Usability of Israeli ministry websites / Gilkis, Nitzan

The study offers a thorough examination of the Israeli government ministry websites, in an attempt to assess the efforts being made by the ministries to bridge "the other divide", point out common usability faults and determine whether sites based on the new infrastructure GovX have higher usability. Thus, the study fills a gap in the E-Government literature on website usability, which has yet to address these issues.

Usability is a term from the field of human-computer interaction (HCI), and can be defined, according to ISO 9241 standard, as "the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use." The success of a website is highly dependent on its usability, and this is especially true for government websites, which are required by the democratic values that underlie government operations to be user-friendly, in order to prevent less-knowledgeable citizens from having unsatisfactory contact with their government.

The literature review introduces the terms 'usability', 'website usability' and 'E-Government', and discusses various usability evaluation methods, with an emphasis on website usability. The existing empirical research in the field is also reviewed, and finally, an overview of the history of E-Government in Israel is provided.

The first chapter of the literature review describes three different ways of viewing usability: the product-centered view, the context of use view and the quality of use view. The latter, which is the most widely accepted view among usability experts, comprises three measure – effectiveness, efficiency and satisfaction – and these measures are discussed in detail.

The second chapter of the literature review offers several definitions of web usability, as well as several principles which may help achieve it. The third chapter describes the main usability evaluation methods, which are divided into four sub-categories: cognitive modeling methods, inquiry methods, testing methods and inspection methods. The heuristic evaluation method – an inspection method popular among usability experts – is demonstrated using Nielsen's ten heuristics, which are the most commonly used set of usability heuristics.

The fourth chapter of the literature review introduces the term E-Government, which is defined as "the use of information technologies to deliver government information and services and to involve citizens in the democratic process and real-time government decision making", and discusses its advantages.

The fifth chapter of the literature review explains the importance of E-Government usability evaluation, and describes the methodology developed by researcher David L. Baker for this purpose. Using triangulation, Baker established 37 common E-Government website usability variables based on 6 selected studies from the field. Baker associated each variable with one of the 6 website usability dimensions proposed by researcher Genie N. L. Stowers (online services, user-help, navigation aids, legitimacy, information architecture and accessibility accommodations), and together these variables provide a good description of each dimension.

The sixth chapter of the literature review reviews the existing empirical research on E-Government, with an emphasis on studies that focus on government ministry websites. The Mimshal Zamin report, which is the Israeli government's means of annually inspecting the information and services it offers to its citizens over the internet, is also mentioned.

The seventh chapter of the literature review discusses benchmarks and benchmarking. A "benchmark" defines "something that serves as a standard by which others may be evaluated", and

allows measuring the performance of an organization in contrast to the best-in-class performance (i.e. benchmarking). Identifying the Israeli government ministry websites which may serve as benchmarks for each of Stowers' 6 usability dimensions is one of the study's main contributions.

The eighth and final chapter of the literature review surveys the history of E-Government in Israel, from the days of the Tehila project in the mid-nineties to the development of the new infrastructure for government ministry websites, GovX. The problems which the GovX infrastructure was meant to solve are described, and the significance of the study in this context is explained. In addition, the methodology of the Mimshal Zamin report is discussed, and its deficiencies relative to the study's methodology are pointed out.

The study questions resulting from the theoretical framework address the level of usability of the Israeli government ministry websites (in general as well as in each of Stowers' 6 dimensions), the usability deficiencies common to these websites and the usability of the GovX websites compared to the remaining websites.

In order to answer the above questions, a descriptive quantitative research comprising two methods was conducted. First, a heuristic evaluation of all 24 Israeli government ministry websites was carried out using the Stowers-Baker framework, which is the most widely accepted framework for E-Government website evaluation. Second, the usability of the Ministry of Finance website (which represented the new infrastructure GovX) was more thoroughly examined via user testing – a method which compliments heuristic evaluation, both in terms of advantages/disadvantages as well as findings.

The research findings provide a detailed picture of the Israeli government ministry websites' usability (both in general and in each usability dimension) and point to the websites which may serve as benchmarks for each dimension. The findings show that a small number of websites have high usability, a small number of websites have low usability, and the majority of the websites have moderate usability.

A positive correlation was found between the average monthly number of visitors to a website and its usability ranking, in following with the study's theoretical framework.

Additionally, the findings point to a number of usability deficiencies common to many Israeli government ministry websites, of which some relate to the absence of essential online services, some are characterized by creating inequality between visitors in terms of ability to use the sites, and some deal with other qualities which are lacking.

Finally, the findings point to a significant number of problems and areas for improvement in the new infrastructure developed for Israeli government ministry websites (GovX), and show that the websites based on this infrastructure are inferior to the overall benchmarks in almost every parameter.

It is worth mentioning that compared to Trinidad and Tobago and the USA (countries in which E-Government website usability research using the Stowers-Baker framework was also conducted), the Israeli government ministry websites rank second in terms of usability. As could be expected, the American websites came in first, while the Trinidad and Tobago websites lag behind for the time being.

The study contributes to the improvement of Israeli E-Government usability in several ways. First, government ministries whose websites were found to have similar problems can cooperate in improving their sites, thus lowering costs and preventing duplicate efforts. Second, thanks to the identification of the overall and dimensional benchmarks, website developers will be able to know which sites to use as models (including sites from abroad). Third, the common usability deficiencies found may point to areas for future government investment. And finally, the thorough examination of the GovX-based websites will allow fixing many deficiencies while the infrastructure is still in initial stages of deployment, thus saving valuable time and money.

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