United States Agency for International Development

Croatia
ICT Assessment
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USAID Europe and Eurasia Bureau

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I. EXECUTIVE SUMMARY

This Information Communications and Technology (ICT) Assessment has been undertaken at the request of the United States Agency for International Development (USAID)/Croatia Mission. The purpose was to assess the level of deployment of ICTs within Croatia and to examine potential opportunities for USAID to apply ICTs as a tool for development. Over the past several years USAID/Croatia has included ICT activities in its portfolio with promising results. The Mission expressed interest in having the findings and recommendations of this assessment available to incorporate into its five-year strategy development exercise that begins in October 2000.

This report includes information gathered by this team of ICT specialists both while in Croatia from 18- September 2000 through 29 September 2000, and by research prior to that on several external ICT-related assessments and earlier ICT-related work carried out by USAID/Croatia. The ICT Assessment seeks to pull many of the emerging threads together, validate and update key components reflected in these studies and activities, and ultimately put forth targeted areas of opportunity for further pursuit by USAID/Croatia using ICT applications in its program portfolio.

The ICT Assessment has been built around four key areas:

1) ***Pipes***—an examination of the current state of telecommunications infrastructure and capabilities within Croatia;
2) ***Public Sector***—an examination of the Republic of Croatia's position and status with respect to ICTs, with specific focus on the legal and regulatory framework, including public policy;
3) ***Private Sector***—an examination of the current state of the private sector with regard to use and leveraging of ICTs, with focus on opportunities; and
4) ***People***—an examination of Croatia's intellectual capital, training capacity, and educational curriculum with a focus on identifying opportunities for leveraging ICTs in the development portfolio of the USAID/Croatia Mission.

The ICT Assessment has concluded that there are at present several constraints that limit Croatia's broader leveraging of ICTs in support of economic development. These are primarily in the areas of competition and liberalization of the telecommunications sector, Internet access, and legal restraints that do not support leveraging the Internet for advancements in the area of E-commerce and E-government.

The assessment also identified opportunities that hold promise, where efforts could be undertaken that would promote the use of ICTs for development in Croatia. The country enjoys an excellent telecommunications backbone with more than 22,000 km of fiber-optic cable and a well-educated labor force with the potential for excellent ICT skills.

Croatia is at a critical juncture that presents significant opportunities to restructure its government and economy, allowing it to speed up its economic, social, and democratic

development. The new government, less than a year old, is searching for policies and programs that will allow it to become an European Union (EU) member. There are a number of existing conditions which, along with the enactment of some key laws, policies, and programs, would allow the country to leapfrog traditional development stages and jump-start its ailing economy.

Pipes

Croatia is at a relative advantage with respect to its neighbors as regards the existing physical infrastructure to support high-speed networking. This coupled with the beginnings of a competitive marketplace for telecommunications services, and good basic technical skills in the information technology (IT) workforce bodes well for Croatia's future business climate in the telecommunications sector. Foreign investments in the telecommunications sector within the last two years are evidence that the international business community sees potential for growth and profit, albeit in an environment of high risk and barriers to business.

Overall telecommunications infrastructure is good, with good international distribution, good national distribution, and fair local distribution. Needed improvements, though important, are not hindering the development of high quality networks throughout Croatia. Some rural, mountain, and war-affected areas still experience lack of basic infrastructure, such as water, sewerage, power, and telephone service, but movement in those areas is ongoing. Some more developed cities still experience power fluctuations, but for the most part power stability is not seen as a major impediment, and generators are not commonplace as in countries where power is regularly lost or cut due to rationing.

An environment in the telecommunications sector that stifles economic development tempers this positive outlook. The main factors contributing to this environment are: 1) the monopoly telecommunications provider, Croatia Telecom or HT, 2) the failure of regulatory pressure to create a level playing field for telecommunications providers, and 3) the need for targeted improvements in the infrastructure. Competition exists, but the HT-owned competitor has distinct advantages in both the Internet service provider (ISP) segment and the wireless segment.

In 1992, a significant portion of the telecommunications infrastructure, including telephone access for over 200,000 subscribers and about US$500 million of facilities, were damaged due to the war. Upon the cessation of hostilities in 1992, the predecessor to HT embarked on a massive reconstruction program to repair war-damaged facilities. Included in that effort was the installation of a national fiber optic network that spans 22,000 km of fiber optic cable to reach all of Croatia's major population centers. The past eight years has seen the installation of that network, along with state-of-the-art main digital switches, and interconnections to international networks.

The continued monopolistic hold that HT enjoys in the lucrative fixed data and international gateway services segments allows it total control of all data networking services in Croatia. HT has the only concession for providing fixed telephone services, public telephone services, leased lines (i.e., metropolitan and inter-city data links), and the transmission of all voice and data

outside of the country (i.e., long-distance telephone and Internet services). Those services that have been liberalized – the provision of mobile cellular telephone services and Internet service provider services – still require the private operators to pay connection fees and international access fees to HT.

Where competition has been allowed, improvements in the infrastructure and service offerings have followed, but in areas such as local loop and international gateway access, improvements are not pursued with the same vigor. In other areas such as war-affected areas, where there is no economic incentive to provide improvements, assistance by aid organizations may be required.

There is limited use of IT within the public and private sectors, where it is primarily used for word processing. Most desktop computers are not connected to a network. It is estimated that there are only 100,000 Internet services subscribers throughout the country. This translates into approximately 200,000 Internet users, despite calculations that there are an estimated 1 million potential users in Croatia. This is a very small number of subscribers, considering Croatia's population of about 4.5 million people are on the whole well educated, and English is spoken by many – though mostly the younger generation.

Wireless telephone use in Croatia is growing at a rapid pace, with good service in major metropolitan areas, the Dalmatian coast, and along major roadways. The introduction of competition and high demand from consumers has driven this segment to growth rates far exceeding those of Internet and general data network services, despite costs that are comparable to Internet access. This experience serves as an example of the potential impact of a small dose of competition. The environment is ripe for growth and development, given the right incentives. Investment, on the other hand, has been slow to develop, leaving much of this potential untapped.

Improvement in the general business environment, and thereby development of the Croatian economy is the major factor that would improve the telecommunications services available in Croatia. More affordable and widespread availability of telecommunications services would push the growth of the Croatian economy. Main factors that would advance this goal are the liberalization of the monopoly situation and strengthening of the regulatory function in the sector.

Public Sector

Croatia has tremendous potential to create an IT economy. An excellent fiber optic backbone network in Croatia and the intellectual capital to exploit its potential are available. Yet the utilization and deployment of ICT remains quite low, largely due to (1) the high cost and barriers to entry caused by the HT monopoly, (2) the lack of support and use of ICT by the Government of Croatia (GOC), (3) the lack of organization within the GOC regarding ICT, (4) an inadequate legal and regulatory framework, (5) minimal interaction on laws and regulations between the private and public sectors, and (6) an unfriendly, overly burdensome business environment and lack of enforcement of key laws. In sum, the GOC stands in the way. The GOC desperately

needs to develop a national strategy for ICT, enact needed legal and regulatory measures, and make the development of an IT economy a national priority.

The sale of 35% of HT to Deutsche Telecom in October 1999 did little to liberalize the monopoly of HT and this is a significant impediment to the use and growth of ICT in Croatia. Companies that want to become ISPs or wireless providers must obtain appropriate contracts through HT. The "independent" telecom regulatory body, Telecommunications Institute ("TI"), is largely an employer to former HT employees, thereby diminishing its objectivity and independence.

The Government has no national IT or telecommunications strategy and has given little or no attention to ICT and the contributions it could bring to both the people and the economy. There is no central entity within GOC that is responsible for IT issues or use of technology. Out of the 19 working groups charged with implementing the GOC Work Programme for 2000-2004, only one deals with IT. Shortly after the new President came into office, he asked a private sector group referred to as the Working Group of the President of the Republic to develop an "informatization" strategy proposal for Croatia. The 14-member Working Group developed a report and a series of recommendations entitled, "e-Croatia -- A Proposal for Croatia's Informatization Strategy." The report called for, among other recommendations, a new ministry to focus on ICT, the development of a national strategy, government organization, and legal and regulatory initiatives.

On 20 September 2000, the GOC announced a tender for the Head of Office of Internetization. This is a step in the right direction, but there are already concerns that the office will be inconsequential if a Minister does not head it. Intra-governmental organization regarding ICT is sorely needed.

In addition to the need for government organization for ICT, significant legal and regulatory reform is needed. There are numerous provisions that create a burdensome and unpredictable business environment, such as high taxes; labor laws; filing requirements; difficult processes for various applications, permits, and licenses that amount to administrative barriers; lack of corruption laws; etc. These provisions outweigh any advantages offered by the GOC to business and encourage foreign investment to go elsewhere.

There are virtually no laws in place to accommodate e-commerce applications, such as digital signature, electronic payments and funds transfers, privacy, consumer protection, computer crime, and other issues now under discussion around the globe and in multinational fora. The financial system in Croatia is developed enough to accommodate e-commerce transactions, whether business-to-business or business-to-consumer, quite easily, but the lack of laws and regulations deter such advances.

Positive changes in the legal and regulatory framework, however, depend upon improved advocacy and interaction between the public and private sectors. The private sector is generally unorganized and not accustomed to lobbying for its interests. The executive and legislative

branches are not receptive to private sector input and largely do as they wish. In part, this divide is due to a lack of transparency and sunshine in the legislative and regulatory process.

The GOC comprises the largest segment of the Croatian workforce. As the nation's largest employer, GOC holds the ability to jump-start an IT economy and the widespread use of ICT simply through its own e-engineering of its operations. Government initiatives such as e-services, e-benefits, e-forms and e-filings, and e-procurement would require changes in both the public and private sectors and significantly advance ICT in Croatia.

The judicial and legal systems in Croatia need continuing assistance. Although some reforms and automation are underway through a comprehensive Ministry of Justice program and USAID initiatives, more needs to be done to alleviate case backlogs, inefficient case management and court administration, and manual processes regarding court registers. The availability of legal information is important for both the judicial branch and the public. This is especially important in the war-affected areas.

Private Sector

The process of privatization in Croatia is continuing to increase and gain some momentum. The government is looking towards privatization receipts to cover budget deficits, and therefore is being instrumental in facilitating this change in an economy that was not open until very recently. Croatia's economy is finally becoming more open to foreign investors and the sale of 35% of HT to Deutshe Telecom in 1999 represents the largest venture of this type. Such change is a result of monetary and fiscal policy by the new Croatian government, driven by an urgent need for foreign direct investment (FDI) to balance their national budget and avoid an increased deficit. Despite the motivation for allowing such an acquisition, it still reflects a move towards privatization within the country.

The privatization of the commercial banking sector is more or less complete. The privatization of commercial banks has led to about 72% of banks being foreign owned, investors primarily coming from Austria, Germany, and Italy. Other sectors are not at this stage, but are moving in this direction. Privatization remains the most difficult area that requires deregulation.

There are an estimated 60,000 companies in Croatia. Only about 1,700 of these are in the private sector, however, and many of them are very small companies, approximately 70% of them having less than 50 employees. The majority of these companies are involved in redistribution of hardware, and despite a labor force that includes those with software development skills, there are fewer than expected companies engaged in this applications development. The reason for this stems from a combination of 1) an unwillingness to pay for software, and 2) inexperienced entrepreneurs who are not able to market their products.

The overall business climate for entrepreneurship is not entirely encouraging, and this has also hindered the growth of the IT industry. Payroll tax rates are high and the corporate tax rate, 35%, is also very high for the region. The registration process for a company is also very cumbersome and a fee is charged for each activity that an enterprise intends to engage in. There

is also limited information available on such requirements, which makes it extremely difficult for foreign investors, as they are simply not aware of what needs to be done to start and run a business in Croatia.

There are also no tax breaks for corporations that invest in training of their staff, and such costs are currently seen as operating costs. Secured transactions are not in place, and this adds to the already existing mistrust in the economy. There seems to be an overall interest in e-commerce, but until the absence of secured transactions and digital signature laws has been addressed, e-commerce initiatives cannot be further developed.

People

Croatia has a skilled labor force in the information technology sector, with good technical skills. Their educational system has strong support from the government, and universities are highly ranked. In terms of IT, practical employment-based training is adequate but not extensive. Management skills, however, are lacking.

Several major areas of ICT applications have potential to rapidly improve the economic and social well-being in Croatia, and would be good candidates for USAID involvement. These include several ventures in electronic government, developing the basis for electronic commerce, and areas of distance education, telemedicine, and other direct applications.

The USAID program in Croatia contains a number of ICT applications. Work on the judicial system incorporates significant IT components. In efforts at building civil society, USAID has significant involvement in mass media activities. In reintegration efforts, use of ICTs has been limited. The USAID portfolio focuses on three general areas: improved democracy and governance, improved conditions for business and economic growth, and re-integration of war-torn areas.

II. INTRODUCTION

Why is ICT Important to Development?

The increased global attention on the positive impact of ICTs can, to a large extent, be accredited to U.S. economy and its positive performance over the past decade. The U.S. is enjoying the longest economic expansion in history, manifested in high productivity rates, growth in real wages levels, and a record low unemployment rate with inflation remaining curbed.[1] The contribution of ICTs to this have been captured and documented in a series of annual reports prepared by the U.S. Department of Commerce (DOC). One of the DOC's most recent reports, "Digital Economy 2000," credits the IT industry for approximately 8% of output in the U.S. economy in the year 2000, and approximately 30% of growth over the past 8 years. The experience of the U.S. provides a strong argument in favor of increased dissemination of ICTs. This phenomenon has resulted in nationwide benefits that cross vertical and horizontal divides in the U.S., and has the potential for doing the same in developing countries.

"Information Technology is:

- *The undisputed driver behind the U.S. economy.*
- *A powerful force in national defense and national security. Indeed, national security is now directly linked to the national economy.*
- *Reshaping the business landscape. The Fortune 500 list looks very different today than it did five years ago and a number of companies who traditionally "made the list" are gone.*
- *Changing culture and the way we work, learn, govern, educate, do business and play.*
- *Wiping out budget deficits and easing government debt.*
- *Changing economic analysis and financial controls.*
- *Raising new issues and problems and requiring new laws, policies and regulations.*
- *Causing unprecedented growth and prosperity.*
- *Changing requirements of law enforcement and how we gather intelligence.*
- *Requiring unprecedented public/private cooperation.*
- *Shifting policy positions and changing relationships with other nation states.*
- *Leading to new bilateral agreements and multinational discussions.*
- *Causing the formation of new industry and consumer groups and NGOs.*
- *Changing the way that transactions and access to communications are taxed.*

[1] Jody Westby, The IT Economy, 2000, 1.

This list, which cuts across all aspects of society, illustrates why traditional thinking in the IT economy is no longer applicable."[2]

Why Should USAID/Croatia Incorporate ICTs into Its Activities?

The emergence of globalization has led to ICTs occupying an increasingly important place on the international development agenda. ICTs impact the development agenda in several areas, one being as a means for communication and collaboration, in a sense, a means for increased 'connectedness' between organizations and their partners. Several studies reveal a correlation between 'connectedness' and democracy. ICTs have served to strengthen civil societies by providing a medium that bypasses communicative barriers of time and space; and thus promote vehicles that support increased levels of democracy through easy access to information. The dissemination of ICTs has been one of the foundation stones of a viable civil and democratic society in this era. "The countries that made a great leap into democracy recently might be expected to slip back somewhat unless or until their communication capabilities come on par with the communication needs that are associated with their new levels of democracy."[3]

Trade has also been greatly impacted by the deployment and increased importance of ICTs, and an international marketplace has been created. Nations are increasingly forming trade agreements – ICTs are at the core of international trade, creating increased profit margins of enterprises. ICTs make international trade possible by increasing the speed of transactions and providing a new transaction vehicle. On a micro level, the advent and use of ICTs have greatly reduced transaction and operating costs in market relationships, increasing overall profits for enterprises.

The "information age" has also brought with it a shift of importance from manufactured, material goods, to the provision of value-added services and information or knowledge-based assets. This increased importance in services has had the corresponding effect of lowering the value of manufactured goods with respect to information and knowledge-based goods. As a result, higher economic value can be derived from goods that are transported over the Internet than those that are shipped by air, land, or sea.

While centralized and bureaucratic organizational structures are being left behind with the industrial era, labor requirements are reflecting similar changes. International demand for labor is shifting from factory workers to the need for software developers, bank employees, system integrators, and so on. This has particular advantages, as employers are creating jobs that have high productivity gains, increased remuneration, and reduced ability for exploitation. The wage gap between IT and non-IT workers in the U.S. vividly illustrates this, as in 1997 annual salaries for those engaged in IT-related employment averaged $53,000 versus $30,000 for non-IT workers[4] and the gap is reported to be widening. This shift in demand for physical labor to 'intellectual' or mental labor has benefits that far outweigh the concerns. Jobs are being created

[2] Jody Westby, The IT Economy, 2000, 1,2.
[3] Christopher R. Kedzie, *The Third Waves,* in **Borders in Cyberspace**, Brian Kain and Charles Nesson, eds, Cambridge, Massachusetts: The MIT Press, 1998, p. 125.
[4] Jody Westby, The IT Economy 2000, 4.

at rapid levels and the myth that the use of IT would lead to a reduction in job openings has been proved untrue. Countries' social problems have shifted from foreign ownership of domestic corporations to serious concern over intellectual capital flight, or the 'brain drain' phenomenon. Although this is a serious domestic issue for many nations, it illustrates the mobility that international labor has acquired, and the choices provided to citizens of all countries by this job market.

The world is no longer divided by the Cold War, but there is a new separating phenomenon, the 'Digital Divide' or as the White House has recently termed it, 'Digital Opportunity' [5]. This divide is increasingly shaping foreign policy. Many reports and results of studies reveal important synergies between general well-being of populations and Internet penetration. The United Nation's (UN's) Human Development Index illustrates a correlation between the increase in human development indicators, such as education and income, and increased Internet use. The G-8 Summit that took place in July 2000 at Okinawa, Japan reinforced this, as witnessed by the importance placed on the growing digital divide. The result was the development of an Okinawa Charter in Global Information Society. This Charter led to the birth of the Digital Opportunity Task Force (DOT Force), as an unprecedented first step toward the goal of achieving digital access and education for all by the year 2010.

It is important to note that the deployment of ICTs are not a panacea that lead to emerging economies automatically catching-up economically and closing the digital divide. The majority of emerging economies have protectionist policies in place, to varying levels, and governments need to actively address this. Liberalization of telecommunications, opening markets to foreign investment and trade, protecting property rights, establishing an effective legal and regulatory system, and efficient financial markets are examples of supportive measures that need to be put in place. The deployment of ICTs will increase the rewards of these.[6] The number of USAID-funded projects that prioritize technology transfer has grown, parallel to the voiced desire for this on the part of recipient host countries. On a practical level, this is manifested in ICTs contributing to the creation of a stable infrastructure, that subsequently leads to attracting further investment to that area. ICTs play an integral role in development activities that are sustainable and self sufficient in the long run, and can also serve as tools to encourage and facilitate empowerment.

[5] http://www.whitehouse.gov/WH/New/digitaldivide/, White House Web site, 2 February 2000.
[6] "The New Economy," The Economist, 23 September 2000.

III. PIPES

Telecommunications is becoming increasingly critical as expanding globalization progressively relies on ICTs as fundamental components of communication, productivity, and growth. Activities that never focused on ICTs are finding that basic needs like facilitation of knowledge and information sharing and exchange can be met using these technologies. Telecommunications and the Internet increase the reach of partners and shift time zones, facilitating tasks like coordination and collaboration across geographic boundaries.

Telecommunications infrastructure, as an underlying component of development activity, is more than ever before being recognized as critical. Organizations are finding that the need to communicate and coordinate with their partners is driving them to find new ways to achieve these goals. Whereas organizations historically viewed telecommunications as a luxury, which can only be practiced in major cities of developed countries, the availability and ubiquity of ICTs worldwide has made telecommunications available to organizations that have not traditionally been able to afford or acquire the capability. Advancing technology, falling costs of technologies as a whole, the increasing "connectedness" of all types of organizations and individuals to the Internet, and the basic need to communicate have all caused an increased emphasis on ICTs as a basic tool that facilitates activity across all of an organization's objectives.

This section of the ICT Assessment examines the telecommunications sector in Croatia from several perspectives, including: 1) the overall telecommunications environment in Croatia, 2) the state of Croatia's telecommunications infrastructure, 3) those products/services provided by Hrvatski Telecom (Croatia Telecom or HT), the semi-privatized state telecommunications monopoly, 4) those services provided by the liberalized segments of the telecom sector, such as local ISPs and mobile cellular telephone providers, and 5) Croatia's telecommunications stance based on comparative data sets from the International Telecommunications Union (ITU) 1998 data.

Summary

Croatia is at a relative advantage with respect to its neighbors as regards the existing physical infrastructure to support high-speed networking. This coupled with the beginnings of a competitive marketplace for telecommunications services, and good basic technical skills in the work force (though a lack of practical operational and management skills is a major hindrance) suggests that Croatia's future business climate in the telecommunications sector has good potential. Foreign investments in the telecommunications sector within the last two years are evidence that the international business community sees potential for growth and profit, albeit in an environment of high risk and significant barriers to business.

Some statistics on Croatia:

- **80% - 85%** of the population has access to fixed telephone service, with a teledensity of **34:100**, or 34 telephone subscribers per hundred.

- **1.6** million fixed network telephones lines in service, with current capacity for **2.2** million
- **22,000** kilometers of fiber optic cable in the national telecom backbone network
- **90%** of national switching infrastructure is digital, with full digital implementation expected by the end of 2000 – this is a critical precondition for the delivery of digital data services such as high-speed Internet
- Digital data services such as Asynchronous Transfer Mode (**ATM**) and Integrated Services Digital Network (**ISDN**) are available in some areas (5 cities nationwide)

And on Internet use:

- **100,000** residential Internet subscribers, approximately **200,000** Internet users (including academic users)
- Between **3%** and **6%** of Croatians as a whole use the Internet
- **10%** of fixed telephone subscribers have Internet access
- **16%** of Croatians have a computer in their home

The environment in the telecommunications sector stifles economic development. The main factors contributing to this environment are: 1) The monopoly telecommunications provider, HT, 2) the failure of regulatory pressure to create a level playing field for competitive telecommunications providers, and 3) the need for targeted improvements in the infrastructure. Competition exists, but the HT-affiliated competitor has distinct advantages in both the ISP segment and the mobile cellular segment.

Croatia split up its post and telecommunications operations (HPT) in 1999, as most traditional government monopolies moving toward privatization have done. Prior to the split, all telecommunications were operated by the government monopoly, HPT. After that split, competition was opened up in two main segments of telecommunications: mobile cellular telephone service, and ISPs. These "enhanced" services were opened to competition, while the basic or "common carrier" services and some other services remained under the control of the government monopoly, now called HT. The services withheld for monopoly control are the essential subscriber access, backbone network access, and international access that any operator in the new competitive segments has to buy from HT in order to operate.

In addition to control over the essential access points in the market, HT operates its own telecommunications companies that compete in those segments that have been opened to the private sector. This creates a situation in which one competitor in each of the liberalized markets (the HT mobile cellular telephone division, for example) has direct ties to the monopoly provider (HT) for the "common carrier" telecommunications services that all competitors need in order to operate.

Where competition has been allowed, improvements in the infrastructure and service offerings have followed, but in areas such as local loop and international gateway access, improvements are not pursued with the same vigor. In underserved regions such as war-affected areas, where

there is no economic incentive to provide improvements, assistance by aid organizations may be required.

Overall telecommunications infrastructure is good, with good international distribution, good national distribution, and fair local distribution. Needed improvements, though important, are not hindering the development of high quality networks throughout Croatia. Some rural, mountain, and war-affected areas still experience lack of basic infrastructure, such as water, sewerage, power, and telephone service, but movement in those areas is ongoing. Some more developed cities still experience power fluctuations, but for the most part power stability is not seen as a major impediment, and generators are not commonplace as in countries where power is regularly lost or cut due to rationing.

Mobile cellular telephone use in Croatia is growing at a rapid pace, with good service in major metropolitan areas, the Dalmatian coast and along major roadways. The introduction of competition and high demand from consumers has driven this segment to growth rates far exceeding those of Internet and general data network services, despite costs that are comparable to Internet access.

By comparison, Internet use in Croatia has grown slowly until 2000. The factors contributing to this dichotomy are: 1) market demand for voice communication (the overwhelming desire of people to talk to each other) versus electronic communication (the relative unpopularity of using a computer to communicate), 2) cost of voice equipment versus computer equipment (a computer costs more than a cell phone), and 3) the cost of voice service versus Internet service (here the costs are relatively equal). It should be stated that cellular telephone use increased dramatically in Croatia when prices were nearly cut in half due to competition.

This experience serves as an example of the potential impact of a small dose of competition, though market demand is a key factor. The environment is ripe for growth and development, given the right incentives.

The availability of telecommunications services, therefore, is such that a high-level of services is accessible and can be acquired in the marketplace. This provides the potential for leveraging telecommunications as a tool for bringing about social and economic development. Business, consumers, and the development community have benefited from increased competition in the market, and availability of services is not an issue in and between major metropolitan areas.

Indeed, the lack of services in war-affected areas itself provides an opportunity for some telecommunications technologies to overcome these barriers. For example, the reconstruction of damaged telephone lines in war-affected areas is hampered by the danger of digging where mines have not yet been cleared. Solutions such as satellite and/or fixed wireless public telephones can leapfrog this problem by precluding the need to dig at all. Services such as this, while not typical to humanitarian assistance, help to alleviate the isolation experienced in these areas and can facilitate access to emergency services. Whereas market forces can be expected to address growth and development in capacity and service offerings of the telecommunications

sector as a whole, there is no incentive for the market to address the needs of populations with little or no income.

Analysis

The development of a national fiber-optic network with modern switching equipment is a major reason that Croatia's telecommunications environment can support competition in the mobile cellular telephone and Internet service markets. Investments in that backbone and the attached equipment make it a good platform for providing high-speed networking services to the country. Possibilities for expanding the network exist through use of the national utilities' right-of-way and further direct foreign investment. At present the backbone is underutilized, and in some places the installed equipment does not meet the capacity requirements of the network. Lack of competitive pressure in these segments of the telecommunications sector provides a disincentive for capital improvements.

Although the signs point in the right direction for development of Croatia's telecommunications sector, many are frustrated by the rate of development, the continued monopoly enjoyed by HT, and the lack of a strong independent regulatory body. Improvement in the general business environment, and thereby development of the Croatian economy, is a major factor that would improve the telecommunications services available in Croatia. The main factors that would advance this goal are the liberalization of the monopoly situation and strengthening of the regulatory function in the sector. Government has moved down the road towards privatization and liberalization, but provisions in the law still hinder competition and lock in monopolies. These barriers create an environment that increases costs to the operators, and in turn to consumers and business, which in turn stifles economic development.

The Ministry of Maritime Affairs, Transport and Communications has the responsibility for governing the telecommunications sector. Regulation of the sector is the responsibility of the Telecommunications Institute. Telecommunications operators report that HT can be unresponsive to pressure from the Telecommunications Institute to deal with private operators and the HT operator equally. The use of former HT employees in the Institute, as well as the appointment of the Assistant Minister of Maritime Affairs, Transport and Communications to be the acting chair of the Institute, creates the appearance of vested interest on the part of the Institute, and diminishes its independence and fosters a lack of confidence in its ability to enforce a level playing field.

Attempts to regulate this environment are hindered by further ties between HT, the government (which owns the majority stake in HT), and the regulatory body (which is chaired by a government Assistant Minister). These ties foster a lack of confidence in the regulatory process, and hence a perception that private businesses are at a disadvantage with respect to operating costs as compared to the government-owned HT operators.

> *"Even for nations inclined to favor a deregulated environment, the potential for the incumbent carrier to engage in anticompetitive practices stimulates the need for government oversight when an incumbent carrier provides both basic and enhanced services. It may:*

- *Exploit its ownership and operation of local exchange facilities;*
- *Impose excessive financial burdens on users of basic services, in effect making them involuntary underwriters of the incumbent carrier's under-priced enhanced services"*[7]

Competition exists, but the HT-owned competitor has distinct advantages in both the ISP segment and the mobile cellular telephone segment. These advantages stem from the requirement for each competitor to use HT's core telecommunications infrastructure to access both the international networks (for voice and Internet) and the local customer (through the local loop). In addition, a competitor coming into one of these markets must contract with HT for its concession. HT, therefore, has the ability to control how that competitor operates.

Players in the telecommunications market (mobile cellular telephone operators and ISPs) complain of high fees and lack of regulatory assistance, but all have a more or less positive outlook on the future of the telecommunications sector to become more competitive and to develop into a profitable, productive market. Companies have expressed their expectation that the growth of Internet use, and thereby its profitability as a market, will come in the next year or two.

Telecommunications Environment

The Telecommunications law in Croatia allows private competitive companies to operate in those segments of the telecommunications sector deemed important for general economic activity. These segments include mobile cellular telephone service, ISPs, broadband data and video services, a value-added and business data services. These services are typically bundled into a category called "enhanced services" to distinguish them from what traditional national telecommunications monopolies deem as "common carrier services."

Those segments deemed critical for strategic and national security reasons were held back for monopoly control by the government and are only available through HT. These segments include all data and real-time voice networking over international borders, all leased data lines, the public telephone network, and public payphones. These can be categorized as "common carrier services" although some services, such as leased data lines, are not typically categorized as basic.

As stated earlier, the general sense is that despite the current monopoly the telecommunications sector will develop. The only questions are "At what pace?" and "What opportunities for advancing the development of the economy will be missed?" Some in the sector are expressing optimism that the boom for Croatia's telecommunications sector is coming in the next few years.

At present, for example, Iskon (the number two ISP behind the state-owned HT ISP HiNet) reports that it is making no profit from its residential Internet service, and small margins on its leased line services (both require Iskon to pay access fees to HT). However, Iskon expects to benefit in the future from its lead position in the marketplace once liberalization takes hold. As a

[7] R. Frieden, *International Telecommunications Handbook.* Artech House. 1996. p. 117.

result, they are willing to invest in expansion of their capacity because of their belief that the Internet market in Croatia as a whole will blossom by early 2002 with a "critical mass" of Internet users coming online.

In another example of optimism and creative problem solving, private mobile cellular telephone and ISP companies are finding ways to bypass the international gateways of HT. They would like to contract with international telecommunications companies like AT&T for international gateway access because the costs are much less than going through HT; however, they are prohibited by law to do so. To work around this requirement, ISPs have adopted a strategy much like the DirectPC service in the U.S., whereby the outgoing request for Internet data travels on the fixed dial-up or leased line, and the returning data requested travels over satellite downlink. In this model, only the return path of data to the ISP (typically the largest share of the traffic) is bypassing HT lines. Whether this model will stand in the light of the current Telecommunications law is uncertain, but more than one operator is using this strategy.

Infrastructure

The telecommunications infrastructure within Croatia can be characterized by reviewing the state of infrastructure and offerings in three areas: 1) local distribution infrastructure, 2) national distribution infrastructure, and 3) international distribution infrastructure.

Local Distribution Infrastructure – local loop or "last mile"
Local loop is the segment of the telecommunications infrastructure that connects the subscriber (residential or business customers) to the overall telecommunications network. The telecommunications network is typically connected to subscribers through aggregation points (called "central offices" or COs) distributed within a neighborhood or city. The connection between the CO and the subscriber (e.g., your home) is the local loop.

Interviews with telecommunications businesses and with HT reveal that the overall state of local loop in Croatia is good. All local loop in Croatia is comprised of copper wire. The areas of the country in which the quality of local loop is poor are the rural and mountainous regions, as well as those regions where telecommunications infrastructure was damaged during the war. Some estimates put the number of subscribers who lost telephone access because of war damage at 200,000, and the cost of damage to telecommunications facilities at US$500 million.

HT states that all local loop older than about 10 years, however, will have some degree of poor quality copper. This will in turn degrade the capability of that local loop to carry advanced services such as high-speed Internet access. HT has already found this problem in some of its testing with the rollout of ISDN services. This problem becomes more acute in developed urban areas, where any digging for replacement or repair causes traffic disruptions.

Another factor that is important for future high-speed networking over local loop is the length of the loop. The distance from the subscriber to the CO is the major factor determining the signal quality that the loop can maintain. In other words, the further your home (or business) is from the CO, the less likely that you will be able to have high-speed Internet. A distance of about 18,000 feet (5.5 kilometers) is considered acceptable for use with most high-speed Internet

services such as ADSL (Asynchronous Digital Subscriber Line) and ISDN, though the very highest speed services require local loop lengths as short as 1,000 feet (300 meters). In Croatia, HT says that the longest local loops will be in rural and less dense areas, and can be as long as 10 kilometers. HT could not venture a guess as to the average local loop length.

Private sector competitors to HT must use HT's local loop facilities to reach customers. HT in turn charges access fees for interconnection to its local loop network. In the U.S., "the FCC required the Bell Operating Companies or BOCs to revamp their local exchanges"[8] according to a structure called Open Network Architecture (ONA), which allows competitive operators to attach their own internal networks to the national network. ONA serves as a means of, "specifying and tariffing local exchange functions by their component parts so that enhanced service providers can select only what they require to engineer customized offerings. […] ONA seeks to maintain a 'level competitive playing field'."[9]

Private operators are anxious to circumvent the infrastructure obstacles, and to bypass HT access fees, by using wireless local loop. This technology replaces the copper wire with a pair of wireless modems. At the moment, the government does not allow installation of wireless local loop by private operators.

National Distribution Infrastructure – backbone network
HT has an extensive network of fiber optic cable running to all the major metropolitan areas of Croatia. HT has installed 22,000 kilometers of fiber presumably in anticipation of the privatization process, though some have suggested it was due to military requirements. This asset, so unusual in this part of Europe, has the potential for allowing advanced networking services to be deployed in Croatia in a short timeframe.

In addition to the fiber backbone, HT has installed modern switching equipment to handle both the voice needs of HT's subscribers and the growing data networking needs of consumers and business. These switches act as the endpoints of a telecommunications operator's service umbrella. In developed countries like the U.S. that have had older analog switches in place for decades, it has been a long and expensive prospect to upgrade their systems to digital switches. All U.S. telecommunications network operators are making this investment, since failure to do so would leave them unable to deliver any of the services that modern customers and businesses require and consider basic. In the U.S., for example, some consumers find that certain digital services are unavailable to them because their local switches have not yet been upgraded.

Croatia, on the other hand, has almost completed this upgrade. Fully 90% of the switches deployed on HT's backbone are digital, with further upgrades ongoing. The anticipated date for completion of the project, with 100% of the switches upgraded to digital, will be early 2001. All entities interviewed for this report stated their belief that the quality of engineering and the staff operating this backbone network was excellent.

[8] R. Frieden, *International Telecommunications Handbook*. Artech House. 1996. p. 118.
[9] Ibid.

HT's investment in digital switches on its fiber-optic backbone has allowed deployment of digital data services (such as ATM) for business, and the possibility for future deployment of high-speed Internet access technologies (such as Digital Subscriber Line or DSL) direct to residential customers.

HT currently offers ATM in five cities, and has rolled out ISDN services as well. HDSL (High-Speed Digital Subscriber Line) is available from HT, but ADSL is not. Plans are being made to develop pilot projects with selected customers to begin testing deployment of ADSL, likely in mid 2001.

Other backbone networks are operated by state enterprises such as the power and railroad companies, although these networks are not as expansive as the HT network. These networks are used for support of internal operations, such as connecting control and monitoring equipment distributed along power and rail lines through isolated areas. These enterprises are in the very early stages of looking at their internal backbone networks as potential data networks, capable of delivering data and voice services.

International Distribution Infrastructure – international gateways
With the sale of 35% of HT to the German telecommunications company Deutsche Telecom (DT), HT now is connected to DT's extensive European backbone network. This connectivity, coupled with connections to Austria, Italy, Hungary, Slovenia, and the U.S., gives Croatia international connectivity to 35 countries.

The link to the U.S. is critical for most Internet traffic, since over 80% of all Internet traffic globally is destined for a U.S. Internet host. Croatia has a 12 Mbps connection to the U.S. via MCI.

Competitive operators have expressed their frustration with HT's lack of concentration on international gateway improvements, however. Increases in the market demand for services from these private competitors lead them to request additional capacity on the international gateways. These needs, however, do not always coincide with HT's priorities, and do not compel HT to devote its resources to upgrading these facilities. HT has stated that it tends to focus its resources on those infrastructure facilities that operate in the competitive arena (such as mobile cellular towers) due to the pressure to compete with private operators. Therefore, non-competitive facilities tend to be overlooked with respect to upgrades and proactive capacity planning.

Hrvatski Telecom

On 1 January 1999, the former public company known as Hrvatski posta I telekomunikacije (Croatian Post and Telecommunications) or HPT, was officially divided into two new joint companies: Hrvatski posta or HP, and Hrvatski telekomunikacije or HT. In October 1999, the Croatian government sold 35% of HT to Deutsche Telecom as part of a privatization effort. In September of 2000, HT changed its name and look to make it more internationally marketable, becoming Hrvatski Telecom (from Hrvatski telekomunikacije) and using a gray and orange logo in line with the DT colors.

HT was restructured, with telecommunications services provided by the operating divisions listed below. Those divisions offer common carrier telephone services, Internet access (ISP), mobile cellular telephone, leased data networks, and packet switching network services.

Those companies that do choose to compete with HT, even with the prohibitive fees, must compete with the potential for preferential fee schedules HT provides to its own companies in those segments, and a weak regulatory body that has difficulty enforcing a level playing field.

HT has several operating divisions in the telecommunications market:

- **HT-CRONET – Mobile Cellular Telephone Service**
  HT introduced an experimental GSM network in August 1995. That network began offering services to subscribers in March 1996 under the name CRONET.

  With approximately 100,000 subscribers, CRONET now operates one of the two GSM licenses in Croatia. The other is operated by VIPNet, which has experienced huge growth in 2000, and whose competition has both lowered the cost of mobile cellular access, and spurred overall increased use of mobile cellular telephone service in Croatia. HT also operates an older analog generation of mobile cellular service (NMT), which has about 100,000 subscribers, and a paging network. HT's total mobile cellular telephone capacity in both networks is about 400,000 lines. It is available to 84% of the population and covers 60% of the Republic of Croatia.

  CRONET offers a portal in conjunction with their mobile cellular service, which allows access to the Internet for its customers.

- **HiNet – Internet Service Provider**
  HiNet has about 79% of the ISP market, but recent competition has again proved a boon to consumers, bringing prices down and overall Internet use up.

- **HT-CROPACK – Packet Switching Network**
  HT's packet switching network has approximately 1,000 subscribers. This service provides data networking services to customers, giving them connectivity between metropolitan and inter-city offices.

- **HT-CROLINE – Leased Data Line Provider**
  There are approximately 300 subscribers to CROLINE. This service is differentiated from the packet switching service in that it provides the basic connectivity between customer premises, without the data networking service; in effect, the cable without the equipment.

  Typically ISPs will utilize this service to connect their offices and "points of presence" since they will be able to supply their own data networking on top of the leased line service. ISPs will also utilize and resell CROLINE as the basis of their own networking

offerings to businesses, since HT it is the only authorized leased line provider. This means all networking in Croatia is affected by any tariffs and fees placed on leased line access by HT.

Competitive Telecommunications Providers

The Telecommunications law in Croatia allows private competitive companies to operate in those segments of the telecommunications sector deemed important for general economic activity. These segments include mobile cellular telephone service, ISPs, broadband data and video services, and value-added and business data services. These services are typically bundled into a category called "enhanced services" to distinguish them from what traditional national telecommunications monopolies deem as "common carrier services."

Held separate from competition are all data and real-time voice networking over International borders, all leased data lines, the public telephone network, and public payphones. These can be categorized as "common carrier services" although some services, such as leased data lines, are not typically categorized as basic.

Private mobile cellular telephone and ISP companies would like to contract with international telecommunications companies like AT&T for international gateway access because the costs are much less than going through HT. To work around this requirement, ISPs have adopted a strategy much like the DirectPC service in the U.S., whereby the outgoing request for Internet data travels on the fixed dial-up or leased line, and the returning data requested travels over satellite downlink.

Internet Service Providers

Estimates for the penetration of Internet access in Croatia vary within a range of 3% to 6% of the population. A recent market survey done for a new ISP venture called Internet Gold was conducted by IPSA. Their numbers as reported by Associated Press (AP) show:

- **54%** of the population know what the Internet is
- **16%** of the population have a computer at home
- **3% - 6%** of the population use the Internet

As for regional distribution of Internet access, it is primarily focused in the capital, Zagreb, where 25% of the nation's population resides. Outside of Zagreb, Istria and the Dalmatian coast are the primary users of Internet.

- **34%** of Internet users are in Zagreb
- **16%** of Internet users are in Istria and Zvarner
- **16%** of Internet users are in the Dalmatian coast

There are two major competitors to HiNet operating in Croatia, along with a few smaller ISPs and one non-commercial network. The largest privately owned ISP is Iskon, which is focusing on its portal service and business system integration offerings. The next largest market share

belongs to GlobalNet. CARNet, the non-commercial ISP, was the first to introduce the Internet in Croatia. The market share of Internet subscribers in Croatia is as follows:

2000 Croatia Internet Market Share	
HiNet	79%
ISKON	17%
GlobalNet and other ISPs	4%

Source: *U.S. TDA Telecommunications Sector Report*, September 2000

- **CARNet – Zagreb University**
  A regional leader in bringing Internet to Eastern Europe, CARNet was started in 1992. CARNet is a non-commercial, academic ISP owned and funded by the government, and present in 23 cities. The CARNet nationwide backbone, using leased lines and the wide-area network (WAN) backbone of HT, connected all academic and research institutions in Croatia. Staff of the Zagreb University Computing Center (SRCE) served as the technical and engineering support for the network.

  In addition to running the academic network, CARNet is the body designated by the Government of Croatia as the official registrar for the Top Level Domain (TLD) namespace of Internet domain names for .hr, the TLD of the Republic of Croatia.

- **Iskon Internet**
  The company provides a complete schedule of Internet-related services including e-mail, dial-up connectivity, leased lines, wireless technology, server collocation, Web design and Web hosting, and Virtual Private Networking (VPN). They also offer consulting services to business on Web content and development as well as Internet and Intranet strategy and development.

  Iskon differentiate themselves from other ISPs (including HiNet) on the basis of their business data and integration services, and through the provision of online content. In pursuit of content, they have recently acquired the most popular Croatian online magazine, Click.

- **GlobalNet**
  GlobalNet was the first private ISP, starting operations in 1996, shortly after HiNet began operations. It has investment from MSUN Group and CCP fund venture capital (60% of GN) this includes share holders (Zagreb Bank, EBRD, Event Fund, and Italian).

  They operate 4 Points of Presence or POPs in Zagreb, Split, Rijeka, and Osijek. This year they have added 10,000 small subscribers, and have 50 leased line customers. They have developed a prepaid service plan like prepaid telephone cards. They are increasing their value-added services, and also offer VPN, VoIP, security, and Web design (applications, e-commerce B2B/B2C). Five of their customers are doing B2C functions

over the net; Clark (TDK Tapes) and King Croatia among others. GlobalNet also owns a credit card clearinghouse (semi-automatic, verifications done via fax, response in a few minutes, not ideal but it works).

GlobalNet has plans to meet regularly to coordinate with other ISPs on issues of laws and monopoly. They stated that the development of the ICT sector is uncoordinated, with several groups working separately.

- **Other ISPs**
  Several other ISPs operating in Croatia share the remaining market, but don't hold significant market share. They include:
  - IBM Network Service Croatia
  - BBM
  - Ring Telecom
  - Zvarner
  - 4Mate

  Internet Gold, an Israeli-owned ISP, is investing in a new Croatian ISP with 4Mate.

Mobile Cellular Telephone Service Providers

There is only one privately owned mobile cellular telephone provider, VIPNet, which has been experiencing rapid growth in 2000. They have undertaken a large, modern advertising campaign focused on youth and youth culture. This campaign, the resulting drop in cost of mobile cellular service due to competition, and the introduction of pre-paid mobile cellular phone cards has contributed to their explosive growth and the overall growth in the mobile cellular telephone sector.

- **VIPNet**
  In 1998 VIPNet, a consortium of Western Wireless (U.S.) and Mobicom (Austria), won the second concession to provide GSM services in Croatia. Their operations as the first private competitor to HT began in July 1999. Since then they have developed rapidly, with 170,000 subscribers in January 2000, and strong acquisition of market share following the monopoly breakup.

  VIPNet offers a WAP portal in conjunction with their mobile cellular service, which allows access to the Internet for its customers.

ITU Telecommunications Information

Each year the ITU publishes a World Telecommunications Development Report.[10] Its most recent report issued on 10 October 1999 included an expanded set of data that for the first time included data on mobile cellular. In addition, it reflects indicators on basic telecommunications, international, TV use, as well as the Internet. While during the course of this Assessment there was reason to suspect the accuracy of this data, it must also be recognized that the data is 1998

[10] World Telecommunications Development Report—1999. Mobile and World Telecommunications Indicators. ITU. Geneva, Switzerland. 10 October 1999.

data—two years old. And in a rapidly changing environment (e.g., growth in some subsectors can be in excess of 100% CAGR [Compound Annual Growth Rate]), current data may be significantly different than what is reflected in this report.

The ITU data is based on a stated population for Croatia of 4.48 million. As defined in the ITU report, Croatia is considered an "Upper Middle Income" country; Upper Middle Income defined as those countries with a Gross National Product (GNP) per capita of more than US$ 3,126, and less than US$ 9,655. The ITU report shows the annual per capital GNP for Croatia in 1998 to be US$ 3,973.

A series of tables with data extracted from the ITU report is presented in Appendix A. For purposes of this analysis, Croatia data is compared to that of neighboring countries (e.g., Bosnia, Yugoslavia, Hungary, and Slovenia), countries with which it has a historical and/or cultural linkage, and major trading partners (e.g., Russia, Germany, Austria, Czech Republic, and Italy). In addition, average data is reflected for Upper Middle Income countries as well as Europe, the U.S., and the world—providing a regional, income-level, and global context for the Croatian data.

The following provides key summary observations resulting from reviewing and analyzing these sets of data. For more detailed analysis refer to Appendix A.

Telephone Infrastructure – Basic Information

The ITU places the number of landlines in 1998 at 1,558,000 (1,229,100 of which are residential) and 182,500 cellular phones. The estimates for 2000 that we have from interviews in Croatia show growth in every area. The number of landlines is estimated at 1,600,000, and the number of cellular telephone subscribers is estimated at 400,000, showing the rate of growth in cellular to be far outpacing landlines. ITU puts the CAGR for number of main lines between 1995 and 1998 at 7.1 percent. Teledensity for Croatia in 1998 is placed at 34.77 for the entire country—twice the average for Upper Middle Income countries, and quite consistent with neighboring countries with the exception of Bosnia and Yugoslavia, which have approximately only one-quarter and one-half that number, respectively. Current estimates for teledensity in 2000 are 35 per 100. The ITU also reports that there was a waiting list for new phones of 72,000 in 1998. Faults per 100 lines were put at 12.9—a fairly low number compared to other Upper Middle Income countries.

Basic Telephony – Tariffs

Connection fees for both residential and business is considerably lower than neighboring countries. The monthly subscription costs for business lines are higher than for residential—showing the typical practice of using business use to cross-subsidize residential use. Residential monthly subscription rates are less than or equal to what neighboring countries are charging whereas business monthly rates are substantially more. Overall tariffs are placed at 3.4 percent of per capita GDP—very high comparing to neighboring countries.

Cellular – Subscribers and Tariffs

In 1998 there were 182,500 cellular subscribers in Croatia providing a teledensity of 4.07 (subscribers per 100 inhabitants). Connect costs are low compared to Bosnia and Yugoslavia, but high compared to Slovenia. Other neighboring countries have comparable connect rates. As a result, the percent of total cellular use is running along those lines, with Croatia leading both Bosnia and Yugoslavia, but falling behind other neighboring countries. In many developing countries, as in Croatia, cellular systems are used to substitute landline based build-out as it is typically faster and can be less expensive—especially in low density areas.

International Traffic

Only Yugoslavia comes close to the total international traffic generated by Croatia—with averages of per capita considerably higher than neighboring countries except Slovenia (61.2 minutes per inhabitant). This higher number is likely due to the large number of Croatians living and working outside of the country, especially in Slovenia, Austria, and Germany.

Telecommunications Staff

In looking at the number of employees relative to the number of main lines, Croatia (HT) appears to be relatively well staffed by comparison to its neighboring countries and the average for Upper Middle Income countries. This may, however, be due to the high number of workers typically employed in state-owned companies, and may not reflect the actual technical staff employed to directly administer and maintain those lines. The positive growth rate (1.7% CAGR) for lines per staff in Croatia shows that the number of staff is either steady or going down in comparison to the number of lines. This may be attributed to cost cutting and efficiency efforts, which privatized companies tend to be pressured to undertake.

Telecommunications Revenue and Investments

With respect to revenue per main line as well as per employee, Croatia is below the average of Upper Middle Income countries (US$ 473 per line and US$ 67,488 per employee). With respect to investments per mainline, Croatia is again below the average for Low Income countries (US$ 181), but higher than its neighbors. However, on a percent of revenue, HT's investments in 1998 were 39.7 percent of revenue—higher than the average of Upper Middle Income countries. Based on interviews with HT, these investments can be assumed to have been applied against their Internet and cellular divisions, where they are experiencing external competition.

Information Technology – Internet and PCs

ITU data places the number of Internet users in Croatia in 1998 at 200,000 and the number of PCs in country at 500,000. Discussions with the two largest ISPs indicated a similar number of Internet users (about 200,000), but anticipated growth over the next couple of years will be good. U.S. commercial service estimates 70,000 computer imports per year, which indicates the number of PCs in Croatia can be estimated to be 640,000 in 2000, recognizing that this number does not include domestically produced PCs.

Network Growth

The ITU data breaks down the network growth into three areas: new telephone lines, new mobile subscribers, and new Internet hosts. The growth data is between 1997 and 1998. For telephone lines, the ITU reflects slow growth of 4.7 percent in the total lines—low compared to its neighbors and below the Upper Middle Income average. For cellular subscriptions the CAGR is put at 51.6 percent—low, and below the Upper Middle Income average. The CAGR for the Internet is put at 15.4 percent—extremely low, even in comparison to its neighbors and the Upper Middle Income average. It should be noted that number of Internet hosts does not necessarily correspond to Internet users. Internet hosts more closely correspond to the number of companies attached to the Internet (ISPs and other private/public entities).

Year 2000 Projections – Main Lines and Cellular

The ITU also includes in its report a projection on the number of main telephone lines and cellular users. This projection shows growth a bit higher than the numbers we encountered in interviews. The number of lines/100 inhabitants set at 37.15 in the year 2000, whereas the numbers we have encountered in the field were between 35 and 36. Teledensity for cellular subscribers is projected to increase by more than half between 1998 and 2000 (4.07/100 to 6.29/100).

NOTE: It should be kept in mind that the above data from the ITU is based on self-reported statistics of the member nations. There is some disagreement as to the accuracy of these statistics overall. Nonetheless, the ITU numbers are widely used and quoted. Assuming these numbers are less than accurate, many of these statistics are suspect. While they are of value for comparisons, etc., caution should be exercised in the use of this data as a foundation for initiating specific actions.

IV. Public Sector

The Public Sector component of this ICT Assessment focused on the legal and regulatory framework -- including Government of Croatia policies -- pertaining to investment, the provision of telecommunications services, the ability to conduct business, and the impact of these factors upon the deployment and utilization of information and communication technologies. In addition, attention was given to GOC's current and planned use of ICT, government organization and support for technology, and GOC's interaction with the private sector and community at-large.

Summary/Analysis

Croatia has tremendous potential to create an IT economy. The biggest hurdle for most countries -- the backbone and infrastructure -- is excellent in Croatia, spanning the nation with 22,000 km of fiber optic cable and 90% digital switches. The intellectual capital is available. Yet the utilization and deployment of ICT remains quite low, largely due to (1) the high cost and barriers to entry caused by the HT monopoly, (2) the lack of support and use of ICT by the GOC, (3) no organization within government regarding ICT, (4) an inadequate legal and regulatory framework, (5) minimal interaction on laws and regulations between the private and public sectors, and (6) an unfriendly, overly burdensome business environment and lack of enforcement of key laws. In sum, the GOC stands in the way. The GOC desperately needs to develop a national strategy for ICT and make the development of an IT economy a national priority.

The lack of privatization and liberalization of HT is a significant impediment to the use and growth of ICT in Croatia. The sale of 35% of HT to Deutsche Telecom in October 1999 did little to liberalize the monopoly; HT is now simply one company owned by more than one entity. HT still controls fixed and public telephone service, all international traffic (voice and data), leased lines, and the local loop. Companies that want to become ISPs or wireless providers must obtain appropriate contracts through HT. The "independent" telecom regulatory body, Telecommunications Institute ("TI"), is largely an employer to former HT employees, thereby diminishing its objectivity and independence. Additionally, ISPs must obtain a license from the Institute and specify the number of lines it will use as well as pay 5% of its annual revenues to TI. All of these factors add up to prices far above competitive markets and deter use of ICT, both by businesses and citizens.

The Government has no national IT or telecommunications strategy and has given little or no attention to ICT and the contributions it could bring to both the people and the economy. There is no central entity within GOC that is responsible for IT issues or use of technology. Out of the 19 working groups charged with implementing the GOC Work Programme for 2000-2004, only one deals with IT. Shortly after the new President came into office, he asked a private sector group referred to as the Working Group of the President of the Republic to develop an "informatization" strategy proposal for Croatia. The 14-member Working Group developed a report and a series of recommendations entitled, "e-Croatia -- A Proposal for Croatia's Informatization Strategy." The report called for, among other recommendations, a new ministry to focus on ICT, the development of a national strategy, government organization, and legal and regulatory initiatives.

On 20 September 2000, the GOC announced a tender for the Head of Office of Internetization. This is a step in the right direction, but there are already concerns that the office will be inconsequential if a Minister does not head it. Intra-governmental organization regarding ICT is sorely needed. An Intra-Ministerial Task Force organized by the Prime Minister, or one of his Vice Prime Ministers, to coordinate ICT policy, facilitate communication and synergy, and focus on IT deployment and utilization as a national priority would make a positive contribution to the situation.

Additionally, a Private Sector Advisory Committee comprised of private sector representatives from industry, academia, non-governmental organizations (NGOs), and the civic community that would interact with such an Intra-Ministerial Task Force would greatly facilitate public-private sector communication and interaction. A third element could be an International Experts Council to advise both the Private Sector Advisory Committee and Intra-Ministerial Task Force as needed.

In addition to the need for government organization for ICT, significant legal and regulatory reform is needed. There are numerous provisions that create a burdensome and unpredictable business environment, such as high taxes, labor laws, filing requirements, difficult processes for various applications, permits and licenses that amount to administrative barriers, lack of corruption laws, lack of secured transactions, etc. These provisions outweigh any advantages offered by the GOC to business and encourage foreign investment to go elsewhere. The legal and regulatory framework especially deters small and medium-sized enterprises (SMEs).

In addition, there are virtually no laws in place to accommodate e-commerce applications. This would include digital signature, electronic payments and funds transfers, privacy, consumer protection, computer crime, and other laws now under discussion around the globe and in multinational fora. The financial system in Croatia is well developed and could accommodate e-commerce transactions, whether business-to-business or business-to-consumer, quite easily, but the lack of laws and regulations deter such advances.

A legal/regulatory initiative is needed to (1) reform existing laws and regulations that are onerous and burdensome to business and deter investment, (2) assess the existing legal framework to identify deficiencies and needed legislation or regulations to accommodate e-commerce and information and infrastructure security, including computer crime laws, and (3) draft and enact needed e-commerce and security laws.

Positive changes in the legal and regulatory framework, however, depend upon improved advocacy and interaction between the public and private sectors. The private sector is, for the most part, unorganized and unaccustomed to lobbying for its interests. The executive and legislative branches are not receptive to private sector input and largely do as they wish. In part, this divide is due to the lack of transparency and sunshine in the legislative and regulatory process. There is no legal requirement for posting draft laws and regulations, allowing a comment period, and requiring open processes and files for comments, communications, and meetings. Thus, the private sector is usually left in the dark until they are informed of a new law

or regulation they must comply with. Initiatives to foster the development of NGOs, organized private sector interest groups, and education regarding the advocacy process would help ensure the success of the legal and regulatory reforms and needed initiatives.

The GOC comprises the largest segment of the Croatian workforce. As the nation's largest employer, GOC holds the ability to jump-start an IT economy and the widespread use of ICT simply through its own e-engineering of its operations. Government initiatives such as e-services and benefits, e-forms and filings, and e-procurement would require changes in both the public and private sectors and significantly advance ICT in Croatia.

Additionally, the GOC needs to develop policies that support SMEs and provide them with needed guidance. Other support for SMEs could be obtained through assistance organizations and the American Chamber of Commerce or industry groups. SMEs are important players because they bring innovation, flexibility, and jobs to an economy and are usually intensive users of ICT.

The judicial and legal systems in Croatia need continuing assistance. Although some reforms and automation are underway through a comprehensive Ministry of Justice program and USAID initiatives, more needs to be done to alleviate case backlogs, inefficient case management and court administration, and manual processes regarding court registers. The availability of legal information is important for both the judicial branch and the public. This is especially important in the war-affected areas.

Government Structure

The Constitution of the Republic of Croatia was adopted on 22 December 1990. The Constitution establishes a democratic government; a market economy with private ownership; and three separate judicial, legislative, and executive branches of government.[11]

Legislative Branch

The GOC's organization is set by the Law on the Structure and Activities of Ministries and State Administrative Organizations.[12] The Croatian Parliament (also called Croatian State Sabor) is the highest legislative body comprised of two chambers: the House of Representatives with 140 seats and the House of Counties with 70 seats. Members of Parliament are elected for four-year terms. The House of Representatives is the primary legislative body and has the power to pass laws, amend the Constitution, and approve budget authorization and appropriations. The House of Representatives also has oversight authority over certain ministry functions and holds the power to declare war. The House of Counties has advisory powers and may send legislation passed by the House of Representatives back for reconsideration.

Executive Branch

[11] *Investment in* Croatia, KPMG, 2nd ed. 1999, p. 2 (hereinafter "KPMG"); see also Legal *Framework for Doing Business in Croatia*, Croatian Investment Promotion Agency, 1999, p. 25 (hereinafter "CIPA").
[12] CIPA at 26; Narodne Novine no. 72/94.

The President is elected for a five-year term and can hold office for a maximum of two terms. The President has the authority to appoint and dismiss the Prime Minister and Ministers and is the Commander-in-Chief of the military.[13] There are 20 ministries and four Vice Prime Ministers.

President Stjepan Mesic came to power with a promise of change. Whereas the previous government had an autocratic president who wielded total control of the government, this new government has a presidency that must work in conjunction with the Prime Minister and Ministers. In his election campaign, he utilized the Internet, reaching out to younger voters with online chats. After election, he continued to reach out using technology, publishing a multimedia CD-ROM promoting the first 100 days in office, and organizing a working group of experts to create a strategy for Croatia's approach to entering the Information Age.

The Working Group of the President of the Republic

Shortly after election to office, the new president created an expert Working Group comprised of private sector citizens and asked it to develop an "informatization" strategy proposal for Croatia. The Working Group was chaired by Dr. Velimir Srica, who selected the 13 other Working Group members. Four presidential advisors also took part in the efforts of the Group. The Working Group worked on a voluntary non-paid basis and, after an intensive two-month effort, produced a working version of its report, "e-Croatia -- A Proposal for Croatia's Informatization Strategy" (see Appendix). As the report was developed, it was posted online and comments from any interested party were accepted and considered. The published version of the report notes that it "is intended for the preliminary public debate in the Croatian Chamber of Commerce and Croatian State Parliament."

Overall, the report is concise, visionary, well researched, and multi-faceted. Its strategic recommendations are focused on six "Strategy Segments":

- Development of the legal framework for an IT society
- Compliance with IT standards and requirements for integration into the EU
- E-government initiatives for state administration and public services
- Creating an IT economy in Croatia
- Entrepreneurial initiatives to attract IT investment and spur the IT sector
- Pilot projects[14]

Each Strategy Segment contained explicit recommendations to accomplish that strategic objective. The recommendations are, overall, well thought out, practical, and worthy of serious consideration.[15]

[13] KPMG at 2; see also CIPA at 26.

[14] "e-Croatia -- A Proposal for Croatia's Informatization Strategy," The Working Group of the President of the Republic, 6 July 2000 at 10.

[15] Id. at pp. 10-16.

In order to implement the strategy, the Working Group proposed:

- The appointment of an "informatization minister" to be the coordinator for all IT activities within the various ministries.
- The formation of a national agency to implement the e-Croatia strategic plan.
- The organization of an Informatization Expert Council comprised of domestic and international experts.
- Development of a national IT strategy comprised of sub-programs that implement the e-Croatia plan.[16]

Judicial Branch

The judicial system operates on a Civil Law system and has three levels of courts: municipal, county, and Supreme Court. Courts of special jurisdiction are commercial, administrative, and military courts. The Constitutional Court has exclusive jurisdiction over matters involving the Constitution.[17] All judges, except Constitutional Court judges, are permanently appointed. The Constitutional Court is not part of the executive branch of government; its role is defined by the Constitution.[18]

There are 112 municipal courts[19] that exercise jurisdiction over administrative, civil, and criminal cases with punishments less than 10 years. Sixty-five percent of all legal actions are handled in the municipal courts. There are 14 zupanije, or appeal, courts that review municipal court decisions.[20] Land and property disputes are handled by the municipal courts.

Commercial courts handle all commercial matters and economic crimes. Their jurisdiction includes shipping, navigation, aircraft, intellectual property rights, bankruptcy, and unfair trade practices. Decisions may be appealed to the High Commercial Court.[21] There are 8 commercial courts, with 3 more planned to be in operation by the end of 2000.

The Ministry of Justice has an ambitious IT plan underway to automate court registries, case management, and court administration. Presently, a pilot project is underway to develop combined land registry and cadastre databases; however, the project is approximately three years behind schedule and is suffering from inadequate funding. There is work underway to prepare manuals on establishing automated land registries and procedures for entering data and storage, archival, and security requirements. These manuals and a training process will be the essential components in moving the pilot project out across the nation. The overall plan calls for the connection of the land registries, with a central database housed in the Ministry.[22] The ICT

[16] Id. at p. 17.
[17] KPMG at 3; see also "Investment Climate Report," U.S. Embassy Zagreb, September. 2000 at 6 (hereinafter "Investment Climate").
[18] CIPA at 26-27.
[19] Interview with Nevenka Rogan-Skrapec, Head of Informatics Division, Ministry of Justice, 26 September, 2000.
[20] "Investment Climate" at 6.
[21] "Investment Climate" at 6-7.
[22] Interview with Nevenka Rogan-Skrapec, Head of Informatics Division, Ministry of Justice, 26 September, 2000.

team visited the Pula Municipal Court, one of the pilot sites. The work at that site was well underway and seemed quite organized, but was limited to PC stations without any networking capability. Thus, manual recording in land registers remains the current system.

The National Center for State Courts (NCSC) has just embarked on an analysis to automate municipal court case management and court administration, starting with the Zagreb municipal court. Currently, all systems are manual and procedures are defined by a book of rules. If successful, the Zagreb case management and court administration system will be implemented in all municipal courts. The Ministry is focusing on security and privacy considerations, especially regarding criminal justice records.[23] Technical assistance regarding computer crime laws and IT security policies and procedures in conjunction with the NCSC analysis would ensure these considerations were an integral part of the overall system.

All commercial courts are connected to a network and a central company register database has been developed for each court, with the central database at the Ministry updated nightly. The Ministry plans to eventually connect the land registry and commercial databases to enable better tracking of mortgages. The backlog of cases in the Zagreb commercial court is especially high due to the number of enforcement and bankruptcy cases, inexperienced judges, and lack of trustees.

USAID, in cooperation with the World Bank, is, or will be, providing technical assistance to the GOC for Commercial Law reform: improving the land registration and company registration processes; assisting in drafting a Law on Secured Transactions and establishing a collateral registry; developing the use of alternative dispute resolution to help resolve commercial law disputes and relieve court congestion; providing training to judges, court personnel, lawyers, academics, students, etc.; and developing the ability of the public and of special interest groups to have access and input to pending legislation, proposed ministerial regulations, and the judicial process.

Misdemeanor courts are responsible for traffic tickets and civil fines and bring in most of the revenue in the treasury. They have only begun to automate.[24]

A Judges' Web site is currently being developed as a pilot project in war-affected areas to provide jurisdictional information for the municipal courts, and categorization and compilation of cases, articles, and other legal information. Although Croatia is a Civil Law system and, therefore, does not have common law rights and binding precedent, the ability to access other judicial opinions is especially helpful to young judges or judges handling new issues. The site has focused on legal issues pertaining to war-affected zones, such as property rights and validity of judgments ("konvalidation"). The Judges' Web could also be used to house directories of attorneys by jurisdiction, legal assistance resources, court forms, etc. In the future, links from the Judges' Web to the land and company registers could also be possible. Although the project

[23] Id.
[24] Id.

has been endorsed by the Ministry of Justice and has received favorable press coverage, the project now is stalled due to lack of a small amount of funding.[25]

Croatia has entered into a bilateral agreement with the U.S. to accept binding international arbitration in disputes with foreign investors.[26] A permanent Arbitration Court is housed within the Croatia Chamber of Economy, which conforms to the United Nations Commission on International Trade Law ("UNCITRAL") model law. Croatia is not a signatory to the Washington Convention, the International Center for the Settlement of Investment Disputes (ICSID).[27]

Croatia became a member of the World Trade Organization (WTO) in September 2000.

Government ICT Legal, Regulatory, and Policy Development

The lack of government organization and long-range planning within GOC is one of the primary obstacles to the use and deployment of technology in Croatia. The GOC has no formal ICT policy or office that focuses on the development of the policies, laws, and regulations necessary to accommodate an IT economy. The GOC does not have a national information technology strategy and has no central or overarching coordination within government regarding IT issues and problems.

There is a critical need to organize an intra-governmental IT Task Force chaired by either the Prime Minister or a Vice Prime Minister and comprised of all the government ministers. The Task Force needs this high-level organization to avoid turf battles and opting out of meetings and participation. The Task Force would serve the purpose of providing a forum for discussion and awareness among ministries regarding IT initiatives, facilitate communication and synergy, and place IT utilization and deployment as a national priority. It would also serve as a point of interaction with the private sector and community-at-large.

Along with a lack of strategic planning, there is virtually no government policy coordinating the utilization and deployment of ICT. A few minor steps have been taken but, to date, these efforts alone will not result in noticeable changes. Each ministry focuses on its own area without any intra-governmental coordination and communication. In addition, there are virtually no laws in place to accommodate e-commerce applications. This would include e-transactions, digital signature, electronic payments and funds transfers, privacy, consumer protection, computer crime, and other laws now under discussion around the globe and in multinational fora. The financial system in Croatia is well developed and could accommodate e-commerce transactions, whether business-to-business or business-to-consumer, quite easily, but the lack of laws and regulations deter such advances.

The GOC has organized 19 working groups to work on the "Working Programme of the Government of the Republic of Croatia for the Period 2000-2004," based on the programs of the

[25] Interview with Drazen Komarica, president, Judge's Web, 28 September 2000.
[26] Not yet ratified by the U.S. Senate.
[27] "Investment Climate" at 6.

six parties comprising the coalition government.[28] Only one of these groups focuses on IT, however, and this group is not expected to have much influence or impact. It is worth noting that IT is barely mentioned in the Working Programme and, although the document is candid regarding the current state of affairs, it does not set an overall national agenda or strategy. It certainly is not based on advancing IT within Croatia or upon the overarching goal of achieving an IT economy. The Working Programme does, however, set forth legal and regulatory reforms directed toward harmonization with the European Union and addresses a number of legitimate areas of concern.

If Croatia wants to work toward achieving an IT economy, it must develop a national strategy and make this overarching goal a national priority. A legal/regulatory initiative is needed to assist the GOC to:

(1) Reform existing laws and regulations that are onerous and burdensome to business and deter investment,
(2) Assess the existing legal framework to identify deficiencies and needed legislation or regulations to accommodate e-commerce and information and infrastructure security, including computer crime laws, and
(3) Draft and enact needed e-commerce and security laws.

Head of Office for Internetization

The first signal that the recommendations of the President's Working Group were being taken seriously came on 20 September 2000 with the GOC's published tender for the Head of Office for Internetization. This position presumably is the "informatization minister" recommended by the Working Group. This person could also direct the formation of national IT policy and serve as the GOC's point person for IT legal and regulatory initiatives. Additionally, this office could provide staff leadership to an intra-governmental IT Task Force comprised of all of the ministers and coordinate interaction with the private sector.

To ensure this office is effective and ICT becomes a national priority, this office will need to be headed by a new Minister responsible for coordination of all e-government initiatives and policy and legal/regulatory initiatives.

Government Interaction with the Private Sector and Transparency

Private sector interaction with the GOC (executive and legislative branches) is limited. This is primarily due to historical factors, lack of resources in Parliament, and lack of organization and advocacy skills in the private sector and NGOs.

Historically, lobbying and public input regarding proposed laws and regulations has been slight. The previous regimes were not open to public opinion, thus advocacy never became part of the culture of the country. As a consequence, the private sector is not well organized and few NGOs

[28] "Working Programme of the Government of the Republic of Croatia for the Period 2000-2004," Government of the Republic of Croatia, 8 February 2000.

exist to assist with legislative initiatives. Advocacy regarding legislation has also been thwarted because access to Members of Parliament is difficult and the executive branch has traditionally drafted legislation and given it to Parliament to be enacted.

Access to Members has been limited because, unlike many legislative bodies, Members do not have staff, thus their availability to meet with the public on issues of concern is necessarily limited. In order for full, effective advocacy to take place, the legislative branch must be encouraged to assume primary responsibility for drafting and working through legislation. The separation of powers is diminished by such heavy-handed involvement in the legislative process by the executive branch. A third factor is the lack of adequate media coverage regarding proposed legislation and advocacy initiatives.

The Croatian Chamber of Economy ("Chamber"), a quasi-governmental entity with mandated membership, does interact with its members and is a viable source for information regarding public initiatives. All companies are required to file corporate profiles with the Chamber, and they house a database containing useful statistics on businesses and industry sectors. Approximately 62,000 companies are registered with the Chamber. The Chamber has a network of 20 county chambers, 13 departments, and 38 professional trade associations and is a member of the International Chamber of Commerce.[29] It is not, however, viewed as an influential or active entity for the business community. Its Director of the Information and Statistics System Department, Marijan Frkovic, was a member of the President's Working Group and participated in drafting the e-Croatia report. Mr. Frkovic is aware of the International Chamber's initiatives in the e-commerce area and plans to bring this information to the attention of Chamber members.

The American Chamber of Commerce ("AmCham") is a business organization of U.S. and international businesses. Created in 1998, the AmCham now has over 130 members from a variety of industry sectors and countries. Their current president, Michael Glazer, President, Auctor Securities, is also a member of the AmCham Legal/Legislative and IT Committees. These are new committees but present an avenue for advocacy regarding the significant legal and regulatory reforms needed in Croatia to foster and promote IT and direct foreign investment.[30]

Private sector interaction with the GOC could be greatly improved through the organization of a Private Sector Advisory Committee comprised of a limited number of persons from industry, education, NGOs, and civic leaders. This Advisory Committee could interact with an Intra-ministerial IT Task Force and could be a valuable point of input into the GOC on the development and deployment of technology in Croatia. Additionally, an International Expert Advisory Council could be organized, comprised of domestic and international IT experts. This Council could assist the executive and legislative branches of the GOC on IT policy and legal and regulatory issues as well as provide input into the Private Sector Advisory Committee.

[29] "Looking for a Business Partner in Croatia," The Croatian Chamber of Economy, September 1998.
[30] Letter to Members from Michael Glazer, President, Board of Governors, American Chamber of Commerce in Croatia, *AmCham Newsletter*, May 2000.

Training that teaches NGOs and the private sector advocacy skills and educates the GOC (legislative and executive branches) on the value of public input regarding legislative initiatives would improve the interaction between the government and the general public/private sector. A number of legal and regulatory initiatives are needed in Croatia to advance ICT, and public input throughout this process will be crucial.

Transparency and Sunshine

Before there can be effective public-private sector interaction there must be transparency and sunshine in the legislative and regulatory processes. At present, there is no requirement that legislation and working drafts be posted prior to enactment and there are no administrative procedures or mandated open files of communications, contacts, and meetings (sunshine) for the regulatory process.

The legislative process does not accommodate or encourage public input. Draft laws that have been available prior to enactment were found to be substantially changed when the final law was printed following enactment, with little or no transparency to the process. Even when concerned business groups have made their positions known to Parliament, they were ignored and the legislation was passed as the Parliament desired. There seems to be a lack of understanding on the part of the Ministries and Members of Parliament that they should listen to their constituents or make draft legislation through the markup phase available to the public.

Likewise, draft ministry regulations are not posted prior to promulgation, detailed records of public input are not kept, and there are no mandated procedures regarding the regulatory process to ensure fairness and deter corruption.

A transparency initiative to help enact such legislation, teach the public and private sectors their respective parts in the advocacy process, and raise the awareness of the media regarding the initiative and advocacy would be helpful. Such a project would significantly advance the interests of business, consumer groups, NGOs and citizens and would certainly create a more favorable environment for the legal and regulatory initiatives required for the increase utilization and deployment of ICT in Croatia.

Legal and Regulatory Environment for Business and ICT

Although there are several provisions in Croatian law that welcome foreign investment and establish a favorable foundation for conducting business, there are numerous other legal requirements that amount to "death by a thousand cuts." Significant legal and regulatory initiatives need to be undertaken to bring Croatia into an IT economy and to cause widespread deployment and utilization of ICT.

All Croatian laws and regulations are published following enactment in the Narodne Novine, the official gazette of the Republic of Croatia. The paper and all the published texts are available on their Web site at http://www.nn.hr.

Narodne Novine
Tel: 385 1 416 404
Web: http://www.nn.hr

English translations of Croatian Laws are available through the Croatian Information Documentation Referral Agency ("HIDRA") at no charge.

Croatian Information Documentation Referral Agency
Tel: 385 1 485 58 27
E-mail: ured@hidra.hr

Favorable Business Provisions

The Constitution and Laws of Croatia provide certain guarantees to foreign investors:

- Ownership rights equal to Croatian citizens (Article 48 of Constitution).
- Prohibition against changing terms of concession or contract by law or legal act (Article 49).
- All entrepreneurs have equal status and monopolies are forbidden (Article 49).
- Free transfer and repatriation of profits and capital invested (Article 49).
- Market value for expropriated property (Article 50).
- Foreign persons have the same treatment as domestic persons in the establishment of commercial companies and in their acquisition rights and obligations of these companies (Law on Commercial Companies, Article 620, para 1).[31]
- May acquire property and property rights.[32]
- Foreign investors are considered persons holding Croatian citizenship if they have a permanent residence abroad. A company is considered to be a legal person.
- May establish companies that are fully foreign owned.
- May serve on boards of directors of Croatian companies.

[31] Subject to reciprocity, which is presumed until proven otherwise. Most Croatian laws pertaining to foreigners contain the reciprocity provision.
[32] No permission required if incorporated as a legal entity, but foreign persons acquiring real property in their own name must receive permission from the Ministry of Foreign Affairs based upon approval from the Ministry of Justice. There are no restrictions upon movable property. CIPA at 73.

- No restrictions on foreign ownership of Croatian companies, including banks, savings banks, and insurance companies.

- May hold foreign and local currency bank accounts.

- No restrictions on holding or exchanging foreign currency.

- May stipulate foreign jurisdiction (either arbitration or courts) for settlement of disputes regarding commercial contracts.

- Enforcement of foreign court decisions or arbitral awards equal to domestic court decisions.[33]

- The Law on Commercial Companies allows a full range of business activities, e.g., sole proprietorships, limited liability companies, corporations, branch offices, representative offices of foreign companies, cooperatives, partnerships of all forms, etc.[34]

Unfavorable Business Provisions

Numerous provisions of the Croatian legal system create a burdensome environment for business that deters foreign investment and the deployment and utilization of ICT. Although not a complete listing, some of these provisions include:

- Lack of competition in telecommunications and energy. The three large public enterprises, telecommunications (HT), energy (HEP) and oil/gas (INA) dominate their sectors, are still quasi-governmental, and control competition. Although 35% of HT was sold to Deutsche Telecom, HT remains one company with two owners. No real competition has been introduced into the market, except for a wireless license granted to VIPNet. Until these enterprises are actually privatized and liberalized, costs in each of these areas will be increasingly high compared to competitive markets, deterring business investment and ICT deployment and utilization.

- Expensive telecommunications services. Local calls are toll calls, all long-distance traffic (voice or data) must go through HT; leased lines, ISP, and wireless licenses are controlled by HT. Costs are excessively high for all services.

- ISPs must be licensed and specify operating details, including the number of lines they will have. Approval for the license is given by HT, which has its own ISP service. Licensed ISPs must pay the Telecommunications Institute 5% of their annual revenues.

[33] CIPA at 20-22, 28-29.
[34] CIPA at 31-58; Law on Commercial Companies, Narodne Novine no. 111/93.

- The telecommunications regulatory authority established in January 2000, Telecommunications Institute, is incestuously controlled by former HT employees.

- Lack of transparency in procurement and the legal/regulatory process.

- Lack of laws, regulations, and policies for e-commerce, e-payments, and e-transactions to support e-commerce and m-commerce applications, Internet start-ups and "backroom" data processing.

- Lack of government support for ICT.

- Lack of enforcement of intellectual property ("IP") rights. Software producers estimate software piracy to be the equivalent of 90% of the total Croatian software market.[35] Croatia's laws for IP protection are adequate; enforcement is the problem. Croatia is a member of the World Intellectual Property Organization (WIPO) and signatory to the major IP conventions.[36] Croatia is considered to be in compliance with the Uruguay Round Agreement on Trade-Related Intellectual Property (TRIPS).

- High taxes. "Croatia is now one of the highest-taxed Central European economies."[37]

- Burdens on labor. "Currently, employers' costs amount to 80% of net wages, while the total contribution rate stands at 41.6%. Croatia's pension system is among the most expensive, even in comparison to more developed European countries."[38]

- Employment is not "at will" but based on a contract of employment. Employees may be dismissed only for gross misconduct. Severance must be paid to employees with more than two years of service.[39]

- Mandated minimum days of paid leave:

For all employees	18 days minimum
For employees performing dangerous tasks	30 days minimum
For employees who are minors	24 days minimum

[35] "Croatia," document prepared by U.S. Embassy, Zagreb, 2000.
[36] Croatia is signatory to the 1967 Paris Convention for the Protection of Industrial Property, Madrid Agreement concerning the international registration of marks, Nice Agreement concerning international classification of goods and services for the purposes of registration of marks, Locarno Agreement establishing an international classification for industrial designs, and the 1971 Bern Convention for the Protection of Literary and Artistic Works (enables copyrights registered worldwide to be automatically recognized in Croatia). In May 1998, the U.S. and Croatia signed a comprehensive IP agreement that addresses patents (product and process), copyrights and related rights, encrypted program-carrying satellite signals, trademarks, semiconductor layout designs, trade secrets, industrial designs, and provides for enforcement and remedial conditions. "Investment Climate" at 10.
[37] *Croatia: A Policy Agenda for Reform and Growth*, World Bank, Vol. 2, February 2000, at 2.
[38] Id. at 12.
[39] CIPA at 139-140.

Employees are also entitled to at least 7 days for personal leave plus leave for justified absence (illness, work interruptions, inadequate safety measures).[40]

- No mechanism for raising long-term capital. There is a lack of financial investment instruments and investment capital. Banks and insurance companies are financially unstable and there are no private pension funds in Croatia.[41]

- Loans between a domestic and foreign person (corporate or individual) must be registered with the Croatian National Bank.[42]

- Foreign nationals are required to pay a 22% VAT tax on goods brought into Croatia. Until January 2000, these goods were processed as temporary imports.[43]

- All businesses are required to establish a branch office in Croatia in order to conduct business activities.[44]

- Requirement that all corporations register in the Registration Department of the Croatian Commercial Court, specifying the exact scope of their activities. Businesses are taxed on each activity and heavy fines are imposed if a company exceeds its registered scope of activity.[45] Thus, businesses are penalized for growing and the bureaucracy discourages them from expanding.

- Businesses must submit revenue tabulations to the Institute of Payment Transactions ("ZAP," also known as the "Payment Bureau"). All business-to-business transactions must be conducted through ZAP and an ad valorem fee is charged per transaction.[46] These requirements are an expensive burden to businesses and these laws place ZAP in direct competition with the private financial sector.

- No central registry of claims, mortgages, and pledges (secured transactions).[47]

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[40] CIPA at 140-141.
[41] "Investment Climate" at 14.
[42] KPMG at 22.
[43] "Customs Issues for Foreign Nationals," *AmCham Newsletter*, American Chamber of Commerce of Croatia, May 2000 at 5.
[44] CIPA at 50-51. A Representative Office of a foreign company may be established in lieu of a branch office, but it may not engage in regular business activities. A representative office may be used only for marketing, advertising, and investigating the local market; it may not engage in regular business activities. A representative office is not a legal entity.
[45] Interview with Laura Trimble, U.S. Department of Treasury, Technical Assistance, Zagreb, Croatia, 27 September 2000.
[46] KPMG at 23.
[47] "Investment Climate" at 9; Interview with Eufrona Snyder, Booz-Allen & Hamilton, Zagreb, Croatia, 22 September 2000. The Law on Banks, Narodne Novine 161/98, passed in December 1998, requires CNB, together with all other banks in Croatia, to establish a Croatian Registry of Credit Liabilities comprised of all credit liabilities and exposures. The Registry will be under the control of the CNB. CIPA at 56.

- Out-of-date land registries, making enforcement of property rights, real estate transactions, and bank loans difficult and/or a lengthy process.

- Backlogged courts with inexperienced judges, inefficient case management and court administration, and confusing jurisdictional boundaries.

- Monopoly on the Croatian legal profession. No foreign attorneys may practice law in Croatia. Thus, all foreign companies must hire local counsel to conduct business. There is also a lack of central directories and resources regarding local attorneys.

- Lack of enforcement of bankruptcy laws, lack of creditor databases, backlogged cases in commercial courts.

- Lack of effective laws and programs to combat corruption.[48]

- Members of the management boards of domestic banks, including ones established by foreign banks, have to have "good knowledge" of the Croatian language.

- Lack of incentives for investment. (The World Bank's Foreign Investment Advisory Service has conducted a study in this area and a report is expected soon.)

- Administrative barriers, i.e., difficulty in obtaining permits, applications, and licenses.[49]

- Lack of support for small and medium-sized enterprises.

The foregoing provisions deter foreign investment, deployment and utilization of ICT, and the growth of business in general, and the IT sector in particular. They are burdensome and expensive to business, draining resources that could go to business equipment investment. In the U.S., IT now accounts for approximately 60% of business equipment investment, up from a mere 3% in the 1960s.

Barriers to the Utilization and Deployment of ICT

The foremost barrier to the utilization and deployment of ICT in Croatia is the GOC's failure to privatize and liberalize the telecommunications monopoly, HT. Lack of competition is stifling the use ICT because of the cost and regulatory process. HT controls the fixed-wire network and virtually all of the ICT services, including international voice and data.

The Telecommunications Law

The Law on Telecommunications was passed in July 1999. The Telecommunications Institute was established pursuant to the law as an independent regulatory body. The independence of the

[48] "Investment Climate" at 16.

[49] "Legal Framework for Doing Business in Croatia," *AmCham Newsletter,* American Chamber of Commerce in Croatia, May 2000 at 3.

agency, however, is stifled by the number of HT employees that have now become "independent" employees of the Institute.

In 1998, a 900 MHz mobile license was granted to VIPNET, making it the first real wireless competitor against HT's 900 MHz wireless business, CRONET. HT plans on selling an additional 21% of HT in June 2001 and will sell an additional 7.5% to HT employees and 7.5% to war veterans. A third GSM wireless license at 1800 MHz is planned for 2003, although HT would like to negotiate with VIPNET and Deutsche Telecom to advance the third license to 2001. A UMTS license is also planned, but there are concerns the government may hold back on this license to enable the thrid GSM licensee to get a toehold in the market. Holding back technologies from a market economy is not wise.

The required licensing of ISPs is also an unnecessary regulatory burden not required in open markets. ISPs must specify exactly the number of lines they will use and reapply if they outgrow their license. The 5% fee on annual revenues is unwarranted and discouraging to business development. Again, the regulatory process deters growth.

Currently, there is a draft of a new Telecommunications Law, but the team was not able to acquire a copy of it, nor was it able determine precisely who in the GOC was involved in drafting it. Overall, this difficulty underlines the lack of transparency in the legislative process of the GOC. Several private sector entities interviewed for this report, that are directly affected by telecommunications law, stated that even when draft copies of the laws are uncovered, they typically bear no resemblance to the version that is passed into law.

As has been witnessed in the re-negotiation of the HT/DT monopoly position, there is a pattern in GOC legislation regarding telecommunications to give away too much, and provide excessive exclusivity. There have been sell-offs of technology assets along with sovereignty (a time-limited guaranteed monopoly), only to experience pressure from private sector and the need for competition forcing the GOC to re-assess and give more concessions to monopoly holders in order to hasten the end of those monopoly agreements.

With the new telecommunications law still in draft form, this is a key opportunity to influence a more responsible approach to managing the transfer of these assets to private hands, and a more long-range view of the evolution of the telecommunications sector in Croatia. The law, if it allows for competition and avoids restricting technological innovation, can clear the way for the telecommunications sector to contribute to Croatia's economic development.

E-Commerce

The lack of a legal and regulatory framework to accommodate E-commerce and electronic transactions is another significant barrier. Civil Law societies, like Croatia, tend to believe that action cannot be taken until a law is passed. Therefore, institutions are reluctant to let their use of technology get out in front of the legal framework. For example, credit card companies refuse to accept any credit card transaction without a written signature, precluding e-commerce and telephone sales. Enactment of the Uniform Electronic Transactions Act ("UETA"), which

basically states an electronic transaction will be treated for legal purposes the same as a paper transaction would help. Digital signature legislation, electronic payment and funds transfer laws, computer crime, and electronic privacy laws are also needed. The lack of enforcement of intellectual property rights also deters investment, innovation, and business generally.

The lack of tax incentives for IT business equipment, training, and e-engineering of corporate operations also impedes the use of ICT.

There is virtually no government policy regarding the development of E-commerce, the numerous IT issues under discussion around the globe, or ICT generally. Government support for IT and signals that it is in line with the policies and initiatives developing globally would instill confidence in the market. The noticeable lack of government organization regarding IT and the failure to develop a national IT strategy is also a deterrent. Technology is clearly considered a "tech" issue and given little or no attention by the Ministers. Even the e-Croatia strategy developed by the President's Working Group was done by a group of private sector volunteers.

Lack of transparency in the legal and regulatory process also plays an important factor. Significant changes need to take place in the legal framework and this process will be more successful with input from the private sector. Effective advocacy and public-private interaction requires a transparent legal and regulatory process and greater participation by Parliament.

Use of ICT by the GOC

The grossly inadequate use of ICT by the government is a very important barrier to the utilization and deployment of technologies. Governments can jump-start the use of technology through their own use of technology, both for internal administrative purposes and for distribution of benefits and services and interaction with its citizens. The bloated public sector comprises the largest segment of the workforce in Croatia. Although widespread use of ICT within the government would expose and train a sizeable portion of the population plus reduce costs and enhance efficiency, the Croatian government has basically little or no implementation of ICT in its operations. E-government, especially e-procurement, initiatives would significantly boost ICT in Croatia. E-procurement and e-filings would immediately require both the public *and* private sectors to use IT in progressive ways.

V. PRIVATE SECTOR

Summary/Analysis

When Croatia became an independent nation state, it gained political autonomy, but inherited an economic model fashioned on that of the former Yugoslavia. Its enterprises were 'socially-owned' and although efforts towards privatization were initiated in 1991, it was only after the enactment of the new Privatization Act in 1996 that reform and transformation of state-owned entities to private ownership was fostered. During the Tudjman era Croatia's economy had been kept relatively closed and there was a lack of a free market. The GOC today has a much more open policy towards the economy and is making efforts to attract foreign investment. Market forces are finally being 'allowed' to govern the economy, but assistance is needed as supportive mechanisms still need to be put in place.

Croatia began its privatization efforts by adopting a voucher or coupon system. Initially, certain citizens, were given preference and were given shares in certain enterprises. The process was questioned by many, as preference was given to certain individuals who 'had helped or served the government'; but the definition of what this entailed was somewhat ambiguous. Many of these enterprises became riddled with debt and the entire process resulted in less than desirable outcomes. Croatian law stipulated that the government should bail out such unprofitable enterprises, and so this was done at the expense of taxpayers. Quasi private enterprises emerged as a result. A Croatian Privatization Fund (CPF) was created and shares were sold on credit with a discount given for cash. In theory, there is merit to establishing such a fund, but in practice this enabled those 'favored' to acquire enterprises, which they further used as collateral to acquire additional companies and so on. This led to oligarchies being created, as an 'inside circle' was justified. This allowed for preferential treatment based on social ties and not competitive advantage. The CPF still exists today and its privatization efforts are nearing its final stages. It will be a challenge to sell off the assets of the final remaining entities.

Many expect the rate of privatization to increase with the new government in place. By the end of 1998, approximately 65% of the enterprises that entered the privatization process in 1991, had been privatized. Reform of the public utilities sector (telecommunications, energy, and oil) are expected to dominate the next wave of privatization efforts[50]. The government is looking towards privatization receipts to cover budget deficits. In fact 83% of the deficit embedded in the revised 1999 budget will be covered in this way. This will mainly come out of the funds generated as a result of the sale a certain percentage of the state-owned Croatian telecommunications company, HT. As stated in earlier chapters, this was sold to Deutsche Telecom in 1999 for approximately US$ 850 million, and a further sale of another percentage is expected in the coming year. It is not clear what percent of HT the next sale will cover, as figures announced have varied from 16%, to 22%, to 35%. This illustrates that there is still a lack of transparency in the privatization process. The initial sale of 35% of HT was a result of monetary policy by the Croatian government, driven by an urgent need for FDI to balance their national budget and avoid an increased deficit. Despite the motivation for allowing such an

[50] EBRD, Croatia: 1999 Country Profile, 1999, 14.

acquisition, it still reflects a move towards privatization within the country; although it reflects a risky pattern of financing and fiscal policy.

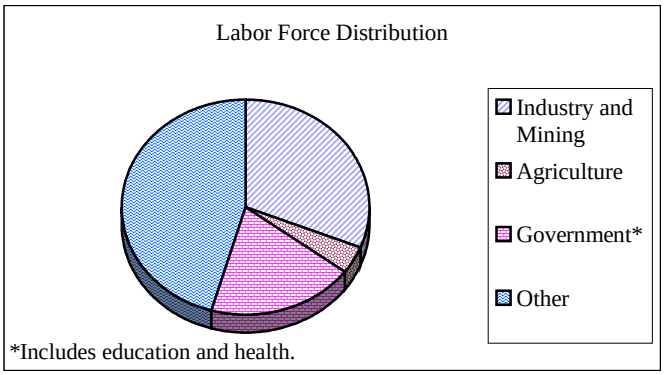
The are three dominant foreign institutions with a specific mandate to encourage and support privatization in Croatia. They are the U.S. Trade and Development Agency (TDA), the International Finance Corporation (IFC), and the European Bank for Reconstruction and Development (EBRD). They function as a bank, or a venture capital vehicle, and give loans to enterprises that would not be able to secure funding from other sources as the returns on these projects have a long-term maturity. There are also other smaller, yet significant private investment funds that are active and maintain a presence in Croatia, as well as brokerage and advisory houses that are involved in privatization efforts. The majority of these institutions collect interest on their loans at the market rate, which is quite high in Croatia, approximately 15%.

Overview – Croatia's Economic Profile

Croatia became a member of the WTO in 2000 and is moving towards EU accession. This is shaping the way that Croatia is moving in terms of developing its economy. Croatia is currently a country in transition and consciously making efforts to streamline its reform efforts away from the Yugoslavian model that it inherited and toward European models. Croatia is an emerging economy and still faces a number of challenges on a macroeconomic level that need to be addressed with some urgency.

In an effort to address Croatia's large fiscal imbalance, the government introduced a stabilization program in 1994 that consisted of very tight monetary policy, but allowed for a large number of people to be employed in the public sector, that has led to high tax rates to finance this. There was a growth in GDP of about 4% as a result of this stabilization program, but due to the large percentage of people employed by the State, Croatia's public expenditure is extremely high. The size of the government has expanded by more than 15% of GDP between over the last eight years and Croatia currently spends 19.10% of its GDP on public sector wages and salaries. This is as a result of expansion, and not necessarily high wage and salary levels. Figure 1.0 below illustrates what a large percentage this is, especially compared with expenditure on labor in other sectors.

Figure 1.0



Croatia's expenditure on public sector wages and salaries is extremely high, especially apparent when compared to other countries. Developed European economies spend on average 5% of their GDP on public sector wages and salaries, while most economies in transition do not spend more than 3% or 4% of their GDP on this. Tax levels in Croatia have had to be increased to finance this and have left Croatia with one of the highest taxed economies in the E&E region (tax collection amounted to 43% of GDP in 1998!)[51]. This has not been conducive to fostering growth of enterprises and attracting FDI, and in fact this policy has been counterproductive, as economic activity fell as a result and this in turn led to an overall reduction in tax revenue in 1999.

Employment in the formal sector has been negatively affected by high payroll taxes introduced by the government. This has led to high labor costs and therefore enterprises retain a small staff. As a result, Croatia is left with the paradox of rising unemployment rates and high labor costs and businesses cannot afford to expand their staff base simply due to this payroll tax structure. This could be one of the many contributing factors to why enterprises such as software application developers have not sprung up, as in other countries in the region. There is a large gray economy and an almost dangerously high level of Croatia's talent and skilled labor force is trapped within this. Croatia's official unemployment rate is 22%, an extremely high number, but due to the significant size of the gray economy the 'real' unemployment rate is probably much lower. Well being of individuals who are employed in the gray economy is still an issue, as despite higher wages for casual work, these individuals are involved in temporary or casual labor and do not have stable jobs.

Intellectual capital flight or the 'brain drain' phenomenon is also emerging as a concern in Croatia. The inability of the private sector to absorb skilled labor by providing competitive salaries is what contributes towards this. The problem is further compounded by countries nearby, Germany in particular, opening up their economies to attract talent in the IT field. There is a worldwide shortage of people from such fields, and due to tax policy as well as the other reasons mentioned, Croatia is unable to retain the talent it has. Payroll tax is extremely high, and this inhibits an enterprise's ability to hire all the staff necessary. Encouraging the development of new enterprises that are competitive in the international arena, would serve to curb the amount of intellectual capital flight that is taking place. Increased FDI in Croatia can help to establish and develop such enterprises and given that the majority of Foreign Direct Investment (FDI) in Croatia has been through the privatization of state-owned enterprises, it is easy to see how important privatization is to Croatia.

The State of Privatization Today

Croatia began its efforts towards privatization in 1991, by adopting a Law on the Transformation of Socially Owned Enterprises. A government entity, the Office for the Restructuring and Economics of State Owned Enterprises (ORESE), was created in 1993 to establish a regulatory framework to support privatization efforts. The second Law on Privatization enacted under the

[51] *Croatia: A Policy Agenda for Reform and Growth*, World Bank, Vol. 2, February 2000, at 3.

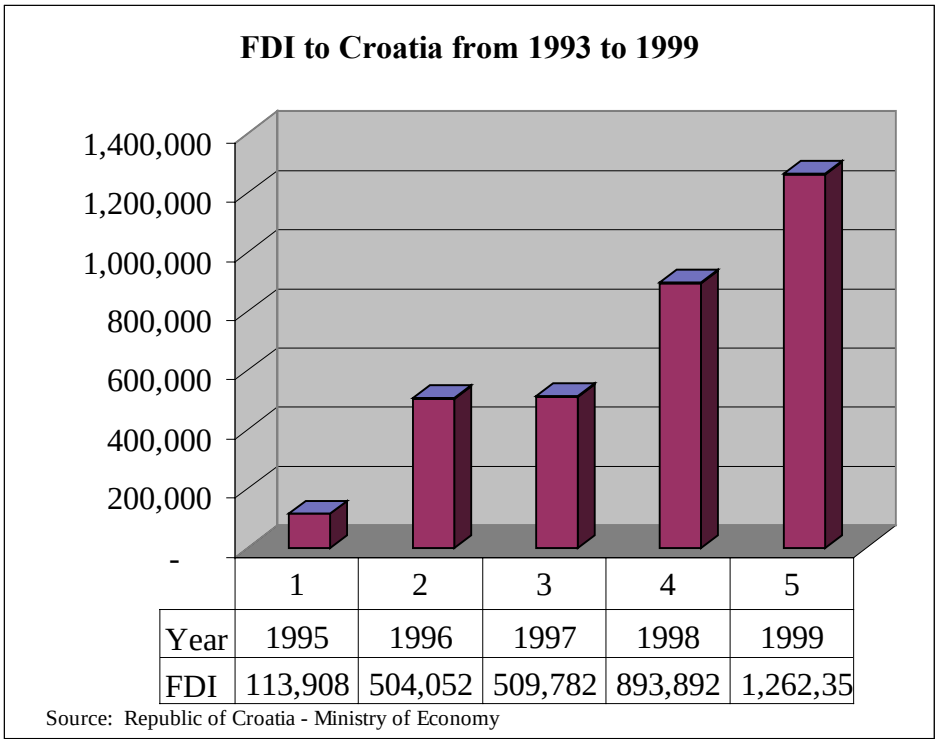
new Privatization Act in March 1996 is what spurred the 'real' privatization process that obtained positive outcomes, and created a general model for 'successful privatization.'

The commercial banking sector leads in terms of privatization compared to other sectors of the economy. The benefits of privatization are clearly illustrated by this sector overall. The privatization process has led to about 72% of banks being foreign owned. The majority being Austrian, German, and Italian. Most commercial banks were riddled with debt, and after only a relatively short while, they were not only able to reverse the situation, but boast profits equal to that of the previous debt or more. Other sectors within Croatia are not at this stage, and privatization remains particularly difficult in areas that require deregulation. Overall there is a positive shift towards increased levels of privatization, and one that shows promise to continue.

There are plans to privatize the Croatian electric company, Hrvatska Electropived (HEP) and dismantle the state monopoly on production and distribution in 2001. HEP plans to split its company to have a separate entity for distribution, and a separate one for production. This will not only lead to attracting foreign investment, but will also require massive investment in IT. The GOC also plans to privatize INA Oil Industries, the largest energy company in Croatia, opening up another sector to foreign investment.

FDI to Croatia has increased steadily over the past few years. It is evident from the bar chart below, Figure 2.0, that FDI has increased significantly in the past two years. This has mainly been as a result of privatization efforts of Pliva, Croatia's largest pharmaceutical company, and HT.

Figure 2.0

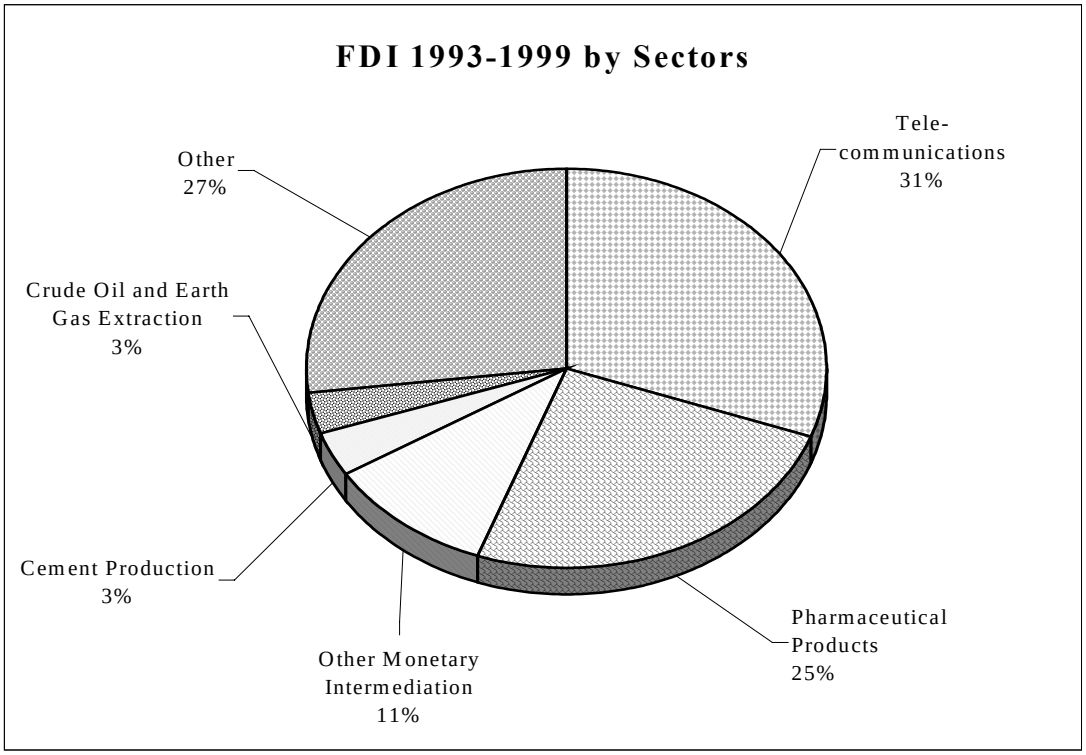


	1	2	3	4	5
Year	1995	1996	1997	1998	1999
FDI	113,908	504,052	509,782	893,892	1,262,35

Source: Republic of Croatia - Ministry of Economy

There is collaboration between financial institutions and their grants and loans are increasing. TDA, EBRD, and the World Bank have joint initiatives in the form of trust funds. EBRD's investment portfolio in Zagreb alone is approximately 565 million Euros and they have given loans and funding to 36 projects in Zagreb, out of which 46% has gone to infrastructure-related projects (water, roads, sewage systems) and 36% towards financial infrastructure. Figure 3.0 illustrates the main sectors that FDI has gone towards.

Figure 3.0



Source: National Bank of Croatia

Funding from major financial institutions is now shifting its focus away from these large infrastructure-related projects, to small and medium enterprises. This is important, as the growth of the IT sector in Croatia will most probably come out of this sector. Privatization of the major sectors that the growth of an IT industry is dependent on, such as telecommunications, is also necessary as a parallel or prerequisite to SME development.

There is reason for concern however, as most financial institutions invest in venture capital funds and do not give loans to SMEs directly. Loan amounts have to be somewhat substantial for these institutions to be able to justify committing their funds to them. For example, projects have to be close to US$1 million for IFC assistance or exceed at least half a million Euros for assistance

from EBRD. The majority of SMEs have to struggle to find avenues for funding as a result. Commercial banks do not provide an avenue for loans to SMEs either. Even the foreign-owned commercial banks have adopted a strict 'low risk' policy and are open and vocal about this position; reflecting an air of mistrust left behind as a result of the old privatization efforts. Money and assets were siphoned off by the 'new owners,' and the Croatian private sector has a long way to go in terms of building and establishing trust from the Croatian banking sector. Not only are SMEs not able to obtain loans from commercial banks, but if they did, they would be subjected to the very high interest rates of about 15% that are standard in Croatia.

SMEs would also be subject to Croatia's high corporate tax rate, which could stifle their development and result in them being crippled by debt. Corporate tax is also at a high level; it is 35%, which may seem standard for a European economy, but it is extremely high for an emerging economy. Hungary's corporate tax, for example, is only 18%. SME development can be stifled due to this and to limited access to credit, and it is difficult to start up. The economic foodchain that exists in many other countries does not exist in Croatia and while venture capital for SMEs seems to exist, it is limited. This limited support to SMEs is also a barrier to the development of the ICT sector in Croatia, as SMEs are intensive users of IT and they bring innovation and flexibility into an economy, create jobs, and spur entreprenuerism. The ISPs that the Assessment Team met with also consider SMEs to be the fastest growing segment of their customer base.

Although limited, there are a few avenues from which SMEs can secure assistance. There are two funds in particular, however, that provide an avenue for SMEs to access venture capital. The Adriatic Fund actually provided the seed capital for VIPNet, one of the main ISPs to establish itself. Another fund that was given a substantial grant of a few million dollars by USAID in 1997 is SEAF. It is an equity investment fund that makes small loans available, its investment size ranging from US$50,000 to US$500,000. It provides financial and hands-on support, including financial planning, revamping of accounting systems, developing marketing strategies, and other forms of technical assistance. SEAF's portfolio consists of approximately one third of their investments in the agricultural sector, one third in business services, and one third in IT-related enterprises. Interestingly, their highest returns have come from enterprises in the IT sector, amounting to approximately 53%. This is a clear example and indication of how privatization and encouragement of enterprise in the IT field in Croatia can have a positive outcome in economic terms.

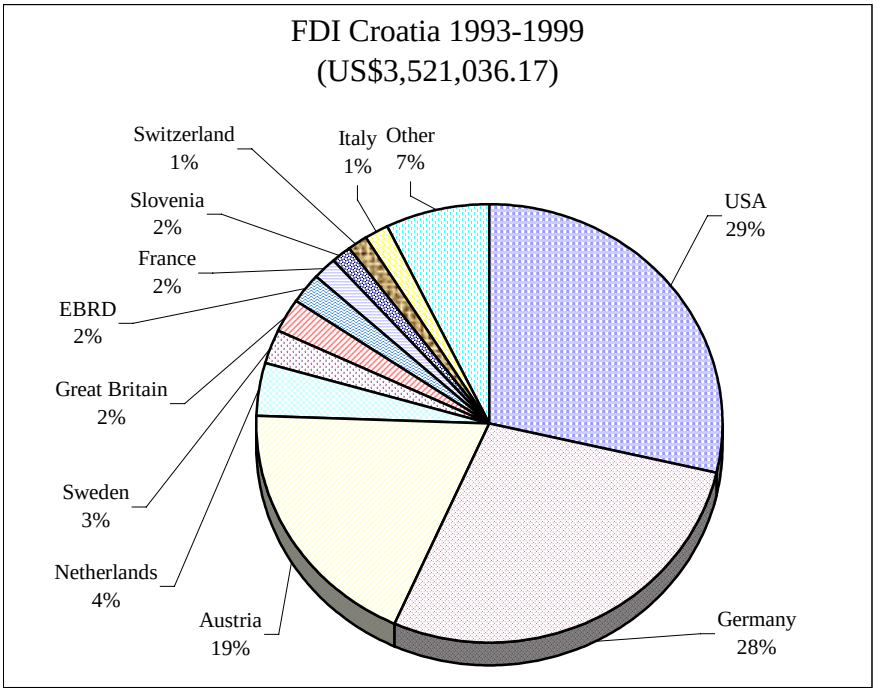
"Doing Business in Croatia"

Although levels of FDI to Croatia and privatization have increased, barriers to foreign investment still exist and are an issue. There is very poor information available regarding the regulations and procedures for registering a new business or procuring an existing one. Literature pertaining to doing business in Croatia does exist, but it is not sufficient. The initial process is very cumbersome and it is especially difficult for a foreigner to be privy to such information. There are no clear standards, and acquisition of property is tied up in red tape. Registration of a company is done in a commercial court and each activity that an enterprise intends to undertake needs to be specified in detail. If an enterprise increases the activities it is engaged in without registering them officially, they risk having their licensed revoked.

Furthermore, there is a fee charged against each activity when registering it[52], and this can serve as a deterrent to registering for activities that a company envisages itself as being involved in the future. As a result, if a company increases the number of activities that it is involved in, it has to go through the entire lengthy and painstaking process of registration again.

As a result of Croatia's geographic location and wish for EU accession, nations that are emerging as trading partners are mainly located within Europe. Having said this, it is important to note that according to official figures, as of 1999, the country where the largest amount of FDI to Croatia had come from is the U.S.A. Germany is the next country, as illustrated in Figure 4.0, largely due to the investment in HT.

Figure 4.0



Source: Croatian National Bank

ICT Assessment Focus

The ICT assessment for the private sector had a dual focus. The private sector was viewed in terms of the level of use of ICTs within it as well as in terms of the development of the ICT sector.

In the private sector, the banking sector appeared to have the highest deployment levels of IT applications. Perhaps there is a positive correlation between privatization and the use of IT applications, or vice versa. The use of ICTs within businesses in the private sector is generally

[52] Interview with Nevenka Rogan-Skrapec, Head of Informatics Division, Ministry of Justice, 26 September 2000.

limited to office automation functions and e-mailing. Media companies were among the few that had employees who regularly used the Internet for research. This was because their employees stated that they needed timely and quick access to 'new' information and the Internet was the best tool for this.

Internet use, in general, is quite limited in Croatia. There are an estimated 100,000 Internet subscribers throughout the country, which translates into approximately 200,000 Internet users. Market research and calculations reveal that the potential is actually 1 million people. This is a very small number and is surprising, especially considering that Croatia's population of 4.5 million people is very well educated and a significant number of them speak English. One would think that this would contribute towards high use of the Internet, but this is not the case. The most common reason given for low Internet use was the high cost of using the Internet. The initial privatization of HT has not translated in the reduction of its monopolistic position, and has simply transferred it from being a fully state-owned monopoly to a semi-private owned one, and the prices have not been lowered. T charges to ISPs remain high and are passed on to customers. Furthermore, ISPs have to pay 5% of their revenue to the regulatory body, the Telecom Institute. This cost is also passed on to users, so users are essentially taxed for using the Internet. ISPs are confident, however, that their customer base will expand and they are expecting a linear growth. The ISPs are optimistic that a critical mass of Internet users will develop by 2001.

There are approximately 1,700 IT-related companies in Croatia, and they only contribute to approximately 2% of the national revenue[53]. Many of them are very small companies, with approximately 70% of them having less than 50 employees. When looking into the qualitative data on these companies, it is evident that the majority of these companies are simply involved in redistribution of hardware, or in some cases assembly of hardware, but not application development, system integration, or manufacturing. Despite a very skilled labor force, there are few companies engaged in software development. This reflects IT-related business activity that has comparatively the lowest rates of return and stability, as research and statistics from such sectors in other countries around the world reveal that the highest profit margins come out of software application development. Simply distributing equipment that has been imported is a viable business activity, but is less secure, thus it is questionable as to why this is the only part of the sector that is growing. There are external dependencies that contribute towards this, such as quality assurance, quantities driven by availability, customs tariffs that are subject to change, and so on.

Although the software development sector is in its nascent stages, there are more and more software companies emerging. There are some foreign companies, German ones in particular, which have offices in Zagreb that employ a significant number of people to develop software for use in their company. This demonstrates that expertise for this sort of activity does exist within the Croatian workforce, and therefore is a supply, but demand is limited. There is a small domestic market mainly due to low per capita income.

[53] Interview with Marijan Frkovic, Croatian Chamber of Economy, Zagreb, Croatia, 20 September 2000.

The low demand and overall low awareness level of the potential gains of investing in software application development may also be partially influenced by the low value attributed to software. There is a serious lack of enforcement of Intellectual Property Rights, and this is manifested in unlicensed software comprising 90% of the software market in Croatia.[54] This has driven down prices paid for software, and has a ripple effect, as the value of software is underestimated. It is common when purchasing hardware, to have a free accounting software application for example, 'thrown in' with the purchase. Software applications are being produced, and free upgrades are also provided to hardware customers; there is a failure to realize that the software application is actually much more valuable as a commodity than the hardware being sold.

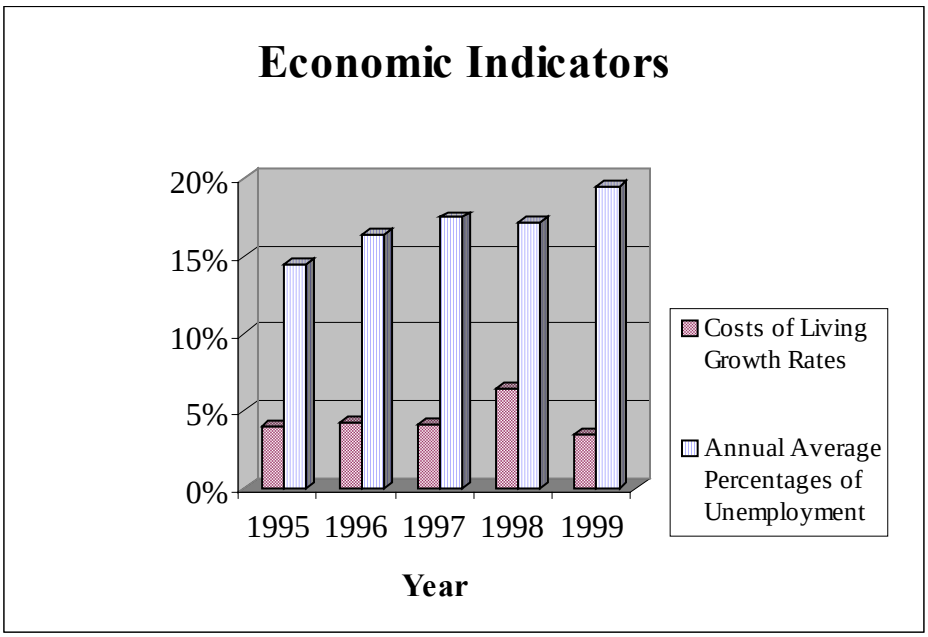
The software application development sector has not been encouraged or supported either. For example, where there has been FDI in relation to the IT industry in Croatia, it has been to ISPs and not to software companies for software application development. This fact, coupled with a low demand for software packages have prevented it from growing.

The hardware industry is not very developed in Croatia and the majority of hardware used is imported. Total imports of hardware amount to approximately US$200 million a year, and local production is limited to the assembly of PCs. Even when locally produced, 65% of components used are imported. This is because there is little incentive to produce goods locally, as both imported and locally produced goods are subject to 22% VAT. Obtaining certification to meet Croatian quality assurance standards is also often complex, time consuming, and expensive.

Demand for hardware in Croatia is also limited, and the government is the largest customer. Only an estimated 15% of households have PCs, and this is a reflection of the level of per capita income. The per capita purchasing power parity is estimated at $5,100, which is quite low, as compared with an EU average of $20,457.[55] As illustrated in Figure 5.0, the cost of living has not changed dramatically over the years, but unemployment rates are continuing to grow. As a result, household income is increasingly spent on obtaining basic necessities, and therefore households are not able to procure IT equipment.

[54] Estimation made by American software companies.
[55] The Economist, Can Moldova get Worse?, 15 July 2000, 49.

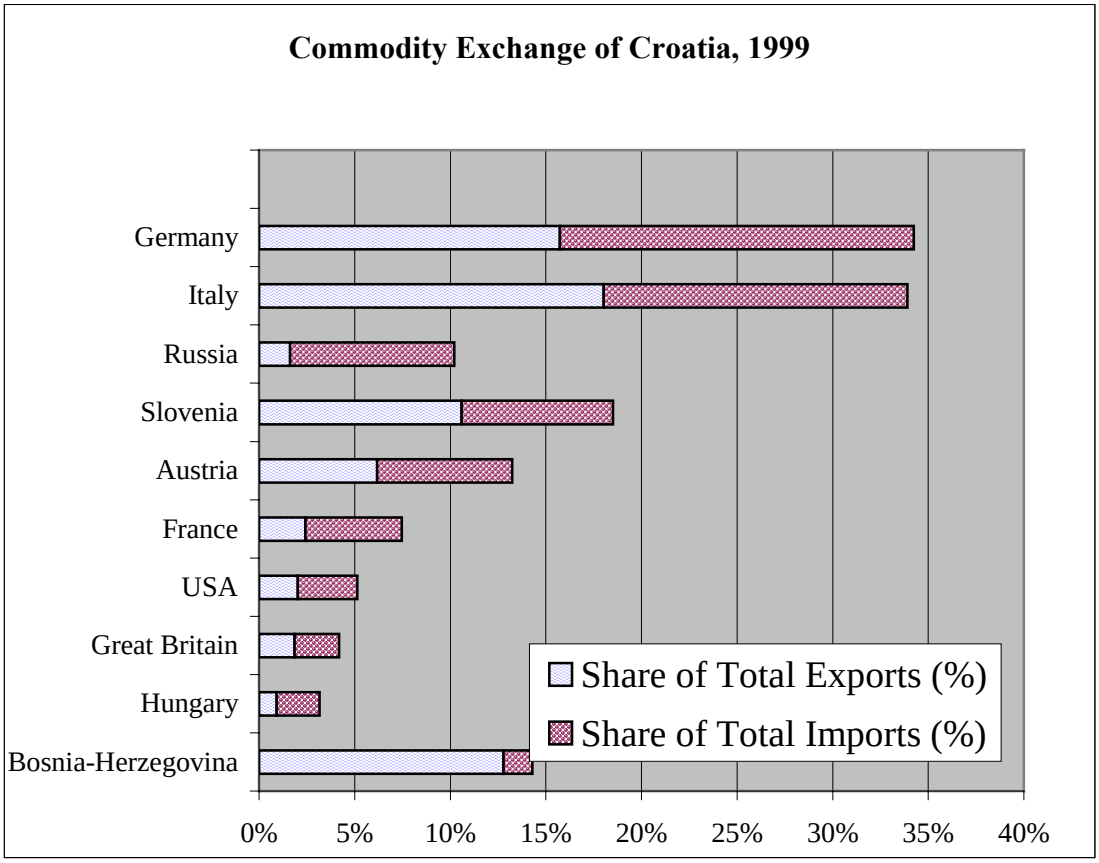
Figure 5.0



E-commerce in Croatia

The value of establishing a foundation for e-commerce is important in terms of meeting domestic demand and also in terms of establishing a basis for marketing and exporting locally produced goods. Croatia's current commodity exchange, illustrated in Figure 6.0, could be enhanced by the establishment of e-commerce.

Figure 6.0



It is likely that e-commerce would 'take off' in Croatia Internet access increases as it is expected to, people would have access to a greater marketplace through the virtual world.

The average Croatian considers goods in Croatia to be expensive and it is extremely common to travel to Vienna, for example, to shop for articles ranging from food items, to furniture, to clothing and bring these back to Croatia. Despite customs duty, this is still cheaper; thus E-Commerce would provide a means through which individuals would not have to personally make a trip to procure items that they need. Minimizing expenditure would be welcome and, as e-commerce can offer a vehicle for this, initiatives to support and encourage e-commerce should be addressed. A larger marketplace with competitive prices would be available to Croatian consumers.

In terms of domestic retail, e-commerce initiatives would add value. Many companies are based in large cities, in Zagreb in particular, and there is a demand for goods outside of Zagreb. A company selling hardware reported their revenue as close to 50,000 kunas a year, and stated that most of the demand was coming from outside of Zagreb.

E-commerce could provide benefits for both consumers and producers in Croatia. It is important to note, however, that are a number of impediments to the development of e-commerce in Croatia. Apart from issues that stifle business development and limit Internet use, there are issues that need to be addressed before e-commerce can be established in Croatia. There is a lack of a Universal Electronic Transaction Act, stipulation that business-to-business transactions have to go through the ZAP, no secured transaction law in place, limited credit card penetration and a banking environment that is not encouraging towards to development of e-commerce. This is manifested by commercial banks stipulating that each and every transaction on a debit card has to be authorized by the bank itself before it can be accepted. Standard international practice demonstrates that a central office, in Europe for example, for the type of card being used (e.g. VISA or American Express) would cover such responsibility, but commercial banks in Croatia do not allow or accept this. There is also a cap on the amount of currency that can be involved in a transaction. The limit is 1,000 kunas, therefore if an item costs 3,000 kunas, the purchaser has to engage in 3 separate transactions; if they are using a check or debit card.

The Croatian postal system is considered to be slow and expensive to use. This poses yet another impediment to the development of e-commerce in Croatia, but also provides an area where the introduction or escalation of the use of ICTs could improve the situation. An automated system would increase efficiency and, despite an initial necessary investment, serve to bring down costs of using the postal system.

VI. People

Summary

Croatia has a skilled labor force in the information technology sector, with good technical skills. Their educational system has strong support from the government, and universities are highly ranked. In terms of IT, practical employment-based training is adequate but not extensive. Management skills, however, are lacking.

Several major areas of ICT applications have potential to rapidly improve the economic and social well-being in Croatia, and would be good candidates for USAID involvement. These include several ventures in electronic government, developing the basis for electronic commerce, and areas of distance education, telemedicine, and other direct applications.

The USAID program in Croatia contains a number of ICT applications. Work on the judicial system incorporates significant IT components. In efforts at building civil society, USAID has significant involvement in mass media activities. In reintegration efforts, use of ICTs has been limited.

Human Capital

Croatia has a very educated labor force and continues to place a high priority on education. Its universities have a reputation for excellence. In information and communication technology, the Faculty of Electrical Engineering and Computing produces graduates with a strong foundation in the skills needed for the Croatian ICT sector.

Because of the economic transition of the country, however, salaries and employment are quite low. The U.S. Embassy's "Investment Climate Report" states that "Croatia has a highly educated and skilled labor force. The average net salary in Croatia (after all income and other taxes and contributions are paid) is HRK 3,367 (about US$400) per month. The total labor force is comprised of 1.625 million people of which 340,000 are unemployed (unemployment 21 percent)."

Technical training in ICTs is not extensive in the secondary schools of the country, but appears to be growing. Of the approximately 1,600 public schools in Croatia, only a small percentage had an Internet connection. Moreover, the technical skills of the teachers are low. In part, this is due to the fact that Croatia spends about 3.4% of its GDP on education, less than the European average. The government has, however, placed a high priority on increasing funding of the education sector.

Access to higher education in IT has been hindered by the practice of streaming children in the public schools into various tracts early in their academic career. At the secondary level, students are assigned tracts that leave upper secondary education with only about 64 percent enrollment. According to the World Bank, "The main government target has been to reestablish the prestige of the academic-oriented gymnasium, enrolling about a quarter of the age cohort, and orienting

the rest of the students to vocational programs. Tracking continues at the tertiary level where a binary system, including new professional colleges is being introduced without a unified credit system to facilitate transfers between programs."

At the higher education level, the University of Zagreb reports a highly capable student body that does well academically, possibly because of secondary school tracking and competition for enrollment. The Faculty of Electrical Engineering and Computing reports a correlation of 0.7 between entrance exam scores and graduation. This department is quite large, with about 5,500 students, including 800 graduate students. They produce about 500 graduates each year, plus about 120-150 post graduate degrees each year.

The US$10 million budget of the Faculty of Electrical Engineering and Computing is supported about 50% by tuition payments (both public and private), and 50% by market supported research. About half of this research is done for companies outside of Croatia. However, most of this research is done by faculty members and paid staff. There does not appear to be a strong tradition of involving graduate or undergraduate students in outside research, as there is in the United States.

One area where there is significant student involvement is in the operation of CARNet, the Croatian Academic and Research Network (http://www.carnet.hr/). Originally created in 1991 by the Ministry of Science and Technology, it was the first Internet application in Croatia. It still maintains an active network linking Croatian academic and scientific institutions. The system is housed in the University of Zagreb, and is maintained and operated largely by students.

As with the IT sector in most countries, employers report that university graduates possess good academic skills, but need to be trained on the specific applications related to their job. For this purpose, there are several training institutions in Croatia that provide employer-funded training. Ten companies, for example, are authorized by Microsoft to provide Microsoft Certified Software Engineer (MSCE) training. The bulk of training in these institutions is for standard office applications, such as word processing, spreadsheets, databases, and communications. Many of the major IT companies also maintain a presence in Croatia and provide training specific to their applications. This includes Cisco, Oracle, Siemens, SAP, and others. Large users of IT, such as the major banks and Croatia Telecom, also provide extensive training in-house.

One area of human resources that many employers report as lacking is management skills among their technology staff. Such skills do not appear to be taught in the technical schools, and several employers reported it as the major problem they have with their technical staff. There is not a tradition of management training in Croatia, although the spread of privatization of the economy is increasing the demand for such skills. The technical schools have begun offering some training in this area.

Although the technology skill level in Croatia is high, several human resource problems were noted in interviews. The most serious appears to be a large migration of skilled workers out of the country. The Faculty of Electrical Engineering and Computing reports that about 20-30% of

their graduates are hired by foreign firms, with most leaving to work in other parts of Europe. Several employers mentioned recent efforts by Germany to recruit highly skilled workers from Croatia.

The high rate of unemployment does not appear to be a major factor for these skilled employees. Rather, this exodus is attributed primarily to the difference in salaries in Croatia and abroad. While average salaries in the dominant public sector are higher than private sector salaries for semi-skilled labor, salaries for highly skilled labor lag behind. Not surprisingly, the public enterprises have the greatest attrition in their skilled labor force. Croatia Telecom reports significant problems in retaining skilled workers.

The easy flow of skilled labor, but not unskilled, to other markets has led to the paradox of scarce skilled labor at a time when Croatian unemployment may be as high as 20-25%. Many private companies, such as the local ISPs and cellular phone providers, report that salaries for technical staff are rising rapidly as a result.

While the formal academic programs in Croatia are currently producing more graduates than the economy can absorb, gaps were noted in non-formal education opportunities. This was particularly true in the workforce currently employed in the public sector, and in war affected areas. There are numerous options for expanding education and training opportunities into these areas, including:

- Distance education programs. These are particularly useful in non-formal education, including on-the-job and other employment-related training programs. They are also useful for providing education to populations with limited facilities, such as in the war-affected areas. Populations can access the training at any time of the day, providing more intensive used of scarce resources.

- Development of tax incentive programs for employer-paid training programs. Employers pay most job-related training. By creating tax incentives for this training, such as classifying training as a capital rather than operating expense, employers will be more likely to provide training for their employers.

- Scholarship programs for retraining of reintegrated populations. Many of the war-affected populations have outdated skills, and could benefit from technology training. Rather than specifying the type of training, however, a scholarship program would create demand for training in areas the population found most useful.

Applications

Many ICT applications in Croatia are still in a nascent stage. Because connectivity is still very low in the country, a critical mass has not yet developed for many of the more common uses of ICT. However, the current government of Croatia has recognized the need for progress in this area. President Stjepan Mesic created a special working group for an “Informatization Strategy” with the following comments:

> *"During the last decade, Croatia has considerably lagged behind in the development of modern technology and the application of computing and informatization into society. It is essential to bridge this gap. Hence, immediately after taking over the post of President of the Republic of Croatia, I decided to form a special expert Working Group assigned to developing Croatia's informatization strategy proposal. Our objective must be to engage in the modern trends of high-tech development. We must find our place in the united Europe, while all efforts in the development of certain industrial and service providing sectors must be pointed toward the aforementioned fundamental objectives. In order to achieve this objective, Croatia must reorganize itself with the high-tech development and informatization of all activities in the economy, state administration, and society as a whole. Employment of young generations must be directed into the computing and high technology sectors."*

The resulting proposed strategy document laid out an ambitious vision to make Croatia a major participant in an "e-Europe" with applications in both the government and the private sector. It is not yet clear if the proposal has been fully vetted and accepted by Parliament. Widespread or significant applications, however, have not yet been developed, largely for the legal, regulatory, and institutional reasons discussed in other sections of this report. The most prevalent application to date is the increasing use of e-mail. One ISP estimated that approximately 70 percent of business managers communicate using e-mail.

Electronic commerce in Croatia is virtually non-existent as of yet. One ISP is hosting about 800 Web sites for its customers, but is unaware of any e-commerce activities taking place. Most companies were using their site for information and advertising. There is interest in e-commerce among the private sector, but a number of institutional problems stand in the way. In addition to the general lack of regulatory and legal basis, the financial sector is not conducive to electronic transactions. For example, a signature currently is required for every credit card transaction in Croatia, making it difficult to complete an online transaction. One ISP that is operating an e-commerce portal compensates by requiring each purchaser to fax to the ISP a completed and signed form.

Electronic government activities are even less developed, but the President's commission is advocating a strong push towards some type of pilot activities. Several local companies mentioned electronic government procurement processes as a high priority first step in electronic government. The argument was that this would not only provide a high visibility demonstration project, but that it would also have a major impact on efficiency and transparency of government operations.

Other applications, such as distance education, telemedicine, electronic marketplaces, and others have been mentioned, but as yet there is almost no activity in these areas. CARNet provides a large amount of academic material on the Internet for independent research, as well as posting the results of seminars and conferences. There is also a distance education program known as the Virtual Medical School being operated by the University of Split Medical School.

Croatia could benefit significantly from the development of a number of applications in the ICT sector. Early ventures can serve as demonstration projects that build awareness and support for more comprehensive endeavors. Some of the most common early applications in other countries have been in the areas of electronic government and in electronic commerce. There are a range of possible applications in each area, and the government can be a leader in promoting early applications. The simplest applications for the government would be in areas of electronic government. First steps tried in other countries include:

- Online government information and databases. Government information that is of value to the public and businesses can be digitized and made available over the Internet.

- Electronic registration for permits, drivers license, passports, etc. Forms for application of various permits and licenses can be made downloadable from the Internet. As a further development, filing of the forms could be done electronically.

- Electronic filing of tax reports and periodic business reports. Cyclical business reports and filings can be automated, thus creating an electronic database of business activity.

- Development of online procurement activities. Government procurement requests can be posted electronically, with bids allowed to be filed electronically as well. The government could create an online marketplace in which firms could actively bid for government purchases. This would increase the accountability and transparency of the procurement process.

Electronic commerce represents a more difficult endeavor for the government. The first major step would be to develop the legal and regulatory structure discussed earlier in this report, including enactment of appropriate contract, privacy, and electronic payment laws. Croatia does not possess the full range of enabling legislation that creates the foundation for electronic commerce activities. Croatia is following the European rather than the American approach to regulation of E-Commerce, and a number of legal initiatives are currently under consideration.

Outside of the legal institutions, the Croatian government also has the opportunity to improve the financial system in ways that facilitate E-Commerce. The Croatian financial sector is very conservative in its operations, in part because a recent history of failed or distressed banks. Many of these conservative practices make electronic commerce difficult. USAID, possibly with the World Bank, could work on improving operations of the sector through improved regulation, deposit insurance, better connectivity between financial institutions, greater competition, and a generally improved business enabling environment.

One area of specific interaction between the government and commerce is in the control of international trade. This is also an area crucial to E-Commerce, and an area where many governments around the world have implemented electronic trade facilitation programs, including electronic customs and forwarding documents. Electronic facilitation of international trade has been a very popular and successful program with private enterprise initiatives in

numerous countries. By eliminating much of the operations at the border, international trade can move more easily into electronic commerce, and at lower costs.

The USAID Portfolio

USAID has an extensive portfolio of activities in Croatia organised around three strategic objectives:

- More competitive market-responsive private financial sector.
- Increased better-informed citizens' participation in political processes.
- Reintegration of war-affected populations.

This set of objectives have been key to USAID's effectiveness in Croatia. The previous mission director explained in a cover memo to the Results Review, "Since the opening of the USAID mission in Croatia, USAID has strengthened and trained grassroots NGOs, political parties, labor unions, and independent media. This five-year, targeted assistance developed a strong and deep foundation of democracy within the Croatian population. The increased assistance in 1999 for 'Get out the Vote' achieved the democratic objective, illustrating that informed, participating voters can make a difference."

Achieving this objective involved extensive use of information and communications technology, since education and information dissemination have been major tools used by USAID to achieve its results. One of the most visible uses of communications was GLAS'99, a massive get-out-the-vote campaign. This effort used all available forms of mass media to make contact with the voters. Extensive background uses of ICTs in this area included extensive national polling and improvement of message and platform development, along with database development and management.

Several of the specific activities under these strategic objectives have used various forms of ICTs in their execution. Good examples include the Court Reform Project and the Judicial Training programs. These are improving the performance of the judicial system by providing electronic databases of court records, development of a judicial Web site, and increased efficiency of the courts through automation. Computer technologies were first implemented in law courts in 1997. Progress has been slow, and much of the technology is being used simply for writing text. Creation of databases and networking activities are currently underway.

In addition, USAID has supported several key improvements in the information flow in the commercial law sector. Reform activities of the mission using ICT have included developing a digital database for the Land Registry where it is expected to reduce the waiting time and efficiency in the processing of requests. Land registries are often early candidates for computerization, given the importance of their accessibility and their formal structure. Pilot projects are now being carried out in six Croatian towns, with mixed success. In one case, and earlier attempt at building a database has been left beside the new system. Coordination of the entire land registry system is expected to take several more years to accomplish.

USAID also has worked with mass communications through its project of assistance for independent broadcast and print media. The mission has supported a new television network, the Association of Independent Television, which covers 75% of Croatia and has played a role in the development of the new Telecommunications Law passed in June 1999. This development is opening the large fiber optics network in the country to a wider variety of private communications channels.

Use of ICTs in the war-affected areas has been more modest, though the mission has supported the use of databases and the Internet for location, missing persons, and communications purposes. Its Firm Level Assistance Group is also working on possible improvements. The Results Review states that it has helped to establish over 285 new business linkages (significant contractual, investment, trade, or market linkages) in Croatia, the region, and abroad.

Networking of activities in the war-affected areas has been a useful USAID initiative. The mission has supported the development of a legal services and assistance network consisting of 23 local offices representing eight NGOs. These NGO-operated community action and legal aid offices have assisted 40,000 clients with legal issues and other information-related problems.

With the change in government in Croatia this year, USAID is exploring appropriate changes in its portfolio of activities. There is an expectation that economic growth will have a more central role in the USAID portfolio. In such a revised portfolio, work on several of the applications discussed in the previous section would be worthwhile uses of the expertise and experience that USAID has developed in Croatia over the past five years.

VII. Appendix A – 1998 ITU Statistics

Each year the International Telecommunications Union (ITU) publishes a World Telecommunications Development Report.[56] In its most recent report issued on 10 October 1999 it included an expanded set of data that for the first time included data on mobile cellular. In addition, it reflects indicators on basic telecommunications, international cable TV use, as well as the Internet. While during the course of this Assessment there was reason to suspect the accuracy of this data, it must also be recognized that the data is 1998 data—two years old. In a very rapidly changing environment (e.g., growth in some sub-sectors can be in excess of 100% CAGR [Compound Annual Growth Rate]), current data may be significantly different than what is reflected in this Report.

ITU data is collected through a process of self-reporting by member nations. The responsible ministry or department in the government overseeing the telecommunications sector or operating the national PTT typically undertakes this task. Therefore, there is neither external verification of the data, nor a disinterested third party involved in the collection of the data. Statistics collection in Croatia is particularly troublesome, as the conventional statistics collection bodies within the country were disrupted by the turmoil of Croatian independence and the subsequent war. Sources interviewed for this report related their opinion that real data had not been reliably collected since the war.

However, taking these potential limitations into account, the following set of tables does reflect the most recent official data from the ITU, and data that can be used to compare the situation in Croatia with that of neighboring countries. For purposes of this analysis, Croatia data is compared to that of neighboring countries, countries with which it has a historical and/or cultural linkage, and major trading partners. In addition, average data is reflected for Upper Middle Income countries as well as Europe, the U.S., and the world—providing a regional, income-level, and global context for the Croatian data. The following countries are included in the analysis:

- Bosnia
- Yugoslavia
- Hungary
- Slovenia
- Russia
- Germany
- Austria
- Czech Republic
- Italy

The following tables provide more details of the situation in Croatia. Following some tables are notes clarifying some of the key data in the tables, as well as short comments with respect to what one may conclude from the data regarding Croatia.

[56] World Telecommunications Development Report—1999. Mobile and World Telecommunications Indicators. ITU. Geneva, Switzerland. 10 October 1999.

Telephone Infrastructure - Basic Information[1]

Country	GDP/US$ Per Capita	Main Lines Teledensity	Teledensity Largest Cities	Teledensity Rest	1995-98 %CAGR	Faults /100
Croatia (U-M)	3,973	34.77	32.42	30.47	7.1	20.0
Bosnia (L)	898	9.07	44.50	6.19	14.8	NA
Yugoslavia (L-M)	991	21.81	45.51	18.63	4.4	NA
Slovenia (H)	9,171	37.48	66.08	27.02[2]	6.6	NA
Hungary (U-M)	4,391	33.59	41.16	22.22[2]	16.8	16.8[2]
Czech Republic (U-M)	5,052	36.39	67.00	32.36	15.5	32.4
Germany (H)	25,625	56.68	57.17	56.66	3.4	8.7[2]
Austria (H)	25,527	49.10	51.86	48.26	1.3	7.2[2]
Italy (H)	19,913	45.07	49.78	42.82	1.3	16.2
Russia (L-M)	3,030	19.66	46.53	17.97	5.2	38.4
Upper-Middle Income Countries	4,651	16.52	24.31	13.78	9.0	27.2
Europe	12,129	37.25	47.98	31.45	3.9	18.0
United States	30,173	66.13	NA	NA	2.9	13.4
World	5,148	14.26	24.99	9.10	5.5	22.2

NOTE: [1] GDP $ are 1997; Teledensity is lines per 100 inhabitants (1998 data); 95-98 CAGR (Compound Annual Growth Rate) based on Teledensity.
[2] Estimated

Observations:

Note on the ITU data for Croatia: There is an apparent discrepancy in the ITU data vis-à-vis the reported national teledensity versus that of the major cities and rural areas. In every case other than Croatia, the figure for overall teledensity lies between that of the large cities and the rural areas. The reported overall teledensity of 34.77 is in line with estimates given during interviews, and with the numbers provided by the ITU reporting agent for the Republic of Croatia, the Ministry of Marine Transport and Communications. The figures in the ITU report for Croatia are being verified with ITU and the GOC.

Basic Telephone Tariffs[1]

Country	Residential (US$)		Business (US$)		Local Calls US$	% GDP per Capita
	Connection	Monthly Subscription	Connection	Monthly Subscription		
Croatia (U-M)	90[2]	2.0[2]	90[2]	12.6[2]	0.03[2]	0.7[2]
Bosnia (L)	159	1.9	588	11.8	0.03	2.9
Yugoslavia (L-M)	397	1.6	1,402	6.2	0.02	0.6[2]
Slovenia (H)	626[2]	6.0[2]	626[2]	6.0[2]	0.03[2]	0.8
Hungary (U-M)	153	6.4	304	7.8	0.13	2.1[2]
Czech Republic (U-M)	108	3.1	108	3.1	0.07	0.7
Germany (H)	49	12.2	49	12.2	0.12	0.7
Austria (H)	145	12.3	145	26.0	0.19	0.6
Italy (H)	137	9.4	137	14.6	0.10	0.6
Russia (L-M)	171	3.4	582	18.8	NA	1.4
Upper Middle Income Countries	91	8.1	156	15.1	0.09	1.8
Europe	126	8.0	193	11.2	0.11	1.0
United States	44	19.9	70	41.3	0.09	0.8
World	109	6.9	155	11.1	0.09	7.5

NOTE: [1] Cost data is 1998; %GDP per capita is subscription as a percentage of GDP; %GDP per capita data is 1997

[2] Estimated

Cellular – Subscribers & Tariffs

Country	Subscribers 1998 (000)	95-98 %CAGR	Teledensity	Connect (US$)	100 Min Basket	% of total subscr
Croatia (U-M)	182.5	75.6	4.07	79	37.72	10.5
Bosnia (L)	25.2	NA	0.69	169	42.19	7.0
Yugoslavia (L-M)	240.0	NA	2.26	108	61.68	9.4
Slovenia (H)	166.5	82.7	8.36	26	50.86	18.2
Hungary (U-M)	1,070.2	59.2	10.50	93	37.78	23.8
Czech Republic (U-M)	965.5	170.3	9.39	75	30.81	20.5
Germany (H)	13,925.0	55.2	16.97	28	61.91	23.0
Austria (H)	2,030.0	74.3	24.94	36	47.58	33.7
Italy (H)	20,489.0	73.5	35.53	NA	42.85	44.1
Russia (L-M)	747.1	103.6	0.51	135	46.50	2.5
Upper Middle Income Countries	32,269.7	77.4	5.51	139	39.57	25.0
Europe	104,889.7	63.4	13.15	65	40.25	26.1
United States	69,209.3	27.0	25.60	NA	25.00	27.9
World	318,892.9	52.1	5.38	86	38.15	27.5

NOTE: [1] Subscriber data is 1998; tariff data is 1999
100-Minute Basket is 50 minutes of peak and 50 minutes of non-peak use plus subscription fee, less free minutes

International Telephone Traffic

Country	Minutes 1998 (000 minutes)	1995-98 %CAGR	Minutes per Inhabitant	Minutes per Subscriber	International Circuits (000) (1998)
Croatia (U-M)	274.4	9.2	61.2	176.1	8.7[2]
Bosnia (L)	94.9	113.3	25.8	284.8	2.9
Yugoslavia (L-M)	220.0	1.3	20.7	94.9	6.7
Slovenia (H)	113.5[2]	6.2[2]	57.2[2]	157.1[2]	4.4[2]
Hungary (U-M)	238.9	-1.2	23.4	69.8	6.7[2]
Czech Republic (U-M)	339.2	9.5	33.0	90.7	11.3
Germany (H)	4,711.0	-3.5	57.4	101.3	NA
Austria (H)	1,250.0	11.5	153.6	312.8	NA
Italy (H)	2,704.7	13.7	46.9	104.1	95.3
Russia (L-M)	1,038.2	5.0	7.0	35.8	13.9
Upper Middle Income Countries	8,436.4	13.5	14.5	88.3	127.0
Europe	34,051.3	7.0	42.7	115.3	354.4
United States	22,811.9	19.2	85.2	132.3	146.1
World	83,714.6	9.5	14.4	100.7	816.2

NOTE: [1] Data reflects only outgoing telephone traffic
[2] Estimated

Telecommunications Staff

Country	Telecom Staff		Main Lines/Employee	
	1998 (000)	CAGR % 1995-98	1998 (000)	CAGR % 1995-98
Croatia (U-M)	10.9	4.8	143	1.7
Bosnia (L)	1.8	-10.8	190	25.5
Yugoslavia (L-M)	15.1	9.9	154	-4.6
Slovenia (H)	3.2[1]	0.4[1]	229[1]	7.9[1]
Hungary (U-M)	13.3	-15.9	257	38.7
Czech Republic (U-M)	24.5	-6.4	153	23.1
Germany (H)	219.7	-1.5	212	5.0
Austria (H)	20.0	4.9	199	-3.0
Italy (H)	92.0	-3.3	282	5.0
Russia (L-M)	444.5	0.2	65	4.9
Upper Middle Income Countries	562.0	-1.3	172	11.6
Europe	1,888.6	0.1	157	4.1
United States	1,021.8	4.3	175	-0.5
World	5,433.2	0.6	155	6.2

NOTE: [1] Estimated

Telecommunications Revenue and Investments

Country	Revenue 1998			Investments 1998		
	Total (000 US$)	Per Main Line	Per Employee	Total 1998 (000 US$)	Per Main Line	% of Revenue
Croatia (U-M)	737.6	473	67,488	269.1[1]	181[1]	39.7
Bosnia (L)	143.5	431	81,830	32.4	97	22.5
Yugoslavia (L-M)	913.7	270	31,246	112.4[1]	52[1]	20.8[1]
Slovenia (H)	313.3[1]	434	99,107	121.7[1]	168[1]	38.9[1]
Hungary (U-M)	1,387.7[1]	448[1]	76,303[1]	507.4[1]	164[1]	36.6[1]
Czech Republic (U-M)	2,014.4	538	82,255	1,163.6	311	57.8
Germany (H)	50,008.5	1,075	227,622	8,808.3	189	17.6
Austria (H)	4,119.9	1.031	205,511	1,212.7[1]	306[1]	31.6[1]
Italy (H)	26,026.5	1,002	282,743	6,693.1[1]	260[1]	29.6[1]
Russia (L-M)	3,693.0	127	8,308	1.2	NA	NA
Upper Middle Income Countries	62,132.7	667	109,389	21,184.5	235	35.7
Europe	221,522.2	746	116,991	47,854.1	163	22.6
United States	246,392.0	1,378	241,135	24,218.1	135	9.8
World	772,548.2	871	133,321	175,655.0	215	24.7

NOTE: [1] Estimated

Information Technology – Internet & PCs

Country	Internet – 1998				Estimated PCs - 1998	
	Total Hosts	Hosts per 10,000	Users (000)	Users per 10,000	Total (000)	Per 100
Croatia (U-M)	9,507	21.22	200.0	446.33	500	11.16
Bosnia (L)	705	1.92	0.5[1]	1.29[1]	NA	NA
Yugoslavia (L-M)	7,712	7.25	100.0	94.03	200	1.88
Slovenia (H)	22,932	115.06	200.0	1,003.51	500	25.09
Hungary (U-M)	95,931	94.12	300.0	294.35	600	5.89
Czech Republic (U-M)	86,482	84.11	400.0	389.03	1,000	9.73
Germany (H)	1,449,915	176.40	6,000.0	731.38	25,000	30.47
Austria (H)	172,569	212.00	1,100.0	1,351.35	1,900	23.34
Italy (H)	386,632	67.05	3,000.0	520.29	10,000	17.34
Russia (L-M)	182,680	12.37	1,000.0	67.71	6,000	4.06
Upper Middle Income Countries	1,068,356	18.24	8,215.1	141.72	23,654	4.11
Europe	7,728,825	96.88	39,008.8	488.50	106,528	13.89
United States	30,489,463	1,127.68	60,000.0	2,219.16	124,000	45.36
World	43,486,022	73.43	144,801.0	250.32	337,828	6.43

NOTE: [1] Estimated

Observations: Two key numbers with respect to ICTs appear on this table—number of Internet users and number of PCs. The numbers for Croatia are 200,000 Internet users and 500,000 PCs; recognizing that this is 1998 data and this is typically a high-growth sector. For example, estimates from the U.S. Embassy Commercial Service give the number of PCs imported into Croatia each year at 70,000. Given this growth rate, it can be inferred that the current number of PCs in Croatia is approximately 640,000 for 2000. As for Internet users, data collected in interviews (e.g., from ISPs in Croatia) place the number of Internet users at approximately 200,000, but does not account for the large academic population that uses the Internet over the free CARNet. Other estimates for Internet use range from 3% to 6% of the population, with perhaps 3% using it for about an hour each day, and 6% having access. While there is no way to confirm these numbers, discussions with several individuals confirm that these numbers appear to reflect intuitive estimates.

Network Growth

Country	New Telephone Lines		New Mobile Subsc		New Internet Hosts	
	Total 1997-98	CAGR (%)	Total 1997-98	CAGR (%)	Total 1997-98	CAGR (%)
Croatia (U-M)	69.9	4.7	62.1	51.6	1.3	15.4
Bosnia (L)	30.3	10.0	16.2	179.8	0.3	89.0
Yugoslavia (L-M)	137.4	6.3	153.0	175.9	2.8	57.5
Slovenia (H)	24.5	3.4	73.2	78.4	3.4	17.6
Hungary (U-M)	327.7	10.6	364.4	51.6	28.0	41.3
Czech Republic (U-M)	461.7	14.1	439.1	83.4	29.6	52.1
Germany (H)	1,300.0	2.9	5,755.0	70.4	317.7	28.1
Austria (H)	27.2	0.7	870.3	75.0	64.1	59.1
Italy (H)	288.1	1.1	8,751.1	74.6	132.3	52.0
Russia (L-M)	780.8	2.8	219.7	41.7	30.1	19.7
Upper Middle Income Countries	9,329.5	10.8	13,357.3	71.3	409.8	62.4
Europe	9,625.1	3.3	43,486.0	71.4	2,049.8	36.2
United States	6,347.5	3.7	13,897.0	25.1	9,865.5	47.8
World	50,558.4	6.4	103,044.0	47.9	13,354.9	44.3

Year 2000 Projections – Main Lines and Cellular

Country	Main Telephone Lines			Cellular Mobile Subscribers		
	Total (000) 2000	Per 100 1998	Per 100 2000	Total (000) 2000	Per 100 1998	Per 100 2000
Croatia (U-M)	1,771	34.77	37.15	300	4.07	6.29
Bosnia (L)	385	9.07	10.73	40	0.69	1.12
Yugoslavia (L-M)	2,517	21.81	23.46	500	2.26	4.66
Slovenia (H)	850	37.48	42.49	700	8.36	35.00
Hungary (U-M)	4,755	33.59	47.02	2,000	10.50	19.78
Czech Republic (U-M)	4,904	36.39	44.58	2,000	9.39	18.18
Germany (H)	50,905	56.68	61.50	15,000	16.97	18.12
Austria (H)	4,158	49.10	51.12	3,700	24.94	45.49
Italy (H)	26,740	45.07	46.10	23,000	35.53	39.66
Russia (L-M)	31,865	19.66	21.24	1,500	0.51	1.00
Upper Middle Income Countries	119,158	16.52	19.65	55,305	5.51	9.12
Europe	325,397	37.25	40.21	160,149	13.15	19.79
United States	193,006	66.13	69.93	100,000	25.60	36.23
World	1,007,939	14.26	16.45	491,447	5.38	8.17

VIII. Appendix B – Contact List

Mark Alley Managing Director **Expandia Invest** Bukova . ka cesta 175, 10000 Zagreb Hrvatska, malley@expandia.com +385-1-2446-222, ext. 114 +385-1-2445-181	Vedran Antoljak Country Program Coordinator Southern Europe and Central Asia dept. **International Finance Corporation** IFC Office Zagreb Kennedyev trg 6B 10000 Zagreb, Croatia, vantoljak@ifc.org +385 1 2387 236 +385 1 2387 233
Damjan Benciç Trade Specialist **FCS** Andrije Hebranga 11/II 10000 Zagreb Croatia, damjan.bencic@mail.doc.gov (385 1) 461-0777 (385 1) 455-3126	Marko Bjegovic Systems Administrator **United States Agency For International Development** TRG Bana J. Jelac, ICA 3/111 10000 Zagreb Croatia, mbjegovic@usaid.gov (385) 1-4811-977 (385) 1-4816-143
Igor Brajkoviç Editor in Chief **Glas Istre** Office: Pula, Riva 10 glasi@glasistre.hr + +385 (0) 52/591-504, + +385 (0) 52/591-500 Pula, Serliov prolaz 1, + +385 (0) 52/25-766 Pula, Serliov prolaz 1, + +385 (0) 52/25-766 + +385 (0) 52/591-555	Aimee Carter Consultant **Booz. Allen & Hamilton Inc.** 8283 Greensboro Drive McLean, VA 22102-3838 carter_aimee@bah.com (703) 902-5000 ext. 98302 +385-1-4854-595 Mobitel: +385-91-525-2361 +385-1-4856-575 Mobitel: +385-91-525-2361 (703) 917-2379
Jonathan Cooper Director General **SEAF - Croatia** Praska 10/11 1 Zagreb, 10000 jonathan.cooper@seaf-croatia.tel.hr (385-1) 4811 131, 4811 912, 4811 913 (385-1) 4811 220	Madeleine Crohn International Programs **National Center for State Courts** Washington Office 2425 Wilson Boulevard, 350 Arlington, VA 22201 mcrohn@ncsc.dni.us (703) 841-5630 (703) 841-5640 (703) 841-5633 (703) 841-5652

Donald Cullen Vice President, Operations **National Center for State Courts** 300 Newport Avenue (23185) P.O. Box 8798 Williamsburg, VA 23187-8798 dcullen@ncsc.dni.us (757) 253-2000 (757) 220-0652	Ante Dodig **Ministry of Post and Telecommunications** Prisavlje 14, 10 000 ZA Greb , HR VA 75KA ante.dodig@telekom.hr (01) 616 91 10 (01) 619 66 62
Larry Forgy President **HomeTies, Inc.** 7405 Colshire Dr. Suite 218 McLean, VA 22102 Iforgy@hometies.net (202) 258-5903 (703) 288-1467	Marijan Frkovic Director **Croatian Chamber of Economy** 10000 Zagreb, Rooseveltov trg 2 Hrvatska, mfrkovic@hgk.hr +385 1 4561 513, 4561 555 +385 1 4561 520, 4828 380
Davor Glavas Advisor **ProMedia/IREX** Perkovceva 2 10000 Zagreb Croatia, davor.glavas@zg.tel.hr +385 1 4826 100 +385 1 4826 102	Kenneth Gregory Member of the Board Chief Technical Officer **VIPnet** VIP-NET Gsm D.O.O. Iblerov trg 7 HR Zagreb, 10000 k.gregory@vipnet.hr +385 1 4691 501 +385 91 4691 500 +385 91 4691 500 +385 1 4691 509
Aleksandar Heina Minister Counselor **Embassy of the Republic of Croatia** 2343 Massachusetts Avenue, N.W. Washington, DC 20008 economic@croatiaemb.org (202) 588-8497 588-5899, ext. 32 588-8937 (202) 234-2363	Tatjana Holjevac Chief Executive Officer Chairman of the Management Board **VIPNet** VIP-NET Gsm D.O.O. Iblerov trg 7 HR Zagreb, 10000 t.holjevac@vipnet.hr +38514691 111 +385 91 4691 111 +385 91 4691 111 +385 1 4691 109

Chuck Howell Program Officer **United States Agency for International Development** Trg Bana J. Jela6i6a 3/111 10000 Zagreb Croatia, chowell@usaid.gov (385) 1-4811-977 (385) 1-4816-143	Patrick Hughes Commercial Attache **U.S. Embassy** Andrije Hebranga 11/II 10000 Zagreb Croatia, patrick.hughes@mail.doc.gov (385 1) 461-0777 (385 1) 455-3126
Frederick Jahn Liaison **American BAR Association** Central and East European Law Initiative (CEELI) 740 15th Street, NW Washington, DC 20005-1022 fred.jahn@zg.tel.hr 385-1-487-25-35,385-1-492-04-96 385-1-487-23-35	Zorka Jelenic Newspaper editor **Glas Istre** Pula, Riva 10 glasi@glasistre.hr + +385 (0) 52/591-566, + +385 (0) 52/591-500 + +385 (0) 52/591-555
Professor Kalpid Vice Dean **University of Zagreb** Unska 3 HR-lO000 Zagreb Croatia, damir.kalpic@fer.hr +385 1 612 96 02 +385 1 617 00 07	Kristina Koch Project Manager for Reintegration, and Revitalization **USAID** Trg Bana J. Jelacica 3/111 10000 Zagreb Croatia, kkoch@usaid.gov (385) 1-4811-977 (385) 1-4816-143
Drazen Komarica United States Fulbright Fellow **Judges Web** Croatia Slavujevac 20 USA 44 Fairview Ave. Glen Rock, NJ 07452 komarica@usa.net (201) 670 - 1098 01-481-4991 Croatia 10 000, Zagreb 01-481-4991 Croatia (201) 670-1098	Drazenko Kopljar Deputy Head of lnformation Tecnology Division **Privredna Banka Zagreb** 10000 Zagreb Ksaver 209 Croatia, dkopljar@pbz.hr +385/1/472-4003 +385/1/472-4130

Mladen Kos Professor Head of Departmant **Department of Telecomunications** **University of Zagreb** HR-10000 Zagreb - Unska 3- Croatia, mladen.kos@fer.hr +385 1 612 97 94 +385 1 612 98 32	Slavko Krajcar Dean **Faculty of Electrical Engineering and** **Computing University of Zagreb** Unska 3 HR-lO000 Zagreb Croatia, slavko.krajcar@fer.hr +385 (0) 1 612 98 63 +385 (0) 1 617 00 07
Andrew Krapotkin Head of the EBRD Office in Zagreb **EBRD** krapotk2@ebrd.com +385 1 4812 400 +385 98 324 037 +385 98 324 037 Petrinjska 59/V, 10 000 Zagreb, Croatia +385 1 4819 468	Damir Kusen Minister - Counsellor **Embassy of the Republic of Croatia** 2343 Massachusetts Avenue, NW Washington, D.C. 20008-2853 PU blicC.croatiaemb.orc] (202) 588-8295 (202) 234-2363
Zoran Löw Managing Director **Zagreb Computer Center** 10020 Zagreb, Avenija Dubrovnik 15 Croatia, zoran.low@zic.tel.hr 385 1 6524 029, 6527 407 385 1 6523 283	Davor Marijancic Adviser-Radio Communications Department **Croatian Institute of Telecommunications** **Independent regulatory authority** Prisavlje 14 HR-10000 Zagreb Croatia, davor.marijancic@.telekom.hr +385 1 616 91 11 Prisavl]e 14, HR-Lo 000 Zagreb , Croatia +385 1 619 66 62
Heike Milhench Director General **SEAF - Croatia d.d**. Pra. ka 10/11 Croatia Zagreb, 10000 heike.milhench@seaf-croatia.tel.hr (385-1) 4811 912, 4811 913 (385-1) 4811 220	Boro Milivojevic voditelj Internet programa **Zagreb Computer Cenre** 10020 Zagreb, Avenija Dubrovnik 15 Hrvatska, boro.milivojevic@zic.tel.hr 01 6524 029, 6527 407 6523 283
Jeanette Miller Director, Business Development Southeast Europe U.S. Trade & Development Agency **U.S. Embassy** Andrije Hebranga, 11/ 11 jmiller-tda@inet.hr 385-1-461-0777 385-1-455-3126	Damir Novinic Project Management Specialist **USAID** Trg bana J. Jelacica 3/III 10000 Zagreb Croatia, dnovinic@usaid.gov (385) 1-4811-977 (385) 1-4816-143

Predrag Pale Dean **Department of Electronic systems and Information Processing** Unska 3 10000 Zagreb Croatia, Predrag.Pale@FER.hr +385 1 612 99 63 +385 1 612 96 52	Ivana Pavacic-Bekic Deputy Director IT Department **Croatian National Bank** Trg Burze 3, 10000 Zagreb Croatia, Ivana.Pavacic@hnb.hr (+385 1) 45 64 789, 45 64 555 (+385 1) 45 64 778
Zrinka Pavkovic International Banking Department **Croatian National Bank** Trg Burze 3, 10000 Zagreb Croatia, zrinka.pavkovic@hnb.hr (+385 1) 45 64 877, 45 64 555 (+385 1) 45 64 704, 46 10 591	Dusan Perovic IT/OT Specialist **The World Bank Group** Country Office Zagreb, Croatia Trg J.F. Kennedya 6b Zagreb, 10000 dperovic@worldbank.org 01-238-7222 / 7245 01-238-7200
Lisa Petter Senior Democracy & Governance Advisor **USAID** Trg Bana J. Jelaç. i6a 3/111 10000 Zagreb Croatia, Ipetter@usaid.gov (385) 1-4811-977 (385) 1-4816-143	Goran Radman General Manager **Microsoft®** Microsoft Adriatics Trg D. Petrovica 3 10000 Zagreb Croatia, gradman@microsoft.com +385 1 4802 500 +385 1 4843 688
Kathleen Redgate Counselor for Political and Economic Affairs **U.S. Embassy** Andrije Hebangar 2 10000 Zaoreb Croatia, redgatekm@state.gov (386/1) 455-5500, 481-7297 (385/1) 455-3178	Nevenka Rogan-Skrapec Head of Informatics Division **Ministry of Justice Public Administration & Self Gov**. 10000 Zagreb R. Austrije 14 Croatia, nrogan@pravosudje hr +385/1/3710-791 +385/1/3764-211

Damit Sabol Managing Director **Iskon Internet** Savska cesta 41/X 10000 Zagreb Croatia, Sd damir@iskon.hr +385 1 6000 700, +385 1 6000 709 +385 1 6000 777	Stephen Sarjeant Regional Manager South Eastern Europe **Cisco Systems Ltd** 3 The Square Stockley Park, Uxbridge Middlesex UBll 1BN ssarjean@cisco.com +44 (0) 181 756 8000 +44 (0) 181 756 8174 +44 (0) 403 547 164 +44 (0) 181 756 8174 +44 (0) 403 547 164 +44 (0) 181 756 8099
Erica Schlangen Program Officer **Financial Services Volunteer Corps** 10 East 53rd Street, 24th Floor New York, NY 10022 eschlangen@fsvc.org (212) 771-1410 212421-2162	Ivan Sedinic IT Department Head. **HT - Hrvatske Telekomunikacije d.d**. Draskoviceva 26 HR Zagreb, 10000 ivan.sedinic@hinet.hr +385 1 4815 200 +385 1 4814 222
Nenad Severin Direktor General Manager **GlobalNet** Ulica Radoslava Cimermana 64 b 10020 Zagreb Croatia, nseverin@globalnet.hr +385 1 6599 000 +385 1 6599 099	Zoran Simunic Head of InJbrmation Tecnology Division **Privredna Banka Zagreb** 10000 Zagreb Ksaver 209 Croatia, zsimunic@pbz.hr +385/1/472-4003 +385/1/472-4130
Eufrona Snyder **Booz. Allen & Hamilton Inc.** 8283 Greensboro Drive McLean, VA 22112-3838 eufrona@aol.com snyder_eufrona@bah.com 4856-575 091-525-6621 4856-895 091-525-6621 4854-595	Velímír Srída Program Director **Delfin** Tratinska SG, 10000 Zagreb Hrvatska, delfin@hi.hinet.hr 01/382-1850 098/352-094 098/352-094 01/382-1850

Dimitrije Todorovic Political Assistant **USAID** Trg Bana J. Jelacica 3/111 10000 Zagreb Croatia, dtodorovic@usaid.gov (385) 1-4811-977 (385) 098/233-151 (385) 098/233-151 (385) 1-4816-143	Laura Trimble Budget Advisor Budget Policy and Management Section **U.S. Department of the Treasury** 1730 K Street, N.W. Ministry of Finance Building, 3rd floor Suite 204 Sarajevo, Bosnia andrzegovina Washington, D.C. 20006 latrimble@aol.com (202) 622-5789 (202) 622-5879
Slaven Trputec Account Manager Marketing and Sales Dpt. **SAP Hrvatska** Savska 64/5 HR-10000 Zagreb m . . com slaven.trputec@sap.com (+385 1) 6177-055 385 91 6177 223 385 91 6177 223 (+385 1) 6177-060	Julius Varallyay Principal Country Officer Europe and Central Asia Region **The World Bank** 1818 H Street, NW Washington, DC 20433 jvarallyay@worldbank.org (202) 473-7210 (202) 477-8772
Egle Zukon strucni suradnik informatiçar Informatics Specialist **Zupanijski sud u Puli Pula** **Municipal Court** Pula, zupanijski-sud@pu.hinet.hr ++385 (0) 52 212-106 211-761	

IX. Appendix C – E-Croatia: A Proposal for Croatia's Informatization Strategy

[Hardcopy Only]

X. Appendix D – List of Croatian Laws

[Hardcopy Only]

XI. Appendix E – 1999 Croatian Telecommunications Law (excerpts)

OFFICIAL GAZETTE OF THE REPUBLIC OF CROATIA,
No. 76, ZAGREB, JULY 19, 1999

THE HOUSE OF REPRESENTATIVES OF
THE CROATIAN NATIONAL PARLIAMENT

1359

Pursuant to Article 89 of the Constitution of the Republic of Croatia, I pass the

D E C I S I O N
ON THE PROMULGATION OF THE LAW ON TELECOMMUNICATIONS

I promulgate the Law on Telecommunications which was passed by the House of Representatives of the Croatian National Parliament at its session held on June 30, 1999.

Number: 01-081-99-1346/2
Zagreb, July 8, 1999

President of
the Republic of Croatia
Franjo Tuđman, Ph.D., signed

LAW
ON TELECOMMUNICATIONS

I GENERAL PROVISIONS

Content and Purpose of the Law

Article 1

This Law shall regulate telecommunications, radio, television and cable television, the relations between providers and users of telecommunications services as well as the construction, maintenance and use of telecommunications facilities and equipment, and of radio stations.

Exemptions Regarding the Application of the Law

Article 2

(1) This Law shall not apply to telecommunications equipment installed and operated exclusively for the purposes of the army, police, diplomatic corps, financial police and customs,

and the frequencies for the operation of such equipment shall be used pursuant to a contract (agreement) with the Croatian Institute of Telecommunications.

(2) This Law shall not apply to telecommunications equipment (in particular radio systems and terminal equipment) installed and operated exclusively for the purposes of the Croatian Institute of Telecommunications.

Terms

Article 3

For the purposes of this Law the terms used herein shall have the following meanings:

Editor's note: [portions omitted due to space considerations]

***Service Provider**:* Legal or natural person providing Telecommunications Services on the market in accordance with the provisions of this Law;

Infrastructure of the Telecommunications Facility, Capacity, Network or System: The basic components of the telecommunications facility, capacity, network or system, such as land, structure or building, antenna rod, access path, power supply, heating, water supply, cable canalization, cable galleries and other;

***Public Telecommunications**:* The commercial provision of Telecommunications to any natural or legal persons;

Public Telecommunications Network: A Telecommunications Network used for the Public Telecommunications;

Public Telecommunications Services: Telecommunications Services provided on a commercial basis to any natural or legal persons;

Public Voice Services: Real-time speech transmission services provided by means of a Public Fixed Telecommunications Network;

***Service Users**:* Natural or legal persons using or requesting Public Telecommunications Services;

Concessionaire: A legal person who has been granted a specific concession and who has concluded a contract on concession;

***Interconnection**:* Access to a network which establishes a physical and logical connection between Telecommunications Networks enabling direct and indirect communication between users connected to these networks;

Ministry: Ministry competent for Telecommunications;

Minister: Minister of the Ministry competent for Telecommunications;

Fixed Network: Telecommunications Network which does not include the Mobile Network;

Operator: Service provider, legal or natural person who exercises, de jure and de facto, control of all the functions necessary for the provision of Telecommunications Services via Telecommunications, Telecommunication System, facility or equipment or Radio Station;

Universal Services: Universal Telecommunications Services are a minimum set of Telecommunications Services of specified quality which are available to all users in the Republic of Croatia, independent of their geographic location and at an affordable price;

Private Telecommunications*:* Telecommunications for members of closed user groups and only for own needs of legal and natural persons which do not include the provision of Telecommunications to the public, i.e. the commercial provision of Telecommunications to other legal and natural persons;

Mobile Radiophone*:* A Mobile Radio Station which is connected to the public telephone network as a mobile Termination Point;

Termination Point*:* All physical connections and their technical specifications for connection which are part of the Telecommunications Network and which are necessary for the connection to that network, and for the efficient establishing of connections via that network;

Network Access*:* The physical and logical connection of Terminal and other Equipment to a Telecommunications Network or parts thereof and the physical and logical connection of one Telecommunications Network to another Telecommunications Network or parts thereof for the purpose of using the functions of that network or for using the services provided thereby;

Mobile Network*:* Telecommunications Network which enables to establish connections even in the circumstances of physical movement of the Service User of that network;

Mobile Radio Station*:* A Radio Station which enables communication even in the circumstances of physical movement of the user of that Radio Station;

Coverage Area*:* The geographical area in which Radiocommunication of the prescribed quality is enabled (other term: service area);

Subscriber*:* Legal or natural person who has concluded a contract with the Provider of Public Telecommunications Services for the purpose of using such services;

Radiocommunications*:* Telecommunications by means of radio waves;

Telecommunications*:* The technical process of sending, transmitting and receiving any kind of intelligence or message in the form of signs, signals, voice or speech, images or sounds by means of the Telecommunication System;

Telecommunications System: Any technical equipment or systems, including wire, optical, wireless, or other electromagnetic systems, capable of sending, transmitting, switching, receiving, steering or controlling as intelligence or messages identifiable electromagnetic or optical signals;

Telecommunications Service*:* A service of transmission, emission or reception of signs, signals, written text, pictures, voice and sounds or intelligence of any nature which is provided through a wire, optical, wireless or other electromagnetic system, including the possibility of using all or part of these systems by leasing, sale or in any other manner;

Telecommunications Line: A transparent telecommunications transmission capacity among Termination Points of a network, without a mediating (switching) function;

Teleshopping: Sale, purchase or rent, i.e. lease of products and other movables or real estate and provision of services via Radio or Television;

Mobile Network Service: A Radiocommunications service between mobile and fixed stations, or between mobile stations;

Owner of the Telecommunications Means, Equipment, Facility, Network or System, or Radio Station: Legal or natural person who disposes, de jure and de facto, independently of the Telecommunications means, equipment, facility, Network or System, or Radio Station;

Common Antenna System*:* An array of technical equipment which is used for direct reception of radio and television emissions for a group of users of receivers in a residential or commercial building or on another smaller, limited, geographically non disrupted area via cables for the distribution of radio and television programs (KDS), with the condition that the distribution of programs is not performed commercially, i.e. with any fee from the users of receivers.

State Interest

Article 4

(1) The construction, maintenance and usage of the Telecommunications System as well as the usage of the Radio Frequency Spectrum and the provision of Telecommunications Services shall be of interest for the Republic of Croatia.

(2) The obligations of the Operators providing Public Voice Services shall be determined by general objectives which, upon the proposal of the Government of the Republic of Croatia, shall be adopted by the Croatian National Parliament.

(3) Within three months upon the expiry of the calendar year, the Government shall submit to the Croatian National Parliament a report on the achievement of the objectives as mentioned in paragraph (2) of this Article for the previous year.

II CROATIAN INSTITUTE OF TELECOMMUNICATIONS

Establishment of the Croatian Institute of Telecommunications

Article 5

(1) By this Law an independent regulatory authority in Telecommunications, the non-profit legal person Public Institution Croatian Institute of Telecommunications (hereinafter: the Institute), shall be established.

(2) The founder of the Institute shall be the Republic of Croatia and the founder's rights, in accordance with the provisions of this Law, shall be exercised by the Croatian National Parliament and the Government of the Republic of Croatia.

(3) The Institute shall be independent in performing its activities and in operation and it shall be responsible for its operation to the Croatian National Parliament to which it shall submit an annual report on its operation. Acts and actions of the Institute's bodies shall be subject to the consent or approval by the Croatian National Parliament or by the Government of the Republic of Croatia or the Minister of the Ministry competent for Telecommunications (hereinafter: Minister), only when this is prescribed by this Law or when these bodies as determined by the Law pass them in the framework of exercising the founder's (ownership) authorizations. The Institute shall be independent in undertaking all organizational and other measures necessary for a non-disturbed performance of functions and fulfillment of obligations in international telecommunications associations in accordance with this and other laws.

(4) The activity of the Institute, as determined by this Law and by the Articles of Association of the Institute, shall be of interest for the Republic of Croatia and the Institute shall perform it as a public service.

(5) The resources for the commencement of the operation of the Institute shall be secured from the resources that are managed and utilized by the Ministry competent for Telecommunications (hereinafter: Ministry) in the manner as prescribed by this Law.

(6) The resources for the performance of the activities of the Institute shall be secured from the budget of the Republic of Croatia. The fees that are prescribed by this Law shall be the income of the budget of the Republic of Croatia.

(7) For the obligations toward other persons the Institute shall be liable with all its resources, and the Republic of Croatia shall be liable without limitation, and jointly and severally with the Institute.

(8) The Institute may not, without the consent of the Government of the Republic of Croatia, acquire, encumber or dispose of a real estate or another property, or conclude another legal transaction, if the value of the contract or another legal transaction is in excess of the amount as determined by the Articles of Association of the Institute.

(9) The Institute shall be managed by the Administration Board, comprised of five members. The members of the Administration Board shall be appointed by the House of

Representatives of the Croatian National Parliament upon the proposal of the Government of the Republic of Croatia for a period of five years, and they may be appointed for another five year period. The members of the Administration Board shall elect the President and Deputy President of the Administration Board among themselves. The members of the Administration Board shall gradually be replaced by new members in such a way that, during the initial five year period and timely, at the end of each of the first four years, the member of the Administration Board from the initial appointment who is subject to replacement or re-appointment for the subsequent five year period, shall be determined by ballot. The Institute shall enter into a labor contract with the members of the Administration Board for the period for which they shall be appointed, whereby the period for which the labor relationship shall be established, the salary and other rights on the basis of work, as well as other rights and obligations of the members of the Administration Board shall be regulated.

(10) The members of the Administration Board must be citizens of the Republic of Croatia, having permanent residence in the Republic of Croatia. They must have professional knowledge, ability and working experience in technical, legal and economic disciplines in the field of Telecommunications, and must be fluent in at least one of the world languages (English, German or French).

(11) The members of the Administration Board may not be owners, shareholders or holders of shares, members of Management Boards or Supervisory Boards or members of Administration Boards or other corresponding management bodies, Directors or other managers of business operations of legal persons which are subject to the provisions of this Law, nor may they have a material or other proprietary interest in the manufacturing or distribution of telecommunications equipment, except where this is a secondary activity to such legal person.

(12) The members of the Administration Board, the Director and other employees of the Institute may not be employees of, or may not enter into a contract or another relationship with, any legal person or other service which is connected with Telecommunications.

(13) The persons who:

1. May not be members of the Management Board of a joint stock company,

2. Have committed a gross violation of duty,

3. If it has been evaluated that they are incapable of ordinary performance of businesses,

4. If they are in breach of the provision referred to in paragraphs (12) and (13) of this Article,

may not be appointed as the members of the Administration Board, i.e., if they have been appointed, they may be removed from office.

(14) The Administration Board shall pass decisions by the majority vote of all members of the Administration Board.

(15) The Administration Board shall adopt the Articles of Association of the Institute, shall pass regulations for whose passing it shall be authorized pursuant to the provisions of this Law, it shall pass decisions on granting of concessions that shall be passed by the Institute pursuant to the provisions of this Law, it shall adopt the annual program of the Institute's operation, the calculation of income and expenditure and the annual account of the Institute, and it shall also perform other businesses as determined by this Law and by the Articles of Association of the Institute.

(16) The Government of the Republic of Croatia shall give its consent to the Articles of Association of the Institute.

(17) The head of the Institute shall be its Director who shall be appointed by the Government of the Republic of Croatia for a period of four years. The Government of the Republic of Croatia shall also appoint the Deputy Director for a period of four years who shall replace the Director in cases of his absence or inability to attend, and who shall also perform other businesses as determined by the Articles of Association of the Institute. The Director and Deputy Director may be removed from office prior to the expiry of their term of office for the reasons referred to in paragraph (13) of this Article and they must be removed from office for the reasons referred to in Article 44, paragraph (2) of the Law on Institutions.

(18) The registered office of the Institute shall be in Zagreb. Internal organizational units shall be established within the Institute as determined by this Law and by the Articles of Association of the Institute, as well as expert, supervisory and counseling bodies of the Institute whose composition, establishment and businesses shall be determined by the Articles of Association of the Institute.

(19) When, pursuant to the provisions of this Law, the regulations for the implementation thereof shall be passed by the Government of the Republic of Croatia or by the Minister upon the proposal of the Institute, the Government of the Republic of Croatia or the Minister shall not bound by the proposal of the Institute.

(20) When the Institute, in implementing this Law and the regulations passed pursuant this Law, shall pass acts that do not have characteristics of regulations, an appeal against such acts may not be submitted, however, an administrative proceeding may be instituted.

(21) The Government of the Republic of Croatia may also, by its decree, regulate other issues in connection with the establishment of the Institute, in accordance with this Law.

VI TELECOMMUNICATIONS SERVICES OPEN TO COMPETITION

Telecommunications Services Open to Competition in a Fixed Network

Article 25

(1) Telecommunications Services open to competition in a Fixed Network shall include:

1. The transmission of sounds, data, documents, images and other through the telecommunications capacities in a Fixed Network, excluding real-time speech transmission;

2. The lease of Telecommunications Lines;

3. The connection of Subscriber Terminal Equipment to the Telecommunications Network with respect to the services referred to in items 1 and 2 of this paragraph;

4. Other Telecommunications Services related to the services referred to in items 1, 2, and 3 of this paragraph, which shall be determined under the contract on concession.

(2) The right to perform Telecommunications Services open to competition shall be acquired pursuant to the decision on the grant of a concession, which shall be passed by the Institute, and pursuant to a concluded contract on concession.

Telecommunications Services Open to Competition with Usage of the Radio Frequency Spectrum

Article 26

(1) Telecommunications Services open to competition, subject to the use of the Radio Frequency Spectrum, shall include:

1. The transmission of speech, sounds, data, documents, images and other through the telecommunications capacities in a Mobile Network and via satellite in a mobile and fixed satellite service;

2. The connection of Subscriber Terminal Equipment to the Telecommunications Network with respect to the services referred to in item 1 of this paragraph;

3. Other Telecommunications Services related to the services referred to in items 1 and 2 of this paragraph, which shall be determined under the contract on concession.

(2) The right to perform Telecommunications Services open to competition, for which the usage of the Radio Frequency Spectrum is required, shall be acquired pursuant to the decision on the grant of a concession, which shall be passed by the Institute, and pursuant to a concluded contract on concession.

(3) The Service Provider providing the services referred to in paragraph (1) of this Article must keep separate accounting records which shall enable the separate calculation of the results of business operations relating to the provision of such services from the results of

business operations relating to the provision of other Telecommunications Services or other activities, and must carry out an annual audit of the accounting statements.

Other Telecommunications Services Open to Competition

Article 27

(1) Other Telecommunications Services open to competition shall include:

1. The transmission of speech, sounds, data, documents, images and other through the Terminal Equipment connected to the Telecommunications Network of other Service Providers;

2. The lease and sale of telecommunications equipment, and, for the account of others, the setting up and maintenance of telecommunications facilities, installations and equipment, as well as the designing and supervision, pursuant to a special law which shall regulate the issues relating to the construction of buildings, in connection with the construction and setting up of telecommunications facilities, installations and equipment, as well as the production of proof of the quality of the work performed in respect of the telecommunications portion of the Telecommunications Building referred to in Article 6, paragraph (8) of this Law and for the conduct of the technical inspection referred to in Article 91, paragraph (3) of this Law.

(2) Other Telecommunications Services open to competition referred to in paragraph (1) of this Article may be performed pursuant to a written application referred to in Article 29, paragraph (2) of this Law.

(3) The application referred to in paragraph (2) of this Article shall not be required for the simple further sale (resale) of the services, referred to in paragraph (1), item 1 of this Article, in inland and international traffic.

Tariffs for Telecommunications Services Open to Competition

Article 28

(1) The User shall pay the price for the service rendered according to the tariff of the Service Provider.

(2) The Service Provider may also agree with particular Service Users on a price of particular services lower than the price defined in the tariff, in accordance with the principle of non-discrimination.

(3) The Service Provider shall regularly and in an accessible way inform Service Users about new services, modalities and conditions under which the Users may use services, as well as about the prices of services.

(4) The prices of services being offered by only one Service Provider on the market shall be approved by the Institute upon the previously obtained opinion of the Ministry and the ministry competent for economy.

XII. Appendix F – ICT Assessments Process Guidelines Draft 2.5: 15 May 2000

The following has been prepared based on recent experience in participating in one IED Initiative Assessment (Morocco) along with subsequent follow-up, a similar E-Commerce Assessment (Sri Lanka), and in reviewing the IED Initiative Assessment document developed as a result of the Assessment carried out in Bulgaria.

The purpose in putting these ideas down on paper is to initiate a "lessons learned" dialog that would be of value in carrying out future ICT/E-Commerce Assessments that are currently in the discussion stage (e.g., Armenia, Romania, Lithuania) as well as the various IED Initiative Assessments that are likely to take place over this next 6-12 months. The target result in developing the following is to improve the efficiencies and effectiveness of these Assessments, and to help sharpen the resulting products in order to improve their value to the Bureaus and Missions. At the same time this should reduce the amount of rework and establish greater consistencies where practical.

The following serve to provide Templates in two areas; 1) the ***process*** for carrying out these assessments, and 2) the concluding ***reports*** themselves.

Process

To date the core of the various Assessments has been a two-week on-the-ground effort carried out by a team assembled for this specific purpose. These are undertaken as joint efforts between the Global Bureau, the Regional Bureau, and the Mission itself. The compositions and size of the teams vary somewhat based on specific areas of focus and availability of USAID staff and contract resources. However, experience over the past several months have indicated that the Assessment process could be substantially enhanced by looking beyond the on-the-ground period and by placing added focus on the team composition itself. The following is a potential outline or template of this broader view of the Assessment process.

- **Pre-Assessment**—It is recommended that approximately 1 week be allocated before the on-the-ground activities get underway, for collecting related information regarding USAID's country activities, previous reports and assessments, and doing research with regards to ITU data on telecommunications, World Bank data on sector-specific data, economic data, etc. In addition, this time can be used to coordinate with the World Bank and others that may be engaged in related activities and to make final logistical arrangements. Only one person need be committed to these work, however it's imperative that this effort be supported by the Regional Bureau, Desk Officer, and the Mission with respect to collecting and providing as much related background information as possible. The results will be a solid set of information to be used by the team as a backdrop and foundation for their efforts. A summary overview of key background information can be included into the final report as an attachment.
- **Assessment Team**—The Assessment Teams vary in size but it appears 3-4 are adequate for carrying out the effort. While not a requirement, consideration should be given to have the Team's activities led by a USAID direct hire either from the Regional Bureau or

Mission (but could be from the Global Bureau or IRM if needed). This direct engagement is to help ensure that the Regional Bureau/Mission is directly engaged and committed to the effort. With respect to the core Team itself, there is the need to have a mix of direct hire and contract resources that provide as much background and expertise as possible in the following areas: 1) Information and Communications Technologies (ICTs) including telecommunications, e-commerce, etc., 2) a Public Sector specialist with a strong focus on policy (e.g., legislative, regulatory, rule-making) and judicial reforms—most likely someone with a law degree and/or legal background, 3) and Economist who has international and/or developmental experience in dealing with a variety of fiscal, economic, and trade-related topics (this position may not be required for the entire Assessment period), and 4) a Private Sector development specialist that has experience in supporting private sector strengthening activities within a development context. Additional skills/knowledge can be added to this core, based on unique areas of focus by the Mission itself (e.g., health, education, democratization, agriculture, etc.). The actual size of the Team will depend on the mix of specific individuals that can be pulled together for the effort. With regards to obtaining contracted resources, to date most have been acquired through the Global Bureau's SEGIR vehicle, with some ICT expertise acquired via M/IRM's contract vehicles.

- **On-the-Ground Assessment**—The Assessment itself consists primarily of a series of interviews with a number of both public and private sector organizations and individuals. Ideally the Assessment begins with an Entrance Briefing with the Mission personnel—describing the approach to be taken and obtaining additional insights into the Mission's activities. The Mission throughout the Assessment provides essential on-the-ground logistical support for such items as arranging interviews, transportation, etc. Within the Public Sector there is the need to focus on those organizations associated with telecommunications and information technology, taxation, customs, fiscal management, banking regulators, trade and investments, import/export promotion, legislative, tourism, etc. Within the Private Sector there is the need to focus on telecommunications and Internet-related firms, high-tech sector firms, private banks, Chambers of Commerce, various industry/sector associations, venture capital firms (if any), a variety of firms in key industries, import/export handlers, shippers, etc. With regard to development activities, the primary source of will be from the USAID Mission itself, the various NGOs/PVOs through which the Mission carries out its activities, the host country government agencies with which the Mission works with, and multilateral Agencies with in-country activities (e.g., World Bank, UN, etc.). The on-the-ground Assessments concludes by setting aside a couple days to draft the bulk of the Assessment report, and to debrief the Mission personnel on the findings.

- **Optional Workshop**—While to date none of the Assessments have included an E-Commerce Workshop within its on-the-ground activities, this is a viable option. Draft materials for such a workshop have been developed and are available for use by the Teams (or anyone else for that matter). The notion here is to determine early on (e.g., no later than during the entrance briefing with Mission personnel; preferably beforehand) whether or not this is to be undertaken. The idea is simply to close the loop of the 2 week Assessment by pulling together those interviewed during the course of the Assessment for 1 or 2 days, outline the preliminary results (after a separate debriefing to the Mission

personnel and in accord with Mission guidance). Further, this Workshop provides an opportunity to provide a basic introduction to E-Commerce such that these organizations and individuals share a common understanding of how E-Commerce can be leveraged. If this option is to be exercised then the rooms need to be reserved early and RSVP invitations handed out as the interviews are carried out. This Workshop would be held on the Monday and possibly a Tuesday of a third week. The curriculum and presentation materials are available on USAID's Intranet at http://www.usaid.gov/ICT/sectors/e-commerce/workshop.html

- **Post-Assessment**—Experience to-date has indicated there can be a substantial amount of post-Assessment work required, and this needs to be taken into account. This consists of finishing off the report itself. While a nearly complete draft should be left with the Mission upon completing the on-the-ground phase, typically there is the need to fill in a few holes and editing the report. A full draft should be provided back to the Mission and Bureau within 1 week after the on-the-ground portion is completed. In addition, there's typically further rework required based on review/comment from the Bureau and Mission in order to develop a final report. Further, there's frequently briefings, perhaps getting the final report translated, and potentially working with the Bureau an Mission in refining an action agenda based on those recommendations to be pursued. This may be as much as 4 weeks of work by one individual, but it's likely to be carried out over a 2-3 month period of time. In one case so far, this entailed a return visit to the country for a briefing to the key participants interviewed during the Assessment.

Report

The following provides a set of salient characteristics that should provide a reasonable level of consistency between the various Assessments. The key here is not that the concluding reports all look alike, but rather that: 1) there is a general sense going in to the Assessment as to what the concluding report will look like (e.g., begin with the end in mind), and 2) that the various reports have enough consistency such that and themes can be extracted from the growing set of materials; where "lessons learned" can be translated into valuable and perhaps repeatable solutions/approaches for resolving those issues that are raised during the Assessments.

The following should guide the development of the final reports:

- **Core Report Suitable for Public Distribution**—The core Assessment report should be written such that it can be distributed to the general public; potentially posted on the Internet. Ultimately the decision to make public would be made by the Mission, itself. However in drafting the content, the language/tone should take this perspective into account. As such, the contents should be free from prescriptive recommendations, potential solutions, or demeaning comments or phases. Rather, it should focus on describing the situation, analysis, and considerations to be taken into account should actions be taken to resolve the issue/s. Recommendations should be reflected in Exhibits that can be separated from the core document.
- **Executive Summary/TOC/Abbreviations**—The final report should include a 3-4 page Executive Summary that captures the essence of the Assessment. This may well take the form of a 10-15 minute speech/presentation, with a brief background and major findings in each of the four categories outlined below. Following the Executive Summary there

should be a Table of Contents and a list of Acronyms and Abbreviations used throughout the report.

- **Common Framework of: ICT, Public Sector, Private Sector, and People**—These Assessments include carrying out numerous interviews, collecting a mass of information, and ultimately putting at least the major findings into this report. While several approaches for presenting these materials/findings can be made, it is recommended that to the degree feasible, that the core of the report be divided into four components. First, the **Information and Communications Technologies (ICTs)** or as some say, the *"Pipes*." Here one key focus is on the telecommunication infrastructure including phones and Internet, and includes reach, pricing, reliability, etc. It should also include the use of ICTs by the business and government sectors, educational systems that support building a base of required technical personnel, use of the technology, etc. Second, the **Public Sector** component should address primarily the *"Policy"* elements of not only telecommunications, but also use of the Internet for E-Commerce. A wide array of issues should be addressed here—especially if the Assessment is an IED Assessment or an E-Commerce specific assessment. Other factors here are the government's use of ICTs for E-Commerce related activities such as customs, handling of taxes, etc. The third component to be covered is the **Private Sector**. The focus here centers on leading industries, markets (domestic or overseas), special trading considerations, specialized use of ICTs, a technology sector if such exists, etc. The idea is to identify the current opportunities and state of ICT readiness/use. The fourth component of the report focuses on **"People"** and this is primarily where attention is given to USAID's in-country development activities/portfolio. Specifically this is where such key elements as literacy, education, schooling, can be discussed, as well as what development activities are underway where ICTs could potentially be leveraged to improve efficiencies and/or effectiveness.

  While actual coverage of these four general categories may vary, one possible approach is to subdivide each category into topics, and for each topic establish a common outline for coverage (e.g., findings, assessment, and topics for further discussion). Refer to the those pages at the end of this paper with respect to specific items of inquiry for each of these four categories.

- **Exhibits used for Capturing Background Information**—In lieu of incorporating substantial amounts of background information into the core report, it is recommended that Exhibits be used to capture key information. This will include key documents obtained during the pre-Assessment efforts, as well as those pulled together as part of the on-the-ground Assessment itself. For capturing background materials important to the Report, but are too voluminous to include even as Exhibits, a References exhibit should reflect the source materials taken into account in carrying out the Assessment.

- **Exhibits used for Recommendations**—Specific recommendations for addressing the issues surfaced during the Assessments should be reflected in an Exhibit. These should be structured such that they correspond directly to the four categories used in constructing the core of the report itself (e.g., ICTs, Public Sector, Private Sector, and People). It is anticipated that these recommendations will not be distributed to the general public as they may or may not be approved and/or funded by the Bureau/Mission. To the extent

possible, these should have an "implementing" quality to them with regards to their level of detail, and may have time frame and estimated costs associated with them if possible. It's likely these will be developed only to a macro level at the conclusion of the on-the-ground Assessment, but subsequently refined in greater detail (via an iterative process) if the Bureau/Mission envisions the possibility of pursuing these recommendations.

- **Exhibits used to Capture Meeting Summaries and Contact Information**—During the course of the Assessment dozens of interviews are undertaken in an effort to gain insights into current situation and surface issues. It is recommended that a one-page synopsis of these meeting be prepared at the end of each day, or every few days. These should reflect the individuals being interviewed, company/organization, and specifics with regards to position, phone, address, e-Mail, etc. In addition, the summaries should document the key elements surfacing during the course of the interview. Once these are all completed the summaries should be placed into an exhibit. Contact information should be extracted from these summaries and pulled together into a separate exhibit for future reference. These may well be published as a separate document due to their size.

Pipes

The following puts forward a number of items and issues that should be addressed within the topic of ICTs. Specifically the dominant focus here is on the ***Pipe***, the enabling telecommunications infrastructure needed to support leveraging of ICTs, E-Commerce, etc. However, due to the specific focus on ICTs as critical enabling component, the coverage here should also include public and private sector information as well. The following bullets provide a sampling of items where data should be collected, pulled together, and information sought out as part of the overall Assessment process. The desired conclusion is to develop as comprehensive "state of ICT" with respect to supporting its leveraging for E-Commerce, E-Government, E-Education, E-Health, etc., as possible. Also to identify potential areas where recommendations for action can be put forward.

- **Pipe**
  - Phone and PC Teledensity (i.e., number phones/PCs per 100 population)
  - Pricing of telephony relative to income and other countries
  - Use of mobile telephony (e.g., augmenting land lines or substitution)
  - Internet availability, pricing, and reliability
  - Urban/rural coverage of telephony and the Internet
- **Trends, transitions, and dynamics is telecommunications sector/market**
  - Policies, regulations, administrative decision processes of telecommunications
  - Existence, maturity, and independence of an regulatory authority
  - Telecommunications providers (e.g., public or private, number of players, etc.)
  - ISP sub-sector (e.g., number of players, dynamics)
  - Import/export, tariffs and/or restrictions on ICTs
  - Engagements of World Bank, United Nations, ITU, other bi-laterals in ICT arena
- **Use and Support of ICTs**
  - Any national IT policy, strategy, planning, ministerial position, special initiatives, etc.
  - Existing use of the ICTs by government, private sector and general population (e.g., home, office, cyber cafés, etc.)
  - Overall knowledge and skill levels regarding ICTs in public and private sector
  - Supporting education systems (e.g., use by schools and schools for building ICT-related skills)
  - Existence of a viable IT sector, High-Tech firms engaged in ICTs, Examples of leading-edge ICT companies or use of ICTs
  - Associations, committees, organizations relating to the use/promotion of ICTs
- **Opportunities where USG could possibly focus critical value-added support**
  - Hindrances to broader use of ICTs
  - Opportunities for broader use/leveraging ICTs in specific areas

Public Sector

The following puts forward a number of items and issues that should be addressed within the topic of Public Sector. Specifically the dominant focus here is on the ***Policies***, the enabling legal and judicial environment needed to support leveraging the opportunities brought about by ICTs and E-Commerce. The following bullets provide a sampling of items where data should be collected, pulled together, and information sought out as part of the overall Assessment process. The desired conclusion is to develop as comprehensive "State of Public Sector" with respect to the supporting soft infrastructure its leveraging for E-Commerce over the Internet. Also to identify potential areas where recommendations for action can be put forward.

- **Policies (Laws, Regulations, Rulings, Administrative procedures)**
  - Protection of Intellectual Property
  - Protecting individuals' Privacy
  - Acceptable Encryption scheme in the transmission of data
  - Electronic Signatures where they can serve as legal/binding agreements
  - Simplified taxation processes, including customs
  - Facilitating electronic payment processes
  - Adherence to multilateral organizations' agreements (such as WTO, WIPO, APEC, UNCITRAL, etc.)
  - Building user confidence through Certification mechanisms
- **Judicial**
  - Knowledge/skills of judges relative to ICTs
  - Timeliness in addressing law suits or administrative complaints
  - Fast track/administrative procedures for resolving smaller complaints
  - Availability by judges of laws, regulations, updates, prior rulings, etc.
- **Practices**
  - Government's use of ICTs in automating key processes such as taxes, customs, postal, business licensing, procurements, etc. (E-Government)
  - Fiscal and Monetary constraints re: holding foreign currencies, convertibility of local currency, etc.
  - Import/export restrictions
  - Viable Postal delivery system for quick and reasonably priced delivery of goods purchased via the Internet
  - Special ICT-related initiatives taking place within the government
  - Awareness, knowledge, skill levels of government officials and ministers with regards to ICT and E-Commerce
- **Opportunities where USG could possibly focus critical value-added support**

Private Sector

The following puts forward a number of items and issues that should be addressed within the topic of Private Sector. Specifically the dominant focus here is on gaining an understanding of the private sector activities with respect to identifying key sectors, key domestic and international markets and partners, products and services, and actual/potential use of leveraging the opportunities brought about by ICTs and E-Commerce. The following bullets provide a sampling of items where data should be collected, pulled together, and information sought out as part of the overall process. The desired conclusion is to develop as a comprehensive "State of the Public Sector" with respect to the leveraging ICT's and E-Commerce over the Internet for expanding growth of current businesses as well as opportunities for seeking entry into new areas. Also to identify potential areas where recommendations for action can be put forward.

- **General Private Sector Background/Information**
  - Key sectors in local economy (e.g., tourism, manufacturing, agricultural, etc.)
  - Key products/services provided to the local economy by the private sector
  - Key products/services provided to the international market by the private sector
  - Major and minor exports (products/services) and associated countries/markets
  - Identification of the top 10-20 local companies
  - Identification of multinational corporations operating in country and products/services they produce
  - Major private sector firms that support exports and identification of their overseas partners
  - Strength and practice of banking sector that support or inhibit E-Commerce
  - Privatization of previously public-owned industries/businesses
  - Overall competitiveness of current industries/businesses on world market
  - Other multilateral or bilateral development activities currently underway to strengthen the private sector
  - Current market trends, dynamics, changes, etc.
- **ICT/E-Commerce Specific Information**
  - Awareness, knowledge, skill levels of private sector business leaders/managers with regard to ICT and E-Commerce
  - Use of ICTs within the private sector businesses
  - Use of the Internet for supporting E-Commerce/E-Business
  - Existence of an IT sector developing software, hardware, assembly, etc.
  - Identification and strength of industry associations and level of current activity re: expanding markets, strengthening member businesses, supporting the adoption of ICTs
  - Identification of inhibitors to business expansion via leveraging the Internet/E-Commerce
- **Opportunities where USG could possibly focus critical value-added support**

People

The following puts forward a number of items and issues that should be addressed within the topic of the social elements within the country. Specifically the dominant focus here is on the USAID development activities—those currently taking place within the portfolio as well as those being planned for the future. New opportunities should also be taken into consideration, though with less focus. The following bullets provide a sampling of items where data should be collected, pulled together, and information sought out as part of the overall process. The desired conclusion is to develop an understanding of the Mission's current activities and identify those specific areas where there are potential efficiencies and effectiveness gains by adopting and leveraging ICTs within the context of these activities. Also to identify potential areas where recommendations for action can be put forward.

- **Local Social Environment**
  - Literacy rates for men and women
  - Average age
  - Average income levelss
  - Average education level
  - Etc.
- **USAID's Country Program**
  - Strategic Objectives
  - Identification of development activities with current deployment of ICTs
  - Identification of development activities with potential for impacting ICT-related issues
  - Identification of development activities with potential for leveraging ICTs but not currently included within the activity
  - Identification of potential new ICT-related activities that could complement what's currently being undertaken
- **USAID Regional Programs**
  - Identification of Regional activities
  - Identification of Regional activities using or with potential to better leverage ICTs
- **Multilateral or other Bilateral Programs**
  - Activities underway by World Bank, United Nations, etc., that will likely have direct impact on ICT-related activities
  - Identification of opportunities to contribute to, partner with, or undertake complementary development activities to advance the leveraging of ICTs in country
- **Opportunities where ICTs could possibly focus critical value-added support to current USAID activities**

XIII. Appendix G – THE IT ECONOMY: Presentation to The U.S. Embassy and USAID

September 27, 2000
Zagreb, Croatia

Jody R. Westby, President
The Work-it Group

Good afternoon!

Introduction

Over the course of the past five years, the United States has created a new, information technology (IT) driven economy. Although IT industries are responsible for less than 10% of total U.S. output -- 8.3% in 2000 -- they are credited with one-third of total real U.S. economic growth between 1995-1999.[1] U.S. productivity and growth in real wages are at record highs, unemployment is at record lows, inflation remains curbed, and the U.S. is enjoying the longest economic expansion in history.[2] "Six major economic studies have recently concluded that the production and use of IT contributed half or more of the acceleration in U.S. productivity growth in the second half of the 1990s."[3]

The IT economy is an achievable goal for all countries, but it requires changes across the board in government, business, education, and societies. In the future, the impact of IT -- and the opportunities for IT -- will be most dramatic *outside* the United States. Global online statistics reveal that between 1998 and 1999, the number of Internet hosts increased by 46%, the number of web servers by 128%, and the number of web addresses by 137%.[4] The number of users in Western Europe and the Asia-Pacific region is expected to double in five years, semiconductor sales worldwide are up 17%, and India's software industry is experiencing a 50-60% annual growth rate.[5] Today, there are over 300 million people connected to the Internet worldwide -- an increase of almost 80% since 1999 -- and for the first time, the U.S. and Canada account for less than 50% of the connected population.[6] Still, this is less than 5% of a world population of 6 billion, with 90% of these Internet users located in the developed world.[7]

The G-8, UNDP, World Bank Group, and USAID are each committed to connect people and use technology to meet their development challenges because, as the U.S. has shown, IT is a Super Force. IT is:

- The undisputed driver behind our economy.
- A powerful force in national defense and national security. Indeed, our national security is now directly linked to our national economy.

- Reshaping the U.S. business landscape. The Fortune 500 list looks very different today than it did five years ago and a number of companies who traditionally "made the list" are gone.

- Changing our culture and the way we work, learn, govern, educate, do business and play.

- Wiping out budget deficits and easing government debt.

- Changing economic analysis and financial controls.

- Raising new issues and problems and requiring new laws, policies and regulations.

- Causing unprecedented growth and prosperity.

- Changing requirements of our law enforcement and how we gather intelligence.

- Requiring unprecedented public/private cooperation.

- Shifting policy positions and changing our relationships with other nation states.

- Leading to new bilateral agreements and multinational discussions.

- Causing the formation of new industry and consumer groups and NGOs.

- Changing the way we tax transactions and access to communications.

This list, which cuts across all aspects of our society, illustrates why traditional thinking in the IT economy is no longer applicable. It is no longer business as usual. IT is requiring businesses, governments, and citizens alike to rethink how we approach almost every aspect of our lives, how we conduct our business, and how we are governed. As the foregoing list demonstrates, reaching an IT economy requires complex changes across the board in core institutions and societies.

IT affords us all significant opportunities, but also hands us tremendous challenges. IT can significantly change the rate of progression toward industrialization, democratic governments and market economies. We have an obligation to help developing countries make these same changes and benefit from our leadership. We hold in our hands a historic opportunity -- and obligation. We must all take care not to squander or diminish the gains to be had by utilizing information technology to its fullest maximum potential. We each must endeavor to do all we can in our respective areas to make the most of the opportunity we have before us, for many generations after us will reap the benefits of our work.

Croatia and other developing countries have never been so attractive for investment or so ripe for dramatic gains in their societies and governments. Croatia can take steps toward achieving its own IT economy. The economic and social benefits of IT, however, can be thwarted, defeated or diminished by ignoring important essential factors, both at what I will call the macro level dealing with "core institutions" in the financial, corporate and government arenas and at the micro level where various factors can impede the deployment of IT and growth of electronic commerce.

How Important Is This?

Let us take a look at some facts. The impact information technology is having on the U.S. economy is evident when looking at some e-statistics derived from three critical U.S. Government reports. The first report, *The Emerging Digital Economy*, was released by the Department of Commerce in April 1998. The statistics in the report were staggering, and they gave the IT industry its first due credit for bringing America into a new economic era. The report revealed that IT industries were growing at *twice* the rate of the overall economy,[8] and it credited declining IT prices with lowering *overall* inflation by a full one percent.[9] The role IT was playing in business was underscored by the fact that IT accounted for over 45% of business equipment investment in 1996, up from a mere 3% in the 1960s;[10] today, it is around 60%. IT's share of investment activity and Gross Domestic Product rose from 4.9% in 1985 to 8.2% in 1998[11] and has been hovering at the 8% mark since.

Probably the most important contribution the report made was to break the mold on traditional economic analysis. *Clearly, IT was playing a substantial role in our nation's productivity and growth and traditional methodologies and financial responses were no longer conclusive or valid.* This bottom line conclusion has played an extraordinary role in the development of the U.S. economy. The lack of attention given to these economic conclusions by the European economic and financial communities is, I believe, a central reason why Europe is lagging behind in achieving its own IT economy.

In April 1999, the U.S. Department of Commerce, at the urging of industry and consumer groups alike, issued a follow-on report, *Emerging Digital Economy II.* The most staggering statistic of all, was the report's crediting the IT industry sector with being responsible for one-third of the U.S.'s *overall* economic growth during the period 1995-1998. Indeed, IT industries were responsible for a full 40% of the nation's overall economic growth in 1995 alone.[12] Moreover, the report pointed out that the steep declines in IT prices were unique: IT prices declined 7.5% in 1997, while prices for the rest of the economy rose 2.6%.[13] IT's impact on trade was evidenced by an 11.9% annual growth rate for exports of IT goods during the period 1993-1998, compared with 7.6% annual growth for all other goods. Exports of IT services enjoyed an even more impressive 17.2% annual growth rate for the same period.[14]

The report also highlighted the impact IT was having on the labor force. Wage gaps between IT and non-IT workers was widening: in 1997, annual salaries for IT workers averaged $53,000 versus $30,000 per year for non-IT workers. And in 1997, earnings per worker in *every* IT-producing industry exceeded the national average.[15] The government predicts that by 2006,

half of the U.S. workforce will be employed by IT companies or heavy users of information technology.[16]

Nine months later, in December, 1999, a third watershed report was released. The U.S. Working Group on Electronic Commerce report predicted that U.S. companies using Internet technologies on core business functions will save $600 billion annually. For example, the Working Group found that purchase cards used with e-purchasing systems can save 95% over manual purchase order systems.[17] The *Digital Economy 2000* report went on to confirm these statistics and trends for yet a fourth time.

IT's Impact on Trade and Development

The impact of IT is not stopping at the United States's borders. It is having a significant impact on trade and development, and these trends can be widened as other countries get into IT economies. First of all, the IT-driven economy creates more jobs than it costs. The old belief that IT will result in people being put out of work and replaced by machines has finally been discredited. IT certainly changes the make-up of the labor force and skills required, but one thing is certain: it creates jobs and results in high productivity gains with low unemployment and little or no inflation.

Second, the Internet has opened global markets to increased competition and has made data regarding innovative technologies available around the world. The result is increased rates of innovation. It used to take years or decades for innovation to cross national boundaries, but today innovation is occurring much more rapidly.[18] This is important because faster innovation can add 1% to global growth rates. And increased global growth rates result in increased world exports and more competitive global pricing structures.[19]

Third, one of the most critical effects of IT on trade and development is being felt within the financial community. A global IT economy will make it easier for financial markets to fund the best opportunities, even risky innovation.[20] The U.S. has excelled at this. Last year, U.S. venture capital investments reached a record $48.3 billion, a 151.6% over 1998 per the National Venture Capital Association and Venture Economies. Internet related companies received $31.9 billion of this, an increase of 354.8% over 1998. E-commerce and web-related companies got an even heftier 458.1% boost over 1998 funding.[21]

Fourth, IT is impacting political platforms as politicians begin backing the deployment of information technologies. India's new government, for example, came into power with a platform calling for an IT-literate India and Sweden's minister for industry, employment and communications is promising broadband in every home.[22] The Republican Party in the U.S. formulated an "E-Contract" platform, pledging advancements and improvements in access and deployment of technology.

Fifth, IT's impact on trade and development is resulting in the end of national monopolies. Countries are realizing that state-owned monopoly providers are deterring infrastructure investment and the use of the Internet and e-commerce. The benefits of competition are finally pushing aside these expensive dinosaurs of government bureaucracies.

Sixth, IT is also creating a serious trade and development problem. Most notably, the increased demand for IT workers. This is going to become a global problem and could cause significant shifts in intellectual capital.

Macro Level Considerations

From this discussion, we can conclude that there are some macro level considerations at the core institutional level that must be undertaken by countries desiring to achieve an IT economy:

1. Investment spending on IT as a share of GDP must be increased.

2. Corporations must e-engineer their operations to make better use of IT and to cut costs.

3. Financial markets must be opened to allow funding of innovation.

4. Venture capital and IPO markets must be developed to foster innovation.

5. Countries must encourage small businesses and create an entrepreneurial environment.

6. The pace of deregulation must be increased.

7. Monetary policies must be adjusted.[23]

This last point deserves more elaboration. As I stated earlier, I believe Europe's monetary policies are partially responsible for their lagging behind the U.S. in achieving an IT economy. European central banks have taken a very traditional, conservative approach toward IT productivity gains. Consistently, the European Central Bank and the Bank of England have raised interest rates at the slightest hint of inflation, thereby choking the demand their IT industry needs to drive the economy. Alan Greenspan, however, Chairman of the U.S. Federal Reserve Board, understands the impact and potential of technology. He has refused to raise interest rates simply based upon traditional productivity and employment statistics. In the face of historic high productivity and low unemployment, he held off against strong urgings to raise interest rates to ward off inflation. He wanted to see actual signs of inflation before taking such measures. He was right.

The OECD's conservative, traditional response to economic indicators is indeed difficult to comprehend, especially in light of its acknowledgement that theories of a "new economy" may indeed have some credence in light of productivity gains in the U.S., Nordic countries, Australia and Canada, but not in France, Germany or Britain.[24] In fact, Britain closely trails the U.S., Sweden and Canada as leaders in IT spending, yet fails to reap the economic benefits.[25] Europe's conservative monetary policy also emphasizes the importance placed upon the full range of

macro level factors we have discussed. Doing well in most of them, while hanging onto old monetary policies, will diminish the IT opportunity.

Statistics regarding the current status of the IT-driven global economy supports this line of thinking. Outside the United States, there is no real indication of productivity increases. In fact, productivity in Britain and Japan may actually be slowing. To be fair, however, we must keep in mind that it took several years before IT productivity gains were accounted for in the U.S. due to the usage of old economic methodologies. It is fair to say, however, that Europe is two to three years behind the U.S. economy and Asia is even more. Part of the reason for this lies in the Asian and European cultures' aversion to risk.[26] But an even greater part of the reason surely lies in Europe's continuing use of traditional economic analysis to determine its monetary policies.

Micro Level Considerations

Now let us move beyond these macro core institutional considerations and take a look at some impediments to IT and the growth of e-commerce. We will call these micro level considerations, although they are equally important. These factors can attract or deter investment in both infrastructure and applications development as well as the growth of Internet start-up companies and other IT opportunities for developing countries.

I want to emphasize again the powerful opportunity that developing countries hold in their palm and reiterate that never before have they been so attractive to investors. The wireless infrastructure opportunities are golden and the market is willing. Unlike highly developed societies, spoiled by the fine-tuned efficiencies of their wired infrastructure and unwilling to tolerate the inefficiencies and imperfections of wireless, the populations of developing countries will eagerly embrace these developing technologies. These countries understand the possibilities of technology are limitless for them, and IT companies understand this is their future market.

The list of micro level considerations includes:

- No or slow liberalization of monopoly providers, keeping costs high.
- Discriminatory IT laws that are Internet specific or tied to specific technologies, such as digital signature laws tied to public key infrastructure (PKI).
- Taxation of online transactions and access to communications networks.
- Overly broad universal service requirements, driving up access and usage costs.
- Too many government controls, regulations and licensing requirements.
- Lack of enforcement of intellectual property and license rights.
- No or inadequate securities exchange.

- Inadequate financial systems and venture capital.
- Use of outdated economic measurement methodologies.
- Lack of common, shared infrastructure.
- Lack of conformity with international telecom standards.
- Lack of incentives for infrastructure development.
- Low utilization of telecommunications and IT.
- Lack of or inadequate legal framework, especially with respect to e-commerce, information and infrastructure security and computer crime, consumer protection and privacy, or non-conformity with the developing global framework.
- Encryption escrow and export laws.
- Stringent content laws.
- Limitations on rights of citizens, such as freedom of expression, freedom of access to information, and privacy.
- Lack of government IT policy, intra-governmental organization and coordination.
- Lack of pilot projects or test beds.
- Lack of interaction between government, industry, academia, and citizens, from the local level on up.
- Lack of IT skills in the workforce.
- Lack of support for entrepreneurs, small businesses.

Most of the foregoing factors are self-explanatory. They are all important and inter-related. Ignoring one can undermine the rest. Let us take encryption escrow and export laws as an example. Britain has recently introduced the Regulation of Investigatory Powers Act, which will allow police and government officials to bug e-mails and mobile phones and requires encryption key disclosure to law enforcement. For whatever criticisms industry and consumer groups may have regarding the bill, objective analysis has already noted that "it could kill hopes of the UK's being a leading e-commerce center."[27] Ireland's new e-commerce legislation does not allow law enforcement to require disclosure of encryption keys and, therefore, may well pull potential investors away from the UK towards the more favorable e-commerce environment in Ireland. Britain's bill also places an expensive burden on ISPs by requiring them to provide

interception capabilities. John Tutcher, director of communications for Sun Microsystems in the UK, noted that:

> The service providers are going to be a critical part of the Internet economy in the UK, particularly in helping small and medium-sized businesses on to the Net. Anything which makes them less competitive is a clear disadvantage for the UK, especially when the same technology means companies can choose to host websites outside the UK."[28]

The legal framework is among one of most important micro factors because it touches upon all aspects of commerce, attracting investment, and conducting business. By the term "legal framework," I want to clarify that this also includes policies. In fact, policies are a critical part of any framework, as they form the underlying foundation of government support for IT and a favorable business environment.

Conclusion

There are significant opportunities for developing countries to create an IT economy, but they demand close attention to macro level "core institutional" requirements and micro level considerations that drive IT and the growth of e-commerce.

Thank you.

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[1] *Digital Economy 2000,* U. S. Department of Commerce, Economics and Statistics Administration, June 2000, p. 27.
[2] Id. at 59.
[3] Id. at vi, 33-42.
[4] *Towards Digital e-Quality*, U.S. Working Group on Electronic Commerce, Mar. 29, 2000 at 8.
[5] "The New Economy" at 74.
[6] Id. at v, vi.
[7] James D. Wolfensohn, "Development and International Cooperation in the Twenty-first Century: The Role of Information Technology in the Context of a Knowledge-based Global Economy," Speech to United Nations Economic and Social Council, June 5, 2000, http://worldbank.org/html/extdr/extme/jdw-070500/ecosocsum.htm.
[8] *The Emerging Digital Economy*, Apr. 15, 1998 at 1.
[9] Id. at 5.
[10] Id. at 1, 6.
[11] Id. at 4.
[12] *Emerging Digital Economy II*, Apr. 1999 at 15.
[13] Id. at 18.
[14] Id. at 21.
[15] Id. at 39.
[16] Id. at 37.
[17] *Towards Digital e-Quality* at 9.
[18] "The New Economy" at 75.
[19] Id. at 75-77.
[20] Id. at 74.
[21] *World Trade*, May 2000, pp. 68-70.
[22] "The New Economy" at 76.
[23] Id. at 74.

[24] Id. at 1.
[25] "The New Economy" at 76-77.
[26] Id. at 74.
[27] Jean Eaglesham and Carlos Grande, "The Price of Policing E-business," *The Financial Times*, June 1, 2000, p. 15.
[28] Id.

XIV. Appendix H – Posting of Tender for Head of Office of Internetization

Translation of announcement (shown here) listed in *Vecernji List*, Zagreb, Croatia, Wednesday, September 27, 2000:

The government of the Republic of Croatia is announcing:

AN ANNOUNCEMENT OF ELECTION of the Head of Office for Internetization

Requirements:

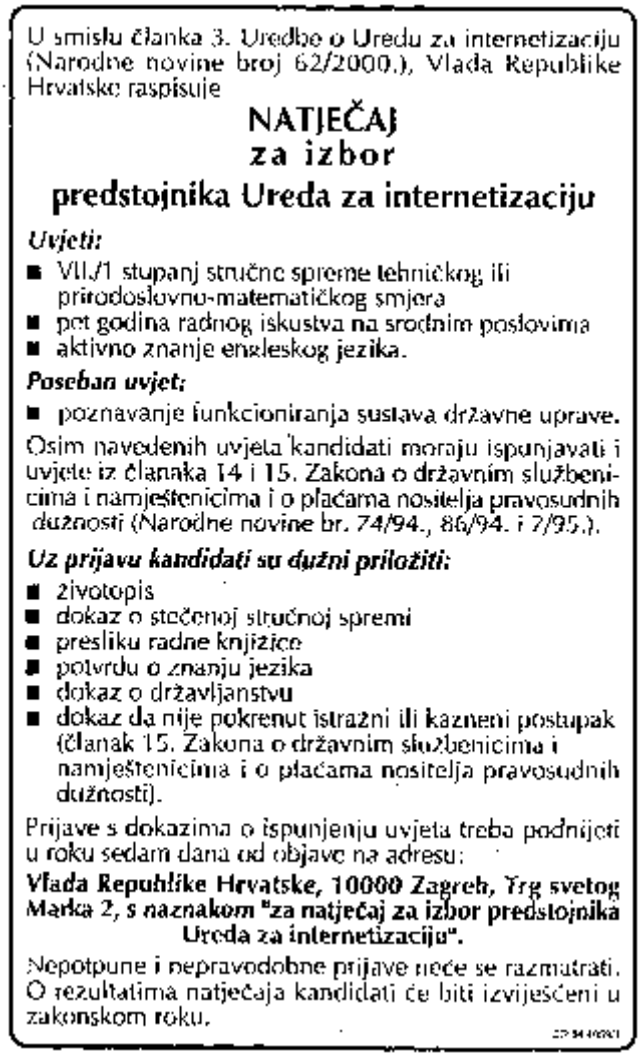
- Academic degree in technical or mathematical field
- Five years of work experience in similar environment
- Active knowledge of English

Special requirement:

- Knowledge of functioning of the system of Public Administration and Government

Attach to the application:

- CV
- Certification of degree
- Work permit
- English language certificate
- Certificate of citizenship
- Proof that there is no criminal proceeding under way against the applicant



U smislu članka 3. Uredbe o Uredu za internetizaciju (Narodne novine broj 62/2000.), Vlada Republike Hrvatske raspisuje

NATJEČAJ
za izbor
predstojnika Ureda za internetizaciju

Uvjeti:

- VII./1 stupanj stručne spreme tehničkog ili prirodoslovno-matematičkog smjera
- pet godina radnog iskustva na srodnim poslovima
- aktivno znanje engleskog jezika.

Poseban uvjet:

- poznavanje funkcioniranja sustava državne uprave.

Osim navedenih uvjeta kandidati moraju ispunjavati i uvjete iz članaka 14 i 15. Zakona o državnim službenicima i namještenicima i o plaćama nositelja pravosudnih dužnosti (Narodne novine br. 74/94., 86/94. i 7/95.).

Uz prijavu kandidati su dužni priložiti:

- životopis
- dokaz o stečenoj stručnoj spremi
- presliku radne knjižice
- potvrdu o znanju jezika
- dokaz o državljanstvu
- dokaz da nije pokrenut istražni ili kazneni postupak (članak 15. Zakona o državnim službenicima i namještenicima i o plaćama nositelja pravosudnih dužnosti).

Prijave s dokazima o ispunjenju uvjeta treba podnijeti u roku sedam dana od objave na adresu:

Vlada Republike Hrvatske, 10000 Zagreb, Trg svetog Marka 2, s naznakom "za natječaj za izbor predstojnika Ureda za internetizaciju".

Nepotpune i nepravodobne prijave neće se razmatrati. O rezultatima natječaja kandidati će biti izviješćeni u zakonskom roku.

Applications to be submitted to the Government of the Republic of Croatia, for the Head of Office of Internetization announcement, Trg Svetog Marka 2, Zagreb.

Incomplete and untimely submitted applications will not be considered. The candidates will be informed of the results of the selection within the legal period.