INVESTIGATION IN TO DECISION SUPPORT SYSTEMS AND MULTIPLE CRITERIA DECISION MAKING TO DEVELOP A WEB BASED TENDER MANAGEMENT SYSTEM

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ABSTRACT

The manual process of tendering which is mostly practiced in the third world countries such as in Sri Lanka, is identified as a challenge an organization undergoes when procuring goods and services. It is an inevitable process which is tedious and time consuming to many managerial bodies. Tendering bodies in organizations that go through tenders manually embark on decisions using their own discretion and thus yielding improper decisions due to lack of transparency and biasness involved in the selection. In terms of this research, an investigation was carried out on a Sri Lankan state bank. This gave insight into underlined manual tender procedure, followed and, it exposed a current efficiency rate of 44.4%. The main objective of this research is to increase the efficiency rate and accuracy of the final tender decision. In order to realize the above stated objective an insight was carried out under the multiple criteria decision making models. And the most suitable models for this project have been in cooperated in the framework that was proposed for the automation of the tender management process. In terms of realizing the objective AHP is proposed to be integrated with weighted score model and this solution was deployed in the form of a website which would be able to be accessed 24/7 making it more convenient to the suppliers, and provide flexibility to the decision makers (DM). This was able to enhance the efficiency rate of the tender process to 82.29% with an overall change of 85%.

Keywords: Analytical Hierarchy Process (AHP), Multiple Criterion Decision Making (MCDM), Tendering, Weighted Score Model, Decision Support System (DSS)

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