Bosnia and Herzegovina

Information and Communication Technologies Sector

FOREIGN INVESTMENT PROMOTION AGENCY

BOSNIA AND HERZEGOVINA INVESTMENT OPPORTUNITIES

2015
Bosnia and Herzegovina
Information and Communication Technologies Sector
Invest in B&H ICT - Exploit the benefits!
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NEW OFFSHORE SERVICES DESTINATION

Despite the recent economic crisis, the ICT industry in Bosnia and Herzegovina is growing. The evolution of ICT companies in Bosnia and Herzegovina has been going on at a tremendous speed lately, many of them now offering highly advanced IT and media experts, eager to prove and with a European mindset.

ICT companies from Bosnia and Herzegovina are successfully implementing different joint projects with companies abroad of all sizes in the development of particular product components, as subcontractors for product development, or as implementers of software products. B&H’s ICT companies have a rich and diverse experience in providing Software Development, Outsourcing, Project Management and Consulting. They are highly educated (B.Sc./M.Sc. in Software Engineering and Mathematics) and skilled, certified, but more importantly battle tested.

Some of offshore projects include the world’s leading companies such as HERE (NAVTEQ, NOKIA), Apple Inc. Cupertino CA USA, Reactor8 Inc. Palo Alto CA USA, The Map Network Washington DC USA, Acision, Waterfall Mobile, Fides Health Care, oLyfe, Black Moose Norway, Raiffeisen Bank Austria and other companies from USA, Turkey, Norway, Sweden, UK, Netherlands etc..

ICT companies from Bosnia and Herzegovina successfully implemented a set of requirements in order to establish an ISO certified quality management system within the organization.
## TELECOMMUNICATION/ICT INDICATORS 2013

<table>
<thead>
<tr>
<th>Fixed Telephone Network</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed telephone lines of incumbent operators</td>
<td>846,484</td>
</tr>
<tr>
<td>Fixed telephone lines which are business</td>
<td>126,126</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mobile Cellular Network</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total active mobile cellular telephone subscriptions</td>
<td>3,488,319</td>
</tr>
<tr>
<td>Percentage of population covered by 3G/4G mobile network</td>
<td>90%</td>
</tr>
<tr>
<td>Percentage of population covered by a mobile cellular telephone network</td>
<td>99%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Internet</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated Internet users</td>
<td>2,305,000</td>
</tr>
<tr>
<td>Penetration of the Internet users</td>
<td>60%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Revenue</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated total revenue from all telecommunication services (EUR)</td>
<td>715,81 mill</td>
</tr>
<tr>
<td>Revenue from mobile networks (EUR)</td>
<td>341,74 mill</td>
</tr>
<tr>
<td>Revenue from fixed telephone services-incumbent and alternative operators (EUR)</td>
<td>190 mill</td>
</tr>
<tr>
<td>Revenue from Internet services (EUR)</td>
<td>65.7 mill</td>
</tr>
</tbody>
</table>

Source: Communications Regulatory Agency BH

## STRONG ACADEMIC BASE

Bosnia and Herzegovina possesses a growing labour force skilled in various aspects of ICT design, management, and applications. Young, educated and innovated workers from B&H are participating in International project and Companies.

Bosnia and Herzegovina’s Quality of math and science education Index for 2014 is 4.5 (World Economic Forum - Global Information Technology Report 2014), which gives the country a rank of 13 out of 148 countries with comparable data.

The University of Sarajevo (MIT) and the University of Tuzla (UCDED) both have specialized ‘e-learning’ schools, teaching and utilizing modern multimedia and programming skills. Several of Bosnia and Herzegovina’s colleges have established online training courses in partnership with U.S. and European universities (University Sarajevo, University Banja Luka, University Tuzla, and University Mostar).

Complementing educational activities, areas of research at the B&H Universities are:

- Management information systems
- Artificial intelligence
- LAN, WAN and wireless network topologies
- Computer architectures
- New information technologies
- System and application software
• Object oriented programming languages
• Evolutionary computation
• Graphics and image processing
• Business and technical information systems
• Software development environment (IDE)
• Expert systems
• Computers in education
• Databases and database administration
• Feasibility studies of Information system projects
• Man machine interface (HMI) systems
• Hardware and software systems (computer systems) and components

Besides education, research activities of the Telecommunication Department at B&H Universities are:

• Spatial planning in telecommunication network development
• Medium and long-term telecommunication network development
• Telecommunication networks and transmission systems (cable, radio relay and satellite systems, commutation systems and mobile phone systems)
• Research in topologies of local telecommunication networks
• Advances in solutions for commutation systems, cable systems, satellite systems, multiplex systems, telecommunication networks, etc.
• Integrated management of networked systems
• Standardization in telecommunication
• New telecommunication technologies
• Integrated services networks
• Digital signal processing
• Investment programs for switching systems, transmission systems and telecommunication networks (stationary and mobile)
• Technical solutions for switching systems, cable systems, satellite systems, multiplex systems, telecommunication networks, etc.
• New telecommunication services
• Modern radio and television equipment
• Specific problems of cable television, wireless data transfer, GSM

B&H has very low average net and gross wages compared to the countries in the region and EU countries, while labour force is very qualified, skilled and educated.

The average net salary in ICT sector in 2014 was 608 EUR (general average net wage in B&H for the same period was 424 EUR).
The HUB387 is information technology (IT) park whose main goal is to create an environment conducive to strengthening of local IT eco system, promoting culture of collaboration and shared knowledge. HUB 387 is revolutionizing the daily work routine by creating open community while increasing level of innovation and competitiveness among associated members.

HUB387’s mission is to build a vibrant IT community, a space where aspiring IT companies and individuals will connect and collaborate; where interaction with peers will facilitate new ideas and solutions to challenges in our workplace.

HUB387 will organize and host IT industry events such as educational seminars, workshops, working lunches, hackathons, etc. Through these programs, HUB387 members will be able to enjoy educational benefits while connecting with other leaders and experts in IT industry and building their networks.

HUMAN CAPITAL

Bosnia and Herzegovina possesses a labour force skilled in various aspects of ICT design, management, and applications. Young, educated and innovative workers from B&H are participating in international project and companies.

According to the latest Global Information Technology Report 2014 of the World Economic Forum which focuses on the quality of teaching in mathematics and natural sciences in schools, the best positioned among Balkan countries and beyond is B&H. Bosnia and Herzegovina at the WEF list for the quality of teaching in mathematics and natural sciences, or quality mathematicians and scientists, is on the 13th place out of 148 countries, so is qualified in the top world list in this area.

Bosnia and Herzegovina’s Quality of management schools Index for 2014 is 4.7, which gives the country a rank of 41 out of 148 countries (also, the best rank in Region).

Average gross wages for ICT sector for 2014 in Bosnia and Herzegovina was 958 EUR, and net wages was 608 EUR.
ICT IS AN EMERGING SECTOR

The quality of ICT infrastructure in Bosnia and Herzegovina is not at the level of EU countries, it is getting better with each year. The challenge ahead for the ICT sector, however, is to gain access to modern and valuable know-how, and this can only be achieved by foreign direct investment. Bosnia and Herzegovina’s ICT sector offers an array of opportunities to potential investors wishing to exploit their knowledge, sophistication, know-how and new business ideas. In addition, locating in Bosnia and Herzegovina can provide a base (gateway) for penetrating markets in the surrounding region (SEE and Turkey - approximately 120 million of consumers).

According to the latest Global Information Technology Report 2014 of the World Economic Forum Bosnia and Herzegovina’s Laws relating to ICTs Index for 2014 gives the country a rank of 67 out of 148 countries. Also for Mobile network coverage (% pop.) B&H is on the 43rd place, for the Accessibility of digital content on 36th, for the Fixed broadband internet tariffs PPP $/month B&H is on the 15th place out of 148 countries.

Bosnia and Herzegovina is a member of the Electronic South Eastern Europe (eSEE) Initiative. The aim of Electronic South Eastern Europe (eSEE) Initiative is to better integrate SEE countries into the global, knowledge-based economy by regionally supporting the development of Information Society.

The eSEE Initiative provides a balanced policy and cooperation framework and provides one of the best examples of regional cooperation in the Stability Pact Practice.

eSEE Initiative was launched in Istanbul in October 2000 and constituted in January 2001 with Sweden as Chair, and Croatia followed by FYROM as co-Chair. In effort to reinforce the regional ownership and to inject the Initiative with the new impetus, the Chairmanship was transferred to Serbia and Montenegro and then to Croatia, while eSEE Secretariat, a regional knowledge hub and information resource center, is being hosted in Sarajevo by UNDP Country Office Bosnia and Herzegovina since 2002.
ATTRACTIVE BUSINESS ENVIRONMENT

The Law on the Policy of Foreign Direct Investments of Bosnia and Herzegovina ensures national treatment of foreign investors, i.e., foreign investors have the same rights and obligations as residents of B&H.

Foreign investors are entitled to open accounts in any commercial bank in domestic and/or any freely convertible currency on the territory of B&H. Foreign investors are entitled to freely employ foreign nationals, subject to the labour and immigration laws in B&H.

Foreign investors are protected against nationalisation, expropriation, requisition or measures having similar effects; such measures may take place only in the public interest in accordance with the applicable laws and regulations and against the payment of an appropriate compensation, i.e., compensation that is adequate, effective and prompt.

The accelerated economic reform process in B&H has contributed to a greatly improved business climate. As a result, B&H has recorded one of the fastest business growths in South-eastern Europe.
• B&H has the most stable currency and the lowest inflation in SEE
• B&H offers favourable Tax and Customs Systems: Investment capital is exempt from paying import customs and customs duties (with the exception of passenger cars, slot and gambling machines).

In Federation of B&H:
• Law Corporate Income Tax enables the taxpayer, who in the year for which the corporate income tax is being determined, has achieved 30% of their total revenue by export to be exempted from the tax payment for that year.
• The taxpayer who in the period of five consequent years invests into production in the value of minimum 20 million BAM, on the territory of the Federation of Bosnia and Herzegovina, is being exempted from the payment of corporate income tax for the period of five years beginning from the first investment year, in which minimum four million BAM must be invested. If the taxpayer, in the time period of five years, does not achieve the prescribed census for investment, he loses the right of tax exemption, and the unpaid corporate income tax is determined in accordance with the provisions of the Law on Corporate Income Tax augmented for penalty interest payable for untimely paid public revenues.
• The taxpayer who employs more than 50% of disabled persons and persons with special needs longer than one year is being exempted from the payment of corporate income tax for the year in which more than 50% disabled persons and persons with special needs were employed.

In Republic of Srpska:
• Amendments of the Law on Profit Tax RS introduced tax base reduction in the value of investment for:
  • Investment in equipment intended for the company production activity
  • Investments in plants and immovable property used for manufacturing and processing activities
And tax base reduction in amount of paid personal income tax and mandatory contribution for the employer:
• Employing 30 workers during a calendar year (workers who were on the official evidence of Employment Office of RS).
• New incentives: Also, in Republic of Srpska, the new incentives have been established by Decree on
Conditions and Implementation of the Investment and Employment Support Program (Official Gazette of RS No 70/12). The aim of these incentives is encourage and support direct investments, employment growth and transfer of new knowledge and technologies. Participants in this funding award may be investors with existing investment projects in manufacturing sector in the territory of the Republic, which provide new employment and submit along with the application all necessary documentation to the Ministry of Finance of RS, after announcement of a public call.

Corporate tax rates in 2014

Source: www.deloitte.com

Half-yearly electricity prices for industry in 2014 - €/kWh

Source: www.ec.europa.eu

Bosnia and Herzegovina’s Total tax rate Index for 2014 is 25.0 (World Economic Forum - Global Information Technology Report 2014), which gives the country a rank of 24 out of 148 countries with comparable data.
ICT INFRASTRUCTURE

Main telecom operators in Bosnia and Herzegovina (BH Telecom, HT Mostar, m: tel) with multiple international connectivity share majority of infrastructure; operate fixed and mobile telephony networks as well as Internet and data transmission networks.

There are a number of private and public network and internet service providers too. All three companies possess most advanced technologies and services (IP/MPLS, VoIP, 3G, GRPS, EDGE, UMTS, broadband access networks – xDSL, Ethernet WAN, Ethernet Metropolitan Area Networks, Wi-Fi, W-LAN, etc.). The transmission system is now virtually 100% digitalized and the switching system is more than 80% digitalized. The 2.5G system is applied, and the 3G/4G system is introducing gradually, which permits the radio data transmission rate of up to 2 Mbps. Also, B&H has lot of outsourcing companies. They take great pride in giving their clients the best possible solutions for their needs in areas of expertise and they ensure high standard of their finished product with consistency in meeting deadlines, quality, and accuracy.

Bosnia and Herzegovina’s Availability of latest technologies Index for 2014 is 4,9 (World Economic Forum - Global Information Technology Report 2014), which gives the country a rank of 76 out of 148 countries with comparable data. Also, Individuals using internet % Index for 2014 is 65,4, which gives the country a rank of 40, then Internet access in schools Index is 4,5 which gives the country a rank of 61 out of 148 countries with comparable data.

WHY INVEST IN B&H ICT SECTOR?

• ICT is an Emerging Sector in Bosnia and Herzegovina
• The continued availability of high-quality engineering and science graduates at B&H colleges and abroad
• A competitive cost environment
• Investing in Bosnia and Herzegovina’s ICT Sector presents a doorway to Southeast Europe
• Bosnia-Herzegovina must be EU compatible
• Privatization opportunities of strategic ICT companies still exist
• Ambitious plans related to the overall development of B&H, requiring a large-scale development of ICT infrastructure and ICT sector as whole
• Availability of basic ICT infrastructure
• Availability of a number of small IT companies
• Cultural affinity
FDI IN ICT SECTOR

<table>
<thead>
<tr>
<th>FDI</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post and Telecommunications</td>
<td>83,85</td>
<td>-15,33</td>
<td>-5,11</td>
<td>6,64</td>
<td>3,06</td>
<td>6,64</td>
<td>19,88</td>
</tr>
<tr>
<td>Consultancy services</td>
<td>-3,57</td>
<td>-1,53</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4,50</td>
<td>0</td>
</tr>
<tr>
<td>for hardware</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICT Sector</td>
<td>80,274</td>
<td>-16,87</td>
<td>-5,11</td>
<td>6,64</td>
<td>3,57</td>
<td>11,14</td>
<td>19,88</td>
</tr>
<tr>
<td>Total FDI</td>
<td>683,60</td>
<td>179,97</td>
<td>220,37</td>
<td>289,90</td>
<td>285,30</td>
<td>209,23</td>
<td>283,51</td>
</tr>
<tr>
<td>Share of FDI in ICT sector</td>
<td>11.7%</td>
<td>-</td>
<td>-</td>
<td>2.3%</td>
<td>1.3%</td>
<td>5.2%</td>
<td>7.0%</td>
</tr>
</tbody>
</table>

Source: Central Bank of B&H, *preliminary data for 2014

SUCCESS STORIES

System Verification Sarajevo (Sweden)

The Swedish System Verification established this company in Bosnia and Herzegovina in 2013. Today System Verification has offices in Malmö, Gothenburg, Stockholm, Copenhagen and Sarajevo. The aim of the company in Sarajevo is to offer the same quality of services within requirements and testing as currently on offer in Sweden, though at lower costs.

Hamdija Jusufagic, CEO of System Verification

“Our clients will not only be provided with highly efficient services for software requirements and testing, but also gain a supplier continuously on the hunt for new openings, where it can grow and improve. Opening up in Sarajevo is an example of this, because it entails cutting costs for the client while maintaining the high level of expertise”

Foreign companies, investors in this sector:

- HT Hrvatski Telecom Croatia-company HT dd Mostar AND Eronet Mostar
- Godolphin Serv. Limited Nikozia – company KIT BH Sarajevo
- Winwest Inc 3650 131 USA-company Europronet Bosnia Sarajevo
- Hermes SoftLab Slovenia- companies Com Trade Sarajevo and Banja Luka
- Microsoft Corporation USA – company Microsoft BH Sarajevo
- Telecom Slovenia – company Aneks doo Banja Luka
- Kohlberg Kravis Roberts USA – company Telemach d.o.o. Sarajevo
- Telecom Serbia – company Mtel ad Banja Luka
- Al Jazeera Network Qatar – company Al Jazeera Balkans Sarajevo
- Chellomedia USA-company OBN dd Sarajevo
Bosnia and Herzegovina ICT Sector

- System Verification Sweeden - company System Verification Sarajevo
- Anadolu Ajansi Turkey - company Agencija Anadolija Sarajevo
- Cisco Systems Inc USA
- Oracle
- Xinhua China

Al Jazeera Balkans (Qatar)

Al Jazeera Balkans (AJB) is an international news television station headquartered in Sarajevo, Bosnia and Herzegovina aimed at the media markets of the SEE. It is part of the Al Jazeera Media Network, which is owned by the Government of Qatar.

The station broadcasts in Bosnian-Croatian-Serbian six hours daily, with subtitled Al Jazeera English programmes being shown the remainder of the day. Al Jazeera Balkans is a sister channel of the Arabic language Al Jazeera and the English language channel Al Jazeera English. The station broadcasts news analysis and features as well as documentaries, live debates, current affairs, business, technology, and sports highlights.

USEFUL CONTACTS

Ministry of Communications and Transport of Bosnia and Herzegovina
www.mkt.gov.ba

Federal Ministry of Transport and Communications
www.fmpik.gov.ba

Ministry of Transport and Communications Republic of Srpska
www.vladars.net

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