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CRITICAL SUCCESS FACTORS FOR KNOWLEDGE TRANSFER: A CASE STUDY OF AUSTRALIAN GOVERNMENT WEBSITE

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Abstract: *This paper presents and discusses the indicators for critical success factors (CSFs) for knowledge transfer (KT) via an Australian government website. The indicators are based from knowledge management (KM), customer service (CS) and web-based self-service (WSS) literature. The research explores CSFs from a case study at Department of Education in Australia that is known as AUSED from the perspective of provider. This study employed interpretive case study with qualitative methods. Primary data derived from interviews with nine government officers that are involved in the development and management of government website. Qualitative content analysis by inductive approach was used as analysis technique. From the analysis, 11 CSFs were identified. These CSFs were then being grouped into six themes, namely management role, user focus, employee focus, content focus, technology focus and organisational culture. Then these CSFs were being validated in a focus group to finalise the CSFs for knowledge transfer via Australian government website. This study used a single study of one government agency in Australia. Therefore, the result may not be applicable to other government departments due to differences of business areas. Nevertheless, this study produces a list of CSFs for strategic management in government agency to consider for development and management of government website. The list might lead towards a best guideline for knowledge transfer to happen via government website.*

Keywords: *Critical Success Factors, Knowledge Transfer, Knowledge Management, Customer Service, Web-Based Self-Service*

Introduction

The aim of this paper is to present the elements for critical success factors (CSFs) for knowledge transfer (KT) via an Australian government education website, from the perspective of provider. The elements are based from KM, customer service (CS) and web-based self-service (WSS) literature. The research explores CSFs from a case study at Department of Education in Australia that is known as AUSED. In this research CSFs are defined as "the limited number of areas in which results, if they are satisfactory, will ensure successful competitive performance for the organisation" (Rockart, 1979, p. 5). The structure of this paper is as follows: the next sections briefly discuss the definition of e-government, knowledge and KT used for this research context. The subsequent sections discuss the research methods used, for data capture and analysis. The penultimate sections reports and discusses the key findings; followed by a short conclusion that explores the significance of the results and possible further work.

Electronic government (E-government) can be defined in many ways. It means different things to different people. Some researchers define e-government as another technology wave and in terms of specific actions such as using a video conference to interact with citizens and other government services through a website (Allahawiah & Alsaraireh, 2014). For the purpose of this research, the definition of e-government will includes these four categories which is similar like Greunz et al. (2001, p. 2), "e-government is (1) the sum all electronic communication between government, enterprises and citizens (Institutional view), (2) the sum of electronically provided products and services, that have to be provided due to mandatory government regulations. These definitions do not depend on the institution that provides the product or service. It just relates to the mandatory regulation nature of the product or service (Product/service view) and (3) the sum of electronic communication in which a subordination relation between government and citizens or enterprises exists (Relational view)". Therefore, this research defines e-government as follows, the utilisation of the Internet particularly website to improve and enhance government operations (Benefit view), to disseminate government information and services (Service view), to acquire knowledge through website (Objective view) and to establish relationship between governments and their stakeholders particularly citizens, employees, business sectors and government agencies (Relational view).

The website has become the preferred channel for users seeking to access government information and services, especially in the case of knowledge-based websites. Nevertheless, the website provides challenges to government - not merely to mount a website able to deliver information and services, but to ensure that the website delivers in a form that addresses user needs and facilitates the transfer of requisite knowledge. The government information and services must be easy to find, to access and to use (Henninger, 2017). A substantial body of e-government research focuses on the importance of information and communication technology (ICT), in particular the role of the website, in transforming relations between a government and its citizens. There is, however, little focus on knowledge management (KM) especially on knowledge transfer (KT).

This research adapted Szulanski (2000) intra-organisational KT model to identify CSFs for KT via government website. This model has been chosen because it is well accepted and recognised among the researchers. Szulanski (2000) intra-organisational KT model consists of four stages, namely initiation, implementation, ramp-up and integration. The initiation stage consists of all events that lead to the decision to transfer knowledge. The stage begins when the user has recognised a need for knowledge and starts a search for knowledge to fulfil that

need. Once the need for that information is identified, the feasibility of transferring that knowledge is explored. The implementation stage begins with the decision to proceed. During this stage, the knowledge resources flow between the source and the recipient. The implementation related activities come to an end after the recipient begins using the transferred knowledge. The ramp-up stage begins when the recipient starts using the received knowledge. During this stage, the recipient will concerned with identifying and resolving unexpected problems that arise while using the new knowledge. Finally, the integration stage begins after the recipient achieves satisfactory results with the transferred knowledge. The use of the transferred knowledge becomes routinised. Integration is complete when old knowledge is replaced by the new knowledge or practices.

The following paragraph explains potential CSFs for KT via government website. These potential CSFs are the elements from the three associated concepts that are related to e-government which is KM, CS and WSS. It is important to note that these potential CSFs are only the working elements that may underpin KT success via government website. The identified CSFs for this research were inductively derived from the empirical work.

Accessibility: Casalino (2014) noted that the knowledge assets should be stored in an electronic medium so as to enable efficient and faster access and retrieval. Provider should also establish a knowledge portal that is accessible via the organisation-wide intranet. The knowledge portal should also provide access to all the knowledge assets as well as the important information systems of the organisation. They further state that provider should provide customised access for users to knowledge resources. Provider also needs to provide a powerful search capability to users in order to enable them to pull out the knowledge assets of interest to them. Lawson-Body et al. (2014) claim that lack of accessibility features on the website such as late e-mail response create frustration to users. By providing web-based self-service (WSS) to users, government is improving the relationship with users (Schedler & Summermatter, 2007), enhancing customer service and the effectiveness of government operations while reducing costs (Goh et al., 2008). Lawson-Body et al. (2014) recognise site navigation is an important aspect for website accessibility because users need to conveniently find the sought information on the company website. It is addresses by services such as site maps and search features.

Attitude and change management: Casalino (2014) promotes that provider needs to constantly scan the environment for potential opportunities and threats so that the organisation is fully prepared to exploit the entire situation to its advantage, administer and maintain the KM portal and its contents so that it is fully geared to meet the demands of users. Furthermore, provider needs to interact with the team members and other government departments in order to explore possible areas of knowledge sharing and ensure that the network of knowledge managers remains effective in carrying out its responsibilities. Similarly with Nadjib Usman et al. (2014), they mention that there are many and different ways of making KM part of the regimen for the staff such as making the knowledge portal a gateway to all the daily computer activities such as e-mails, news, knowledge resources, access to experts, interactions and many more and making it mandatory for the staff to record the lessons learned while rendering their official responsibilities. Furthermore, Cullen (2008) and Staniszkis and Sttaniszkis (2006) note that the employees of the organisation need to work together to meet the objective of the website. According to Lockett et al. (2008) working as teamwork is important. They consider knowledge and skill of the website team will enforce the CRM success. Research by United Nations (2008) found that codes of

conduct are a formal documentation in the organisation which identifies values and beliefs held within an organisation that governing behaviour. These rules are being practiced by the staff which they learned among the peers to enhance the performance of the organisation.

Awareness and notification: Casalino (2014) describes that users should take the initiative to be aware of the organisation knowledge and be willing to institutionalise it. They further state that highly publicise the available knowledge can increased acceptance among the user. Also, users need to be informed about the upcoming chat, audio and videoconferencing sessions and new knowledge in their areas of interest through an e-mail based on subscription manager. They also suggest that provider needs to constantly build awareness about KM initiatives and its successes through seminars, workshops and training courses. Governments begin to view their citizens as customer by utilising the ICT to develop their national websites to have the necessary tools to meet their citizens' needs (United Nations, 2008). Casalino (2014) describe that users prefer to receive notification services from the website for any information updates. Different based of organisations have make use of the ICT and move their operations to the web to provide services to users. Communications with key stakeholders, especially the media, and the management of public and media awareness is important in order to motivate users to use the website (Cullen, 2008). Cooper et al. (2006) address that provider needs to establish awareness and marketing programmes in order to promote WSS to users.

Content: Casalino (2014) noted that the organisation should exercise care to ensure that the knowledge are available to the knowledge consumers, whenever and wherever they want. They further state that provider should constantly seek to improve the knowledge base by evaluating the existing knowledge assets for their relevance, usefulness and enhancement, ensure protection to the knowledge base by clearly specifying access privileges to employees as well as external users for various activities such as inserting, updating and deleting knowledge assets and ultimately, the entire set of activities must result in usage of knowledge assets by the employees in effectively rendering their official responsibilities. Nadjib Usman et al. (2014) report that government agencies have the obligation to transfer government information to users. Therefore, government agencies have to ensure the information that they disseminate is free of error. Furthermore, they also state that by using website to transfer the government information it will reduce search time. In the context of e-government, one-stop government portal has served as WSS for users to access government information and services (Reddick, 2009). Cooper et al. (2006) mention that high quality content in the knowledge base is needed for WSS success.

Education, training and knowledge sharing: Casalino (2014) contend that sharing knowledge among the employees is one of the important elements in the electronic KM framework for government organisation. On the other hand, Miranda and Tarapanoff (2008) and Newell and Edelman (2008) address that manual is one types of organisational knowledge that is based on the individuals' professional knowledge and on the knowledge of the groups that can assist users to use the website. Hu et al. (2009) and Siddiquee (2008) reveal that manual can assist users with data entry and processing, eliminate human errors and reduce the turnaround time for processing, hence increase the service quality and the continuance intention of online services. Also, Lockett et al. (2008) assert that management should provide professional training and education for employees in order to improve CRM performance. Cullen (2008) mentions that in order KM and knowledge sharing are going to be practiced by the staff, it must start from the top level of the management. Also, Cooper et

al. (2006) suggest that provider should provide education and assistance to users to use the WSS system.

Employee focus: Smith (2008) describes that human resource division should match work participant qualifications with requirements of process work tasks and determined by the work participant role model for smooth process execution in an administrative environment. Similarly with Traunmuller et al. (2006), they contend that employees should be assigned tasks according to the job specifications and their qualifications for smooth process execution in an administrative environment. The results of the study by Siddiquee (2008) conclude that in the emerging of the technology, Malaysia has introduced several programs in an attempt to address critical challenge of manpower needs. Cooper et al. (2006) state that management should provide training to support agent in order to promote knowledge transfer and reuse and improve productivity.

Information Communication and Technology (ICT) infrastructure: Casalino (2014) describes that the organisation should take seriously consideration about the technology in terms of the computing devices, network infrastructure and system software tools that will best fulfil the users' need in order to access the knowledge resources, establish an organisation-wide intranet that offers extensive communicating and collaboration capabilities and ensure that processes and events that relate directly or indirectly to the organisation's strategic direction are automated as computer-based information systems. Lockett et al. (2008) contend that ICT infrastructure can improve CRM performance. Research by United Nations (2008) found that government should provide an infrastructure both within the public sector and across society at large, one based upon reliable and affordable internet connectivity for citizens, businesses and all stakeholders in a given jurisdiction. Moreover, Cooper et al. (2006) reveal that organisation needs to have sufficient ICT infrastructure, internet connection and technical support for users.

Interactive platform: Casalino (2014) outlines that tacit knowledge is best shared through dialogue such as e-mail, discussion groups, expert locators, chat rooms, e-learning through online seminars and virtual classrooms, audio and videoconferencing links and other virtual collaborative workspace. Lockett et al. (2008) mention that customers are encouraged to participate in steering committees and supervisory or advisory boards in order to design the website for meeting customers and businesses' needs. On the other hand, Traunmuller et al. (2006) address that citizen involvement and democratic deliberation are important in the governance cycle of e-government solutions. Millard (2006) further add that the interactive platform can plays as an assisted self-service to users to use the online services. Also, users can involve into the whole process of service and content design. Hu et al. (2009) suggest that the opportunity of users to interact with specialist can convey website assurance to users which refers to the ability of the website to inspire trust and confidence.

Leadership: Kolsaker and Lee-Kelly (2007) state that management role in the organisation is important to implement the objectives of the organisation. The management role includes leadership that can direct and facilitates KM efforts, supervise projects, support work groups and provide incentives to encourage knowledge sharing and use. Singh (2008) also suggests that the productivity of the organisation depends to the management of valid knowledge through suitable styles of leadership. Trivellas and Dargenidou (2009) noted that a leader can play role as a director and coordinator in order to provide quality services. Not only that top management support is also become indicator for quality customer services Schedler and

Summermatter (2007), Castelnovo and Simonetta (2008) and United Nations (2008). Cooper et al. (2006) report that top management support is always important in any strategic organisational initiative.

Presentation of knowledge: Traunmuller and Orthofer (2007) recognise standardisation of the website is one ways to enhance the performance of the website including establishing a common understanding of processes, building on widespread administrative concepts, ensuring interoperable platforms, having administrative domain ontology, defining formats for data interchange and other types of standardisation. Similarly, Millard (2016) also states that data interconnectivity is also one of the success factors to enhance the performance of the website. Although this study is not going to evaluate service quality on government website, the criteria discuss in this section may be useful since users are expecting to receive quality services from government through website (Allahawiah & Alsaraireh, 2014). Hu et al. (2009) stated that website design is one of the determinants of service quality and continuance intention of online services. Similarly, research by United Nations (2008) and Perez et al. (2008) also state that website with attractive and simple design allows users to quickly find what they are looking for hence, that website is well tailored to the needs of its stakeholders. Equally, Wood et al. (2008) state that user friendly and well-designed website can increase the effectiveness of information dissemination. Barlow et al. (2007) also assert that poor online design can affect the customer relationship management (CRM) in e-government. Nadjib Usman et al. (2014) also assert that WSS can provide customers to access to organisation's support knowledge directly through the internet. Cullen (2008) promotes online form design that can ease users and to encourage completion includes a single scrolling page, with minimal graphics, reduce download times and support dial-up access. Kim et al. (2008) assert that web designer should design web contents which contain maximum information in minimum pages. Cooper et al. (2006) also noted that support knowledge presented through the web interface must be readily accessible to users.

Security: Smith (2008) and Staniszkis and Sttaniszkis (2006) assert that policy formulation, legal drafting and evaluation of policies are vital in the whole governance cycle. Casalino (2014) on the other hand, states that policy formulation could publicly accredit the ownership of knowledge providers. Hu et al. (2009) stated that security can influence users' perception towards online service quality. This can be addressed via website design by providing evidence or certifications that demonstrate how secure the website is. Smith (2008) proposes that with the rapid growth of e- and m-government activities, government has to improve security, trust and their CRM in order to become successful. Cooper et al. (2006) claim that website provider needs to secure system and data privacy.

Usability: Casalino (2014) believe that usability issues which include how a user perceives and interacts with a website, easy navigation, appropriate design and creates a positive experience for user are important in designing a website. According to Yu et al. (2008) web services are expected to become the key technology to provide services through the web. Study by Cooper et al. (2006) found that usability for WSS includes navigation and search.

User focus: Phusavat and Anussornnitisarn (2008) report that there are several basic services that are critical and constantly needed by citizens such as identification or ID cards, copies of household certificates, updating of household members about births, deaths, and move-ins, marriage certificates and others basic services. When the government begins to focus on citizen-centric they improved the customer service and increased the satisfaction of customers

(Al-Mashari, 2007). Lockett et al. (2008) mentioned that customers are expected business processes to be aligned to the delivery of the customer-centric promises, such as guaranteed service levels, creativity and convenience. Cooper et al. (2006) state that WSS is a key type of network-based customer service system (NCSS). Lawson-Body et al. (2014) propose taxonomy of customers' needs amenable to online fulfilment such as knowledge of company about their services offered, new articles, company background, stock information and other information about the company, knowledge about the products and services offered, catalogues, membership services, new products, frequently asked questions (FAQs) and other information about the services. Cooper et al. (2006) mention that personalisation of support for individual customers must be provided through the knowledge base system.

User ICT literacy: Lockett et al. (2008) believe that skills of the employees are one of the drivers for the CRM readiness for e-government.

Research design

The concept of "success factor" was first discussed by Daniel (1961) in the management literature. It was Rockart (1979) however who first developed a methodology to elicit CSFs. Rockart (1979, p. 5) defines a CSF as "the limited number of areas in which results, if they are satisfactory, will ensure successful competitive performance for the organisation". This research adapted the CSF method which consists of an introductory workshop, one-to-one interviews and a focus group. In the introductory workshop the contact official was briefed on the purpose of the research. Following the workshop, one-to-one interviews with participants were took place. The participants were asked to list what they see as the CSFs in their context and rank them in priority order. Finally, a focus group was conducted, involving the same participants as in the one-to-one interviews. The purpose of the focus group is to validate the CSFs resulted from the one-to-one interviews. In this session, the list of the CSFs from the one-to-one interviews was tabled. Participants then shared from each other's experiences and produced a final list of CSFs. The case site for this research is the Department of Education in Australia that is called AUSED. The researcher provided to AUSED with the background of the research and interviewed nine participants. The participants are the staff that are involved in the development and management of Australian government website including top, middle and operational management level across the department. The interview transcripts were analysed by using inductive qualitative content analysis (Elo & Kyngas, 2008). Finally, the result from the one-to-one interviews was validated in the focus group.

Result

From the one-to-one interviews, participants identified 11 CSFs for KT via Australian government website. Four themes were emerged from the categories, namely management role, user focus, content focus, and technology focus. Then, the CSFs were validated in a focus group. Refer to Table 1 for the final list of the CSFs for KT via Australian government website.

Table 1: CSFs for KT via Australian government website

CSFs AUSED
Management role theme • Governance
User focus theme • Awareness and notification • Usability: Functionality and navigation • User focus: Understand needs of recipient • Presentation of knowledge • User positive experience
Content focus theme • Content • Knowledge storage and retrieval: Architecture
Technology focus theme • Accessibility • ICT infrastructure: Awareness of users' technology availability • Search engine

Participants from AUSED commenced by agreeing the CSFs *AUS_CSF 1 – Awareness and notification, AUS_CSF 2 - Usability: Functionality and navigation* and *AUS_CSF 3 – User focus: Understand needs of recipient,* their definitions and their classification to *Theme 2 – User focus.* With regard to awareness and notification it was observed that while the website must be promoted to users, and changes to website structure and content must be notified to the user, a degree of stability in the configuration of the website must be maintained. Frequent change is unsettling to website users, dissuading them from returning to the website. "*Definitely you can't get the message out if people are not aware of the website."* (PA7: Senior Online Communication Advisor). *"In terms of functionality, modification and new developments, I think it is more about not surprising the user constantly by changing things so that they constantly come back to a different environment. The environment needs to be stable - needs to be consistent - and when you are undertaking new development you need to plan effectively, based on what the user expectation are."* (PA7: Senior Online Communication Advisor). Respondents agreed the CSF *AUS_CSF 4 – Presentation of knowledge,* its definition and categorisation in *Theme 2 – User focus.* According to AUSED respondents, one of the challenges for them is to unpack the content that is to be presented in a logical way, and then to present it so that efficient user access is achieved. To achieve this, the importance of writing style guides was stressed. *"One of challenges is to unpack the content for the user so that the user knows where to access the document quickly"* (PA7: Senior Online Communication Advisor). *"We inform authors who write for the web to use the writing style guide. Most important information on top of the page, using bullet points, that sort of presentation, to give people who generally don't want to spend lots of time reading the screen - keep them with the guide upfront, and lead them through the important points"* (PA3: Online Communication Advisor). AUSED respondents agreed CSF *AUS_CSF 8 – User positive experience,* its definition and categorisation in *Theme 2 – User focus.* According to the participants, achievement of a positive user experience is, in part at least, an outcome of meeting the first four CSFs i.e. an outcome of focusing on user needs, usability and presentation of knowledge. When the user has a good initial and ongoing experience, they

will return to use the website. This raises an interesting question – is this a CSF in its own right, or simply an element of achieving the other listed CSFs? Given that achievement of some of the other listed CSFs was discussed as contributing to the achievement of a positive user experience, but not as a guarantee, positive user experience was retained as a CSF in its own right. *"Combine all of the other CSFs - can't have user positive experience if we don't have the others. Certainly if they don't have a positive experience then they won't come back or may not come back"* (PA5: Senior Communication Advisor). *"The failure to satisfy the first four CSFs has therefore led us to failure at number eight"* (PA4: Web Specialist).

AUSED respondents agreed CSF *AUS_CSF 5 – Content*, and its categorisation in *Theme 4 – Content focus.* AUSED respondents, however, expressed concern at the explicit inclusion of references to update times in the definition. According to the AUSED respondents, advice on update times, so users can appreciate the currency of knowledge resources and schedule revisit times is not important in the AUSED context. Given that the content is clear and can be accessed quickly and accurately, the respondents argued users will trust the website and return to it. In addition, the website is not static. Most content regularly changes, in particular in the announcement area. Therefore, users are always aware that the website is being updated. Further, there is no need to update some content over extended periods of time – so in such cases references to past or future update times are meaningless. In summary, the user knows that the website is responsive to change, and so users trust the website and its content regardless of whether the page was updated one week or six months ago, or is scheduled for a future update. All that said, governmental procedure prescribes regular cycles of review and update. Following discussion, the reference to update times was deleted from the AUSED definition. *"As far as they [users] know we are being responsive to changes as they are happening so they have trust in the content, regardless of whether it was updated a week ago or six months ago. They know the way that we end up running and managing the website. We do keep things up to date and current and so they can trust that information"* (PA5: Senior Communication Advisor).

AUSED respondents agreed the CSFs and definitions of *AUS_CSF 6 – Accessibility, AUS_CSF 7 – ICT infrastructure: Awareness of users' technology availability* and *AUS_CSF 10 – Search engine*, however, they suggested that *AUS_CSF 9 – Knowledge storage and retrieval: Architecture* should be re-categorised to *Theme 4 - Content focus*. It was argued that the intent of *AUS_CSF 9 – Knowledge storage and retrieval: Architecture* is directed to the requirement for guidelines that content authors are required to follow when preparing content and procedures to ensure compliance. The guidelines include website maps that specify locations for the storage of knowledge. The intent is content-focussed, not a technology provision or appreciation matter. Following discussion, *AUS_CSF 9 – Knowledge storage and retrieval: Architecture* was re-categorised under *Theme 4 – Content focus. "I'm not clear here why it [knowledge storage and retrieval] is under technology focus - not under content focus. I guess that it comes back to content ... it's going to impact on ... content because it is about offering guidelines and styles on content the best way possible - so that the user can have that positive first experience"* (PA5: Senior Communication Advisor).

The absence of CSFs related to *Theme 1 – Management role* at AUSED was noted. Herein, however, it should be noted that in the course of that discussion a new CSF was recognised by the respondents, related to *Theme 1 - Management role*. It was observed by the respondents that leadership and top management support of e-government website development, and its role in promoting KT are taken as given at AUSED. What is important, however, in the

AUSED context, is IT "Governance", which in the AUSED focus group discussions included those aspects of corporate governance focused on IT systems and their performance. In particular AUSED respondents highlighted the importance of providing clear policy, from the top, on the structures and accesses appropriate to various user groups. This was seen not as a leadership or top management support role, but as a requirement to take responsibility for the formulation of key corporate policy and structures with important impact on the operation of an e-government website. Following discussion, an additional CSF was agreed - *AUS_CSF 11 – Governance* (Definition: Senior management must accept and exercise overall website governance responsibilities. Of particular importance, management must exercise control over the capabilities of, and interactions between, the multiple tools that are provided to users via the website. This includes, in particular, taking key decisions concerning which tools are available to the public and those which are restricted to users who are internal to the organisation). *"I don't think that [leadership] is critical to us because they [senior management] are aware of the fundamental business tools of online communication, and see them as critical communication tools."* (PA7: Senior Online Communication Advisor). *"Governance is the critical success issue – in particular decisions concerning the interaction between multiple tools. We have both public tools and internal tools. Talking to the same audiences - often we bring similar types of information but the governance structure is important so that we bring delivery together"* (PA7: Senior Online Communication Advisor).

Conclusion

This paper presents the CSFs for knowledge transfer via Australian government website. The CSFs identified contribute to building an understanding of the principles underpinning the delivery of successful government website. Furthermore, the CSFs provide useful guidance for strategic management at other government agencies to consider for ongoing development and management of government website. The CSFs may also become the factor towards the best guideline for KT to happen via government website. Nevertheless, this research used a single study of one government agency in Australia which the result may not be generalised. This result set as a foundation for the research in phase two that is currently on-going which is the integration of naqli and aqli in knowledge transfer researchers. The result of that research will be the subject for future publication.

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