

Feedback Mechanisms To Evaluate Australian Government Education Website As Vehicles For Knowledge Transfer

[Nurdiana A., Ross Smith, Vanessa Cooper, and Noraizah A. B.]

Abstract—Feedback mechanism is one way for the website administrator to evaluate the usage of the website. Higher usage of the website indicates that the website is meeting the users' needs. For the purpose of this research, knowledge transfer (KT) is defined as a process that includes any exchange of knowledge between or among individuals, teams, groups or organizations. It is the process by which knowledge is transmitted to, and absorbed by, users. Knowledge in this research is scoped to include education knowledge resources (information and services) made explicit and available to users via education websites. This paper illustrates feedback mechanisms used by the website administrator to evaluate the performance of Australian government education-based website that supports KT. This is an interpretive case study which applies qualitative data capture and analysis methods. A total of nine interviews were conducted at a government agency in Australia, known as AUSED which is an education-based organization. This study adapted Rockart's CSF method for data collection, including an introductory workshop, interview, and focus group. The interview transcripts were then analyzed, using inductive qualitative content analysis techniques. Ten mechanisms for seeking feedback on Australian education website performance that supports KT was reported by the respondents. These suggest some feedback mechanisms that may be used to evaluate some elements of the performance of websites as vehicles for KT. The ten mechanisms are web analytic tools, user testing, e-mail feedback, telephone feedback, checklist, site visits, focus groups, eye tracking and qualitative surveys. The

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identified feedback mechanisms have the capacity to provide practical guidance to web practitioners. For future research the feedback mechanisms could be identified on the different type of websites. Not only that, this research adopts qualitative method. For future research, the result of this study could be validated through the quantitative method.

Keywords—feedback, mechanisms, evaluation, Australia, education, website, knowledge transfer

I. Introduction

Websites are increasingly being used by government agencies to provide information and deliver services to the public [1] [2] [3] [4]. This creates both opportunities and challenges for public agencies, in having websites that not only deliver information resources and services online but also deliver these based on the needs of users [5] [3] [6].

Feedback mechanism is one way for the website administrator to evaluate the usage of the website [7]. Higher usage of the website indicates that the website is meeting the users' needs. For the purpose of this research, knowledge transfer (KT) is defined as a process that includes "any exchange of knowledge between or among individuals, teams, groups or organizations" pp. 538 [8]. It is the process by which knowledge is transmitted to, and absorbed by, users. Knowledge in this research is scoped to include education knowledge resources (information and services) made explicit and available to users via education websites.

This paper illustrates feedback mechanisms used by the website administrator to evaluate the performance of Australian government education-based website that supports KT. For this reason the website administrator can manage the website that can meet the users' needs.

A key literature in website evaluation research has focused on the issue of service quality. Characteristic of this research is the work of as in [9] who assert the importance of web presence and service quality, defined broadly to encompass all phases of a customer's interactions with a website, and the extent to which a website facilitates efficient and effective shopping, purchasing and delivery. Reference [10] exert that development of government websites are still of lacking high levels of service quality. Website capability to meet user needs has also been researched. Reference [11], who developed AIMQ (Aim quality), a methodology for evaluating

information quality in an organization, have magnified security and operations as important aspects of accessibility. Reference [12] used content-related factors in their analysis of information quality, and emphasized ease of use and security as determinants of system quality.

II. Research Methodology

This is an interpretive case study, which applies qualitative data capture and analysis methods [13]. A total of nine interviews were conducted at a government agency in Australia, known as AUSED which is an education-based organization. This study adapted Rockart's [14] CSF method for data collection, including an introductory workshop, interview, and focus group. The interview transcripts were then analyzed, using inductive qualitative content analysis techniques [15].

III. Feedback Mechanisms

In this section, ten mechanisms for seeking feedback on website performance, as highlighted by the AUSED respondents, are reported. These suggest some feedback mechanisms that may be used to evaluate some elements of the performance of websites as vehicles for KT. As will be clear, these tend to relate heavily to the technical performance of the website, reflecting a clear focus on technical rather than managerial or organizational issues in the AUSED identified CSFs above.

Note that the order below does not represent the priority reported by the respondents, but simply the order in which the various feedback mechanisms emerged during the analysis of interview transcripts.

A. Web Analytic Tools

AUSED operates web analytic tools to collect web statistics, tracking the number of website visitors and their behavior whilst visiting the website. Analysis of these logs allows AUSED staff to identify the total number of visitors on a daily basis. The analysis allows initial visits (i.e. first time visits), and repeat visits to be identified and counted. Further, for each visit, AUSED staff can identify the duration of the visit to the website, the navigation of users around the website, and downloads.

Highlighted particularly by respondents is "**Audience signal**" tracking (AUSED staff can use web analytic tools to analyze the path that a user or user group follows while accessing a website) and "**Video tracking**" (AUSED staff can track video play, so determining whether a video is being accessed, providing insight into the users' assessment of the relevance of provided video materials).

Statistical records of this analysis are stored on a special purpose database for future access and use. "*We also get audience signal on the web statistics. If someone is arriving as a parent, we will look at the pages that they go to, and aggregate that over time, and we say ok the majority of parents go down this path, and there is another group of*

parents who go here and then stop, and there is another group go here and then go to totally different places." (PA3: Online Communication Advisor).

B. User Testing

As mentioned as part of the modeling of the KT Initiation stage, AUSED follows processes for quality assurance of websites that include inviting user stakeholder groups to test, evaluate and provide direct feedback on the website. For example, AUSED will invite a group of parents to evaluate a component of the website designed to be released as part of the parents' section. The test subject group will be instructed to complete a task requiring access to the website, and will be observed undertaking that task, without any prior advice or associated hints. AUSED staff will observe the group completing the task, logging errors and false navigation paths. If the test group encounters problems in the completion of tasks, AUSED will undertake redesign/restructuring of the website, and can schedule retesting. Such sessions of user testing are held two to three times in a year, responding to the identified need for testing as significant new website areas are developed for release.

C. E-mail Feedback

On the website, at a number of places, there are clearly delineated invitations inviting comments, suggestions or corrections concerning the website by online means, which are directed to the relevant website administration team. In some places these links simply involve provision of an email address, while at others there is a provided online feedback form, including designated areas such as: Subject; Feedback Category; Usability Rating (1-5); Feedback Text; Name (optional); and Email address (optional). In particular, this alerts AUSED staff to links that are not working and to incorrect information on the website. AUSED staff respondents emphasized that they take seriously any such user complaint, with processes requiring prompt action. "*We also conduct user testing on our site. We also have e-mail feedback links.*" (PA1: Senior Online Editor).

D. Telephone Feedback

The AUSED website provides information concerning more traditional contact mechanisms, including general switchboard, postal address and street address. Specific stakeholder groups are also advised of dedicated telephone lines including: Maternal and Child Health line; and Parentline. Users can call AUSED seeking assistance with specific needs. As pointed out by the respondents, the number and content of such calls related to issues that have been raised on the website can provide insights into required website improvement as a means of KT. "*The amount of telephone calls we get on particular issues is also feedback into and including some of the content,*" (PA1: Senior Online Editor).

E. Checklist

As mentioned as part of the modeling of the KT Initiation stage, AUSED follows processes for quality assurance of

websites that include using a checklist that is based the Victorian government standards for e-government websites. The whole Victorian Government Website Standards encompass nine website standards that have been developed to promote consistent application of website standards across Victorian Government departments and agencies. As previously discussed, the standards address: Accessibility; Consistent User Elements; Content Approval and Review; Discoverability; Domain Names and Allocation; IA/Classification; Legal Compliance; Minimum Information Provision; and Privacy. All content authors at AUSED are responsible to follow these standards while preparing website content. Government Departments/Agencies are required to report their compliance to these website standards annually in accordance with the reporting dates set out in each standard. As such, the extent to which the website meets the expectations in the standards may be indicative of website performance as a means of KT. *"And we've got whole of government standards on how we set up our web pages so we've got consistency of heading and how you can get back to main section," (PA2: Website Specialist).*

F. Site Visits

AUSED also visits schools to identify their information and communication (ICT) needs and to receive feedback on the websites. As part of these visits, AUSED can identify the attitudes of users, especially teachers, to ICT usage. Of particular value, from these visits AUSED can identify content or functionality that may need to be added to the website.

G. Focus Groups

AUSED holds focus groups with sets of stakeholders, seeking feedback on the website. Such focus groups can be mediated by external usability experts. During these, participants will typically be given a task on the website to complete. The activity is videoed and following completion of the task, participants will be asked to verbalize their thought processes as they worked their way through the activity. A replay of the video recording of their website session can serve as a prompt to remind them of their actions/key clicks. *"We try to regularly have focus groups where we get a group of people from our major stakeholder groups like teachers or parents and we get external usability experts to take participants through tasks from our website - get registered to go to conference or something that we offered through the site - so they test subjects. If you will ... they get a task to do and in the usability lab they try to complete that task. It's videoed and we ask people to talk about their thought processes, their clicking on different links." (PA3: Online Communication Advisor).*

H. Eye Tracking

In recent times, AUSED staff have been working with eye tracking technology, which allows them to determine where on a web page a user's eyes are focused. Participants are given a task to complete on the website. Using the eye tracking software, a diagram is produced showing where on each page the user's eyes focused/moved. Access to such technology

facilitates taking decisions on the placement of key content and links on each page, to maximize the likelihood that a user will notice such features, and to diagnose the misplacement of important content/features. As such, AUSED is able to improve website design. *"We have also recently done some eye tracking where once again they complete a task and this technology focuses on where their eyes glance on the page. We get a little diagram on the page showing their eyes mostly focus on the top left hand corner or ... they didn't go where we expected at all - we are looking here instead of here at the body of the text." (PA3: Online Communication Advisor).*

I. Qualitative Surveys

AUSED, as occasionally required, will run (online) qualitative surveys, seeking user feedback on their experience accessing the website or particular parts/features of the website. A particular focus of surveys has been access and navigation. Given that the website operated by AUSED is extensive, with dense information, survey information can facilitate redesign to minimize, for example, the number of user clicks to access knowledge resources. *"We also do some qualitative surveys. We asked people in the survey have they had any problem accessing the information" (PA3: Online Communication Advisor).*

J. Qualitative Surveys

AUSED has a system which can be used to check a website for broken links. The system produces reports on the condition of each link on the website. As noted by one respondent, given the huge size of the website, running the link checking software takes hours, although, as noted below, a recent report discovered in excess of a thousand broken links. *"We've got a links checking process in place. They take hours to run because the site is huge. I think the last report we had over thousand broken links but then a lot of those links will link on to several pages." (PA4: Web Specialist).*

iv. Conclusion

This paper illustrates the feedback mechanisms that may be used to evaluate some elements of the performance of websites as vehicles for KT. Therefore, it is hope that the identified feedback mechanisms have the capacity to provide practical guidance to web practitioners. For future research, the feedback mechanisms could be identified on different type of websites. Not only that, this research adopts qualitative method. For future research, the result of this study could be validated through the quantitative method.

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