



Executive Summary

As global leader in beverage alcohol, Diageo immerses productivity as strategy to drive out cost and sustain the business growth. Even though whisky category contributes the highest total net sales in 2017, the whisky production is vulnerable to inefficiency in maturation process. Number of cask movement and cask on the floor are suspected to be the main sources of efficiency in the warehouse. However, it is hard to prove this statement and describe the scope of this problem with tabular report. Along with the advancement of data acquisition and visualisation, integrating data from multiple sources is captured as opportunity by Diageo to give the valuable insights and incorporating it with operations processes. This project captures this opportunity by combining data from multiple sources, process it with following Cross Industry Standard Process for Data Mining (CRISP-DM) and deliver the result with six sigma framework.

It is found that there is an association between site locations and non-productive movement. Hence, this project focuses on Blackgrange as the largest maturation facilities. The trend of non-productive activity in Blackgrange shows no significant decrease which needs further action for improvement. Utilizing bigger data set is captured to be an efficient improvement since it will generate fresh insight and raise the awareness of performance results. Dashboard visualisation with Microsoft Power BI is considered to be an effective tools in performance management. Variables to be shown in dashboards is important as it would be able to highlight the issue and opportunities. Cause-and-effect analysis is conducted to list possible causes of non-productive activity. Then, variable selection is performed to find the root causes of the non-productive movement and relationship between non-productive activity and the causes are analysed with regression function. As the result, other variables such as movement duration is proven to be the causes of non-productive movement cost as it contributes to labour and equipment cost. In addition, decision to drop casks before removal date and cask drop activity also affect cask on the floor events. The dashboards cover two functions, non-productive movement dashboards has the function as performance reasoning for future operational planning and cask on the floor dashboards has the function as short-term monitoring tool for immediate action.

Controls such as data governance, adoption strategy and dashboards integration have to be implemented to sustain the dashboards. Finally, dashboards have to be developed to keep up with business needs and users engagement.