Application of Delphi Method and Quality Function Deployment on Requirements for Website Development - A Survey of Website Developers in Taiwan

Gary Y. Chen and Zhong-Han Yu
Industrial & Systems Engineering
Chung Yuan Christian University
Chung Li, Taiwan

Jamie Rogers
Industrial & Mfg. Systems Engineering
University of Texas – Arlington
Arlington, TX 76019, USA

Abstract

As one of most important technologies in 21st century, websites provide information convenient to their users. To build an effective website, a systematic process to manage the website development is imperative. The website building process starts by understanding customer needs through discussions. A rigorous requirement management is essential because it forms the foundation of the project development. Studies have shown that software projects typically cannot meet original expectation because main requirements are inadequate and further updates are required. In this study both the Delphi method and quality function deployment are applied to understand the impacts of requirement management on website construction. The Delphi method involves discussions among a number of experienced experts. In order to gather experts' opinions, a questionnaire including customer needs and the software quality for website development is created. A quality function deployment is then developed based on the survey to analyze the relationships between users' preferences and developers' technical considerations. The results of this research may facilitate the reduction of resource misuse associated with poor requirement management and enhance the quality and effectiveness of website development.

Keywords
Website Development, Requirement Management, Delphi Method, Quality Function Deployment

Biography

Gary Yu-Hsin Chen received his PhD in Industrial and Systems Manufacturing Engineering from the University of Texas at Arlington, Arlington, Texas, USA. He had worked as a senior software development/test engineer in the telecommunications and industrial automation industries in USA. He is currently an assistant professor in the Department of Industrial and Systems Engineering at Chung Yuan Christian University, Taiwan. His research interests are in the fields of software testing/quality assurance, meta-heuristics, facility layout optimization and telecommunications applications.

Zhong-Han Yu is currently working as a special assistant to a factory general manager with a well-known food and livestock conglomerate in Taiwan. He received his MS degree in Industrial and Systems Engineering from Chung Yuan Christian University, Taiwan, in 2011.

Jamie Rogers is a professor and the associate department chair at the University of Texas at Arlington (UTA), Arlington, Texas, USA. Professor Rogers is the 2013-2014 president-elect of Accreditation Board For Engineering And Technology (ABET), a nonprofit, non-governmental organization that accredits college and university programs in the disciplines of applied science, computing, engineering, and engineering technology. She is the recipient of UT System Regents' Outstanding Teacher (2012), UTA Academy of Distinguished Teachers (2011-Present) and UTA Chancellor's Council Award for Excellence in Teaching (1999). In addition, she serves on the UT

System – Systems Engineering in Healthcare Steering Committee, whose mission is to apply systems engineering tools and methods to revolutionize healthcare operations across The University of Texas System. She is a registered professional engineer in Texas, USA.