

USABILITY AND FUNCTIONS OF THE PUBLIC ADMINISTRATION PORTALS IN THE EUROPEAN UNION COUNTRIES

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Abstract: *The following article is about the lives of the citizens in the European Union. The structure and functions of the current public administration portals in the European Union countries is described as a brief definition of the European public administration. Selected portals have undergone usability testing, which allowed gaining more detailed information about using the portals by their users.*

Keywords: *European Union, Public Administration, Portals of the Public Administration, Accessibility, Usability Testing, eGovernment.*

JEL Classification: *H11.*

1. Introduction

Portals of the public administration usually have a function of the information centre of the public administration or in the last years are also used as a communication point among the bodies of the public administration and the users of the services provided via the Internet. Thanks to 27 different members of the EU there are also many different portals. There is not only difference in kind and type of offered information and services, but also the structure of the whole portal varies. Besides official portals, which are administrated by the specialized bodies of the public administration of their own countries there are also unofficial portals, which deal with the problematic of the public administration or counselling and mediation of their services. Due to that some countries provide more than one official portal of the public administration, in respect of law, culture and political environment which are defined in the specific country.

The group of the users is wider and wider because of the free move of the people (of labour force), goods and services and also the capital within the EU. Therefore new requirements are needed for every portal. This article is about meaning, functions and structures of the public administration portals. In some selected portals their usability is also evaluated.

2. The public administration in the EU countries

Each public administration in each EU country has its own specifics, but the aim must be the same. This is mainly improvement in the quality of life of the citizens. The specifics must respect the rules of the permanent sustainable development and at the same time it must improve efficiency and quality of provided public services. On the basis of subsidiary principle there is a respect of each member state which has a possibility to improve its own system according to the particular needs of its citizens.

Moreover it is required to supply its own system effectively and reliably as the EU agreed in the relevant regulations. [1]

The main way leading towards improvement in competition of the integrated Europe in relationship towards other partners and also towards other competitors around the global planet is thought to be quality and efficient performance of the public administration. For this reason the current public administration must readjust requirements of newly created information society and use modern information and communication technologies. In the member states of the EU can be seen tendencies towards using information technologies in all parts of the administration, automation of the administrative operations and processes and improvement in communication and exchanging information between the state and its citizens. [2]

The big amount of the member states of the EU must have gone through most of the reforms of the public administration during the last years. Those are mainly states belonging to the former eastern block and the states with continental system of the public administration, where the central administration had much bigger power than the regional authority. Nevertheless, in all states democracy, decentralization and delegation of authority of the public activities have been transferred to lower regional or municipality administrations. These changes are also seen in the structures of the portals of the public administration when most of the information and services including their retrieval is carried out by segmentation to the lower regional public administrations. [3]

Moreover, the access towards the realization and operation of the public administration must have been reassessed because of the new problems which appeared. This is mainly connected to members of the national and ethnic groups who come to the EU from Turkey, north Africa, southeast Asia, but also from the states of former Soviet Union and some member EU states, such as Bulgaria and Romania. Therefore, the information must be accessible in many languages and there is the necessity to invest money into interpreters and set up specialized departments. The portals of the public administration must operate in multilingual mutations including documents for downloading. Some portals consists of specialized sections which are made for 'foreigners/immigrants'. Among other problems, which we have to take for granted, are problems about the environment, fight against spreading drugs, ensuring coequality between men and women, respect rights of disabled people etc. These problems are mainly solved by specialized sections, very often with cooperation in other portals and information resources. [1], [3]

3. Portals of the public administration, their importance and functions

The name of the portal is usually used for web presentation, which enables quick access to big amount of sorted and related information in one place. Other signs of these portals are regularly updated news, advice, documents for downloading, notices or archive messages and also different forms of information retrieval, which help to find the required information. Most of the portals today offer possibility to sign in and log in. Users are then allowed to access more information and additional services, such as sending news to the mobile phones or to emails etc. [3]

Portal could be defined as a gate or entrance point into the specific problematic. In case of the public administration portal, it is a gate leading towards information about the public administration and the life in the specific country.

Each country in the EU has a different attitude towards creating and carrying out their portals. Some countries are satisfied with a brief listing of basic information about the public administration, which are realized in the forms of references to the web presentations covering this problematic. Other countries offer regularly up dated information, contacts to the bodies of the public administration, advice, documents for downloading and electronic services. Differences could be also found in the names of the portals, where are also eGovernment portals, civic portals or governmental portals etc., not only portals of the public administration. We can often find portals which are only for the citizens and the businesses or strictly only for the bodies of the public administration. Unity can be found in the relation to the EU, its organs and their published information and portals of every member state. In the last years a trend has been to create portals of the public administration, which runs as an intersection of the existing portals of the public administration. This portal is usually in the centre of attention because it is more advantageous to promote one complex intersection than the network of the thematic portals, e.g. when entering via web browsers. [3]

Portals of every member state of the EU do not usually have unified structure and range of offered information and services. The similarities could be found in the portals of the countries with similar historical development and cultural tradition. As an example there are comparable portals of the Czech Republic and Slovakia or portals of Denmark and Sweden.

Portal with the name EUROPA has the EU. This portal is oriented on publishing basic information, news and different regulations, which are under the authority of the EU. In the browser environment Internet Explorer 8, it could be found on <http://europa.eu/> and is accessible in 23 language mutations. References to other portals of the public administration in each EU state, which are in forms Uniform Resource Locator (URL) mentioned in Appendix 1, were gained from the Portal of the public administration of the Czech Republic, in section 'Information about the EU', or were possibly added from the portal EU – EUROPA portal. Basic information about each state including references to the web presentation having function of the public administration portal could be found on this portal in the section about each member state of the EU.

The aim of these portals is mainly running of the public administration in every member state and also makes it easier to retrieve the offered services, duties and possibilities of communication with specific bodies of the public administration. Among the users of the portals are of course the citizens and the businesses of the state, then the citizens and the businesses of other member states of the EU and last but not least foreigners living in the specific state or those who want to visit it. Therefore, it is necessary to concern in their suggestions and offer the information accessed on these portals. [3]

Portals are integral parts of the eGovernment or the electronic public administration in each country and serve mainly as an information tool and intersection which has the

aim to increase knowledge about advantages of the electronic public administration, its offers and services.

4. Requirements for the portals of the public administration

To satisfy the users' requirements they must be thought in advance and the creators of the web presentations and the services must oblige it. The portals should be user-friendly; they should have logical structure of the website navigation and organization of the basic elements such as the name of the portal, main menu, switching into different language mutations, making the letters bigger or smaller, signing in to the specific services and help and search for information needed. Then they should be graphically interesting and should include connections via references. There should not be missed a description of the work with the page and feedback to the provider. To reach this the users should be invited to join this proposal. The users should participate actively at the beginning and during the development of the project mainly when it is connected to the user interface and the definition of the range of the offered services and information. [3], [5]

Web presentations are made and provided to the users. Therefore, it is necessary to make them easily accessible and user-friendly. Accessibility shows us the amount of the users with different knowledge and experience. The main aim is to ensure that the users will not be distracted by any problems and troubles while going through the presentation. There are many methodologies which specify principles of how to create the user-friendly web presentations. [5]

However, the portals of the public administration and other web presentations of the bodies of the public administration need different requirements than e.g. media portals and other thematic portals. The users expect better information value from the portals of the public administrations. There should not appear any advertisements which are not in any connections with carrying out the public administration. Graphics should be chosen suitably (very often the combination of national colours are used) and should not disturb the reader. Too many animations and advertisements make the work with the web presentation much slower and more confused. The first thing today is also the requirement for an interconnection among all the bodies of the web presentations which means that the references to other web sites should be highlighted. [3]

These requirements, when web presentations making, are preferred also by supra-national level (organs of the EU) as well as by every member state [3]:

- creating portals as intersections to other services and also as a complex centre for electronic services and communications among the bodies of the public administration,
- cross-border cooperation at regional level,
- multinational language mutations on the portals in respect of minorities living in the specific country,
- spreading offers of the electronic services and their interconnection,
- personalized services for the businesses as well as for the citizens,

- wider participation of the businesses already in the phase of choice and optimization of the services,
- users' segmentation according to their needs.

5. Usability and structure of the public administration portals

Usability of the web presentations shows us how easily and intuitively are the web pages used, how the users find the information needed and how they feel about their usage. Of course, it is necessary to know if the web pages are lucid and understandable; i.e. how user-friendly they are. Serviceable web pages are those where the users feel good and find everything they look for quickly. The most important factor is the level of website navigation on the web presentation. The main purpose of it is not to allow the user get lost in deeper search. Also the users must be able to do everything why they attended the page. The result of bad usability could be outflow of the web pages and in connection with it also financial loss.

For finding out all the failings and mistakes which might cause wrong usability of the web presentations there are different methods of testing and evaluating of the usability. Among the advantages of these methods is getting information about real usage of the product by the user including stimulating remarks used in the further development. Among the disadvantages is that the user interface should be prepared for testing and also the testing itself do not offer direct solution to the problem. [3]

According to this the testing of usability was carried out in the selected portals of the public administration in the member states of the EU. Reduction of the number of testing portals was necessary because of the language barrier (some portals are accessible only in the national language of the member state). Time and organization were the other reasons for reduction, because it was not possible to test all 27 portals. The conditions were set for these reasons for development into the main phase of testing and evaluating the usability. They were set in order to follow the language version of the portal and for its structure, configuration and accessibility of required information.

1. Is there an English version of the portal?
2. Is there segmentation according to the theme or life's problems? (in all language mutations)
3. Is it possible to get the required information from the home page without necessity to search for it? (e.g. by switching the bookmark or the role – in every language mutation)
4. Is there a possibility for searching? (in English version of the portal).

For the progress towards the main phase it was necessary for the portal to fulfil the first and the second condition and at the same time at least one of the other two conditions. These requirements were fulfilled by 15 portals of the public administration of the member states of the EU, such as Belgium, the Czech Republic, Estonia, Finland, France, Cyprus, Latvia, Hungary, Malta, Poland, Austria, Greece, Slovakia, Slovenia and the UK.

As the main criteria for the choice of the suitable testing method and evaluation of the usability were these criteria set:

1. minimal time demand of testing (including preparation and progress of the main testing, not processing of the results),
2. special equipment (method which did not need any special equipment – PC is thought to be the basic equipment),
3. recruit the participants (according to the high number of the tested portals it was necessary to recruit the sufficient number of them – it was expected that the portals would be divided into groups, i.e. that each group would need its own participants),
4. minimal knowledge and skills of the participants (basic knowledge of work with computers and searching on the internet, knowledge of English language etc.).

In respect of information above the testing method and evaluation of the usability was chosen as a method by questionnaire survey. Specifically, these methods were used [4]:

- Questionnaire for User Interface Satisfaction (QUIS) measuring overall satisfaction with the user interface. This method consists of questions divided into 5 groups: overall reaction to the software (website), which consists of 6 questions, screen (consists of 4 questions), terminology and system (website) information (6 questions), learning (6 questions) and system capabilities (5 questions). Each question is rated on a ten-point scale (from 0 to 9) with appropriate anchors at each end (e.g. overall reaction to the website: from terrible to wonderful).
- Nielsen's Attributes of Usability (NAU) – this usability test only has five questions that focus on the usability with the questions based on ability to learn, efficiency, ability to remember, errors (accuracy) and subjective satisfaction. The specific scale of the test ranges from bad to good with a rating starting from 1 (up to 7).
- After Scenario Questionnaire (ASQ) is a three-item questionnaire and consists of three questions in general: I am satisfied with the ease of completing the tasks in this scenario; I am satisfied with the amount of time it took to complete the tasks in this scenario and I am satisfied with the support information (online help, error messages, documentation) when completing the tasks. After participants finished a scenario, in this case it means questions of the methods QUIS and NAU, they completed the ASQ.

Because the methods require answers to the questions such as arrangement of the text on the page, order and speed of the pages in case of QUIS method or ability to learn and efficiency in case of NAU method, it was necessary to form a set of eight questions, which were carried out by the evaluators before testing. The aim of these questions was obvious. It should have enabled the evaluators to try each function part of the portals and get to know the environment which were to evaluate.

At the set of eight questions for each portal the overall time for their filling and its rate was studied (there were 3 possibilities – answer YES or YES, but after a longer time or NO). The results of testing for the questions QUIS, NAU and ASQ are shown in Tab. 1, where the numbers in the first line mean:

1. QUIS – overall reaction to the software (website),
2. QUIS – screen,
3. QUIS – terminology and system (website) information,
4. QUIS – learning,
5. QUIS – system capabilities,
6. NAU – ability to learn,
7. NAU – efficiency,
8. NAU – ability to remember,
9. NAU – errors (accuracy),
10. NAU – subjective satisfaction,
11. ASQ – I am satisfied with the ease of completing the tasks in this scenario in general,
12. ASQ – I am satisfied with the amount of time it took to complete the tasks in this scenario in general,
13. ASQ – I am satisfied with the information support (online help, error messages, documentation) when completing the tasks, in general.

Values in Tab. 1 are in forms of average values as they were gained from the participants testing the specific portal. There were 125 evaluators altogether, but each of them could test only 3 portals due to the time consuming procedure, i.e. each portal was tested by 25 evaluators.

Tab. 1: Results of usability testing with methods QUIS, NAU and ASQ.

	1	2	3	4	5	6	7	8	9	10	11	12	13
<i>Austria</i>	7,24	7,11	6,22	6,12	7,65	5,32	4,24	4,98	5,28	5,76	4,32	4,88	3,64
<i>Belgium</i>	5,84	6,77	5,58	6,91	6,74	4,92	3,88	4,85	5,16	5,28	4,36	4,60	3,52
<i>Cyprus</i>	4,28	4,82	3,84	3,34	3,12	3,08	2,96	3,02	2,96	2,76	2,72	2,64	2,96
<i>CZ</i>	6,14	6,65	6,33	7,61	6,12	5,04	4,04	5,14	5,52	5,16	4,08	4,68	3,72
<i>Estonia</i>	5,75	6,33	6,12	7,20	6,23	4,84	3,96	4,72	4,96	4,92	4,56	4,76	3,84
<i>Finland</i>	7,03	7,56	6,43	7,34	6,88	5,36	4,12	5,09	5,20	5,60	4,48	4,92	3,68
<i>France</i>	4,74	5,42	3,45	4,71	3,34	2,88	3,16	3,22	3,12	2,88	3,04	2,88	3,24
<i>Greece</i>	5,12	5,68	4,91	5,24	4,94	3,96	3,44	3,78	3,36	4,52	3,68	3,60	3,20
<i>Hungary</i>	5,44	5,95	4,91	5,48	4,95	4,16	3,36	4,14	3,76	3,76	4,12	4,16	3,56
<i>Latvia</i>	5,71	6,35	5,44	6,19	4,82	4,24	3,24	3,95	3,68	3,52	4,16	4,32	3,48
<i>Malta</i>	4,91	5,45	4,24	4,11	4,98	3,20	3,04	3,36	3,04	3,16	3,96	2,92	3,08
<i>Poland</i>	5,29	6,12	5,12	5,56	4,83	4,16	3,52	3,67	3,56	4,24	3,64	3,36	2,88
<i>Slovakia</i>	6,03	5,82	6,08	5,34	4,72	4,24	3,68	4,22	3,44	4,68	3,80	3,52	3,68
<i>Slovenia</i>	5,26	6,08	5,82	6,11	5,28	3,84	3,24	4,16	2,96	4,32	3,88	4,12	3,44
<i>UK</i>	5,69	5,92	5,44	5,82	4,54	3,68	3,36	4,01	3,08	4,24	3,80	4,04	3,12

Source: [3]

Calculation of the final value was worked out the way that the evaluator chose one number of the interval, e.g. at 10. NAU – subjective satisfaction, choice from ‘bad’ for 1 point to ‘good’ for 7 points. These points were then added for each portal and divided by number of the evaluators of this portal. The formula could be this:

$$\bar{o}_k = \frac{1}{n} \sum_{i=1}^n o_{ik}$$

where ‘k’ is a number of questions studied at one portal (k=1,...,35) and ‘n’ is a number of evaluators for each portal (n = 1,...,25).

Only for better lucidity of the table the questions of QUIS method (1-5) were transformed using the arithmetical average into 5 groups (as they are defined by the method itself), i.e. in case 1 QUIS – overall reaction on the web presentation, which consists of 6 questions, all average values were added and divided by number of questions. Nevertheless, there were 35 questions of all methods altogether.

Except questions of QUIS, NAU and ASQ methods at the portals were also studied other attributes such as average time needed for testing or average mark for the portal (further information in [3]). The data matrix was formed from all gained data; the standardization and correlation were carried out (in order to eliminate dependent attributes which were taken away afterwards). Also the number of clusters was determined by using the neuron networks and at last the clustering was set using the algorithm K-Means. The results of the clustering including the division of the state into groups and their common features are shown in Tab. 2.

Tab. 2: Results of the clustering.

Cluster	Country	Common features
Cluster 1	Austria, Belgium, CZ, Estonia, Finland.	<ul style="list-style-type: none"> • The group is quite compact, only an average time needed for the testing of the portal, the CR is different, • high average point of evaluation, • lucid structure and arrangement of information and the portal itself, • modern design and function, • satisfaction with demandingness of tasks fulfilling, • satisfaction with information support when tasks fulfilling, • very good average mark.
Cluster 2	Cyprus, France, Malta.	<ul style="list-style-type: none"> • Bad searching for information, • confused structure and arrangement of information, • discontent with demandingness of tasks fulfilling, • discontent with information support when tasks fulfilling, • long average time for testing, • very bad average mark.
Cluster	Country	Common features
Cluster 3	Greece, Poland, Slovakia.	<ul style="list-style-type: none"> • Long average time for testing, • but good searching for information on the portal, • lucid structure and arrangement of information (except Greece, which reached subnormal results), • mild discontent with time demandingness when tasks fulfilling, • in Poland also discontent with information support when tasks fulfilling.
Cluster 4	Hungary, Latvia, Slovenia, UK.	<ul style="list-style-type: none"> • Long average testing time of one portal, • good graphics and design, • lucid structure and arrangement of information and the portal itself, • satisfaction with demandingness when tasks fulfilling, • easy searching for information, • bad average mark.

Source: [3]

Except above information the main common features could be defined in the selected portals of the public administration in general:

- menu could be found in top part or at the sides, it causes the important role while searching for information,
- national colours of the portals are preferred and also there are usually state symbols,
- most of the portals are available in other language mutations, most often in English version,
- on home page references could be found connected to a brief political, historical and cultural description of the specific state, mainly according to the public administration and administrative structures – for each region and municipality there is usually its own portal,
- interactive maps with wide range of functions – maps are usually divided into the administrative regions of the country,
- current news and terms of the public administration, calendar with the important terms – e.g. tax payments, requirements etc.,
- references to the official web presentations of the president, the government, the ministries and other bodies of the public administration,
- information division according to interest groups – mainly the basic segmentation for the citizens, the businesses and the bodies of the public administration; another division is into groups like – children, youth, workforce, retired people, people with disabilities etc.; the information are also for immigrants, tourists, minorities etc.
- various coloured sections of each role – for the citizens versus the businesses,
- thematic information sections – family, law, education, tax, health etc.
- life's problems – help with solving problems including the contacts to the relevant bodies,
- references to the EU institutions or references to the portals of the public administration in other EU member states,
- there are not advertisements which would not connect the public administration sphere or presentations of the countries,
- possibility of sign in and using electronic services, documents for downloading or references to web presentations which offer them,
- sections for registered and non-registered users and information offered to them with emphasis on secure communication – e.g. digital certificates,
- social networks as one of the possibilities of communication with the users, but also for better knowledge about functions of the public administration and offered services.

In some selected portals of the public administration there could be identified some mistakes in the usability according to the results of testing and evaluation of the usability:

- Different structure and arrangement of information in other language mutations – some sections are completely missing; names of the sections are translated

into the chosen language, but the information inside is not. It is seen on the portals of Belgium, the Czech Republic, France, Latvia, Hungary, Austria, Greece, Slovenia and the UK.

- Plain icons for switching languages and signing in on the portals – the portals of the Czech Republic, Cyprus and Malta.
- Missing reference to home page – logo of the pages is not connected to the home page – the portals of Finland and Hungary.
- Inconveniently chosen form of the website navigation or its placement – the portal of Cyprus.
- Importance of the single objects on the pages is not enough visually distinguished – usually the type size and icons - the portals of Cyprus, Hungary and Greece.
- Inconveniently chosen graphics – colours should not be highlighted too much and go beyond the information value of the web presentation – the portals of Estonia and France.
- Inconveniently placed or plain menu – the portals of Belgium, Cyprus, Hungary, Malta and Greece.
- Badly signposted and inconveniently placed window for searching – the portals of Cyprus, Latvia, Poland and Greece.

The most mistakes in the usability were found on the portal of the public administration of Cyprus, where the portal was inconveniently placed into the space of the browser. For most of the information it was necessary to roll up and down the page because at the top part of the portal there are placed references to other web presentations and on the sides there is a free space. There is also not very good website navigation when entering the section Family, Education, Workforce etc., because a confused collage of pictures appears there. The type size is not possible to enlarge, the window for searching is placed at the bottom of the page and the portal is very confused and user unfriendly in general.

6. Conclusion

In the field of the usability most of the tested portals of the public administration is on a very high level. Evaluated portals are mainly lucid, the information retrieval is not time consuming although the portals are not without mistakes.

Failings are in general about missing language alternatives on the portals which are accessible only in the national language of the state. The other often problem is the minimum information in other language mutations (mainly in English) where there is not many information translated compared to the national language version. Among other mistakes could be included plain icons, type size and marking the sections of the portal. However, the main advantage is information support when working with and searching on the portal, i.e. help, map of the pages and other advice or help making the users' work easier.

The portals of the public administration have had an important role nowadays as a main tool of the public administration in the field of the Internet. During the project and functions of these portals it is necessary to think in advance the specific demands of the users as well as possibilities of communication and exchanging information between the bodies of the public administration on one side and the users on the other. The main emphasis in the EU has been nowadays put on cross-border cooperation and information exchange among the EU member states.

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Appendix 1: List of the public administration portals in the EU countries.

Member state	URL of the portal
Austria	http://www.help.gv.at/
Belgium	http://www.belgium.be/
Bulgaria	http://www.government.bg/
Cyprus	http://www.cyprus.gov.cy/
Czech Republic	http://portal.gov.cz/
Denmark	http://www.borger.dk/
Estonia	http://www.eesti.ee/
Finland	http://www.suomi.fi/
France	http://www.service-public.fr/
Germany	http://www.bund.de/
Greece	http://www.ermis.gov.gr/
Hungary	http://magyarorszag.hu/
Ireland	http://www.gov.ie/
Italy	http://www.italia.gov.it/
Latvia	http://www.latvija.lv/
Lithuania	http://www.epaslaugos.lt/
Luxembourg	http://www.guichet.public.lu/
Malta	http://www.gov.mt/
Netherlands	http://www.rijksoverheid.nl/
Poland	http://www.poland.pl/
Portugal	http://www.portaldocidadao.pt/
Romania	http://www.e-guvernare.ro/
Slovakia	http://portal.gov.sk/
Slovenia	http://e-uprava.gov.si/
Spain	http://www.060.es/
Sweden	http://sweden.gov.se/
United Kingdom	http://www.direct.gov.uk/

Source: [3]