

Evaluating Tax sites: An Evaluation Framework and its Application

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Abstract: In the last decade many governments have created e-services in order to deliver instant and advanced services to their citizens. One of the major transactions between the state and the citizens is tax filling and payment. This paper highlights critical factors that make a tax web site successful. Its purpose is the creation of an integrated evaluation framework for tax web sites. This framework should accommodate citizens' needs. It would be useful both for government decision makers and for tax web sites' designers and developers in order to deliver better services to the citizens.

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1. Introduction

Everybody has the right of participating in the Information Society. Citizens not only have this privilege, but they also use Information and Communication Technology (ICT) very often. Millions of business transactions are completed through the Internet every day. This is a fact that can not let governments detached. They have to move in this direction. That is why a state should support e-government.

E-government is the use of ICT by government. It must be understandable that e-government is more than online services. It is the transformation of government into a mechanism “citizen-centred” (Caldow, 2001) without bureaucracy, delays, misunderstandings and other problems that exist in citizens’ transactions with the state. A citizen has the possibility to interact with the government in the same way as he interacts with an e-shop. Furthermore, government agencies interact between each other. The success of G2G (Government to Government) may rely upon e-government being reconceptualised as an instrument of devolved, communitarian governance (Kolsaker, 2006). Mellor and Parr (2002) found that 15% of users in 31 countries from North America, Europe and Asia-Pacific made transactions with government sites. The highest percentages of citizens using government sites were in Sweden

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(57%) and Norway (56%). Thus, in some countries more than half of the citizens make their transactions with the government through the Internet. Moreover in 2003, the Public Accounts Committee (PAC) reported that the UK Government had 100 major ICT projects underway, with a total value of £10 billion (Post, 2003; PCA, 2002).

Citizens and businesses would like to have access and use via the Internet various services. For example, it would be useful to find laws and regulations, access assistance tools, register their business, get a license or permit, or even pay their taxes online.

One of the major transactions between the citizen and the government is the taxation. Tax sites are web sites that help citizens to find information about taxes and to realise their taxes' obligations through the Internet. ICT would strengthen the taxpayer's confidence towards the systems integrity, effectiveness and justice (Tahinakis et al., 2006). In this paper, we focus on this e-government service. Web sites for taxes give the opportunity to citizens to learn more about and arrange online their financial obligations to the state. They also minimize citizen's waste time and money due to the bureaucracy. In order to design and develop a successful tax site, critical factors should be identified. A useful study in 15 countries and 46 public organizations reported that some government organisations adopt ERP (Enterprise Resource Planning) systems primarily to integrate their Information Technology (IT) resources, while others seek greater process

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efficiency or are strategy-driven (Raymond et al., 2006). Several previous studies examined the development of a government site from various points of view. Zahir et al. (2006) presented in a comprehensive way all the different trends in developing a government site. Generally, the transition to tax filling through a web site must follow at least four phases (Chandler and Emmanuels, 2002; New Zealand E-government Strategy, 2006). The first phase is Web presence. In this phase citizens can find basic information on a Web site. The second phase is Interaction. In this phase citizens can access online critical information, download forms, and contact officials by email. The third phase is Transaction. In this phase citizens can complete entire transactions or processes online. The transaction stage of e-government is one of the most important regarding the implementation of an e-government system as it represents the highest level of internal interaction between customers and governments (Al-Sebie et al., 2005). Finally, the fourth phase is Transformation. In this phase the delivery of government services and potentially the operation of government itself are redefined. Information, service delivery and government processes are integrated across traditional boundary lines. Information and services are increasingly customised to the particular needs of individuals and businesses. The identity of individual agencies matters less to people as information and services are accessed through a single point of contact on the web.

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The design of a web site is a very demanding process. Even after the initial design, the administrators should continuously evaluate the site in order to find inefficiencies and improve its effectiveness. Many previous studies targeted on evaluating e-commerce sites. In the sequence, several studies evaluated e-government sites using general evaluation frameworks that have been developed for evaluating an arbitrary web site. Schubert (2003) suggested the Extended Web Assessment Method (EWAM). This method builds on the original WAM and integrates findings from the Technology Acceptance Model. Another tool to evaluate sites is the American Customer Satisfaction Index (ACSI) methodology (Freed, 2003). The ACSI is a cross-industry measure of customer satisfaction produced quarterly by the University of Michigan. Moreover, a very interesting instrument to evaluate e-government sites is the WebQual developed by Barnes and Vidgen (2003). WebQual is based on the quality function deployment (QFD). QFD is a structured and disciplined process that provides a means to identify and carry the voice of the customer through each stage of product and/ or service development and implementation (Slabey, 1990). Barnes and Vidgen (2004) modified the E-Qual tool in order to evaluate e-government sites. Another approach (Choudrie et al., 2004) on measuring the quality of web site used web diagnostic tools (e.g. WebXact, Netmechanic, Validator, Vizcheck). WebXact evaluates accessibility, quality and privacy. Netmechanic

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identifies broken links. W3C's HTML Validator validates HTML code. Vizcheck examines how the colour schemes used by the respective portals impact upon people with various forms of colour blindness. A citizen-centric approach has been proposed by Wang et al. (2005). Wood et al. (2005) described and combined four methods for evaluating government sites: i) usability testing, ii) user feedback, iii) usage data, and iv) Web and Internet performance. Taylor (2003) looked at the quality and accessibility of the information, the ability to complete transactions, and the ability of citizens to participate. Finally, United Nations Division for Public Economics and Public Administration (2002) provided many criteria that make a government site successful. Although there are several previous studies on evaluating e-government sites, they targeted to evaluate specific characteristics of the sites. So, a comprehensive evaluation framework is needed that is also tailored to tax sites.

Based on these previous studies, on discussions with taxpayers, tax consultants, accountants and officials, as well on our previous experience on web site design and evaluation, we developed the Tax Site Evaluation Framework (TSEF). TSEF may help in a holistic and integrated evaluation of tax sites. TSEF aims to consider all important criteria that should be satisfied in order to create a useful and successful tax site. Tax sites provide specific e-services to citizens, so a specific evaluation framework is needed to assess their effectiveness. In Section 2, we describe TSEF and

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the critical factors for successful tax sites. In section 3, we apply TSEF and compare five European tax sites. In section 4, we discuss the evaluation results. Finally, in Section 5, we conclude and suggest areas for improvements.

2. Tax Site Evaluation Framework (TSEF)

After considering the important factors for an effective tax site (Appendix), we classified them into five categories: 1) Content, 2) Presentation, 3) Usability, 4) Technical, and 5) E-Services & Interactivity (Figure 1).

Figure 1. Tax Site Evaluation Framework

The Content category examines factors related to the user's satisfaction regarding the information's quality and quantity that he gets from a tax site. It consists of three subcategories: i) Quantity, ii) Quality, and iii) Personalization. Quantity examines the completeness and comprehensiveness of the information in the tax site. Quality examines at what extent the Content is useful, relevant, simple and clear. Moreover, it must be current and updated continuously. Personalization investigates tax site's efficiency to customize the Content to the user's profile. The user's

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profile can be estimated using either his registration information or his navigation trail. The Content should also satisfy all possible users (e.g. a regular citizen, an immigrant, a business). Other classification modes (with respect to region, marital status, occupation, etc.) can be also supported. Moreover, it must support multiple languages for foreigners, immigrants, etc.

The Presentation category examines how the Content is displayed to the user. A tax site must be aesthetic and attractive in order to make the browsing pleasant. This category consists of three subcategories: i) Appearance, ii) Format, and iii) Multimedia. Appearance examines the aesthetics and the use of colours in the tax site. The appropriate use of colours, the size and place of the various objects on the screen may give an aesthetic result. Colours should help in making the tax site attractive as well as the navigation easy. They must be neither very light nor very heavy for the user. Format examines the appropriate and consistent use of styles, fonts and titles. It is an important factor for a tax site because the majority of information is given by text. For example, the use of fonts' sizes (titles, subtitles, text, links, etc.) should be suitable for the Content and consistent in every page of the tax site. Multimedia examines the extent and quality of multimedia usage. The designers can use sounds, photos, videos or flash movies in order to make information in the site more understandable. The multimedia variety, attractiveness and quality

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are examined. Also, their usefulness and effectiveness in helping the user is considered.

Another important category is Usability. It examines factors related to the easiness and friendliness of using the tax site. It consists of five subcategories: i) User Interface, ii) Structure & Organization, iii) Navigability, iv) Orientation, and v) Search. User Interface examines the easiness of finding the url of the tax site, of learning how to use the tax site, and of using it. People say that “the beginning is half of the whole”, so the home page is very important. The menus, toolbars, buttons, icons, frames etc. should be simple and easy to use. Furthermore, the user should find them useful and effective in accomplishing his tasks. Accessibility means designing a user interface that is not only effective, efficient and achieving user satisfaction, but also inclusive of more people in more situations (Ma and Zaphiris, 2003). For example, the site must be accessible by special needs persons. There are more than 750 million people with disabilities worldwide, at least 6 million in the United States alone (Huang, 2003). Structure & Organization examines if the order of pages is logical and drives a user simply to the service that he wants. Navigability examines if a user can easily explore the site without become weary. It is useful to provide customary shortcuts, Help button, buttons to navigate to the next or previous page, button to go straight to the Home page, buttons to navigate inside the current page (go to the top, bottom,

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etc.). The absence of navigation errors like broken and missing links or pages under construction is imperative. Orientation examines the user's ability to understand where exactly he is currently in the site. Usually, tax sites contain many pages and a user after many "clicks" can be lost. A site can help the user's orientation by offering a site map, indexes or an address bar which contains the path that a user followed in order to arrive at the current page. Finally, Search examines all the facilities that a tax site offers to a user in order to find the information that he is looking for easily and fast. A search engine and subject directories are such tools. These tools must offer complete, accurate and relevant results. There is no reason to have a search engine if the user can not find exactly what he is looking for.

The Technical category examines factors related to the Technical aspects of the tax site. It consists of four subcategories: i) Reliability & Maintainability, ii) Performance, iii) Compatibility, and iv) Security. Reliability is the outward-facing feature of e-government – the part that constituents see, expect and depend on (IBM Corporation, 2001). When e-government infrastructures become hindered – unreliable and unavailable due to slowdowns or security breaches – the constituent experience and the rationale for undertaking the e-government initiative is threatened. Reliability & Maintainability examine if the tax site operates continuously without any breakdowns. Furthermore, in case of any breakdown, the user

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must be able to recover his information. When the tax site starts operating again, the user should be able to continue from the breakdown point. Providing Technical support to the user is also useful. Moreover, the tax site should send acknowledgments for transactions. Finally, the tax site must be continually upgraded in order to support the increasing number of users and e-services. Performance examines the downloading and uploading speed of the tax site. For example, how much time is needed for a user to upload his tax form? This is a very important factor because if the communication is too slow the user may become anxious. Consequently, designers have to create a tax site that satisfies the criteria in the first three categories but in a way which will not make the site slow. Compatibility examines the capability of the tax site to support various operating systems, web browsers, multimedia software, screens' resolutions, communication lines, user devices, etc. Security is of paramount importance. The tax payers give important personal data to the tax site, so they must be secured in all their transactions. Security certifications and guarantees would be used. Encryption and cryptography of the input and output data would be also useful. However, the existence of the security mechanisms is not enough. The tax site has to "advertise" these guarantees because the majority of the users are people with no extensive experience on e-transactions. So, the tax site should explain the

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security mechanisms, and make it clear that it can protect the user's personal data in order to gain the user's trust.

E-services category contains factors related to the Internet's added value. Users are granted with services that did not exist before Web's explosion. In our days a citizen can get any information he wants sitting at his office or home. The communication between the tax site and the citizen can be asynchronous or synchronous. A citizen can discuss several issues not only with the tax site officers but also with other citizens. Applications such as e-mail, forums, discussion boards, sms, alerts and newsletter provide asynchronous communication. Furthermore, a citizen can use synchronous applications, such as chat rooms, voice over IP (Internet Protocol) and other conferencing tools to communicate in real time. This communication can be personalized. Other important E-Services include e-learning, e-consulting and e-payment. The tax site may offer to the tax payer educational opportunities in order to learn about his tax obligations, tax laws, the necessary receipts, etc. Also, the tax site may offer accounting advises. The tax payer may discuss online with a revenue issues about his tax obligations. Moreover, tools to help the tax payer to learn the site's operation are useful. For example, the tax site may offer flash movies and videos to explain how a tax payer can fill in a form or to demonstrate the site's operation in order to facilitate the user finding what he is looking for. Additionally, the tax site should offer on line

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Technical assistance in case a tax payer has technical problems in interacting with the tax site. Of course, the tax payer should have the opportunity to pay his taxes online using a credit card or a banking account.

3. Evaluation Results

After presenting TSEF, we examined its applicability. We looked at many European tax sites. The evaluation of a tax site is a very demanding task. It requires evaluators who understand how tax sites operate and what is important for effective tax site operation. TSEF is an evaluation tool consisting of more than one hundred parameters in 21 subcategories. These factors make the evaluation process a very demanding task. Initially, the evaluator has to understand the TSEF. Then, he has to explore the tax site and find out its facilities and services. Finally, he must spend many hours to evaluate every specific criterion for every tax site. So the evaluation task requires a huge effort by the evaluator. There is no way to persuade random users to do it. Furthermore, TSEF is a comprehensive guideline for the design of tax site. It can be used from web developers and web administrators for the creation, the amelioration and the evaluation of the tax site according to the site's stage. It is understandable that the evaluation by non-experts is too risky for the results' accuracy.

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Several previous studies discussed the various evaluation methods. Hartson, Andre and Williges (2001) considered four evaluation methods: 1) Expert Evaluation, 2) Guidelines review, 3) Cognitive walkthrough, and 4) Usability testing. We decided to perform the evaluation by ourselves because TSEF was designed to be used by experts (web designers and developers).

The experts are able to easily identify problems and difficulties based on their prior experience with similar systems. Experts are able to make comparisons between systems or particular requirements of user groups without the expense of a comparative user trial (Ross & Burnett, 2001). Moreover, they see beyond the technology to the likely human factors problems. This means that they are able to identify more usability problems (Chan et al, 2002). Some usability inspection methods (Nielsen, 1994) are essentially intrinsic in that they analyze an interaction design with respect to a set of design guidelines or “heuristics”. This kind of inspection method requires a usability expert to analyze the design rather than testing with real users. The experts work alone. Sometimes, they use guidelines or a supporting scenario. Regarding our study, we used our proposed framework (TSEF) as a guideline. Tax sites’ designers and administrators could use TSEF as a guideline to ameliorate, reconstruct and evaluate their tax sites.

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The purpose of this section is to test the applicability and utility of the TSEF with real data, and current available resources. So, we (the authors) performed the evaluation. The evaluation was conducted by the two authors synchronously. This means that we sat together and examined the tax sites. We were discussing and arguing about each criterion. Then we agreed about the quality of the site and assigned the grade for the specific criterion. We also used Netmechanic and Watchfire to test the tax sites with respect to the browsers compatibility, loaded time, bad links, accessibility and privacy. We evaluated the tax sites during Spring 2007.

We selected tax sites based on our ability to examine them. Since we speak Greek, English and French we selected tax sites that use these languages. However, there are many tax sites that require registration. So, we could not examine tax sites that required registration. In addition, we tried to represent various countries across Europe. We also tried to cover countries where people have different culture and computer experience. So, we compound to five tax sites.

Firstly, we selected the Greek tax site (<http://www.taxisnet.gr>) with which we had a lot of experience. Then, we selected two tax sites from developed countries with widespread Internet use (France and Netherlands). French tax site (<http://www.impots.gouv.fr>) is one of the best tax sites in Europe. Netherlands (<http://www.belastingdienst.nl>) is a developed country which operates a very good tax site. Moreover, we

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selected Finland (<http://www.vero.fi>) as a representative from the Scandinavian countries. Finally, we selected Czech Republic's tax site (<http://cfs.mfcr.cz/>) which is a new country in European Union.

As we described in section 2, TSEF is an evaluation framework for tax sites across 5 categories: 1) Content, 2) Presentation, 3) Usability, 4) Technical, and 5) E-services & Interactivity. Each category has the same importance (weight) in the total score. Each category is divided into subcategories of equal sub-weight. The highest grade that a tax site can get in a category is 100 points, and the lowest is 0 points. In order to make the evaluation more understandable, we choose to present firstly the results by category and then we give the overall evaluation picture.

Regarding Content, the French site is the best (Figure 2). Information is classified and is updated very often. It contains large and high quality Content. Moreover a user can find anything easily and quickly thanks to the proper format, and the Content's categorisation and personalization. Czech Republic's tax site follows very closely. A user can be satisfied with its Content. Information is categorised perfectly, but the personalization could be improved. In Netherlands's and Finland's tax sites, the Content is well organized but it seems inferior in quantity and categorisation comparing to the first two sites. The Greek tax site needs more work. Its Content is short and the personalization seems to not work properly.

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Figure 2: Scores for the Content category

Regarding Presentation, the differences among the five tax sites are larger than regarding Content (Figure 3). Czech Republic's site uses colours and multimedia at a satisfactory level. It has been designed in Flash making the Presentation fascinating. Similarly, French's site tries to please the users but there is a shortage in multimedia and colours except in the Home page. The appearance of Netherlands's and Finland's sites is too simple without multimedia, but with a good format. Finally, the Greek site has a quite good appearance and format, but there is a shortage of multimedia.

Figure 3: Scores for the Presentation category

Regarding Usability, Czech Republic's site achieves the highest score (Figure 4). It seems to be almost perfect. A user has at his disposal many tools in using the site easily. The major advantage of this site is that a user can easily find any directory and index using the two toolbars at the top and bottom of the central page. Other useful buttons include a site map and "home" that help the navigation. A search engine helps to find subjects related to key words. The structure is very good and there are not

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broken or missing links. France's and Finland's site are very good too. Their navigation and the other subcategories are at the same level as Czech Republic's site. They have well structured menus and auxiliary tools like site map and search engine. However, their user interfaces do not seem attractive and the personalisation is a possibility only if a user wants to pay through the Internet. Netherlands's site also uses helpful tools, such as site map and search engine. However, its Structure is not as good as that of the three previous sites and it does not offer personalization. Finally, the Greek site seems poor in comparison to the other four sites. It does not have many tools and there is not customization. Since, it is too simple and short, shortcuts are unnecessary for a good navigation.

Figure 4: Scores for the Usability category

Regarding the Technical category (Figure 5), all sites take care of securing the tax payers' data. Finland's and Netherlands's sites give more information about security in order to remove any user's fear and hesitation. Also, France's site bucks up the user's trust. All the sites operate and are updated continuously. Their performance is quiet good. A user with a low bandwidth communication line does not have to wait very long to get the information he wants. Finally, users with different systems

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and programs do not face problems in using the sites. To conclude a user is satisfied regarding this category. However, Finland's site is a little bit better than the others.

Figure 5: Scores for the Technical category

The last category is related to E-services and facilities (Figure 6). All tax sites have services for communication and interaction like e-mails, telephony, newsletters and frequently asked questions (FAQ). A user can communicate easily with the financial department and he can find any information he needs. It is encouraging that many tax sites use a second language. Finland's and Czech Republic's tax sites offer an English version. Netherlands's tax site offers English and Dutch version. The France' site does not offer English version. In the Greek tax site, the English version is under construction. Furthermore, all tax sites give the opportunity to the user to pay on line simply by making a registration. Tax sites have a separate section in which a user can download application forms or relevant laws. The Greek tax site does not offer this service. All sites explain how a user can interact with the site's services. However, it will be more appropriate if they could use images and videos to explain their services. Also, online learning needs much improvement. Czech Republic's site is the best in this category. It offers many facilities for

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communication and interactivity. France's site is also advanced. It offers approximately the same facilities. The other three sites follow closely. Finally, all sites exhibit a shortage in applications that help people with problems in vision or audition to use them. The only tax site that offers a tool to increase the fonts' size is Finland's site.

Figure 6: Scores for the E-Services category

4. Discussion

In the previous section we examined the tax sites by evaluation category. In this section we present the overall results and make suggestions for improvements.

Figure 7: Total evaluation across all categories

In general, the tax sites performed well with regards to the Content (Figure 7). They contain information of good quality and quantity. The only problem is that there is not enough personalisation of the Content. Tax sites must give the possibility to the user to create a profile in order to customize the pages and to have direct access to the information that he needs and wants. So, customization should be incorporated in the tax sites.

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Regarding Presentation, the French and Czech Republic's tax sites have been developed with great creativeness. On the contrary, the other tax sites have used nice format but without colours and multimedia. Tax sites have to deliver services and information in a pleasant and comely way. It is not enough to only have plenty of information. Tax sites should not appear as impersonal and cold public offices. They should use beautiful colours and multimedia in order to make their usage more pleasant and attractive. Governments have the great opportunity to come closer to the citizen through the Internet.

In the Usability category, all tax sites except the Greek site achieved very good results. The navigation is very easy. They use help buttons like site map or return to Home. They have a list of categories always available, so the user can easily visit any category of the site without the need to return Home. Here, we suggest to the designers to use an address reference which show the path that a user followed in order to open the specific folder/page. Moreover, the structure and the orientation are clear. These subcategories are very important because if a tax site has not a good structure or orientation, navigation becomes unpleasant and the user does not want to use the site. Finally, all tax sites offer search engines. It is the most important tool. There is a lot of information and a user must be able to use keywords in order to find the information that he wants.

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Regarding the Technical category, all tax sites satisfied the criteria in this category. They are compatible to different software and they are reliable. They are also doing well in security and privacy which is the most important subcategory here. Tax sites must encourage users and guarantee them that they are secure and that their personal information will stay private. A method to persuade a user is to exhibit the software or the mechanisms that keep information private. So, the tax site should explain how personal information is secured. Moreover, it must display the advantages that a user will have if he uses the tax site and that he has no reason to be afraid.

Finally, in the E-Services category, the tax sites offer many E-Services but they do not use all the possibilities that information technology offers. They offer the opportunity to the user to download a form or a law, complete an electronic payment and communicate with the public officers. However, they could do many more improvements in this category. For example, we find a shortage in the use of videos to explain some issues. Moreover, tax sites can use software in order to help users with visual disability or a hearing impairment. They could use software for speech recognition and synthesis. For example, they could use sounds or a brief acoustic analysis in every option for people with visual disability. The only site that has a text enlargement facility is Finland's site. Additionally, for low-literate users, the sites would use explanations to make the

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navigation simpler. For people that could not speak or write the native language, tax sites should also offer their services in a second or a third language. Also, they would use translation programs in order to help foreigners and immigrants. Furthermore, the tax sites may offer forums to give the opportunity for information exchange and suggestions among tax payers, accountants, tax consultants, public officers, etc. Of course, this is a project that requires a lot of work and money. It is obvious that the E-Services category is the most demanding. However, there are many opportunities to serve the citizen.

Figure 8 summarizes the total score for every tax site. Czech Republic's tax site is the one that satisfies better the TSEF's criteria. France's tax site follows closely. The other three tax sites are in a good level but they can be improved.

Figure 8: Total evaluation

5. Conclusions & Future Research

Dunleavy and Margetts (1999) described very well that the main goal of the e-government is to enable citizens to carry out more transactions or dealings with public agencies "electronically". Citizens want and need the online communication with the government. The following Figure 9

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shows the interaction state among citizens and their government in the countries examined in this study.

Figure 9: Information Society Indicators regarding e-government
(Eurostat, 2005)

We notice that the enterprises use extensively the Internet for interacting with the public authorities. However, the individual citizens' percentage is smaller, but in the future it is expected to grow.

In this paper, we have presented a comprehensive framework for evaluating tax sites from the citizen's point of view. We classified the evaluation criteria into five major categories: 1) Content, 2) Presentation, 3) Usability, 4) Technical and 5) E-services. Furthermore, we divided each category into subcategories. The Content category consists of the i) Quantity and ii) Quality iii) Personalisation. The Presentation category consists of the i) Appearance, ii) Multimedia and iii) Format. The Usability category consists of the i) User Interface, ii) Structure/Organization, iii) Navigability, iv) Orientation, and v) Search. The Technical category consists of the i) Security and Privacy, ii) Performance, iii) Compatibility and iv) Reliability& Maintainability subcategories. Finally, the E-services category consists of i) Quantity, ii)

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Quality, iii) On line Payment, iv) On line Learning, v) Technical Services and vi) Informational Services.

The adoption of information systems clearly provides a powerful tool for modernizing governments (Zahir et al., 2006). The transition to e-taxes offers many opportunities but also major challenges. Well-designed and smoothly functioning Web sites can be a strong platform for delivering a wide range of tax services electronically. E-Government initiatives propose to enhance efficiency of government organisations, improve the quality of public sector organisation services through quicker transactions, improve accountability, better business processes, and create new services (Heeks, 2001; Seifert and Peterson, 2002). Jaeger (2003) underlined that difficulties can arise in the development, implementation, and updating of e-government sites. However, up to 33% of attempts to introduce enterprise-wide solutions ended in failure (Booty, 1998). Also, e-government has not help to increase the citizens' trust or confidence in government. It will take major improvements in government performance and evidence that technology is responsible for the improvement in order for the public to transform itself into trusting and non-cynical citizens (West, 2004). The realization of this project needs an evaluation strategy; that is why we created the Tax Site Evaluation Framework (TSEF). TSEF is a holistic and integrated tool to evaluate a tax site. Using TSEF, tax site officials and designers would identify the shortages that a tax site has and

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make the necessary improvements. It is well-known that the design and the analysis of an information system are the most difficult and important parts of the information system evolution. Tax sites are very demanding information systems, so TSEF's principals can be used in the design stage in order to avoid mistakes that could provoke serious problems in the future. They can also be used during the whole lifecycle of the tax site to continuously evaluate its effectiveness. To conclude, in this paper we tried to integrate all these factors that are important to create a functional and efficient tax site. In addition, we used TSEF to evaluate five tax sites in order to make more understandable the TSEF and to find out at which level these tax sites satisfy its criteria. The importance of better change management is nowadays, more important due to the evolution of Europe towards a multicultural, more open and international society with changing common values, increasing levels of education, demographic involvement and adoption of new technologies (Stojanovic et al., 2006). "Governments have a historic opportunity to transform themselves, their businesses and their relationships with citizens into world-class players in the digital economy and society. Anything less will result in a seat on the sidelines" (Caldow, 2001).

Future research may evaluate tax sites all over the world and identify cultural similarities and differences. Of course, there are language barriers and the need for registration that is required by several tax sites. Also, a

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simplified version of TSEF would be used by many citizens of various levels of education, income, age, etc. to evaluate a country's tax site.

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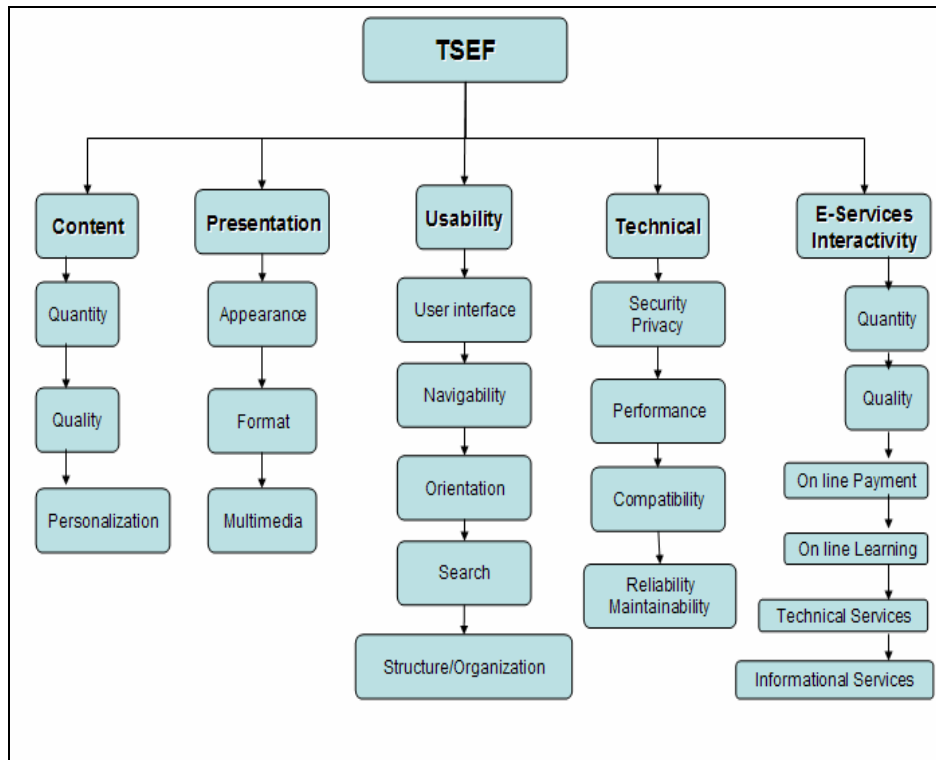


Figure 1: Tax Site Evaluation Framework

Title

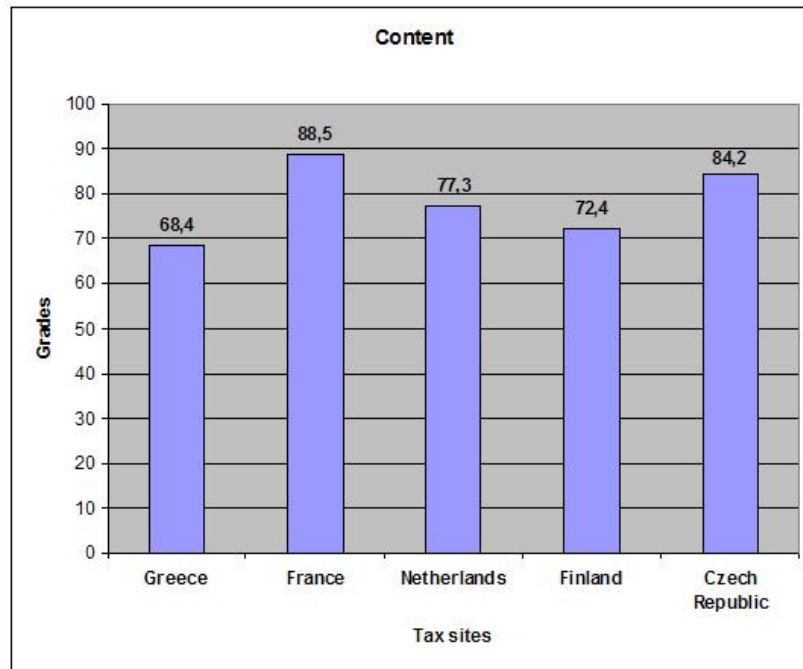


Figure 2: Scores for the Content category

Author

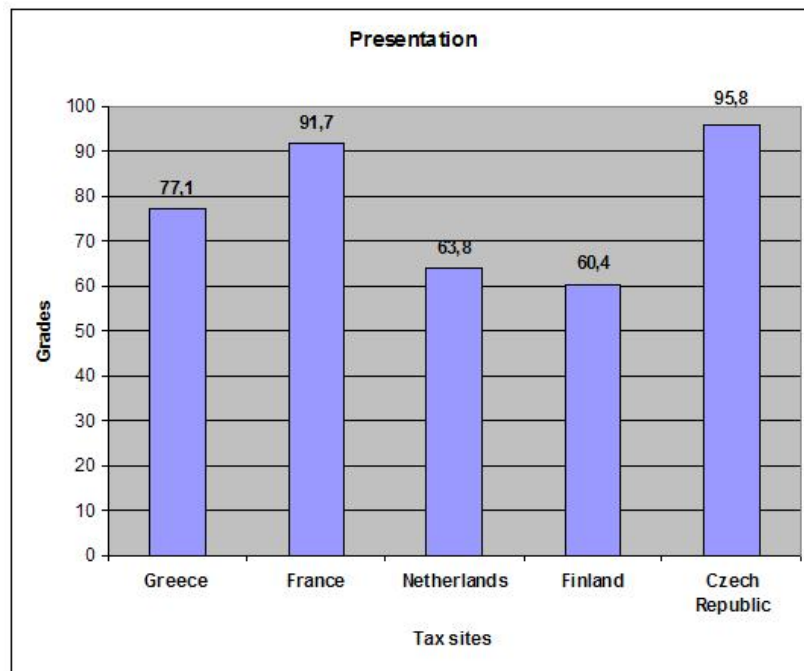


Figure 3: Scores for the Presentation category

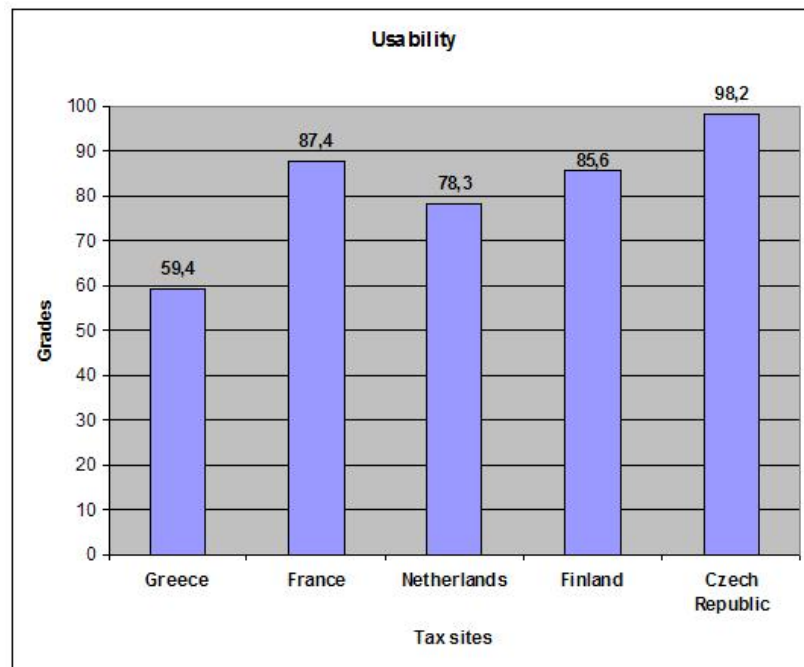


Figure 4: Scores for the Usability category

Title

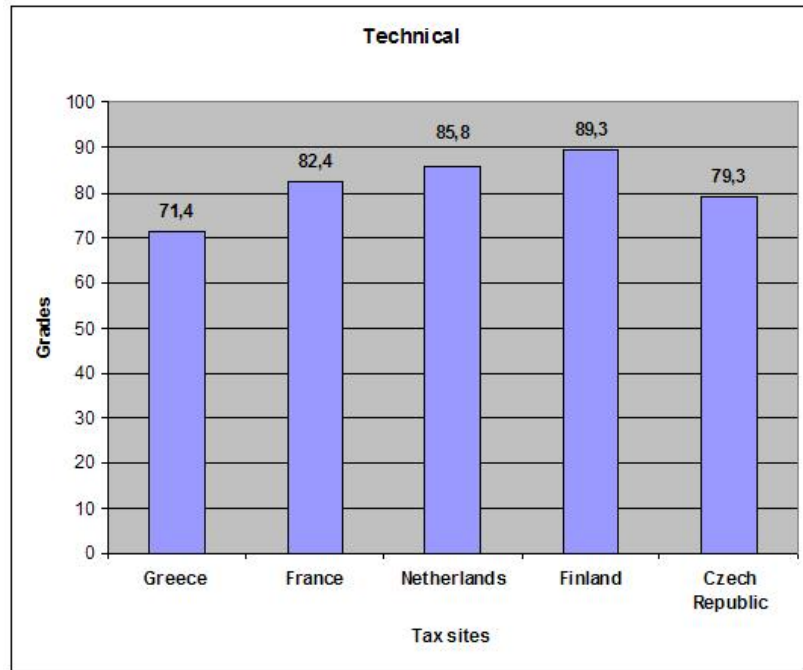


Figure 5: Scores for the Technical category

Author

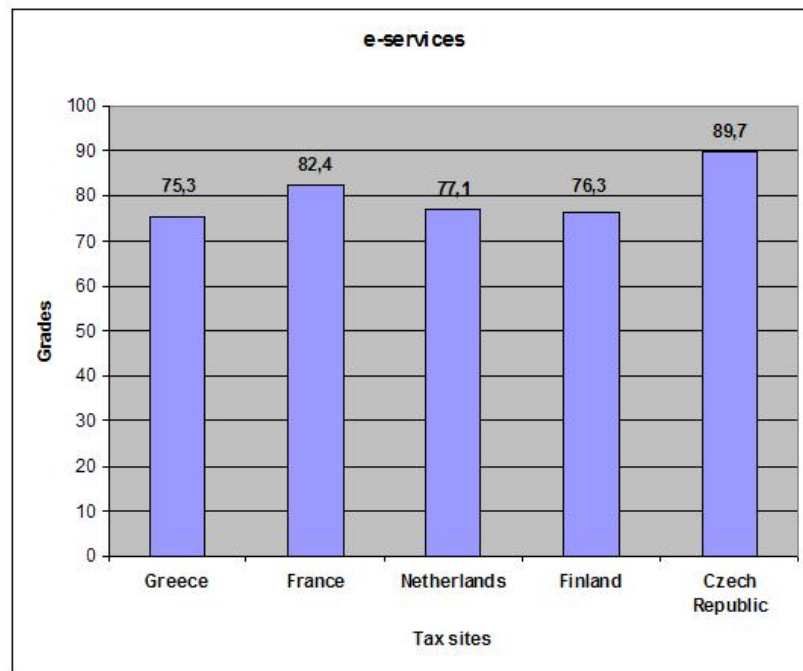


Figure 6: Scores for the E-Services category

Title

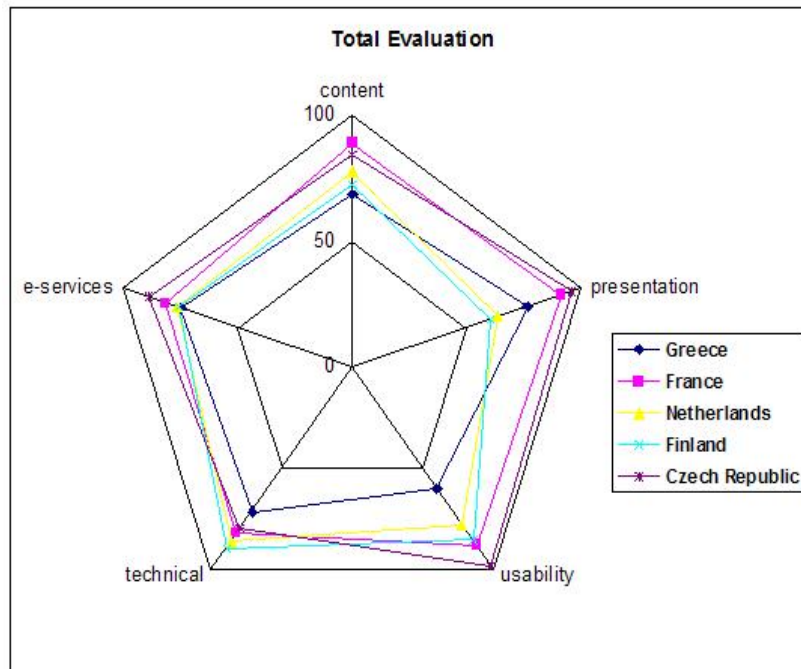


Figure 7: Total evaluation across all categories

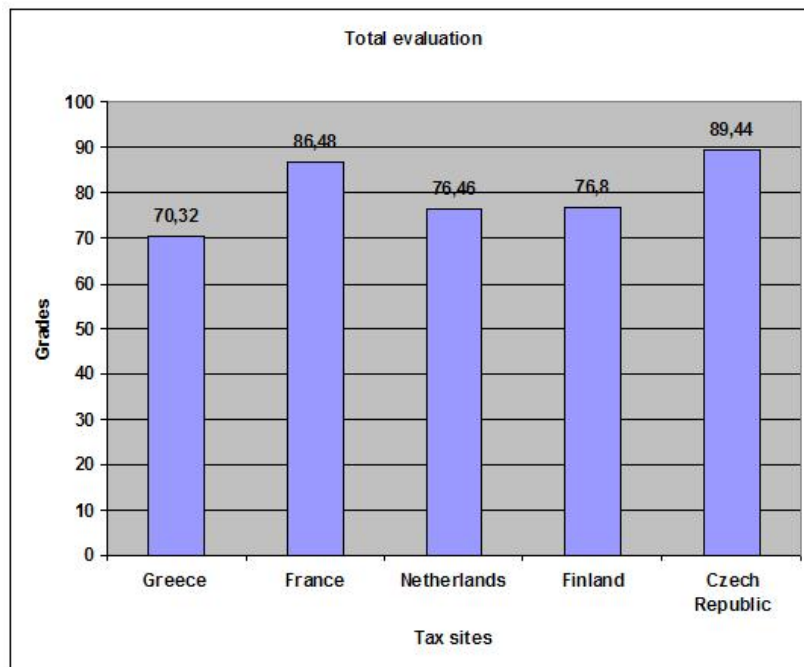


Figure 8: Total evaluation

Author

Information Society indicators				
Country	Percentage of individuals using the Internet for interacting with public authorities		Percentage of enterprises using the Internet for interacting with public authorities	
Greece	obtaining information	5%	obtaining information	72%
	downloading forms	2%	downloading forms	69%
	Returning filled forms	3%	returning filled forms	56%
France	obtaining information	NA	obtaining information	NA
	downloading forms	NA	downloading forms	NA
	Returning filled forms	NA	returning filled forms	NA
Finland	obtaining information	44,6%	obtaining information	88%
	downloading forms	21,5%	downloading forms	87%

Title

	Returning filled forms	11,2%	returning filled forms	71%
Netherlands	obtaining information	40,7%	obtaining information	52%
	downloading forms	21,8%	downloading forms	51%
	Returning filled forms	NA	returning filled forms	44%
Czech Republic	obtaining information	3,3%	obtaining information	73%
	downloading forms	2,4%	downloading forms	65%
	Returning filled forms	1,4%	returning filled forms	32%

Figure 9: Information Society Indicators regarding e-government

(Eurostat, 2005)

APPENDIX

Author

A Content

A.1 Quantity

A.2 Quality

A.3 Personalization

A.3.1 Citizen's Profile

A.3.1.1 Personal data change

A.3.1.2 Code number change

A.3.1.3 Owed taxes briefing

A.3.1.4 Profile status

A.3.2 Company's Profile

A.3.2.1 Information about enterprise's creation, taxation

A.3.2.2 Information about enterprise's closure, tax debts

A.3.2.3 Companies' taxation terms

A.3.2.4 Companies' tax statements

A.3.3 Explanation of tax imposition

A.3.3.1 According to income

A.3.3.2 According to age

A.3.3.3 According to profession

A.3.3.4 According to familial situation

A.3.3.5 According to nationality

A.3.4 Possibility for Use by Special Needs persons

A.3.5 Support of many Languages

A.3.6 Possibility for Use by persons Without Computer Experience

Title

B Presentation

B.1 Appearance

B.1.1 Home Page

B.1.1.1 Comprehensiveness

B.1.1.2 Clear

B.1.1.3 Attractiveness

B.1.2 Use of Colors

B.1.2.1 Quality

B.1.2.2 Appealing

B.1.3 Background

B.2 Format

B.2.1 Content

B.2.1.1 Clear and Simple

B.2.1.2 Comprehensible

B.2.1.3 Grammatically Correct

B.2.2 Pages adapted to fit in Browser Window

B.3 Multimedia

B.3.1 Tangible

B.3.2 Attractiveness

B.3.3 Quality & Fidelity

B.3.4 Useful and Interesting

Author

C USABILITY

C.1 User Interface

C.1.1 Easy to find the Site

C.1.2 Easy Access to Categories

C.1.3 Menu Easiness

C.1.4 Using list for categorization

C.2 Navigability

C.2.1 Basic Navigation Buttons on Every Page

C.2.2 Help Button

C.2.3 No Pages under Construction

C.2.4 Return to Main Page

C.2.5 No Links broken or under construction

C.2.6 Site Map

C.3 Orientation

C.3.1 Location Path on Every Page

C.3.2 Appearance of main menus on every page

C.4 Search Engine

C.4.1 Easy to Use

C.4.2 Comprehensible Results

Title

C.5 Structure/Organization

C.5.1 Well organised site with Reasonable Number of Levels

C.5.2 Registration's Facilities

D TECHNICAL

D.1 Security & Privacy

D.1.1 Security Systems for Data

D.1.2 Security Systems for Payment

D.1.3 Rules about how to use the site

D.2 Performance

D.2.1 Download Speed

D.2.1.1 Fast loading of Pages

D.2.1.2 Fast loading of Multimedia

D.2.1.3 Fast downloading of Files

D.2.2 Upload Speed

D.3 Compatibility

D.3.1 Support of all Web browsers

D.3.2 Support of files created by popular software

D.3.3 Use of popular languages for scripts (java, flash)

D.4 Reliability & Credibility

D.4.1 Registration of Personal Data

Author

- D.4.2 Benefits from Registration
 - D.4.3 Appearance of Authors' Elements on Web page
 - D.4.4 Frequent Renewal of Web pages, Updated
 - D.4.5 Report of Last Renewal's Date
 - D.4.6 Report of the Site's Operational Date
 - D.4.7 Report of Current Date
 - D.4.8 Issues' Renewal
 - D.4.9 Offers' Renewal
 - D.4.10 Publicities' Renewal
 - D.4.11 After job services
-

E E-Services & Interactivity

E.1 Quantity

E.2 Quality

E.3 On line Payment

E.3.1 By credit card

E.3.2 By bank account

E.3.3 By other electronic way

E.4 On line Learning

E.4.1 Using videos

Title

- E.4.2 Using flash movies
- E.4.3 Download Instructions
- E.4.4 Online communication with a specialist
- E.4.5 Forums and Chat Rooms with other tax payers

E.5 Technical Services

- E.5.1 On line help for form filling
- E.5.2 On line help for problems with the system

E.6 Informational Services

- E.6.1 Introductory Information
- E.6.2 Explanation of abbreviations and terminologies for the taxes
- E.6.3 General information
 - E.6.3.1 Contact with us
 - E.6.3.2 Registration problems and complaints
 - E.6.3.3 Citizen's briefing for the new taxation - announcements
- E.6.4 Citizen's registration
 - E.6.4.1 Income statement submission/ declaration
 - E.6.4.2 Taxes notification /certification
 - E.6.4.3 Briefing via e-mail
- E.6.5 Help
 - E.6.5.1 Frequently Asked Questions (FAQ) and Answers
 - E.6.5.2 Via the web page

Author

- E.6.5.2.1 By form
 - E.6.5.2.2 By advices
 - E.6.5.2.3 By examples
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