

CHAPTER V

DISCUSSION

5.1 Proposed SSBI Solution

In this research, it is focusses on the development of Self-service BI as decision support system. Development of SSBI has many advantages. First, the development of SSBI will accelerate and automate data processing into meaningful information started from data integration from data sources, ETL, manage dimensions until data visualizations for self-service business users.

Based on data processing in Chapter 4, this research proposed the using of Microsoft Power BI to convert the raw data into meaningful information. This approach plays significant role as a tool for creating data warehouse. Microsoft Power BI provides self-service approach to perform ETL process, create dimensions, and design visualizations using only 1 software because its capability to model the data using Power Query Editor, Data View, and Relationship View. Therefore, it is apparent that by develop SSBI using Microsoft Power BI will accelerate and automate data processing into meaningful information started from raw data from the sources until data visualizations. However, in this research there is no quantified Key Performance Indicators (KPI) for measuring sales performance due to fictitious company as a research object.

Based on the data processing in Chapter 4, it can be seen that development of SSBI using Microsoft Power BI provides visualizations in a good way and easy user experience. Figure 5.1 shows that the proposed approach reports able to be accessed via web browser. Besides, Microsoft Power BI also provides smartphone application that can access the model by log in to the application. Therefore, it is apparent that the visualization or the model can be customized as the preferences and can be accessed through several platforms which make it easier to access.

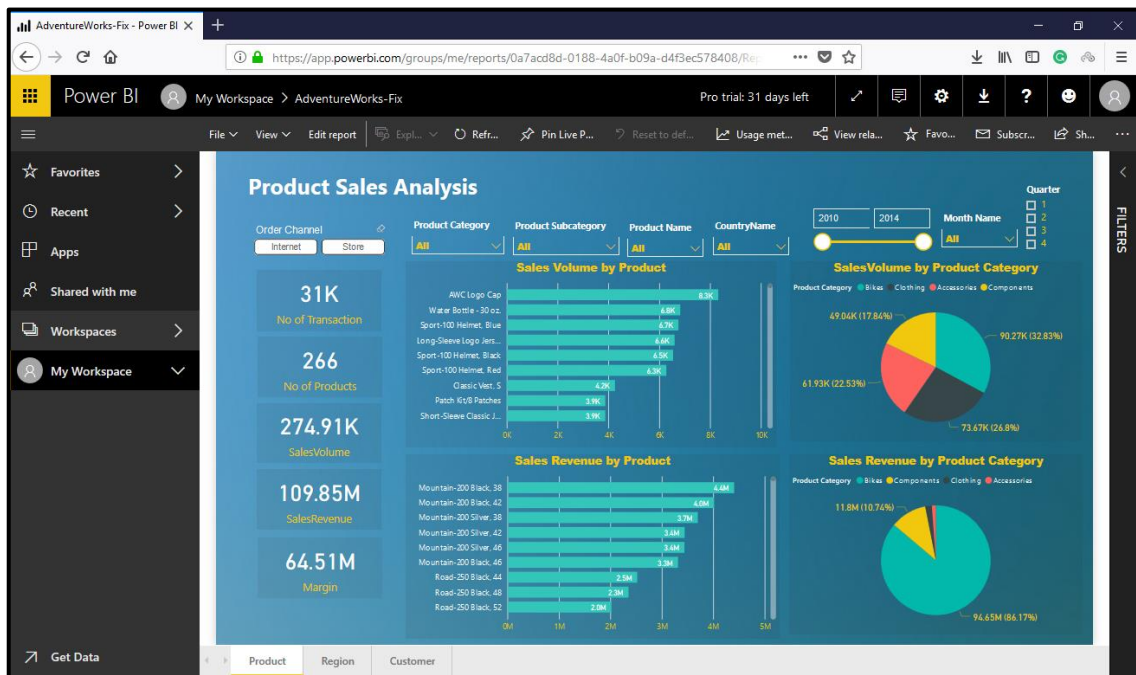


Figure 5.1 Report accessed via Web

Self-service BI can support decision making for the company to be better and faster because the decision is made by fact and relevant information that can be drilled until the smallest unit of dimension. This research is based on fictitious company, called as Microsoft's Adventure Works. It would be more beneficial if the SSBI solution can be implemented in real company by using live data connection through its OLTP transaction. On the other hands, the other vendors that providing SSBI solution could be another good opportunity to implement SSBI solution for next research.

5.2 Dashboard Result Discussion

A. Proposed Dashboard

This research develops SSBI solution for B2C (business to customer) analysis model. There are 3 main dashboards created in this research which are product sales analysis, sales analysis by location, and sales analysis by customer.

The development of those 3 dashboards is used to analyse the sales analysis regarding with product, location, and customer profile. According to the result of dashboard in chapter 4, it is apparent that all of the dashboards have slicers, card, and visualization such as chart, stacked bar chart, line chart, and/or geo-maps. The slicers of the dashboard are used to make the business user able to explore the data analysis and drilling-up and drilling-down the visualizations.

B. System Testing on Business User Customization

This research provides 3 dashboards proposed as default dashboard to analyse the sales performance of Adventure Works company. Furthermore, the business users can modify the visualization including chart, stacked bar, or create customized dashboard page to go to another analysis as shown in system testing on Chapter 4. Based on system testing in chapter 4, it can be seen that the business users can explore the dashboard by modifying or creating slicer, chart, and also customizing dashboard page.

System testing on business user customization in Chapter 4 discussed about Top 5 vs Bottom 5 product by margin. This system testing shows that the business user can create a customization as well as create new dashboard using default dashboard as a reference. Based on this testing, it can be seen that for default slicer (all slicer configured as “all”), the difference between Top 5 vs Bottom 5 products based on customer profile is in customer’s yearly income. The customer with lower income tends to buy bottom 5 products. Therefore, the business user can make changes to bottom 5 products such as give discount promotion so that it will increase the order quantity.

By using the same rule, default slicer, there is no difference between Top 5 and Bottom 5 products in term of customer education. Both products have the highest customer buyer with bachelor degree education, followed by partial college, and finalized with partial high school. Therefore, the business user can use marketing segmentation strategy of Bottom 5 products in order to make the customer focussed on buying these products.

However, if the business user changes the slicer of product category into select only “bikes” category, there is a difference between Top 5 vs Bottom 5 products in term of customer education. Figure 5.2 shows the visualization of the customized dashboard if the slicer of product category is not configured as “all”. In this case, it is configured as “Bikes”

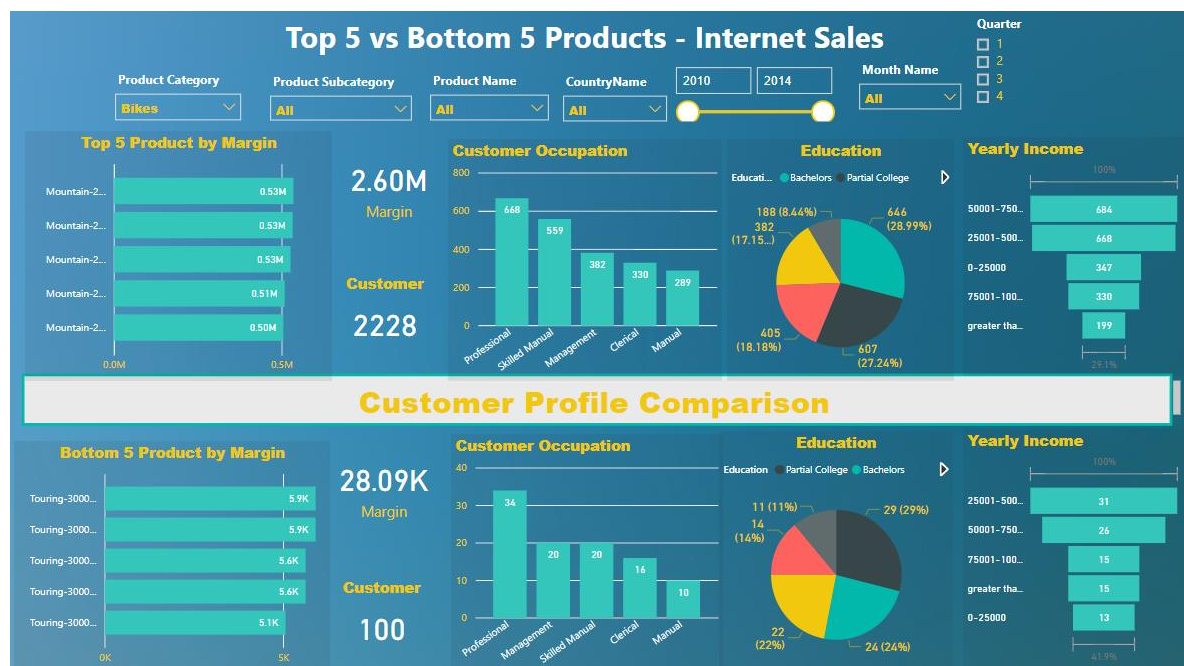


Figure 5.2 Top 5 vs Bottom 5 Products using “Bikes” Product Category

Based on Figure 5.2, it can be seen that there are differences of customer profile such as in yearly income, education, and occupation. For education, Bottom 5 products are dominated by Partial College while Top 5 products are dominated by Bachelor Degree. The business user can choose alternative to boost the sales quantity of bottom 5 products in order to make the margin of company higher such as making a campaign by

customer education of partial college, providing discount limited only for partial college so that the potential buyer of bottom 5 products will increase.

In fact, the business users can use a dashboard to analyse everything they need. In this section, it only discusses Top 5 vs Bottom 5 products with the use of default slicer and configured slicer “bikes” in product category. If the business users want to analyse by different slicer, it can be executed with only change the slicer as they want such as change the product category into accessories, change product subcategory, change the country into Australia, change the time into 2013, and so on. The changing of slicer will affect to the visualization and insights so that it is appropriate with the needs of business users.

All of the dashboards used in this research only apply Power BI feature without integration with another software. As shown in system testing about Top 5 vs Bottom 5, all of the visualizations are based on the historical data and it shows the descriptive analytics. Furthermore, business users can integrate the proposed model of this research with R software and Azure Machine Learning. This software can be used as a tool as supporting tools for creating predictive analytics so that the business can go to further analysis.