

The ICT sector in Croatia



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

Ken Olson, president/founder of Digital Equipment Corporation

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/default_e.htm
(Croatia in figures: http://www.dzs.hr/Hrv_Eng/CroInFig/croinfig_2016.pdf)

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

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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.

Croatia had GDP growth of 2.9% (Q3 2016).

In 2017, economic activity should accelerate mildly, to 2.1 percent. For 2017, IMF expects an increase in inflation by 0.8 percent. Estimate of this year's surplus in Croatia's current account should slip to 2.2 percent.

Unemployment is relatively high and, according to official sources, reached 14.8% of the workforce in December 2016. 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 indicator 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 5 676 kuna HRK (760 euros). This represented a nominal increase of 0.1% and a real decrease of 0.4%, as compared to the first quarter of 2016. If compared to the same period of 2015, it showed a nominal increase of 1.2% and a real one of 3%.

INDICATOR	MONTHS	YEAR	VALUE
GROSS DOMESTIC PRODUCT, % REAL ANNUAL GROWTH RATES	q3	2016	2,9
INDUSTRIAL PRODUCTION, % ANNUAL CHANGES	10	2016	1,8
CONSUMER PRICES, % ANNUAL CHANGES	10	2016	-0,5
PRODUCER PRICES, % ANNUAL CHANGES	10	2016	-2
RETAIL TRADE, % REAL ANNUAL CHANGES	10	2016	5,3
TOURISM - NIGHT STAYS, % ANNUAL CHANGE	9	2016	11,5
CONSOLIDATED CENTRAL GOVERNMENT BALANCE, HRK MILLION, ESA 2010		2015	-10.706
CONSOLIDATED CENTRAL GOVERNMENT BALANCE, % OF GDP, ESA 2010		2015	-3,2
AVERAGE MONTHLY NET WAGE, HRK	9	2016	5,624
UNEMPLOYMENT RATE, % EOP	10	2016	14
NUMBER OF REGISTERED UNEMPLOYED PERSONS	10	2016	225,703
AVERAGE EXCHANGE RATE EUR/HRK	10	2016	7,5
AVERAGE EXCHANGE RATE USD/HRK	10	2016	6,8
AVERAGE EXCHANGE RATE CHF/HRK	10	2016	6,89
EXPORT OF GOODS, EUR MILLION (CBS)	8	2016	927
IMPORT OF GOODS, EUR MILLION (CBS)	8	2016	1,568
CURRENT ACCOUNT BALANCE, EUR MILLION	q2	2016	152,2
CURRENT ACCOUNT BALANCE, % OF GDP	q2	2016	4,6
EXTERNAL DEBT, EUR BILLION, EOP	8	2016	43,672
EXTERNAL DEBT, % OF GDP	6	2016	97,3
PUBLIC DEBT, % OF GDP, ESA 2010		2014	85,1
OFFICIAL INTERNATIONAL RESERVES, EUR MILLION, EOP	10	2016	12,993
MONEY (M1), HRK MILLION, EOP	10	2016	78,783
TOTAL CREDITS, HRK MILLION, EOP	10	2016	259,746
DEPOSITS WITH COMMERCIAL BANKS, HRK MILLION, EOP	10	2016	207,261

OSNOVNI GOSPODARSKI POKAZATELJI
BASIC ECONOMIC INDICATORS

INDEKSI OSNOVNIH GOSPODARSKIH KRETANJA
INDICES OF BASIC ECONOMIC INDICATORS

	2013. 2012.	2014. 2013.	2015. 2014.
Bruto domaći proizvod, stalne cijene u cijenama prethodne godine, referentna godina 2010. = 100 ¹⁾ Gross domestic product at constant previous year prices, referent year 2010 = 100 ¹⁾	98,9	99,6	101,6
Fizički obujam industrijske proizvodnje Total volume of industrial production	98,2	101,2	102,7
Ukupan broj zaposlenih u industriji Total number of employees in industry	95,2	98,3	99,4
Proizvodnost rada u industriji Labour productivity in industry	103,2	103,0	103,3
Zaposleni u pravnim osobama svih oblika vlasništva Persons in legal entities of all kinds of ownership	98,2	99,0	101,8
Prosječne mjesečne isplaćene neto plaće, ukupno Average monthly paid off net earnings, total	100,7	100,3	103,2
Realne neto plaće, ukupno Real net earnings, total	98,5	100,5	103,7
Prosječne mjesečne bruto plaće, ukupno Average monthly gross earnings, total	100,8	100,2	101,3
Realne bruto plaće, ukupno Real gross earnings, total	98,6	100,4	101,8
Ukupan broj nezaposlenih, godišnji prosjek ²⁾ Total number of unemployed persons, annual average ²⁾	106,4	95,1	87,1
Nominalni promet u trgovini na malo ³⁾ Nominal turnover in retail trade ³⁾	101,7	99,6	101,4
Realni promet u trgovini na malo ⁴⁾ Real turnover in retail trade ⁴⁾	99,4	100,4	102,4
Izvoz – preračunano u EUR Export – recalculated in EUR	99,6 ⁵⁾	108,1 ⁶⁾	111,2 ⁶⁾
Uvoz – preračunano u EUR Import – recalculated in EUR	101,9 ⁶⁾	103,6 ⁶⁾	107,9 ⁶⁾

- 1) Podaci za 2013. konačni su, dok su podaci za 2014. i 2015. privremeni (zbog tromjesečnih podataka).
2) Izvor: Hrvatski zavod za zapošljavanje
3) Godišnji podaci revidirani su radi preračunavanja na novu bazu godinu 2010.
4) Vidi Metodološka objašnjenja u Prilogu 4.2.3/2014.
5) Vidi Metodološka objašnjenja u Prilogu 4.2.3/2015.
6) Vidi Metodološka objašnjenja u Prilogu 4.2.3/2016.
7) Podaci su usklađeni s Eurostatovom metodologijom Handbook for EU Agricultural Price Statistics version 2.0, March 2008.
8) The data are harmonised with the Eurostat Methodology Handbook for EU Agricultural Price Statistics, version 2.0, March 2008.

OSNOVNI GOSPODARSKI POKAZATELJI
BASIC ECONOMIC INDICATORS

INDEKSI OSNOVNIH GOSPODARSKIH KRETANJA
INDICES OF BASIC ECONOMIC INDICATORS

	2013. 2012.	2014. 2013.	2015. 2014.
Indeks potrošačkih cijena – ukupno Consumer price index – total	102,2	99,8	99,5
Prehrana i bezalkoholna pića Food and non-alcoholic beverages	103,7	97,8	100,4
Alkoholna pića i duhan Alcoholic beverages and tobacco	109,6	106,2	102,0
Odjeća i obuća Clothing and footwear	96,1	95,8	99,8
Stanovanje, voda, električna energija, plin i ostala goriva Housing, water, electricity, gas and other fuels	104,8	101,7	99,9
Pokupstvo, oprema za kućanstvo i redovito održavanje kućanstva Furnishings, household equipment and routine maintenance of the house	100,5	99,2	99,7
Zdravlje Health	101,1	100,8	101,7
Prijevoz Transport	99,1	100,1	93,3
Komunikacije Communication	98,4	99,5	101,1
Rekreacija i kultura Recreation and culture	100,7	100,8	102,1
Obrazovanje Education	100,2	100,1	99,6
Restorani i hoteli Restaurants and hotels	102,0	101,7	101,1
Ostala dobra i usluge Miscellaneous goods and services	101,7	99,6	100,0
Indeksi cijena industrijskih proizvoda pri proizvođačima na domaćem tržištu (IKD 2007.) Producers' price indices of industrial products on domestic market (IKD 2007.)	100,5	97,3	96,1
Indeksi cijena proizvoda poljoprivrede pri proizvođačima ⁷⁾ Producers' price indices of agricultural products ⁷⁾	93,8	95,0	100,4
Industrijska proizvodnja – ukupno Industrial production – total	98,2	101,2	102,7
Prema Glavnim industrijskim grupacijama – IIG 2009. According to Main Industrial Groupings – IIGs 2009.			
AI Intermedijarni proizvodi Intermediate goods	98,2	103,4	102,4
AE Energija Energy	104,5	93,8	99,2
BB Kapitalni proizvodi Capital goods	89,5	100,4	106,0
CD Trajni proizvodi za široku potrošnju Durable consumer goods	98,7	104,3	99,5
CN Netrajni proizvodi za široku potrošnju Non-durable consumer goods	97,4	103,1	103,6

- 7) Podaci su usklađeni s Eurostatovom metodologijom Handbook for EU Agricultural Price Statistics version 2.0, March 2008.
8) The data are harmonised with the Eurostat Methodology Handbook for EU Agricultural Price Statistics, version 2.0, March 2008.

Economic overview of Croatia

Croatia is included in the group of countries with small and open economies, which are largely connected to other foreign markets. The priority of Croatia's economic policy is the continuation of making stable and strong market - oriented economy which is competitive in the global market, constant reinforcement of macroeconomic stability and the continuation of structural reforms for the purpose of securing stable and sustainable economic growth, increase in production, especially import and increase in employment. The particular emphasis is on creating a favorable business environment harmonized with the business environment prevalent in the European Union, further development of market economy, stimulation of private investments, promotion of international competitiveness, and entrepreneurial and market freedom. In terms of primary goals of economic policy of the Republic of Croatia, a special position is given to foreign investments which are very important for the future development of the country and further restructuring and modernization of the economy. Basic economic goals include export growth, quality standards introduction, meeting ecology requirements and achieving expenditure efficiency. One of the primary goals of the economic policy of Croatia's government is to create a stimulating business environment, harmonized with the standards used in the EU and countries with developed market economies. The basic features of Croatia's economy are industry, agriculture, forestry, fishing industry and food, drink, tobacco production, construction, transport and communication and trade.

Croatia is mostly an exporter of transport equipment, machinery, textiles, chemicals, foodstuffs and fuels. On the other hand, Croatia is an importer of machinery, transport and electrical equipment, fuels and lubricant and foodstuffs. Croatia's mainly exports to Italy, Bosnia and Herzegovina, Germany, Slovenia, Austria and Serbia.

The Croatian economy accelerated in Q1 2016, on the back of strong private consumption and fixed investment. According to the latest high-frequency data, the good economic momentum likely carried over into Q2, steadily supported by strong consumer spending, as evidenced by the increase in retail sales in both April and May. Croatian households are giving impetus to economic activity, sustained by increased disposable income and the falling unemployment rate. Moreover, the fiscal deficit more than halved in the first five months of 2016 compared to the same period last year, and both exports and imports increased.

Croatia's economy expanded 0.6 percent on quarter in the second quarter of 2016, the same pace as in the previous period. GDP Growth Rate in Croatia averaged 0.35 percent from 2001 until 2016, reaching an all-time high of 4.20 percent in the first quarter of 2008 and a record low of - 3.70 percent in the first quarter of 2009. GDP Growth Rate in Croatia is reported by the Croatian Bureau of Statistics.

The most important sector of Croatian economy is services with tourism accounting for 20 percent of GDP. The industry, although declining in recent years, is led by shipbuilding, food processing, pharmaceuticals and information technology.

On the expenditure side, household consumption is the main component of GDP and accounts for 60 percent of its total use, followed by government expenditure (20 percent) and gross fixed capital formation (19 percent). Exports of goods and services account for 46 percent of GDP while imports account for 44 percent, adding 2 percent of total GDP.

Croatia is a member of the IMF, the European Bank for Reconstruction & Development and the World Trade Organization.

Source: <http://www.tradingeconomics.com/croatia/gdp>, <http://www.focus-economics.com>, <http://www.mvep.hr>, <http://www.dzs.hr>

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. As the government remains the major investor in ICT in Croatia.

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 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. Despite all the difficulties ICT sector in Croatia is one of the best sectors of Croatian economy, especially since a large part of it is focused on exports. ICT sector in Croatia has annual revenues of around 21 billion kuna. Croatian ICT sector is actually doing quite well and keeps growing by about ten percent per year. Even in the recessionary years all the main trends in the sector are positive: growth of exports and number of employees. The facts show that ICT is one of the most propulsive sectors of the Croatian economy. Directly employs more than 22,000 people, with around ten thousand additional ICT professionals who work in companies engaged in other industries. Croatia is also recording a growth of employment in ICT and is in 54th place out of 143 countries in its competitiveness in the use of information and communications technologies.

Croatian IT export is five times higher than the export of telecom sector or tobacco products, nearly three times higher than the export of beverages and textiles, and twice the export of paper. It is already two-thirds of export of pharmaceutical products as well as export that achieve domestic farmers, foresters and fishermen together. 58 per cent of Croatian IT exports are local products and services. The three largest IT companies in Croatia are MSAN group, then Combis property of Croatian Telecom and King ICT.

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.

<http://www.telecompaper.com/news/smartphone-sales-up-61-percent-in-croatia--972556>

In the Adriatic region, Croatia accounts for around 40% of IT spending. It is the largest market in the region, ahead of Slovenia and Serbia

After several years of negative performance in the IT sector, the sector grew at an average rate of 6% over the last three years. The local branch of one reliable ICT market research agency estimates that the ICT market will grow by 9% next year, reaching about \$2.5 billion. Croatian IT spending per capita was about 30 % of the EU average. The Croatian telecommunication sector is one of the most developed sectors of the Croatian economy, and still has a preference for U.S. equipment, regardless of the increasing presence of Asian manufacturers.

<http://www.telecompaper.com/news/croatia-to-have-six-times-more-smartphones-by-2020--978682>

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

https://www.google.com.mx/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CCYQFjAA&url=http%3A%2F%2Fec.europa.eu%2Finformation_society%2Fnewsroom%2Fcf%2Fdae%2Fdocument.cfm%3Fdoc_id%3D2223&ei=JIEzU8eRLbL62gX6zICQBA&usg=AFQjCNHxnxVwq67HDIF-hg0UK5DwqMVyPA&sig2=M3V9urHsAz1Mr6MdB7Sqhw

2. List of current ICT regulations in the Republic of Croatia

Recognizing the importance of information technology (IT), the Croatian government has, over the past five years, adopted a number of initiatives and corresponding laws aimed at developing an information society. In that context, the Central State Administrative Office for e-Croatia was formed, a number of government services have been offered online and several online databases of court precedents have been introduced.

For ICT initiatives to be successful, an effective legal framework is indispensable. In that respect, Croatia adopted a number of laws to support ICT development and its application in the business sector, such as the Electronic Signature Act, the Electronic Commerce Act, the Personal Data Protection Act, the Right to Information Act, the Information Secrecy Act and the Information Security Act.

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:

- **E-Government Legislation**

Current status

There is no specific E-Government legislation in Croatia; however, the country has a comprehensive framework of laws and regulations in place for exercising e-Governance 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)

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 achievement 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 its 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.

Source:https://joinup.ec.europa.eu/sites/default/files/egov_in_croatia_-_january_2015_-_v_12_0_final.pdf

Some other interesting related documents are:

- DEVELOPMENT OF E-BUSINESS IN CROATIA :
<https://bib.irb.hr/datoteka/473671.developpement-of-e-business.pdf>
- DEPLOYMENT OF e-INVOICE IN CROATIA
https://bib.irb.hr/datoteka/391700.SS2_346_Vanjak.pdf

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://www.hgk.hr/english>), 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. Additionally, the CCE is the first public institution within the Republic of Croatia which has, from 2005, introduced and certified the quality management system related with the ISO 9001 Standard, in which is included not only the Headquarters in Zagreb, but also includes County Chambers.

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b) E-Croatia Program

This program was created in 2004 by the Croatian Government and its implementation started the same year. 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.

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.

e-Citizens

The system e-Citizens is project of the Croatian Government launched to simplify and advance citizens' communication with public administration and to increase transparency of the public sector. The system was launched in June 2014 and is available via <https://pretinac.gov.hr>

By using the system, citizens can request electronic copies of birth certificates, marriage or life partnership certificate, ask for electronic records of residence or owned vehicles and many other documents.

e-Consultations

Portal "e-Consultations" provides citizens with easy access to all currently open consultations on regulations, laws and acts issued by public authorities.

e-Court Case

This automated system provides information on the current status of the court case at the national level. System can monitor the status of cases at municipal, county and other courts, list of case participants and other important information about the case. It enables monitoring and provides detailed statistics on the work of the courts, verdicts, court minutes and other reports.

Fiscalization

Being one of the measures for suppression of grey economy and unfair competition, fiscalization was introduced in many countries, according to different models and IT solutions and with different experiences. The Croatian solution is based on the first online fiscalization system. This is an open solution that enables an online working mode without time delays. This has reduced possibility of tampering with receipts because every receipt is delivered to the Tax Administration in real time. Digital certificates are used to ensure authentication of user and protection of data.

e-Construction Permit

This information system is used for issuing construction or building permits in all Croatian counties and cities. The main goal of this centralized system is to raise the quality of administrative and non-administrative procedures by simplifying and speeding up the procedure.

Open Data Portal

Data.gov.hr is a data hub used for collection, classification and distribution of open data produced by public sector. This data can be used to create added value or economic benefits in commercial and/or non-commercial purposes. Project aims to improve the dissemination of public open data through a unique and central place and enable implementation of innovative non-commercial and commercial applications. The goal is to intensify cooperation with the private sector, particularly in the field of information technology and to originate improvement of electronic public services as well as increase of transparency of public administration.

e-Class Register

The e-Class Register is a web application for the management of the class registry in an electronic format. The application fully replaces the paper documentation with additional functionalities enabled through the use of IT.

e-Employment Records and e-Employee Registration

The e-Employment Record facilitates citizens' access to information on work history and former employers. With e-Employee Registration system employers can electronically register their employees and make changes related to pension insurance and other. Application for health insurance is done automatically and there is no duplication of the process or need to queue at the counters.

e-Medical Appointments

The project goal was to create and implement the national electronic system of booking medical appointments. System has connected over 5000 primary healthcare practices, over 60 hospitals, 400 clinics and primary healthcare centres. Booking medical procedures became easier and quicker.

E-health

The Croatian government wanted to offer to its citizens a more efficient health information system. A solution was developed with the goal of integrating healthcare processes, information management and business workflows. Connecting 2400 primary healthcare teams in the 20 counties and the capital, Zagreb, the Healthcare Networking Information System provides electronic reporting and booking, updates patient records, and digitalizes prescriptions and referrals, so they can be sent to pharmacies, hospitals and laboratories without the need for printouts.

Ministry of Public Administration for e-Croatia (e-Hrvatska)

Phone: + 385 1 2357 543 Telefax: +385 1 2357 693

E-mail: e-gradjani@uprava.hr

Source: https://www.ericsson.com/article/e-health_croatia_1633598732_c,
https://www.ericsson.com/res/thecompany/docs/success_stories/2009/e-health_croatia.pdf , <http://www.ericsson.hr/homepage>

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.

HITRO.HR counters within the Financial Agency (FINA) can be the easiest and fastest way to establish a company or open a business. HITRO.HR service provides Web services that are available from your own office or home, 24 hours a day at a time when it best suits you.

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 labour).

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 information

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Telefax: +385 1 6127 008

E-mail: Hitro-Zagreb@hitro.hr

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 Mr. Goran Zeković. HIT has several departments: Finance, TEST Program (incentives for Croatian Technology program), Business Research, Technological Forecasting, Technology Transfer and International Cooperation.

Contact information

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Phone: +385 1 5494 721

Telefax: +385 1 5494 720

Contact person: Goran Zeković

E-mail: goran.zekovic@hit.hr

f) BICRO

Croatia has a Business Innovation Centre. 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.

<http://www.hakom.hr>

Hrvatska agencija za poštu i elektroničke komunikacije

Contact information

Ulica Roberta Frangeša Mihanovića 9

10 110 Zagreb

Tel.: + 385 1 700 70 07

Fax: + 385 1 700 70 70

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.

CROATIAN INFORMATION TECHNOLOGY ASSOCIATION

Ilica 191e/II

10000 Zagreb

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Fax: +385 1 2222-723

e-mail: hiz@hiz.hr

<http://www.hiz.hr/english>

I) CARNET- Croatian Academic and Research Network

Croatian Academic and Research Network - CARNet is a public institution that today operates under the Ministry of Science, Education and Sports in the field of information and communication technologies and its application in education from network and Internet infrastructure through e-services, to security and user support.

CARNet services are available to educational institutions (from K-12 to higher education, including research centres and institutes) and individual users alike. Institutional users are automatically included in the network of CARNet members, as a result of which they are connected to CARNet network and gain the right to use CARNet services. Individual users include primary and secondary school students, teachers, university students, professors, scientists and staff employed at CARNet member institutions. Recently CARNet services are also available to other public institutions such as hospitals, certain ministries etc. (<https://www.carnet.hr/en>).

Contact information

Josipa Marohnića 5

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Tel.: +385 1 6661 616

Fax: +385 1 6661 615

E-mail: Zvonimir.Stanic@CARNet.hr

J) OIV-Transmitters and communications Ltd.

With more than 80 years of radio and more than 50 years of television broadcasting experience, Oiv provides national TV and radio broadcasting services in Croatia, which includes transmission for all national Croatian TV and radio stations and most regional and local TV stations.

Besides terrestrial broadcasting, Oiv is able to provide TV and radio satellite broadcasting services from any satellite visible from Croatia.

Contact information

Ulica grada Vukovara 269d,

10000 Zagreb

Tel.: +385 1 618 6000

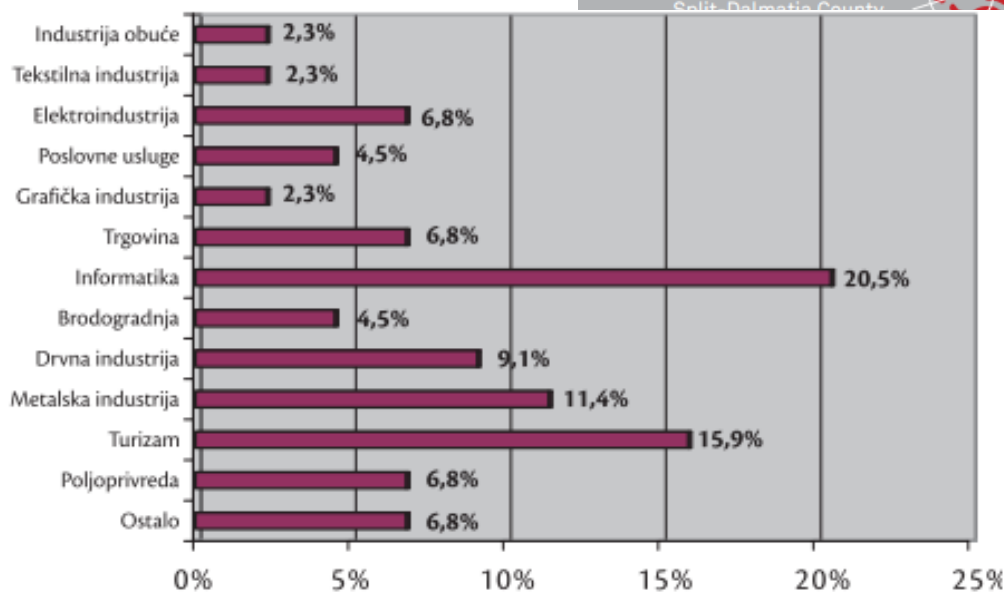
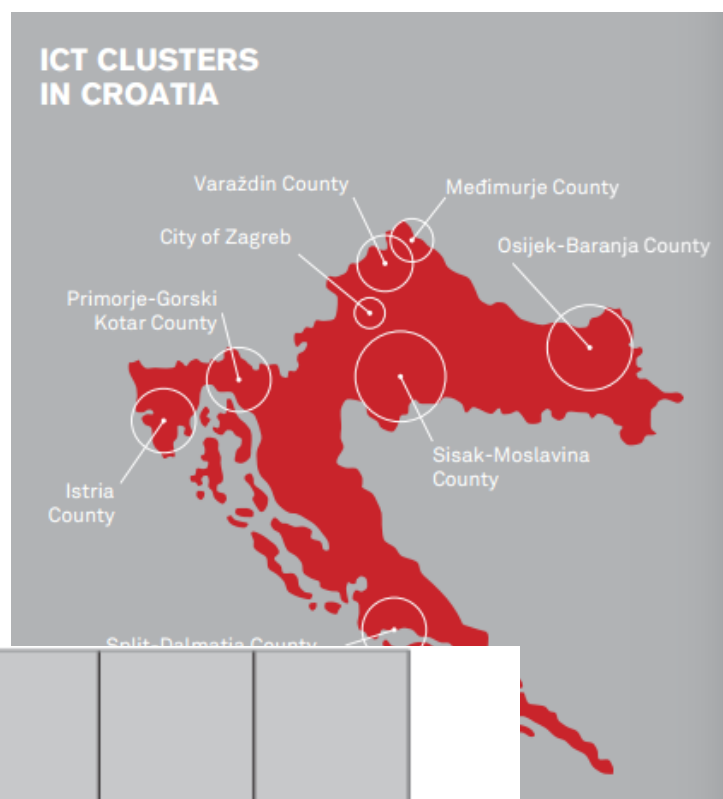
Faks: +385 1 618 6100

E-mail: oiv@oiv.hr

Internet: <http://www.oiv.hr>

4) Cluster Organization of ICT companies in Croatia

In order to survive on the market, small companies are grouped in Clusters. A cluster represents a great potential, growth and development, not only through the cooperation of subjects within the ICT industry, but also through synergies with other industries. 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, Bana Josipa Jelačića 22b, Čakovec / www.mit-cluster.hr / infor@mit-cluster.hr

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

5) Internet in Croatia

The introduction of Internet in Croatia officially started in 1991. Broadband Internet access is used increasingly, replacing narrowband (dial-up) Internet access, due to higher data transmission rates and service packages with unlimited Internet traffic. With the aim to develop broadband Internet, in September 2006, the Government of the Republic of Croatia adopted the Broadband Development Strategy in the Republic of Croatia by the year 2008.

The main goal of the Strategy is to increase the number of broadband Internet users in the Republic of Croatia, as the basic condition for creating information society and economy. 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.

a) USAGE OF INTERNET IN ENTERPRISES

Usage of broadband internet access prevailed; 91% of enterprises used some type of fixed broadband internet connection; 80% of enterprises used mobile broadband internet access. Internet sales covered only 14% of the total sales of goods and services. Social internet media usage was not widespread and was used by 38% of enterprises. The survey of ICT in enterprises (www.dzs.hr) showed that 91% of enterprises have internet access. The internet became a necessity for efficient business conduct, so 69% of enterprises had their own web site. 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 better quality of business conduct. The availability and affirmation of mobile devices caused a change in the trend of internet access. There were 87% of enterprises (a decrease of 6%) that used a fixed broadband connection (DSL, cable, leased line). At the same time, usage of mobile internet increased.

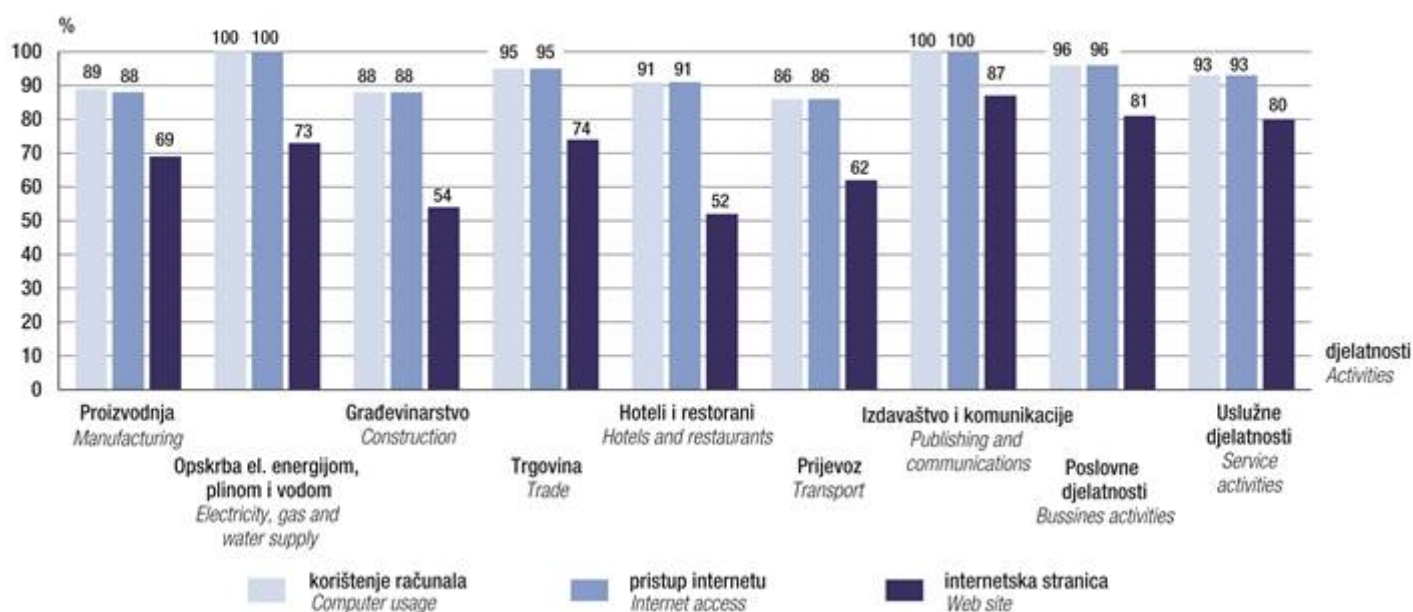
Mobile internet access was used by 80% of enterprises (an increase of 16%). Usage of the internet caused changes in the ways of business is conducted by enabling integration of business processes at a higher level. Internet connection speed becomes an important factor in business conduct. The increasing availability of broadband internet boosts data transfer speed. A significant increase was spotted in a segment that offers data transfer speed of over 10 Mbps. That segment consists of 49% of enterprises (an increase of 14%). The appearance of the cloud computing internet service is a new technology used by 23% of enterprises.

The next scheme shows us the usage of Internet by companies divided into different sectors:

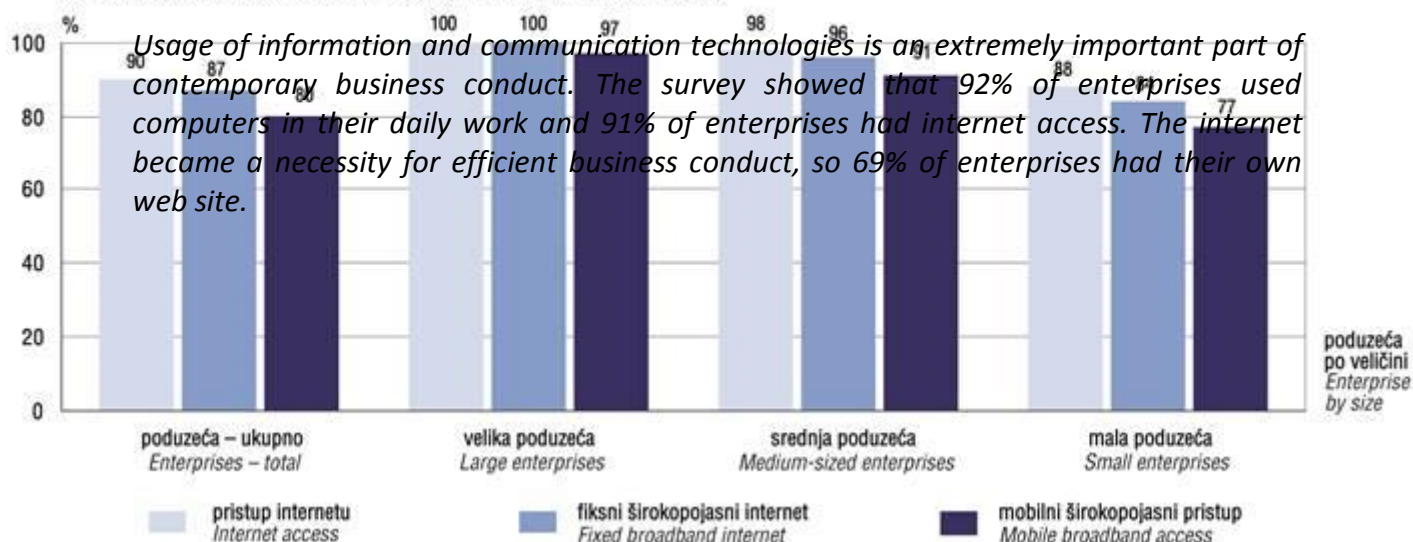
Source:

http://www.dzs.hr/Hrv_Eng/publication/2016/02-03-01_01_2016.htm

G-1. UPORABA IKT-a U PODUZEĆIMA PO DJELATNOSTIMA U 2016.
USAGE OF ICT IN ENTERPRISES, BY ACTIVITIES, 2016

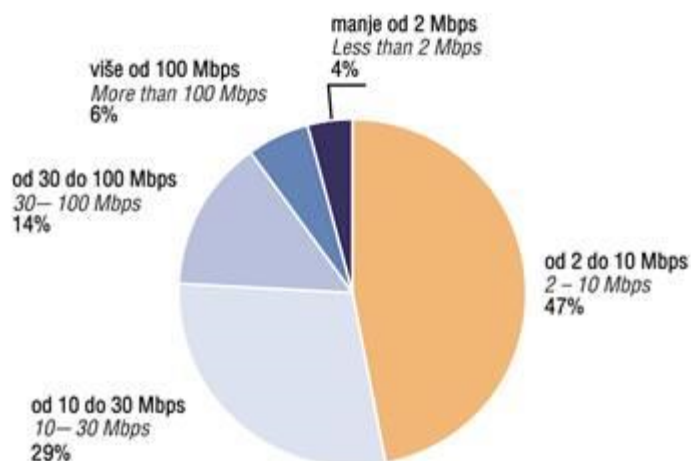


G-2. PRISTUP INTERNETU U PODUZEĆIMA I PO VELIČINI PODUZEĆA U 2015.
ACCESS TO INTERNET IN ENTERPRISES, BY ENTERPRISE SIZE, 2015



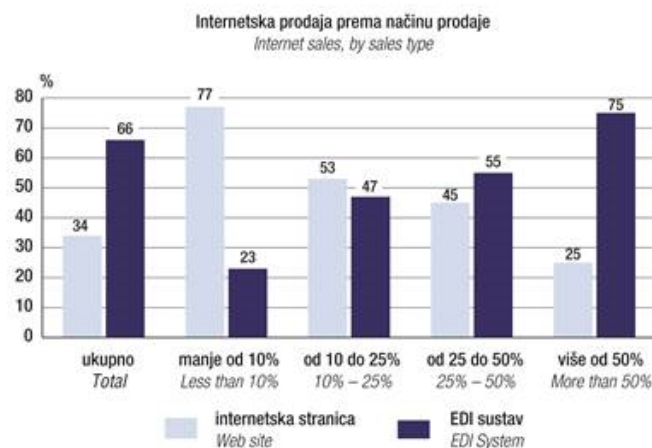
The internet and other network technologies allow for connectivity between sectors within an enterprise and the integration of business processes that contribute to more efficient business conduct. The type and speed of data transfer allow for a higher quality of business conduct. The availability and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

G-3. UGOVORENA BRZINA INTERNETSKJE VEZE U PODUZEĆIMA U 2015.
CONTRACTED SPEED OF INTERNET ACCESS IN ENTERPRISES, 2015



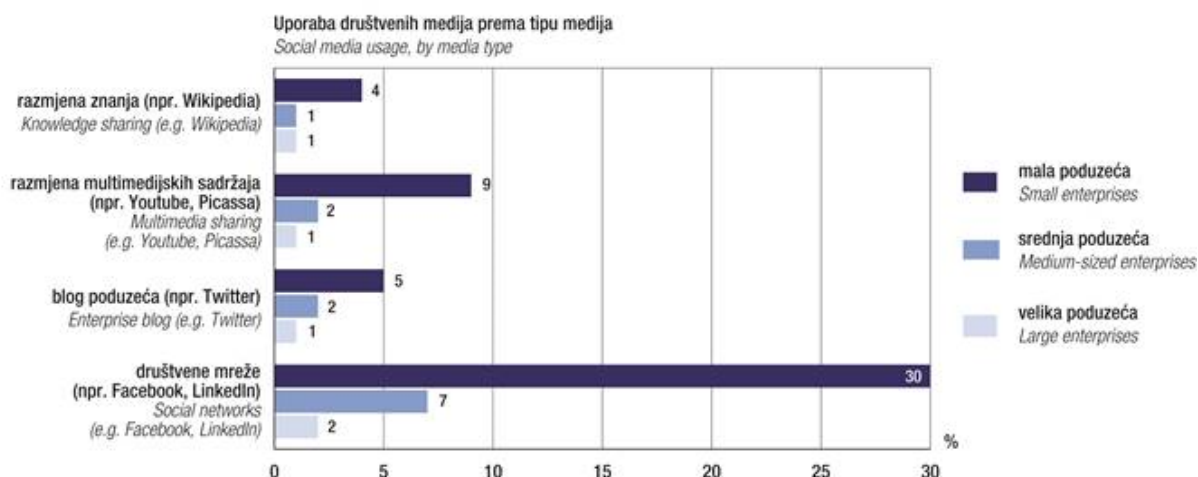
Usage of the internet caused changes in the ways business is conducted by enabling integration of business processes at a higher level. Internet connection speed becomes an important factor in business conduct. The increasing availability of broadband internet boosts data transfer speed. A significant increase was spotted in a segment that offers data transfer speed of over 10 Mbps. That segment consists of 55% of enterprises (an increase of 6%)

G-4. E-TRGOVINA – INTERNETSKA PRODAJA U PODUZEĆIMA U 2015.
E-COMMERCE – INTERNET SALES IN ENTERPRISES, 2015



The integration of business processes and communication between business entities via the internet allows 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 14% of sales were conducted via the internet. Two thirds of transactions were completed via the electronic data interchange systems (EDIs), while one third was completed by selling via web page

G-5. UPORABA DRUŠTVENIH INTERNETSKIH MEDIJA U PODUZEĆIMA U 2016.
SOCIAL INTERNET MEDIA USAGE IN ENTERPRISES, 2016



Social internet media usage is monitored in order to determine their influence on business processes and business results. The survey shows that social media were mostly used for advertising and exchanging information with customers via blogs or social networks. They were predominantly used in small enterprises, while medium-sized and large enterprises rarely used social internet media for business purposes.

b) USAGE OF INTERNET IN HOUSEHOLD AND BY INDIVIDUALS

As already said, almost all households used broadband internet access. A majority of households used fixed broadband internet access, while the share of households using mobile broadband internet access increased from 38% to 47%, mostly due to the increased availability of mobile devices such as tablets, mobile phones and USB modems using the 3G/4G technology.

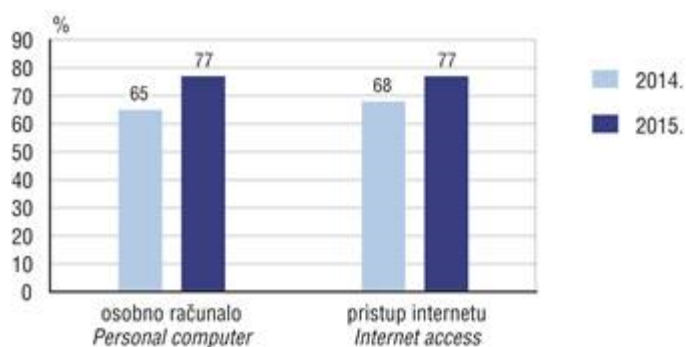
Reference: http://www.dzs.hr/Hrv_Eng/publication/2015/02-03-02_01_2015.htm

Tendencies:

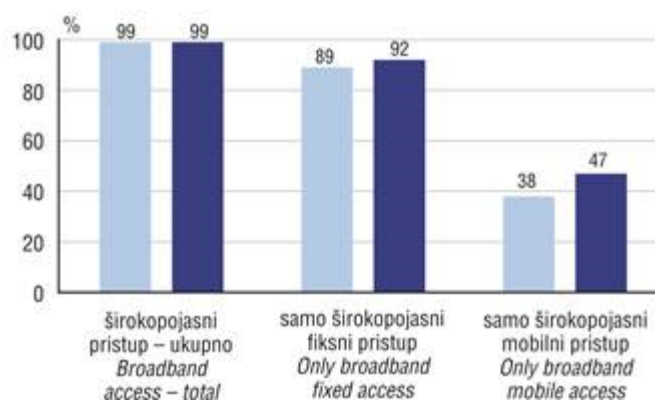
- The share of households equipped with ICT is rising.
- The availability of broadband internet access rose; a significant increase in the usage of broadband internet was noticed.
- Computer and internet usage was at a high level with the population up to age 44; an increase among all age groups was noticed.
- Increase in the usage of online e-government services.

- Commerce via the internet is increasing; 31% of individuals purchased goods or services via the internet during the previous year (an increase of 3% compared to 2014).

G-1. OPREMLJENOST KUĆANSTAVA IKT-om U 2015.
HOUSEHOLDS EQUIPPED WITH ICT, 2015

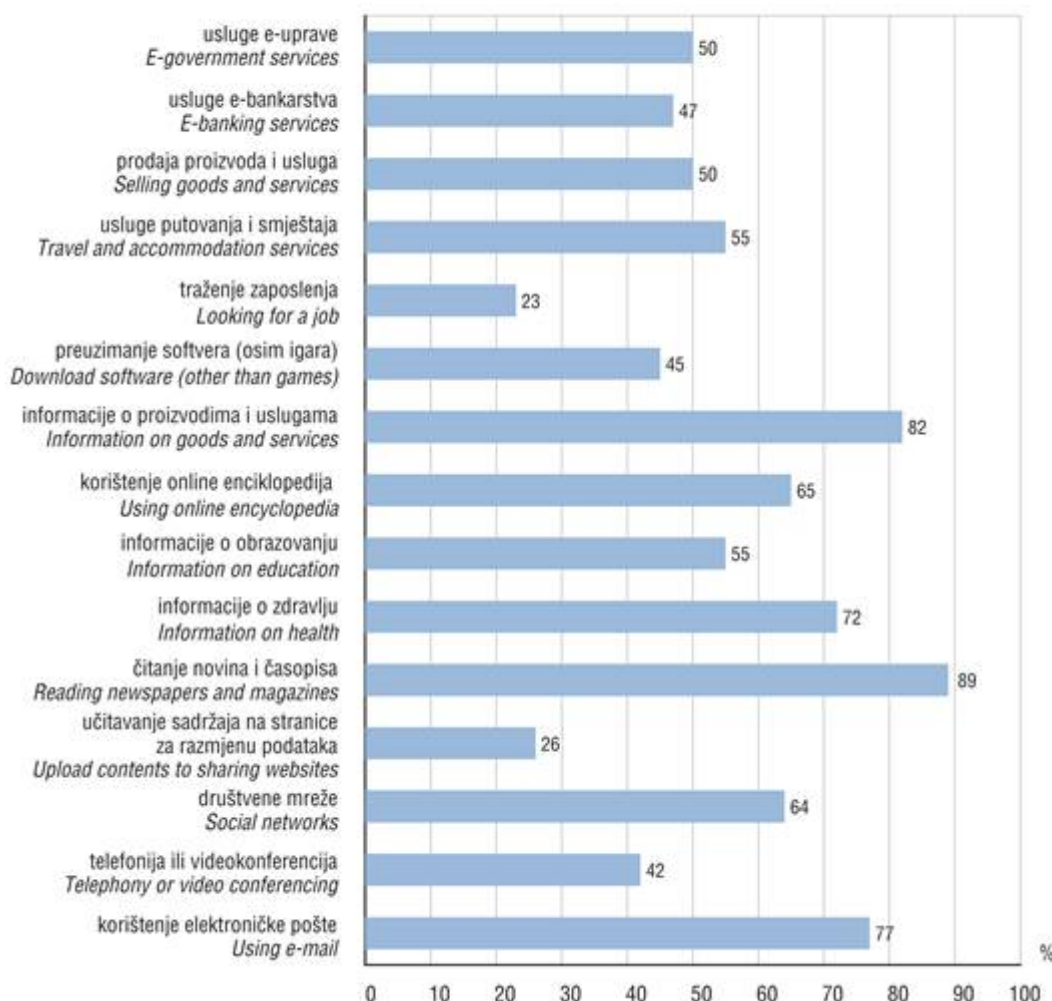


G-2. NAČINI PRISTUPANJA INTERNETU U KUĆANSTVIMA U 2015.
TYPES OF INTERNET ACCESS IN HOUSEHOLDS, 2015



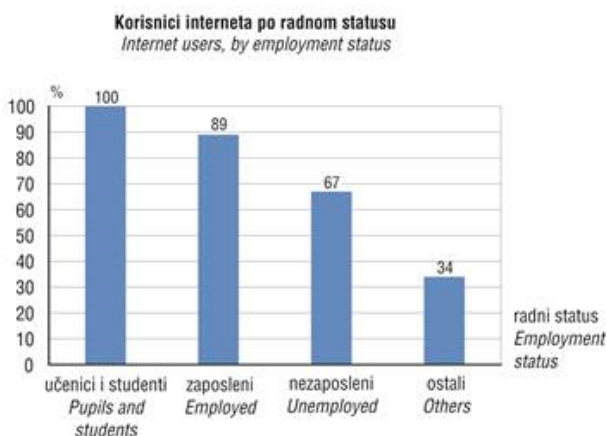
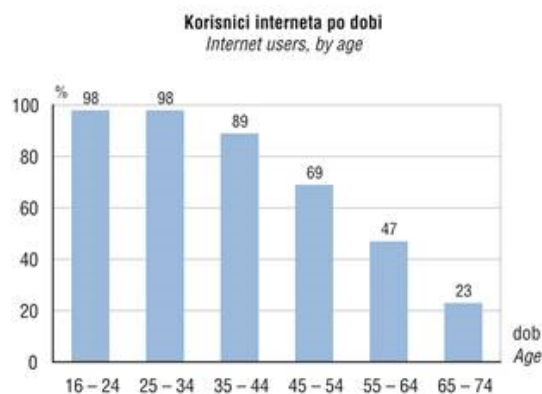
The survey results showed that the share of households equipped with ICT in the Republic of Croatia increased compared to previous year. There was a significant increase recorded in broadband internet access; almost all households used broadband internet access. A majority of households using mobile broadband internet access increased from 38% to 47% mostly due to the increased availability of mobile devices such as tablets, mobile phones and USB modems using the 3G/4G technology.

G-6. NAMJENA UPORABE INTERNETA KOD POJEDINACA U 2015.
PURPOSE OF INTERNET USAGE BY INDIVIDUALS, 2015



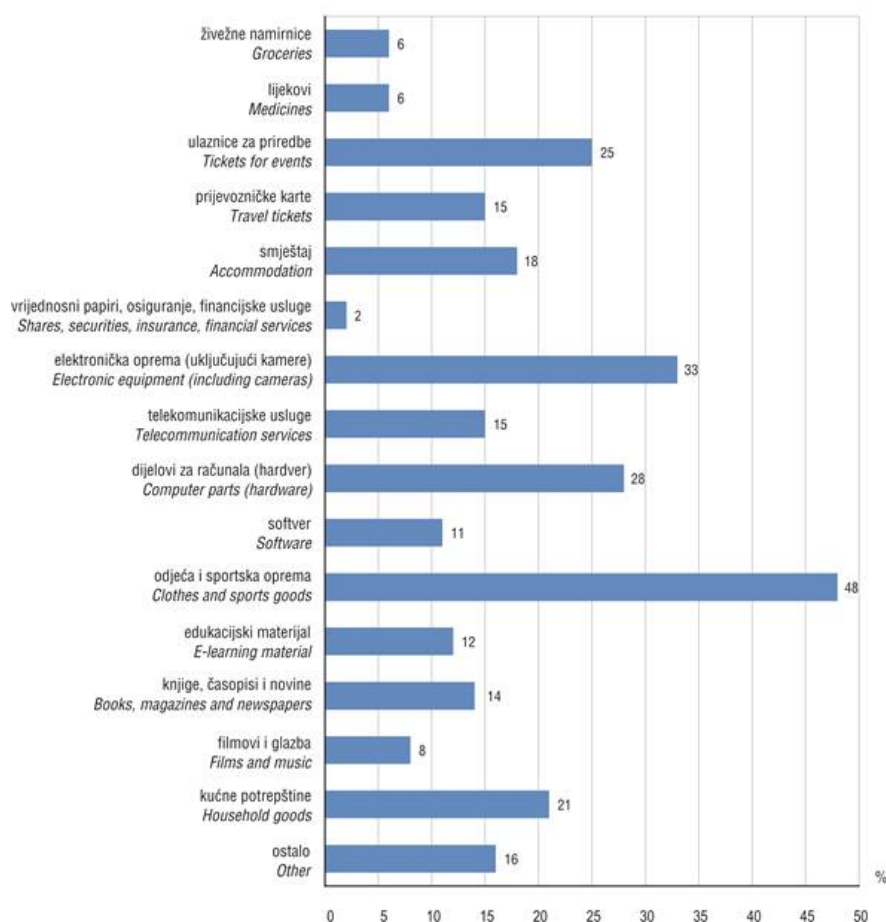
The comparison of the results with the data from the previous year showed that individuals mostly used the internet for obtaining information on goods and services (82%), obtaining information on health (72%), e-mail usage (77%), for reading daily news and magazines (89%) and participating in social networks (64%). A significant increase was spotted in usage of travel and accommodation services (22%) and E-banking services (19%).

G-5. UPORABA INTERNETA KOD POJEDINACA U 2015.
USAGE OF INTERNET BY INDIVIDUALS, 2015



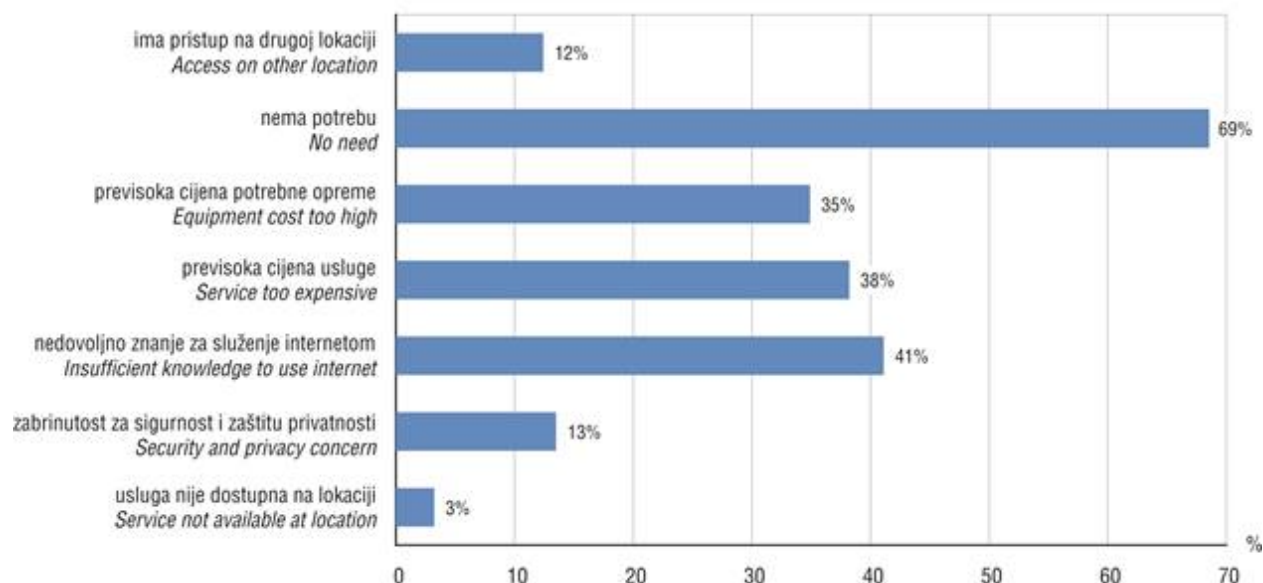
As shown in the previous chapter, the increase in the number of internet users was noticed among all age groups. The number of users aged over 65 increased by 6%. The number of internet users also increased in all categories by employment status

G-7. INTERNETSKA KUPNJA KOD POJEDINACA U DRUGOM POLUGODIŠTU 2014. I PRVOM POLUGODIŠTU 2015.
INTERNET PURCHASES INDIVIDUALS, SECOND HALF OF 2014 AND FIRST HALF OF 2015



The survey results showed that commerce via the internet became more widespread. There were 31% of individuals who purchased goods and services via the internet, which is an increase of 3% compared to the previous year. Buyers' habits were very similar to those recorded in the previous year: household goods, clothes and sports equipment, tickets for events, electronic equipment and computer parts were the most favoured ones.

G-3. RAZLOZI NEPOSJEDOVANJA INTERNETSKOG PRIKLJUČKA U 2015.
REASONS FOR NOT HAVING INTERNET ACCESS, 2015



Out of the total number of surveyed households, 23% did not have internet access. The survey results showed that the most common reason was the lack of a need for it. A significant share of respondents highlighted the cost of services and equipment being too high as an important reason for not having internet access.

Development of the market

T-HT trials G.fast technology; VIPnet planning to introduce DOCSIS3.1-based services; Optima Telekom announces plans to merge with H1 Telekom; Novi-Net granted national WiMAX licence; VelaTel Global Communications expands wireless broadband capacity; T-HT launches Stream On videostreaming service; DVB-T2 to be deployed by 2020; regulator awards more funding to promote rural broadband; telcos' operating and financial data to Q3 2016, recent market developments.

Source: <https://www.budde.com.au/Research/Croatia-Fixed-Broadband-Digital-Economy-and-Digital-Media-Statistics-and-Analyses>

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".

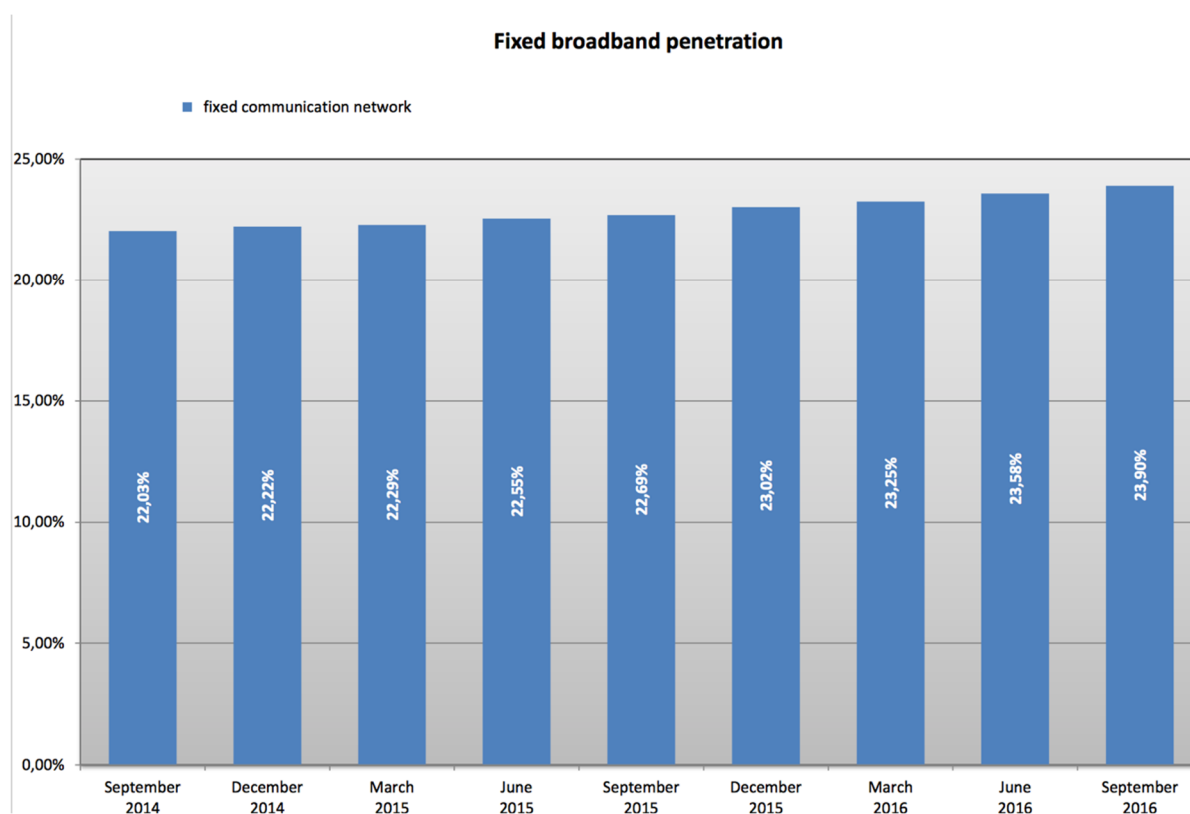
WiMAX has been hailed as having the potential to connect remote areas to high-speed broadband services, because it can bridge the fixed-line infrastructure gaps, but in most cases the initial development of these networks starts with the large cities. In 2005 Croatia's telecom regulator awarded 10 WiMAX 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.

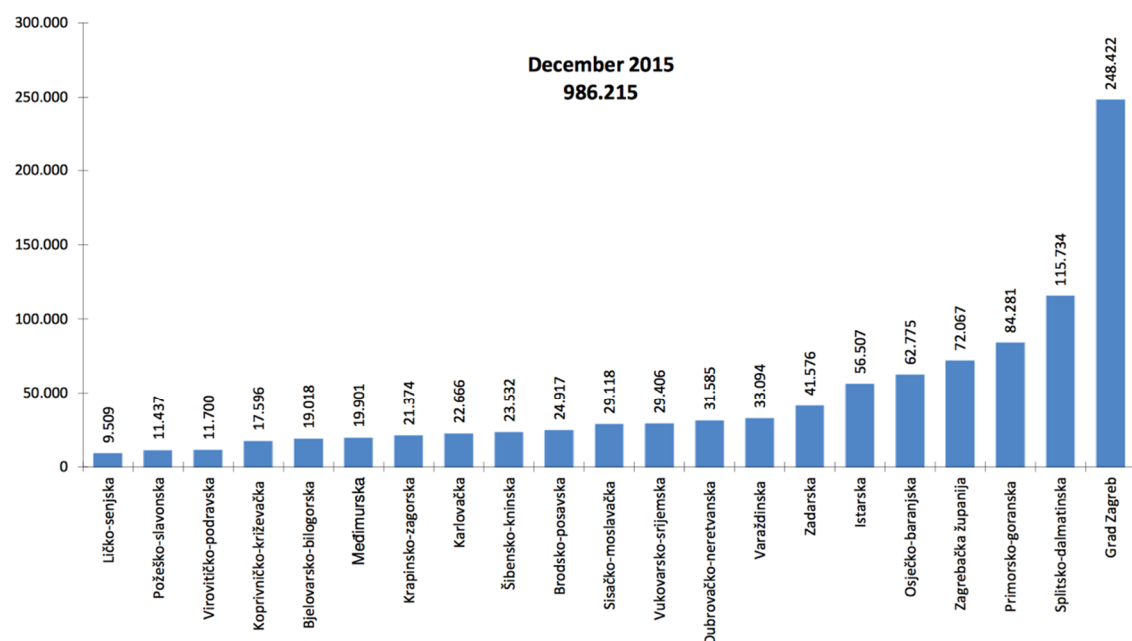
Croats can access the global network also in Internet cafes, public libraries and the school/university network. In schools/universities, internet access is provided by CARNet.

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 Bloger.hr and Blog.hr.

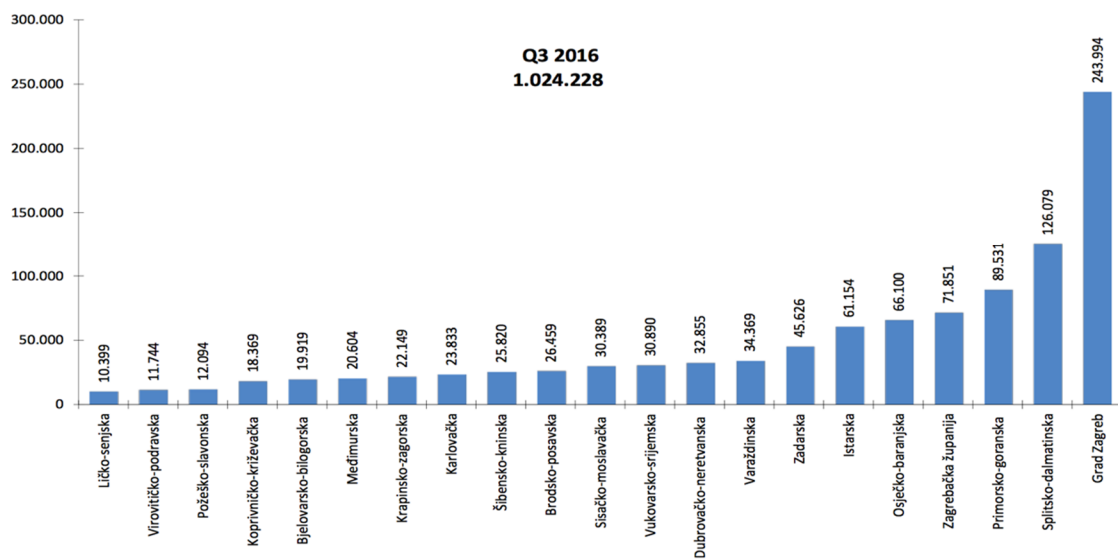
With Croatian communities present in other former Yugoslavian republics and with the Serbo-Croatian language spoken by virtually everyone in the former Yugoslavia, there is potential for development outside the national borders for online media and social networks.

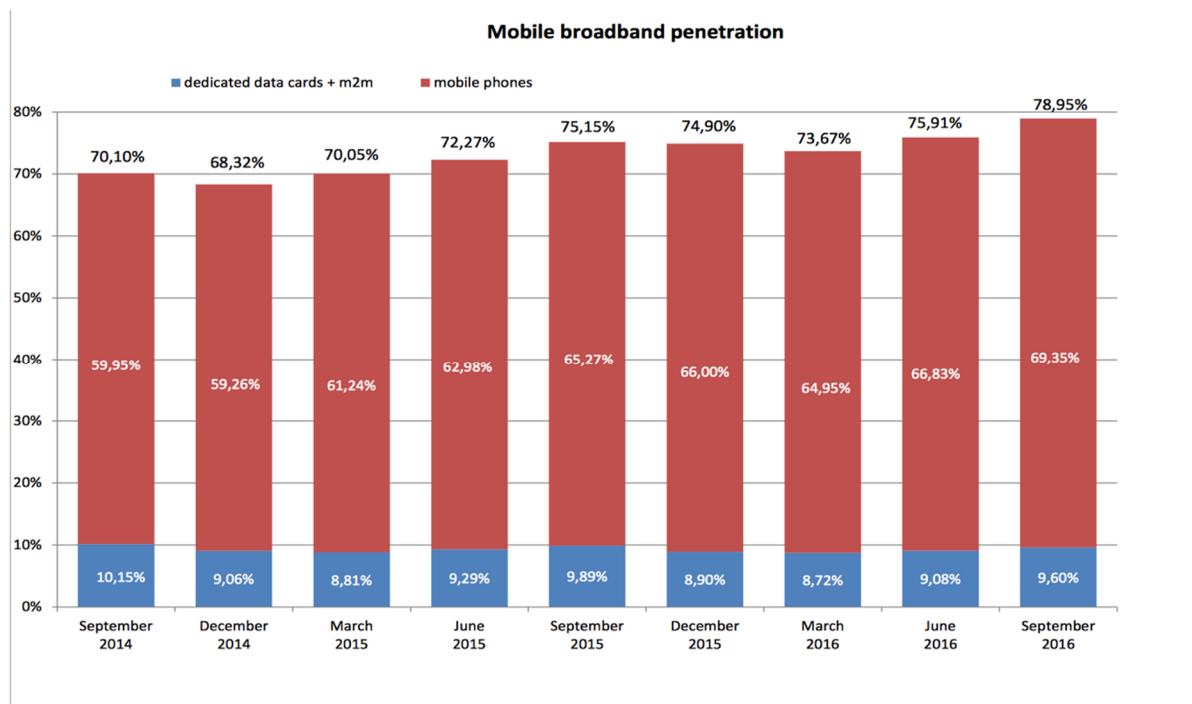


Number of broadband lines by county
fixed communication network
end of 2015



Number of broadband lines by county
fixed communication network
Q3 2016





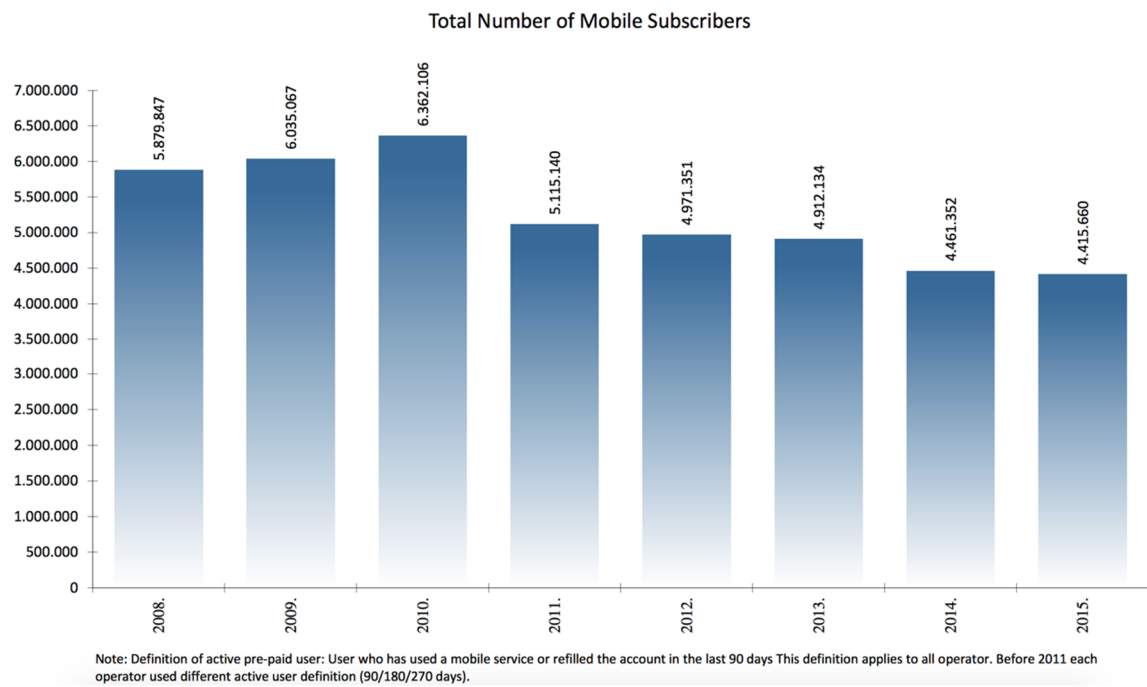
6) Telecommunications in Croatia

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.

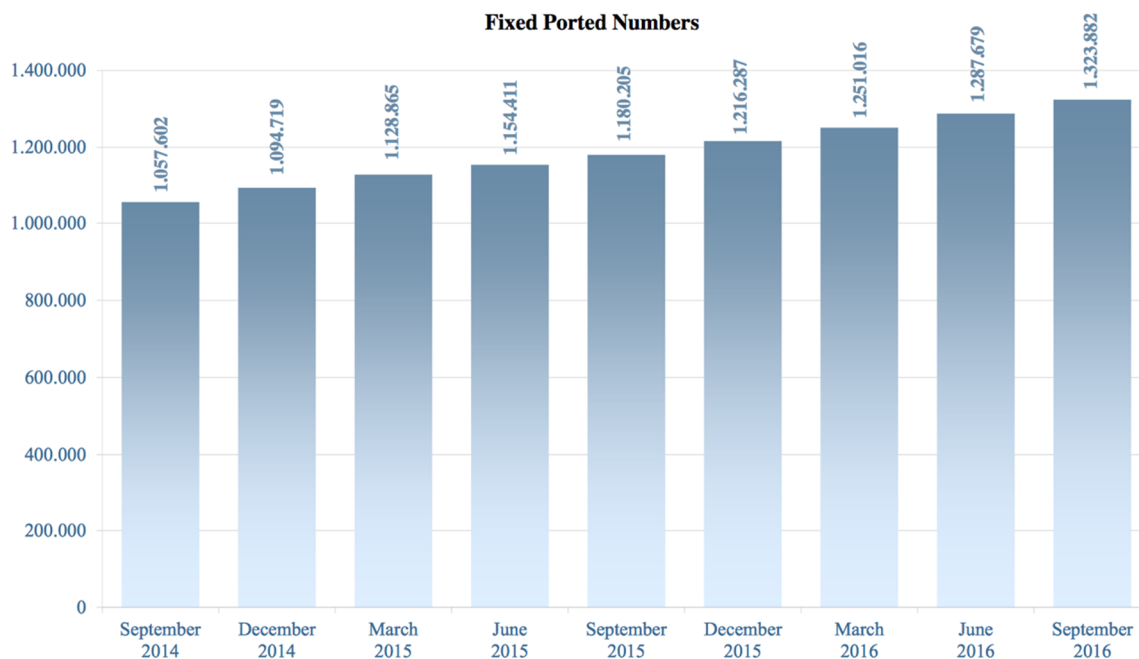
Key developments:

- Regulator sets out amended wholesale access tariffs for 2017;
- T-HT takes over management of Optima Telekom, applies to extend management oversight to 2021;
- T-HT to invest HRK2 billion on fibre infrastructure;
- VIPnet acquires three regional cable companies;
- Regulator sets new fixed and mobile termination rates to 2019;
- T-HT trials LTE-Advanced Pro technology to deliver data at up to 500Mb;
- Regulator allocates remaining 800MHz spectrum;
- T-HT trials G.fast technology;
- VIPnet planning to introduce DOCSIS3.1-based services;
- Optima Telekom announces plans to merge with H1 Telekom;
- T-HT launches Stream On video streaming service;
- DVB-T2 to be deployed by 2020;

Report update includes the regulator's market data to June 2016, telcos' operating and financial data to Q3 2016, recent market

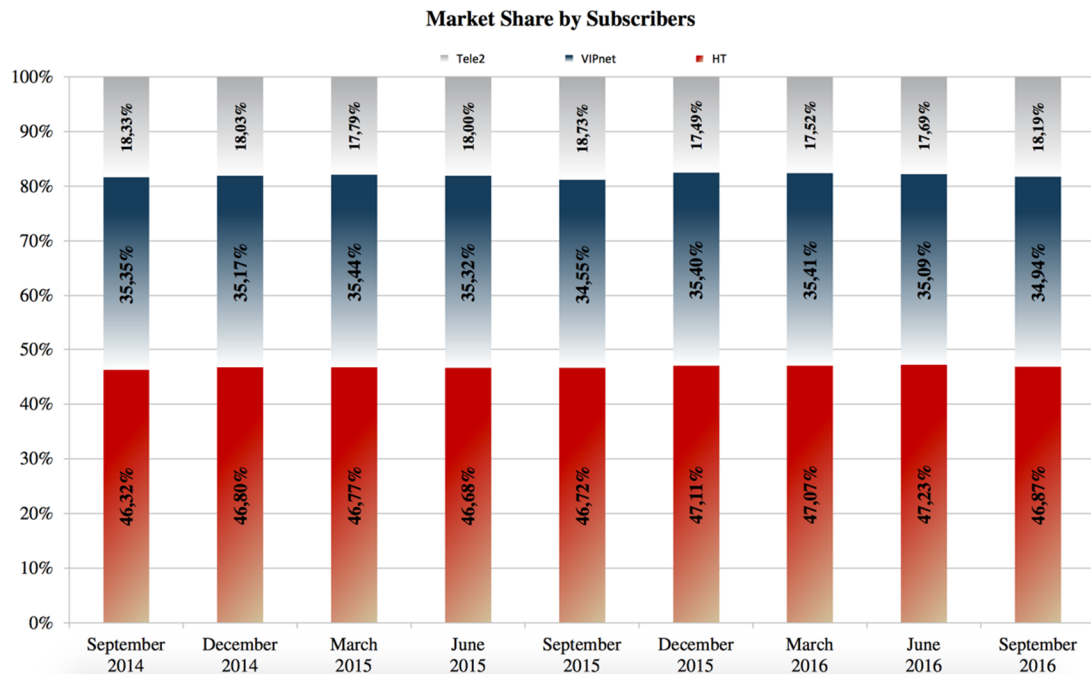


Mobile telephony services	Q3 2016	quarterly change Q3 2016 – Q2 2016	annual change Q3 2016 – Q3 2015
Total mobile telephony services revenue (HRK)	1.235.408.350	15,20%	8,33%
Retail revenue	931.682.993	7,66%	8,19%
<i>Retail revenue - Residential</i>	690.695.600	7,33%	6,25%
<i>Prepaid subscribers</i>	298.068.766	9,26%	-4,30%
<i>Postpaid subscribers</i>	392.626.833	5,91%	15,95%
<i>Retail revenue - Business</i>	240.987.393	8,63%	14,17%
Wholesale revenue	303.725.358	46,68%	8,77%
Total number of active subscribers ¹	4.672.091	4,99%	0,92%
<i>Residential</i>	3.909.164	6,09%	0,59%
<i>Prepaid subscribers</i>	2.580.480	9,46%	-1,34%
<i>Postpaid subscribers</i>	1.328.684	0,10%	4,55%
<i>Business</i>	762.927	-0,29%	2,65%
Mobile penetration ²	109,04%	5,00%	0,92%
Mobile originating voice minutes ³ (min)	2.283.819.536	0,51%	1,18%
International <i>roaming</i> traffic – own subscribers (min)	36.437.426	19,20%	62,69%
International roaming traffic – foreign subscribers (min)	237.761.914	179,52%	15,99%
Total SMS sent	661.373.465	1,37%	-9,32%

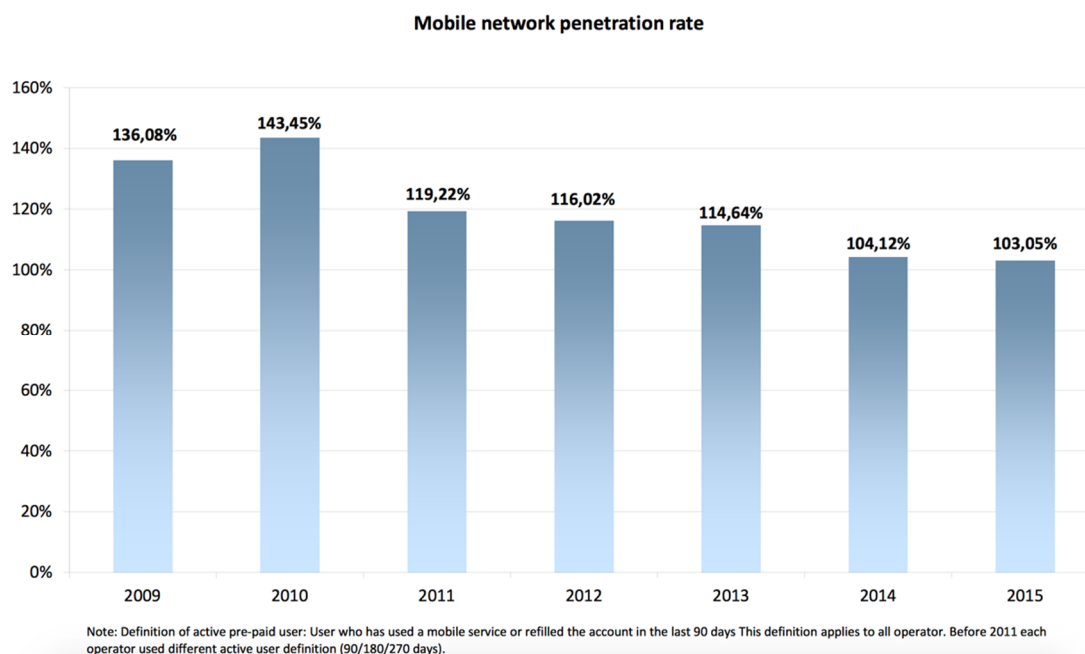


In the opinion of VipNet CEO, Croatia continues to the general world trend of replacing voice communications to data communications. The Republic of Croatia has a HSDPA mobile network (**High-Speed Downlink Packet Access (HSDPA)** is an enhanced [3G](#) (third generation) [mobile telephony communications 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.



<https://www.hakom.hr>



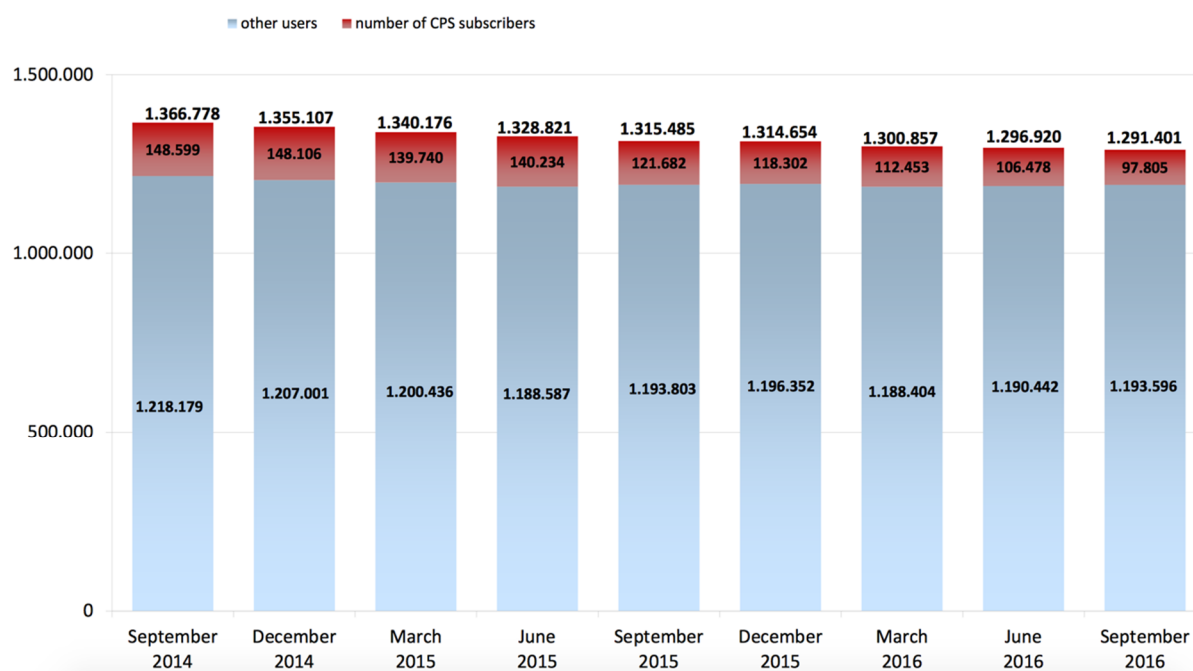
<https://www.hakom.hr>

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.

Fixed telephony services	Q3 2016	quarterly change Q3 2016 – Q2 2016	annual change Q3 2016 – Q3 2015
Total fixed telephony services revenue (HRK)	455.152.507	-2,25%	-10,98%
<i>Retail revenue</i>	378.562.641	-3,17%	-11,35%
<i>Wholesale revenue</i>	76.589.866	2,58%	-9,10%
Total number of fixed lines	1.405.377	-0,30%	-2,06%
Stand-alone – fixed voice telephony subscribers	560.528	-0,46%	-16,11%
Number of subscribers ¹	1.291.401	-0,43%	-1,83%
CPS subscribers	97.805	-8,15%	-19,62%
Fixed originating voice minutes ² (min)	506.488.188	-9,31%	-9,42%
Fixed ported numbers	1.323.882	2,81%	12,17%

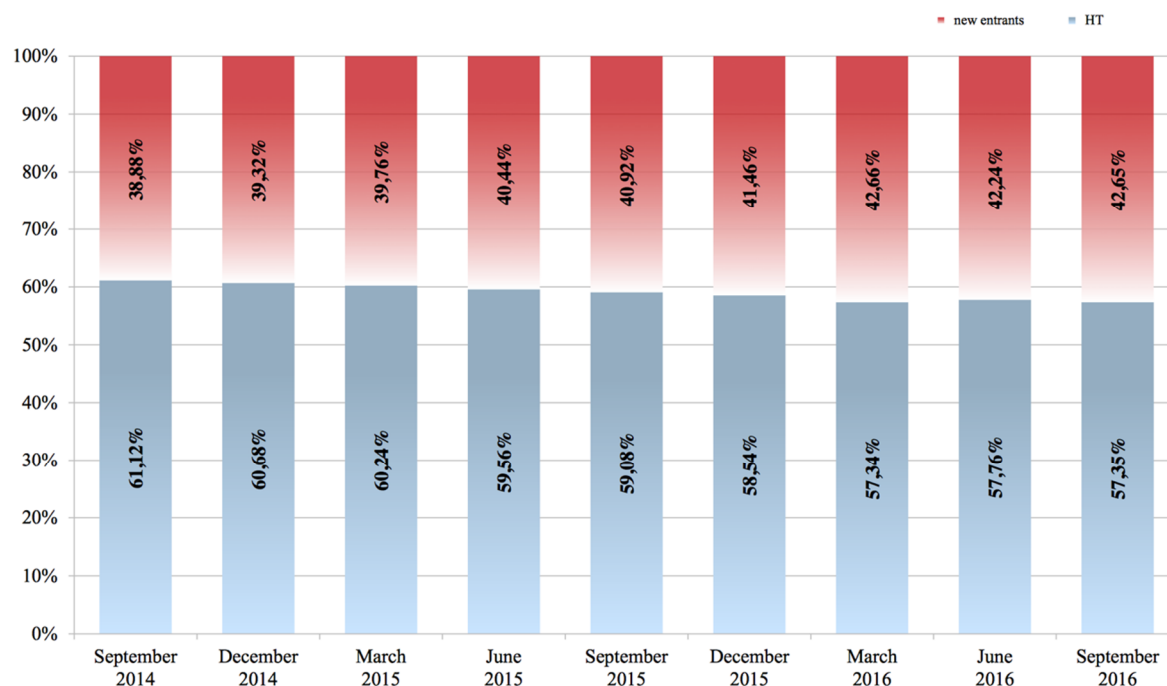
https://www.hakom.hr/UserDocsImages/2016/e_trziste/Croatian%20Quarterly%20electronic%20communications%20data,Q32016.pdf

CPS subscribers in total number of fixed subscribers



https://www.hakom.hr/UserDocsImages/2016/e_trziste/KVA%20ENG%20Q3%202016_CPS%20subscribers_fixed.pdf

Fixed Market Share by Subscribers



https://www.hakom.hr/UserDocsImages/2016/e_trziste/KVA%20ENG%20Q3%202016_Fixed%20market%20share.pdf

Fixed lines phone network

AKTON doo

Bani 75, Buzin
10010 Zagreb-Sloboština
Phone: +385 (01) 8000 905 / Fax : +380 (01) 8000 915
info@akton.hr
www.akton.hr

HT dd

Savska cesta 32, Zagreb
10000 Zagreb
Created in 1999 (Separation with Croatian Post HPB)
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.

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+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

City Centre One West Jankomir 33,
10000 Zagreb
Created in 1994, owned by Matija Martić
Phone: +385 (01) 0800 0088
info@optima-telekom.hr
<https://www.optima.hr>

Mobile phone network operators

VipNet

Chaired by Mladen Pejković
Created in 1998 by MOBILKOM Austria
Tel: +385 01 4691 091
www.vipnet.hr
Vrtni put 1
10000 Zagreb

T-Mobile

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

Tele 2

Phone: +385951000444
Fax: +38595100045
Ulica grada Vukovara 269d,
10000 Zagreb
www.tele2.hr

Tomato

E-mail: info@tomato.com.hr

www.tomato.com.hr

Bonbon

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10110 Zagreb

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E-mail: bonbon@bonbon.hr

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Evo TV

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E-mail: uprava@posta.hr

<http://www.evotv.hr>

Terrakom d.o.o.

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10000 Zagreb

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E-mail: info@terrakom.hr

www.terrakom.hr

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Dračevac 2 d

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Telefax: +385 21 555 179

E-mail: info@h1telekom.hr

<http://www.h1telekom.hr/>

Multiplus mobile

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E-mail: predsjednik@agrokor.hr

<http://www.multiplusmobile.hr/>

7) Television and Radio in the Republic of Croatia

Croatia was among the first countries in Central and Eastern Europe to establish a radio station - to be more precise - on 15 May 1926. Croatian television made its appearance on the same date thirty years later and, at the time; it was perceived as quite the phenomenon. HRT is a national public service broadcaster, mainly financed by viewer/listener license fees and advertising. It has well exceeded a million radio and television listeners/viewers. HRT has seven regional radio stations and five regional TV centres. It has three national and seven regional radio channels, two terrestrial TV channels and one satellite TV channel broadcasting in Croatian. Since 1997, HRT radio and television programs have been also broadcasted digitally via satellite throughout Europe. The two international programs, "Voice of Croatia" on radio and "Picture of Croatia" on television, are broadcast throughout Europe and overseas, notably in countries with large Croatian communities, such as Australia and the USA.

The first trial broadcasts of DVB-T signals began in May 2002 in Zagreb, and in 2008 the government developed an Analogue to Digital Television Broadcasting Switchover Strategy for the Republic of Croatia. There are nine main regions of digital TV allotments and additional, geographically small allotment areas designed for local broadcasters. As of May 2014, there are eleven nationwide free-to-air DVB-T television channels, with HRT's four channels, RTL Televizija operating three, Nova TV operating two and the remaining two operated by the Croatian Olympic Committee and Author d.o.o. companies and the government's Central State Administrative Office for e-Croatia. All ten DVB-T television channels are free-to-air and privately owned, except for HRT's channels and the Moja uprava channel (which are publicly owned broadcasters). Doma TV is part of the Nova TV group. There are 21 regional (or local) DVB-T television channels operating in Croatia.

In the past ten years Croatian TV market has significantly developed both in Free-To-Air and in Pay-Tv segments. Pay-Tv has been developing steadily since 2006 and today holds about 40% of market share, maximum share of pay TV is being projected at about 60%, at which point the market will likely become saturated. The largest pay-tv operator in Croatia is MaxTV, second place is held by VIPNet.

The terrestrial television infrastructure in Croatia is operated by Odašiljači i veze d.o.o. (OIV). Transmitters and Communications Ltd. is one of the leading transmission service providers in Republic of Croatia. OIV - Transmitters and Communications Ltd. provides national TV and radio broadcasting services in Croatia, which includes transmission for all national Croatian TV and radio stations and most regional and local TV stations. Television and radio media service providers are registered in the Register of providers of media services, electronic publications and non-profit producers of audio-visual and / or radio programs. As of January 2012, OIV operates and maintains 222 television transmitters and broadcast relay stations.

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 Mirjana Rakić.

Contact:

Jagićeva 31

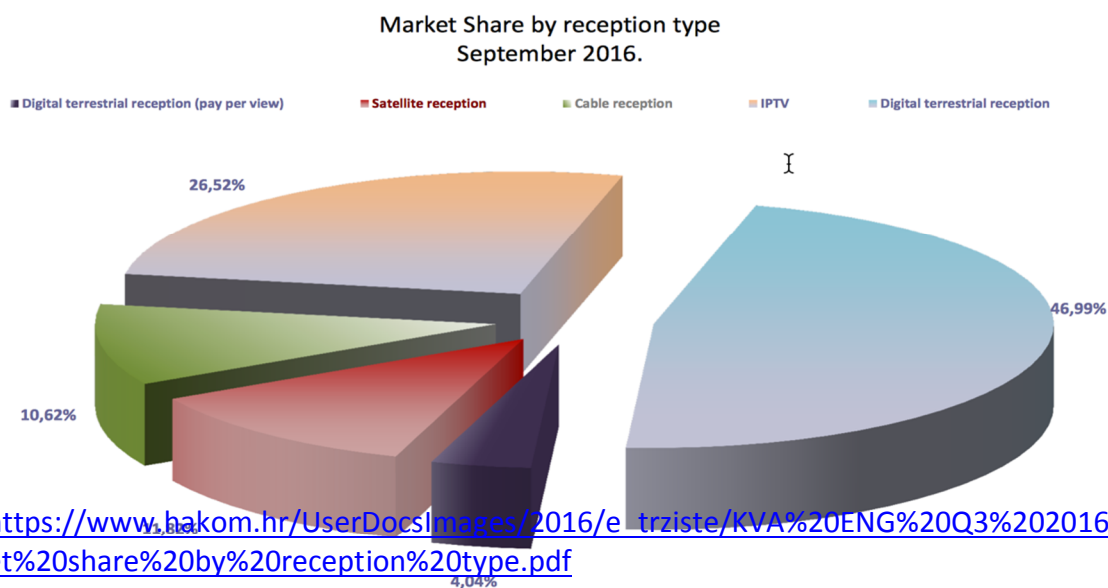
10000

ZAGREB

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info@e-mediji.hr

<http://www.e-mediji.hr>



<https://www.hakom.hr/UserDocsImages/2016/e-trziste/KVA%20ENG%20Q3%202016-market%20share%20by%20reception%20type.pdf>

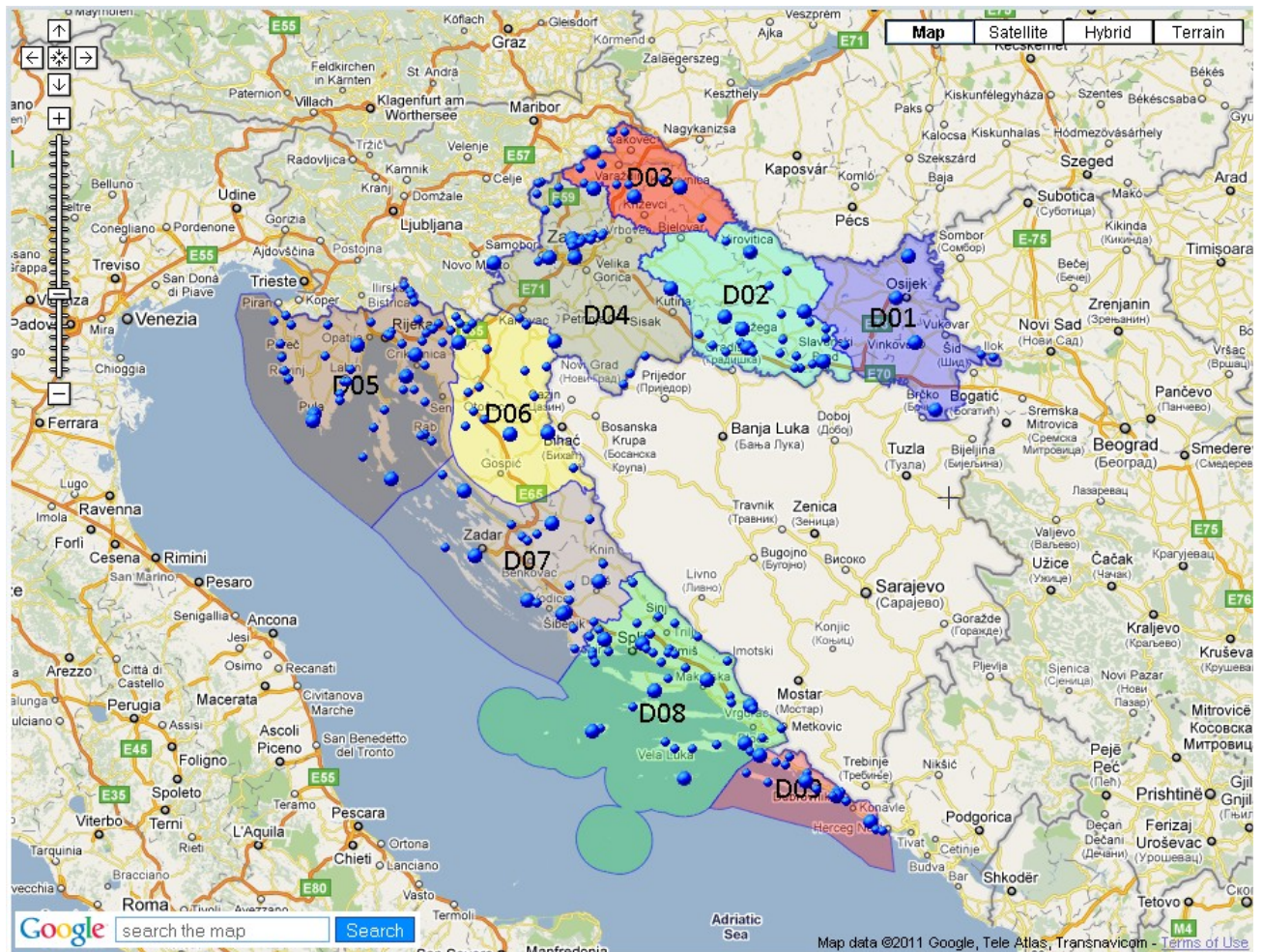
Note: The number of Digital terrestrial reception = (Number of HH in Republic of Croatia - number of HH without TV) – (number of Cable reception + number of IPTV + number of Satellite reception + digital terrestrial reception_pay TV)

Television services	Q3 2016	quarterly change Q3 2016 – Q2 2016	annual change Q3 2016 – Q3 2015
Television services revenue (HRK)	174.948.626	0,24%	9,75%
Stand-alone – TV subscribers	236.767	8,64%	-6,03%
Cable reception	157.259	1,43%	3,70%
IPTV	392.700	0,67%	2,31%
Satellite reception (SAT-TV)	175.028	0,89%	7,78%
Digital terrestrial reception (pay-TV)	59.786	-4,88%	14,06%
Digital terrestrial reception ²	695.732	-2,57%	-6,67%

Source: Croatian Office of Statistics

Analogue terrestrial television was switched off in Croatia on 5 October 2010 at 12:35 AM.

Map of Digital Television Transmitters in Croatia



Telecommunication and television operators and providers in Croatia

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E-mail: sluzba.za.korisnike@bnet.hr
Internet: <http://www.bnet.hr>

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E-mail: info@tomato.com.hr
Internet: <http://www.tomato.com.hr>

Amis

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Telefax: +385 1 2468 099
E-mail: info@amis.hr
Internet: <http://www.amis.hr>

Iskon Internet d.d.

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Internet: www.iskon.hr

Tele2 d.o.o.

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Internet: www.optima.hr

Evo TV

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Internet: <http://www.evotv.hr>

Terrakom d.o.o.

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E-mail: info@terrakom.hr
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Internet: <http://www.h1telekom.hr/>

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E-mail: predsjednik@agrokor.hr
Internet: <http://www.multiplusmobile.hr/>

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

Here: http://en.wikipedia.org/wiki/List_of_radio_stations_in_Croatia, you can find a list of radio stations in Croatia.

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.

8) Software market in Croatia

Software and IT services are the most promising Croatian export products. The export of software and IT services is experiencing significant growth and is a product of local knowledge. Export of software produced in Croatia in 2015 increased by 501 million kuna. In 2015 software export grew by 32.7 percent to 2.03 billion kuna. Domestic software industry in 2013 had export of 1.22 billion kuna, a year later, export jumped to 1.53 billion kuna. Export is the main engine of growth of domestic software industry, so last year the total income of local software producers jumped 19.6 percent to 6.96 billion kuna. In 2015, the software companies in Croatia hired factory and a half people, and opened nearly 1,500 new jobs. The number of employed in the software industry jumped by 13.2 percent to 12,642 employees. The software industry has good potential and captures an excellent result in the field.

Vendors and their partners should focus on new delivery models such as cloud computing and should make a priority of offering extended functionalities to existing clients. Maintenance revenues from existing installations became very important during the crisis and will continue to record growth during the recovery period. Customer satisfaction should be a key market strategy, followed by the acquisition of new clients

Source: <http://www.poslovni.hr>

CISEX Association

Croatian Independent Software Exporters is an association gathering innovative Croatian software companies around the idea of sharing good practices in order to create high quality products for global market. The association was founded in January of 2011. CISEx member companies are challenging the status quo by constantly increasing the quality of their products, tailoring them for their clients.

Koturaška 47

10 000 Zagreb

Phone: +385 1 6690 200 Telefax: +385 1 6690 299

E-mail: info@cisex.org

Internet: <http://www.cisex.org/>

Software companies:

Calyx

Cvijete Zuzorić 3

10000 Zagreb

<http://calyx.hr>

Hashcode

Frana Folnegovića 1C

10000 Zagreb

Tel: +385 1 1234 45 67

<http://www.hashcode.hr/>

hashcode@hashcode.hr

Enecom

Osječka 50,

51000 Rijeka

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web@enecom.hr

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IN2

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<http://www.in2.hr/>

E-mail: in2@in2.eu

Infobip

Zadarska 80

10000, Zagreb

Tel: +385 1 6406 055

www.infobip.com

E-mail: info@infobip.com

Visage Technologies

Unska 3

10000 Zagreb

Tel: +385 1 6129 877

<http://visagetechnologies.com/>

Nanobit

Radnička Street 37B,

10000 Zagreb, Croatia

Tel: +385 1 60 55 587

<http://www.nanobit.com>

E-mail: business@nanobit.com

Oneiric IT

Laniste 9B

10000 Zagreb

<http://oneiric.solutions/>

Lemax

Remetinečka cesta 139

10000 Zagreb, Croatia

Tel: +385 (0) 1 631 42 21

<http://www.lemax.net>

E-mail: itravel@lemax.net

FIVE

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10000 Zagreb

Tel: +385 1 553 50 36

<http://five.agency/about/company/>

RIS

Horvaćanska cesta 17a,

10000 Zagreb

Tel.: +385 (0)1 364 01 89

www.ris.hr

Media Studio

Tel: +385 (0) 95 903 15 43

<http://mediastudio.hr>

Reset it

Pivovarska 8,

47000 Karlovac, Croatia

<https://www.reset-it.hr/en>

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INFINUM Ltd.

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10000 Zagreb
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SEDMI ODJEL Ltd.

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ACCELERATIO Ltd.

Savska cesta 182
10000 Zagreb, Croatia
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<https://acceleratio.net>

Odašiljači i veze

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

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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:

- o 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);
- o 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);
- o 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);
- o 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);
- o 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.

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:

- o 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;

- o 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 is possible to have audiences of every media through Nielsen office.

ELECTRONIC AND COMMUNICATIONS ACT-

https://www.hakom.hr/UserDocsImages/dokumenti/Electronic%20Communications%20Act%20OG73_2008.pdf

ACT ON AMENDMENTS TO THE ELECTRONIC COMMUNICATIONS ACT-

https://www.hakom.hr/UserDocsImages/2012/propisi_pravilnici_zakoni/ZID-ZEK2011-ENG%209_11.pdf

9) Important IT companies in Croatia

Some global ICT companies are operating here only to fulfil 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 centres (ERICSSON, ENVOX, SIEMENS).

a) IBM

IBM Hrvatska d.o.o. was founded in 1991. and it is the Croatian arm of multinational software giant IBM. The company is engaged in wholesale and retail trade of computers and other similar equipment, as well as programming and software development. IBM Hrvatska d.o.o. also offers hardware and software for small users and for big projects, as well as computer maintenance and repair services. (<https://www.emis.com>) In the spring of 2017, IBM will open Client Innovation Centre in Croatia in which plans to hire 500 people.

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<http://www.ibm.com/hr>

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.

Hewlett Packard doo

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<http://www.hp.com./hr>

c) Oracle

ORACLE HR sells licenses for applications, databases and tools for designing Internet Solutions, consulting. The company also organizes training and support.

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<http://www.oracle.com/hr>

<http://www.oracle.hr>

d) Cisco System

Cisco Systems in Croatia was founded 1998. Cisco Systems, Inc. is the world's leading supplier of computer networking products, systems, and services. Cisco serves three main market segments: large organizations--including corporations, government entities, utilities, and educational institutions--needing complex networking solutions that typically bridge multiple locations; service providers, including Internet access providers, telephone and cable companies, and providers of wireless communications; and small and medium-sized businesses whose needs include operating networks, connecting to the Internet, and/or connecting with business partners.(<http://www.fundinguniverse.com/company-histories/cisco-systems-inc-history/>).

Contact information:

Cisco Systems Hrvatska doo
Hektorovičeva 2/I
10000 Zagreb
Phone: +385 1462 8900
Fax: +385 1462 8909
<http://www.cisco.com/hr>
E-mail: izunic@cisco.com

f) SAP

SAP d.o.o. is present in Croatia since 1995 as franchise of the corporation SAP. SAP is the world leader in enterprise applications in terms of software and software-related service revenue. Based on market capitalization, it is the world's third largest independent software manufacturer.

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>

g) Microsoft Hrvatska d.o.o.

Microsoft Croatia d.o.o was founded in January 1997. It is fully owned by Microsoft Corporation, Redmond, WA and is responsible for the development of the Croatian market. Company tasks are organization of sale channel, cooperation with large customers, the organization of technical support, marketing, legalization and localization of products.

Contact Information

Horvatova 82

10010 Zagreb

Phone: +385 1 4802 500

Telefax: +385 1 6606 766

Internet: <https://www.microsoft.com>

h) Ericsson Nikola Tesla d.d.

Ericsson Nikola Tesla is a leading regional provider of innovative ICT solutions and services in industry and society area and telecommunications and, as an integral part of the Ericsson Group, it supports the modern ways of communicating. It is also Croatia's leading knowledge exporter through its Research and Development activities and Service Delivery Centre. The company's activities include marketing and sales, research and development, design of the total communications solution, services in the multi-service and mobile networks area including the mobile Internet and complex system integration in all business areas. The company provides innovative solution in health care, transport, state administration, municipal services and multimedia that constantly improve people's life and create new value. Shares of Ericsson Nikola Tesla are traded in the Regular Market of the Zagreb Stock Exchange under the stock exchange symbol ERNT-R-A. Being a member of the Ericsson Group, the Company operates within the Region Western and Central Europe (RWCE). (<https://www.b2match.eu/innovation-croatia/participants/593>)

Contact information

Krapinska 45 p.p. 93,
10 002 ZAGREB

Phone: + 385 1 365 35 35 / + 385 1 365 45 56

Telefax: + 385 1 302 85 40 / + 385 1 365 31 56

E-mail: etk.company@ericsson.com

Internet: <http://www.ericsson.hr>

i) M SAN Group

M SAN Group is a private company established in 1995. After four years of continued growth and expansion. In 1999 M SAN Group took over the leading position on the list of the largest IT companies in the Croatian market. Company core business is distribution of computer hardware, software, and consumer electronics.

Contact information

Buzinski prilaz 10,

10 010 Zagreb

Phone: +385 1 3654 900

Telefax: +385 1 3654 905

E-mail: marketing@msan.hr

Internet: <http://www.msan.hr/>

10) IT Education in Croatia

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 an 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 was 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.).

University of Zagreb
Faculty of Electrical Engineering and Computing
Unska 3
10000 Zagreb
Tel: +385 1 6129999
Telephone Dean's Office: +385 1 6129642
Fax +385 1 6170007
E-mail: fer@fer.hr / Web: <http://www.fer.hr>
DEAN: Professor Nedjeljko Perić, Ph.D

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 centre 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.

FACULTY OF ELECTRICAL ENGINEERING (ETFOS)
Josip Juraj Strossmayer University of Osijek
Adress: Kneza Trpimira 2B, 31000 Osijek, Croatia
Phone: +385 (0) 31 224-600 / Fax: +385 (0) 31 224-605
E-mail: etf@etfos.hr
Dean: Prof Galić Radoslav, PhD

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 Centre in Varaždin

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

The mission

The centre'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 vision

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

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

The centre's aims

Two years after the foundation of the centre, which was founded thanks to an investment of 2 million dollars, the centre 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 centre's partners

In the process of achievement of the Varaždin centre, 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 Centre Varaždin
Zagrebačka 94,
42000 Varaždin
Tel: +385 42 201 010
Fax: +385 42 200 864

11) Future investments

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

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

- The reductions of the minimum of Croatian 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 centre. 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 (Fibre to the home). FTTH (fibre to the home) is a form of fibre optic communication delivery in which the fibre 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 FTTH.

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.

Useful link: <http://www.doingbusiness.org/data/exploreeconomies/croatia/> www.hgk.hr

12) 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.

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).

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.

13) 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

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 VELEPRODAJA 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>

Gruška 22, Zagreb

10000 Zagreb

Tel: +385 (01) 6324 500

Fax: +385 (01) 6324540

Represented companies: MICROTEK, SMC, FIC, KEY TRONIC

Storm Computers d.o.o

storm@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

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

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

14) 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

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

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