

ANALYSIS OF INTRODUCING ONE STOP SHOP ADMINISTRATIVE SERVICES: A CASE STUDY OF THE REPUBLIC OF MACEDONIA

Martin TODEVSKI
Smilka JANESKA-SARKANJAC
Dimitar TRAJANOV

Martin TODEVSKI

Associate for cooperation and promotion of information society,
Ministry of Information Society and Administration of the
Republic of Macedonia, Skopje, Macedonia
E-mail: martin.todevski@gmail.com

Smilka JANESKA-SARKANJAC

Assistant professor, Faculty of Computer Science and
Engineering, Ss Cyril and Methodius University in Skopje,
Skopje, Macedonia
Tel.: 00389-71-372.956
E-mail: smilka.janeska.sarkanjac@finki.ukim.mk

Dimitar TRAJANOV

Associate professor, Faculty of Computer Science and
Engineering, Ss Cyril and Methodius University in Skopje,
Skopje, Macedonia
E-mail: dimitar.trajanov@finki.ukim.mk

Abstract

Reforming the administrative procedures through the implementation of an e-Government programme is an on-going important process for governments around the world. The benefits of using ICT as a catalyst for increasing the efficiency of administrative procedures are well known and confirmed.

The implementation of computer based information systems and providing a possibility for institutions to share data and documents among themselves will create conditions for introducing one stop shop electronic services, which will lead to simplifying administrative procedures.

The new simplified administrative services will be of great benefit to citizens. Yet, the institutions will face a significant reduction in the number of issued documents required for providing administrative services, which will lead to positive financial implications.

In that regard, the goal of this paper is to make an analysis of the financial aspects of introducing one stop shop services in the Republic of Macedonia by using computer based information systems. The analysis was conducted using public data for the administrative services which are currently provided by a closed set of 16 Macedonian government institutions. In this analysis we calculate the financial implications on citizens, businesses, institutions, and other entities in the society. The result of the analysis is the calculation of the overall savings for the society, which can be used by decision-makers in order to adjust the degree of investments in information systems and necessary complementary assets needed for introduction of these services.

Keywords: information and communication technology, public sector, e-services, one stop shop administrative services, interoperability.



1. Introduction

The Government and public administration, with their central position in the public sector, with their rigid hierarchy, red tape, and processes that originate from the 19th century, made for industrial society, should leverage the information technology in its own favor and in the favor of the society as a whole. Besides the managerial aspects of e-governance, increased efficiency, effectiveness, transparency, better informing of the citizens, lower costs, etc., which are widely proven outcomes of the application of the information technology, another aspect should be equally considered: building a client-oriented public administration with the citizen in the centre.

One stop shop, by definition, is a term used to describe the facility the government offers for the citizens and businesses to discuss and arrange services with government officials by providing a single point of contact (Costopoulou and Tambouris, 2004).

Electronic services, in their first stage of development (Kalsi *et al.*, 2009; Layne and Lee, 2001; Spremić *et al.*, 2009), are practically a replication of traditional, 'old fashion' administrative procedures. The electronic services follow the same principles, such as submitting the request, providing the necessary evidence and completing the service. On the other hand, the introduction of electronic services based on complicated 'old fashion' procedures is very difficult to achieve, especially if taken into account that a service usually requires other documents to be submitted as additional proof. Therefore, the introduction of electronic data exchange between institutions for the purpose of administrative procedures is of great importance for reduction of administrative barriers in order to introduce one stop shop services and electronic administrative services (Veljković *et al.*, 2012; Špaček, 2008).

There is strong evidence that e-government reforms are more likely to be a top-down process rather than a result of citizen demand (Demczuk and Pawłowska, 2006; Reinsalu, 2006), even in highly developed countries as USA (Yun and Opheim, 2010). In the case of developing countries, this is even more emphasized, because of the modest number of e-services offered by the private companies, and underdeveloped awareness of their advantages. This puts even more responsibilities in the hands of the governments of developing countries.

Administrative services in the Republic of Macedonia today, despite the implemented reforms in the administrative procedures for the last 20 years since its establishment as independent country, still prove to be complex. If one analyses the administrative services in the Republic of Macedonia, one will notice that for an average G2C (Government to Citizen) administrative service, such as Income taxes, Job search services, Social security benefits, Personal documents, Birth and Marriage Certificates etc., the citizen must obtain and submit several required documents. For one administrative service, three documents in average are needed, and in some cases more than six documents are needed¹. The documents submitted by the citizens contain data which is already

1 Ministry of Information Society and Administration of the Republic of Macedonia, 'Analysis for the e-Documents project', 2010.

stored in the registries and databases of other institutions (or in some cases the same institution). These complex administrative procedures are time and money consuming for the end-users of the services, and on the other hand produce costs for the institutions as well (Ministry of Information Society and Administration of the Republic of Macedonia, 2010).

Another important point is that the administrative procedures in fact require only particular data of the required documents (whether a citizen is a citizen of the Republic of Macedonia, whether the citizen was born in Skopje, what is the name of his/her spouse and so on).

These processes would be significantly simplified if institutions share the data among themselves, and if citizens would only be asked to fill out an application and pay to complete the service (Gottschalk, 2009).

Interoperability is one of the most important back-office projects whose implementation will significantly ease the process of implementation of one stop shop services. It refers to implementing a single electronic mediatory system for exchange of data and documents between different institutions (Guijarro, 2007). This kind of a system is used by institutions in the countries where e-services for standardized electronic exchange of data and documents are implemented for the purposes of completing one stop shop administrative services (Chatfield and Alhujran, 2009; Parna and Tunzelmann, 2007).

The Interoperability Project launched by the Ministry of Information Society of the Republic Macedonia shows a commitment from the Government to increase the efficiency of institutions and improve the quality of administrative services. The changes in the Law on General Administrative Procedures, made in April 2011, introduced an obligation for institutions to provide one stop shop services, and eliminated the obligation of the citizens to submit documents that other institutions already possess (Law on General Administrative Procedures, 2011). It is the responsibility of the institutions to arrange how they will organize the exchange of data. According to the Law on Electronic Management, if the institutions are exchanging data and documents in electronic manner for the purposes of administrative services, this should be realized through the Interoperability system that is administered by the Ministry of Information Society and Administration (Law on Electronic Management, 2009).

Even though these new one stop shop services will provide improved efficiency and other significant benefits, yet they will create new challenges (Persson *et al.*, 2006). If the Interoperability project is fully implemented and the processes of acquiring required documents are changed, from paper submission to electronic acquiring by the institutions, paying of administrative taxes and fees for the required documents will be eliminated. Even though, at first sight, it seems that these payments should be eliminated, and that the institutions should not charge for these back-office services, still, they need these revenues because these revenues cover a significant portion of the budgets of that particular institution.

The goal of this paper is to conduct an analysis of the financial consequences that the implementation of one stop shop services will have to the budget of the Republic of Macedonia, and to the citizens, businesses, public institutions and other entities.

The reason for this approach is that the introduction of this system will have financial consequences not just to institutions as service providers, but also to citizens and companies as main service users. Additional positive implication of this analysis is that its findings can serve as a measure of eligibility of the Government investments in ICT, organizational reforms and other activities which will contribute to the implementation of this system.

2. Creating the framework of the financial analysis of introducing one stop shop administrative services

What would seem to be convenient for the citizens is to receive the service and pay for it in one place, and afterwards this single amount of money is to be distributed to institutions that issue the requested documents. One of the questions we try to answer here is how much will the citizens pay for the service. This question is not simple to answer due to the fact that the total price is not a simple sum of the price of all the documents, due to several reasons:

- there are several forms of submission of the requested documents (some are requested as original documents, some as copies, some as notarial verifications or other are requested just for review and are returned to the citizen);
- it should be taken into account that the new system will bring changes which will impose savings in one place and expenses in others; and
- there is a psychological moment of paying the total price of all documents at once because the summed price of the new electronic service would seem very high to the citizen.

For the needs of the analysis of the financial implications of the proposed system, data was used from a previous analysis made by the Ministry of Information Society and Administration of the Republic of Macedonia for the e-Documents project. This analysis contains a sufficient amount of data for the administrative services provided by institutions and related documents which citizens need to submit to obtain these services (State Statistical Office of the Republic of Macedonia, 2012).

The analysis of the e-Documents project contains data for 16 government institutions which represent most of the administrative service providers, including data for a total of 198 documents and services which are provided by these institutions. Given this frame, the analysis undertaken in this paper is based on a closed set of institutions and documents and services which are offered by these institutions, and thus the results are related to this closed set.

The following institutions are included:

1. Agency for Real Estate Cadaster;
2. Ministry of Interior;
3. Central Register;
4. Public Revenue Office;
5. Customs Administration;
6. Office for Managing of Birth, Marriage and Death Certificates;

7. Health Insurance Fund;
8. Pension and Disability Insurance Fund;
9. Employment Agency;
10. Public Procurement Bureau;
11. Notarial Chamber;
12. Centre for Social Affairs;
13. City of Skopje;
14. Primary Court I;
15. Primary Court II; and
16. Administrative Court.

The analysis makes a distinction between documents and services, thus defining documents as paper proof of a certain attribute or state of the requesting side (e.g. birth certificate, citizenship certificate, property certificate etc.), while a service applies to a certain activity performed by an institution for the needs of the requesting side, by which a certain attribute or state is being changed (e.g. registration of a new-born, acquiring citizenship, registration of a company etc.). For the purpose of simplification of the matter in this paper, one term is used – ‘administrative service’ for both issuing documents and providing services as defined previously.

The main administrative services’ parameters that are used in this analysis are the following:

- total price of the administrative service which consists of administrative taxes and fees;
- total number of provided administrative services;
- required documents for particular administrative service; and
- form of submission of the requested document (original, plain copy, notarial verification etc.).

Administrative taxes are regulated according to the Law on administrative taxes. These charges are collected to the state budget as regular taxes.

Administrative fees are regulated by the laws on the services and institutions providing the respective services. These fees are collected to the budget of the institutions and relate to the calculated costs for providing respective services.

3. Financial analysis of introducing one stop shop administrative services

The financial analysis is carried out in several steps:

- Calculations of the current annual revenues of providing administrative services;
- Reduction of the total number of issued documents which will not be needed in the one stop shop system, as a result of the data exchange among the government institutions;
- Developing scenarios of pricing methodologies of the new administrative services;
- Calculations of future budget revenues from providing administrative services taking into account the reduction of the revenues because of the reduced issuing of documents, and the new prices of the administrative services;

- Calculations of savings for the institutions in terms of paper, printing and employee's working hours;
- Calculations of savings for the citizens in terms of transport and time; and
- Calculations of overall savings taking into account all the previous items.

3.1. Total annual revenues of providing administrative services

Because of the numerous data, we will present the methodology of the calculations and the cumulative results. By multiplying the prices of the administrative services with the number of provided services on an annual level respectively, the total revenues in the budget of providing administrative services (in the framework of the 16 institutions included in the analysis) are calculated. The calculations are based on the already collected data which were organized as in Table 1.

Table 1: Calculation of total annual revenues of providing administrative services²

Institution that is providing the administrative service	Name of administrative service	Total services provided on an annual level	Administrative taxes	Fees	Total price of the service	Total annual revenues from services
Institution	Administrative Service	(Amount)	(Amount)	(Amount)	(Amount)	(Amount)
Total		Σ	Σ	Σ	Σ	Σ

The amounts gained from these calculations are shown in Table 2.

Table 2: Results of the calculation of total annual revenues of providing administrative services³

Item	Amount (EUR)	Note
1. Total annual revenues in the budget from providing administrative services	27,345,563.95	Correct amount calculated by multiplying the prices of administrative services with the number of provided services on an annual level respectively.
2. Total provided administrative services on an annual level	6,649,045	Correct amount as a sum of provided services on an annual level.
3. Average price of an administrative service	4.11	Amount calculated by dividing the total annual revenues in the budget from providing administrative services with total provided services on an annual level.

3.2. Reduction of the total number of issued documents

The analysis includes data of all requested documents for the particular administrative service, encompassing documents in the enclosed set of 16 institutions, but also documents out of this set. For the requested documents, we know the requested form of the document in the procedure (original, plain copy, notarial verification etc.). This data is important because it determines the value of the requested document.

2 Calculations are based on the data from the Ministry of Information Society and Administration of the Republic of Macedonia, 'Analysis for the e-Documents project', 2010.

3 Calculations are based on the data from the Ministry of Information Society and Administration of the Republic of Macedonia, 'Analysis for the e-Documents project', 2010.

Further calculations were made with the number of the requested documents, with a purpose to find the amount of future reduction of the number of the yearly issued documents. These calculations are also based on the already collected data which are organized as in Table 3.

Table 3: Calculation of future reduction of the number of the yearly issued documents in first level⁴

Data for the issued document			Data for the requested documents				
Institution that is issuing the document	Name of document	Total issued documents on an annual level	Name of document	Issued by	Form: 1-Original document kept by the institution; 2-Notarial verification kept by the institution; 3-Document copy; 4-Returned to requester.	Utilization factor	Reduction of the number of the issued documents on annual basis in first level
Inst.1	Document1	(Amount)	Document1	Inst.1	1	100%	(Amount)
Inst.2	Document2	(Amount)	Document2	Inst.2	2	50%	(Amount)
Inst.3	Document3	(Amount)	Document3	Inst.3	3	15%	(Amount)
Inst.4	Document4	(Amount)	Document4	Inst.4	4	15%	(Amount)
Total							Σ

The reduction of the number of the issued documents per year is based on the following criteria:

- The specification of the required documents within the scope of the analysis;
- According to the actual method of submitting the requested documents, the appropriate utilization factor is used for calculations of the number of the reduced documents per year, as follows:
 - If the requested document is required in original form and is retained by the service provider institution, in that case an utilization factor of 100% is set because the document is fully 'eliminated / utilized';
 - If the requested document is submitted as a notarized copy which is retained by the service provider institution, in that case an utilization factor of 50% is set based on an assumption that two notarized copies in average are being made for a document in its lifetime;
 - If the requested document is a plain copy of the original document which is retained by the service provider institution, in that case an utilization factor of 15% is set. This parameter is set as an average value because of the results of reducing the number of issued documents per year, which is within 10% to 20%;
 - If the document is requested in its original form, but only an insight is required and it is returned to the applicant, an utilization factor of 15% is set. This parameter is set as an average value because of the results of reducing the number of issued documents per year, which is within 10% to 20%.

4 Calculations are based on the data from the Ministry of Information Society and Administration of the Republic of Macedonia, 'Analysis for the e-Documents project', 2010.

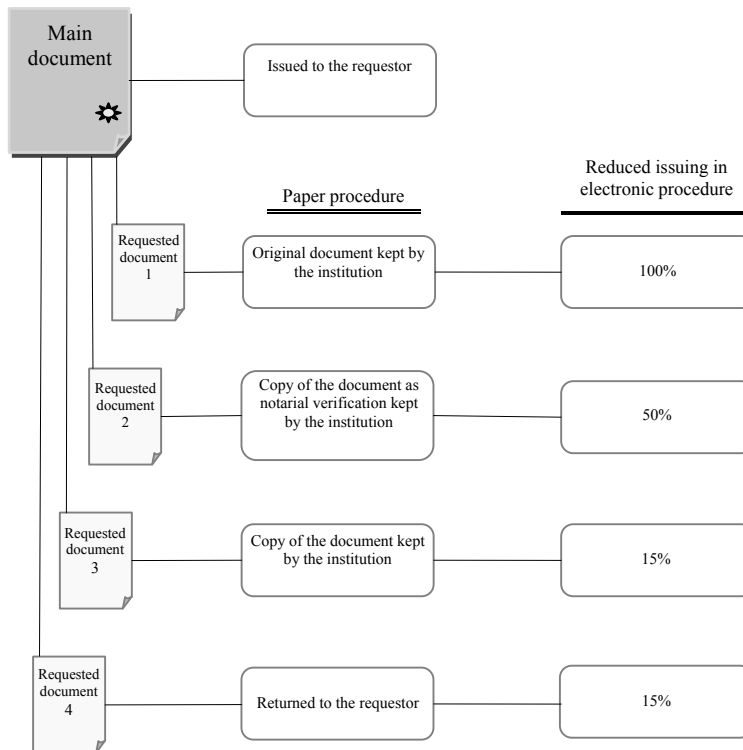


Figure 1: Reduction of issuing of requested documents in electronic procedure according to the form of submitting the requested documents

As mentioned before, administrative services require documents to be submitted by the citizens as certain proofs. For the purpose of this paper, this will be referred to as the first level of required documents.

For obtaining some of the documents in the first level, citizens sometimes need to obtain other documents from different institutions. This new (second) set of required documents will be referred to as the second level of required documents.

The reduction of the number of the issued documents in the first level, multiplied by the respective utilization factor (according to the form of submission of the requested document – original, notarized copy, plain copy etc.), and multiplied by the price of the respective document gives the amount of reduction in revenue in the budget due to the elimination of the required documents in the first level.

Because of the fact that in some situations, these requested documents require other documents as the procedure goes on, the reduction of the number of the issued documents on annual level was made also in the second level. With the second level, the elimination was complete, since the analysis did not show a third level. The same utilization factors are used for the reduction of the number in second level, and the same method is being used to calculate the reduction of the revenues in the budget with the elimination of the requested documents.

Table 4: Calculation of future reduction of the number of the yearly issued documents⁵

Item	Amount	Note
Reduction of the number of issued documents on annual level (first level)	1,310,265 documents	Number of documents which will not be issued in the future on an annual level, by implementing electronic one stop shop (first level reduction)
Reduced revenues because of the reduction of the number of issued documents (first level)	13,404,576.33 EUR	The reduction of revenues is calculated by multiplying the reduced documents issued in first level with the price of these documents
Reduction of the number of issued documents on annual level (second level)	213,032 documents	Number of documents which will not be issued in the future on an annual level, by implementing electronic one stop shop (second level reduction)
Reduced revenues because of reduction of the number of issued documents (second level)	543,204.66 EUR	The reduction of revenues is calculated by multiplying the reduced documents issued in second level with the price of these documents
Reduction of the number of issued documents on annual level	1,523,297 documents	Total number of documents which will not be issued in the future on an annual level
Total reduced revenues because of reduction of the number of issued documents	13,947,780.99 EUR	Total reduction of revenues on an annual level taking into account the reduced issued documents and the price of these documents

One can notice that there will be a relatively high reduction of the number of documents issued annually. If the institutions stop charging for these documents they will lose a substantial part of their revenues. Because of this fact, four scenarios are developed, which provide choices on how the requested documents should be charged in the future. The difference among these scenarios is based on how much will be charged for the administrative taxes and fees of the requested documents.

3.3. Scenarios for calculation of the price of the requested documents

As mentioned before, the following scenarios are introduced according to the level of charging administrative taxes and fees of the requested documents. The scenarios use a 0%/50%/100% ratio of charging administrative taxes of required documents and 75%/25% ratio of charging administrative fees of required documents. Documents which were previously required in original form and kept by the institution are charged 75% of their administrative fee, as a simple discount on using electronic procedures. Documents which were previously required in plain copy or are returned to the citizen are charged 25% of their administrative fee according to a presumption that a document has an average 'life cycle' of four plain copies. Notarial verifications are charged 2.44 EUR – as an average price of a notarial verification.

Administrative taxes are fixed amounts regulated in the Law of administrative taxes, and administrative fees are determined by the institutions which are providing the services according to their calculated costs. The selected scenario for a pricing methodology will imply a need for changes in the referred legislation.

5 Calculations based on the data from the Ministry of Information Society and Administration of the Republic of Macedonia, 'Analysis for the e-Documents project', 2010.

Scenario 1

According to this scenario, administrative taxes for the requested documents are charged in full amount to a sum of the administrative taxes of all the identified requested documents in the 'traditional' procedure. The fees are charged by the principle 75% of the fee amount if the requested document is required as an original document that is kept by the institution and 25% of the fee amount if the requested document is required as a copy which is kept by the institution or if it is returned to the requestor. If the requested document is required as a notarial verification, in that case an amount of 150 denars (2.44 EUR) is calculated, as an average expense of a notarial verification.

Scenario 2

According to this scenario, the administrative taxes of the requested documents are not charged, only the administrative taxes of the frontal service will be charged. The fees are charged by the principle 75% of the fee amount if the requested document is required as an original document that is kept by the institution and 25% of the fee amount if the requested document is required as a copy which is kept by the institution or if it is returned to the requestor. If the requested document is required as a notarial verification, in that case an amount of 150 denars (2.44 EUR) is calculated, as an average expense of a notarial verification.

Scenario 3

According to this scenario, administrative taxes of the requested documents are charged in half amount. The fees are charged by the principle 75% of the fee amount if the requested document is required as an original document that is kept by the institution and 25% of the fee amount if the requested document is required as a copy which is kept by the institution or if it is returned to the requestor. In case the requested document is required as a notarial verification, the amount of 150 denars (2.44 EUR) is calculated, as an average expense of a notarial verification.

Scenario 4

According to this scenario, administrative taxes and fees of the requested documents are not charged, and these are charged only for the frontal service in full amount.

Example of calculation of a new price for a service

Below is an example of a real administrative procedure – a child adoption procedure – with a new pricing methodology applied. Scenario 2 is applied for this case, or more precisely, administrative taxes of requested documents are charged in full amount and the fees by the 75%-25% principle.

The child adoption procedure is as follows: a couple who wants to adopt a child should submit a request to the Commission for child adoption, which is a body under the Ministry of Labor and Social Policy. The following documents should be attached to the request:

- Citizenship certificate – Ministry of Internal Affairs;
- Birth certificate – Office for Managing of Birth, Marriage and Death Certificates;
- Marriage certificate – Office for Managing of Birth, Marriage and Death Certificates;

- Medical certificate for health and psychophysical state of the marriage partners – Medical institution;
- Certificate that the partners are not deprived of parental rights – Primary Court;
- Certificate that the partners are not sentenced – Primary Court;
- Certificate that the partners are not deprived of working abilities – Primary Court and Center for Social Affairs;
- Certificate for material state of the married partners – Public Revenue Office;
- Proof of property – Real Estate Cadaster Agency;
- Certificate for level of education – Educational institution;
- Proof of monthly revenues and other revenues gained by the married partners; and
- Social report of the authorized service which holds an approval of the country, that the partners are suitable to adopt a child.

After the documents are received, the Commission for child adoption checks the documents and if it confirms that the appropriate conditions are fulfilled, a copy of the entire case is being sent to the authorized Center of Social Affairs according to the place of living of the partners.

If a pricing methodology is not applied, that would mean that in an electronic procedure for submitting a request for child adoption, the Ministry of Internal Affairs, the Office for Managing of Birth, Marriage and Death Certificates, the Primary Court, the Center for Social Affairs, the Public Revenue Office, the Real Estate Cadaster Agency and others would lose revenues from charging administrative taxes and fees that previously would be paid by the citizens who would submit the request.

If scenario 2 is applied to this service, administrative taxes for requested documents will not be charged. Below are the calculations for the new price of this service.

Table 5: Calculation of new price of the service for submitting a request for child adoption⁶

Administrative service	Price of the 'traditional' administrative service (EUR)		Form of submitting the required document	Factor for charging the fee	New price of the administrative service (EUR)	
	Admin. taxes	Fee			Admin. Taxes	Fee
Service – Submitting a request for child adoption	0.81	2.44	/	100%	0.81	2.44
Citizenship certificate	0.81	1.63	original	75%	0.00	1.22
Birth certificate	1.63	0.81	original	75%	0.00	0.61
Marriage certificate	1.63	0.81	original	75%	0.00	0.61
Medical certificate for health and psychophysical state of the marriage partners	0.00	19.51	original	100%	0.00	19.51
Certificate that the partners are not deprived of parental rights	1.30	3.90	original	75%	0.00	2.93

6 Calculations based on the data from the Ministry of Information Society and Administration of the Republic of Macedonia, 'Analysis for the e-Documents project', 2010.

Administrative service	Price of the 'traditional' administrative service (EUR)		Form of submitting the required document	Factor for charging the fee	New price of the administrative service (EUR)	
	Admin. taxes	Fee			Admin. Taxes	Fee
Certificate that the partners are not sentenced	1.30	3.90	original	75%	0.00	2.93
Certificate that the partners are not deprived of working abilities	1.30	3.90	original	75%	0.00	2.93
Certificate for material state of the married partners	0.81	4.07	original	75%	0.00	3.05
Property certificate	0.81	2.03	original returned to requestor	25%	0.00	0.51
Certificate for level of education	0.81	2.03	copy as a notarial verification	/	0.00	2.44
Proof of monthly revenues and other revenues gained by the married partners	0.00	0.00	original	75%	0.00	0.00
Social report of the authorized service which holds an approval of the country, that the partners are suitable to adopt a child	0.00	0.00	original	75%	0.00	0.00
Total	11.22	45.04			0.81	39.17
	Total price	56.26			Total price	39.98

One can conclude that the total price of the administrative service in an electronic procedure is lower than that in a 'traditional' paper procedure. In this case, the total price is lower by about 30%.

This example also shows an interesting fact – some of the documents cannot be exchanged electronically since they require a certain expertise to be conducted at the same time when the request for the service was submitted. This refers to the medical certificate for health and psychophysical state of the married partners which should be charged 100% because the procedure must be completed physically.

According to the table there is a difference between how much the citizen will pay in the paper procedure, and how much in the electronic procedure, not taking into account the savings that the citizen will make regarding the expenses for transportation, parking, time etc. After this sum is paid in one place – the central institution that provides the one stop shop service, the sum will be distributed to the institutions that provide the requested documents.

What will be different for the citizen from another perspective is that now he/she will pay a much higher price in one place, and thus he/she might feel that is paying much more for the same service. To avoid this, appropriate promotional activities should be conducted in order to emphasize the real savings for the citizens, institutions, etc.

3.4. Future revenues of providing administrative services

In the previous paragraphs an example of one administrative service was given and the differences in the present administrative service cost and Scenario 2 cost were calculated. Differences are due to the reduction in the number of issued documents and their respective revenues.

In Table 6, we conduct a general assessment of revenue differences, for the enclosed set of 16 government institutions which represent most of the administrative service providers, including data for a total of 198 documents and services which are provided by these institutions, for all four scenarios. The starting point is the present annual revenues from issuing documents in a 'traditional' way, which are then reduced because of reduced issuing of requested documents.

The final results show that there are almost no savings for the applicants (or losses on the budgets) in the Scenario 1, but total spending on administrative services in Scenario 4 are halved.

Table 6: Calculation of the future budget revenues according to different scenarios⁷

Scenario	Total administrative services provided on an annual level	Total present revenues of providing administrative services (EUR)	Reduction of the revenues because of the reduced number of issued documents (EUR)	Total price of requested documents (EUR) ⁸	Total future revenues of providing administrative services (EUR) ⁹	Ratio of revenues differences
Current situation	6,649,045	27,345,563.95	0.	13,947,780.99	27,345,563.95	/
Scenario 1	5,125,748	27,345,563.95	-13,947,780.99	12,849,232.17	26,247,015.13	95.98%
Scenario 2	5,125,748	27,345,563.95	-13,947,780.99	3,753,172.66	17,150,955.61	62.72%
Scenario 3	5,125,748	27,345,563.95	-13,947,780.99	8,301,202.41	21,698,985.37	79.35%
Scenario 4	5,125,748	27,345,563.95	-13,947,780.99	0.00	13,397,782.96	48.99%

Other data that can be set out from these calculations is how much will the notaries lose because of the reduction of the number of requested documents required as notarial verifications. If average expenses for a notarial verification are 150 denars (2.44 EUR), in this case total year losses for the notaries would be 954,521.95 EUR. This calculation was made by separating the data of the requested documents which are requested as notarial verifications.

3.5. Savings for the institutions

Institutions will make savings in form of savings on paper, printing expenses, and labor. Savings are made as a result of the elimination of requested documents, which will be exchanged between the institutions in the new electronic procedure.

7 Calculations based on the data from the Ministry of Information Society and Administration of the Republic of Macedonia, 'Analysis for the e-Documents project', 2010.

8 The total price of requested documents refers to the total increase of the prices of administrative services (when moving to one stop shop services), according to the rules for charging administrative taxes and fees for requested documents given the scenarios explained before.

9 Total future revenues of providing one stop shop administrative services are calculated when the present revenues of providing administrative services are reduced because of reduced number of issued documents and then increased for the total price of requested documents.

Despite the obvious savings for the institution because of reduced paperwork, an assumption is being introduced that the new work process will release significant administrative labor, which in the future can be redistributed to other work. Because of this, the second part of the calculation is in fact valorization of the release of labor work time.

Table 7: Calculation of savings for institutions with introduction of electronic procedures¹⁰

Item	Amount	Note
1. Reduction of the number of issued documents on annual level	1,523,297	Total number of documents which will not be issued in the future on an annual level, by implementing electronic one stop shop
2. Average sheets of paper spent on one requested document	2	Assumption that in average two sheets of paper are spent on one requested document (minimum one sheet for requestor and one for institution)
3. Price of one sheet of paper (EUR)	0.013	1 ream of paper of 500 sheets costs 6,5 EUR
4. Costs for printing per sheet of paper (EUR)	0.0325	Average price of toner for a laser printer costs 65 EUR, which can be used for 2,000 sheets of paper
5. Total costs of paper and printing for one document (EUR)	0.091	Average sheets of paper for one document x (Price for one sheet of paper + Cost for printing one sheet of paper)
6. Total savings of paper and toner (EUR)	138,706.76	Number of reduced issued documents on annual level x Total costs of paper and printing for one document
7. Average number of branch offices for one service	30	Institutions in average have 30 branch offices across the country
8. Average number of employees working for one service in branch office	1	In average there is a ratio of one employee per service (using an assumption that one employee works on two services, and there is one employee that has an approval role to two services)
9. Number of administrative services	198	Determined in the analysis
10. Number of employees working on providing documents/services	5,940	Average number of branch offices for one service x Average number of employees working for one service in a branch office x Number of administrative services
11. Average gross salary (EUR)	488.33	Average gross salary, period 02.2011 ¹¹
12. Factor for work efficiency increase because of electronic procedures	25 %	Assumption of increased work efficiency in institutions because of the new system
13. Total staff savings (EUR)	8,701,955.12	Number of employees working on providing documents/services x Average gross salary x 12 (months in one year) x Factor for work efficiency increase because of electronic procedures
Total savings on paper, printing and staff (EUR)	8,840,661.89	Total savings of paper and toner + Total staff savings

10 Calculations based on the data from the Ministry of Information Society and Administration of the Republic of Macedonia, 'Analysis for the e-Documents project', 2010.

11 Source: State Statistical Office of the Republic of Macedonia.

An additional aspect in calculating savings for the institutions on paper is to transpose these savings into environment savings, as a result of reduced demand for paper (just for the enclosed set in 16 institutions).

Table 8: Calculation of environment savings with introduction of electronic procedures¹²

Item	Amount	Note
1. Reduction of the number of total issued documents on annual level with electronic procedures	1,523,297	Total number of documents which will not be issued in the future on an annual level, by implementing electronic one stop shop
2. Average sheets of paper spent on one requested document	2	Assumption that in average two sheets of paper are spent on one requested document (minimum one sheet for requestor and one for institution)
3. Number of sheets of paper per requested documents	3,046,594	Reduced number of issued documents on annual level with electronic procedures x Average sheets of paper spent on one requested document
4. Average number of sheets of paper that are produced by one tree	80,500	Data from http://science.howstuffworks.com/environmental/green-science/question16.htm ¹³
Number of trees that are saved per year	38	Number of sheets of paper per requested documents / Average number of sheets of paper that are produced by one tree

According to the reduced demand of quantity of paper, in the set of 16 institutions, 38 trees will be saved per year.

3.6. Savings for the citizens

Citizens will make savings because in the one stop shop procedures they will visit fewer institutions, and make savings on transportation and in time.

In the calculations of the savings for the citizens, the following parameters are taken into account:

- valorization of previous time spent for acquiring the requested documents in different institutions, and
- savings in form of gas and parking fees for acquiring requested documents.

Table 9: Calculations on additional savings for citizens with introduction of electronic procedures¹⁴

Item	Amount	Note
1. Reduction of the number of total issued documents on an annual level with electronic procedures	1,523,297	Total number of documents which will not be issued in the future on an annual level, by implementing electronic one stop shop
2. Average gross salary (EUR)	488.33	Average gross salary for the period 02.2011 ¹⁵
3. Average gross salary per diem (EUR)	22.20	Average gross salary / 22 work days

12 Calculations based on the data from the Ministry of Information Society and Administration of the Republic of Macedonia, 'Analysis for the e-Documents project', 2010.

13 Accessed on May 25, 2011.

14 Calculations based on the data from the Ministry of Information Society and Administration of the Republic of Macedonia, 'Analysis for the e-Documents project', 2010.

15 Source: State Statistical Office of the Republic of Macedonia.

Item	Amount	Note
4. Average working hour gross salary (EUR)	2.77	Average per diem / 8 work hours
5. Unemployment rate	30.9%	Source: State Statistical Office, last quarter of 2010
6. Average working hour taking into account unemployment rate (EUR)	1.92	Average working hour – Average working hour x Unemployment rate.
7. Average effective time for one document in hours	4	This value is an approximate number calculated as the time that is needed for a citizen to: get info about the administrative service, fill required forms, go to bank, pay the administrative tax and fee, go to the institution, wait in line, get the service and return home.
8. Costs for lost time for one document (EUR)	7.67	Average working hour taking into account unemployment rate x Average effective time for one document
9. Gas and parking for one document (EUR)	1.63	Assumption that a citizen spends 100 denars (1.63 EUR) for gas and parking to acquire one document
10. Total costs for a citizen to acquire one requested document (EUR)	9.29	Costs for lost time for one document + Gas and parking for one document
Total savings for requested documents (EUR)	14,158,961.32	Reduced number of issued documents on an annual level with electronic procedures x Total costs for a citizen to acquire one requested document

3.7. Summarizing overall savings for the society

The aim of this paper, as previously mentioned, is not just to calculate the revenue difference in the budget of the Republic of Macedonia, but to calculate the produced savings for citizens, businesses, institutions and other entities in society.

To get a whole picture of the financial implications, previous calculations are taken into account, such as:

- Total future revenues of providing documents and services according to different scenarios;
- Total present revenues of providing documents and services;
- Savings for institutions; and
- Savings for citizens.

Moreover, additional calculations are made based on the determined parameters in the previous calculations. These additional calculations are included in Table 10.

In fact, Table 10 is summarizing all the figures, therefore presenting a global picture of costs and savings of the citizens and institutions by introducing full one stop shop system. Apart from the already analyzed scenarios, in Table 10 we introduce an additional scenario that provides the same average price of administrative services, price paid by citizens as we have in the current situation. This scenario is introduced in order to avoid the psychological moment for the citizens of paying more with the introduction of one stop shop administrative services. From the viewpoint of the institutions, this scenario actually represents the limit average price that will avoid increasing the average cost of services, while enabling maximum revenue for institutions.

The first column of Table 10, named 'Total future revenues of providing one stop shop administrative services', represent the amount to be received in the budget of

the institutions on an annual basis, depending on the price of charging the services and the number of services provided. Total future revenues are on the highest level in Scenario 1, and on the lowest in Scenario 4 (administrative taxes and fees for the requested documents are not charged), where the revenues decrease by around 50%. The second column shows the decrease of revenue in percentage.

'Total number of provided administrative services on an annual level' is the third column, and it shows that there is a decrease of the number of administrative services in a one stop shop system because there will be a decreased number of issued documents. The total of 5,125,748, represents the number of 'frontal' administrative services which are requested by the citizens on an annual level and it is a reduction of 23%.

The average price of an administrative service (column 4) in the current system is 4.11 EUR. The change of the average price throughout the scenarios is based on the change of the total number of administrative services provided on an annual level, and the method of charging for the requested documents.

It is of interest to emphasize the psychological moment for the citizen of paying more in one place in some cases, which should not be overcome when introducing the system and selecting the right option for the pricing. Taking this into consideration, we have added the 'Same average price scenario'. In order to calculate the right percentage of charging for the administrative taxes we reversed the calculations. First we put the same average prices as we have in the current situation, and then we go back in our calculations and we calculate that the total future revenues generated by providing administrative services need to be 21,062,261 EUR. Based on this amount we calculated that the right percentage of charging for the administrative taxes of the requested documents needs to be 43%. This adjusted scenario is very close to scenario 3.

Column 5 represents the 'Reduced revenue for institution (Savings for citizens)'. In each scenario, total revenues are lower than in the current system. Yet, the amount of reduced revenues is in fact equal to what the citizens will save on the prices which they will pay for the services.

Total savings on paper, printing and staff (column 6) is the amount calculated for the reduced costs for paper, printing and staff for the documents which will not be issued anymore and the free time of the staff because of increased efficiency which can be valorized for other job tasks.

In order to see the financial effect of different scenarios we added the column 7 'Net surplus for institutions'. The total savings on paper, printing and staff decreased by the difference in the revenues received will provide the net surplus that the institutions will acquire. The institutions will not gain surplus in scenarios 2 and 4. It is interesting to emphasize that in 'Same average price scenario' the institutions will have a positive surplus of 2,557,359 EUR.

Total savings on time and transportation for citizens (column 8) is an amount around 14 million EUR and represent the calculated savings for the time lost and the transportation needed for obtaining additional documents in the current system (details are given in Table 9).

Table 10: Calculation of overall savings for the society¹⁶

	1	2	3	4	5	6	7	8	9	10
	Total future revenues generated by providing administrative services	Percentage of revenues decrease	Total number of administrative services provided on an annual level	Average price of an administrative service (1/3)	Reduced revenue for institution (Savings for citizens)	Total savings on paper, printing and staff by adopting one stop shop	Net surplus for institutions (6-5)	Total savings on time and transportation for citizens	Total savings for citizens (5+8)	Overall savings for the society (7+8)
Current situation	27,345,563.95	0.00%	6,649,045	4.11	0.00	0.00	0.00	0.00	0.00	0.00
Scenario 1 (adm. tax. 100% fees 75%/25%)	26,247,015.13	4.02%	5,125,748	5.12	1,098,548.82	8,840,661.89	7,742,113.07	14,158,961.32	15,257,510.14	21,901,074.39
Scenario 2 (adm. tax. 0% fees 75%/25%)	17,150,955.61	37.28%	5,125,748	3.35	10,194,608.34	8,840,661.89	-1,353,946.45	14,158,961.32	24,353,569.66	12,805,014.87
Scenario 3 (adm. tax. 50% fees 75%/25%)	21,698,985.37	20.65%	5,125,748	4.23	5,646,578.58	8,840,661.89	3,194,083.31	14,158,961.32	19,805,539.90	17,353,044.63
Scenario 4 (adm. tax. 0% fees 0%)	13,397,782.96	51.01%	5,125,748	2.61	13,947,780.99	8,840,661.89	-5,107,119.10	14,158,961.32	28,106,742.31	9,051,842.22
Same average price scenario (adm. tax. 43% fees 75%/25%)	21,062,261.20	22.98%	5,125,748	4.11	6,283,302.75	8,840,661.89	2,557,359.14	14,158,961.32	20,442,264.07	16,716,320.46

¹⁶ Calculations based on the data from the Ministry of Information Society and Administration of the Republic of Macedonia, 'Analysis for the e-Documents project', 2010.

The total savings which the citizens gain (column 9) is the sum of the savings on the reduced price and the savings on time and transportation for the additional documents in the current system.

Actually, because the new system is just moving the loss of revenues from the institutions to financial gain for the citizens, this does not provide new added value to the whole system. The elements which will provide new value to the system (which did not exist before) are the savings on paper, printing and staff for the institutions and time and transportation for citizens, which sum up to around of 23 million EUR.

Taking the side of the Government in order to justify the investments made in a new electronic system, organizational reforms, and different activities in order to introduce full one stop shop, the loss of revenues should also be considered. Thus, the last column of this table is the overall savings for the society by providing one stop shop administrative services. This amount is determined by summing up the total projected savings for citizens and institutions and the (negative) difference of the present and future revenues.

4. Conclusions

As the analysis conducted in this paper shows, introduction of one stop shop administrative services would have a positive impact for the citizens when fulfilling their administrative obligations and exercising their rights, and on the other side it will contribute as a significant step forward towards building a client-oriented public administration.

Yet, providing one stop shop services will impose side effects which should not be neglected. These side effects on which we focus are reduction of revenues for issuing documents, but also savings for citizens and institutions because of simplified procedures.

In that regard, the goal of this paper was to make a comprehensive financial analysis of introducing ICT supported one stop shop administrative services, by calculating the overall savings for the society, taking into account changes of revenues and costs reduction/savings for different entities in society.

The financial analysis started with the calculation of the current revenues in the national budget which originate from providing administrative services / issuing documents and estimating the reduction of revenues because of future reduced issuing of documents. Pricing methodologies were proposed, in order to set new prices for the one stop shop administrative services, which will provide additional changes to the budget. Printing costs for the institutions and costs for staff working on providing services were calculated. The costs for the citizens were estimated in terms of costs for transportation and the time lost for obtaining services. Additional side effects were projected as well, such as environmental savings, losses for the notaries etc. These calculations were based on real data from a closed set of 16 institutions, official data from the State Statistical Office of the Republic of Macedonia and real market prices on some items.

The purpose of the analysis was to highlight the reduction of costs and the value added that will be created. The overall savings for the society were estimated by calculating the difference in revenues in the national budget for issuing documents and providing administrative services, adding the savings produced for citizens and institutions because of the simplified procedures and lowered number of issued documents.

The final results of the analysis show that, using any pricing methodology for the new administrative services, different entities in the society (citizens, institutions, environment etc.) will have a positive gain. Savings for the institutions, in terms of savings on staff are almost 9 million EUR, and in terms of savings on paper and printing around 139,000 EUR. Citizens will also benefit significantly because services will be provided in one place, which brings savings in terms of time and transportation that amount to 14 million EUR. The final calculations show that the overall savings for society can be in the range of 9 to 21 million EUR, depending on how the new services will be charged. Taking out the reduction of revenues which, on the other side, represent savings for the citizens, will give the fixed value added of close to 23 million EUR, which represents the clear new benefit provided to the system.

A summary of the potential benefits and losses by introducing one stop shop system is given below:

- Institutions will have fewer costs for printing because of reduced issuing of documents to citizens. The increased efficiency of the employees will mean that more time can be devoted to other work tasks. Also, providing simplified and more efficient services will show an improved image of the institutions for their determination towards better quality service. Directly, institutions will face reduced revenues to their budget because the full price of the new service will be lower;
- Citizens will save time because of simplified procedures, but also going to fewer places to obtain administrative services will reduce the costs for transportation. On the other hand, citizens will pay a higher price (in one place) for the 'frontal' administrative services, which can have a psychological effect of paying more for the same service;
- Notaries will lose because of the reduction of the number of requested documents required as notarial verifications. The total per year amount of these losses sums up to almost 1 million EUR; and
- The projected reduction of printed paper defines the positive impact towards a greener society.

These results can serve as a valuable input for the Government in making decisions on different aspects related to introducing ICT enabled one stop shop. One of the parts of the analysis can serve as a starting point for the Government to determine its pricing methodology for the new administrative services. In this direction we conduct an analysis and create the scenario that provides the same average price of administrative services price paid by citizens as we have in the current situation. This scenario is introduced in order to avoid the psychological moment of paying more for the citizens

with the introduction of one stop shop administrative services, but in the same time minimizing the decreases in revenue for institutions.

Moreover, by using the same parameters in the analysis, the scope of the network calculations can be broadened to encompass all institutions which provide administrative services, and thus provide an estimate of the total value added. The estimated overall savings will contribute significantly in justification for the government investments in new ICT systems, as well as the organizational reforms needed for introducing one stop shop services.

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