WEB ANALYTICS AS ONE OF THE FEEDBACK MECHANISMS IN ELECTRONIC GOVERNMENT MANAGEMENT

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ABSTRACT

Summary of main principles of formation and management of e-government is presented. Web analytics application issue is researched as the possibility to increase the effectiveness of e-government management indicators. Web analytics is reviewed as one of the feedback mechanisms in monitoring and management of e-government. Some recommendations how to design e-government programs were done.

KEYWORDS

E-government, web analytics, public administration

1. INTRODUCTION

Currently, different projects related to formation of electronic government (e-government) are developed and carried out worldwide. Increasing of electronic readiness and acceleration of e-government development during the past few years can be indicated as most noticeable tendencies in information society formation direction. Regular monitoring of these tendencies are the main focus points of many international and national organizations [1-4].

United Nations (UN) regularly publishes analytical reports on e-government application practice and use in different countries in the world [1]. UN e-government development report 2008 covered 192 countries. Sweden, Denmark and Norway were ranked as the top three countries in relevance to their e-government readiness. UN 2010 Survey found, that Singapore and Estonia achieved the best results in e-participation index (e-government formation field) [2].

Following can be included in objectives of e-government: provision of transparence of government authorities operations, provision of information freedom, increasing effectiveness of government authorities, close participation of citizens (regardless of physical capabilities) in government structures, rendering government services in online environment, provision of security etc. In different countries, and primarily USA and Great Britain, generally consider e-government as a concept which can direct at increase the effectiveness of government activity. In the other words, the essence of e-government consists of direct provision of information and services by different levels of government structures to consumers using modern information technologies. Citizens, non-government organization or government structures are consumers of e-government services and simultaneously their voice can influence decisions of government (mainly in the countries with high e-participation).

While reviewing e-government programs conducted in different countries worldwide, it is clear that shortly, in near future e-government will become more accessible and effective based on "one window" principal [5-7]. This is mainly related to rapid development of web technologies and social networks. From this perspective, the use of effective administration mechanisms in implementation of e-government projects is a quite an important issue.

Application of web-analytics is a strong tool for improvement of e-government management indicators and creation of feedback mechanism [8-10]. If we consider that, formation of effective administration policy is the most important issue of implementation of e-government programs, then, application of especially new

technologies can significantly broaden the political communications capabilities. In its turn, information based on web-analytics allows to achieve new integration forms among government, business sector and citizens.

2. PUBLIC ADMINISTRATION CONCEPT AND MONITORING OF E-GOVERNMENT

Regardless of government formation characteristics and economy development level, in any modern country the government is the main provider of services for citizens and business sector. Government institutions are the source of normative acts. They license different activity fields, provide population's social security and implement a number of other necessary social functions. Moreover, private and government organizations act as largest product and service consumers.

The essence of e-government management is in incessant optimization of rendered services, provision of participation of citizens in management thanks to rebuilding of external and internal relations using ICT. Thus ICT plays here only as a tool for reaching the main goal – optimization of rendered governmental services. So namely administrational reforms must form the basis of relevant changes [5,7,8,10].

A number of issues of technical, administrative, and legal nature must be solved in order to implement the e-government program. Among these are preparation of inter-institution mutual relation regulations, development of classification of governmental services, as well as realization of architecture and software-hardware platform.

Thus, e-government is not a provision measure, but a public administration concept. Changes in formation principals of normative-legal basis, budgetary incomes and expenses, assignment of legitimate statuses to e-documents and regulations are important measures for conduction of public administration reforms and successful activity of e-government.

An application of web analytics allows improving e-government management mechanisms by centralized administration of resources belonging to e-government, monitoring of web sites, portals and contents, analysis of number of access, analysis of user and professional forums [6,8,9].

Also, we must note that administrators must use ICT tools, as well as web analytics in order to achieve an increase of effectiveness and transparency of governmental funds' usage, and increase of the effectiveness of rendering services to citizens. Government sector services must provide implementation of transparent and accessible decisions, must be interactive and in online mode. ICT tools must be applied in such a manner that will form policy more accountable and allow a higher level of monitoring, evaluation and control [2,6,8,11].

Following are proposed for e-government monitoring system development:

- e-government indicators must be formed with consideration of interactivity level of the online public services;
- indicators must be formed in relevance with management level;
- indicators must be edited in case of change in e-government development and conditions;
- indicators related to interactivity level, service quality must be used etc;

Following must be included in indicators list on e-government management and realization level: number of services rendered in online mode, quality of these services and existence of application for such services.

Another important aspect of e-government management is definition of what information to collect, from what sources, and what effective analytical methods to use. Generally following may be information sources: Web-sites and IT-bodies of governmental institutions, users – citizens, organization or governmental officials.

In this case, in principal, analysis of web-sites and portals content provides more reliable information. Two methods can be used for this: Investigation of sites by administrators (experts) who analyze the sites and provide their opinion; Following of users by web analytics (identification the patterns of users behavior and interests).

3. WEB ANALYTICS AS ONE OF THE FEEDBACK TOOLS

Effective web-analysis – is detailed analysis of behavior and actions of users on web-site and portal. It is impossible to take measures on optimization of web-sites without knowledge on exact actions of users on the site. Optimization and administration of web resources is an important condition for adaptation of the site to requirements of citizens [9].

Effective web analytics of sites and portals of government institutions, as well as sites rendering online services to citizens – is detection of software, technical and content directed errors and adaptation of the sites to requirements of citizens and users. Using web analytics allows clarifying the reasons why users leave web sites, actions and behavior of users on sites or web-pages related to specific services. It is clear that, web analytics is not limited to certain statistics and allows to obtain more detailed information for analysis.

Also we can note that, there are no globally accepted definitions within web analytics as the industry bodies have been trying to agree definitions that are useful and definitive for some time. The main bodies who have had input in this area have been JICWEBS (The Joint Industry Committee for Web Standards in the UK and Ireland), ABCe (Audit Bureau of Circulations electronic, UK and Europe), The WAA (Web Analytics Association, US) and to a lesser extent the IAB (Interactive Advertising Bureau) [12-15]. Both the WAA and the ABCe provide more definitive lists for those who are declaring their statistics using the metrics defined by either [13,14].

Considering international experience, it is proposed the state programs actions plan to implement in the Republic of Azerbaijan in two steps with the purpose of formation of e-government indicator system for conduction of e-government program.

On the lower step, field action plans (for example e-ministry, e-district, e-municipality etc) are prepared for different central, local executive power, court, and legislation and municipality institutions. On higher step, countrywide main action plan is prepared. In field action plans, ICT projects on countrywide level of relevant administration institutions and administrative-territorial division of local executive and municipal institutions are carried out. ICT application action plan in education system, scientific action plan, customs service's action plan etc. can be listed as examples. By conducting this conceptual approach, duties and responsibilities of each governmental institution in ICT field will be clear, digital divide occurring as a result of application of ICT in government sector will be reduced to minimum, conduction of monitoring will be simplified, process management can be conducted on a high level, more effective main action plans can be prepared in future by conducting comparative analysis [16]. In its turn, this will allow to create bases for evaluation of e-government formation and development (dynamics), processing of indicators on field and administrative territorial divisions, and creation of monitoring system based on these. E-government portals, web- sites of different government institutions, as well as web-sites rendering government services will be analyzed using web analytics, deficiencies will be defined and relevant strategies will be conducted by learning the demands of the citizens.

Also, it must be noted that, decision making in online environment, studying of social opinion, conduction of referendums and elections, processing of technologies as well as creation of situation center for each institutions included in e-government are quite important issues. Considering that such situation centers are created based on supercomputers, development of mutual relations among them relevant to security policy requirements can be one of the important set forth duties. Analysis of log files and information collected in e-mails during the process of development of on-line relations among citizens and government institutions play an important role in effective decision making by e-government subjects as a result of web analysis usage.

In its turn, it allows to process feedback mechanisms for e-government management. Formation of public Internet centers and points in residential areas in order to provide the access of citizens' country wide to e-government institutions is one of the important issues in e-government construction. Since, e-government must demonstrate sustainable activity, be reliable and immune to threats. Information, energy etc. security of e-government must be provided and, a system must be ready to prevent all possible risks under privacy preserving rules.

4. CONCLUSION

Development of e-government is the primary direction of development of the country. As it's clear from conducted research, e-government development monitoring cannot be limited to accessibility of ICT and its usage indicators. Factors significantly affecting e-government development must be continuously controlled, analyzed and evaluated by the government. Use of web analytics in e-government management is one possibility of feedback mechanisms and a strong tool in effective decision making.

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