Chapter 9

Conclusion

Chapter Objectives

The present work gives a systems perspective to web quality environment. It reinforces the need of system based model and highlights the advantages of exploring website quality model at subsystem level. It also discusses the implication of the study as a result of application of the systematic methodology. It explores the possibilities of future research based on proposed approach.

9.1 Summary of the Study

Web quality has been a major concern since the invention of World Wide Web (WWW). The exponential growth in the development of web technology and its embrace by the people has only added complexity to defining web quality. The ISO 9126-1 model of software quality was thought to be sufficient when it was presented way back in 2001. Since then, various authors have extended the model to keep pace with the development of web technology. The three dimensional model presented by Calero et al. in 2005 was supposed to be sufficient and one of the best model. Yet the advent of web 2.0 and futuristic direction in the expansion of web showed the limitations of the model. One of the quality models presented by Olsina et al. in 2009 on web 2.0 also extended ISO 9126-1 quality model to include content quality.

The existing models presented till date were insufficient keeping in view the present scenario of the web technology. The success of social networking websites enforced a few more factors to define its quality environment. This essentiated the need to develop a new web quality model, which can extend the previous models to accommodate the emerging factors. The purpose was to develop a web quality system which could represent critical quality factors within web environment.

A pilot survey was carried out to remove trivial factors. Seventy seven factors were extricated through pilot survey. Main survey was conducted which consisted of 77 factors extracted through pilot survey. Based on the results of main survey a four dimensional web quality model was formed as shown in figure 4.6.

The developed four dimensional web quality model was evaluated to compare websites using Analytic Hierarchy Process. Interpretive Structural Modelling was
used to structure the WQKF (Web Quality Key Factors) identified in developed web quality model. Quantification of web factors was carried out using Graph theory and matrix methods to check the effect of factors on a given website thereby extracting the weak factors.

9.2 Implication of the Study

1. Web quality is essential towards success of an online venture. The study provided in-depth analysis of critical factors of web quality thereby understanding the nature of their effectiveness in a web quality model.
2. The study has provided a four dimensional model consisting of critical factors essential towards qualitative analysis and deployment of any website.
3. In this study, web quality model as a system and underlying subsystems and part thereof has considered the impact of interrelationships among various components and subcomponents thereby providing better understanding of the critical factors.
4. Analytic Hierarchy Process (AHP) technique has been used on web quality model to compare websites.
5. Interpretive Structural Modelling (ISM) technique has been used to model the web quality key factors. ISM methodology combined with MICMAC analysis provided model and driving power and dependence diagram of web quality key factors. It was observed that factor ‘Functionality’ and ‘Usability’ is having highest driving power while quality of a website is highly dependent on the factors ‘Reliability’ and ‘Efficiency’.
6. Graph Theoretic approach has been utilized to quantify the overall effect of website quality factors in developed web quality model through systematic approach. The developed procedure may be useful for self-analysis and comparison among various websites.
7. Developed web quality model can be used in e-manufacturing. Since web is an inherent part of e-manufacturing, an e-manufacturing strategy implemented in line with the developed web quality model will help the organization embrace information transparency, fostering operational excellence while cutting down on wastes.
8. Web quality model will assist in improvement of website thereby fulfilling the expectation and satisfying the target users.
9.3 Limitations of the Study

Survey is a methodology which relies on standardization, thereby forcing the researcher to develop questions general enough to be minimally appropriate for all respondents, possibly missing what is most appropriate to many respondents. They depend on subjects' motivation, honesty, memory, and ability to respond. Subjects may not be aware of their reasons for any given action. They may have forgotten their reasons. They may not be motivated to give accurate answers; in fact, they may be motivated to give answers that present themselves in a favorable light. Survey question answer-choices could lead to vague data sets because at times they are relative only to a personal abstract notion concerning "strength of choice". For instance the choice "moderately agree" may mean different things to different subjects, and to anyone interpreting the data for correlation.

The expert’s advice used in techniques such as AHP, ISM and Graph Theory may seem biased as different people may have different view on a concerned topic, specifically while comparing them. Reader discretion is advised on such matter. The research process incorporated the study of web quality factors that were chosen based on available literature and convenience. According to Churchill (1979) this type of sampling can be applied when the emphasis is on exploratory research, though selection error must be appreciated when generalizing the results and conclusions to the population. The small sample size and respondents vague interpretation of choice, a function of time constraints, may have also affected the extent of precision in the analysis.

Another limitation is that the results cannot be generalized to all businesses. It is true that large organizations generally provide leadership in using information technology, but differences exist between small and large businesses, especially in using the Web to compete. Therefore, careful use of the results should be made, especially as to their applicability to small businesses.

9.4 Direction for future research

The research methodology incorporated in the study has provided an exhaustive list of critical web quality metrics thereby forming web quality model system. Though the research has provided four dimensional web quality model, yet, there is a wide scope for future work. Some of the areas for future research are:
1. Since websites are continually developing incorporating latest web technologies, the new web applications are necessary for mobile and other web connecting devices that could result in changes to website design and development. In the future, the website quality metrics may be adjusted to adapt this new challenge and hence formulate web quality model for mobile and other web connecting devices.

2. An advanced program may be designed as a website evaluation tool wherein the web quality model framework provides an evaluation blueprint. It may also act as resource to inform visitors that they can access the website confidently.

3. Web Quality needs exploration towards standardization of web quality metrics definition and web design and development process. Developed web quality model may provide a good starting point towards standardization process.