

BOSNIA AND HERZEGOVINA

ICT SECTOR PROFILE

Sarajevo, September 2005



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LETTER FROM THE DIRECTOR OF FIPA

Bosnia and Herzegovina, with a population of just under 4 million, lies at the very heart of the Balkans with easy access to a market of over 120 million consumers in Southeast Europe and Turkey. Bosnia and Herzegovina is also a country in economic transition, and presents potential investors with a wide range of opportunities to penetrate the larger Balkans region consumer markets. Moreover, Bosnia and Herzegovina is a member of the Southeast European Free Trade Agreement, and has established various preferential export regimes with the majority of the OECD, EU, and SEE markets.

Indeed, Bosnia and Herzegovina has begun the formal process to seek EU integration by 2014, and this has already provided the Bosnia and Herzegovinan economy with a new energy and focus. A wide range of political, social, and economic reforms are being aggressively instituted, including the establishment of an EU-standard VAT system. A brief overview of Bosnia and Herzegovina's investment environment:

- Bosnia and Herzegovina currency, the Convertible Mark, is pegged to the EURO, and inflation rates are the lowest in the region (less than 1%).
- Bosnia and Herzegovina's banking system has undergone substantial reform, and several foreign banking systems have invested throughout Bosnia and Herzegovina.
- Bosnia and Herzegovina's workforce is talented, highly educated and competitively priced.
- 2006-08 will see a substantial number of privatization projects completed.
- Extensive tax incentives and protection schemes for foreign investments.
- Favorable Foreign Direct Investment Laws.
- Bosnia and Herzegovina has more than doubled its FDI inflows between 2003 and 2004.

Bosnia and Herzegovina is committed to the development and capitalization of Information and Communications Technologies (ICT), being aware that this key sector plays a vital role in any modern economic structure. This ICT Sector Profile should assist potential investors to gain a fundamental overview of Bosnia and Herzegovina's ICT-related investment environment, whilst FIPA's web site (www.fipa.gov.ba) provides a more detailed compilation of company-specific data and contact information.

Director

I. WHY INVEST IN ICT IN BOSNIA AND HERZEGOVINA

Bosnia and Herzegovina's ICT sector is specific and prospective one, which offers to the potential investors who possess the levels of knowledge, sophistication, know-how and new business ideas, an array of the opportunities to create themselves a business environment entirely in compliance with their wishes, as well as to penetrate both, the consumer market of Bosnia and Herzegovina, as well as the markets of neighboring countries in the Region. This statement is based on the facts, which include as follows:

- ICT is an Emerging Sector in Bosnia and Herzegovina
- The continued availability of high-quality engineering and science graduates at Bosnia-Herzegovina 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 / compliant in ICT by 2010
- Privatization opportunities of strategic ICT companies still exist

II. FDI OPPORTUNITIES - AT GLANCE

1. Bosnia and Herzegovina is supposed to be a recipient of various EU funding programs targeting EU integration objectives, over the next several years. Technical assistance, skills training, and co-funding support provide the foreign investment community with a wide array of investment incentives and protections.
2. In particular and starting in early 2005, Bosnia and Herzegovina is planning to partner with EU governments on a bilateral basis to establish a nation-wide network of business incubators throughout Bosnia and Herzegovina – where multiple companies are to be housed in a series of cooperative environments. It is a strategic goal that a nation-wide network of business incubators will provide foreign investors with a more efficient environment so as to leverage both capital and knowledge investments.
3. The effective use Bosnia and Herzegovina's seven Customs Free Zones and various favorable trade agreements between Bosnia and Herzegovina and various foreign markets will assist FDI effectiveness by leveraging strategic alliances and logistics benefits
4. Before mentioned as well as geopolitical position of Bosnia and Herzegovina, high demand in ICT services at Bosnia and Herzegovina and SEE markets, availability of the low cost human resources with tradition in IT and engineering skills, as well as the low cost of the real estates and other incentives provided by FDI relevant laws, create numerous opportunities for both, local and export oriented FDI, particularly for investment in the mostly services oriented activities, such as:
 - Establishment of a network of ICT incubator, ICT parks / industrial zones
 - Merging and acquiring smaller diverse SME's and turning them into more efficient corporate investment vehicles
 - Establishment of branch companies or partnership with local companies for various types of outsourcing activities
 - Establishment of Call/contact center
 - Establishment of Shared service centers / back-office services / outsourcing centers
 - Establishment of Regional headquarters
 - IT services (Software development, Application testing, Content development, Engineering and design, etc.)
 - Assembling activities, benefiting services of 7 free zones

III. FOUNDATIONS FOR ICT INVESTMENTS

1. ICT: An Emerging Sector

A brief overview of the emerging ICT sector and its relationship to the economic landscape of Bosnia-Herzegovina:

- Macroeconomic data is beginning to demonstrate that the expansion and increased sophistication of the ICT sector is vital for the self-sustainability and growth of the country's overall economy.
- Government fiscal and FDI policies are beginning to address the issues of encouraging long-term investments in both technology and knowledge. In particular, the government has recently approved a wide-ranging Information Society Strategy and Action Plan, and established a state-level agency to coordinate the Information Society agenda.
- One of the most profound influences to the overall economic landscape and to the ICT sector in particular, is Bosnia's commitment to obtain EU Integration status by 2014. Substantial policy reforms and essential market standards are expected to dramatically expand the economic opportunities for both domestic and foreign investors.
- A number of the country's larger economic producers, including the telecommunications incumbents, are scheduled to undergo privatization within 2006-08. Further, Bosnia's Communications Regulatory Agency (www.rak.ba) who's mission is to facilitate a proper and effective policy environment for the sector, has established a reputation for independence.
- Recently, the telecoms and energy incumbents have undertaken the responsibility to join together with other leading companies, university programs, and the SME sector to stimulate economic growth, particularly in the fields of R&D and ICT.
- On a more commercial level, ICT is beginning to experience convergence throughout multiple economic and social sectors. Particularly in the e-banking, e-education, and e-government sectors, ICT goods and value-added services possess substantial growth potential.
- FDI specifically targeting the ICT sector is already developing, and the success stories clearly demonstrate that the ICT sector is shaping up to be a priority sector for FDI.

2. Talented, high-quality young workforce

Bosnia and Herzegovina possesses a growing labor force skilled in various aspects of ICT design, management, and applications. Most are educated in a wide array of foreign languages, including English, German, Russian, even Chinese. CISCO Systems, the multinational Internet infrastructure company, has established a series of training

academies in Bosnia and Herzegovina, with hundreds of students graduating each year with skill certificates recognized internationally. 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. Additionally, several of Bosnia and Herzegovina's colleges have established online training courses in partnership with U.S. and European universities.

But more than their commitment to education, Bosnia and Herzegovina's young people are impatient to apply their knowledge, with many establishing entrepreneurial home businesses to provide various ICT-related services, and even hardware assembly to Bosnia and Herzegovina's expanding market. Human resources and entire ICT solutions are often outsourced to these young entrepreneurs. The ICT sector market has grown to the extent that if these young companies are to achieve long-term self-sustainability, domestic and FDI capital is required to expand these entrepreneurial efforts into viable companies and investment vehicles providing long-term value to the markets.

3. Investing in Bosnia and Herzegovina's ICT Sector: Doorway to Southeast Europe

Bosnia and Herzegovina presents a very convenient destination for easy access to the SEE market of over 60 million consumers, as well as to the market of Turkey with additional 60 million consumers.- Bosnia and Herzegovina can serve as a platform for this wider geographical market, benefiting from international accords and Free Trade Agreements signed between seven South-Eastern European countries that have created a freetrade zone that includes Albania, Croatia, Bosnia and Herzegovina, Bulgaria, Macedonia, Romania and Serbia and Montenegro. In addition Bosnia and Herzegovina has signed a Free Trade Agreement with Turkey. The main purpose of this accord was to increase the scope of regional and international trade, to improve the total capacity of the regional market and to attract foreign direct investment (FDI). It also contains an intention to increase the integration of this region in European structures and the global economy. The accord sends a clear message from these countries to the rest of the world that they are ready to cooperate with the purpose of accelerating economic progress and renewing trade relations, thereby generating a secure and favorable business environment for investment.

4. Macroeconomic Foundations for ICT Investments

- [FDI Indicators - at a glance](#)

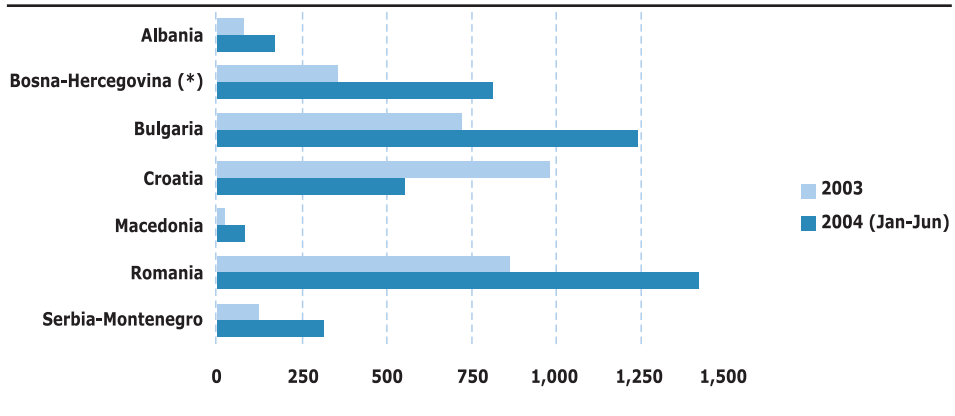
In 2004, Bosnia experienced both a dramatic increase in FDI inflows over 2003 as well as a diversification of FDI projects. As Tables 1 and 2, below, demonstrate, Bosnia has surpassed its neighbors in the region in FDI inflows for 2004 – doubling its inflows from \$358 m in 2003 to \$815 m in 2004. And as Table 3 demonstrates, FDI inflows were diversified into new types of projects, including tourism, services, and transport.

Table 1

FDI Inflows -Balkan Region

as of June 30, 2004

in US\$ m



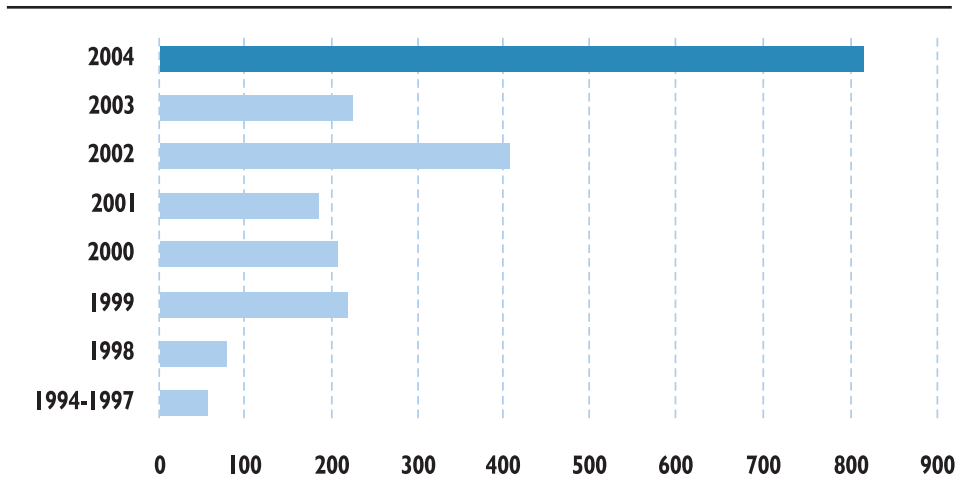
SOURCE: ViewsWire Eastern Europe
(*) as of EDY, 2004 (Source BiH Ministry of Foreign Trade and Economic Realties, 2005)

Table 2

FDI Inflows - Bosnia-Herzegovina (a)

Year-on-year (1994-2004)

in US\$ m

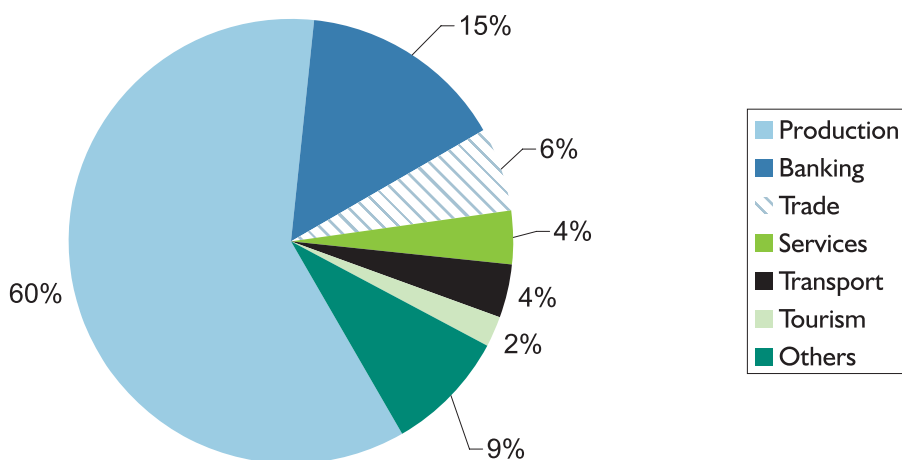


Source: BiH Ministry of Foreign Trade and Economic Realties, 2005

Table 3

Foreign Direct Investment Inflows - Bosnia-Herzegovina (b)

By FDI Target Sector
in %



Source: BiH Ministry of Foreign Trade and Economic Relations, 2005

5. ICT Indicators - at a glance

• Commitment to ICT Education

Over the past several years, Bosnia and Herzegovina has increasingly expanded education opportunities targeting the ICT sector. Table 4 demonstrates Bosnia and Herzegovina's public sector commitment to diversify the various specializations of ICT into university curricula throughout the country. Beyond public sector education, however, Bosnia and Herzegovina has placed specific attention to the development of private sector ICT-focused education opportunities – including a series of CISCO Systems Training Academies (computer and Internet networking) arranged in partnership with various university programs throughout Bosnia and Herzegovina's major cities. Hundreds of students are presently enrolled at these independent ICT-focused learning centers – such as the Center for Computer Education in Sarajevo, the UCDED Center and the Center for New Technologies in Tuzla, etc. These institutions provide e-learning programs based on international standards, issuing a variety of internationally-recognized diplomas or certificates, such as CCAI, CCNA, Microsoft, ECDL, SUN Learning Initiative, VUE testing, CISCO, COMPTia, IBM business partner certificates, and the like.

Table 4

| ICT Education Programs - University Level - School Year 2003/04 | |
|--|--------------|
| | Enrolled |
| University Sarajevo | |
| Electrical Engineering | 1158 |
| Electrical | 435 |
| Transport & Communications | 666 |
| Economic - Business Management | 679 |
| Natural Sciences & Mathematics | 563 |
| Sarajevo Sch. of Science & Technology | 67 |
| University Banja Luka | |
| Electrical Engineering | 908 |
| Natural Sciences & Mathematics | 627 |
| University Tuzla | |
| Electrical Engineering | 435 |
| Natural Sciences & Mathematics | 983 |
| University Mostar | |
| Faculty for Information Technologies | 413 |
| Economic - Business Management | 615 |
| Total | 7,549 |

• Telecom Incumbents & Infrastructure

Three incumbent telecom operators (BH Telecom, Telecom RS and HT Mostar) presently share the Bosnian infrastructure market, operating fixed and mobile telephony networks as well as Internet and data transmission networks. These three incumbents are scheduled to be privatized between 2006-08. Tables 5 highlights the composition of providers in the infrastructure market, including competition emanating from wholly private Internet Service Providers (ISPs). Table 7 briefly highlights overall revenues earned by the infrastructure providers.

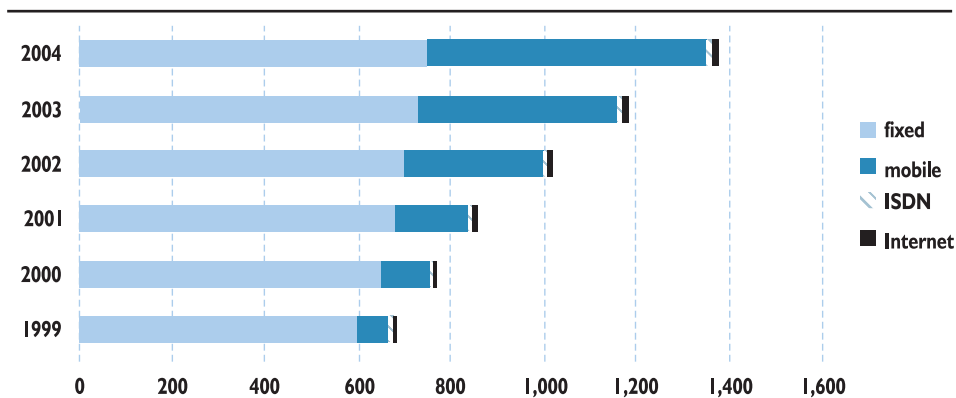
Table 5 – Bosnia-Herzegovina Infrastructure Providers

| | |
|---|-----|
| Fixed network operators with international connectivity | 3 |
| Mobile network operators | 3 |
| Network operators | 64 |
| Internet Service Providers | 40 |
| Cable operators | 40 |
| PS TV operators | 39 |
| Radio operators | 143 |
| Population coverage of fixed telephony infrastructure | 75% |
| Population coverage of GSM infrastructure | 80% |

For an up-to-date listing of licensed telecom and network operators/providers, please see the web site of the Communications Regulatory Agency (www.rak.ba).

Table 6 – Bosnia's Telecom Incumbents, Ownership Structure (pre-privatization)

| | | |
|--|------------------------------------|------|
| BH-Telecom | Federation entity of BiH | 90 % |
| | Privatization voucher shareholders | 10 % |
| HT- Mostar | Federation entity of BiH | 80 % |
| | Privatization voucher shareholders | 20 % |
| Telekom Srpske (fixed) and Mobis (GSM) | Republika Srpska entity of BiH | 75% |
| | Privatization voucher shareholders | 25% |

**Table 7
Revenue Trade - ICT infrastructure**
in € m

• An Emerging Market of ICT Providers/Users

Prior to the 1991 Bosnia and Herzegovina was host to a vibrant and proud technology heritage, boasting of some of the most sophisticated applications of mainframe and server-class computer technologies. International branded IT companies even invested in manufacturing and assembly facilities in Bosnia and Herzegovina. Presently, approximately 300 ICT-related companies (mainly SME's) are registered throughout Bosnia and Herzegovina, 90% of them wholly private. However, ICT-specific services and even manufacturing are again beginning to emerge as market demand begins to grow.

Table 8 - Initial ICT Market Segments

| | |
|--|------|
| Production of computers and other data processing equipment | > 50 |
| Production of insulated wire and cables | 4 |
| Production of electronic tubes and other electronic components | 6 |
| Production of TV and radio transmitters and wire phone and telegraph equipment | 14 |
| Production of TV sets, radios, and similar equipment | 4 |
| Production of industrial process control equipment | 5 |
| Telecommunications | > 25 |
| Renting office equipment, machines and computers | 4 |
| Consulting on computer equipment | > 25 |
| Data processing | > 20 |
| Data base construction and maintenance | > 20 |
| Other related computer activities | > 20 |
| <i>polled from 250 companies, 2003-2004</i> | |

To date, it has been with support of international community funded reconstruction projects that more of the sophisticated ICT projects have been initiated. Table 9 illustrates where the past market demands have being driven.

Table 9

| Selected Major Reconstruction Projects | Project Value (in €m) |
|--|-----------------------|
| Civil Information and protection System | 20 |
| Public Accounting Reform Project (Budget & Treasury Institutions) | 12 |
| State Border Control System | 20 |
| Customs Control System | 15 |
| Central Bank & Clearing House Systems | 17 |
| ICT System for Support to Privatization | 6 |

• Information Society Initiative

Bosnia and Herzegovina is in the midst of developing a policy foundation for the modernization and harmonization of the country's economic, social, and political systems, which has specific implications for the ICT sector. Within the regional context, Bosnia-Herzegovina is a signatory of the The Stability Pact of Southeast Europe and its eSEE Agenda for the Development of Information Society.

The eSEE Agenda for the Development of Information Society signed by Information and Communication Technologies (ICT) ministers of the countries of the region, namely Albania, Bosnia and Herzegovina, Croatia, FYR Macedonia, Serbia and Montenegro on 29 October 2002 in Belgrade associates the Signatories with the objectives of the eEurope and eEurope+ processes. The commitments of the document represent the strategy for the Initiative. Bulgaria and Romania as part of the region and also part of the eEurope+ process are important links to develop a true regional dimension.

The eSEE Working group is mandated to monitor and facilitate the implementation of the Agenda. The eSEE Working Group is backed by a Secretariat based in the UNDP Sarajevo Office reinforcing regional ownership of the Initiative. Beside the countries of the region supporting countries and organizations take part in the work of the Group as EC DG Information Society, UNDP, South East European Research Telecommunications and Informatics Institute (INA/Greece), Hungary, Slovenia, Sweden, UK, US, Turkey, UNECE. Projects promoted by the Working Group are supposed to underpin the realization of the strategy.

On the country-wide level, the BiH Council of Ministers (with assistance from UNDP) made public its larger Information Society agenda:

Strategy: http://is.gov.ba/uploadfiles/Strategy_for_IS_Development_in_BH.pdf

Action Plan: http://is.gov.ba/uploadfiles/Action_Plan_for_IS_Development_in_BH.pdf

The BiH Council of Ministers established a dedicated government agency to more effectively coordinate the country's ICT sector development.

More generally, the BiH Medium Term Development Strategy - PRSP (2004-2007) addresses the development of the country's ICT sector:

<http://www.seerecon.org/bosnia/documents/prsp/V-12.pdf>

• EU Integration

The Government of Bosnia-Herzegovina and the European Union established a Road Map, which commits Bosnia to a series of economic, political, and social measures necessary to prepare Bosnia to become a member of the EU by 2014. Clearly, the ICT

sector will play a vital role in increasing productivity and connectivity within all segments of Bosnia and Herzegovina's economic, government, and social infrastructures.

A substantial list of priorities exist for Bosnia and its EU partners to execute regarding the development and implementation of ICT tools and strategies necessary for effective EU integration. Priorities ranging from efficient knowledge and information sharing between a multitude of government ministries and public services, to sophisticated electronic currency and commerce networks and services — ICT is at the core of how these nation-wide infrastructures are designed and implemented

• **EU Integration Impact on BiH Market Economics and ICT Sector**

Bosnia-Herzegovina is committed to increasing national exports to the EU members states — thus:

- Bosnian companies will increasingly utilize ICT-driven processes and technologies to increase productivity and lower costs, so as to increase national exports.
- ICT goods and services have been shown in a multitude of nations to be an effective sector to attract export potential.

Bosnia-Herzegovina enjoys various multilateral and bilateral agreements and tax incentives with the EU and its Member States to increase Bosnia's export volumes. In unison with the official funding commitments from the EU and other international community leaders, as well as Bosnia's increasing domestic investments in the ICT sector, FDI into Bosnia's ICT Sector will be a vital tool to achieve Bosnia's inevitable integration with the European Union and the world's free market economies.

1. Privatization opportunities

Privatization processes in Bosnia and Herzegovina are managed by the Privatization Agencies. A number of "strategic enterprises" were selected for tender privatization (which includes telecommunications and public utilities).

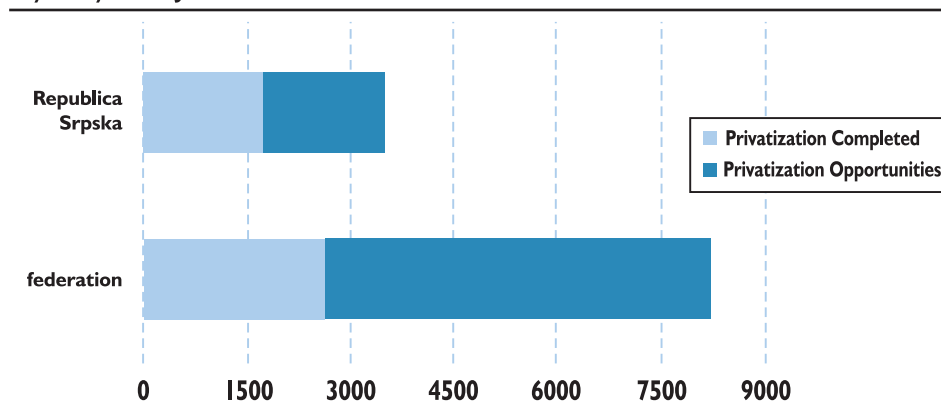
The adoption of the Laws on Concessions in 2002 created preconditions for more substantial inflows of private capital for infrastructure through the privatization of these enterprises.

2006-08 is projected that many of the remaining high-value privatization projects will be concluded — such as the telecommunications and power utilities sectors. As Table 10, below, demonstrates, nearly 7,500 privatization opportunities remain throughout Bosnia.

Table 10

Existing FDI Opportunities from Privatization

Privatization of Yugoslavia are Corporations within Bosnia
By Erity as of June 30, 2004



Source: unoknow

2. Privatizing the Telecommunication Sector

The Law on Communication was adopted at the state level in 2002, providing that the Council of Ministers was responsible for developing and adopting the sector policy, while the Communication Regulation Agency was responsible to regulate the telecommunication networks and services, including licensing, pricing, linking and specifying the basic conditions for provision of joint and international means of communication.

• Incumbent Information

BH Telecom

BH Telecom, d.d. (www.bhtelecom.ba), headquartered in Sarajevo, is a “joint-stock” company, principally divided into four primary service units, and combined, the company employs about 3,000 personnel.

| | |
|-------------------|------------|
| Fixed telephony | BH Telecom |
| Mobile telephony | GSM BIH |
| Internet service | BIHNET |
| Data transmission | BIHPAK |

BH Telecom provides 22 direct connections with foreign operators, providing a total capacity of 3,471 channels and also direct connections with Bosnia's other two incumbents, Telekom Srpske (494 voice channels) and HT Mostar (214 voice channels). BH Telecom has commercial roaming contracts with 127 world GSM operators, in 59 countries on all five continents. BH Telecom continues to expand its BIHNET Internet service with subscriber access to broadband capacity via leased lines and ADSL access.

Privatization status: BH Telecom is one of the "strategic" companies scheduled for privatization within 2006-08.

Telekom Srpske

Telekom Srpske (www.telekomsrpske.com), headquartered in Banja Luka, employs about 2,400 personnel, and provides its present subscriber base of 275,000 with direct switch links to Serbia-Montenegro, Germany, Slovenia, Croatia, Austria, Italy, and Switzerland. The company projects that its infrastructure will be fully digital by the end of 2005.

Privatization status: Telekom Srpske is one of the "strategic" companies scheduled for privatization within 2006-08.

HT Mostar

HT Mostar (<http://www.ht.ba/naslovna/index.php>) is the second of two telecoms operating in the Federation BiH. HT Mostar is legally established as a limited liability company (d.o.o.), with the Federation government owning about 80% of the company capital, the remaining 20% is privately owned capital. At present, HT Mostar provides only fixed line telephony and Internet connectivity services. The company possesses about 130,000 fixed line subscribers and Internet subscribers (dialup and broadband). In 2002, HT Mostar's GSM operations were spun-off into a separate operating entity, ERONET, but there are now attempts underway to re-merge together the two corporate entities.

Elektroprivreda BiH

Elektroprivreda (www.elektroprivreda.ba) is Bosnia-Herzegovina's largest power utility incumbent, which possesses a substantial, and growing telecommunications infrastructure primarily to support the power utility's generation, transmission, and distribution operations. About 2,000 kilometers of fiber optic cable capacity has been thus far installed by Elektroprivreda, and the company is now installing an additional

2,000 kilometers of fiber optic capacity. In late 2004, Elektroprivreda was awarded an independent telecommunications operator license, which allows the company to develop commercial applications of its excess capacity.

- **Additional Information**

For additional information regarding privatization, please see the following resources:

- BiH Medium Term Development Strategy - PRSP (2004-07) - Privatization: www.seerecon.org
- Main Privatization Portal for BiH: www.bhprivatisation.com
- Privatization in Federation: www.apf.com
- Privatization in Republika Srpska: www.rsprivatizacija.com
- Global Privatization Resource: PrivatizationLink: www.privatizationlink.com
- Global Privatization Resource: IPAnet: www.ipanet.net

IV. BOSNIA AND HERZEGOVINA'S ICT SECTOR FDI STRATEGY

Bosnia and Herzegovina's ICT FDI Strategy is based on the Bosnia and Herzegovinan government's awareness of inevitable needs of funding and technical capacity resources provided by the international community, and the transfer of knowledge and expertise to Bosnia and Herzegovina's ICT Sector. These inputs are required to address the mounting necessities of free market economics and regional competitiveness to manage foreign trade and domestic production output, combined with developing corporate capacity to design and integrate the sophisticated processes and procedures required to manage such free market necessities.

Recognizing that Bosnia and Herzegovina has a small population base, the FDI strategy is focused primarily on targeting medium to large -sized ICT companies, such as:

- Conventional capital providers specifically experienced in developing emerging markets via merging and acquiring smaller diverse SME's into more efficient corporate investment vehicles
- ICT integrated solutions providers, which possess the necessary know-how and capital to develop Bosnia and Herzegovina's domestic ICT market as well as ICT goods and services targeted for export.
- Large transnational branded FDI resources, particularly transnational telecommunications and public utility providers - which are consistently expanding their regional market specifically in the fields of ICT design and integration - will be targeted for some specific projects, such as privatization opportunities relating to telecommunications and power utilities and associated projects.

V. FIPA - SUPPORT TO EFFECTIVE FDI MANAGEMENT

FIPA is committed to both promote and facilitate FDI specifically targeting the ICT sector. FIPA has initiated a database of the country's ICT companies, and has established a vetting process to better facilitate qualified companies for FDI promotion.

In short, FIPA is committed to acting as one-stop-shop for the foreign investment community — helping to establish effective introductions, coordinate third-party accounting and legal services, coordinate government and bureaucratic requirements, and even to assist in identifying domestic investment resources for co-funding purposes.

You are kindly requested to see www.fipa.gov.ba, if you need more detailed information.

