

Enhancing the Centralized Information System as a Distributed System in Higher Education: Design Science Approach

R.L. Samantha^{1*}, M.J. Prasad², H.S.C. Perera³ and K.P.A.P. Samantha⁴

¹*Department of Marketing, Faculty of Management and Finance, University of Ruhuna, Matara, Sri Lanka*

²*Department of Computer Science, Faculty of Applied Science, University of Sri Jayawardanapura, Sri Lanka*

³*Department of Management and Entrepreneurship, Faculty of Management and Finance, University of Ruhuna, Matara, Sri Lanka*

⁴*Department of Marketing, Faculty of Management and Finance, University of Ruhuna, Matara, Sri Lanka*

The information systems (IS) provide several enormously important services to conduct and manage operations in different fields in government and private sector organizations. Hence, there should be a complete IS solution to acquire such a precious service. However, among the identified problems, less awareness of numerous ways of the information and process duplications, and some improper document management practices are identified problems in an organization for this research. At the same time, the interoperability problem with the use of ISs is a critical issue within these problems. Thus, more ISs are running as isolated systems within the organization. Ultimately, this may have a high impact on the total productivity of the organization. The objective of the study is to develop a centralized system to find a better solution to minimize the identified issues and then, to check the validity of the developed system. Then, the design science approach was used as the research approach in this study. Problem identification, system design, system development, system implementation, and system evaluations were major research process followed by this study. Based on the above approach and developed software model, a centralized system was developed to keep connectivity with all isolated systems using database driver mechanisms. Then, the system validity was checked based on the selected case site in the evaluation part of the methodology. The evaluation was conducted with the collected data from the information on services and facilities provided by departments or branches of the University of Ruhuna. Data were analysed by regression techniques using the statistical tool to check the improvement and compare it with the current system. According to the findings, the developed system is more suitable for the selected case site comparing with the current system. Finally, the system was selected as a better solution for the identified problems.

Keywords: Distributed information system, Profile management system, Model view controller