A METHODOLOGY FOR EVALUATING WHETHER WEB SITES SUPPORT THEIR ORGANIZATIONAL CRITICAL ACTIVITIES

Wei-Hsi Hung, Department and Graduate Institute of Information Management, National Chung Cheng University, Chia-Yi, Taiwan, ROC, fhung@mis.ccu.edu.tw

Robert John McQueen, Department of Management Systems, The University of Waikato, Hamilton, New Zealand, bmcqueen@waikato.ac.nz

David C Yen, Department of DSC & MIS, Miami University, Oxford, OH 45056, yendc@muohio.edu

Abstract

Organizational critical activities (OCAs) are activities which must receive constant management attention in order for that organization to be successful in its industry. Some empirical studies have shown that all of these activities may not be well supported by organizations’ websites. This research attempts to develop the evaluation methodology which can be used to assess how well an organization’s website supports the organization’s OCAs if the OCAs are identified. Based on a review of relevant literature, a prototype was proposed, and then evolved and tested through eight case studies in New Zealand universities. In total, more than two thousands web pages were evaluated and 37 semi-structured interviews were conducted. The final methodology includes five operational stages and seven forms. The results of final case were presented in order to show how the methodology can be utilized in the website evaluation. Some implications and future research are also provided.

Keywords: Organizational critical activities, organizational success, Web evaluation methodology, case study, interactivity
1. INTRODUCTION

The notion of organizational critical activity (OCA) was originally utilized in order to develop a method through which the alignment between websites and business strategies could be measured (Hung 2006). An OCA is defined as an organizational priority that is recognized as being essential to a company’s short, medium, and long-term success in its industry, and has been significantly used and monitored by senior management (Hung, 2006). The management literature (Porter, 1985; Shortell & Zajac, 1990; Tallon, Kraemer & Gurbaxani, 2000) reveals four categories of generic examples of OCAs – marketing related, internal, external and inter-organizational, and service related.

Website designs should support organizations' strategies and objectives in order to achieve optimal effectiveness in their operations (Boudreau & Watson, 2006; Dann & Dann, 2001). While studies have shown that websites are supporting a number of organizational activities (Bhatt & Emdad, 2001; Karakaya & Khalil, 2004; Sheth & Sharma, 2005), a group of studies conducted in New Zealand, the US, the European Union, Asia, and Canada showed that the website designs are not fully supporting organizational strategic objectives (Boudreau & Watson, 2006; Lederer et al., 2001; Tchokogue & Boisvert, 2001; Yu & Koslow, 1999).

Since the introduction of this ever powerful form of information technology, enormous evaluation methodologies and frameworks have been proposed to evaluate websites. A significant number of published studies have attempted in the last few years to evaluate consumer-oriented websites along the issues of quality (e.g. Barnes & Vidgen, 2006; Cao, Zhang & Seydel, 2005); Web design (e.g. Cyr, 2008; Ivory & Megraw, 2005); and usability (e.g. Agarwal & Venkatesh, 2002; Kumar & Benbasat, 2006; Nielsen, 1993). Due to the notion that OCA is a new concept, the effectiveness of current methodologies that evaluate websites in terms of how they support OCAs is questionable. This research attempts to develop the evaluation methodology which can be used to assess how well an organization’s website supports the organization’s OCAs if the OCAs are identified.

2. LITERATURE REVIEW

2.1 Web Evaluation Perspectives

A number of perspectives have been adopted for evaluating a website. Hung (2008) suggested two issues to consider when categorizing the evaluation perspectives for evaluating websites – whether the evaluation is conducted by the provider or user, and whether the evaluation can add value to an organization that provides a website or to its customers. In regards to the first issue, in prior literature the meanings of, and relationship between the words “user” and “provider” are expressed through various terms including: “browser” and “author” (Chalmers, Rodden & Brodbeck, 1998); “customer” and “merchant” (Wang, Head, & Archer, 2000); “user” and “developer” (Collings & Pearce, 2002); and “user” and “owner” (Mich et al., 2003). The evaluations made from the provider and user are in different interests (Auer & Petrovic, 2004; Chalmers et al., 1998), particularly, in the analysis of websites (Chalmers et al., 1998). The provider cannot fully understand what the user has perceived, and likewise, the user cannot understand what the provider expects to achieve.

In regards to the second issue, the organization is the party who provides the website, whereas the customer represents the party that does not provide, but rather uses the website. Therefore, there are many differences between how value should be added to these two different parties. When adding value to an organization, the product information is the content from which the organization conducts its “advertising” activity, which is intended to induce customer purchases of its products or stock on its website; On the other hand, when adding value to the customer, the product information is merely used by the customer to conduct his/her transaction activities on the website (Yuan, Caulkins & Roehrig, 1998).

In order to add value to the customer, an organization should consider what benefit the website intends to provide to the customer; likewise, in order to add value to the organization, it should consider what benefits it receives from its website (Auer & Petrovic, 2004). Quayle (2003) argued
that customers may have focused simply on products and not the process. This implies that customers are more concerned with utilizing websites to gain better quality, pricing, reliable products, and services and support, instead of areas that create greater value to organizations such as, developing new technology, and Research and Development (R&D).

The major purpose of this research is to develop a methodology to evaluate how well the website supports an organization’s OCAs. Furthermore, this methodology should be used by the website provider to measure and improve its quality. When the website supports organization’s OCAs, it is adding value to the organization. Therefore, this study is conducted through the perspective of the provider and how value can be added to the organization, and is termed Organization Provider Perspective (Hung, 2008).

2.2 Evaluation Criteria for Organization Provider Perspective

What evaluation criteria are appropriate for the website evaluation when adopting the Organization Provider Perspective? Efficiency and effectiveness are two kinds of value which the information systems (IS) can provide to organizations in terms of adding value to the organization (Bakos & Treacy, 1986; Pant & Hsu, 1996). Adopting websites enables organizations to transform their processes to develop more efficient and effective transactions and activities (Ellinger, Lynch & Hansen, 2003). This research identifies two appropriate criteria for evaluating how effectively and efficiently an organization’s website supports its OCAs – informativeness and interactivity. Informativeness is the criterion that will be used to measure how effectively the website supports an organization’s OCAs, and interactivity will be used to measure how efficiently the website supports the OCAs.

2.2.1 Evaluating Informativeness

This research, based on Bhatt and Emdad (2001), defines informativeness as the amount of information that flows between the user and the website when conducting an OCA. There are two aspects associated with evaluating informativeness. The first aspect is the amount of information needed in supporting an OCA that is similar to the measurement principle of the information intensity of a service (Lane & Cavaye, 1999; Porter & Millar, 1985). The informativeness of a website in supporting an OCA can be measured by the amount of information required to develop the activity, and the amount of information utilized by users when conducting the activity.

The second aspect is the relevance of the information (Wang & Soergel, 1999). Relevance is judged by a person in consideration of the relationship between a need and a document (Wang & Soergel, 1999). Pyburn (1983) suggested that how effectively the IS supports the organization is measured by how the IS is perceived to support the critical needs of the organization. Thus, when addressing the needs associated with conducting an OCA, it is important to assess the relevance of the piece of information.

2.2.2 Evaluating Interactivity

This research, based on the studies of Dann and Dann (2001) and Lane and Cavaye (1999), defines interactivity as the extent to which the interactive nature of the website allows the user to control the dialogue needed to transfer information associated with conducting an OCA. Two approaches to evaluating the interactivity of websites are interaction level (e.g. Hamilton & Selen, 2003; Scharl, Gebauer & Bauer, 2001; Teubner & Klein, 1998) and feature level (Karakaia & Khalil, 2004; Quelch & Klein, 1996).

The interaction level approach sets the levels of interactivity from an overall perspective. When adopting the interaction level approach, researchers set the levels of the interactivity of websites as static, dynamic, and transactional (Hamilton & Selen, 2003; Teubner & Klein, 1998). The static level is the one-way flow of information (Marcella, 2002), while the dynamic level calls for the website to enable a two-way flow of information (Marcella, 2002) and to provide personalization and feedback.
features (Hamilton & Selen, 2003; Lane & Cavaye, 2000). The transactional level calls for the website to provide real-time communication (Hamilton & Selen, 2003; Lane & Cavaye, 2000) and real-time transactions (Kollmann, 2000; Peters, 1998) to its users.

The feature level approach identifies the levels of interactivity based on the features of the website (Karakaya & Khalil, 2004; Quelch & Klein, 1996). Quelch and Klein (1996) identified five levels of website’s abilities: the first level provides image/product information; the second provides market research information; the third provides customer support functions; the fourth provides internal support and service; and the fifth enables transaction. Lockett and Brown (2001) also identified five levels to the feature level approach. The website which enables supply chain and customer relation management initiatives is ranked as very high; the one ranked as high supports financial information, vertical applications, and e-marketplaces. The website ranked at the medium level enables buying and selling products and services on-line, and is linked by the extranet. The website classified at the low level can be accessed through the Internet. Finally, a website that can only provide e-mail is ranked at the very low level.

In comparison, the feature level approach is less applicable to various kinds of Web environments. This is due to the evolving sophistication of Web technologies (Scharl & Brandtweiner, 1998). Thus, one approach developed four years ago may not be applicable in evaluating a current website because some of the latest Web features may not be recognized by the approach. In contrast, the interaction level approach is more flexible and leaves room for adding new features associated with each website level.

This research adopts the interaction level approach in order to measure the interactivity of websites in supporting OCAs. By providing more sophisticated transactional, communicational, and distributional features, which are required to conduct an OCA, a website can support the OCA more efficiently.

2.3 Web Analysis Methods

The Web analysis method can be qualitative and quantitative (Atzeni, Merialdo & Sindoni, 2002; Bauer & Scharl, 2000; Sudweeks & Simoff, 1999), and these differ in their approach to the problem (Sudweeks & Simoff, 1999). Atzeni, Merialdo and Sindoni (2002) described qualitative analysis as “General Analysis,” which deals with the overall features of the site and aims at providing a succinct, yet complete, snapshot of the site. They believed that this approach is more appropriate for evaluating websites in relation to the objectives and services provided (Atzeni et al., 2002). Sudweeks and Simoff (1999) suggested that the qualitative approach is centered on the qualitative characteristics of the phenomenon and attempted to grasp the form, content, and various constraints of the investigated phenomenon, while also analyzing its qualities.

The quantitative approach is associated with numeric evaluation (Atzeni et al., 2002) and tries to quantify every detail (Sudweeks & Simoff, 1999). Atzeni, Merialdo and Sindoni (2002) described this approach as “Specific Analysis”. Content analysis is mostly used in the quantitative analysis of websites (Sudweeks & Simoff, 1999). The use of content analysis allows both a systematic and objective method for capturing specific characteristics of media (Palmer & Griffith, 1998). It requires the researcher to generate a list of variables, codes, and rules of codes. The website is then analyzed in terms of the frequencies of the coded features (McMillan, 2000; Sudweeks & Simoff, 1999).

This research study adopts both approaches to analyze the data. The qualitative analysis is chosen for the judgment of the information and features in the website, while the quantitative analysis is used in analyzing the amount of information and characteristics of each feature.

This research also suggests a third issue: whether the data collection approach is manual or automated (Bauer & Scharl, 2000; Clausen, 1999). The first approach employs one or more evaluators to analyze the website manually, whereas the automated approach employs software or a computer programs to analyze the website automatically. Although the automated approach enables the evaluator to deal with a large number of websites and web pages efficiently, it may be weaker in addressing the issue of effectiveness, such as ranking the level of satisfaction or interpreting phrases.
When adopting the Organization Provider Perspective, the manual approach is appropriate, since the evaluation of the informativeness criteria requires human judgment on the relevancy of the information. However, the number of web pages associated with any given website has grown enormously. Identifying all of the relevant pages for these enormous websites manually can be a very labor-intensive process. Thelwall (2003) suggested shifting the focus from individual pages to aggregate collection of web pages based on topic and community. The term “topic” refers to a set of pages on the website that share a common theme, whereas the term “community” is identified solely by the link structure. Moreover, employing evaluation guidelines and forms also helps the evaluator assess a website more efficiently and effectively (e.g. Hung & McQueen, 2004; Kuo, Hwang & Wang, 2004).

3. \textbf{RESEARCH METHODOLOGY}

As discussed in the Literature Review section, the literature only partially answered the research questions, and there is still a need to conduct an empirical research study to answer them in full. This research has developed an overall plan to conduct the empirical research. First, a prototype evaluation methodology was developed to evaluate how well a website supports the OCAs, which is termed Prototype OCA Web Support Evaluation Methodology. It includes several components which are grounded in the key theoretical foundations discussed in the Literature Review section, and are crucial to answering the research questions. Then, a development process, including a series of case studies, was conducted to further improve and test the Prototype OCAWSEM in order to develop it into a valid and reliable OCAWSEM, termed Developed OCAWSEM (see Appendix 2).

4. \textbf{CASE STUDIES}

The universities in New Zealand (eight in total) have been utilized for developing the Prototype OCAWSEM. University websites in New Zealand are one of the best examples for other industries in the country (Thelwall & Wilkinson, 2003). Each case includes three stages: data collection, data analysis, and reflection. In the data collection stage, a series of interviews were conducted with the management (at least one from the senior management team) and Web team. The management was asked to list the OCAs of the university while the Web team was ask to comment on how they support OCAs through the website. The Prototype OCAWSEM was also employed to assess the university website. In the data analysis stage, the interview data was analyzed in order to generate a final list of OCAs, and the web evaluation data was then analyzed based on the Prototype OCAWSEM. In the reflection stage, critical improvements were made to the Prototype OCAWSEM and useful lessons were collected. This research assessed each case’s results and made a decision about the need for the next case study, as also performed by Holsapple and Joshi (2004). Once a case yields no more new lessons and no more major improvements on the Prototype OCAWSEM are needed, the iterative process can be stopped. These seven case studies are termed Developing Case Studies. In total, more than two thousands web pages were evaluated and 37 semi-structured interviews were conducted.

The eighth case study, termed Testing Case Study, was conducted in order to test the quality of the Developed OCAWSEM. This case included three stages conducted in the Developing Case Studies along with a stage necessary for assessing the quality of the Developed OCAWSEM, based on five testing criteria suggested from the literature: validity, reliability, usability, extensibility, and adaptability (Churchill, 1979; Hix & Schulman, 1991; Hung & McQueen, 2004; Zikmund, 1997). In total, more than four hundred web pages were evaluated and seven semi-structured interviewees conducted.

According to the Evaluation Process Instructions provided in the Prototype OCAWSEM, this research requires the evaluator to evaluate the content on the front page of the sub-site, click all the links in the sub-site, go to the next sub-site level, and to then evaluate all of the content and links of the second sub-site. Ideally, this process should be continued until the evaluator reaches the “individual page,” (Thelwall, 2003) or the “terminal page” (Gillenson, Sherrell & Chen, 2000).
5. RESULTS OF THE TESTING CASE STUDY

Through the interviews with management, 14 OCAs are produced in the final list, and represent management’s view of what OCAs the university is conducting. After conducting Stages 1, 2, 3, 4, and 5, all of the Website Evaluation Forms were complete. All OCAs nominated by the management are supported by the website, and have been grouped into five categories in terms of their individual levels of effectiveness and efficiency (see Table 1).

<table>
<thead>
<tr>
<th>Category</th>
<th>OCAs Nominated by the Interviewees (in no particular order)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 1:</td>
<td>Communication with businesses and local community;</td>
</tr>
<tr>
<td>Effectively and Efficiently Supported</td>
<td>Enhancing internal administrative efficiency; Providing student services; Recruiting international students; Developing research; Retaining staff; Student learning support</td>
</tr>
<tr>
<td>Category 2:</td>
<td>Facility management;</td>
</tr>
<tr>
<td>Effectively or Efficiently Supported</td>
<td>Recruiting domestic students</td>
</tr>
<tr>
<td>Category 3:</td>
<td>Efficient teaching and learning;</td>
</tr>
<tr>
<td>Generally Supported</td>
<td>Recruiting staff</td>
</tr>
<tr>
<td>Category 4:</td>
<td>Developing and providing strategic plans;</td>
</tr>
<tr>
<td>Poorly Supported</td>
<td>Financial management</td>
</tr>
<tr>
<td>Category 5:</td>
<td>Developing new courses</td>
</tr>
</tbody>
</table>

*Table 1. Grouping the OCAs in the Website Evaluation Form 4*

In Table 1, Category 1, which is “Effectively and Efficiently Supported”, has the greatest number of OCAs. For the exception of “facility management” and “recruiting domestic students,” all of the OCAs in the same category have been sorted based on the application of the Web Prioritizing Principle 1 – “the activity, which is supported by more sub-sites, has higher priority.” These two activities are supported by the same number of sub-sites and ranked in the same level of interactivity (level 3). Thus, the Web Prioritizing Principle 3 is applied. It was found that the university provides a more sophisticated search function, which can help users search many more topics, to support the “recruiting domestic students” activity. This activity is prioritized higher than the “facility management” activity. The results of this prioritizing process produce a list of OCAs supported by the website, which are shown in Table 2.

<table>
<thead>
<tr>
<th>Priority</th>
<th>OCAs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Providing student services</td>
</tr>
<tr>
<td>2</td>
<td>Enhancing internal administrative efficiency</td>
</tr>
<tr>
<td>3</td>
<td>Retaining staff</td>
</tr>
<tr>
<td>4</td>
<td>Providing student learning supports</td>
</tr>
<tr>
<td>5</td>
<td>Communication with businesses and local community</td>
</tr>
<tr>
<td>6</td>
<td>Recruiting international students</td>
</tr>
<tr>
<td>7</td>
<td>Developing research</td>
</tr>
<tr>
<td>8</td>
<td>Recruiting domestic students</td>
</tr>
<tr>
<td>9</td>
<td>Facility management</td>
</tr>
<tr>
<td>10</td>
<td>Recruiting staff</td>
</tr>
<tr>
<td>11</td>
<td>Efficient teaching and learning</td>
</tr>
<tr>
<td>12</td>
<td>Developing and providing strategic plans</td>
</tr>
<tr>
<td>13</td>
<td>Financial management</td>
</tr>
</tbody>
</table>
The prioritized OCAs, as shown in Table 2, can be used by the university to develop their web investment strategies. For example, the Vice-Chancellor of the university nominated the “efficient teaching and learning” and “developing research” activities to be the top two priorities of the university. Accordingly, these two activities should be given higher priority in terms of web design investment in order to match the web design with the management’s priorities. Yet, Table 2 shows that the website provides the most support to the “providing student services” and “enhancing operational efficiency” activities. For improvement, the web team should consider shifting resources and time, which are currently being spent on OCAs ranked lower in Table 2 by senior management, in order to better support the “efficient teaching and learning,” and “developing research” activities. They can also use OCAWSEM to assess competitors’ websites in order to elicit their web design strategies.

6. CONCLUSION

The purpose of this research is to seek methodology that can be utilized to evaluate the organization’s website in terms of how well it supports the OCA, supposing an OCA in an organization is identified. Results show that the Developed OCAWSEM, which is a theoretically based methodology including five stages and seven evaluation forms, is capable of evaluating how effectively and efficiently the website supports the OCAs. The five stages are Investigate Web Background, Confirm and Generate Organizational Critical Activities, Analyze Effectiveness and Efficiency, Group, and Prioritize. The seven forms are termed Evaluation Process Instructions, Website Evaluation Forms 1, 2, 3A, 3B, 4, and 5. Through conducting the five stages with the assistance of the seven forms, the evaluator is able to: be familiar with the website domain and know the intended user groups; assess hyperlinks and sub-sites systematically; analyze the evaluation data; and group the support properly. The results of this research also confirm the literature Hung and McQueen (2004) that utilizing evaluation forms provides a systematic way to evaluate websites.

The literature seemed to suggest that informativeness and interactivity are two key criteria for evaluating how effectively and efficiently websites support OCAs. The results of this research confirm that these two criteria are capable of evaluating how effectively and efficiently websites support OCAs from the perspective of an organizational provider. Moreover, this research finds a third criterion, consistency, which deals with the consistency of website designs. This criterion is used for evaluating how the website supports the "increasing the branding" activity.

In an academic sense, this research adopts the perspective of an organizational provider, and is different from the majority of published literature which takes the user’s perspective on website evaluation (e.g. Agarwal & Venkatesh, 2002; Chen & Macredie, 2005; Kumar & Benbasat, 2006; Nielsen, 1993). This particular perspective contributes to the literature since it gives web researchers a balanced view on the issues relating to the provider’s perspective of the value of websites. The organization provider perspective complements the user perspective. In a more practical sense, the organization provider perspective gives organizations an opportunity to monitor their websites by themselves in order to seek better support for organizational desires.

In terms of website evaluation, it is possible to continue advancing the knowledge and methods of adopting the three evaluation criteria (informativeness, interactivity, and consistency). In regards to informativeness, there must be more research done on the measurement method to determine how informatively the files and documents on the website support OCAs. In regards to interactivity, there needs to be continuous research of new web features, and the categorization of these new features into the three levels of interactivity from other state-of-the-art websites. Finally, in regards to consistency, further research needs to measure the impact made on the organization’s brand image from a consistent or inconsistent web design.
References


Appendix 1 Developed OCAWSEM

Evaluation Process Instructions

Stage 1 – Investigate Web Background:
1. Browse through the website, and answer following questions:
   - Does the website comprise Internet, intranet(s), and extranet(s) Homepages?
   - Is password required to access into Internet, intranet(s), and extranet(s)?
   - What are intended user groups of the website?
2. Then, complete Evaluation Form 1

Stage 2 – Confirm and Generate Organizational Critical Activities:
1. Start from the centre of the university Homepage, click one hyperlink and follow the hyperlink to the first level of sub-site.
2. Based on the purposes of the hyperlink and the sub-site, identify the organizational critical activities listed in the OCA Repository which this sub-site is supporting.
3. Record the name of the sub-site and how to find it in Evaluation Form 2.
4. If the organizational critical activity supported by the hyperlink is not listed in OCA Repository, add it into the OCA Repository and repeat step 3.
5. Repeat steps 1 to 4 to quick links on the top, on the side, and then to the bottom until all the hyperlinks on university Homepage are evaluated.
6. Applied steps 1 to 5 to the second level sub-sites of the Homepage.
7. Repeat steps 1 to 6 on the Homepages of intranet and extranet.

Stage 3 – Analyze Effectiveness and Efficiency:
1. Choose one organizational critical activity in Evaluation Form 3A.
2. Conduct evaluation on how effective and efficient the activity is supported by referring the results in Evaluation Form 2 and the criteria in Evaluation Form 3B.
3. Record the result onto Evaluation Form 3A.
4. Repeat steps 1 to 3 on the rest of organizational critical activities in Evaluation Form 3A.

Stage 4 – Group:
1. Based on the results of Evaluation Form 3, assign one organizational critical activity to Evaluation Form 4.
2. Repeat this process on the rest organizational critical activities in Evaluation Form 3.

Stage 5 – Prioritize:
1. Use the Web Prioritizing Principles to identify the priority for all nominated organizational critical activities in Evaluation Form 4.

Website Evaluation Form 1
(Content only, the full version is available upon request)
Does the website comprise the Homepages of following domains (see *)?

Domain (Yes/No) Password protected? Name of the Homepage
- Internet
- Intranet
- Extranet

What are the intended user groups of the website?

*Definitions of Web Domains are:
- Internet: The Web pages can be accessed by any users and are password free.
- Intranet: The Web pages can only be accessed by employees of the organization and are password protected.
- Extranet: The Web pages can only be accessed by suppliers or buyers of the organization and are password protected.

**The sub-site level:
- If the sub-site only presents questions, this is not counted as one level of sub-sites.

***The Web domain:
- If the sub-site belongs to the domain of the university website, it must be fully or partially owned by the University.
  Departmental sub-sites will not be evaluated unless they support any university level activity.

<table>
<thead>
<tr>
<th>No</th>
<th>Organizational Critical Activities</th>
<th>Internet Domain Supported?</th>
<th>Extranet Domain Supported?</th>
<th>Intranet Domain Supported?</th>
<th>Title of the Sub-site and How It Was Found?</th>
<th>Specific Features?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No</th>
<th>Organizational Critical Activities</th>
<th>Effectiveness</th>
<th>Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Levels of Effectiveness A***

<table>
<thead>
<tr>
<th>Degree of Support</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>More than 10 sub-sites** and in each sub-site contains information three times the length of the screen (with 1024 x 768 resolution screen display) on average to support the organizational critical activity.</td>
</tr>
<tr>
<td>Medium</td>
<td>Include 5 to 10 sub-sites or more than 10 sub-sites but with information less than three times the length of the screen on average in each sub-site to support the organizational critical activity.</td>
</tr>
<tr>
<td>Low</td>
<td>Less than 5 sub-sites to support the organizational critical activity.</td>
</tr>
</tbody>
</table>

***Levels of Effectiveness B****

<table>
<thead>
<tr>
<th>Degree of Support</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>No more than 2 sub-sites are designed inconsistently</td>
</tr>
<tr>
<td>Medium</td>
<td>More than half of the sub-sites are designed consistently</td>
</tr>
<tr>
<td>Low</td>
<td>More than half of the sub-sites are designed inconsistently</td>
</tr>
</tbody>
</table>

**Levels of Efficiency**

<table>
<thead>
<tr>
<th>Degree of Support</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>The feature provides static information to support conducting the organizational critical activity.</td>
</tr>
<tr>
<td>Level 2</td>
<td>Not only information provision, the feature also provides at least one-way communication between users and the university when conducting the organizational critical activity, for example, online form, and FAQ.</td>
</tr>
<tr>
<td>Level 3</td>
<td>Not only information and communication functionality, the feature also provides data transaction between users and the university when conducting the organizational critical activity, for example, search feature****, online payment, change of passwords, or exchange of personal information.</td>
</tr>
</tbody>
</table>

* This criterion is used to evaluate how the website is supporting all organizational critical activities except for branding.

** A sub-site is the composition of Web pages which can be accessed through the linkage of a hyperlink on another Web page. It is different from sub-page. A sub page is only a page of information.

*** This criterion is used to evaluate how the website is supporting branding activity. For evaluating branding, both Levels of Informativeness A and B are required to complete. Then, record both results to Evaluation Form 3A.

**** The search feature is the feature which supports the organizational critical activity rather than the general search feature of the website.
Website Evaluation Form 4
(Content only, the full version is available upon request)

Category Description List Activities in this Level Alphabetically

Category 1: (the website provides effective and efficient support) High and Level 3 in Evaluation Form 3
Category 2: (effective or efficient support) High and Level 2 or Medium and Level 3 in Evaluation Form 3
Category 3: (General support) The rest supported by the website and is not Low and Level 1 in Evaluation Form 3
Category 4: (Poor support) Low and Level 1 in Evaluation Form 3
Category 5: (Non-support) The activity is not supported by the website.

Website Evaluation Form 5
(Content only, the full version is available upon request)

Web Prioritizing Principles
1 The organizational critical activity in higher category has higher priority than the one in the lower category.
2 The activity, which is supported by more sub-sites, has higher priority.
3 If two or more than two organizational critical activities are supported by the same number of sub-sites and ranked in the same levels of Interactivity, the one supported by more sophisticated Web features will have higher priority.
4 If two or more than two organizational critical activities are supported exactly by the same sub-sites, the one supported by more information will have higher priority.