ABSTRACT

AN EMPIRICAL STUDY ON BUSINESS INTELLIGENCE ADOPTION AND MATURITY IN MALAYSIAN ORGANIZATIONS

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Business intelligence (BI) is a collection of technologies, applications, and processes, by which organizations collect, integrate, access, and analyze data for decision making. In recent years, market enthusiasm toward BI is overwhelming. This is evident with increasing parades of BI vendor as well as increasing spending on BI. Such enthusiasm can be attributed to their recognition of the value of BI. Despite the apparent significance of BI to the success of business activities, many organizations still have not obtained full potential benefits from their investment. The main reason is that many of them only adopt basic BI capabilities, and have not touched on the implementation of higher level analytics and intelligent functions. The term “maturity” is being used to describe such differences in the level of BI implementation. To gain full benefits of BI, it is essential that organizations start to move toward a higher level of maturity in their BI implementation. However, for organizations to be able to move from their existing maturity level to a higher one, it will require them to first recognize where they are in the maturity chart. This means to understand their current BI capabilities. Following that, they would need to know how to climb the ladder to a higher maturity level. This requires an understanding of the elements they need to improve to leap to the next level. This study intends to address these two issues. The main objective of this study is to develop and test a comprehensive BI maturity model that can be used to guide organizations in their effort to move toward a higher maturity level in their BI initiatives. This maturity model comprises of four dimensions: organizational, process, technology, and outcome, spanning across five levels of maturity. For each dimension, it will spell out criteria to move from the lowest level of maturity all the way to the highest level of maturity. An empirical study was undertaken with the development of a structured questionnaire to test the BI maturity model. The questionnaire was pilot-tested and has demonstrated a high level of internal reliability among items in which the Cronbach’s alpha coefficient of the four dimensions ranging from 0.757 to 0.937 respectively. Since the Cronbach’s alpha values exceeded the minimum acceptance level of 0.70, thus, the results of Cronbach’s analysis show that the questionnaire is well constructed and reliable. The survey was undertaken for
the duration of five months in year 2012 and distributed to the selected organizations in West Malaysia which have already implemented BI system. 100 Malaysian organizations had been identified as the samples for this survey. However, only 34 organizations agreed to participate in this survey. Majority of the companies that refused to participate in the survey responded that it is against their company policy to review confidential data or information to others even if it is for the use of educational purpose. Survey results indicate that no organizations have achieved level 5 and most of them are still at either low or moderate level of maturity across all the four dimensions that built into the BI maturity model. This implies that organizations are yet to obtain full benefits from their investments. The findings in this study also show that outcome and organizational dimensions have a higher impact on the BI maturity level, followed by technology and process dimensions. There are still rooms of improvement where organizations can and should move up the maturity hierarchy so that they can gauge all potential benefits of BI. Having this BI maturity model as guidance, organizations can effectively devise a systematic plan to achieve higher BI maturity level. Overall, it can be concluded that, all the research objectives formed in this study have been successfully achieved. In terms of the maturity model developed for this study, it is believed this BI maturity model is comprehensive enough to cover all dimensions of consideration when an organization plans to implement BI. Nonetheless, the model is only tested with a limited number of organizations (34 organizations). Consequently, it may not possible to generalize the findings that have been obtained from the present study. Future research could use larger sample sizes, therefore increasing the power of generalising the results as well as establishing the comprehensiveness and validity of this BI maturity model.