ICT COUNTRY PROFILE

MACEDONIA

2013

REGIONAL COMPETIVENESS INITIATIVE
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The author’s views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.
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I. EXECUTIVE SUMMARY

The purpose of this report is to provide an objective external evaluation of the ICT development in the country and reveal the possibilities for regional ICT cooperation. The desktop research should reveal the national strategies, policies and action plans for ICT development from one side and the activities held in that direction from another. The overall goal of the report is to disclose the real picture of the local ICT market and identify the possibilities for regional cooperation.

In order to be as objective as possible the author of the report used different researches, analyses and statistics from international organizations (World Bank, World Economic Forum, United Nations, etc.) and domestic state agencies and profit and non-profit organizations. The respective sources are quoted as footnotes at the end of each section.

Macedonia is an upper middle-income country that has made great strides in reforming its economy over the last decade. The country has made significant development achievements, but more efforts across a range of areas is still needed to generate economic growth that puts people to work in the country and improves living standards for all.

The economy of Macedonia has been somewhat stable in the past few years although a little affected by the global economic and financial crisis. However the impact of the Eurozone crisis has been felt strongly in 2012 when a significant slow-down of GDP growth was observed and followed since. A clear decline in macroeconomic stability was also witnessed in 2012, although growth in 2011 was close to 3% and inflation and the government deficit were kept at low levels. Economic growth outlook for 2013 is more positive, expected to remain moderate in the first half of the year and to slowly pick up in the second half. The adopted 2013 budget reflects higher realism in revenue forecast and capital expenditure planning compared to the 2012 budget, based on an overly optimistic growth forecast that did not materialize.

Macedonia has made further progress on key reforms geared towards integration into the European Union. After it acquired formal status as an EU candidate country in December 2005, the European Commission recommended in October 2009 to open EU accession negotiations. In December 2012 the Council of the European Union concluded that the country meets the criteria for the opening of the EU accession talks, while noting at the same time that a negotiated and mutually acceptable solution to the name issue, under the auspices of the UN, remains essential.

The country continues to perform well on business environment indicators and, according to the 2012 World Bank’s Doing Business Report, Macedonia made the third highest improvement in ranking, moving up 12 places from 34th to 22nd (out of 183 countries) for overall ease of doing business. This places the country significantly ahead of regional peers on this business environment measure. The largest improvements were noted in dealing with construction permits, registering property and getting credit. The country still performs relatively poorly on access to electricity, cross-border trade and contract enforcement.1

As one of the fastest growing industries in Macedonia, with a growth rate of about 47% in the last 5 years, the IT and software industry is of growing importance for the overall economic development of the country. In 2011 it was already accountable for $178.98 million turnover, $56.31 mln of exports and employed more than 2000 people.2

In view of the information society development the Macedonian industries are now recognizing the need for investment in IT solutions in order to improve their performance. Leaders in this trend are the financial sector, tourism and the government.

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2 http://outsourcing-verband.org/macedonia-nearshoring-destination-information-page/
II. ANALYSIS OF THE ICT SECTOR IN MACEDONIA

A. PAST, PRESENT AND FUTURE TRENDS

Following a decline in 2010, the Macedonian IT market again fell in 2011. Measured in local currency, the market contracted 4.9% year on year. However, according to IDC expectations the country’s IT market might grow 1.5% year on year in 2012 and to expand at a compound annual growth rate (CAGR) of 4.8% to reach approximately $226 million in 2016. Macedonian per capita IT spending stood at $87 in 2011, or 9.1% of the EU average and well below the Adriatic regional average of $141.3

As part of EU integration the legislation of Macedonia has implemented the principles of the EU’s regulatory framework for communications, established an independent regulator and set out a number of provisions to provide for a competitive telecom market, including wholesale access to the incumbent’s fixed-line network. Although the fixed telephony market has been liberalized, the incumbent continues to dominate the sector. Broadband services are widely available, with effective competition between DSL and cable platforms complemented by wireless broadband and a nascent FttX sector.4

According to the data of the Statistical Office of the Republic of Macedonia, in the first quarter of 2012, 58.3% of the households had access to the Internet at home, which is 3.3% more in comparison with the same period in 2011. Participation of the households with broadband connection in the total number of households increased from 42.1% in 2011 to 58.1% in 2012. In this period, the most common Internet connection, used by 99.6% of the households with internet access, was broadband connection that includes: fixed wired (cable, fiber, Ethernet, PLC etc.), fixed wireless (satellite, public WiFi, WiMax) and mobile connection to the Internet (via at least 3G handset-UMTS, or at least 3G modem-USB/card for laptop).

In the first quarter of 2012, 68.4% of the total population aged 15-74 used a mobile phone, 59.9% used a computer, while 57.5% used the Internet. Internet was most used by pupils and students, i.e. 96.4%. The Internet was most frequently used, by 74.7% of the internet users in the last 3 months, for telephoning over the Internet or video calls via webcam.5

Three mobile operators are active on the market: T-Mobile Macedonia (a subsidiary of Makedonski Telekomunikacii), ONE (owned by Telekom Slovenia Group) and VIP (a subsidiary of Mobilkom Austria). The mobile networks cover up to 99% of the population. The mobile penetration rate exceeds 100 % of the population, and continues growing steadily.

Macedonia’s industry regulator the Agency for Electronic Communications (AEC) has published its latest observatory of the country’s telecoms markets for the period ended 30 September 2012. At that date the watchdog counted a total of 2.299 million active mobile subscribers, up 1.9% from 2.257 million in September 2011. Of these, the number of mobile broadband (2G/3G) users stood at 446,288, up 15.9% from 384,988 a year earlier; 2G narrowband users topped 172,787 (+63.8%). The Macedonian regulator also said that mobile phone users generated voice traffic of over 1.020 billion minutes in Q3 2012, up 17.3% y-o-y and 3.7% higher than in Q2 2012.

The total number of main lines in service (PSTN and ISDN) reached 407.896 at end-September 2012, down 1.4% year-on-year, of which business lines accounted for 43,615 (-0.02%). Meanwhile the number of residential fixed line subscribers dropped by 1.5% in the year under review to 364,281. The total number of internet connections was 302,257, compared to 271,773 at end-September 2011. IPTV subscriptions stood at 58,385, up 64.9% on an annualized basis.6

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3 http://www.idc.com/getdoc.jsp?containerId=prHR23543012
A number of international companies such as Seavus (Sweden), Netcetera (Switzerland), MSoft (France), 6PM (UK/Malta) are successfully developing software in Macedonia for the export market and others are providing 24/7 telephone customer support for major multi-national IT companies.

**COMPETITIVE INDEXES AND DATA**

In terms of GDP Macedonia is among the last countries in the region in rank, but for GDP per capita is among the leaders. According to the Global Competitiveness Report of the World Economic Forum and the Global Information Technology Report the country is in a middle position compared to the other countries in the region. In terms of e-Government development and e-Participation it also keeps its middle position.

<table>
<thead>
<tr>
<th>Population (m)</th>
<th>GDP $ (b)</th>
<th>GDP per capita $</th>
<th>WEF GCR index Rank (value)</th>
<th>GCR innovation Rank (value)</th>
<th>WEF GITR Rank (value)</th>
<th>E-gov. development Rank (value)</th>
<th>E-participation Rank (value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albania</td>
<td>3,2</td>
<td>13</td>
<td>4</td>
<td>89(3,91)</td>
<td>128(2,4)</td>
<td>68(3,89)</td>
<td>86(0,5161)</td>
</tr>
<tr>
<td>Armenia</td>
<td>3,1</td>
<td>10,2</td>
<td>3,3</td>
<td>82(4,02)</td>
<td>62(3,2)</td>
<td>94(3,49)</td>
<td>94(0,4997)</td>
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<tr>
<td>Azerbaijan</td>
<td>9,2</td>
<td>63</td>
<td>6,9</td>
<td>46(4,41)</td>
<td>39(3,5)</td>
<td>61(3,95)</td>
<td>96(0,4984)</td>
</tr>
<tr>
<td>BiH</td>
<td>3,8</td>
<td>18,1</td>
<td>4,8</td>
<td>88(3,93)</td>
<td>101(2,8)</td>
<td>84(3,65)</td>
<td>79(0,5328)</td>
</tr>
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<td>Georgia</td>
<td>4,5</td>
<td>14,4</td>
<td>3,2</td>
<td>77(4,07)</td>
<td>116(2,5)</td>
<td>88(3,60)</td>
<td>72(0,5563)</td>
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<tr>
<td>Kosovo</td>
<td>1,8</td>
<td>6,4</td>
<td>3,6</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Macedonia</td>
<td>2,1</td>
<td>10</td>
<td>4,9</td>
<td>80(4,04)</td>
<td>99(2,8)</td>
<td>66(3,91)</td>
<td>70(0,5587)</td>
</tr>
<tr>
<td>Moldova</td>
<td>3,6</td>
<td>7</td>
<td>2</td>
<td>87(3,94)</td>
<td>122(2,5)</td>
<td>78(3,78)</td>
<td>69(0,5626)</td>
</tr>
<tr>
<td>Montenegro</td>
<td>0,6</td>
<td>4,5</td>
<td>7,1</td>
<td>72(4,14)</td>
<td>53(3,3)</td>
<td>46(4,22)</td>
<td>57(0,6218)</td>
</tr>
<tr>
<td>Serbia</td>
<td>7,3</td>
<td>45,8</td>
<td>6,3</td>
<td>95(3,87)</td>
<td>120(2,5)</td>
<td>85(3,64)</td>
<td>51(0,6312)</td>
</tr>
<tr>
<td>Ukraine</td>
<td>45,7</td>
<td>165,2</td>
<td>3,6</td>
<td>73(4,14)</td>
<td>58(3,3)</td>
<td>75(3,85)</td>
<td>68(0,5653)</td>
</tr>
</tbody>
</table>

**B. ICT ASSOCIATIONS**

There are a few ICT associations and chambers present in the country and representing the private sector. However MASIT is the ICT Association representing about 80% of the local IT market and responsible for the public dialog, collaboration and networking of the companies presented by the chamber.

**MACEDONIAN CHAMBER OF INFORMATION AND COMMUNICATION TECHNOLOGIES (MASIT) – www.masit.org.mk**

The chamber was founded in 2000 as an initiative of the top fifteen Macedonian IT companies and was operating as an Association within the Economic Chamber of Macedonia. In April 2007, on the Annual Assembly of MASIT, the legal transformation of MASIT from Association to Chamber of commerce was agreed. The chamber represents 80 companies of the ICT sector in Macedonia including: software and IT services companies, hardware companies and distributors, carrier and other telecom companies, as well as training providers and ICT consulting companies. MASIT members represent about 80% of the domestic IT market.

Work Committees, as defined in the MASIT Statute, are:

- Hardware Committee
- Software and IT services Committee
- Electronic Communications Committee
- Domestic ICT Business Committee

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ASSOCIATION FOR INFORMATION AND COMMUNICATION TECHNOLOGIES ICT-ACT – ict-act.org

Mission of the ICT Association is to support the development of information and communication technologies in Macedonia, the Balkan region and beyond, especially in the area of education, research and application of innovative technologies. Strategic goals of the Association are:

- To promote scientific research work in the field of informatics, information and communication technologies.
- To promote application of information and communication technologies for building information society.

The Association has the following goals:

- Organizing of scientific conferences and workshops in the areas of interest to the Association.
- Organizing of expert and scientific lectures and presentations of domestic and foreign experts.
- Organizing research in the area of interest
- Creating support to the institutions of higher education on cycle 1, 2 and 3.
- Active collaboration with ICT industry trough projects and IT expertise
- Proposing and participating in scientific research projects

Active collaboration with governmental and other organizations in the area of ICT industry trough appropriate consultancy, workshops, discussion groups, realization of applicative projects and IT expertise.

ECONOMIC CHAMBER OF MACEDONIA/ ICT ASSOCIATION – www.mchamber.org.mk

The ICT Association is a branch association of the Economic Chamber of Macedonia.

MACEDONIAN CHAMBERS OF COMMERCE/ ICT CHAMBER - www.sojuzkomori.org.mk

Founded in 2005, more than 100 companies from the IT business, manufacturing software, information services, education, digital media, electronic communications and other services, ICT Chamber is a leading business chamber association of IT industry. ICT Chamber is continuing to work to improve the business climate and to protect the interests of its members.

METAMORPHOSIS FOUNDATION FOR INTERNET AND SOCIETY – www.metamorphosis.org.mk

Metamorphosis is an independent, nonpartisan and nonprofit foundation based in Skopje, Macedonia. Its mission is to contribute to the development of democracy and increase the quality of life through innovative use and sharing of knowledge. Our guiding values are openness, equality and freedom.

Metamorphosis started working in 1999 as part of the e-publishing program of the Foundation Open Society Institute – Macedonia, and became an independent foundation in 2004.

C. PROFILE OF SELECTED COMPANIES

Most of the world’s largest IT companies such as Microsoft, CISCO, IBM, Compaq, Hewlett Packard, Dell, Siemens, Sun Microsystems, Apple, Lotus, ORACLE are present in Macedonia via branch offices, distributors, dealers, resellers, solution providers and business partners. In addition, there are a number of companies oriented towards assembling, sale and maintenance of their own computer systems.

Public and governmental organizations are still the most important clients of many companies. However, the share in market demand of private companies and end-users is also growing constantly. In recent years the orders from foreign investors are very important. Also the various international cooperation programs stimulate the demand for IT products and services in the home market. Innovation oriented domestic companies are increasingly concentrating on foreign markets.

The following companies were found through a desktop research:

BABYLON SOFTWARE SOLUTION (BSS) - http://www.bss.com.mk

Babylon Software Solution (BSS) is a dynamic company which follows the world trends in information systems, design and programming. The core activities of BSS Group are wrapped around the members of the Group and their major brands: ExpoStudio, WebStudio, Macedonian Cultural and Information Centre and Babylon Events.
GORD Systems is an independent software developer and IT Outsourcing provider. The company, established in 1989, is a leading IT solution provider in the country with significant international projects experience.

EIN-SOF - http://www.ein-sof.com/
Ein-Sof was founded in 1993. Today, the company is going Global with representative offices across the world - USA, England, Germany, France and Eastern Europe having over 170 employees and more than 40 foreign associates. The company has gained and offers valuable expertise in ERP and CRM solutions, Document Management, Business Intelligence, Content Management, Communications Management and Healthcare Software solutions.

INET - http://vhost.mk/inet/
Throughout its history, INet has maintained its leadership role by demonstrating the knowledge and expertise needed to identify the markets and technologies that shape the IT industry. Today, the company continues to anticipate, recognize and lead industry trends, keeping INet at the forefront of the Macedonian technology marketplace. With the success of INet in Macedonia, the company expanded the reach of its services to regional markets. By 2004, INet quickly provided services throughout Kosovo and Albania.

MACEDONIAN BUSINESS SYSTEMS (MBS) - http://www.mbs.com.mk/mbsweb.nsf
"Macedonian Business Systems" (MBS) is an IT company providing Systems integration, Application development, Installation and post-installation support and warranty and post-warranty services. Core MBS business is based on a status of IBM Solution Provider as a basic cooperation with IBM as its principal. Besides that MBS has the status of IBM Services Provider.

NEXTSENSE - http://nextsense.com
A company established in 2001, specializes in building complete e-business solutions to improve business performance for wide range of companies, from start-up businesses to strategic initiatives for established companies. Nextsense provides design, development and maintenance of custom tailored solutions as well as consulting and training services.

SIGMA SB - www.sigmasb.com.mk
The company offers all-in-one system - planning, design and implementation of complete leading-edge IT solutions for improving working processes through professional business consulting and know-how transfer, in order to improve the client’s competitive edge.

Design, development, implementation and maintenance of complete software solutions Specialized in Document management, Case management, automated form processing, Business Process Management, CRM, HRM, ERP for SMB.


D. ACADEMIC PROGRAMS

Every child in Macedonia begins to learn English in the first grade of primary school. Two foreign languages are mandatory in high school as well: English, and either German, French, or Russian. English is also taught for two years at University level. Regional languages (Serbian, Croatian, Bulgarian, Albanian, Greek, and Turkish) are widely spoken. Receiving such language education is a big asset for future students and employees, especially in the ICT sector.

In the last few years the number of ICT students has doubled and according to the State Statistics Office of Macedonia there were around 1300 IT graduates in 2011.

The Ministry of information society and administration of Macedonia has started a number of projects aiming at the development of the IT education in the country. Worth mentioning are:
- Strategy for e-Content development
- E-textbook portal
- Computer for every student
- University of Informatics technologies
- Internet for all of the high and primary schools

USAID has also been supporting the ICT education in the country through different projects aiming at increasing access to Information and Communication Technology (ICT), including activities that earned Macedonia the title “First Wireless Country in the World”.

Public universities:

**SS CYRIL AND METHODIUS UNIVERSITY, SKOPJE** – www.ukim.edu.mk
Faculty of Electrical Engineering and Information Technologies (www.fei.ukim.edu.mk)
Faculty of Mathematics and Natural Sciences, Institute of Informatics (http://www.ii.pmf.edu.mk)
Faculty of Computer Science and Engineering (http://www.finki.ukim.mk)

**UNIVERSITY ‘ST. KLIMENT OHRIDSKI’, BITOLA** - www.uklo.edu.mk
Faculty of Technical Sciences (www.tfb.edu.mk)
Informatics and Computer Techniques

**UNIVERSITY FOR INFORMATION SCIENCE AND TECHNOLOGY, OHRID** - http://www.uist.edu.mk

‘GOCE DELCEV’ UNIVERSITY, STIP - www.ugd.edu.mk
Faculty of Computer Science – Stip (inf.ugd.edu.mk)
Faculty of Electrical Engineering – Radovish (etf.ugd.edu.mk)

**STATE UNIVERSITY OF TETOVO** - www.unite.edu.mk
Faculty of Math-Natural Sciences, Informatics Department

Private universities:

**SOUTH EASTERN EUROPEAN UNIVERSITY, TETOVO** – www.seeu.edu.mk
Faculty of Math-Natural Sciences, Informatics Department

**EUROPEAN UNIVERSITY, SKOPJE** – www.eurm.edu.mk
Faculty of Informatics

**FON UNIVERSITY, SKOPJE AND STRUGA** – www.fon.edu.mk
Faculty of Information and Communication Technology

**NEW YORK UNIVERSITY SKOPJE** – www.nyus.edu.mk
Faculty of Computer Science and Information Technology

**UNIVERSITY AMERICAN COLLEGE SKOPJE** – www.uacs.edu.mk
Computer Science and Information Technology

**MIT UNIVERSITY, SKOPJE** – www.mit.edu.mk
Faculty of Computer Science and Technology

**INTERNATIONAL BALKAN UNIVERSITY, SKOPJE** – www.ibu.edu.mk
Faculty of Technical Sciences, Information Technologies Department
E. STATE AGENCIES AND ORGANIZATIONS

The main regulatory institution in the field of ICT in Macedonia is the Ministry of Information Society and Administration. During the last few years it has actively participated in the process of development and implementation of National strategies in the field of ICT aiming at achieving a modern look of the country in the region and worldwide and forming a high-technology and knowledge-based economy.

MINISTRY OF INFORMATION SOCIETY AND ADMINISTRATION – www.mio.gov.mk
The Ministry of information society and administration is the basic authorized institution for coordination of the activities for the development of information society and the coordination of the measures derived from the National strategy for developing the information society and action plan and the National strategy for developing electronic communications with information technologies.

AGENCY FOR ELECTRONIC COMMUNICATIONS – www.aek.mk
The Agency for Electronic Communications was established in 2005 as an independent regulatory body in the electronic communications markets. For the purpose of regulating the electronic communications market in a systematic manner, the Agency has tightly defined objectives to be achieved. The Agency has directions to achieve the goals of a competitive market in which the conditions would be created for end users to use electronic communications services with best quality and prices.

DIRECTORATE FOR TECHNOLOGICAL INDUSTRIAL DEVELOPMENT ZONES – www.fez.gov.mk
Approved by the Government of the Republic of Macedonia in August 2000, the Directorate for Technological Industrial Development Zones was officially launched in January 2002. On October 5, 2006 a foundation stone of a new plant was laid by Johnson Controls, the first User of the Technological Industrial Development Zone Skopje 1. The project was completed and put into operation by the end of 2007.

F. NATIONAL STRATEGIES AND POLICIES FOR ICT DEVELOPMENT

Aware of the need to develop the ICT sector in order to boost other sectors of the economy, implement best practices and support the development of own products the Ministry of Information Society and Administration has started a number of projects and coordinates the fulfillment of the National Strategies created to support the ICT sector development.

National strategy for developing the information society and action plan
Basic challenge in building the Strategy is defining the economic, social and political vision of the society based on knowledge, through development and application of ICT in all living aspects, creating modern and efficient citizen and business services.

National strategy for developing electronic communications with information technologies
Basic challenge of the Strategy is the enabling of aggressive implementation and massive, efficient utilization of electronic communications and information technologies, which will assist the involvement of the Republic of Macedonia in the global net economy and the achievement of leap frogging in the economy.

Initiative and formation of the Cluster for implementation of ICT solutions to increase the competitiveness of the Small and Medium Enterprises SMEs
As a result of the initiative defined in November 2011 to form a "Cluster for implementation of ICT solutions to increase the competitiveness of the Small and Medium Enterprises (SMEs)" was set up this type of cluster that will deal with the implementation of the information - communication technologies in the small and medium enterprises. The focus will be placed on educating small and medium enterprises in Republic of Macedonia how to become more competitive on the market and sell their products and services through the use of ICT technologies. The establishment of the cluster represents an important strategic measure to overcome the limitations of the resources, and enabling Macedonian software companies to join together and focus on new market segments in
the domestic and international market. Furthermore, the creation of the Cluster means greater visibility and more effective branding, and allows joining of the competencies and cost savings in software development and IT services.

The activities of the cluster are in correlation with the contract for dedicating funds for implementation of the program (project) of the clusters’ associations that MASIT signed with the Ministry of Economics in October 2011. The initiative is supported by the USAID IDEAS project and GIZ.

The Macedonian government decided to leave the VAT on computers, software and solar collectors at the preferential level of 5%. These goods are already taxed at the preferential rate, but this treatment was scheduled to expire at end-2012. The general VAT rate in the country is 18%. The amendments were proposed by the Ministry of finance and aim at boosting the quality of IT and education and encouraging greater use of solar energy.8

G. DONOR PROGRAMS IN THE IT SECTOR

A number of international donor organizations are assisting Macedonia in the development of the ICT sector. Some of the most recent projects are listed below.

GIZ
Investment and export promotion
The purpose of this document is to develop an export promotion strategy in close collaboration with all relevant actors, which enables the Macedonian software industry to achieve the following overall goal:
To establish Macedonia as a well-recognized brand for specialized, high quality out-sourcing services and software products within Europe based on systemic competitiveness, company excellence and superior customer value
In close correlation to this overall goal, the export promotion strategy intends to reach the following strategic objectives:
- to overcome the obstacles associated with exporting and to successfully position Macedonian software companies (particularly SMEs) in international markets;
- to open up new markets and customer segments;
- to induce export-led economic growth and employment promotion;
- to promote international marketing and branding of Macedonia and its software industry;
- to reverse the brain drain;
- to promote technology transfer and access to new technologies and know-how
- to reduce risk through diversification of markets;
- to accelerate EU market integration (ICT).

Summarizing one could state that the intention of the export promotion strategy is not only to facilitate the internationalization of Macedonian software and IT service companies but also to increase the international competitiveness of the Macedonian software industry on a sustainable basis and to strengthen its role as a catalyst for growth, productivity and innovation for the Macedonian economy.

USAID
Since 1993, USAID has been working alongside the Macedonian government and the private sector to accelerate economic growth and improve Macedonia’s prospects for EU membership. USAID played a major role in Macedonia’s joining the World Trade Organization in 2003 and in passing new Laws on Electronic Communications, Financial Companies, Public Procurement and Investment Funds. Efforts to establish a single window process for import and export and introduce internet applications into customs licensing will raise Macedonia’s trade practices to international standards and ease its access to the global economy.

The Regional Competitiveness Initiative (RCI) of USAID has actively supported since 2005 regional cooperation and IT development in Macedonia and the region. RCI encourages the implementation of Quality Models through its support of local software companies toward the IT Mark and Capability Maturity Model Integration (CMMI) implementation and certification, which enhances the competitiveness of the companies, the

sector in the countries and the region itself. The activity also assists companies to win more projects with global companies and e-Government tenders. Since 2007 seven Macedonian companies have been IT Mark and IT Mark Premium - certified by the European Software Institute, Center Eastern Europe.

In 2012 the Macedonian Chamber of Commerce (MASIT) was granted support by RCI to start the development of a Center of Excellence and Innovation (CEI) for Hybrid Cloud ICT Solutions for Small and Medium Enterprises. The activities of the Center of Excellence will include:
- Initial development of a Hybrid Cloud Solutions Catalog, including a variety of applications for general business operations
- Development of regulatory requirements for cloud applications and clear guidelines covering privacy and security issues in the development of cloud applications
- Identify potential Managed Service Providers for Hybrid Cloud Solution delivery
At present the CEI is working in two industries – agribusiness and tourism industry in Macedonia.

e-BIZ Project
The e-BIZ Project's mission is to stimulate employment in Macedonia by helping SMEs adopt high-impact ICT applications that support their competitiveness and growth. The e-BIZ Project employs a new and powerful approach that addresses both demand and supply sides of SME adoption of ICT.
The e-BIZ Project provides an innovative model for helping small and medium enterprises (SMEs) use information and communication technology (ICT) to strengthen their businesses. It partners with Macedonian entrepreneurs to offer “high impact” ICT solutions that significantly improve SMEs' competitiveness.
To date, 6 e-BIZ Centers have been created offering the following services:
- CAD/CAM based services
- E-Commerce services
- Management Training services

e-Accessible Education
The objective of the project is to foster the inclusion and active participation of students with disabilities in mainstream education through: Enabling IT access for students with disabilities through use of assistive technology (such as big-button keyboards, trackballs, and joysticks, as well as accessible software);
Increasing teacher abilities to work with new technologies to assist these students; and
Involving relevant stakeholders in creating an environment where children with disabilities can gain a better education. End date of the project is June 30, 2014.10

H. EXHIBITIONS, CONFERENCES AND EVENTS

There is insufficient accessible information in Internet regarding the different ICT related events in the country or it is possible that only a few events dedicated to the sector are being organized. This may be an obstacle to attract new partners and investors and promote the image of the country as an ICT supplier.

**MAIN EXHIBITIONS IN MACEDONIA IN 2013**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Girls in ICT Day 2013</td>
<td>08 May, Skopje</td>
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<td>5th ICT Innovations Conference 2013</td>
<td>12-15 Sept., Ohrid</td>
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<tr>
<td>Tehnoma</td>
<td>15-19 Oct., Skopje</td>
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I. IT NEWS: SOURCES OF INFORMATION

Desktop research showed that there are no IT specialized Macedonian online newspapers or magazines published in English. There are a few websites with up-to-date news that have updated information and communications technology development news but again only in Macedonian.

A list of Macedonian newspapers and magazines can be found at http://www.abyznewslinks.com/maced.htm.

III. IT FOR OTHER INDUSTRIES IN THE COUNTRY

Information Communications Technology (ICT) is a key enabler for the competitiveness of a country’s economy. There is relatively high level of awareness in the country regarding the importance of implementation of ICT in other industries, especially since the country is trying to become one of the regional leaders in the ICT industry and also join the EU.

A number of projects have been initiated by the Ministry of Information Society and Administration aiming at improving the ICT stability and presence in Macedonian economy.

**e-Infrastructure** is being developed by projects such as Interoperability, Individual data base, National Certification Authority, Integrated border management, fast broadband infrastructure, and Wi-Fi coverage of the whole country.

**e-Government** projects include Estimation of the impact of regulations, introduction of ISO 9000 group of standards in the Ministry of Information society and administration, development of ICT in local self-governments, creation of a National Council for informatics society, implementation of Business process management service, Management system for documents in all ministries, e-Judiciary, and Electronic research and payment of the services provided by the governmental institutions.

In terms of **e-Health** a project is being implemented to result in the introduction of Integrated Health Informatics System and electronic health card.

The **e-Business** projects supported by the ministry include Open e-Services, Electronic Commerce, Digital certificates, Agricultural informative system, and e-cadastrre.

A number of **e-Citizens** and **e-Documents** projects have also been initiated.  

The web platform IT2Business (www.it2business.org), an online catalogue with successful practices and Information Technology (IT) solutions for the business, is aimed at increasing the ICT competitiveness in Eastern Europe and Caucasus. The platform is designed and launched by USAID funded RCI (Regional Competitiveness Initiative) project through European Software Institute - Center Bulgaria/Eastern Europe. It fosters the direct contact between IT and other economic sectors. This enables the promotion of the local industry and the region as a whole. Currently there are 64 companies and 148 products/solutions registered in the platform. There are 3 Macedonian companies in the portal.

11 http://www.mio.gov.mk/?q=node/156
IV. QUALITY TENDENCIES

Working in compliance with the international quality standards is one of the obligatory prerequisites for developing a competitive ICT industry and gaining strong positions on the international market. In Macedonia there is a high level of awareness of the necessity to implement the latest relevant standards. According to data provided by the World Bank Organization in 2009 21.5% of the companies in the country owned ISO certification.

The Standardization Institute of the Republic of Macedonia (ISRM)\(^{12}\) as national standard body represents the national interest in the international, European and regional organization for standardization, promotes the standardization activities and thru bringing together the public and private stakeholders, ISRM develops and adopts voluntary national standards. In March 2003, the membership in ISO (International Organization for Standardization) was transferred from the Bureau of Standardization and Metrology to ISRM. Later, in 2003, ISRM was accepted as associate member in IEC (International Electro-technical Commission), and in March 2005, it became associate member in CENELEC (European Committee for Electro-technical Standardization). ETSI (European Telecommunications Standards Institute) in December 2006 recognized ISRM as NSO (National Standardization Organization).

The Macedonian IT companies gain more and more awareness of the benefits to be part of the common capacity fund of ICT training and certification providers in Eastern Europe.

The web platform Quality2IT(www.quality2it.org) – Eastern Europe Training and Certification Network, provides excellent opportunities to participate in the establishment of a common regional ICT brand based on high quality and innovations. The platform is designed and launched by USAID funded RCI (Regional Competitiveness Initiative) project through European Software Institute - Center Bulgaria/Eastern Europe. For the time being there are 45 companies with 115 services registered in the platform. There are 5 Macedonian companies in the Quality2IT online portal.

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12 www.isrm.gov.mk
V. SWOT ANALYSIS

The SWOT analysis of the ICT environment in Macedonia shows conclusions as follows:

**Strengths**
- IT industry is recognized as a key economic sector by the Macedonian authorities;
- Private sector in ICT is well organized and represented by MASIT;
- Macedonian companies are aware of the need for implementation of the latest standards relevant to the IT companies;
- Qualified human resources;
- ICT companies with a wide range of specialization;
- Cheap labor costs;
- Support from international donor organizations;
- Stable economic development of the country during the last 10 years;
- Growing ICT market;
- EU and NATO candidate country

**Weaknesses**
- Micro and small scale of the enterprises;
- Cooperation culture between companies is not sufficiently developed yet;
- Potential for work sharing in the region is not extensively used;
- Marketing strategies are not planned for the long-term;
- Lack of project management skills and/or industrial production of software;
- Country does not have the image of an IT supplier;
- Lack of international marketing skills and expertise;
- Lack of quality certification and development methodologies;

**Opportunities**
- Implementation of world recognized models and practices;
- Clustering with other competitive sectors in Macedonia and the region;
- EU integration provides opportunities for easier access to regional and EU markets;
- Development of own products;
- Strategic alliances with foreign companies to increase exports;
- Increased understanding of software process improvement methodologies;
- Strong tendency to improve the IT image of the country;
- Rapid development of the mobile and internet structure;

**Threats**
- Loss of export demand and decrease of the export prices;
- Lack of a coherent industry image;
- Dependency on scientific-technical development through orientation to the home market;
- Low-cost competition;
- Brain Drain of leading IT specialists;
- Challenges in gaining an image of new-born IT supplier;

For further information, please do not hesitate to contact the RCI IT team in ESI Center Eastern Europe, office@esicenter.bg, tel. +359 2 4899740.