www.eucip.com) and (www.eucip.hr) in Croatia.

CITA participates in the programs of the European Union.
4) Cluster Organization of ICT companies in Croatia

In order to survive on the market, small companies are grouped in Clusters. Croatia has many ICT clusters.

CRO ICT is another group of clusters in Croatia. It was founded in 2007 by these clusters and companies:

- GRIT ICT
- Alliance of 8 Croatian ICT companies (Arbor Informatika, KvarnerCAD, Multilink, Netcom, Nomen, Ri-ing, Ris, Status) + University of Rijeka
● HR-51000 Rijeka, Milutina Barača 19 / info@grit-hr.net / http://www.grit-hr.net

○ Međimurski IT cluster
  ■ Alliance of 11 local ICT companies (Calius, Axiom, Aalius, Redea, Inpro)
  ● Međumurski IT Cluster, Mažuranića 2/II, 40000 Čakovec / www.mit-cluster.hr / infor@mit-cluster.hr

○ Cluster Dalmatian IT Professional
  ■ Alliance of Dalmatian IT companies (Enel Group, Gideon Multimedia)
  ● Kopilica 5, 21000 Split / info@disc.hr / www.disc.hr

○ IT Slavonia Cluster
  ■ IT Cluster consisting of the following companies located in Slavonia,: Cisco, Microsoft, IBM, Oracle, HP and SAP
  ● J.J. Strossmayera 134/31 000 Osijek / www.iks-it.hr / info@iks-it.hr

○ IT cluster Varaždin
  ■ The IT cluster in Varaždin consists of IT companies in the Varaždin area. (Igea, Infomodul, logit, maxcom, reanima)
  ● www.cro-ict.net / members / ICT_Varaždin

○ Information Technology Cluster in Istria
  ■ IT Cluster in Istria is an association of IT companies situated in Istria, members of this association are: Istracom doo, Opti-kom and Medialab doo
  ● www.cro-ict.net / members / ITC_Istra

If you want to join this cluster, or obtain help from them, dial +385 98 259 305 or +385 98 674 883. The e-mail address is info@cro-ict.net

Connect2Croatia is the association of ICT clusters. http://www.connect2croatia.com/

SWOT analysis of ICT in Croatia

Yazmin Vallejo
<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT recognized among national priorities</td>
<td>lack of specific ICT research priorities</td>
</tr>
<tr>
<td>Institutional support for research and technological development</td>
<td>mechanisms for implementation of policies and strategies</td>
</tr>
<tr>
<td>Technology Foresight initiated</td>
<td>lack of communication on new institutions and funding opportunities</td>
</tr>
<tr>
<td>policy of R&amp;D funding growth</td>
<td>lack of communication on ICT research policy</td>
</tr>
<tr>
<td>number of both public and private institutions participating in ICT research</td>
<td>little to no joint research between universities and research institutes and private companies</td>
</tr>
<tr>
<td>presence in the FP6 and other EU programmes</td>
<td>lack of communication on EU policies</td>
</tr>
<tr>
<td></td>
<td>lack of project management skills</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Science, Education and Sport has recently approved opening of new positions in all Universities and Institutes for development</td>
<td>ICT research infrastructure</td>
</tr>
<tr>
<td>Strategy for Development of e-Business</td>
<td>brain drain</td>
</tr>
<tr>
<td>Croatia is an affiliated country for FP7</td>
<td>global financial crisis</td>
</tr>
<tr>
<td>public administration reform underway, drafting of a Strategy on e-Administration</td>
<td></td>
</tr>
<tr>
<td>Programme of digitalization of cultural heritage</td>
<td></td>
</tr>
<tr>
<td>EU accession process in advanced stage</td>
<td></td>
</tr>
<tr>
<td>health system reform</td>
<td></td>
</tr>
<tr>
<td>advanced communication network and a growing number of internet users</td>
<td></td>
</tr>
<tr>
<td>global financial crisis</td>
<td></td>
</tr>
</tbody>
</table>
5) Internet in Croatia

Internet penetration in Croatia is the highest in the Balkans region, and is more in line with those found in the Eastern European EU countries. Available broadband access platforms include ADSL2+, cable, FttX and WiMAX. ISPs have focused on increasing broadband uptake, with hopes of generating additional revenue through sales of broadband TV and triple play services. Digital Terrestrial TV developments are underway, with analogue switch off taking placing. Digital TV programming is also available via cable TV and satellite TV.

Key developments

Novi-Net granted national WiMAX license; Telekom Austria buys up regional cable providers; VelaTel Global Communications expands wireless broadband capacity; DVB-T2 to be employed in two MUXES; regulator awards more funding to promote rural broadband; GTS Central Europe extends fiber network through Croatia, is sold to Deutsche Telekom; High Court upholds regulator’s pricing for incumbent’s wholesale fiber access; Amis Telekom builds fiber network in Zagreb, put up for sale by owners; H1 Telekom launches IPTV service; regulator market data to September 2013; telcos’ operating and financial data to Q3 2013; market developments to early 2014. - See more at: http://www.budde.com.au/Research/Croatia-Digital-Media-and-Broadband-Markets-Insights-Statistics-and-Forecasts.html#sthash.YtpC3agC.dpuf

a) By companies

- 98% of the companies use computers to perform everyday tasks
- 98% have an access to the internet (77% of these access are broadband access).
- 54% use mobile broadband access to Internet.
- 68% have their own website and 85% of them conduct a financial business thought the internet.
- 92% use e-government services.
- 41% use e-government services for complete administrative tasks
- 32% buy on the internet
- 11% was the total of internet sales of goods and services
- 33% use social media

The next scheme shows us the usage of Internet by companies divided into different sectors:
Usage of information and communication technologies is an extremely important part of contemporary business conduct. The survey showed that 98% of enterprises used computers in everyday business and 98% of enterprises had the internet access. The internet became a necessity for an efficient business conduct, so 68% of enterprises had its own web site. The internet simplifies performing of some business processes, such as banking and financial transactions; it also allows for usage of administrative public services (e-government, 92% used the internet for administrative purposes.)

The internet and other network technologies allow for connectivity between sectors within an enterprise and the integration of business processes that contribute to more efficient business conduct. The type and speed of data transfer allow for a higher quality of business conduct. The availability and
Yazmin Vallejo

affirmation of mobile devices caused a change in the trend of internet access. There were 77% (a decrease of 13%) of enterprises that used the fixed broadband connection (DSL, cable, leased line). At the same time, there was an increased usage of the mobile internet. Mobile internet access uses 54% (an increase of 10%) of enterprises.

The usage of the internet caused changes in the ways of business conduct by allowing for the integration of business processes at a higher level. Internet connection speed is becoming an important factor in business conduct. Increasing availability of broadband internet encourages an increase of data transfer speed. Graph shows that majority of enterprises still did not use the high speed internet connections, only 4% of enterprises used internet connections that enable data transfer speed of over 10 Mbps.

The usage of e-government services provides for a better information accessibility and speeds up a delivery of administrative procedures. Almost all services increased compared to the previous year. Out of several services available, 78% (an increase of 4%) of enterprises used services to obtain information and 84% to obtain forms (an increase of 8%). Other services, such as returning filled-in forms (77% – an increase of 6%). Two new categories were added: VAT declaration and social contribution declaration.
The integration of business processes and communication between business entities via the internet allow for a more efficient offer of goods and services and their purchase and sale on the market. The volume of e-commerce compared to conventional commerce was still rather low and barely 11% of sales was conducted via the internet. Two thirds of transactions were completed via electronic data interchange systems (EDIs), while one third was completed by selling via web pages.
The social internet media usage is monitored in order to determine their influence on business processes and business results. The survey shows that the social media are mostly used for advertising and exchanging information with customers. They are predominantly used in small enterprises, while medium-sized and large enterprises used the social internet media quite rarely.

b) By households

Reference:
http://www.dzs.hr/Hrv_Eng/publication/2013/02-03-02_01_2013.htm
The survey results showed that the share of households equipped with the ICT in the Republic of Croatia was relatively at the same level as in the previous year. The spotted decrease of 2% in having a personal computer and of 1% in having internet access was caused by a larger number of households in the total population than in the previous year.

As compared to the previous year, increase of 1% was spotted in number of household using xDSL to access to the internet. At the same time, there was the increase recorded in other types of broadband internet access. The share of fixed (cable) broadband increased from 23% to 31%. A relatively large share of households used mobile broadband networks to access the internet due to an increased availability of mobile devices as tablets, mobile phones and USB modems using 3G technologies.

This scheme shows us the usage of Internet by households: The comparison of the results with the last year’s data showed that individuals mostly used the internet for obtaining information on goods and services (70%), e-mail usage (72%), for reading daily news and magazines (84%) and participating in social networks (57%). Two new categories with significant share of users were seeking health information (53%) and seeking education literature and courses (55%). A relatively low share of the usage of e-banking and e-government services showed that the usage of online services was still not widespread, although it slightly increased.
Internet access for households is rising with a significant part of broadband access. We can notice young people ranging from 16 to 34 years all use Internet and computers and in the other categories of age, the number is increasing. In opposition, the adaptation to Internet and computers by the elderly is slow.
There were positive developments in the age structure of computer users noticed compared to the last year. The youngest population still maintained lead in the computer usage and the number of users was decreasing proportionally with age. The number of users in the 35 – 54 age groups increased by 4% and of those aged over 55 by 9%. A similar trend was noticed in the employment status structure, where pupils and students, as the youngest group, were the most frequent computer users.

It is not common in Croatia to use the internet for e-services like e-banking or in addition e-government administration very often. In 2010, only 14% of goods were purchased through the Internet.
G-6. INTERNETSA KUPNJA KOD POJEDINACA U 2012.
INTERNET PURCHASES INDIVIDUALS, 2012

- Clothes and sport goods: 38%
- Tickets for events: 32%
- Household goods: 25%
- Books, magazines and newspapers: 24%
- Accommodation: 19%
- Electronic equipment (incl. cameras): 18%
- Computer parts (hardware): 18%
- E-learning material: 17%
- Telecommunication services: 16%
- Films and music: 10%
- Travel tickets: 10%
- Software: 10%
- Computer games: 9%
- Other: 8%
- Groceries: 6%
- Shares, securities, insurance, financial services: 4%
- Medicines: 3%
We can notice this fact: the Ipad (famous Apple device) was launched officially in Croatia eight months only after the international launch.

Development of the market

VIPNet extends 42Mb/s HSPA+ services; two operators launch LTE; Croatian government abolishes 6% tax on mobile services revenue; regulator allocates remaining 800MHz spectrum; T-HT authorized to manage e-money services; GDP shows continuing decline; state transfers remaining shares in T-HT to Pensioners’ Fund; VIPnet acquires three regional cablecos; Optima Telekom seeks company restructure; Novi-Net granted national WiMAX license; VelaTel Global Communications expands wireless broadband capacity; DVB-T2 to be employed in two MUXES; regulator awards more funding to promote rural broadband; GTS Central Europe extends fiber network through Croatia, and is sold to Deutsche Telekom; Amis Telekom builds fiber network in Zagreb, put up for sale by owners; H1 Telekom launches IPTV service; regulator’s market data to September 2013; telcos’ operating and financial data to Q3 2013; market developments to early 2014. - See
WiMAX (Worldwide Interoperability for Microwave Access) is a telecommunications protocol that provides fixed and mobile Internet access. The current WiMAX revision provides up to 40 Mbit/s with the IEEE 802.16m update expected to offer up to 1 Gbit/s fixed speeds. The name "WiMAX" was created by the WiMAX Forum, which was formed in June 2001 to promote conformity and interoperability of the standard. The forum describes WiMAX as "a standards-based technology enabling the delivery of last mile wireless broadband access as an alternative to cable and DSL".

WiMAX has been hailed as having the potential to connect remote areas to high-speed broadband services, because it can bridge the fixed-line infrastructure gaps, but in most cases the initial development of these networks starts with the large cities. In 2005 Croatia's telecom regulator awarded 10 WiMAX licenses. VIPnet and OiV started covering the capital, Zagreb, while WiMAX Telecom focused its efforts in other cities such as Split and Osijek. Since 2008 it has used Alcatel-Lucent technology in order to develop the first WiMAX 802.16e-2005 network in Croatia. In 2009 the company launched a mobile WiMAX network using Volubill technology.

Croatian companies are also starting to create WI-FI hotspots. Nowadays, they are only in hotels, occasional in cafe and some public places.

Croats can access the global network also in Internet cafes, public libraries and the school/university network. In schools/universities, internet access is provided by CARNet.

Typically for a relatively small country, the most popular web2.0 sites in Croatia are the international ones which have more power and influence in attracting users than their local counterparts. The most popular social websites in Croatia are Facebook and Youtube, while Forum.hr is the most visited local social platform. Blogging activities are supported mainly
by international websites like Blogger.com and Wordpress.com, but also by local platforms like Blog.hr and Blog.hr.

In 2009, T-Mobile Croatia launched Play Now Plus option, a service offering unlimited music downloads to mobile phones using Sony Ericsson technology. As a local solution, T-HT also launched a music download service called Fonoteka. VIPnet has its own portal vip.hr offering music play and download solutions including a partnership with Vodafone Live! Another local solution for music downloading is Cedeterija.hr. With Croatian communities present in other former Yugoslavian republics and with the Serbo-Croatian language spoken by virtually everyone in the former Yugoslavia, there is potential for development outside the national borders for online media and social networks.

http://www.hakom.hr/UserDocsImages/2014/e_trziste/KVA%20ENG%20Q4%202013_broadband%20subscribers.pdf
http://www.hakom.hr/UserDocsImages/2014/e_trziste/KVA%20ENG%20Q4%202013_broadband%20penetration.pdf


Yazmin Vallejo
6) Telecommunications in Croatia

The Croatian telecoms market has been shaped by the country’s bid to join the European Union, resulting in market liberalization and creation of a regulatory environment conducive to competition. Alternative operators have entered the market and launched competing services in the fixed-line market. Both alternative operators and the incumbent are investing in network infrastructure to support bandwidth-intensive services such as broadband access and triple play. This report provides a concise overview of Croatia’s fixed-line market, covering regulatory developments, fixed-line infrastructure used to offer services, financial and performance data on significant fixed-line operators as well as the wholesale and IT markets.

Key developments

State transfers remaining shares in T-HT to Pensioners’ Fund; Croatia joins the EU; T-HT invests in cloud computing; VIPnet acquires three regional cablecos; Optima Telekom seeks company restructure; regulator’s market data to Q3 2013; telcos’ operating and financial data to Q3 2013; market developments to early 2014.
Household possession of mobile phones has risen steadily, from 67.7% of households in 2004 to 94.7% in 2009, making Croatia one of the most highly penetrated markets in the Balkan region. In 2009 revenues from the mobile sector accounted for 57.7% of total telecom revenues in Croatia, compared to 53.0% in 2004. The rising share of the mobile sector in the overall telecoms industry is partly due to growth in mobile voice services, and partly a result of slow development in the fixed communications sector.

http://www.hakom.hr/UserDocsImages/2014/e_trziste/KVA%20ENG%20Q4%202013%20mobile%20subscribers.pdf
The Croatian telecommunication sector is ranking at the 24th place towards the global competition. This good result is a consequence of investments, market development and the introduction of new technologies in the fixed and mobile segment. The figure of 340 000 users of mobile broadband in Croatia, puts its penetration level above the EU 27 average.
In the opinion of VipNet CEO, Croatia continues to the general world trend of replacing voice communications to data communications. The Republic of Croatia has a HDSPA mobile network (High-Speed Downlink Packet Access (HSDPA) is an enhanced 3G (third generation) mobile telephony communications protocol in the High-Speed Packet Access (HSPA) family, also dubbed 3.5G, 3G+ or turbo 3G, which allows networks based on Universal Mobile Telecommunications System (UMTS) to have higher data transfer speeds and capacity. Current HSDPA deployments support down-link speeds of 1.8, 3.6, 7.2 and 14.4 Megabits/s. Further speed increases are available with HSPA+, which provides speeds of up to 42 Mbit/s downlink and 84 Mbit/s with Release 9 of the 3GPP standards.). As from 2010, Vipnet has been the leader in the mobile broadband market in Croatia, where it has about 60% market share.
Market Share by Subscribers

Note: Definition of active prepaid user: User who has used a mobile service or refilled the account in the last 90 days. This definition applies to all operators. Before 2011 each operator used different active user definition (90/180/270 days).

http://www.hakom.hr/UserDocsImages/2014/e_trziste/KVA%20ENG%20Q4%202013_market%20share_mobile.pdf

Mobile Network Penetration Rate

Note: Definition of active prepaid user: User who has used a mobile service or refilled the account in the last 90 days. This definition applies to all operators. Before 2011 each operator used different active user definition (90/180/270 days).

http://www.hakom.hr/UserDocsImages/2014/e_trziste/KVA%20ENG%20Q4%202013_mobile%20ported%20numbers.pdf
In 2009, 76.1% of Croatian households had a fixed-line telephone, down from 91.4% in 2004. In absolute terms, the number of telephone lines in use also declined slightly during the period 2004-2009 to reach 1.9 million in 2009. The decrease in fixed-line telephone penetration is mainly due to rising competition from the mobile sector and the increasing take-up of alternative communications methods such as Voice over Internet Protocol (VoIP). In particular, VoIP solutions have gained importance mainly due to their lower prices. In Croatia, there are around 40 operators offering this type of service, intensifying competition and thus putting further downward pressure on prices in this segment.


In 2009, the traditional segments of fixed and mobile voice telephony services were most affected by the crisis, recording a decline of 6.3 percent and 1.8 percent. It is alleged that the 'pay TV', mobile data services, Internet were the drivers of growth, but the 33-percent share of their total income was not large enough to compensate for the decline in voice segment. Unlike in 2009, Erste Bank Analysis expects a growth of the market during the year 2011.
Croatia has 219 companies selling telecommunications equipment. 16 of them are selling equipment for telephone. 72 are trading telephone handset and component, 87 mobile equipment and accessories. 3 shops are selling second hand phones.
Croatian households spent HRK 167 (USD 31.6) on average on telecommunications equipment in 2009, a real decline of 40.1% from 2004. Besides this, the average expenditure on telecommunications services was HRK 5,166 (USD 978) per household in 2009, which represents a fall of 7.1% in real terms over a year earlier. The fall in household expenditure on telecommunications has been mainly due to the difficult economic situation since the second half of 2008, which has led to decreasing household disposable incomes.
Fixed lines phone network

**AKTON doo**

Bani 75, Buzin  
10010 Zagreb-Sloboština  
Created in 2003 and owned by AKTON Telekomunikacijski inženiring d.o.o  
Chaired by Željko Beker  
2 employees  
Turnover: 4670000 HRK in 2009 for a profit of 292000 HRK

Phone: +385 (01) 6641 476 / Fax: +380 (01) 6641 395  
info@akton.hr  
www.akton.hr

**AMIS TELEKOM**

Bani 75, Buzin  
10010 Zagreb-Sloboština  
Created in 2002  
Chaired by Boštjan Košak  
54 employees  
Turnover: 39 800 000 HRK in 2009

Phone: +385 (01) 2468 000 / Fax: +385 (01) 246 8009  
info@amis.hr  
www.amis.hr

**HT dd**

Yazmin Vallejo
Savska cesta 32, Zagreb
10000 Zagreb
Created in 1999 (Separation with Croatian Post HPT)
Formerly CRONET now part of Deutsche Telekom - Croatian Government sold 35% of shares in 1999 and in 2001, Deutsche Telekom bought more shares to become the majority shareholder.
5209 employees
Turnover: 5 450 300 000 HRK in 2009 for a profit of 896 100 000 HRK

Phone: +385 (01) 4912 100  Fax: +385 (01) 4912111
+385 (01) 4911 100  +385 (01) 4911011
+385 (01) 4911 000  +385 (01) 4912822
+385 (0800) 90 00  +385 (0800) 91 00
+385 (062) 626 200  +385 (062) 626 222
+385 (01) 4912 800

info@t.ht.hr
http://www.t-com.hr
http://www.t.ht.hr
http://www.ht.hr
http://www.htnet.hr
http://www.humanitarni-telefon.hr

**OT - OPTIMA TELEKOM dd**
Bani 75a, Buzin

Yazmin Vallejo
10010 Zagreb-Sloboština
Created in 1994, owned by Matija Martić
192 employees
Turnover: 458 400 000 HRK

Phone: +385 (01) 5492 669 / +385 (01) 6659 280
Fax: +385 (01) 5492019 / +385 (01) 5492109
info@optima-telekom.hr
http://www.optima.hr / http://www.optima-telekom.hr / http://www.optinet.hr

WIMAX Telecom doo
Bednjanska 8, Zagreb
10000 Zagreb
Created in 2005, owned by WIMAX Telecom GmbH
4 employees
Turnover: 1 230 000 HRK in 2009

Phone: +385 (01) 6661 366 / Fax: +385 (01) 6661369
info@wimaxtelecom.hr
http://www.wimaxtelecom.hr

Mobile phone network operators

VipNet

Yazmin Vallejo
Chaired by Mladen Pejković
Created in 1998 by MOBILKOM Austria
Numbers of employees: 1034
Turnover: 3 611 500 000 HRK (in 2009)

VIP Customer Service: +385 91 77 00
VIP net doo  www.vipnet.hr
Vrtni put 1
10000 Zagreb

T-Mobile
Created in 1999 (Separation with Croatian Post HPT)
Phone: +3854911000
Director Darija Brkić  Fax: +3854911011
Savska Cesta 32
10000 Zagreb
kontakt@t-com.hr
www.t.ht.hr

Tele 2
Number of employees: 83
Foundation in 2004 (Entrance in the market in 2005)
Swedish Operator
Turnover: 874 500 000 HRK (in 2009)
Phone: +385951000444
Fax: +38595100045
Olajnica 19
32000 Vukovar
www.tele2.hr

**Tomato**
www.tomato.com.hr

**Bonbon**
This company is owned by T-com and is really recent. It is a prepaid mobile phone network
www.bonbon.com.hr
7) Television and Radio in the Republic of Croatia

National regulation authority: Agencija za elektroničke medije

The Electronic Media Council manages the ELECTRONIC MEDIA AGENCY and carries out the duties of a regulatory body in the area of electronic media.

The Council has seven members one of which is the president of the Council. The president and other members of the Council are appointed for a five-year term by the Croatian Parliament upon the proposal of the Government of the Republic of Croatia. The current president of the council is Mr Zdenko Ljevak.

Contact:
Jagićeva 31 10 000 ZAGREB
Phone – +385 (0)1 4882610 / Fax - +385 (0)1 4882614
info@e-mediji.hr
http://www.e-mediji.hr

In 2009, data on 21 TV broadcasters were presented. By status, there was one public and 20 independent TV broadcasters. As compared to 2008, the total number of in-house broadcasted hours of program (without satellite transmissions) increased by 9.3% and the satellite transmission by 12.5%, while the share of TV repeats in the total program (without satellite transmissions) decreased by 1.7%. The share of information and documentary programs of all TV broadcasters was 16.4%, out of which TV broadcasters that cover the whole territory of the Republic of Croatia (hereinafter referred to as state TV broadcasters) participated with 14.9%, regional TV broadcasters with 18.8% and local ones with 16.4%. The share of commercial programs of all TV broadcasters was 25.1%, out of which the state TV broadcasters participated with 11.6%, the regional ones with 30.8% and the local ones with 28.5%.
<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Individuals</th>
<th>Companies and Institutions</th>
<th>Total</th>
<th>Individuals</th>
<th>Companies and Institutions</th>
<th>Population per Subscriber</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>1,235,922</td>
<td>128,879</td>
<td>99,568</td>
<td>1,315,922</td>
<td>132,399</td>
<td>116,568</td>
<td>3.0</td>
</tr>
<tr>
<td>2006</td>
<td>1,259,898</td>
<td>147,710</td>
<td>108,512</td>
<td>1,367,898</td>
<td>146,211</td>
<td>120,012</td>
<td>3.0</td>
</tr>
<tr>
<td>2007</td>
<td>1,254,699</td>
<td>118,281</td>
<td>109,106</td>
<td>1,373,699</td>
<td>119,309</td>
<td>119,106</td>
<td>3.0</td>
</tr>
<tr>
<td>2008</td>
<td>1,303,283</td>
<td>165,913</td>
<td>118,209</td>
<td>1,471,283</td>
<td>166,521</td>
<td>127,418</td>
<td>3.0</td>
</tr>
<tr>
<td>2009</td>
<td>1,301,148</td>
<td>154,494</td>
<td>126,962</td>
<td>1,455,148</td>
<td>153,579</td>
<td>134,962</td>
<td>3.0</td>
</tr>
</tbody>
</table>

Market Share by reception type:

- **Cable reception**: 52.94%
- **IPTV**: 21.0%
- **Satellite reception**: 10.03%
- **Digital terrestrial reception - Pay TV**: 26.45%
- **Digital terrestrial reception**: 8.79%

HRT is the national Radio Television. Former affiliation was Yugoslav Radio Television. The first Radio Broadcast was the 15 May 1926 and the 15 May 1956 for the first TV Broadcast.

From 2002, 70% of HRT's funding comes from broadcast user fees (each house in Croatia is required to pay 79 kuna, per month for a single television), the remainder rest made up from advertising.

Croatian Radio television has three organizational units, three sister companies - the Croatian Radio (Hrvatski radio), the Croatian Television (Hrvatska televizija) and Music Production (Glazbena proizvodnja).

The company employs 3 600 persons. In 2009, the total revenue was 1 463 800 000 kuna in 2009 (ca 198 million euros).

Popular TV program are:

- **Dnevnik HRT** ("Daily News"), popular midday, evening and midnight news program
- **Nedjeljom u dva** ("Sundays at two o'clock"), weekly talk show
- **Dobro jutro, Hrvatska** ("Good morning, Croatia"), mosaic morning show
- **Hrvatska uživo** ("Croatia live"), mosaic afternoon show
Analogue terrestrial television was switched off in Croatia on 5 October 2010 at 12:35 AM. Croatian Radio television (HRT) started to transmit DVB-S programs in 1997. It transmits all three state-owned TV channels (HRT 1, HRT 2, HRT 3, later replaced by HRTplus), and three radio stations (HR 1, HR 2 and HR 3). Croatia started to test DVB-T transmission early in 2002. It transmitted 4 national TV channels (HRT 1, HRT 2, RTL Televizija, Nova TV) on a network of 9 transmitters built by Odašiljači i veze, completed in 2007 and covering about 70% of the country.

The whole of Croatia is covered with DVB-T in from 5 October 2010. In April 2009 by winning the HAKOM (Croatian Post and Electronic Communications Agency) public tender, OiV becomes network operator of two national DVB-T multiplexes (MUX A and MUX B - standard definition, MPEG-2), and since May 2009 the digital terrestrial television is being introduced across the whole territory of Croatia. In July 2010, by winning a further HAKOM public tender, OiV also becomes the network operator of third DVB-T multiplex (MUX D - combined national/regional and local multiplex - standard definition, MPEG-2).
The analogue switch-off process took place region by region, starting from January 2010 in Istria and Rijeka region and completing the switch-off on 5 October 2010 when the final region (Zagreb) was converted fully to DVB-T.

MPEG-2/SDTV is selected as a platform for free-to-air channels, initially with two MUX channels covering, where MUX A would be used by public TV Croatian Radio television (HRT) and MUX B used by commercial TV stations, while later MUX C and MUX D will be populated by HD and regional channels, respectively.

DVB-T (Digital Video Broadcasting - Terrestrial) is a standard developed for broadcasting of digital terrestrial television. The system is more resistant to various interferences than the analogue one and enables TV signal reception in much higher quality than possible in current analogue terrestrial TV. DVB-T system also enables the introduction of new services and features like electronic program guide (EPG), multi-channel audio, interactive services, conditional access, PayTV, and further development of high definition television - HDTV.
In the Republic of Croatia, you can access to Internet with triple play offer (TV+Internet+Telephone). Price goes from 199 HRK to 399 HRK. Registration time is during 24 months. An example of an offer: MaxTV (from T-Com) offers a portal to 130 foreign TV through IPTV technologies.

In addition, B.net (merge of DCM and Adriatic Cable) uses cable technology for provide Television to Croatian citizens. B.net has a range up to 264 151 Croatian households (November 2010 numbers) through its own network, and the six largest cities (Osijek, Rijeka, Split, Velika Gorica, Zadar and Zagreb). 20 another cable providers, offer these services. 18.4% of households in Croatia had cable television and approximately one third of these are digital.

Yazmin Vallejo
Compared to cable TV, satellite television is more popular in Croatia, although the number of satellite TV providers is smaller. In 2009, 43.5% of households received TV signals via satellite, up from 41.2% in 2004. Romanian company RCS&RDS provides the Digi TV satellite package whilst Croatian pay-tv Seemore Sat Channel also offers satellite TV services.

Some companies like Iskon are developing software environment for viewing television programs on mobile devices with 3G connection or Wifi.

**Amis Telekom d.o.o.**
Bani 75
10010 Zagreb

Tel: +385 1 2468 000
Fax: +385 1 2468 099
info@amis.hr
www.amis.hr

**BNet**
Avenija Veceslava Holjevca 20, 10020 Zagreb
062 100 101 016566372 info@bnet.hr
http://www.bnet.hr

**BTnet d.o.o.**
Dubravkin trg 5

Yazmin Vallejo
DAB (Digital Audio Broadcasting)

In 1997 experimental DAB (Digital Audio Broadcasting) transmission has started on VHF. Experimental DAB transmission from transmitter location Sljeme allows listening to Croatian radio programs (HRT HR1, HRT HR2, HRT HR3) in Zagreb area.

The frequency of experimental DAB transmission is 227.36 MHz (channel 12 C).

DRM (Digital Radio Mondiale)

Recently, the DRM (Digital Radio Mondiale) technology was developed for digital signal transmission on medium wave. This allows signal reception on MW with stereo quality and
brings a variety of improvements like multimedia transmission, and transmission of several programs on single frequency.

Since 2006 OiV has been transmitting the program Voice of Croatia with DRM technology on frequency 594 kHz from MW station Deanovec. Average transmitter power is 10kW. The program is transmitted with parametric stereo quality using AAC+SBR compression.

Frequency 594 kHz is shared with other radio stations in Europe, limiting the transmission time only to daylight time. Transmission time is 08:00 – 16:00 CET.

**FM Radio**

In 2012, there were 146 radio stations in operation, which was two less than in 2011. There were 4 stations that broadcasted throughout the whole territory of the Republic of Croatia. Others were either regional or local ones. According to their status, 20 stations were considered public and 126 independent institutions.

As compared to 2008, the total broadcast of own program expressed in hours increased by 2.0%, out of which the broadcast of state-owned radio stations did not change, regional stations increased broadcasting by 9.5% and the local ones by 1.1%.

The average share of news and information program in own programs of all radio stations was 14.8%, out of which the program in the state-owned radio stations reached 14.5%, in regional ones 19.0% and in local ones 14.3%. The share of advertising spots in all radio stations was 7.2% on the average, out of which this kind of program in the state-owned radio stations reached 4.7%, in the regional ones 7.5% and in the local ones 7.3%.

As compared to 2008, the total number of persons in employment decreased by 4.2%, while the share of those directly engaged in the production of radio programs (71.8%) increased by 1.8%.

The share of women in the total number of persons in employment was 44.6%, which means that it did not significantly change as compared to the year 2008.
Transmitters and Communications Ltd. has been transmitting FM radio program since 1957. Transmitters and Communications Ltd has built radio networks with national level concession and manages the following national networks:

- HRT HR1
- HRT HR2
- HRT HR3
- HRT HR local


**MW**

The program Voice of Croatia is transmitted on medium wave from MW transmitter site Zadar. The illustrative map with coverage area is given on the picture. Due to the specific electromagnetic wave propagation on MW band, signal reception in Central Europe is possible in the late afternoon and during the night.

The program is transmitted on frequency 1134 kHz and transmission time is adapted to enable reception in Europe. During the summer period transmission time is 17:00 - 00:00 CET.

600 kW amplitude modulated (AM) transmitter is used for program transmission. Antenna system is directed towards Europe, and gain in the main radiation direction is 7.4 dB.

**SW**

Radio program for Europe is transmitted on short wave from SW transmitter site Deanovec. The program is transmitted 24 hours a day, but transmission frequencies are changed throughout the day.
Since 80 years, OiV operates in the core of broadcasting and telecommunication industries providing services, network solutions and infrastructure behind television or radio, as well as fixed and mobile telecommunications. This company helps owners to launch new TV, they provide transmission for all national and most regional Croatian TV and radio broadcasters using analogue and digital (DVB-T, DAB and DRM) transmissions. In addition, they have satellite services.

Contact:
http://www.oiv.hr/index_en.aspx

Ulica grada Vukovara 269d, HR-10000 Zagreb
Tel: +385 (1) 618 6000
Fax: +385 (1) 618 6100
E-mail: oiv@oiv.hr
The Croatian legal framework for the protection of media pluralism

Croatia has, after the year 2000, introduced a new set of media legislation, which includes measures to control mono-media and cross-media ownership concentration and ensure transparency of data on ownership and functioning of the media. The Media Law (2004) limits concentration in the printed media and establishes transparency rules for all media (printed and electronic), while the Law on electronic media (2003) limits cross-media ownership.

Transparency

Although these media laws in principle ensure transparency of ownership and other media data, an in-depth analysis of the legal provisions finds a number of contradictions:

- Electronic media broadcasters have to supply the information on ownership to the Ministry of Culture by 31 January of the current year and publish the same data in the Official Gazette (time and frequency not specified) (according to the Law on electronic media, 2003);
- All media publishers (print and electronic) have to supply information on ownership to the Croatian Chamber of Commerce by 31 January of the current year and publish it in the Official Gazette by 28 February of the current year (according to the Media Law, 2004);
- All media publishers have to publish information on total revenue, circulation, listeners and viewers in their own media by 30 April of the current year (Article 34 of the Media Law);
- The same information and information on the ownership in the media, shall be published in any media, at least once in the calendar year (Article 14 of the Media Law);
- All media publishers have to supply the information on their revenues, market shares in readers/listeners/viewers as well as advertising, names of advertisers or advertising agencies through which more than 10 per cent of the revenues are gained, to the Croatian Chamber of Commerce by 30 April of the current year (Article 34 of the Media Law).

These inconsistencies make it difficult to ensure implementation of transparency requirements, they do not clearly set out the duties of the institutions involved in collecting the information on the ownership and functioning of the media, and generally make it difficult to access all the data that are, in principle, in the public domain.

Yazmin Vallejo
The Law on the protection of market competition and the Law on the right of access to information, in their separate provisions, clearly define that all information that is in the public domain, or must be in the public domain or in the possession of the public bodies following provisions in other laws, cannot be treated as restricted information and must be provided to the interested party. According to this, all the information on media ownership, as well as business information on media revenues, audiences, advertising, are clearly in the public domain.

The implementation of the Law on the right of access to information has not been tested in Croatia.

**Concentration**

Concentration in the media sector is regulated by a general Law on the protection of market competition (2003), the Media Law (2004) and the Law on electronic media (2003).

The Agency for the Protection of Market Competition reviews all planned concentrations in the media sector (according to the Media Law), regardless of the total revenue of the companies (in the media sector usually smaller than the general threshold of 100 mil. Kuna).

The Media Law prohibits concentration in the markets of general information dailies or general information weeklies if the market share of the participants after concentration exceeds 40 per cent of the total copies sold of the general information dailies or weeklies in Croatia.

The Law on electronic media prohibits concentration in the radio and television sector, as well as cross-media concentration. The law defines the following forms of media concentration as impermissible:

- a broadcaster with a concession at state (i.e. national) level, and shares exceeding 25 per cent in another broadcaster who has the same kind of concession, and vice versa;

- a broadcaster with a concession at state level, and shares exceeding 10 per cent in another broadcaster who publishes daily newspapers with a print-run over 3,000 copies, and vice versa;
o a broadcaster with a concession at state level, and shares exceeding 10 per cent in a legal person who performs the activity of a newspaper agency, and vice versa;

o a broadcaster with a concession at state level who simultaneously publishes daily newspapers with a print-run of over 3,000 copies;

o a broadcaster with a concession at the local or regional level, and whose shares exceed 30 per cent in another such broadcaster with a local or regional concession in the same area;

o a broadcaster with a concession at the local or regional level who simultaneously publishes daily newspapers of local importance in the same or in the neighboring area (Article 46).

It’s possible to have audiences of every media through Nielsen office.

Contact:
Nielsen Audience Measurement (AGB Nielsen istraživanje medija d.o.o.)
Budmanijeva 1 10000 Zagreb - Croatia
Phone +385-1-60 65 555 · Fax +385-1-60 65 550
E-mail: info.hr@agbnielsen.com

8) Important IT companies in Croatia

Some global ICT companies are operating here only to fulfill the needs of the domestic Croatian market by offering their products and services in Croatia. The long term goal is to expand in the SEE region. Other ones created are R&D centers (ERICSSON, ENVOX, SIEMENS).

a) IBM

IBM Croatia was founded in 1991 and currently employs 191 people. The head director of the office in Zagreb is Mr. Krešo Perica. IBM Croatia is part of the IBM Corp., US, Yazmin Vallejo
which was founded in Armonk, New York in 1911. Next to Zagreb, IBM Croatia holds offices in Osijek, Rijeka and Split. The company’s profit in 2009 was 30900000 kuna. The turnover in 2008 represented 198900000 HRK and in 2009 even 23060000 HRK, recording a 15.9% increase.

Main activities of the employed (Technology and Business science specialists) include consulting, market support, business innovation systems and education.

Contact Information:

IBM Hrvatska doo
Miramarska cesta 23
10000 Zagreb
Phone: +3851 6308 100
Fax: +3851 6111 119
E-mail: info@hr.ibm.com
http://www.ibm.com/hr

Osijek:
Šetalište Petra Preradovića 4
31000 Osijek
Phone: +385 31 205 181

Rijeka:
Fiorello La Guardia 13
51000 Rijeka
Phone: +385 51 333 497

Split:
Ivana Gundulića 26
b) HP

HP Croatia was opened up in 1998 in Croatia. The general director is Mr. Boris Bauk, leading 40 employees in Croatia alone. HP Croatia falls under the ownership of Hewlett Packard USA, which was founded in Palo Alto, California in 1939. In 2009 the company made a profit of 4520000 HRK while its turnover grew 6% from 116900000 HRK in 2008 to 124300000 HRK in 2009. HP provides Marketing, consultancy, technical and educational support to Croatian as well as Bosnian and Slovenian customers.

Contact information:
Hewlett Packard doo
Radnička Cesta 41/5
10000 Zagreb
Phone: +385 1 6060 200
Fax: +385 1 6060 213
Email: darija.narancik@hp.com
http://www.hp.com./hr

c) Oracle

ORACLE HR sells licenses for applications, databases and tools for designing Internet Solutions, consulting and organize training and support. Marin Tadić is the CEO. In 2009, Oracle Croatia’s turnover was about 150 400 000 HRK (+12% compare to 2008) and the profit reach 23 400 000 HRK (+109%).
Contact:
ORACLE HRVATSKA doo
Budmanijeva 1/IV, Zagreb 10 000

+385 (01) 6323 200
+385 (01) 6312 200
+385 (01) 6323 222
Fax
+385 (01) 6312205
+385 (01) 6312250
+385 (01) 6323250

marin.tadic@oracle.com
info-hr_ww@oracle.com
http://www.oracle.com/hr
http://www.oracle.hr

d) Cisco System

Cisco systems Croatia was founded in 1998 and currently employs over 20 people. It is part of its parent company Cisco Systems US. The head director in Croatia is Mr. Mark Thomas Gorman. Cisco systems produce network equipment and offers systems for company networking. Cisco is also a partner of the Microsoft Center in Varaždin. The profit generated in 2009 was 530000 HRK and turnover represented 41800000 HRK in 2009.
e) IDC Adriatics

IDC Adriatics was founded in 2001. The company has 9 employees in Croatia and is owned by I.D.C CEMA sro. Director Steven Joseph Frantzen and his team offer research and follow-up of information and telecommunication technology, ICT equipment and services. In 2009 the company reported a profit of 16000 HRK. Turnover fell by 40% from 3670000 HRK in 2008 to 6160000 HRK in 2009.

Contact information:

IDC Adriatics doo
Srednjaci 8/II
10000 Zagreb
Phone: +3851 3040 050
Fax: +3851 3040 061
http://www.idccroatia.hr
E-mail: boris.zitnik@idccroatia.hr

f) SAP
SAP doo was created in 2001 by the German mother-company SAP AG in Zagreb. The company employs 20 persons. Igor Dropulic is the director. They offer advisory services and acquisition software.

In 2009 the SAP turnover was about 62 800 000 HRK (-20,2 compared to 2008).

Contact:
Hektoroviceva 2, Zagreb
10 000 Zagreb

+385 (01) 4820 400
+385 (01) 60440 136 (fax)
info.croatia@sap.com
marko.biljan@sap.com
http://www.sap.com
http://www.sap.hr

9) IT Education in Croatia

Yazmin Vallejo
A) Universities

1) University of Zagreb

The faculty of electrical engineering and computing (FER) is a part of the University complex of the city of Zagreb. FER is the biggest and most influential research and knowledge institution in Croatia in the field of electrical engineering and computing.

This faculty is a spin-off of the Technical Faculty Zagreb, which was founded back in 1919. FER is accredited as a institution with an emphasis on research. It employs around 130 university professors, 160 junior researchers, assistants and technological co-workers in 12 institutions with a total of 59 laboratories. Students have access to 9 laboratories equipped with 180 computers.

The faculty consists of 3300 undergraduate and 800 postgraduate students. Around 650 students register to FER each year while 500 graduate annually. The studies take around 5 years.

The first computer that has been installed in FER was in 1968 whereas the school has been supplied with computers for students and faculty from 1991 onwards. The study of computing and engineering has been introduced in 1970.

FER takes part in 69 projects initiated by the Ministry of Science, Education and Sports as well as those for other European scientific institutions.

It is important to emphasize that the faculty is in close collaboration with the economic sector, 60% of their revenues come from the economy. From its beginning, FER has educated 2302 students who obtained their PhD’s. FER is also accredited by the ASIIN (Accreditation Agency for Degree Programs in Engineering, Informatics, the Natural Sciences and Mathematics.).
2) Varaždin

The University of Applied Sciences in Varaždin offers undergraduate studies of electrical engineering, which lasts up to 3 years. The University of Applied Sciences started its program in 2001 when more than 400 students enrolled.

The faculty of Organization and informatics (FOI) exists within Zagreb University even though it is located in Varaždin. FOI was founded in 1974 out of a Higher School. In Croatia FOI is the only institution where the field of informatics and informational sciences is covered exclusively. FOI also hosts a traditional international conference called “Information and Intelligence Systems”.

FOI has been following the regulations of the Bologna program from 2005 on, with classes being held with laboratory workshops and exercises. Microsoft has signed an agreement with FOI to create the Microsoft Innovation Centre, which enables students to acquire a Microsoft certificate.

3) Split

The Faculty of Electrical Engineering (FESB) in Split was founded in 1960 by the Parliament of the Republic of Croatia. The same year Split University opened up the
center for part-time study of Mechanical Engineering. Due to the merger of these two institutions, the Split Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture was established in 1971 (FESB). FESB is part of the University of Split. Up until today 3200 students graduated from the FESB and about 40 students acquired Ph.D. degrees. FESB has gained a good reputation thanks to the research undertaken by both students and professors alike. The results obtained have been published in scientific journals in some cases or were presented at conferences in others. FESB itself organizes conferences, seminars and public lectures itself. High school students are given the opportunity to visit the Physics Summer School organized annually. Furthermore, the FESB's reputation has been strengthened by a successful cooperation with economic organizations.

University of Split
Faculty of Electrical Engineering, Mechanical
R. Boškovića 32, 21000 Split, Croatia
Tel: +385 21 305-777 | fax: +385 21 463-877
Dean: prof.dr.sc. Tomislav Kilić

4) Osijek

The Faculty of Electrical Engineering in Osijek has been founded in 1978 as the Junior College of Electromechanical Engineering. Thanks to the exchange of students and the teaching staff, the Faculty of Electrical Engineering has found many partners in Croatia and abroad. A special kind of cooperation has been established between Osijek and the Hochschule Bremen. An international, scientific conference called “Science for Practice”(1985) takes place every year and 5 main faculties participate in it. The participants are the faculties of Bremen, Osijek, Schweinfurt, Pecs and Budapest.
5) Rijeka

Since Rijeka and the surrounding area are regions highly dependent on industry it was inevitable to have an institution educating young people in this field. The faculty of mechanical engineering was established in 1960 and was renamed into Technical Faculty in 1973. Research on an international basis is conducted at the Technical Faculty Rijeka, which collaborates with numerous universities in Europe and beyond, like the Technische Universitaet Vienna, the Ann Arbour and Massachusetts Institute in Boston, only to name a few.

Faculty of engineering
Vukovarska 58
51000 Rijeka
Tel: 051 651 444 / Fax: 051 651 416

B) Microsoft Innovation Center in Varaždin

The Microsoft Innovation Center in Varaždin was opened up in September 2005 (it was established as the Microsoft-Business and Technology Center). With the support from the Croatian government the innovation center was founded on an agreement between the US agency for international development (USAID), Microsoft and the city of Varaždin.
**The mission**

The center's mission is to insure the infrastructure and the resources needed for independent software vendors in order to create new products and services and the presentation thereof as well as the formation of well-lead companies that are supposed to rely on the products and services.

**The center's vision**

The center's vision is a focus on maintaining small and middle large companies that are dealing with ICT. The center holds educational seminars and gives technological support to them. This center is leaning on the model of already existing Microsoft innovation centers throughout the world. The center in Varaždin, as the first one of its kind in Eastern Europe, is supposed to play a role model for other possible centers in this region.

There are additional innovation centers in Croatia planned so this model is supposed to be followed.

**The center's aims**

Two years after the foundation of the center, which was founded thanks to an investment of 2 million dollars, the center has helped more than 200 companies in the informatics and telecommunication field (ICT). It helped to generate 20 new businesses, while 50 new solutions were developed and offered on the Croatian and European market.

**The center's partners**

In the process of achievement of the Varaždin center, Microsoft and USAID have gathered a wide array of partners. Companies like Cisco, HP, Končar and T-com understood the importance of this project for the development of the whole Croatian IT industry as well as its significance to the economic development for the whole country.

Microsoft Innovation Center Varaždin
Zagrebačka 94

Yazmin Vallejo
42000 Varaždin
Tel: +385 42 201 010
Fax: +385 42 200 864
10) Future investments

Investing in the ICT Market of Croatia would give you the opportunity to access the niche market with a well-educated labor force (good education system) and close ties with Germany and Austria. But you will have to face the competition of neighboring countries and the rest of the world (India).

Croatian government is actually trying to attract all big ICT companies in Croatia. One regulation adopted for help is:

- The reductions of the minimum of Croatian the company have to hire for obtain tax benefits. Normally, you have to hire 75 persons. This number goes down to 50 for ICT sector companies.

Google has already a small office in Croatia. But the Croatian government expects the Serge and Larry’s company investment in the island of Pag to build a data center. The budget plan is 600 million dollars. For the moment, Google do not comment this information.

LTE Technology. The first demonstration took place in October 2010 by Ericsson. They offer services like cells reporter, 3D TV content and wireless multiplayer gaming.

FTTH Technology (Fiber to the home). FTTH (fiber to the home) is a form of fiber optic communication delivery in which the fiber extends from the central office to the subscriber's living or working space. HT and other Croatian companies want to invest in this technology soon.

90% of the present network of Croatia is in FTTH. The 10 other percent are FTTB. They will be replaced by FFTH.
B.Net plans further expansion of the availability and increase network capacity within these urban areas, but spreading to smaller urban areas in Croatia will, in the words of administration, wait for a "better time", which will further increase the demand of the population, and therefore the profitability of such investments. In 2011, the company also plans to introduce VoD and PVR services, and increased the transition to digital and interactive video and IP services.

With Deutsche Telekom and Telekom Austria controlling over 80% of the fixed and mobile market, B.net as the main cable provider and RTL Group being the most important private television company in Croatia, it is expected that expertise, technologies, investment and influence continue to come from the German-speaking economic area.

Euromonitor International's forecasts for Croatia during the next decade show that the fixed broadband market will continue to grow faster than the rest of the TCM industry, partly due to the current delay in its development. Household broadband Internet penetration is expected to reach 59.6% of households in 2020, almost double the level in 2009. On the other hand, mobile and fixed telephony as well as television distribution by cable and satellite are expected to stagnate in the medium term. While it is expected that 98% of the households will have access to a mobile phone at the end of the next decade, the potential for growth of mobile voice segment is very limited. In the longer-term the expected engine for growth is represented by additional services which will compensate for the slow organic growth of the main basic services.

11) Business opportunities in Croatia – Call for tenders

As the responsible for the tendering of all procurement in the context of the decentralized EU funded programs in Croatia, The Central Finance and Contracting Agency (CFCA) –SAFU in Croatian- is your reference contact concerning IT call for tenders in Croatia.

Yazmin Vallejo
CFCA website (http://www.safu.hr/en/) shows every call for tenders classified by pre-accession programs which take advantage to Croatia (CARDS, PHARE, ISPA, IPA).

Below a list of links showing forecasts and open call for tenders concerning IT sector:

http://www.safu.hr/datastore/filestore/305/Contract_Forecast.pdf
http://www.safu.hr/datastore/filestore/10/Contract_Forecast_2.pdf

In addition, a link for a public tender for the use of RF spectrum for digital TV MUX D on the area of the Republic of Croatia:
http://www.hakom.hr/default.aspx?id=645

The payment deadline to suppliers generally ranges from 20 to 60 days, the average being around 30 days. However, the average payment deadline could be from 30 up to 90 days. 90% of transactions are conducted with delay. Payments tend to be faster when the customer is located abroad.
A payment made within the first seven days is considered cash in advance. The sectors where most default is detectable are the wholesale, construction and manufacture sectors.

12) Computers (Desktop, Notebooks, components...) wholesalers

Numerous Croatian computers shops import goods from Germany, the Netherlands, Taiwan and The United States of America. They also export to the countries of ex-Yugoslavia (Macedonia, Serbia, Bosnia-Herzegovina, Montenegro, Kosovo and sometimes Slovenia) and Albania.
Below a Croatian wholesalers and distributors contact list (remark, they are also multimedia wholesalers most of the time):

I. Wholesalers

Arhiteh Computers

veleprodaja@arhiteh.hr (fill the line subject with: veleprodajni partner)
http://www.arhiteh.hr
Hrvatskog proljeća 38, Zagreb
Tel: +385 1 2991 646

ZN Informatika d.o.o

zninfo@zninfo.hr
http://www.zn-shop.com
Trpanjska 12, 10000 ZAGREB
Tel: +385 1 3648103
Fax +385 1 3648 105

Renoprom d.o.o – Technomax
renoprom@renoprom.hr
www.renoprom.hr
Ljubljanska 4, 10431 Sveta Nedelja
Tel: +385 (01) 3330 999
Represented companies: ACER, ACOUSTIC ENERGY, ATECA, CHAINTECH, LEXMARK, OLYMPUS, PHILIPS ELECTRONICS, PQI, TW & SONY.

Unusmedia d.o.o

unusmedia@unusmedia.hr
www.unusmedia.hr
10 430 Samobor, Ferde Livadića 28
Tel: + 385 1 6389 350
Fax: + 385 1 6389 351

Lost d.o.o
lost@lost.hr
http://www.lost.hr
Stubička 75, Zagreb
Tel: +385 (0)1 3027 163
Fax +385 (0)1 3697 640

Zola d.o.o VELPRODAJA I SERVIS,
zola@zg.t-com.hr
http://www.zola.hr
Trg senjskih uskoka 8, 10020 Zagreb
Tel: +385 (01) 6552 727
Fax: +385 (01) 6529248
Represented companies: BROTHER, DYSAN, EPSON, HP, MICROSOFT, PANASONIC, SEIKO PRECISION & TERRATEC.

M SAN GRUPA
msan@msan.hr
http://www.msan.hr
Buzinski prilaz 10, Buzin 10010 Zagreb-Sloboština
Tel: +385 (01) 3654 900
Fax: +385 (01) 3654905
Subsidiary companies:
- KING ICT doo
- KIM TEC
- M SAN SERVIS doo
- M SAN INFORMATIČKO UČILIŠTE
- M SAN LOGISTIKA doo
- M SAN EKO doo
Represented companies: ASUS, BELINEA, D-LINK, GVC, HEWLETT PACKARD, SAMSUNG & WESTERN DIGITAL

II. Distributors

**Autronic Computers**

*autronic@autronic.hr*

*[http://www.autronic.hr](http://www.autronic.hr)*

Gruška 22, Zagreb
10000 Zagreb
Tel: +385 (01) 6324 500
Fax: +385 (01) 6324540
Represented companies: MICROTEK, SMC, FIC, KEY TRONIC

**Ron-Ban d.o.o**

*ron-ban@ron-ban.hr*

*[http://www.ron-ban.hr](http://www.ron-ban.hr)*

Kopernikova 20, 10000 Zagreb
Tel: +385 1 6682 805
Fax: +385 1 6674 862

**Storm Computers d.o.o**

*storm@storm.hr*

*[http://www.storm.hr](http://www.storm.hr)*

Savica-Šanci 127, 10000 Zagreb
Tel: +385 (01) 2352 200
Fax: +385 (01) 2352299
Represented companies: 3 COM, ALLIED TELESIS, CISCO, OLYMPUS, OPTIVISIA, RITAL, TELEGARTNER, DE

**HSM Informatika**

Yazmin Vallejo
hsmsales@hsm.hr
http://www.hsm.hr
Grada Mainza 19, 10 000 Zagreb
Tel: +385 1 3908 930
Fax: +385 1 3758 850

Asbis Hrvatska
prodaja@asbis.hr
http://www.asbis.hr/
Slavonska avenija 24/6, 1 kat 10000 Zagreb
Tel: +385 (01) 600 99 00
Fax: +385 (01) 600 99 88
Represented companies: Intel, Seagate, Hitachi GST, Canyon, Prestigio, AMD, Kingston, Kingmax, Patriot, Toshiba, Dell, Promise Technology, Samsung (HDD), Sapphire, Innovision, Silverstone, Transcend, Pioneer (ODD), LiteOn and others.

Omnia d.o.o
omnia@omnia.hr
http://www.omnia.hr
Koturaška 69, 10000 Zagreb
Tel: 01/6170-433
Fax: 01/6170-433
Represented companies: Fujitsu, Creative, Maxell, TDK.

KSU d.o.o
Jurja Dobrile 50 10410 Velika Gorica
13) Television and video equipment (professional) wholesalers

**HSM Informatika**
hsmsales@hsm.hr
http://www.hsm.hr
Grada Mainza 19, 10 000 Zagreb
Tel: +385 1 3908 930
Fax: +385 1 3758 850

**BOSSIZ d.o.o.**
boros.b@bossiz.hr
http://www.bossiz.hr/en
Zagrebačka 162b, Sesvete, 10360, Zagreb, Croatia
Tel: +385 1 2920 127
Fax: +385 1 2920 128

**DRADAR d.o.o.**
dradar@dradar.hr
http://www.dradar.hr
Veleprodaja / Office
Puževa 13
10020 Zagreb
Tel. +385 1 6594 966
Fax +385 1 6594-968

**Uprava Europatrade d.o.o.**
info@europatrade.hr
http://www.europatrade.hr
Rimski put b.b., 10360 Zagreb Sesvete
Tel: ++385 (0)1 2040 250
Fax: ++385 (0)1 2040 266

**KUMEX VELEPRODAJA**

igor@kumex.hr
http://www.kumex.hr
Šamačka 1, 31000 OSIJEK
tel: +385 31/373-777
fax: +385 31/373-778

**M+S d.o.o.**

info@ms-zagreb.hr
http://www.ms-zagreb.hr
Siverička 10, 10 000 Zagreb
Tel: +385-1-3842-505
Fax: +385-1-3842-504

**Silnica d.o.o**

silnica@silnica.hr
http://www.silnica.hr/
Andrije Žaje 10, Zagreb
Tel: +385 (0)1 4666 888
Fax: +385 (0)1 4667 515