e-Government for Business Development

USAID FROM THE AMERICAN PEOPLE

eGov Project

INTERNEWS

# Evaluation of the Impact of the USAID eGov Project Activities in Macedonia

With a special emphasis on the e-services for the business sector

Metamorphosis Foundation

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# Executive Summary

The evaluation performed by the Metamorphosis Foundation between July and September 2009 revealed that the five specific G2B Applications supported by the USAID-funded eGov Project implemented by Internews Network had crucial impact on the general process of e-government development in Macedonia from 2004 to 2009.

The primary research data is gathered through a telephone survey of user satisfaction and through direct input from key stakeholders. The secondary data is based on analysis of documentation, research studies and media coverage, confirmed that alongside improvement of the efficiency and transparency in the communication between the government institutions and the business sector. The introduction of the five G2B Project Applications contributed to creation of policies and enabling environment for successful development of electronic government services.

The survey encompassed respondents from over 440 companies, including over 300 employees directly responsible for use of the five G2B Project Applications: e-Tax, e-Procurement, Automated System for Management of International Cargo Transport Licenses (CEMT), Single Portal for Export/Import Licenses – EXIM, and Online Registration of Employment.

Overall satisfaction with all the five G2B Project Applications is rather high, with a score of 3.8 on a 5-point scale. Over a quarter of respondents attributed a maximum score 5/5 for overall satisfaction. Overwhelming majority of 84% of respondents reported not having any problems with the use of the five G2B Project Applications.

Relevant government officials expressed strong sense of ownership of the five G2B Project Applications, affirming their long-term sustainability, using them as examples of best practices within the overall process of e-government development and committing budget funds for their further maintenance and upgrades, responding to user demand.

Moreover, the implementation of the applications had significant wider impact, through raising the overall level of online availability of government services, which positively affected Macedonia's efforts for integration into the EU. In addition, the media coverage of these services abroad contributed to improving the image of Macedonia as business destination. At the same time, locally it contributed to the promotion of the causes of greater transparency and accountability of public institutions, and to raising the level of support and awareness of anticorruption measures.

Future activities contributing to e-government development in Macedonia need to include development of more e-services and expanding of their scope, end-user trainings, as well as actions for raising awareness and trust.

# 1 Introduction

This study, carried out in the period from July to September 2009 analyzes the user satisfaction and impact that the USAID funded eGov Project activities have made on the general process of e-government development in Macedonia in the period 2004 – 2009 through the implementation and use of the five Government to Business (G2B) Internet Applications. Throughout this document, these applications will be referred to as **'the five G2B Project Applications'**.

## 1.1 Scope

The United States Agency for International Development (USAID) funded eGov Project in Macedonia is launched in 2004. The Project is implemented by Internews Network.[1] The main objective of the Project, through support of the development of a number of e-government applications (e-services), is to help "increase the efficiency and transparency of the public sector management and open new channels for doing business in an open manner, making Macedonia more attractive to the investment community"[2]. So far, the eGov Project has supported the development of 11 applications: five (5) of them are Government to Business (G2B), four (4) of them are Government to Citizens (G2C), and two (2) of them are Government to Government (G2G).

This study focused on the evaluation of the following five G2B Project Applications:

- e-Procurement (www.e-nabavki.gov.mk) – available since April 2006[3], which enables realization of the public procurements in electronic form, aiming to reduce the possibilities for **corruption** and making **savings** through the reduction of costs. The Public Procurement Bureau is the institution responsible for the application.

- e-Tax (e-Tax.ujp.gov.mk) – available since July 2006 for large tax payers (since April 2009 all small and medium enterprises (SMEs) can use it as well), providing **efficient** and **secure** electronic submission of tax returns to the Public Revenue Office. The Public Revenue Office is the institution responsible for the application.

- Automated System for Management of International Cargo Transport Licenses - CEMT (dozvoli-mtc.gov.mk) – available since November 2006, provides increased **transparency** and **fairness** in the process of allocation and usage of international transport licenses. The Ministry of Transport and Communications is the institution responsible for the application.

[1] USAID eGov Project web page, www.eGov.org.mk (accessed August 10, 2009).
[2] eGov Project, "Performance Monitoring Plan, Rev. 2", Internews Network, May 2009.
[3] http://egov.org.mk/Project_e-Procurement.htm (accessed August 2009)

- Single Portal for Export/Import Licenses – EXIM (www.exim.gov.mk) – available since November 2008, enables electronic submission of requests for import, export and transit licenses, as well as submission of requests for tariff quotas distribution. It facilitates cross-border trade by improving the efficiency of the overall performance of the Customs Administration and fifteen(15) involved government agencies.

- Online Registration of Employment (www.avrm.gov.mk/PrijavaOdjava/) – available since December 2008, an online system that provides an efficient, easy, **simple**, **cost-** and **time-effective** process for employment registration with the Employment Agency. The Employment Agency of Macedonia is the institution responsible for the application.

## 1.2 Objectives

The main objective of this survey was to measure:

1. The satisfaction of the users with the five G2B Project Applications developed in Macedonia with the support of the USAID-funded eGov Project, including reasons for satisfaction and dissatisfaction;
2. Impact of these services on the user's business performance; and
3. To what extend the work of the eGov Project influenced and facilitated the process of e-government development in Macedonia.

This study provides an ongoing snapshot of the use of the five G2B Project Applications. Moreover, this study analyzed some of the secondary data in order to evaluate the impact that the usage of the five G2B Project Applications has on the process of improvement of both e-government and economic environment in the country. Secondary data analysis proceeded through assessment of publicly available information regarding development of information society, e-government and business environment. Some efforts (measures) taken in the period before, after and during the implementation of the Project Applications related to the process of development and deployment of the applications were taken into consideration as well.

# 2 Methodology

The objective of the survey was to measure the satisfaction of the users of the five G2B services developed in Macedonia supported by the USAID eGov Project and the impact of these services on the business performance and economic environment in the country. This objective was reached through a four(4) stage approach:

1. Stage One – Desk Research
2. Stage Two – Methodology Design
3. Stage Three – Survey Conducting
4. Stage Four – Reporting

## 2.1 Stage One – Desk Research

The desk research stage started in July 2009. At this stage all significant methodologies and studies for 'e-services user satisfaction and impact measurement' worldwide were analyzed. The aim was to develop a feasible survey methodology and instrument to measure user satisfaction and impact of the G2B eGov Project Applications in Macedonia, based on the best practices.

The desk research commenced through a web-based search concentrated on sources of e-government satisfaction and impact measurement studies. At this stage information from a long list of relevant sources, studies and cases from the EU member states (such as Slovenia, Netherlands and UK) and from non-European countries, (such as Australia and the USA) was gathered and analyzed. The main focus in this research was put on measurement frameworks, methodological tools and main results and recommendations from the cases mentioned above.

Various reports from the United Nations (UN) bodies, the World Bank (Doing Business Report), European Commission (EC)—particularly from the Delegation for Information Society and Media—and other international organizations served as secondary sources, alongside national reports and data gathered from Macedonia. These sources included the National Statistical Office, the relevant Ministries and other government institutions. Significant input came from the eGov Project through reports, application specifications, and contact information of the G2B Project Applications owners and users.

The fact that two (2) of the five (5) applications (e-Tax and e-Procurement) cover three (3) out of eight (8) public G2B e-services whose online availability and sophistication is measured in the annual benchmark study commissioned by the EC, has much wider implications outside of the field of e-government, influencing the ongoing process of Macedonia's integration into the European Union (EU).

## 2.2 Stage Two – Methodology Design

Based on the findings from the research of the studies and good practices identified during the previous stage, a methodology and a questionnaire for the survey were designed.

The questionnaire (Appendix H) consists of 29 questions grouped in four main categories:

- Profile of the respondents
- Use of G2B Internet Applications
- User satisfaction with the five G2B Project Applications
- Reported benefits (impact) and future use

a) User profiles

In regard of the profiling of users of the five G2B Project Applications two modules were distinguished:

- General company profile
  - Company size (micro, small, medium and large enterprises)
  - Year of establishment
  - Economic activities
  - Region in which they are located
- Company's ICT infrastructure
  - Percentage of employees with computer
  - Type of Internet access
  - Company website and the purpose of use
  - Period of acceptance of Internet/Web technologies
  - Internet/web security

Also, the respondents were grouped according to their business profile (Internet/web index) into 4 main categories:

- LH – Large companies with High Internet/web profile
- LL – Large companies with Low Internet/web profile
- SH – Smaller companies with High Internet/web profile
- SL – Smaller companies with Low Internet/web profile

The Internet/web profile index consists of 3 parameters:

- Use of digital certificates/electronic signature
- Presence of website
- Website – purpose of use

Based on these tree parameters, an Internet/web profile index was generated as follows: If the company uses digital certificate/electronic signature, has its own website, and the purpose of its website is B2C or/and B2B, than the company has

'High' Internet/web profile. If some of these parameters misses than the company has 'Low' Internet/web profile.

b) Use of G2B e-government Applications

The usage of G2B e-government Applications has the following modules:

- General use of e-government (e-services)
    - Acquaintance with G2B e-government Applications (e-services)
    - User/Non user of G2B e-government Applications
- The five G2B Project Applications
    - Use of 5 G2B Project Applications
    - Number of trained users in the company
    - Problems reported with the use of the five G2B Project Applications

c) Satisfaction with the five G2B Project Applications

This category together with the category of 'Perceived impact and future use', is crucial for the study and has two modules:

- Overall satisfaction
    - Overall level of satisfaction – satisfaction score
    - Satisfaction measure
- Factors of satisfaction/dissatisfaction
    - Communication
    - Transparency
    - Speed
    - Corruption
    - Trust

d) Perceived benefits (impact) and future use

- Perceived benefits (impact)
    - Time saving
    - Saving money
    - Efficient communication
    - Quality improvement (decrease human errors)
    - Transparency increasing
    - Corruption reducing
    - Competitiveness improvement
    - Financial results improvement
    - Overall benefit
- Sustainability
    - Upgrades of existing applications
    - Need for new G2B applications

All the results are presented as percentages (%) or the mean and the average value of the answer. In the questionnaire, the respondents rated the various options on the scale of 1 to 5, where signified the worst mark (very poor, not at all, completely unsatisfied, etc.) whereas 5 signified the best mark (very good; yes, absolutely)

## 2.3 Stage Three – Survey Conducting

A telephone survey was conducted in the period of July 27 – August 14 2009, comprising a sample of 445 interviews with companies chosen from the lists of registered users of the five G2B Project Applications provided by the eGov Project. This included 60 companies - registered users of e-Tax, 19 registered users of Online Employment Registration, 43 registered users of E-Procurement, 37 registered users of EXIM, and 286 registered users of the Automated System for Management of International Cargo Transport Licenses Project.

## 2.4 Stage Four – Reporting

Based on the analysis of the survey data and the review of inputs from secondary sources, the study was prepared in a three week period in September 2009.

The final version of the report was released in October 2009.

# 3 Survey Results

The key findings of the survey are based on a total sample of 445 companies in Macedonia. The results are presented in a structural form based on a conceptual framework. First, the companies' profiles are described, followed by user satisfaction and impacts of G2B services on the business environment in Macedonia.

## 3.1 Profile of the Business Respondents

It is common for the business surveys to interview the company representatives who are not necessarily the owners or the general managers of the company. For the purpose of this survey, only the persons from the companies identified as person responsible for the use of certain G2B Project Application were interviewed.

The approach of this survey was to interview at least 20 percent of the overall number of users of the five G2B Applications supported by the USAID eGov Project. The companies were selected from the list of registered users of specific G2B Project Application. The companies were classified according to size and sector. This study followed the Macedonian definition of small and medium sized enterprises (SMEs)[4] and also respected the National Classification of Activities (NKD Rev.2)[5]. For this survey the companies are aggregated into larger groups according to the sector separation, and SMEs are considered to be companies with less than 250 employees.

### 3.1.1 Companies profile

The sample of the surveyed companies consists of 87.9% of SMEs and 12.1% large enterprises *(Table 1).*

| Company Size | Companies | |
|---|---|---|
| Micro enterprises (< 10 employees) | 314 | 70.6% |
| Small enterprises (10 - 49 employees) | 38 | 8.5% |
| Medium enterprises (50 - 249 employees) | 39 | 8.8% |
| Large enterprises (≥ 250 employees) | 54 | 12.1% |
| TOTAL (N) | 445 | 100.0% |

***Table 1.*** *Composition of the business sample according to company size*

[4] Macedonian definition of SMEs according to the Law on trade Companies (Official Gazette no. 28/04 from 30.04.2004) recognizes three criteria on the basis of which a company could be classified: 1) staff number thresholds, 2) turnover, and 3) balance sheet total. This survey used only the first criteria, and this criteria in Macedonian definition is identical with the EU definition of SMEs.

[5] The National Classification of Activities - NKD Rev.2 is a classification of economic activities in the Republic of Macedonia used for collection, processing and publishing of statistical data, fully compliant with the NACE or Statistical Classification of Economic Activities in the European Community, a European industry standard classification.

More than half of the surveyed companies are from the 'Transportation and storage' industry (58.7%), followed by companies from 'Manufacturing' (9.0%), 'Financial and insurance' (4.9%) and 'Construction' (4.5%). In the 'Other' category are companies performing the following economic activities: 'Administrative and support service activities'; 'Agriculture, forestry and fishing'; 'Electricity, gas, steam and air conditioning supply'; 'Mining and quarrying'; 'Water supply, sewerage, waste management and remediation activities'; 'Arts, entertainment and recreation'; 'Human health and social work activities'; and 'Other services activities' (Table 2).

| Economic activity | Companies | |
|---|---|---|
| Transporting and storage | 261 | 58.7% |
| Wholesale and retail trade | 60 | 13.5% |
| Manufacturing | 40 | 9.0% |
| Financial and insurance activities | 22 | 4.9% |
| Construction | 20 | 4.5% |
| Information and communication | 19 | 4.3% |
| Professional, scientific and technical activities | 8 | 1.8% |
| Other | 15 | 3.4% |
| TOTAL (N) | 445 | 100.0% |

***Table 2.*** *Composition of the business sample according to the economic activities*

Almost all surveyed companies provided data about the period/year of establishment of the company. 11.9% of the surveyed companies were established in the last three years, 28.1% are established between year 2000-2006 and 41.6% in the period of 1991-1999. Significant portion of interviewed companies (15.3%) are established before the year 1991 (Table 3).

| Year of establishment | Companies | |
|---|---|---|
| < 1991 | 68 | 15.3% |
| 1991-1999 | 185 | 41.6% |
| 2000-2006 | 125 | 28.1% |
| 2007-2009 | 53 | 11.9% |
| Do not know | 14 | 3.1% |
| TOTAL (N) | 445 | 100.0% |

***Table 3.*** *Composition of the business sample according to the year of establishment*

Interviewed companies are located in 50 municipalities in Macedonia (Table 4). In this context, 11% of all surveyed companies are from the municipalities where ethnic Albanians are majority or form significant portion of the population (Tetovo, Gostivar, Debar, Kumanovo, Cair, Saraj, Lipkovo, Kicevo, Studenicani, Zelino, Brvenica, Suto Orizari)[6].

[6] According to the data from the Census of population from 2002, and territorial organization of the Republic of Macedonia from 2004. Source: State Statistical Office of the Republic of Macedonia.

| Municipality | Total | Municipality | Total |
|---|---|---|---|
| Aerodrom | 6.1% | Kratovo | 0.4% |
| Berovo | 0.4% | Kriva Palanka | 0.2% |
| Bitola | 4.0% | Kumanovo | 4.5% |
| Bogdanci | 0.7% | Lipkovo | 0.2% |
| Bosilovo | 0.2% | Makedonski Brod | 0.2% |
| Brvenica | 0.2% | Negotino | 3.1% |
| Butel | 2.9% | Ohrid | 1.3% |
| Cair | 1.1% | Pehcevo | 0.2% |
| Caska | 0.2% | Petrovec | 0.4% |
| Centar | 11.7% | Prilep | 4.3% |
| Cesinovo | 0.2% | Radovis | 3.1% |
| Debar | 0.2% | Resen | 1.1% |
| Demir Hisar | 0.9% | Rosoman | 0.2% |
| Gazi Baba | 8.3% | Saraj | 0.4% |
| Gevgelija | 3.6% | Stip | 3.6% |
| Gjorce Petrov | 2.5% | Strumica | 3.6% |
| Gostivar | 1.6% | Studenicani | 0.2% |
| Ilinden | 2.2% | Suto Orizari | 0.4% |
| Jegunovce | 0.2% | Sveti Nikole | 0.7% |
| Karbinci | 0.2% | Tetovo | 1.8% |
| Karpos | 5.6% | Valandovo | 0.4% |
| Kavadarci | 6.1% | Vasilevo | 0.2% |
| Kicevo | 0.2% | Veles | 2.9% |
| Kisela Voda | 5.2% | Vinica | 0.7% |
| Kocani | 0.2% | Zelino | 0.4% |

***Table 4.*** *Composition of the business sample according to geographical location of the companies*

### 3.1.2 ICT Infrastructure

In order to asses the ICT (Information and Communication Technologies) infrastructure, i.e. to describe the businesses' profiles in regard of computers[7] and Internet infrastructure, access and use, the companies were asked about the number of computers deployed, type of Internet connectivity they have and the use of their website for communication and collaboration with customers and suppliers. Most of the companies are well equipped with computer equipment and Internet access, but the situation regarding their web presence is not satisfactory.

For the analysis of a number of computers deployed in the companies, data was collected from N=441 companies meaning a 99.1% of the whole sample. The number of computers in the companies is presented in Table 5.

[7] By computer this survey understands a complete, working computer (personal computer, workstation, minicomputer, server, laptop, or notebook).

| Number of computers | Companies | |
|---|---|---|
| 0 | 2 | 0.5% |
| 1- 4 | 261 | 59.2% |
| 5 – 9 | 45 | 10.2% |
| 10 – 30 | 41 | 9.3% |
| > 30 | 92 | 20.9% |
| TOTAL (N) | 441 | 100.0% |

***Table 5.*** *Number of computers in the companies*

More than half of the interviewed companies have between 1-4 computers (59.2%), and 20.9% have more than 30 computers. There are 10.2% of the companies with 5-9 computers and 9.3% with 10-30 computers. Still, there are 0.5% (2 companies) that declared that they do not have a computer within the company. Those two companies belong to the 'Transporting and storage' industry and are registered as users of the Automated System for Management of International Cargo Transport Licenses. Companies that do not have the required PC infrastructure in the company's premises use publicly available Internet access points in order to use the G2B Project Applications.[8]

For the analysis of type of Internet access, data was collected from N=443 companies meaning a 99.6% of the whole sample. Table 6 represents the type of Internet access.

| Type of Internet access | Companies | |
|---|---|---|
| No Internet access | 3 | 0.7% |
| Dial up | 1 | 0.2% |
| ADSL | 242 | 54.6% |
| Cable | 70 | 15.8% |
| Wi-Max | 21 | 4.7% |
| More than one type (broadband) | 16 | 3.6% |
| Other | 28 | 6.3% |
| Do not know | 62 | 14.0% |
| TOTAL (N) | 443 | 100.0% |

***Table 6.*** *Type of Internet access*

Most of the companies have broadband Internet access: ADSL (54.6%), cable (15.8%) and Wi-Max (4.7%). Some of them (3.6%) even have more than one type of internet, but one of the Internet access types is always broadband. Some companies combined two types (ADSL and cable, or ADSL and Wi-Max) in order to have backup Internet access. The representatives of some of the companies (14.0%) admitted that they do not know what type of Internet access their company is using, and 6.3%

[8] "The process will not only save time, but it will be fair, transparent, and without any additional expenses for the service. The transporters which do not own computers or cannot fill in the application on their own will be able to do that via a special counter in the Association of Trucking Transporters Makam Trans," said Mile Janakieski, Minister of Transport and Communications. Utrinski Vesnik, October 5, 2007.

use some other types than the ones offered in the list (leased lines or other). There is one company (0.2%) that only has dial up Internet access and three companies declared that they do not have any Internet access in the company. Those three companies belong to the 'Transporting and storage' industry and are registered as users of the Automated System for Management of International Cargo Transport Licenses.

For the purpose of analysis of the companies, website data were provided by N=443 companies which equals a 99.6% of the whole sample. The percentage of companies which have their own website is presented in Table 7.

| Company's Website | Companies | |
|---|---|---|
| Yes | 208 | 47.0% |
| No | 235 | 53.0% |
| TOTAL (N) | 443 | 100.0% |

***Table 7.*** *Companies with their own Website*

Micro enterprises have the smallest ratio of web presence. Out of all the surveyed micro enterprises, 69.2% do not have a website of their own, vis-à-vis 7.4% of all the surveyed large enterprises (Table 8).

| Company Size | Have a website | | Do not have a website | |
|---|---|---|---|---|
| Micro enterprises (< 10 employees) | 96 | 30.8% | 216 | 69.2% |
| Small enterprises (10 - 49 employees) | 30 | 78.9% | 8 | 21.1% |
| Medium enterprises (50 - 249 employees) | 32 | 82.1% | 7 | 17.9% |
| Large enterprises (≥ 250 employees) | 50 | 92.6% | 4 | 7.4% |
| TOTAL (N) | 208 | 100% | 235 | 100% |

***Table 8.*** *Companies without a website, according to their size*

One of the first indicators to describe the Internet/Web user profile of the respondent companies is the moment of establishment of their own websites and the corresponding number of years that the respondent companies have already been present online. Out of 208 companies that have their own websites, 161 presented the data about the year of the establishment of their website.

The total sample of companies that have established their own websites consists of a mix of experienced users, already present online for a considerable number of years, and users who have established their websites rather recently. Eighteen percent (18%) of the respondents in the sample are mature users who have been present online for 10 years or more; most of them started to establish websites in the period 1992-1995. Web establishment peaked between 1999 and 2000, and again between 2005 and 2008; as a result we can conclude that 41% of the companies in the sample

initiated their online presence in this last period. Finally, for the year 2009 the establishment rate seemingly decreased—it was reduced to 9.3% (Chart 1)—due to the fact that this covers only the first seven months of that year.

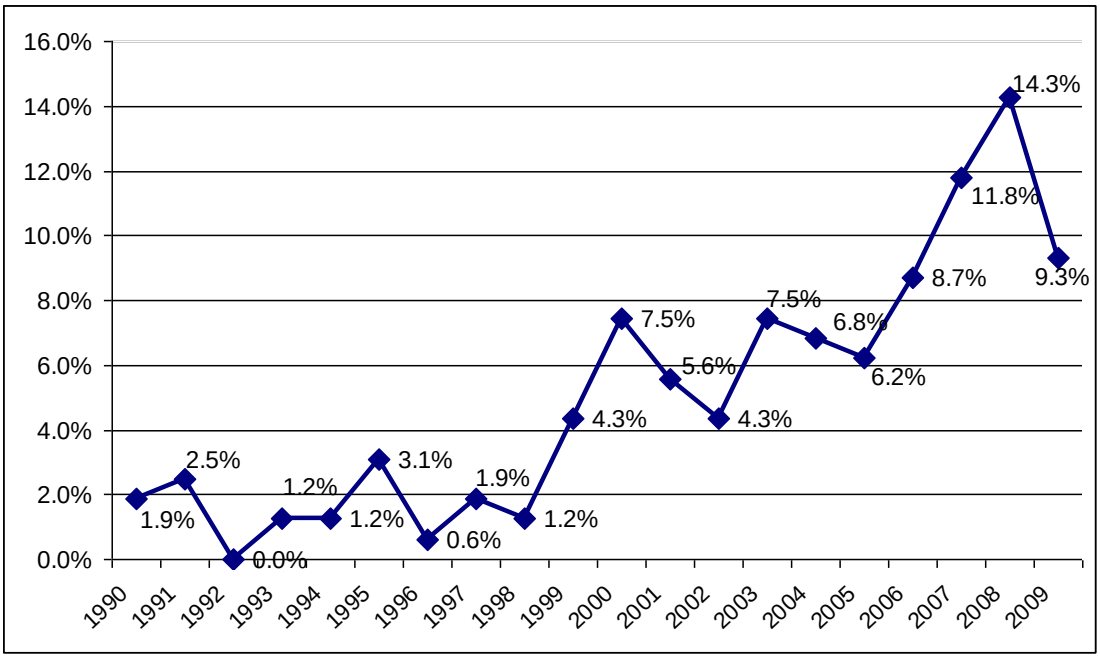


***Chart 1.*** *Establishment of company websites year by year*

This survey result shows high correlation (coefficient of 0.935) with the data on registration of new .MK domains provided by the domain registrar MARNet.[9] (Table 29, Appendix G), confirming the relevance of the sample.

According to the period of establishment of their own website, the companies were classified into four main categories: Innovators, Early adopters, Middle majority, and Late adopters (Table 9).

| Website (Period of establishment) | Companies | |
|---|---|---|
| < 1991 (Innovators) | 3 | 1.9% |
| 1991-1999 (Early adopters) | 26 | 16.1% |
| 2000-2006 (Middle majority) | 75 | 46.6% |
| 2007-2009 (Late adopters) | 57 | 35.4% |
| TOTAL (N) | 161 | 100.0% |

***Table 9.*** *Year of the company's website establishment*

Companies mostly use their websites for business cooperation with other companies (77.4%). This cooperation includes: logistics, marketing, sales, procurement, and after-sales services. Only 4.3% have B2C websites and 6.7% use their websites for both B2B and B2C interaction. In addition, 11.5% of the companies use their websites only to disseminate general information about the company and its products and/or services (Table 10).

[9] Macedonian Academic and Research Network – Network Information Center (MARNet-NIC) website URL: http://dns.marnet.net.mk.

| Business activities through the Website | Companies | |
|---|---|---|
| B2B | 161 | 77.4% |
| B2C | 9 | 4.3% |
| B2B and B2C | 14 | 6.7% |
| Other | 24 | 11.5% |
| TOTAL (N) | 208 | 100.0% |

***Table 10.*** *Use of the Website*

The companies were asked about their use of secure Internet applications and/or communications through use of digital certificates[10] and electronic signatures. The results are presented in the Table 11.

| Using digital certificates/electronic signature | Companies | |
|---|---|---|
| Yes | 166 | 37.4% |
| No | 187 | 42.1% |
| Not sure | 41 | 9.2% |
| Do not know what is that | 50 | 11.3% |
| TOTAL (N) | 444 | 100.0% |

***Table 11.*** *Use of digital certificates/electronic signatures*

Over a third, or 37.4% of all surveyed companies use a digital certificates/electronic signatures, and 42.1% do not. Eleven point three percent (11.3%) of the representatives from the surveyed companies does not know what the digital certificates/electronic signatures are used for, regardless of whether they are using them as part of their business communication or for access to Internet applications. Less than ten percent (9.2%) are not sure whether these features are used in their companies or not.

| Company Size | Using | Not using | Do not know/ not sure | Total respondents (N) |
|---|---|---|---|---|
| Micro enterprises (< 10 employees) | 26.6% | 51.4% | 22.0% | 313 |
| Small enterprises (10 – 49 employees) | 47.4% | 28.9% | 23.7% | 38 |
| Medium enterprises (50 - 249 employees) | 64.1% | 25.6% | 10.3% | 39 |
| Large enterprises (≥ 250 employees) | 74.1% | 9.3% | 16.6% | 54 |
| TOTAL (N) | | | | 444 |

***Table 12.*** *Use of digital certificate/electronic signature by companies, according to their size*

[10] The following G2B Project Applications require use of digital certificates: EXIM, Online Registration of Employment, and e-Procurement.

As presented in Table 12, more that half (51.4%) of all surveyed micro enterprises do not use a digital certificate/electronic signature vis-à-vis 9.3% of all surveyed large enterprises. Almost two thirds of the medium sized enterprises (64.1%) and three quarters of large enterprises (74.1%) use digital certificates and/or electronic signature.

## 3.2 Use of G2B e-Government Applications

This section of the study assessed the general use of e-government applications and in particular the use of the following G2B Project Applications (G2B Applications developed with a support of USAID funded eGov Project):

a) e-Tax
b) Online Employment Registration
c) E-Procurement
d) EXIM
e) Automated System for Management of International Cargo Transport Licenses

The users were offered a series of closed questions offering multiple choices of predetermined answers, but also an opportunity to provide wider explanation through an open question after the closed one, or at the end of each topic segment.

### 3.2.1 General use of e-government Services

As described in the Methodology part of this report, only registered users of the five G2B Project Applications were surveyed for the purpose of this study. Table 13 shows that 291 out of 444 surveyed company representatives responded affirmatively to the question "Are you familiar with the existence of electronic government services for the companies which can be used over the Internet?"

| Aware of the existence of G2B Internet applications | Companies | |
|---|---|---|
| Yes | 291 | 65.5% |
| No | 153 | 34.5% |
| TOTAL (N) | 444 | 100.0% |

***Table 13.*** *Companies aware of the existence of G2B Internet applications*

A breakdown of the figures by company size is presented in Table 14.

| Company Size | Aware of the existence of G2B Internet applications | Total respondents | |
|---|---|---|---|
| Micro enterprises (< 10 employees) | 187 | 313 | 59.7% |
| Small enterprises (10 - 49 employees) | 28 | 38 | 73.7% |
| Medium enterprises (50 - 249 employees) | 30 | 39 | 76.9% |
| Large enterprises (≥ 250 employees) | 46 | 54 | 85.2% |
| TOTAL (N) | 291 | 444 | |

***Table 14.*** *Companies aware of the existence of G2B Internet applications according to their size*

In general, when it comes to the size of the companies, a significant difference can be noticed regarding the percentage of companies aware of the existence of G2B Internet Applications: very small ('micro') enterprises (59.7%) and the others ('small enterprises – 73.7%, 'medium enterprises' – 76.9% and 'large enterprises' – 85.2%).

In response to an open-ended question of the 291 respondents who answered that they are aware of the existence of G2B Internet applications, only 167 were able to name some particular applications. The results are presented in Table 15.

| G2B Internet application | Companies aware of its existence | |
|---|---|---|
| EXIM | 47 | 28.5% |
| e-Tax | 31 | 18.8% |
| E-Procurement | 28 | 17.0% |
| Automated System for Management of International Cargo Transport Licenses | 32 | 19.4% |
| Online Employment Registration | 9 | 5.5% |
| Central Register | 8 | 4.8% |
| Official Gazette | 2 | 1.2% |
| E-Banking (KIBS/MIPS) | 7 | 4.2% |
| Cadastre | 2 | 1.2% |
| Other | 7 | 4.2% |
| Do not know | 5 | 3.0% |

***Table 15.*** *All G2B Internet Applications the companies are familiar with*
*(Note: Respondents could indicate more than one G2B Internet Application)*

The registered users of the G2B Project Applications are well acquainted (> 80.0%) with the existence of G2B Internet Applications. Only the users of the Automated System for Management of International Cargo Transport Licenses are an exception, with only 54.7% of all registered users of this application being aware of the existence of any G2B Internet application (Table 16).[11]

| Company registered as user of G2B Project Application | Companies aware of the existence of G2B Internet applications | Total respondents | |
|---|---|---|---|
| e-Tax | 50 | 60 | 83.3% |
| Online Employment Registration | 16 | 19 | 84.2% |
| E-Procurement | 35 | 43 | 81.4% |
| EXIM | 34 | 37 | 91.9% |
| Automated System for Management of International Cargo Transport Licenses | 156 | 285 | 54.7% |
| TOTAL (N) | 291 | 444 | |

***Table 16.*** *Companies aware of the existence of G2B Internet applications according to their size*

When asked how they were informed about these G2B Internet applications, the companies provided multiple answers (Chart 2).

Most of the companies (37.3%) were informed about the G2B Internet applications by the state institution responsible for providing the respective services. The media represents the second most frequent source of information (22.4%), and almost every fifth company (18.8%) heard about certain G2B Internet application from other companies.

[11] According to the reports by the surveyors on the interview process, some of the respondents had issues with the terminology and did not associate the term "e-government" with the concrete service they use. This situation affected the results, especially in regard to responses by registered users of the Automated System for Management of International Cargo Transport Licenses.

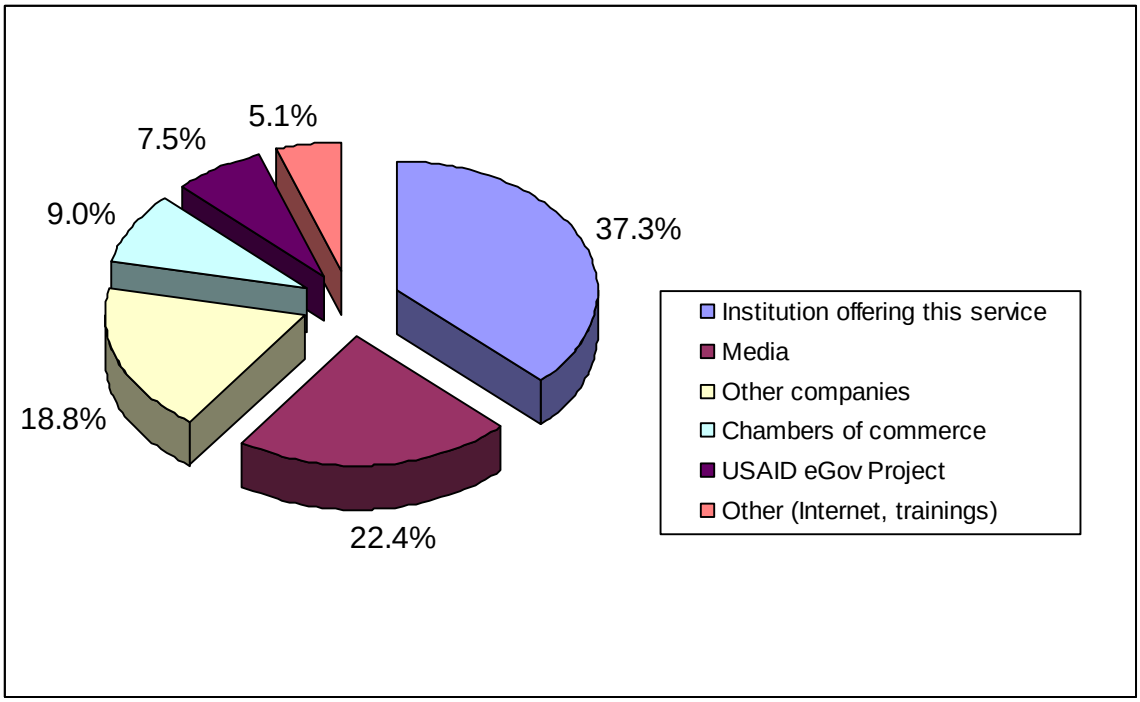


***Chart 2.*** *Source of information about G2B Internet Applications*

The chambers of commerce provide significant contribution as a source of information on G2B Internet Applications, and were credited by almost every tenth company (9.0%). In addition, 7.5% of the companies replied that they were informed through direct USAID activities, indicating the significant influence of the USAID eGov Project among the end users. Finally, 5.1% of the companies chose the option 'Other' and when asked to name the source of information they responded 'Internet', or that they acquired the information from a seminar or other source.

### 3.2.2 The five G2B Project Applications

The survey instrument that was developed can be applied to measure the level of usage and satisfaction with any G2B Internet Application provided by a government agency through electronic means. Still, this study measures the user satisfaction and the impact from the five G2B Project Applications only.

At this stage, in order to identify the real (active) users (not just listed or registered), respondents were asked which G2B Project Applications (out of the five G2B applications developed with the support of the USAID eGov Project) they had used in the past.

Majority of 71.9% of all respondents (N=413) have used at least one of the five G2B Project Applications. Half of them (50.2%) used more than one application. Still, 21.8% of all respondents said that they do not use any of the five G2B Project Applications (Chart 3).

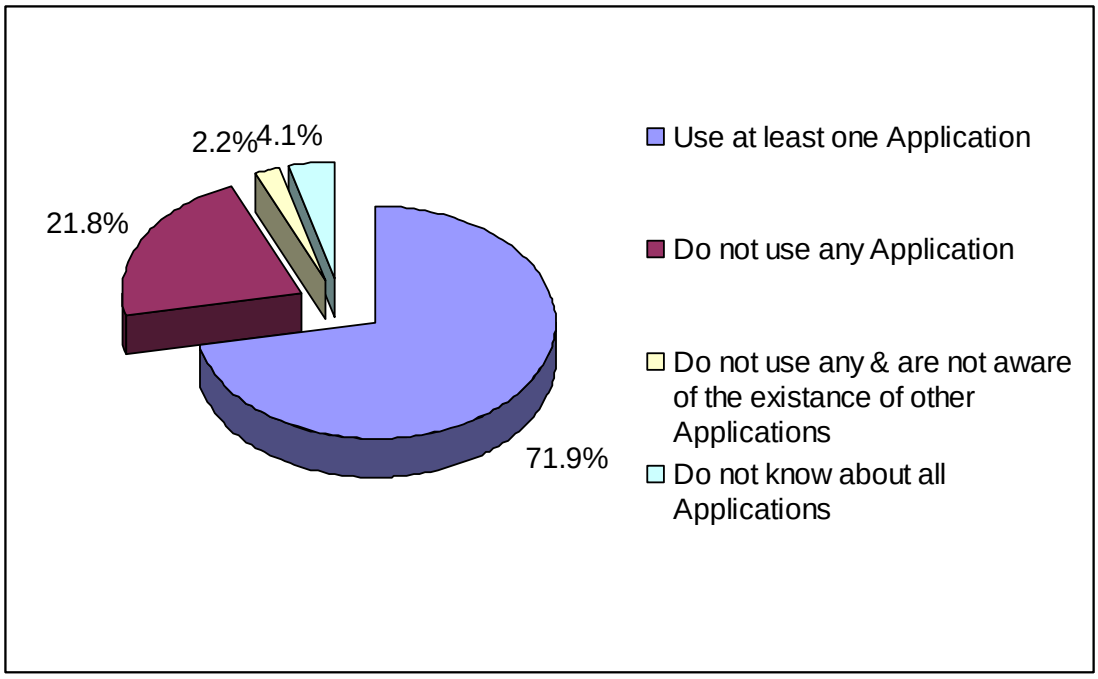


***Chart 3.*** *Actual use of the five G2B Project Applications*

The representatives of the 90 companies that answered that they do not use any of the five G2B Project Applications were asked to name the reasons. They provided the following three main reasons hindering the use of the G2B Project Applications:

1. Lack of awareness (43.2%)
2. Lack of need to use any of the five G2B Project Applications (27.2%)
3. Lack of technical facilities (Internet, computers) (12.3%)

Another significant indicator is the number of employees who have been trained to use some of the e-government applications, indicating the capacity of the company to continue using these e-government services. Table 17 presents the results in this area, which indicate that most of the companies (74.9%) from the sample of 311 that responded to this question have between 1-5 employees, while 12.5% have between 6-10 staff trained to use G2B Project Applications.

The issue of training needs can prove significant for 15.1% of the companies which indicated that they have only one trained staff member. A small percentage of the companies registered as users of the five G2B Project Applications (1.3%) reported that they have no trained persons at all (Table 17).

| Number of employees trained to use certain G2B Project Applications | Companies | |
|---|---|---|
| 0 | 4 | 1.3% |
| 1 | 47 | 15.1% |
| 2-5 | 202 | 59.8% |
| 6-10 | 39 | 12.5% |
| 11-50 | 26 | 8.4% |
| >50 | 9 | 2.9% |
| TOTAL (N) | 311 | 100% |

***Table 17.*** *Number of trained employees within the companies*

Overwhelming majority of 84% of respondents reported that the use of e-government applications did not cause any work problems for their companies. On the other hand, a small minority of the companies (16%) noted that use of a G2B Project Application caused them problems (Chart 4).

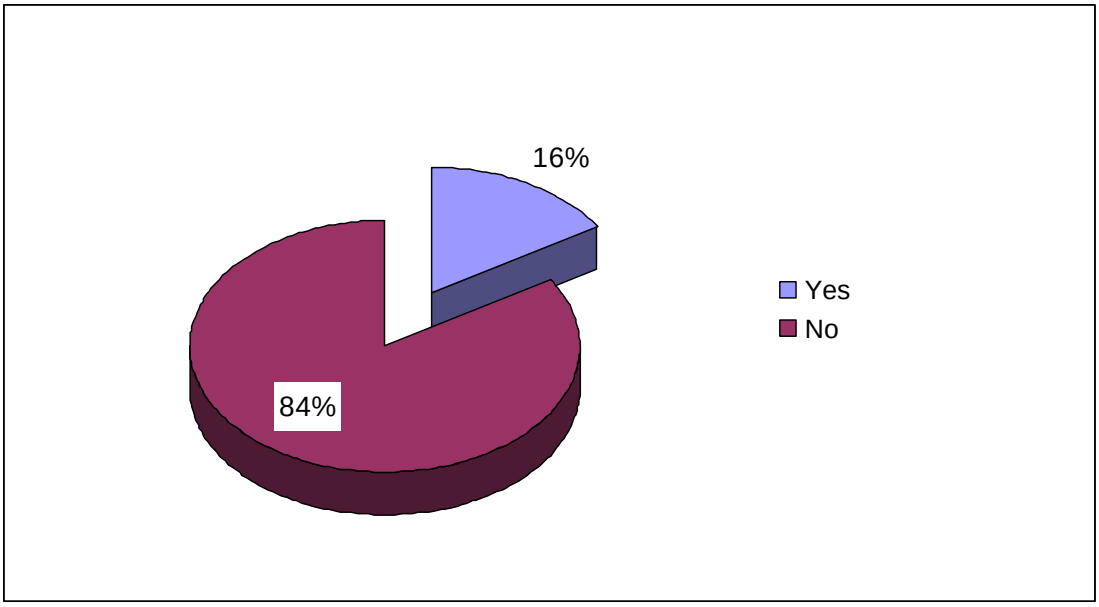


***Chart 4.*** *Responses to inquiry if G2B Project Applications had caused any problems*

According to their profiles, the 51 companies whose representatives claimed that use of the G2B Project Application caused problems to them are registered users of Automates System for Management of International Cargo Transport Licenses (58.8%), EXIM (19.6%), e-Tax (11.8%), e-Procurement (5.9%), and Online Employment Registration (3.9%) (Chart 5).

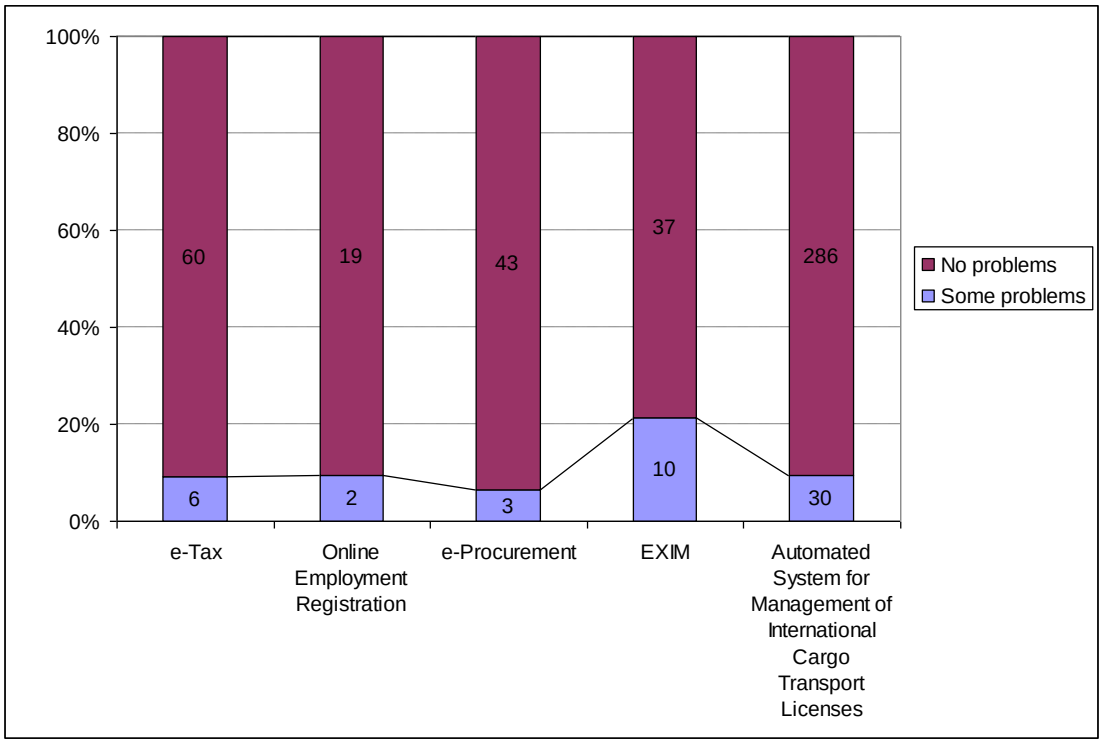


***Chart 5.*** *Data on users who have experienced problems cross-indexed with the data on their registration for certain G2B Project Application*

These 51 respondents had the opportunity to share their experiences related to the problems they have experienced in the use of G2B Project Applications. The reported reasons for the problems can be classified into three main categories:

1. Technical reasons (40%) – e.g. bad Internet connection, slow response, system crashes;
2. Procedural reasons (29%) – e.g. no feedback, incomplete data, procedure is too complicated;
3. Other (31%) – not enough information, problems only at the beginning of implementation, lack of training.

## 3.3 User Satisfaction with the five G2B Project Applications

The core section of the study focuses on the measurement of satisfaction with the five G2B Project Applications. Respondents expressed the extent to which they are satisfied (on a scale from 1 to 5) with five G2B Project Applications: e-Tax, Online Employment Registration, e-Procurement, EXIM, and Automated System for Management of International Cargo Transport Licenses.

### 3.3.1 Overall satisfaction

Overall satisfaction with all the five G2B Project Applications is rather high, with a score of 3.8 on a 5-point scale.

Twenty seven point four percent (27.4%) of respondents attributed a maximum score 5/5 for overall satisfaction. The group of companies which are totally dissatisfied (score 1=very poor) is limited to 2.2%. Overall satisfaction measure is 65.4% (65.4% of all respondents for overall satisfaction from the G2B Project Applications gave grades 4=good and 5=very good) (Chart 6).

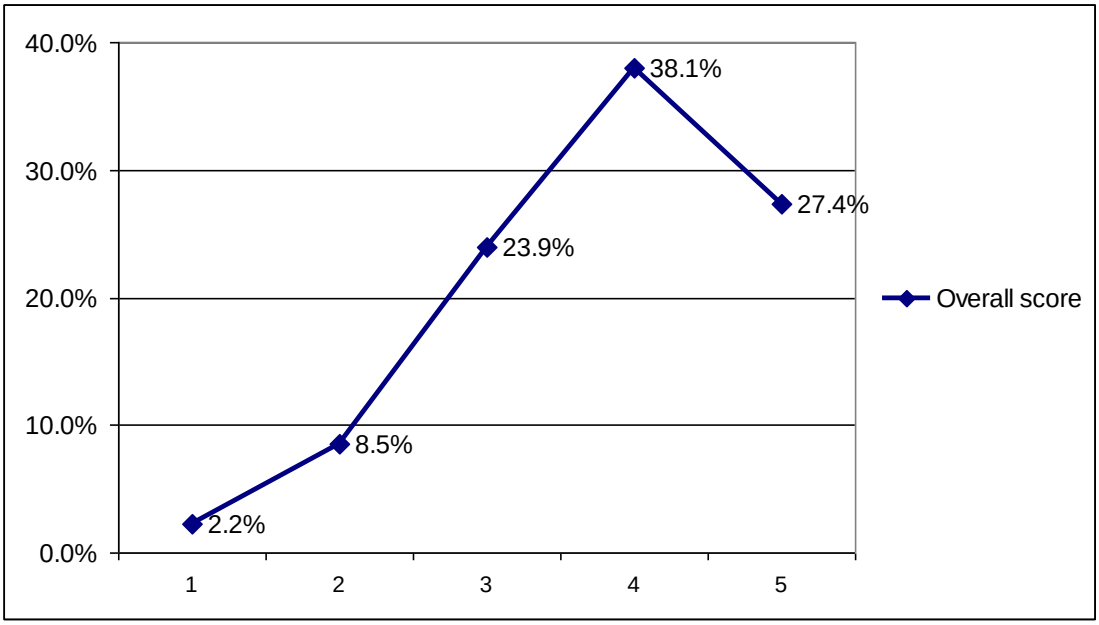


***Chart 6.*** *Satisfaction with the five G2B Project Applications: Overall score*
*(5 point scale: 1=very poor, 2=poor, 3=average, 4=good, 5=very good)*

Cross-referencing the level of user satisfaction with the company's business profile shows that the level of satisfaction increases with the increase of the level of the Internet/Web profile of the companies. Also, large companies despite their lower Internet/Web profile are more satisfied with the five G2B Project Applications than SME's (Table 18).

| Business profile | Satisfaction score | Satisfaction measure | Companies |
|---|---|---|---|
| LH (Large companies with High Internet/web profile) | 4.0 | 77.8% | 27 |
| LL (Large companies with Low Internet/web profile) | 4.0 | 66.7% | 21 |
| SH (SME's with High Internet/web profile) | 4.0 | 77.2% | 57 |
| SL (SME's with Low Internet/web profile) | 3.7 | 60.6% | 213 |

***Table 18.*** *Overall satisfaction score and satisfaction measure according to the company's business profile*

The registered users of e-Tax Application expressed the highest satisfaction (4.2), whereas the users of the EXIM (3.6), and e-Procurement (3.5) expressed lowest levels of satisfaction (Chart 7). However, even these lowest levels of satisfaction are quite satisfactory on the 1-5 scale.

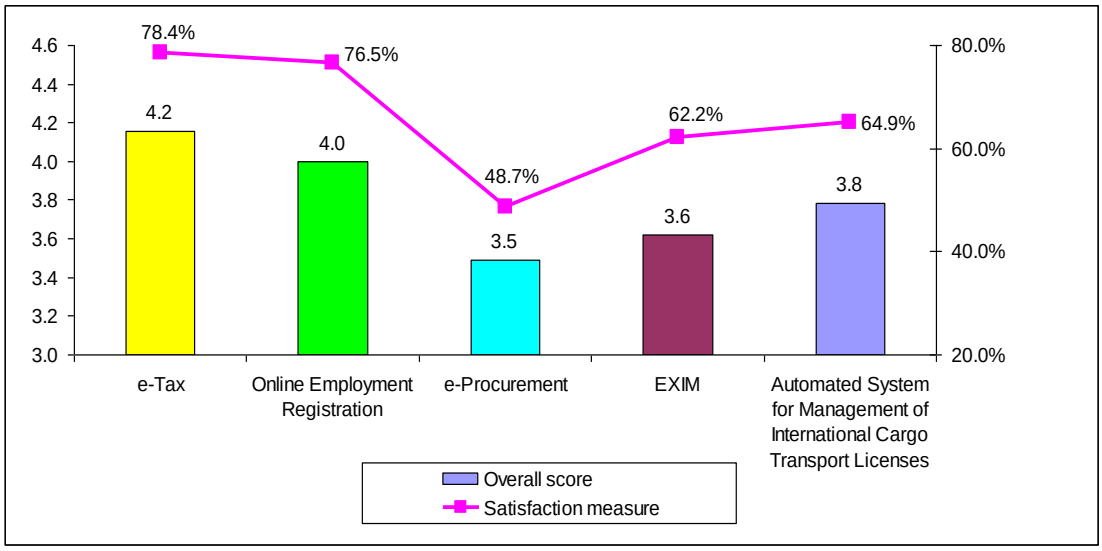


***Chart 7.*** *Satisfaction by registered users of certain G2B Project Application*

All overall scores and satisfaction measures grouped by registered users of specific G2B Project Applications are given in the Charts 18-22 (Appendix A).

### 3.3.2 The main factors of satisfaction

To refine the score and measurement of overall satisfaction, the questionnaire contained a series of five requirements. These constituted factors contribute to either satisfaction or dissatisfaction. Respondents were asked to what extent they agree or disagree with the below five statements using a 5-point scale. All factors are equally important for the overall score of satisfaction.

The five G2B Project Applications were evaluated on the basis of the following five factors:

- improved **communication**
- improved **transparency**
- **speeding up** the process of service delivery
- limited space for **corruption**
- improved **trust** in electronic services as part of the government operations.

Vast majority of users agreed that the G2B Project Applications improved the situation in all five areas. The strongest points of satisfaction are improvement of trust in electronic systems (72.3%) and speeding up of the process of service delivery (70.8%). The weakest points of satisfaction among the five areas—although still with very high general score—are the possibility of G2B Project Application to limit corruption (52.2%) and improve the communication between the companies, as

users, and government institutions responsible for service delivery (55.2%). Minority of companies (12.7%) disagrees that use of the G2B Project Application can help limit corruption and improve the transparency of the government institutions (8.5%) (Table 19).

| Factors of satisfaction | Satisfaction Score | Agreement (4 and 5) | Full disagreement (1) |
|---|---|---|---|
| G2B Project Applications help **improve the trust** in electronic systems | 4.1 | 72.3% | 5.7% |
| G2B Project Applications **speed up the process** of service delivery | 4.0 | 70.8% | 7.2% |
| G2B Project Application **improve the transparency** in the government institutions' service delivery | 3.8 | 64.2% | 8.5% |
| G2B Project Applications **improve the communication** between your company and the governmental institutions | 3.6 | 55.2% | 7.6% |
| G2B Project Applications help **limit corruption** in the public sector | 3.5 | 52.2% | 12.7% |

***Table 19.*** *The main factors of satisfaction/dissatisfaction*

The Table 27 (Appendix C) also presents a more detailed overview of the main factors of satisfaction and dissatisfaction by application.

The strongest factor for satisfaction for the registered users of e-Tax (the highest scoring application) is improving trust (with score of 4.4, agreement - 84.3%, and full disagreement – 2.0%), and the weakest is limiting corruption (with score of 3.7, agreement - 56.9%, and full disagreement – 3.9%). On the other hand, the strongest factor for satisfaction for the registered users of e-Procurement (the lowest scoring application) is improving trust (with score of 4.0, agreement - 71.3%, and full disagreement – 2.0%), and the weakest is the limiting of corruption (with score of 2.9, agreement - 24.3% and full disagreement – 13.5%).

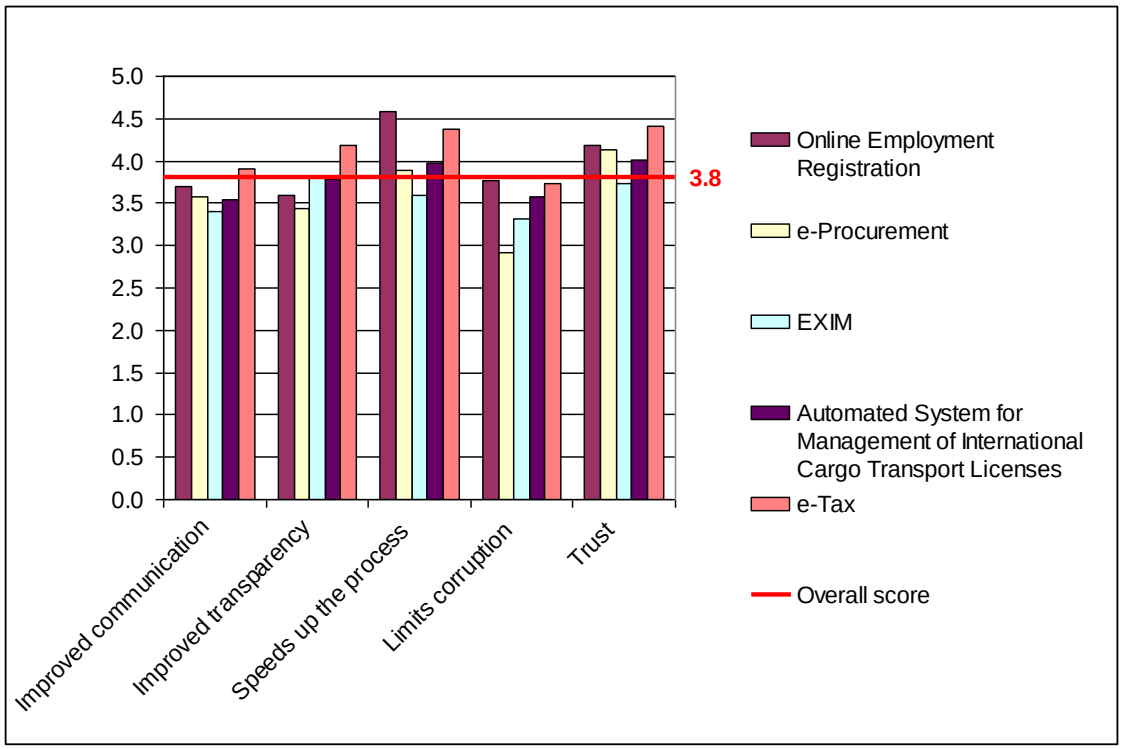


***Chart 8.*** *Satisfaction factors rates per Project Application*

Chart 8 presents the scores of each satisfaction and dissatisfaction factor for each of the five G2B Applications supported by the USAID eGov Project.

## 3.4 Reported Benefits and Sustainability

The final part of the survey was focused on the perceived benefits companies received by using the five G2B Project Applications. The companies were asked if they agree or disagree with the eight potential benefits of using the five G2B Applications created by USAID eGov Project in Macedonia.

### 3.4.1 Reported benefits

The most important benefits reported from using the five G2B Project Applications are: **saving time** (86.5%), **saving money** (75.2%), and more **efficient communication** between the companies and governmental institutions (66.7%). Use of the five G2B Project Applications improves the competitiveness of the companies (users) according to 46.5% of the respondents. 39% of the respondents agree that alongside saving time and money, the use of five G2B Project Applications has a positive impact on improvement of their financial results (Chart 9).

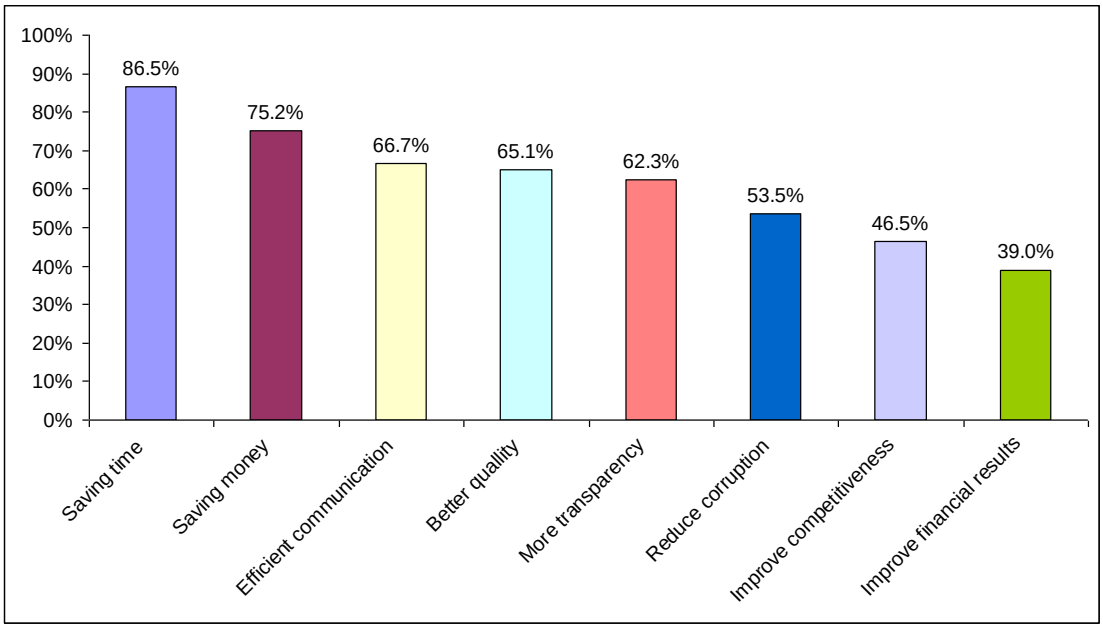


***Chart 9.*** *Reported benefits from the five G2B Project Applications per benefit element*

Overall perceived benefit for all five G2B Project Applications is 61.9%, and it is presented in Chart 10.

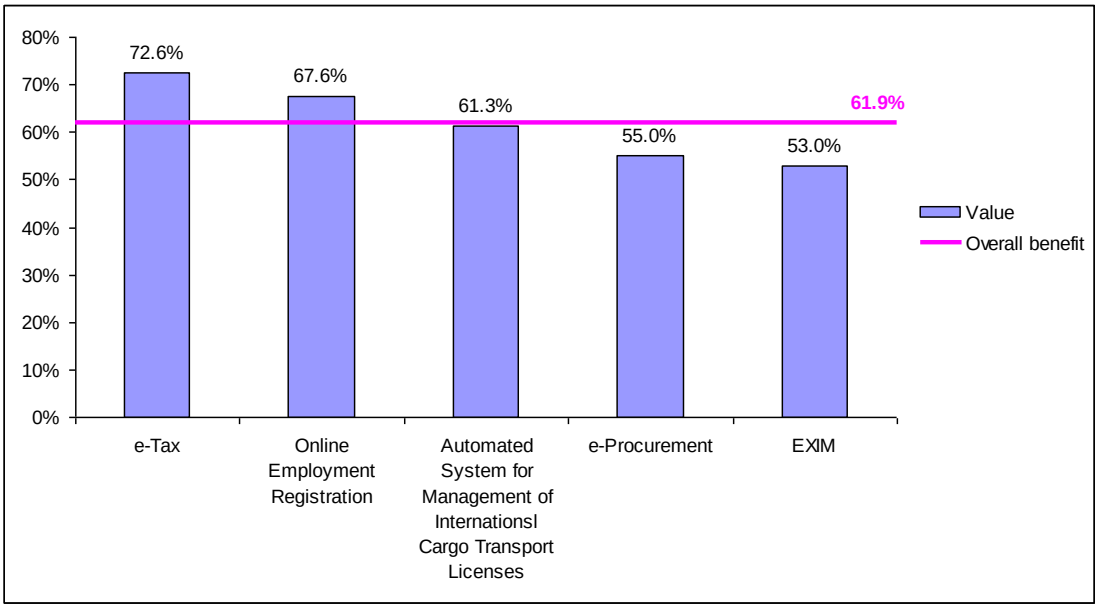


***Chart 10.*** *Reported benefits from the five G2B Project Applications per registered users of certain Project Application*

Two highest scores for the benefits perceived have been reported for 'saving time', expressed by the registered users of e-Tax application (98%) and by the registered users of Online Employment Registration application (94.1%) (Chart 11).

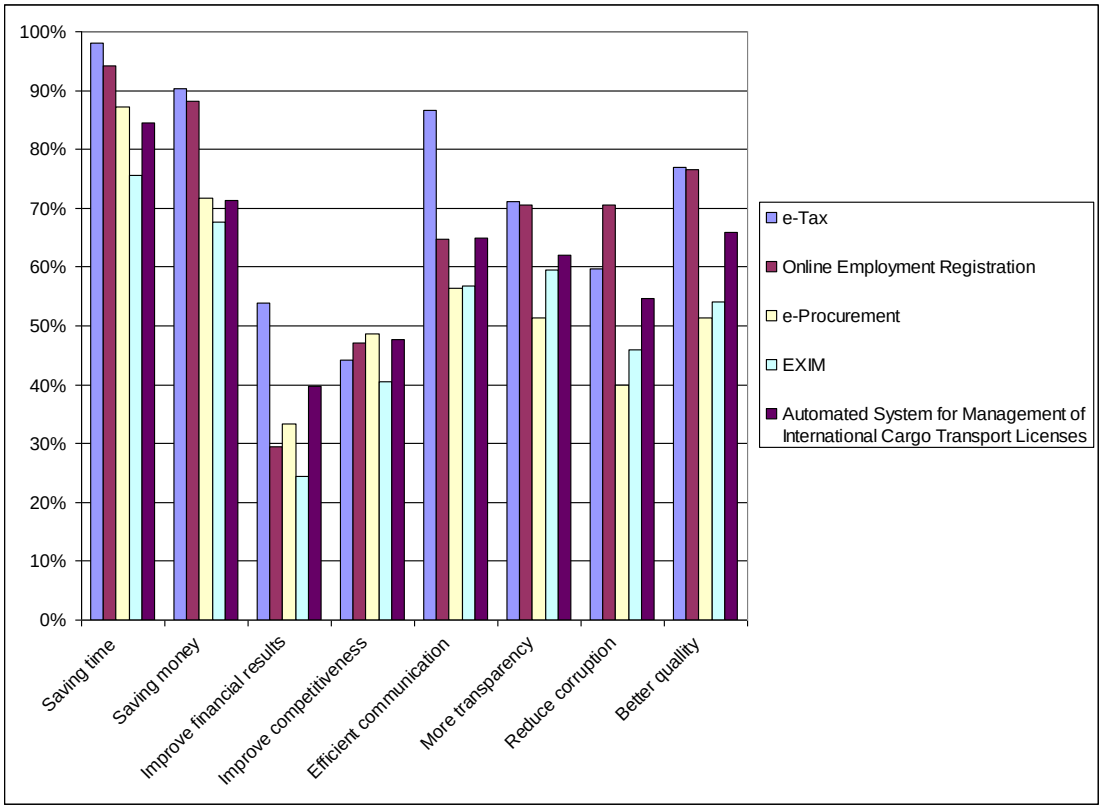


***Chart 11.*** *Companies reported benefit from the five G2B Project Applications per registered users of certain Project Application, grouped by benefit elements*

Some companies also believe that some Project Applications have no influence on certain elements important for the overall benefit, as defined by the methodology developed for this survey. Namely, 52.9% of registered users of Online Employment Registration claim that the use of the application did not contribute to the improvement of their financial results. Also, 48.6% of the registered users of EXIM said that its use did not contribute to improvement of financial results and their competitiveness (Chart 24 and Chart 25, Appendix F).

### 3.4.2 Sustainability

Understanding the future demand for development of new G2B applications expressed by the companies and their need for further improvement of the existing ones will give us some idea about the future demand and thus sustainability of the process of G2B services delivery.

Out of the 318 respondents that answered the question "Do you reckon that the existing e-government services need further upgrades?" 84% claimed that the existing five G2B Project Applications need further upgrades and only 3% said that there is no need for further upgrades (Chart 12).

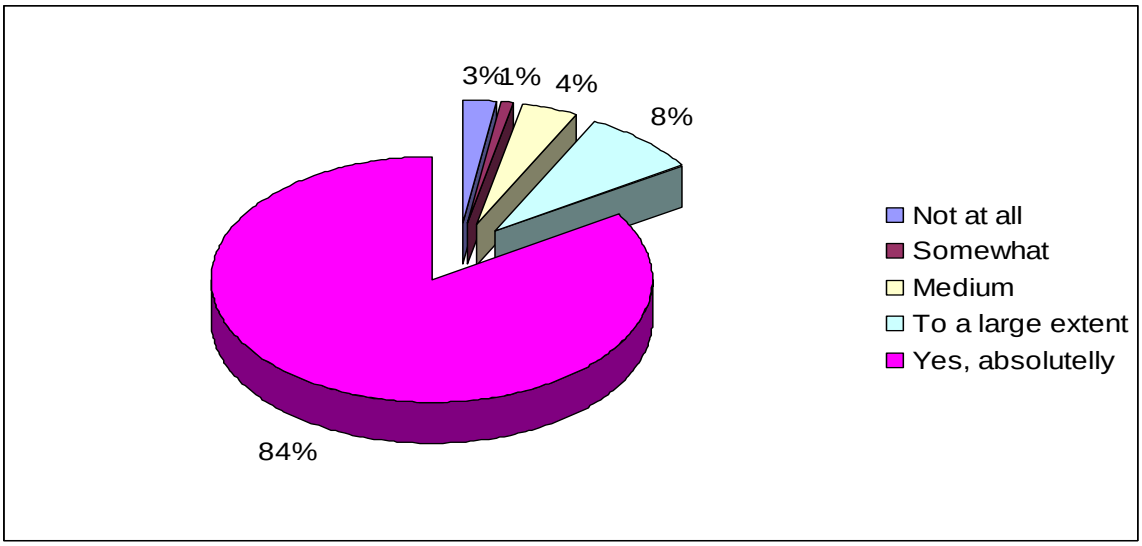


***Chart 12.*** *Need for further upgrade of the existing five G2B Project Applications*

Majority of the respondents who support further upgrade of the existing five G2B Project Applications (54%) are registered users of the Automated System for Management of International Cargo Transport Licenses, while only 5% are registered users of the "Online Employment Registration" application (Chart 13).

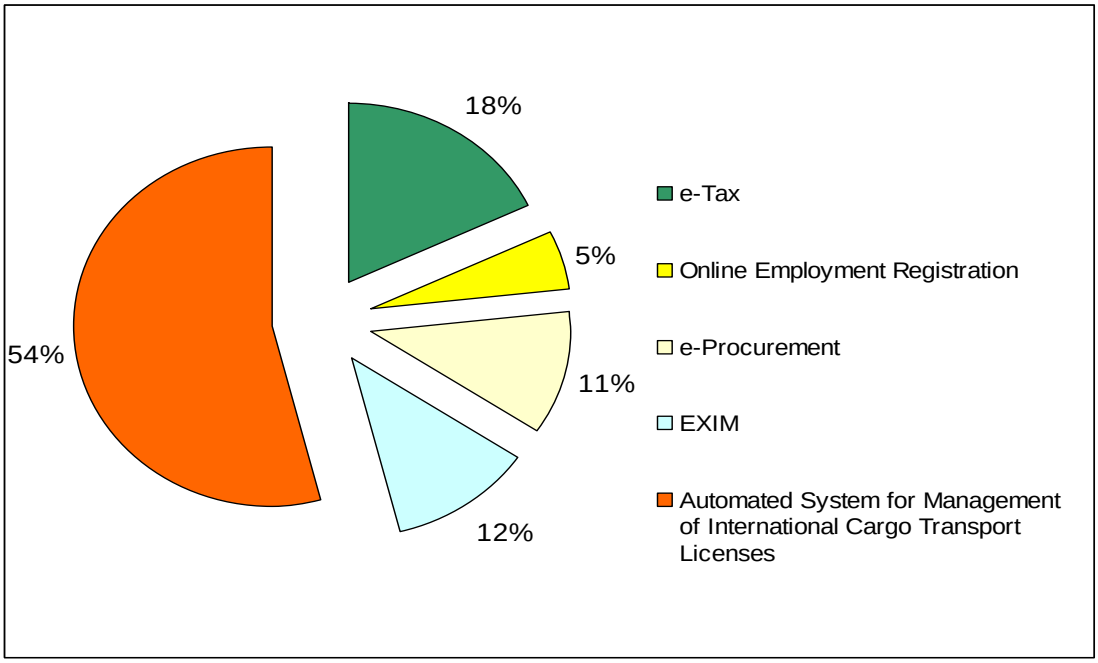


***Chart 13.*** *Need for further upgrade of the five G2B Project Applications per registered users of certain application*

The survey respondents provided many ideas on how to upgrade the existing five G2B Applications developed by the USAID eGov Project. Some respondents focused on the improvement of the stability, accessibility and reliability of the applications. Others emphasized the need for further simplification of the business procedures and especially, increasing the level of interactivity and feedback by the responsible institutions. Many respondents mentioned insufficient training and the need for

seminars for the users of the applications. Some respondents also emphasized lack of public awareness for existence of the G2B applications and other e-services in the country.

Regarding the new G2B development, slightly more than three quarters of the respondents (77%) would like to have more G2B applications available online in the country (Chart 14).

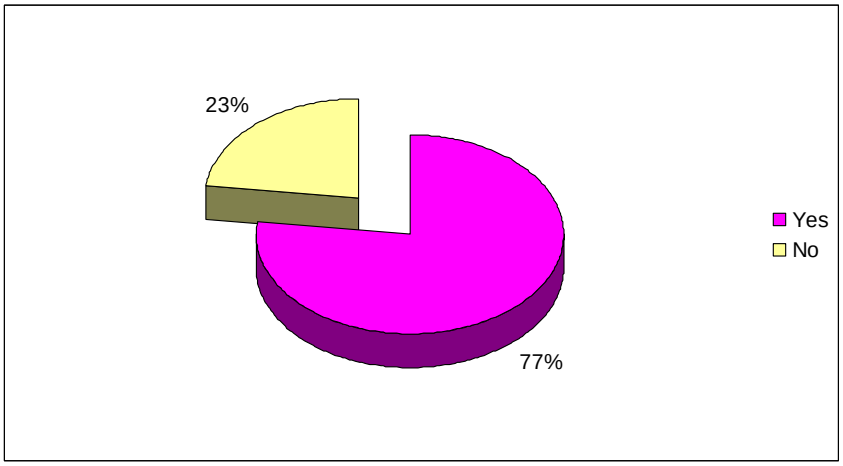


***Chart 14.*** *Need for further development of other G2B applications*

Analysis of those companies shows that most of them are willing to interact electronically with all governmental institutions related to their business processes.

Some of the most important institutions that need to provide full transaction services for the business sector are: the Cadastre, the Central Register, and the Health Insurance Fund. Also, the respondents require that governmental institutions on local level, (the local governments, municipalities, public enterprises on local and central level, as well as local branch offices of the governmental ministries) need to start providing full transactional services for businesses and for citizens.

# 4 Impact on the Business Climate

Considering the main objective of the eGov Project, and especially the main purpose for the development of the five G2B Project Applications, several facts should be underlined. Deployment of the five G2B Project Applications was expected to help with:

- Increasing the efficiency of public government services delivery to the businesses using ICT
- Increasing the transparency of the public administration when cooperating with the business community, as well as reducing the possibility for corruption
- Improving the business climate in Macedonia

It is interesting to find out if the use of the five G2B Project Applications has had any impact on the process of growth of e-government services, transparency and business environment. In an attempt to find out whether and to what extent the eGov Project activities impacted the process of development of e-government services, and improved the transparency and the business environment, the following areas through the respective periods were analyzed:

- e-government services in Macedonia – 2004-2008
- Transparency and fight against corruption – 2004-2008
- Business environment – 2004-2009

## 4.1 e-Government Services

The progress of e-government in Macedonia is measured since 2004.[12] The e-government progress in the country is measured by using the Capgemini methodology, which is the basic tool for measurement of the progress of online public service delivery across Europe.[13]

The methodology is used for measurement of sophistication[14] and percentage of fully-online available services, measured across a basket of 20 services – 12 for citizens and 8 for business. The 20 services are listed in the Table 20:

| Citizens (G2C) | | Businesses (G2B) | |
|---|---|---|---|
| 1. | Income taxes | 13. | Social contributions |
| 2. | Job search | 14. | Corporate tax* |
| 3. | Social security benefits | 15. | VAT* |
| 4. | Personal documents | 16. | Registration of a new company |
| 5. | Car registration | 17. | Submission of data to statistical offices |
| 6. | Building permits | 18. | Customs declaration |
| 7. | Declaration to the police | 19. | Environment-related permits |
| 8. | Public libraries | 20. | Public procurement* |
| 9. | Certificates | | |
| 10. | Enrollment in higher education | | |
| 11. | Announcement of moving | | |
| 12. | Health related services | | |

***Table 20.*** *Basic 20 public online services, according to the Capgemini methodology*
*(* Services directly related to the five G2B Project Applications)*

Out of the twenty basic e-services defined as priority by the EU, three refer to areas related to some of the five G2B Project Applications. The services corporate tax and VAT are directly covered by e-Tax Application, and public procurement service falls within the scope of e-Procurement Application.

According to Capgemini methodology, their definitions of some of the online services covering related areas are not tied directly to some of the G2B Project

[12] Gusev M., Spasov D., Armenski G., "Bencmarking eGovernment services in Macedonia – The results from the fourth measurement", Available online at www.metamorphosis.org.mk, Accessed September 5, 2009.
[13] Capgemini. The User Challenge Benchmarking The Supply Of Online Public Services - 7th Measurement. European Commission, Directorate General for Information Society and the Media. September 2007. Available online at http://ec.europa.eu/information_society/eeurope/i2010/docs/benchmarking/egov_benchmark_2007.pdf.
[14] In order to measure the indicator 'availability of public services online', in Capgemini methodology an e-service sophistication model was developed. This model illustrates the different degrees of sophistication of online public services going from 'basic' information provision over one-way (downloadable forms) and two way (electronic forms) interactions to 'full' electronic case handling. In the year 2007 the existing framework of the methodology was extended to include a fifth level of sophistication built around 'pro-activity' and 'personalization'.

Applications. For instance, the Income Taxes service does not fall within the scope of the e-Tax Application, the Job Search service does not fall within the scope of the Online Registration of Employment Application, and Customs Declaration service does not fall within the scope of EXIM Application.

Since 2004, four measurements of e-government services using the Capgemini methodology were conducted in Macedonia. According to the study conducted in 2008, there is a significant progress of the online sophistication score for the period of 2004-2008. Chart 15 shows the progress of the online sophistication for all 20 public services from 2004 to 2008.

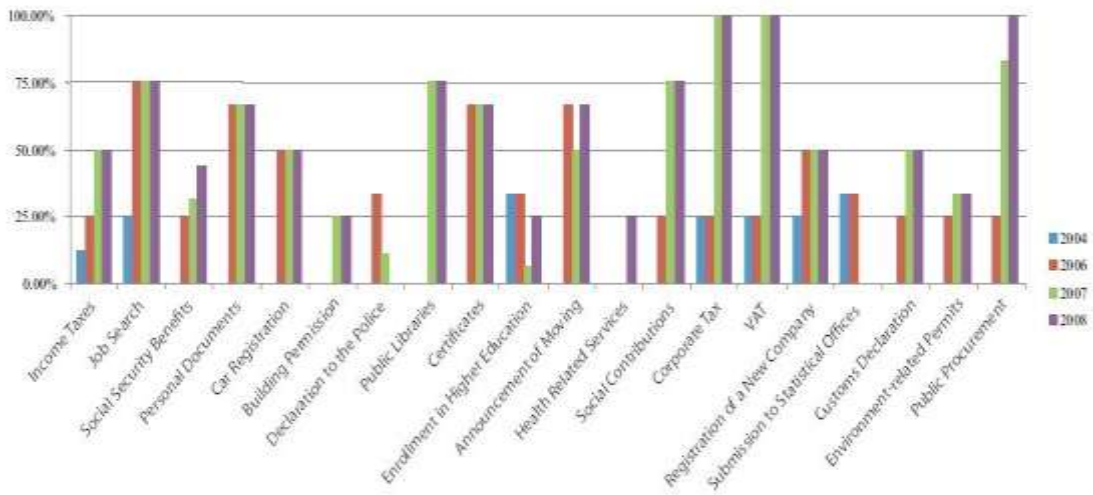


***Chart 15.*** *Progress on online sophistication of the 20 basic services in Macedonia for the period of 2004-2008*

The overall online sophistication which is an average for all 20 services had the score of 9% in 2004, and was later increased to 33% in 2006. It was 50% in 2007, and finally, the measurement in 2008 has reported overall online sophistication of 53% (Chart 16).

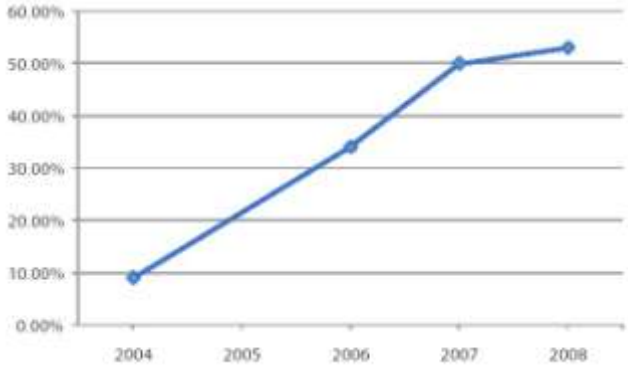


***Chart 16.*** *Overall online sophistication, comparison between Macedonia and EU*[15]

[15] Ibid.

In the list of 20 public e-government services that have been evaluated with the Capgemini methodology, the first 12 services address the most common interactions between the Government and its citizens (G2C). For the purpose of this study it is much more interesting to overview the remaining 8 services provided by the government for the businesses (G2B) and the growth of their score of online sophistication (Chart 17).

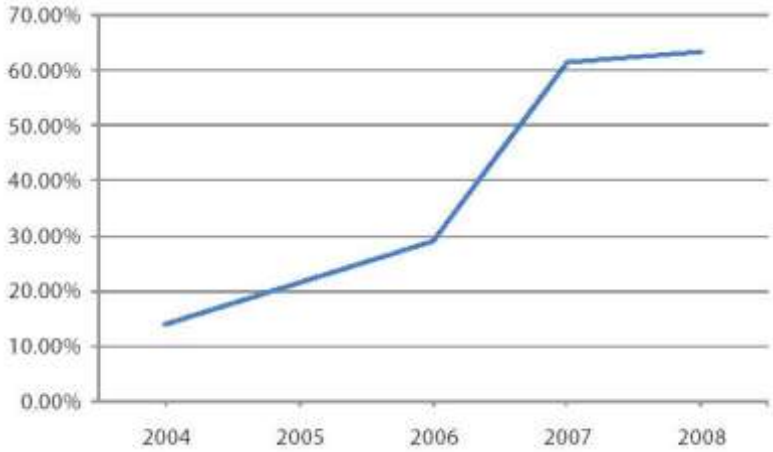


***Chart 17.*** *Online sophistication growth of the business services in Macedonia in 2004-2008*[16]

Online services developed with the support of USAID-funded eGov Project have had the biggest impact on the growth of the overall score for online sophistication, and of the score for the Government services for businesses available online in Macedonia.

Provision of the three (3) services provided via the e-Tax and e-Procurement Project Applications (out of eight (8) basic services listed in the Capgemini methodology) in the year 2008 raised their online sophistication score to 100%.

Moreover, this improvement affected the overall progress of the sophistication score of business services, which is mainly based on the implementation of these G2B Project Applications. Specifically, the impact of the e-Tax and e-Procurement Project Applications resulted with quadrupled growth, which was twice as large in comparison to the other online services which had two-fold growth.

## 4.2 Transparency and Fight Against Corruption

The main benefits for the citizens and businesses from the delivery of online e-government services include convenience and efficiency. However, e-government is often seen as a useful tool that can be used to complement broader public sector reform goals as well, including increased transparency and reducing corruption. The impact of e-government applications is very intensive on reducing corruption

[16] Ibid.

practices through increasing accountability and improving the transparency of government operations in many domains where corruption is an often phenomenon (regulatory functions, customs, taxation, and procurement).

There are many examples where the fight against corruption is based on the design of transparent systems, rules, procedures and data related to the decisions of civil servants. In this context, one of the most common goals of the five G2B Applications supported by the USAID eGov Project is the improvement of the Government's transparency, too. While paper-based systems that are accessible to only a few employees enable corruption in the delivery of government services by shielding transactions from observation, the introduction of the five G2B Project Applications provides a means to opening government processes to control from appropriate authorities and members of the public.

The eGov Project Applications helped the improvement of transparency by:

- Introducing transparency in data, decisions/actions, rules, procedures and performance of the Government institutions
- Automation of processes to take away discretion
- Providing entry point for simplification of rules
- Making decisions traceable
- Building accountability
- Providing documentation to business for follow up

Aside from the strong awareness about the anti-corruption effects of the five G2B Project Applications expressed by the survey respondents, the general level of support for and awareness of anticorruption measures implemented through the e-government applications has been accessed using publicly available data on perceptions of corruption and analysis of the media coverage.

The Transparency International Corruption Perceptions Index (CPI) represents a world-renown yardstick that ranks countries in terms of the degree to which corruption is perceived to exist among public officials and politicians. It is a composite index, based on "corruption-related data from expert and business surveys carried out by a variety of independent and reputable institutions." [17]

The CPI focuses on corruption in the public sector and defines corruption as the abuse of public office for private gain. The surveys used in compiling the CPI ask questions relating to the misuse of public power for private benefit. The questions from the source polls used to compile the CPI include issues encompassing both the administrative and political aspects of corruption which have been addressed by most of the eGov Project Applications. This includes eliminating the human factor in order to limit opportunities for bribery of public officials, providing transparent and automated procedures for the process of public procurement, as well as supporting awareness raising activities related to the strength and effectiveness of anti-corruption efforts.

[17] Transparency International. Frequently Asked Questions. Available online at: http://www.transparency.org/policy_research/surveys_indices/cpi/2008/faq#general1.

According to the Transparency International (TI) there are many studies about the impact of e-government applications on reducing corruption.[18] These studies implicitly show the relation between the e-government services and the Corruption Perception Index (CPI) and the Global Corruption Barometer (GCB). Following its release in 1995, CPI has been widely credited with putting Transparency International and the issue of corruption on the international policy agenda. In 2008 the CPI ranked 180 countries by their perceived levels of corruption, as determined by expert assessments and opinion surveys.

| Year | Macedonia's Rank | Corruption Perceptions Index (CPI) | Surveys used | Confidence range | Countries ranked |
|---|---|---|---|---|---|
| 2003 | 106 | 2.3 | 5 | 2.0 – 2.7 | 133 |
| 2004 | 97 | 2.7 | 7 | 2.3 – 3.2 | 145 |
| 2005 | 103 | 2.7 | 7 | 2.4 – 3.2 | 158 |
| 2006 | 105 | 2.7 | 6 | 2.6 – 2.9 | 163 |
| 2007 | 84 | 3.3 | 6 | 2.9 – 3.8 | 179 |
| 2008 | 72 | 3.6 | 6 | 2.9 – 4.3 | 180 |

***Table 21:*** *Corruption Perceptions Index (CPI) for Macedonia between 2003 and 2008.* *(Data by Transparency International.)*

Results shows that Macedonia has achieved significant improvement, taking into account the leap from the rank 103 (out of 158 countries) to rank 72 (out of 180 countries). Although they are not the only reason, the implementation of the eGov Project Applications deserves significant credit for this achievement. As shown in Table 21, Macedonian CPI and Rank has been improving since 2006, the year of launching of three out of the five G2B Project Applications (e-Procurement, e-Tax, and the Automated System for Management of International Cargo Transport Licenses). These three applications received significant attention by the media and in the public eye they have been linked specifically with efforts to limit corruption, improve transparency and efficiency of the Macedonian state administration.

The analysis of the press clipping carried out on a sample of 52 relevant articles revealed that the issues of limiting corruption and human errors, increased transparency and building trust, increasing savings and the efficiency of the state administration have been associated to a high degree with the coverage of the Project applications. The sample consisted of articles from the Macedonian daily and weekly newspapers referring specifically to the applications.

[18] "Global Corruption Report 2003", Transparency International, 2003. Available online at: http://www.transparency.org/publications/gcr/gcr_2003#download. Accessed September 16, 2009.

| Topics | Number of articles | Percentage* |
|---|---|---|
| Corruption (and human errors) | 28 | 53.8% |
| Transparency (and trust) | 31 | 59.6% |
| Savings | 33 | 63.5% |
| Efficiency | 21 | 40.4% |
| TOTAL (N) | 52 | |

***Table 22:*** *Topics covered within articles about the eGov Project Applications from 2006 to 2009. (* Some articles covered more than one of the above topics)*

Most of these articles used either neutral or positive tone in reporting about the effect of the five G2B Project Applications and cited various sources. Only two of the articles contained complaints about the additional inefficiency of bureaucratic procedures, and did not refer to the actual work of the applications.

Most of the articles in the sample (48%) referred to the Automated System for Management of International Cargo Transport Licenses. In this case, the journalists mostly cited the key decision makers like the Minister of Transport and Communications Mile Janakieski, who in 2006 stated that *"In this way, we are actually closing the corruption gap in the allocation of the permits, which was previously the reason for discontent among the transport companies. Automated allocation of the permits is one of the essential measures in the fight against crime and corruption."*[19] While introducing the electronic submission functionality in 2007, the Minister announced *"The process will not only save time, but it will be fair, transparent, and without any additional expenses for the service"*[20]. To conclude in 2008 that *"The efficiency of the process of approval and issuing of the permits is increased, and the irregularities and possibilities for error have been eliminated. We now have a transparent allocation process."*[21]

A number of articles also contained testimonials from the end users of this application, such as Kumanovo trucker Trajche Donevski, who said that: *"This has been the best distribution of CEMT licenses since 1991. There were criteria in the previous years, but nobody respected them. Up to thirty licenses used to remain undistributed, and the Minister then distributed them personally due to his discretionary right. This will happen no more."*[22] Emilija Arnaudova, marketing manager of a transport company from Bogdanci, concurred, and stated: *"It is good that the allocation of the permits is now done by a computer, and the human factor is excluded, which was previously the reason for bribe and corruption in the allocation procedure."*[23]

[19] Dnevnik, November 20, 2006.
[20] Utrinski Vesnik, October 05, 2007.
[21] Nova Makedonija, August 12, 2008.
[22] Shpic, November 20, 2006.
[23] Vecher, November 20, 2006.

The newspapers amplified the favorable impression through their commentaries, such as the editorial by Marjan Blazhevski who wrote: *"By pressing the start button of the program, the computer rejected corruption and introduced a new work standard for the transport companies, so they are now working in accordance with the legal regulations, submitting correct data about their work. Starting from next year, the applications will also be submitted electronically. Therefore, the human factor will be excluded when it comes to allocation of CEMT permits, which should create fair, European working conditions."*[24]

The coverage of the other applications proceeded along similar lines. Most of the articles about e-Procurement accentuated the benefits of increased transparency, among others quoting then-Skopje Mayor Trifun Kostovski, who stated: *"In this way, the costs will be reduced, we will save time, and increase transparency in the public procurement procedures."*[25]

Articles stressing increased efficiency and savings referred to EXIM (*"Now it takes only one day to obtain the license, which is laudable*" – Zoran Kostovski, from the pharmaceutical company Alkaloid[26]) and the Online Registration of Employments. For instance, an article on the former issue included a statement by Deputy Prime Minister Zoran Stavrevski who said that *"…the online register provides even greater security for data storage, reducing the possibility for abuse. In this way, we are saving significant time and resources, for both the employees and employers, who will not come across any administrative or subjective obstacles. The service is particularly important, since it provides simple access to records of employees and correct data about the number of employees in Macedonia."*[27]

Covering the news on e-Tax Application, the media stressed both transparency and efficiency, quoting then-Public Revenue Office Director, who said that: *"The application for electronic tax return submission is a great step towards the creation of an efficient and transparent system for tax collection in Macedonia*."[28] Deputy PM Stavrevski stated that: *"The e-Tax Application has increased the regularity and efficiency in submission of the tax applications and simplified tax data record keeping. The practice proved that the software applications undoubtedly contributed to the transparent cooperation between the business sector and the public administration."*[29]

[24] Dnevnik, November 20, 2006.
[25] Vreme, April 13, 2006.
[26] Vecher, July 09, 2008.
[27] Biznis, December 04, 2008.
[28] Dnevnik, October 17, 2005.
[29] Address of the Deputy Prime minister Stavreski on the Promotion of the New Electronic System of the Agency for Employment, December 3, 2008. Available online at http://vlada.mk/?q=node/1823. Accessed September 5, 2009.

## 4.3 Business Environment

In addition to the practical benefits coming from the use of the five G2B Applications supported by the USAID eGov Project, their introduction required changes of the legal framework which contributed toward creation of a more conducive environment for business sector development in Macedonia.

It is obvious that new technologies and ICT can have a direct impact on the improvement of the efficiency and competitiveness of the businesses. Part of this merit belongs to the companies and their entrepreneurial and innovative spirit, and acceptance of new technologies in their business operations. However, the governments play a crucial role in the process of creating competitive business environment in the national economies. In the case of the five G2B Project Applications, the use of these ICT solutions also served as a catalyst which facilitated the process of implementation regulations that enhance business activity. The process of development of the five G2B Project Applications included cooperation between the eGov Project and the executive and legislative branch of the Government of Republic of Macedonia, leading to legislative changes with much wider positive implications.

One of the indicators for the positive effects resulting from the reforms of the legal frameworks is the rising rank of Macedonia within the World Bank's Doing Business Report. A set of regulations affecting ten stages of a business life has been measured since 2004 and presented in this global study. The ten stages are: starting a business, dealing with construction permits, employing workers, registering property, getting credit, protecting investors, paying taxes, trading across borders, enforcing contracts, and closing a business.

Macedonia achieved significant improvement during the period between 2006 and 2009 (Table 23). Note that according to the methodology used by Doing Business authors, data under each heading refers to the previous year. For instance, the data in Doing Business 2010 refer to the situation as of June 1, 2009.

| Rank | 2007 | 2008 | 2009 | 2010 | Change in rank (2007-2010) |
|---|---|---|---|---|---|
| Ease of doing business | 92 | 75 | 71 | 32 | +60 |
| 10 Indicators: | | | | | |
| 1. Starting a business | 76 | 21 | 12 | 6 | +70 |
| 2. Dealing with construction permits | 86 | 76 | 152 | 137 | -51 |
| 3. Employing workers* | 117 | 128 | 125 | 58 | +59 |
| 4. Registering property | 87 | 91 | 88 | 63 | +24 |
| 5. Getting credit | 48 | 48 | 43 | 43 | +5 |
| 6. Protecting investors | 83 | 83 | 88 | 20 | +63 |
| 7. Paying taxes* | 79 | 99 | 27 | 26 | +53 |
| 8. Trading across borders* | 127 | 72 | 64 | 62 | +65 |
| 9. Enforcing contracts | 72 | 84 | 70 | 64 | +8 |
| 10. Closing a business | 123 | 127 | 129 | 115 | +8 |

***Table 23.*** *Macedonia's rank in Doing Business 2007-2010.*
*(* Areas having procedures related to the five G2B Project Applications)*

The implementation of the five G2B Project Applications has initiated a number of reforms of the legislation and procedures tackling some of these 10 stages, and thus contributes to the ranking of Macedonia on the Doing Business list for the period from their deployment up to date.

The Doing Business methodology makes measuring the exact impact of specific application on respective indicators in Doing Business a complex task. However, it is possible to infer which amendment laws and regulations or introduction of new business procedures related to the five G2B Project Applications affected the rising score for Macedonia.

1. The implementation of the EXIM resulted in a more efficient and cost-effective process of issuing of licenses for export, import and transit of goods across borders. Its implementation required amending or adopting of the following laws and regulations that has been assisted by the eGov Project:

- Law on General Administrative Procedure
- Law on Data in Electronic Form and Electronic Signature
- Law on Administrative Fees
- Regulation on the Establishment and the Use of the Information System for Export, Import and Transit of Goods (Official Gazette 134/08)

The EXIM application has been mandatory for the government institutions since its launch on November 1, 2008. The application is related to the Trading Across Borders area of the Doing Business Report.

2. The development of the Online Registration of Employments Application simplified the process of submission of forms for registration and termination of employments and it required the amending of the following legislation:

- Law on Labour Relations
- Law on Vital Records in the Area of Labour
- Law on Vital Records for Insured and Pension and Disability Fund Beneficiaries
- Law on One-Stop-Shop System and Register of Companies
- Regulations related to the above mentioned laws

The application is related to the Employing Workers area of the Doing Business Report.

3. The e-Procurement Application enables greater efficiency and cost-effectiveness in the field of public procurement. The system provides secure communication among the contracting authorities and the economic operators, and saving of taxpayers' money by reducing the costs and the possibilities for corruption. The Application has been in use since April 2006, and the upgraded version from January 2008 is in line with the legislative changes introduced by the new Law on Public Procurements. With the new legislation and the e-Procurement system, the Republic of Macedonia became fully compliant with the EU procurement directives and EU

public procurement functional requirements.[30] Motivated with the process of EU accession the Law and the practice of public procurement became the first area within this process to attain this level of harmonization with the respective EU Acquis.

There was no mandatory obligation for use of the e-Procurement application before January 2008. Since January 1, 2008 all contracting authorities are obliged to publish the contracts and contract award notices. Moreover, as a result of the strong commitment and support to the e-Procurement Application, the Government of Macedonia introduced mandatory use of e-auctions[31] through the e-Procurement Application.

4. The e-Tax Project Application introduced a new channel for submission of tax applications electronically, and made a significant impact on the increase of Macedonia's rank within the Paying Taxes area of the Doing Business Report.

5. The process of development of the Automated System for Management of International Cargo Transport Licenses aimed to increase transparency and fairness in the process of allocation and use of international transport licenses. The implementation of this application introduced a new electronic way of communication and cooperation between all the institutions – stakeholders in the process of application and distribution of the licenses and significantly reduced possibilities for corruption. The application also improved the back office processes and procedures eliminating bottlenecks and inefficiencies, contributing to the improvement of the business environment for the transporting and storage sector and the business in the country in general.

The reengineering of the process and technology for the new international transport licenses management required changes to be made to the Rulebook for Distribution for International Cargo Transport Licenses, legalizing the electronic data submission and handling. The system is mandatory for all transporters in Macedonia and is managed by the Ministry of Transport and Communications. This application is related to the Trading across borders area of the Doing Business Report.

[30] Public procurement is a key sector of the EU economy accounting for about 16% of GDP. (In Republic of Macedonia according the reports of the Public Procurement Bureau the value of public procurements in 2006 was 3% of the GDP, in 2007 - 6%, and in 2008 - 8% of the GDP). Because of the importance of this issue for the EU two directives have entered into force in 2006 giving a uniform legislative framework all over Europe. These Directives are: 2004/17/EC of 31 March 2004 and 2004/18/EC of 31 March 2004. With the Manchester Ministerial Declaration of 24 November 2005 the European Union has fixed the following objectives for e-Procurement by 2010: 100% electronic availability and 50% real use for procurement procedures above the legal thresholds. The Manchester declaration has inspired the i2010 eGovernent action plan.

[31] Mandatory use of e-auctions requires coverage of 30% of all tenders eligible for e-auctions in 2010, 50% in 2011 and 100% in 2012

# 5 Government Commitment to e-Government

## 5.1 Broad Perspective

There are many different factors for sustainability of the process of e-government development, but the commitment of the stakeholders (citizens, businesses, non-profit organizations and public sector) is among the most important.

As it is obvious from the survey results that the demand for future G2B e-government services development is enormous, there has to be a balance with the supply side - the Government's commitment that the process will continue in the future as well.

The first organized efforts in the process of development of e-government in Macedonia have started since the beginning of the 21st century, as part of the concept for development of information society. Some key points on this path were the following:

- e-Macedonia for All initiative adopted (July 2000)
- e-Declaration 2002, Recommendations on Accelerated Development of Information Society and Digital Economy in the Republic of Macedonia as a National Priority[32] adopted (2002)
- Committee for Information Technology - CIT established (2002)
- Concept for e-government adopted (2004)
- National Information Society Task Force established (2004)
- National Policy, Strategy and Action Plan for Development of Information Society[33] adopted (2005)
- National Strategy for the Development of Electronic Communications with Information Technologies[34] adopted (2007)
- Ministry of Information Society established[35] (2008)
- National Information Society Council[36] established (2009)
- e-Government Strategy 2010-2012 (to be adopted by the end of 2009)

During this period, the Parliament adopted the following important legislation related to e-government development:

- Law on Electronic Data and Digital Signature (2001)
- Law on Electronic Communications (2005)
- Law on Private Data Protection (2005)

[32] Available online at: http://www.loginsys.com.mk/ShowAnnouncements.aspx?ItemID=274&mid=898&tabId=128&tabindex=0.
[33] Available online in the Documents section of the Ministry of IS website: www.mio.gov.mk.
[34] Ibid.
[35] The Ministry for Information Society is established by the Law on Organization and Operation of State Administrative Bodies (Official Gazette of Republic of Macedonia no.82/08 from July 8, 2008).
[36] The National Council for Information Society was established with the Government's decision from July 8, 2008 (Official Gazette no.97/08 from August 1, 2008).

- Law on Free Access to Information of Public Character (2006)
- Law on Interception of Communications (2006)
- Law on e-Commerce (2007)

In 2005 the Government launched the e-service portal www.uslugi.gov.mk with aim to serve as a flagship project and raise awareness about e-government. This portal is a central access point for citizens and businesses in Macedonia to where they use e-government services (G2B and/or G2C). During 2006 and 2009 the portal was constantly upgraded with introduction of new services and in September 2009 there were 368 e-government services available online for citizens and for businesses. [37]

During the same period, political leadership in the country has established a full consensus on the information society and e-government development platform. If there was a debate in 1990s over the dilemma between ICT and Macedonia's development imperatives, the choice was clear after 2001. Decision makers across the political spectrum demonstrated clear understanding of the social impacts of e-government services on all sectors of the economy, and on the social, cultural and political lives of the people in the country.

## 5.2 Commitment to the Process of e-Government Development

There are several indications of the commitment of the Macedonian government for a sustainable process of continued e-government development in general, and the five G2B Project Applications in particular.

1. **The overall commitment of the Government to introduce ICT in the service delivery to the citizens and to the enterprises.**

Commitment to further development of e-government services has been part of the stated strategic objectives of the Government of Republic of Macedonia in the last decade, as evidenced by results of policymaking efforts at national level and at the level of particular relevant institutions.

The five G2B Project Applications are part of all strategic and policy documents for information society and e-government development in Macedonia. The Ministry of Information Society of the Republic of Macedonia is currently leading a process of development of e-Government Strategy 2010-2012. The draft of the strategy has been made available online as part of the process of public consultations.[38] This policy document confirms the Government's commitment to further develop e-government services in general and in particular in the fields related to the five applications supported by the USAID eGov Project. Section 7.2 of the Strategy is dedicated to detailed explanation of the future projects for e-services.

[37] www.uslugi.gov.mk. Accessed on September 20, 2009.
[38] Ministry of Information Society of RM. Draft Strategy for eGovernment 2010-2012. Available online in Macedonian language only at: http://www.mio.gov.mk/files/pdf/dokumenti/Strategija_za_e-Vlada.pdf. Accessed September 22, 2009.

The first such service is in the area of taxation. The draft Strategy envisions that the Ministry of Finance and the Ministry of Information society work together on developing a service for e-Taxation for individual citizens (physical persons), to be implemented by the Public Revenue Office during 2010 using funds of MKD 21.525.000 from the Budget of the Republic of Macedonia.

According to the draft Strategy, this service will "expand the functionalities of the existing e-Tax system towards creating opportunities for filling in tax returns and other forms online, as well as creating an electronic system of pre-filed tax returns prepared in advance by the Public Revenue Office to be verified and signed by the citizens."

As a prerequisite for the implementation of this service, the draft Strategy notes the requirement for interoperability of the Public Revenue Office's systems with the systems of the other state administration institutions (vital records, central registry, and employment registration).

The e-services section of the draft Strategy for e-Government includes several instances which directly build upon the five G2B Project applications, such as the establishment of electronic system for reporting of tax irregularities and corruption, by providing an online channel for this activity in addition to the existing telephone hotline. As with the hotline callers, the anonymity of the people who report over the internet will be guaranteed, and the Public Revenue Office will be obliged to investigate all complaints. This system will also be financed from the state Budget, and a prerequisite for its implementation is the updating of the legal regulations related to the process of submitting complaints online.

Another service within the e-services section refers to providing electronic means for implementation of the rights to social security benefits for the unemployed citizens, to be implemented by the Employment Service Agency. This system directly builds upon the Online Registration of Employment Application, and should be implemented during 2009-2010, by using funds from the Budget of the RM.

Moreover, the draft Strategy envisions of upgrading of the Online Registration of Employment in order to enable usage of the system by all public institutions which rely on the State Budget. The explanation states that the current system serves only the private sector due to the obligation of the public institutions to submit written approval by the Ministry of Finance. The system upgrade will enable the Ministry of Finance to input the approval electronically, in order to speed up the automatic processing. The period of implementation for this service is 2010-2011, and the draft Strategy envisions that it will be financed by the Budget of the RM, and by donations.

In addition the draft Strategy for e-government also notes projects for development of ICT human resources in the state administration, and e-government trainings of the civil servants, to be implemented by 2012 using a combination of funds from the State Budget and donations.

### 2. Input from the government institutions in the development and implementation of the five G2B Project Applications

The process of development of the five G2B Project Applications was accompanied by strong commitment and involvement of the government institutions directly responsible for delivery of the service and other institutions related to the services. They took active participation in the analysis of the processes and procedures, in their harmonization and standardization, in the process of designing the system, development, hardware and software deployment, implementation and testing (both system and functional), and user training. Also, it is estimated that all partner institutions to support successful implementation of the five G2B Project Applications invested almost $1.7 million,[39] which by far exceeded the funds invested by the eGov Project for software development.

The mandatory use of some of the services supported by the eGov Project, like EXIM, e-Procurement, and Management of International Transport Licenses has already been spelled out in the respective national legislation, which clearly demonstrates the Government's commitment to their sustainability.

Direct inquiry of the Government institutions responsible for delivery of the services covered by the five G2B Project Applications confirmed that their future use, maintenance and development has been incorporated in their policies and operational documents. This state of affairs is reflected through specific budget items referring to hardware requirements, software upgrades, personnel, and training.[40]

Alongside the practical usefulness of the application, the users also recognize this strong commitment by the competent Government institutions, and the growing number of registered and active users reflects this situation.[41]

### 3. Strong Political Commitment

At the presentation of the World Bank's Doing Business 2010 Report in Skopje on September 14, 2009, which included the announcement of Macedonia as business environment leader in South-East Europe, the Prime Minister Nikola Gruevski

[39] The figure presents an estimation based on the informal information from the owner institutions.
[40] For instance, the Customs Administration included employee training and the maintenance of the necessary hardware as regular activities within the Strategic Action Plan 2010-2012. The Public Procurement Bureau recently signed a service level agreement with Seavus for the maintenance of the e-Procurement Application, while the Ministry of Transport and Communications signed a service level agreement with Nextsense regarding the Automated System for Management of International Cargo Transport Licenses (CEMT).
[41] For instance, according to data supplied by Customs Administration, 184 companies registered to use the EXIM Application by the end of May 2009, while in September 2009 this number grew to more than 300 active users. According to data from the Public Procurement Bureau number of users of e-Procurement Application grew from 965 during 2008, to around 1300 on June 1, 2009, to 1626 on September 24, 2009.

highlighted that the government plans for the future are related to the further introduction of electronic services in government institutions.[42]

On December 3, 2008, at the launching event of the Online Employment Registration Application, the then-Deputy PM for Economic Affairs Zoran Stavreski stressed that this online service provides increased safety of data storage, reducing the possibilities of misuse, and saving time and money both for employees and employers. He said that "the policy of the government for improvement of the business climate, the investments in education, reforms in the labor market and public administration, as well as the development of the information society are directed toward the increase of the competitiveness of the Macedonian economy". Mr. Stavrevski also mentioned that the use of G2B applications will "*…without doubt contribute to the transparent cooperation between the business sector and the public administration.*"[43]

Since 2006, the strong expressions of political commitment for e-government development were also backed by concrete investments from the State Budget. Referring to the cooperation with the USAID the then-Prime Minister Vlado Buchkovski stated: *"The Government has decided to implement massive use of IT in all institutions. Investing in e-government is an unstoppable process heading into a positive direction, and a proof for that is the introduction of a special budget item for e-government projects. This technology can and should be a catalyst of the whole economic development in the country and therefore the government supports this process with words and deeds. We know that this concept is a long-term and expensive process, and because of that we seek partners to realize many joint projects together."*[44]

In 2008, a comprehensive report by the International Herald Tribune noted that *"In Macedonia, a recently created Ministry of Information Society has pledged to spend $3 million on e-government programs next year,"* quoting Minister Ivo Ivanovski who stated that the elimination of human factor during the delivery of automated e-government services will diminish the potential for corruption.[45]

[42] MIA, "World Bank report "Doing Business 2010" presented", Available online at http://www.mia.com.mk/default.aspx?vId=67486718&lId=2, Accessed on September 9, 2009.
[43] Government of the Republic of Macedonia, News, "Launch of simplified procedure for registration of employees", Available online at http://www.vlada.mk/?q=node/1817. Accessed September 9, 2009.
[44] Dnevnik, May 17, 2006.
[45] International Herald Tribune, October 3, 2008. Available online at http://www.nytimes.com/2008/11/03/business/worldbusiness/03iht-egov03.3.17444978.html.

# 6 Key Findings and Conclusions

## 6.1 Key Findings

**Business Profile:**

1. Only 37.4% of all companies use secure Internet/web communications (digital certificate/electronic signature), and 42.1% do not. (See ***Table 11***)

2. 64.1% of medium sized enterprises and 74.1% of large enterprises use digital certificates and/or electronic signature. In contrast 51.4% of micro enterprises do not use digital certificates/electronic signature. (See ***Table 12***)

3. Out of all the enterprises included in the survey, 47.0% have websites. (See ***Table 7***)

4. Large enterprises have the largest ratio of web presence (92.6%), while only 30.8% of the micro enterprises have web presence. (See ***Table 8***)

5. 77.4% of all companies use their websites to collaborate with other businesses (logistic, marketing, procurement, sales, after-sales services). (See ***Table 10***)

**Use of G2B e-Government Applications:**

1. 65.5% of all companies (85.2% of all large and 59.7% of all micro) are acquainted with the existence of G2B Internet Applications. (See ***Table 13*** and ***Table 14***)

2. The registered users of the five G2B Project Applications are very well acquainted (>80%) with the existence of G2B Internet Applications. Exceptions are only the users of the Automated System for Management of International Cargo Transport Licenses (54.7%). (See ***Table 16***)

3. 50.2% of all users of the five G2B Project Applications use more than one application.

4. 83.6% of all surveyed companies have at least two and more than two trained persons for the specific application. 15.1% have only one employee trained to use the G2B Project Application. (See ***Table 17***)

5. 84% of respondents do not face any problems with the use of the five G2B Project Applications. (See Chart 4)

**User Satisfaction:**

1. **Overall satisfaction with the five G2B Project Applications is rather high, with a score of 3.8** on a 5-point scale. **27.4% of respondents attributed a maximum score** 5/5 for overall satisfaction. (See Chart 8 and Chart 6)

2. The registered users of **e-Tax** Project Application expressed the **highest** satisfaction (4.2) followed by the Online Employment Registration (4.0), and the lowest was expressed by the users of the EXIM (3.6), and e-Procurement (3.5). (See Chart 7)

3. The **strongest points of satisfaction** are the possibility of G2B Project Application to **improve the trust** in electronic systems (72.3%) and **speed up the process of service delivery** (70.8%). The weakest point of satisfaction—although with a very high score—is the possibility of G2B Project Application to limit corruption (52.2%). (See ***Table 19***)

4. The strongest factor for satisfaction for the registered users of e-Tax (the highest scoring application) is improving trust (with a score of 4.4, agreement - 84.3%, and full disagreement – 2.0%), and the weakest is limiting corruption (with a score of 3.7, agreement - 56.9%, and full disagreement – 3.9%). On the other hand, the strongest factor for satisfaction for the registered users of e-Procurement (the lowest scoring application) is improving trust (with score of 4.0, agreement - 71.3%, and full disagreement – 2.0%), and the weakest is limit corruption (with score of 2.9, agreement - 24.3% and full disagreement – 13.5%). (See ***Table 27*** – Appendix C)

**Benefits and sustainability**

1. Overall benefit for all five G2B Project Applications is 61.9%.[46] (See Chart 10)

2. The most important benefits from using the five G2B Project Applications are: **saving time** (86.5%), **saving money** (75.2%), and more **efficient communication** between the companies and governmental institutions (66.7%). (See Chart 9)

3. Two highest scores for the benefits have been reported for 'saving time', expressed by the registered users of e-Tax application (98%) and by the registered users of Online Employment Registration application (94.1%). (See *Table 28* – Appendix E, and Chart 11)

4. Majority of 84% of all registered users claimed that the existing five G2B Project Applications need further upgrades. (See Chart 12)

[46] Overall benefit averages the eight benefit elements reported by the companies from the five G2B Project Applications.

5. Over three quarters of the respondents (77%) would like to have more G2B applications available online. (See Chart 14)

6. The overall online sophistication of e-government services based on the Capgemini methodology used by the European Commission had the score of 9% in 2004, which had increased to 33% in 2006. In 2007 it was 50%, and finally the measurement in 2008 has reported overall online sophistication of 53%. (See Chart 16)

7. The basic laws and regulations relevant to development of e-government in Macedonia are in place.

8. Strong political commitment for e-government applications development articulated for the past ten years. E-government development is long-term orientation of the country.

## 6.2 Conclusions

The undertaken study enabled to draw a number of important issues considering the satisfaction level of the users and impact from the five G2B Project Applications:

- The average number of people trained for the use of the five G2B Project Applications is satisfactory. Still, there is a small number of Micro enterprises where only one person is trained and has required skills to use the concrete application. It might be good to develop some self-training modules for the five G2B Project Applications, so even the newly employed people in the companies could easily become actual users of the application with 'on the job' self-training.

- Increasing the level of sophistication and usage of all publicly available e-government services will have to take into consideration the issue of secure internet/web communication, as both practical and legal requirement. The survey results indicate that even the actual users of the three out of five G2B Project Applications that require digital certificate/electronic signature have low awareness about these concepts. Therefore, the future efforts need to include components of awareness raising and training in this area, especially in regard to micro enterprises.

- In general, the results indicate that the **overall user satisfaction from the five G2B Project Applications developed by USAID eGov Project is high**. The overall score of user satisfaction is 3.8 (out of 5) indicating good satisfaction. More over, almost two thirds of the users are very satisfied or just satisfied with the use of the G2B Project Applications. The level of user satisfaction is neither dependent on the year of the establishment of the companies, nor on the type of their economic activity.

- The survey identifies that the most important elements for satisfaction from the five G2B Project Applications are that they provide opportunity to **improve the trust** and they contribute to the **speeding up** of the communication between the companies and the governmental institutions. Despite the objectives for development of the five G2B Project Applications, the companies included in the survey expressed doubt that the implementation of online e-government services could help limit the corruption in the government institutions and improve their transparency. The level of trust improves with the level of online sophistication of the service and also with the level of business profile of the users. SMEs with low level of Internet/Web profile are the least satisfied with the use of the five G2B Project Applications, but their satisfaction score of 3.7 and satisfaction measure of 60.6% are still very high.

- The most important benefits for the surveyed companies from using the five G2B Project Applications are: **saving time** (86.5%), and **saving money** (75.2%).

- User satisfaction increases with the degree of interaction with e-government services. In order to fulfill the companies' need for efficient and smooth use of e-government services, these need to be more sophisticated, but not more complex. The findings with regard to satisfaction and impact highlight the possible areas for service improvement.

- It is obvious that **e-services developed with the support of USAID-funded eGov Project** have had the biggest impact on the growth of the overall score for online sophistication, and of the score for the business services available online in Macedonia. In particular, the three services that are provided with the e-Tax and e-Procurement Project Applications (out of eight basic services listed in the Capgemini methodology) in the year 2008 show the online sophistication score of 100%. The overall progress of the sophistication score of business services is mainly based on the implementation of those G2B Project Applications. Specifically, the e-Tax and e-Procurement Project Applications proved most influential, resulting with quadrupled growth, which was twice as large in comparison to the other e-services which had two-fold growth.

- Aside from the importance of the overall reforms conducted by the Government of the Republic of Macedonia, the implementation of the five G2B Project Applications plays a very important role for the improvement of the country's rank on the Doing Business Reports from 2006-2010, especially for the improvement of the ranking in the following topics: Starting a Business; Employing Workers; and Paying Taxes.

- The overall conclusion is that the satisfaction with the five G2B Project Applications is high, and it is clear from the results of this study that for the future G2B e-government services balanced efforts concerning the **development of more highly sophisticated e-services, as well as actions for raising awareness and trust, are necessary**.

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# Appendix A

## Overall satisfaction score and satisfaction measure for 5 G2B Project Applications registered users

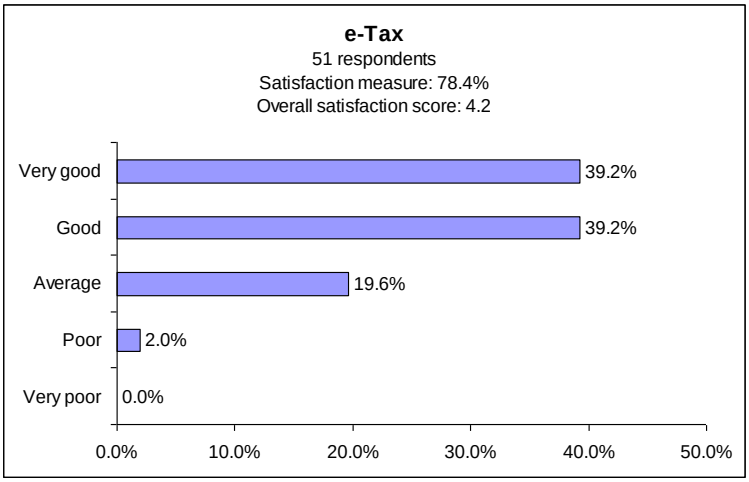


***Chart 18.*** *e-Tax registered users*

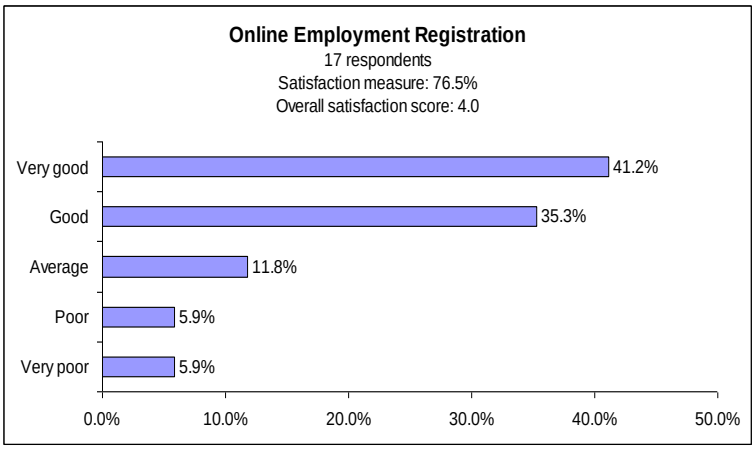


***Chart 19.*** *Online Employment Registration registered users*

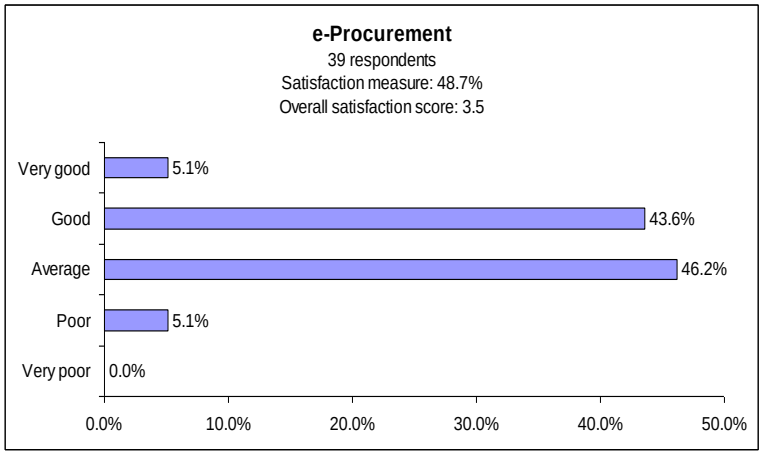


***Chart 20.*** *e-Procurement registered users*

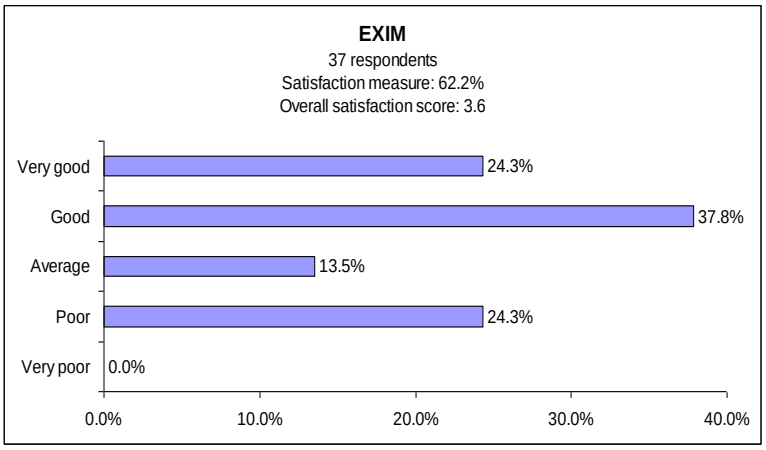


***Chart 21.*** *EXIM registered users*

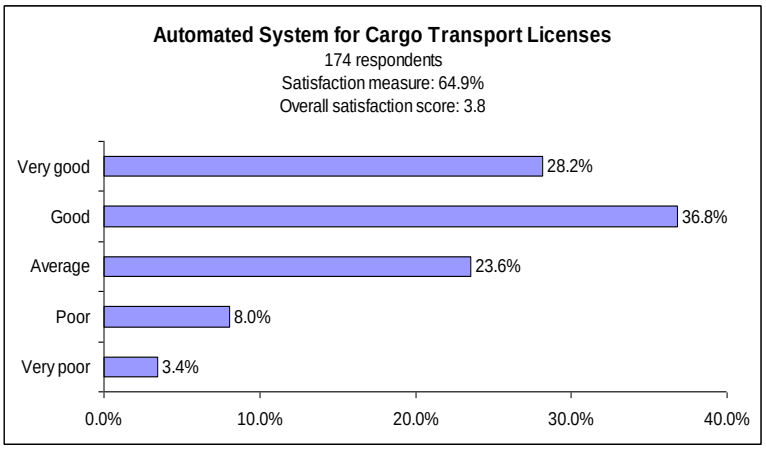


***Chart 22.*** *Automated System for Management of International Cargo Transport Licenses registered users*

# Appendix B

## User satisfaction by business profile of the companies

| | User satisfaction level* | | | | | |
|---|---|---|---|---|---|---|
| Company Size | 1 | 2 | 3 | 4 | 5 | Total |
| Micro enterprises (< 10 employees) | 2.9% | 11.6% | 23.7% | 35.7% | 26.1% | 100% |
| Small enterprises (10 - 49 employees) | 0.0% | 3.3% | 20.0% | 43.3% | 33.3% | 100% |
| Medium enterprises (50 - 249 employees) | 0.0% | 0.0% | 33.3% | 48.5% | 18.2% | 100% |
| Large enterprises (≥ 250 employees) | 2.1% | 4.2% | 20.8% | 37.5% | 35.4% | 100% |

***Table 24.*** *User satisfaction from the five G2B Project Applications grouped by company's size*
*(* 5 point scale: 1=very poor, 2=poor, 3=average, 4=good, 5=very good)*

| | User satisfaction level* | | | | | |
|---|---|---|---|---|---|---|
| Website (Period of establishment) | 1 | 2 | 3 | 4 | 5 | Total |
| < 1991 (Innovators) | 0.0% | 0.0% | 50.0% | 50.0% | 0.0% | 100% |
| 1991-1999 (Early adopters) | 0.0% | 0.0% | 21.7% | 60.9% | 17.4% | 100% |
| 2000-2006 (Middle majority) | 0.0% | 3.1% | 20.0% | 46.2% | 30.8% | 100% |
| 2007-2009 (Late adopters) | 2.2% | 6.5% | 28.3% | 39.1% | 23.9% | 100% |

***Table 25.*** *User satisfaction from the five G2B Project Applications grouped by Internet/web adoption period*
*(* 5 point scale: 1=very poor, 2=poor, 3=average, 4=good, 5=very good)*

| | User satisfaction level* | | | | | |
|---|---|---|---|---|---|---|
| Business profile | 1 | 2 | 3 | 4 | 5 | Total |
| LH (Large companies with High Internet/web profile) | 3.7% | 0.0% | 18.5% | 48.1% | 29.6% | 100% |
| LL (Large companies with Low Internet/web profile) | 0.0% | 9.5% | 23.8% | 23.8% | 42.9% | 100% |
| SH (SME's with High Internet/web profile) | 0.0% | 3.5% | 19.3% | 52.6% | 24.6% | 100% |
| SL (SME's with Low Internet/web profile) | 2.8% | 10.8% | 25.8% | 34.3% | 26.3% | 100% |

***Table 26.*** *User satisfaction from the five G2B Project Applications grouped by company's business profile*
*(* 5 point scale: 1=very poor, 2=poor, 3=average, 4=good, 5=very good)*

# Appendix C

## Factors of satisfaction for the five G2B Project Applications' registered users

| Main factors of satisfaction | e-Tax | | | Online Employment Registration | | | e-Procurement | | | EXIM | | | Automated System for Cargo Transport Licenses | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Score | Agreement | Full disagreement | Score | Agreement | Full disagreement | Score | Agreement | Full disagreement | Score | Agreement | Full disagreement | Score | Agreement | Full disagreement |
| Improved communication | 3.9 | 66.7% | 0.0% | 3.7 | 64.7% | 17.6% | 3.6 | 52.6% | 5.3% | 3.4 | 48.6% | 5.4% | 3.5 | 52.9% | 9.8% |
| Improved transparency | 4.2 | 76.5% | 2.0% | 3.6 | 58.8% | 23.5% | 3.4 | 48.7% | 7.7% | 3.8 | 67.6% | 16.2% | 3.8 | 63.8% | 7.5% |
| Speed up the process | 4.4 | 78.4% | 2.0% | 4.6 | 94.1% | 5.9% | 3.9 | 66.7% | 2.6% | 3.6 | 56.8% | 16.2% | 4.0 | 70.1% | 8.0% |
| Limited corruption | 3.7 | 56.9% | 3.9% | 3.8 | 70.6% | 23.5% | 2.9 | 24.3% | 13.5% | 3.3 | 48.6% | 16.2% | 3.6 | 55.7% | 13.2% |
| Trust | 4.4 | 84.3% | 2.0% | 4.2 | 76.5% | 5.9% | 4.1 | 69.2% | 0.0% | 3.7 | 62.2% | 5.4% | 4.0 | 71.3% | 8.0% |

***Table 27.*** *Factors for satisfaction per Project Applications' registered users*

# Appendix D

## User satisfaction by factor of satisfaction

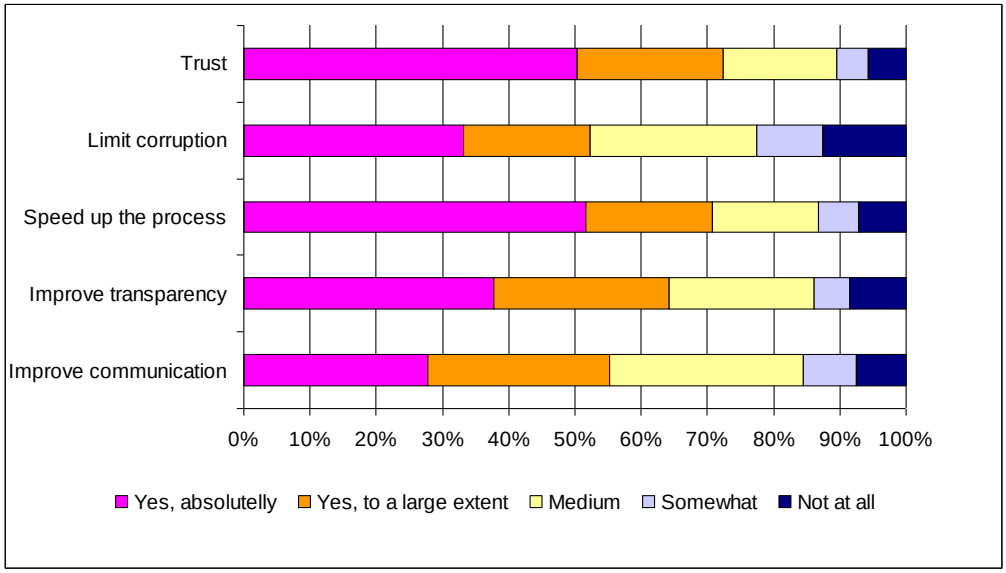


***Chart 23.*** *Level of importance of factors of satisfaction*

# Appendix E

## Reported benefits from the five G2B Project Applications

| Potential Benefit | e-Tax | | | Online Employment Registration | | | e-Procurement | | | EXIM | | | Automated System for Cargo Transport Licenses | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Yes | No | Do not know | Yes | No | Do not know | Yes | No | Do not know | Yes | No | Do not know | Yes | No | Do not know |
| Saving time | 98.0% | 0.0% | 2.0% | 94.1% | 0.0% | 5.9% | 87.2% | 7.7% | 5.1% | 75.7% | 18.9% | 5.4% | 84.5% | 10.9% | 4.6% |
| Saving money | 90.4% | 3.8% | 5.8% | 88.2% | 5.9% | 5.9% | 71.8% | 20.5% | 7.7% | 67.6% | 24.3% | 8.1% | 71.3% | 24.7% | 4.0% |
| Improved financial results | 53.8% | 21.2% | 25.0% | 29.4% | 52.9% | 17.6% | 33.3% | 38.5% | 28.2% | 24.3% | 48.6% | 27.0% | 39.7% | 47.7% | 12.6% |
| Improved competitiveness | 44.2% | 30.8% | 25.0% | 47.1% | 47.1% | 5.9% | 48.7% | 25.6% | 25.6% | 40.5% | 48.6% | 10.8% | 47.7% | 41.4% | 10.9% |
| Efficient communication | 86.5% | 7.7% | 5.8% | 64.7% | 17.6% | 17.6% | 56.4% | 30.8% | 12.8% | 56.8% | 27.0% | 16.2% | 64.9% | 24.1% | 10.9% |
| More transparency | 71.2% | 15.4% | 13.5% | 70.6% | 17.6% | 11.8% | 51.4% | 18.9% | 29.7% | 59.5% | 24.3% | 16.2% | 62.1% | 22.4% | 15.5% |
| Decrease corruption | 59.6% | 17.3% | 23.1% | 70.6% | 23.5% | 5.9% | 40.0% | 27.5% | 32.5% | 45.9% | 32.4% | 21.6% | 54.6% | 28.7% | 16.7% |
| Better quality | 76.9% | 9.6% | 13.5% | 76.5% | 17.6% | 5.9% | 51.3% | 30.8% | 17.9% | 54.1% | 35.1% | 10.8% | 65.9% | 24.9% | 9.2% |

***Table 28.*** *Eight potential benefits per Project Application's registered users*

# *Appendix F*

## Companies do not reported and do not know the benefits from the five G2B Project Applications[47]

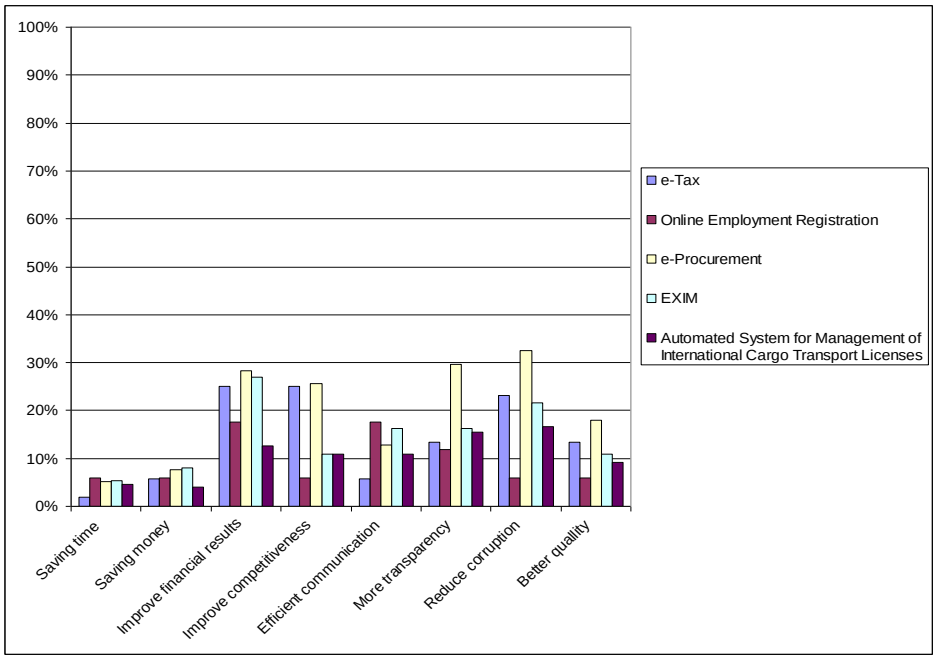


***Chart 24.*** *Companies which did not report benefiting from the five G2B Project Applications, grouped by benefit elements*

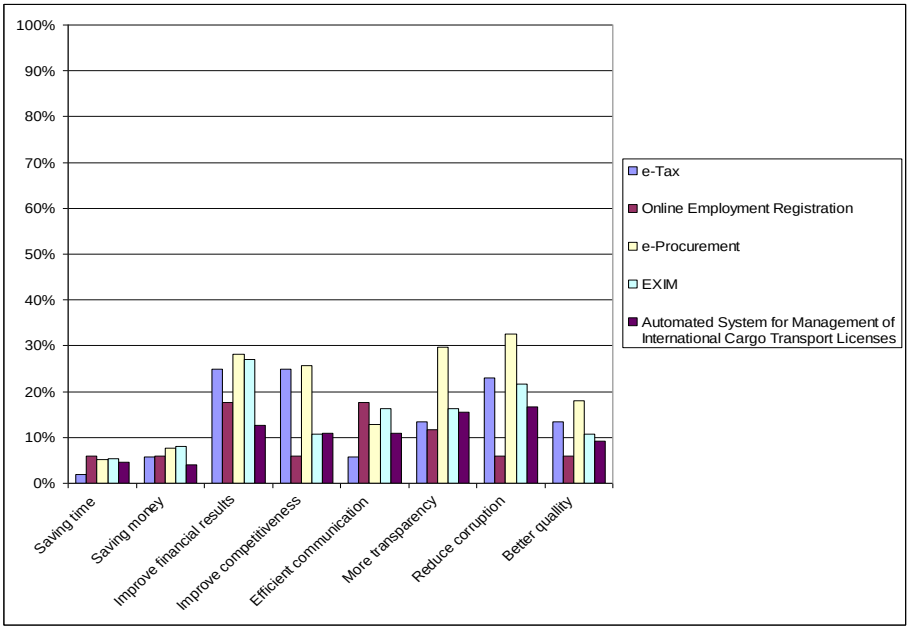


**Chart 25.** Companies do not know what are the benefits from the five G2B Project Applications per registered users of certain Project Application, grouped by benefit elements

[47] Companies that reported benefits from the five G2B Project Applications are presented on Chart 11, page 29.

# Appendix G

## General ICT indicators for Macedonia

| Domain/Year | 1995-2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009* | Totals |
|---|---|---|---|---|---|---|---|---|
| .mk | 5 | 2 | 2 | 3 | 8 | 1055 | 1213 | **2288** |
| .com.mk | 3793 | 1028 | 1020 | 1449 | 1830 | 2007 | 1088 | **12215** |
| .org.mk | 682 | 182 | 172 | 176 | 210 | 184 | 94 | **1700** |
| .net.mk | 254 | 28 | 51 | 32 | 74 | 68 | 34 | **541** |
| .edu.mk | 57 | 21 | 27 | 37 | 23 | 35 | 23 | **223** |
| .gov.mk | 134 | 19 | 75 | 50 | 34 | 45 | 15 | **372** |
| .inf.mk | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **0** |
| .name.mk | 1 | 0 | 1 | 1 | 2 | 4 | 3 | **12** |
| **TOTAL (N)** | **4926** | **1280** | **1348** | **1748** | **2181** | **3398** | **2470** | **17351** |

***Table 29.*** *Number of newly registered domains per year until September 9, 2009.*
*(Source: Macedonian Academic and Research Network[48] – Network Information Center (MARNet-NIC) Data provided via e-mail September 9, 2009)*

| | 2004[49] | 2006 | 2008 |
|---|---|---|---|
| Computer | 92.25 | 92.0 | 93.5 |
| Internet | 75.75 | 72.3 | 83.4 |
| Internet connection type | | | |
| Modem | 49.61 | 39.7 | 18.0 |
| ISDN | 50.92 | 44.7 | 17.9 |
| DSL | 15.49 | 32.6 | 65.1 |
| Cable, leased line | - | 17.8 | 24.8 |
| Use of Internet | | | |
| Information search | | | |
| Banking and financial services | 58.01 | 61.8 | 63.4 |
| Using e-government services | | 49.1 | 59.2 |
| Training and education of the employee | 19.16 | 28.0 | 26.8 |
| Website | 51.71 | 34.9 | 55.5 |
| Use of e-government | | | |
| Obtaining information | 40.94 | 46.5 | 63.3 |
| Obtaining forms (e.g. for taxes) | 33.60 | 35.3 | 54.9 |
| Sending filled in forms | 11.55 | 15.0 | 24.2 |
| Administrative procedures, completely electronically | 3.94 | - | 20.0 |
| Tenders | - | 5.9 | 12.7 |

***Table 30****. Use of ICT by enterprises, 2004-2008.*
*(Based on data from State Statistical Office, www.stat.gov.mk)*

[48] MARNet allowed registering second level .MK domains without special permission by the Government in 2008, and most of such domains are now owned by companies. The companies purchased such domains alongside their existing .COM.MK domains, and many new companies opt to purchase only the shorter and more easily remembered .MK domain to ease their branding efforts.
[49] Enterprises with 10 or more employees.

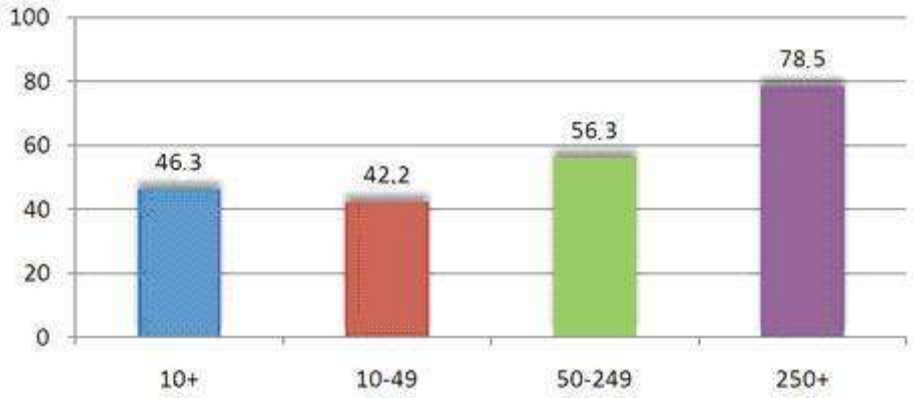


***Chart 26**. Enterprises have a website according to the number of employees.*
*(Source: State Statistical Office, News Release No. 8.1.8.23, from December 16, 2008)*

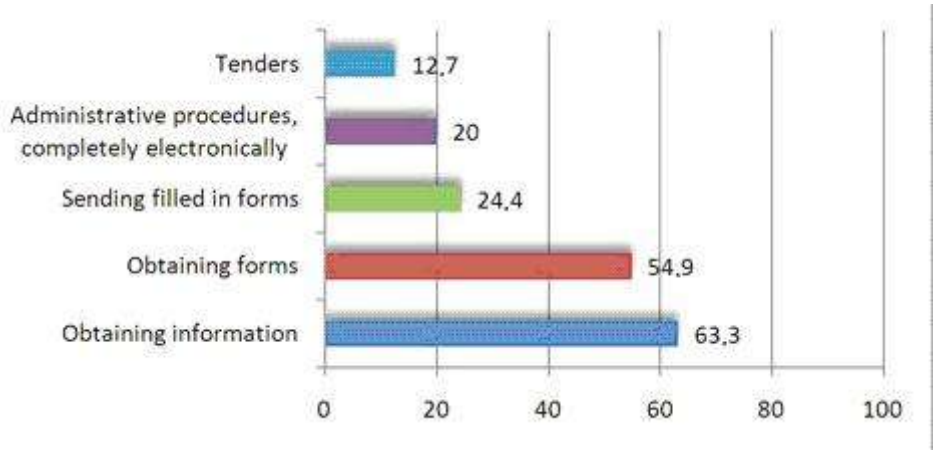


***Chart 27.** Use of e-government services by enterprises with 10 or more employees.*
*(Source: State Statistical Office, News Release No. 8.1.8.23, from December 16, 2008)*

# Appendix H

## Survey Questionnaire

### e-Government Services Survey for Companies

| | | | | |
|---|---|---|---|---|
| Sheet No. ___<br>Ordinal No. of the company in the list ____ | | | Survey date _____<br>Surveyor_____ | |
| | | | | |
| **1.** | **Are you acquainted with the existence of electronic government services for the companies which can be used over the internet**<br>1.1 Yes 1.2 No | | | |
| **2.** | **If the answer is Yes, please specify which services:** | | | |
| **3.** | **How did you get acquainted with these services?** | | | |
| | **3.1 Through direct USAID activity**<br>**3.2 Via the state institution offering this service**<br>**3.3 Via the media**<br>**3.4 From coleagues or from other firms**<br>**3.5 Information by my chamber of commerce**<br>**3.6 Other (please specify)** | | | |
| **4.** | **Have you used some of the following electronic government services?** | | | |
| | a) e-Procurement | 4.1.1 yes | 4.1.2 no | 4.1.3 I do not know |
| | b) e-Tax | 4.2.1 yes | 4.2.2 no | 4.2.3 I do not know |
| | c) EXIM | 4.3.1 yes | 4.3.2 no | 4.3.3 I do not know |
| | d) Automated System for Cargo Transport Licenses | 4.4.1 yes | 4.4.2 no | 4.4.3 I do not know |
| | e) Online Employment Registration | 4.5.1 yes | 4.5.2 no | 4.5.3 I do not know |
| | f) Other? (please specify) 4.6: | | | |
| **5.** | **If you responded NO [to all accounts in Q5], please state the reasons why.** | | | |
| **6.** | **Has the use of e-gov services improved the working procedures and working conditions for your company?** | | | |
| | 6.1 No, not at all | 6.2 Somewhat | 6.3 Medium | 6.4 To a large extent | 6.5 Yes, absolutely. |
| **7.** | **Where [in which field] do you feel the advantages?** | | | |
| | a) Saving time | 7.1.1 yes | 7.1.2 no | 7.1.3 I do not know |
| | b) Saving funds | 7.2.1 yes | 7.2.2 no | 7.2.3 I do not know |
| | c) Improved financial results | 7.3.1 yes | 7.3.2 no | 7.3.3 I do not know |
| | d) Improved competitiveness | 7.4.1 yes | 7.4.2 no | 7.4.3 I do not know |
| | e) Efficient communication with the state institutions | 7.5.1 yes | 7.5.2 no | 7.5.3 I do not know |
| | f) Increased transparency in the work with the state institutions | 7.6.1 yes | 7.6.2 no | 7.7.3 I do not know |
| | g) Decreasing of opportunities for corruptive | 7.7.1 yes | 7.7.2 no | 7.7.3 I do not know |

| | | | | |
|---|---|---|---|---|
| | influences | | | |
| | h) Decresing the rate of human errors in data input | 7.8.1 yes | 7.8.2 no | 7.8.3 I do not know |
| | i) Other? (please specify) 7.9: | | | |
| **8.** | **How many people in your company have been trained to use these e-gov services?** _____ (number) | | | |
| **9.** | **Does the use of e-gov services cause any problems in your work?**<br>9.1 Yes 9.2 No | | | |
| **10.** | **If [you responded] YES [to Question 9, please let us know], what kind of problems?** | | | |
| | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **11.** | **Did the use of e-gov services result in improved communication between your company and the state institutions?** | | | | |
| | 11.1 No, not at all | 11.2 Somewhat | 11.3. Medium | 11.4. To a large extent | 11.5. Yes, absolutely |
| **12.** | **Do you think that introduction of electronic systems leads to improved transparency of government services toward the companies?** | | | | |
| | 12.1 No, not at all | 12.2 Somewhat | 12.3. Medium | 12.4. To a large extent | 12.5. Yes, absolutely |
| **13.** | **Do the electronic systems speed up the procedures for providing government services to the companies?** | | | | |
| | 13.1 No, not at all | 13.2 Somewhat | 13.3. Medium | 13.4. To a large extent | 13.5. Yes, absolutely |
| **14.** | **Does the electronic communication between the public and the business sector contribute to limiting space for corruption?** | | | | |
| | 14.1 No, not at all | 14.2 Somewhat | 14.3. Medium | 14.4. To a large extent | 14.5. Yes, absolutely |
| **15.** | **Do you trust the electronic systems?** | | | | |
| | 15.1 No, not at all | 15.2 Somewhat | 15.3. Medium | 15.4. To a large extent | 15.5. Yes, absolutely |
| | | | | | |
| **16.** | **Do you reckon that the existing e-gov services need further upgrades?** | | | | |
| | 16.1 No, not at all | 16.2 Somewhat | 16.3. Medium | 16.4. To a large extent | 16.5. Yes, absolutely |
| **17.** | **If [you responded] YES [to Question 16], how [they need to be upgraded]?** | | | | |
| **18.** | **Do you think that some other government services of use to the business sector need to become available electronically?**<br>18.1 Yes 18.2 No | | | | |
| **19.** | **If [your response to Question 19 was] YES, please name them:** | | | | |

## Company data

**20. Company location: Municipality of** _____

**21. Company info: basic activity area/industry?** _____

**22. Number of employees**

| | |
|---|---|
| 22.1 | 1 - 9 |
| 22.2 | 10 - 49 |
| 22.3 | 50 - 249 |
| 22.4 | 250 or more |

**23. Number of computers within the company:**

| | |
|---|---|
| 23.1 | 1 – 4 |
| 23.2 | 5 – 9 |
| 23.3 | 10 – 30 |
| 23.4 | More than 30 |

**24. What kind of internet connection do you use?**

| | |
|---|---|
| 24.1 | Dial up |
| 24.2 | ADSL |
| 24.3 | Cable |
| 24.4 | Wi-Max |
| 24.5 | Other (please specify) |
| 24.6 | I do not know |

**25. Do the appropriate employees of your company possess digital certificate/electronic signature?**

| | |
|---|---|
| 25.1 | Yes |
| 26.2 | No |
| 26.3 | I do not know if they use such a thing |
| 26.4 | I do not know what that is |

**26. In which year was your company founded?** _____

**27. Does your company have a website?** 27.1 Yes 27.2 No

**28. If [you responded] YES [to Question 27], when was your website launched?** _____

**29. For what purposes do you use your website??**

| | |
|---|---|
| 29.1 | B2B |
| 29.2 | B2C. |
| 29.3 | Information |

**Thank you for your time and cooperation!**