

Investigation on the Adaptation of Business Intelligence and Analytics in Sri Lankan Supermarket Sector Organizations

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Abstract

In the era of the fast moving technology, every company and firm try to get the competitive advantage over the other firms in participating actively in the competition of the market. As the businesses get larger and distributed, the data collected each day rise from megabytes to terabytes each day. Increasing amounts of data give the opportunity to companies to use analytics to understand the hidden patterns in the data they collect and harness valuable business insights to gain competitive advantage. We present the results of a study on the adoption of business analytics in the Sri Lankan supermarket industry conducted to evaluate their readiness to use the state of the art business intelligence technologies available today.

The main reasons for selecting supermarket sector over another industry is due to the nature of transactions, volume of transactions, high competitiveness, requirement for analysis, proven ability to get good results by using business intelligence techniques, loyalty card systems, the huge volume of customer data and transaction data collected each day are significant. Furthermore, the supermarket sector exhibits a huge competition among the three leading conglomerates and one appearing conglomerate. In order to gain competitive advantage these companies should understand the patterns hidden among these data such as the behaviors of their consumers and the trends in the market. However, it is unknown whether they are adequately and successfully adopting the business intelligence technologies for competitive advantage even though they have sufficient data assets.

Through a through literature review the factors were identified that should be considered related to assessing the readiness of a company for business intelligence and analytics. A questionnaire was made based on the review of literature elaborating the seven factor model referred as “BI readiness Assessment” which can be used to determine the states of various issues related to organization’s ability to utilize BI. “BI readiness Assessment” describes seven readiness factors, which they have also referred as potential barriers to the ability to deploy BI. We used this model, originally developed for the context of the United Kingdom, for the context of Sri Lanka and thereby evaluated the Sri Lankan supermarket sector organizations in terms of the seven factors of BI readiness to understand the overall readiness and adoption of analytics.

The research was designed as a case based qualitative research in which all identified leading supermarket sector conglomerates were analyzed as cases. The four leading conglomerates were identified based on their variety as well as annual turnover and the government owned Supermarket

Company. Extensive open ended interviews with IT managers and the heads of BI departments of the respective organizations based on the questionnaire developed were used to collect data to develop the cases. The questions covered the seven factors of the model, in order to verify each a set of open ended questions were defines and gathered details through answers.

Qualitative data that had been received is translated into useful information through context analysis. The questions under each seven factors considered are translated to numerical values and given the ranks according to Mann–Whitney U-test. The ranks for the main seven factors are derived then with the weighted average for each point. By comparison of the ranks the results are derived.

In Sri Lanka there are only five main supermarket chains and all of them are interviewed, and gathered details. So the coverage is 100%. Four of them belong to private sector two of them are part of the big conglomerates, the other one is owned by the government of Sri Lanka. In the study we came across with different levels of usage of business analytics; Firm 1 is using query processing for analytics, Firm 2 is using a business intelligence tool, Firm 3 is having a stable ERP culture in which they perform analytics as well as an ongoing project to implement a BI system based on Hanna, Firm 4 is having a strong infrastructure design but still in the process of implementing the infrastructure and the Firm 5 shows as an outlier, which doesn't uses any business intelligence or analytics, the firm is still in the process of getting point of sales systems all outlets, from all details of stores all over the country nothing is collected and put into a common system or linked. The summary of our analysis based on the seven-factor model is given in Table 1. As per the methodology I used the qualitative analysis

	Firm 1	Firm 2	Firm 3	Firm 4	Firm 5
Strategic alignment	Average	Good	Good	Good	Bad
Continuous process development	Average	Average	Good	Average	Bad
Culture around use of information and analytics	Good	Good	Good	Good	Bad
Decision process engineering culture	Average	Average	Average	Average	Bad
BI technical readiness	Good	Better	Better	Good	Bad
DW technical readiness	Average	Average	Average	Average	Bad
Functional use of BI	Average	Good	Good	Good	Bad
Business: IT partnership	Good	Good	Good	Good	Bad

Table 1: Summary of the Analysis

As shown by the summary of the analysis, it is clear that all large-scale supermarket sector companies use and utilize BI and analytics for a considerable scale, hence their sufficiently ready for the analytics world. However, the world is now moving in to the world of “big data”, which is largely characterized by unstructured data and, investigating the readiness of these companies for analytics in the big data world would be an interesting future research that extend this study. Our study indicates that except “Firm3”, the other firms are not ready to analyze big data yet.

Keywords: *Business Intelligence, Business Analytics, Super Market*