

Connecting Microsoft Dynamics CRM and Microsoft Power BI for Analytical CRM

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Abstract: The major purpose of this article is to illustrate that how to utilize Microsoft Power BI to compare and analyze internal data and external data from Microsoft CRM. In this research, potential customers' data is collected from Microsoft Dynamics CRM and uploaded the data into Microsoft Power BI. In addition, the research will implement Microsoft Power BI to gather external data from a social media (Facebook) and to transform the data to visualized data analysis. Both data from the internal and external will be published in the dashboard of Microsoft Power BI. Finally, the various diagrams in the dashboard are easy and obvious to present the trending for the customers and for the decision makers.

Keywords: Business intelligence, Microsoft Dynamics CRM, Microsoft Power BI, Social media, Facebook

INTRODUCTION

In recent decades, business intelligence (BI) is the main method for companies to make business decisions. According to Chen, Chiang, & Storey (2012), BI becomes an important term in the last twenty years in the field of academic and business. In order to retain customers and create new market opportunities, companies have to analyze their current customers and future leads. However, companies only analyzed their internal data of the customers traditionally. With the prosperous trend of technology, social media can reveal what the customers thinks about products and how it will affect other customers. Today social media is a dispensable application for people to interact with each other. Moreover, social media is a necessary tool for businesses when making strategy planning or management decisions (Dutot & Mosconi, 2016)

In this article, Microsoft Dynamics CRM and Microsoft Power BI are the main software to collect data from the internal and external areas. Microsoft Dynamics CRM is the software which supports companies to manage their customers and identify who is the primary opportunities or leads in the organizations. Lee, Lee, Chung and Chen (2014) state that Microsoft Dynamics CRM includes three modules: sales, service, and marketing. In these three modules, the most significant one is the sales. In our research, the research gathered the internal data from the Leads application which is belonged to sales area. For the external data, the research utilized Microsoft Power BI to integrate the data from Facebook and convert the data into charts so that we can obviously compare and analyze the potential customers and leads from both internal and external sources.

Overall, the purpose of the study is to understand how to connect Microsoft Dynamics CRM and Microsoft Power BI. In addition, we try to test the performance of the methods of combining the internal data and external data in the dashboard of Microsoft Power BI.

LITERATURE REVIEW

The article “The Power Social Media Analytics” by Fan & Gordon (2014) explained the process of social media analytics, the description social media analytics techniques and the methods for social media in business value. The authors illustrated social media analytics includes three main processes: capture, understand and present. The process of capture is collecting data from different social media such as Facebook, LinkedIn or YouTube. In addition, the understand stage integrates those data and identifies the valuable data to implement advanced analytics, and the authors emphasized that the stage of understand illustrate the decision making. In the last stage of social media analytics, the authors described the important factor of present process. In the present stage, visualization is significant for viewers to understand the result of analysis; therefore, the authors supported that the visual dashboard has to cumulative and demonstrate explicit interface to support the customization for different users. The article presents the significant process of social media analytics to illustrate that the social media is part of important data for business intelligence and analytics.

METHODOLOGY

In the research methodology, the article assumes 16 customers purchase behavior. In the internal data, the research creates a small customer templet and inputs the assumption’s customer data. For example, the research emphasizes customers’ product quantities and personal information. The article assumes that those customers are the opened leads in the Microsoft Dynamics CRM as the internal data.

For the external data collecting, the research gathers the external data from social media-Facebook. The customers’ data are collected from the Microsoft Facebook page. Due to the permission problem, the Microsoft Power BI Desktop version cannot collect customers’ data from other accounts except for Microsoft Facebook page. Therefore, the research gathers the customer data from Microsoft Facebook page. In the following paragraph, we show the detailed steps of using Microsoft Dynamics CRM and Power BI to collect and analyze the data.

Step-by-step 1: Microsoft Dynamics CRM (CRM 2016 or Dynamics 365)

To use the Microsoft Dynamics CRM to collect data and import them into Microsoft Power BI, you will need an account to login to Microsoft Dynamics CRM. When login into the CRM, you can see your user account on the right top side and the main navigator on the left top side. Click **Navigator button** → Select **Sales** → Choose **Leads** (see **Figure 2: Finding Leads Application**) → Click **Import Data** in top option items → Choose **Download Template for Import** (see **Figure 3: Download Template for Import**). After downloading the template, in this experiment we assume 16 customers’ purchase behavior. In order to illustrate the clear charts for the business analytics, we assume the customers’ purchase behavior such as purchase cycle, customers’ information (see **Figure 4: Template Customer Data**).

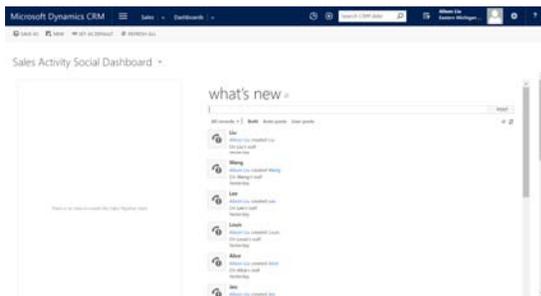


Figure 1: Home page of Microsoft Dynamics CRM

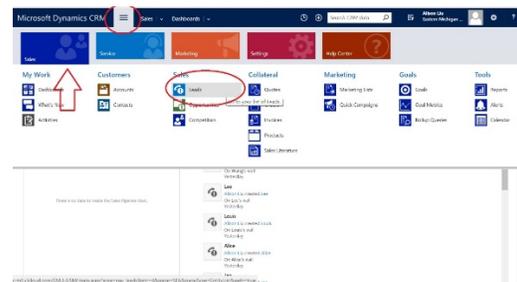


Figure 2: Finding Leads Application

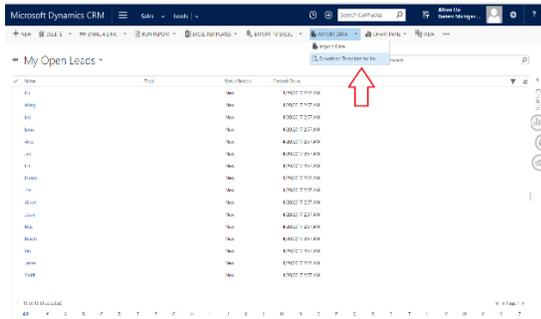


Figure 3: Download Template for Import

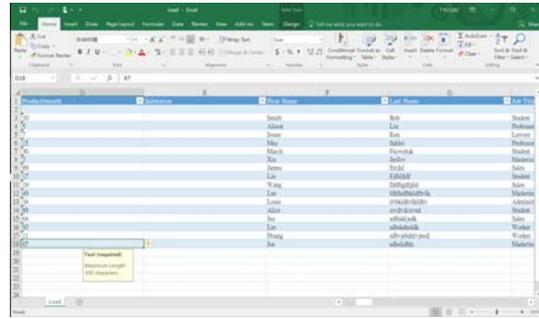


Figure 4: Template Customer Data

Step-by-step 2: Microsoft Power BI

After collecting the customers’ data, we load the data into the Microsoft Power BI in the next step. For the users, Microsoft Power BI provides free Microsoft Power BI Desktop version. When opening Microsoft Power BI, the user can see the main page as Figure 5. On the top of the main page, the user can click **Get Data** to input the data into power BI (see **Figure 6: Get Data**).

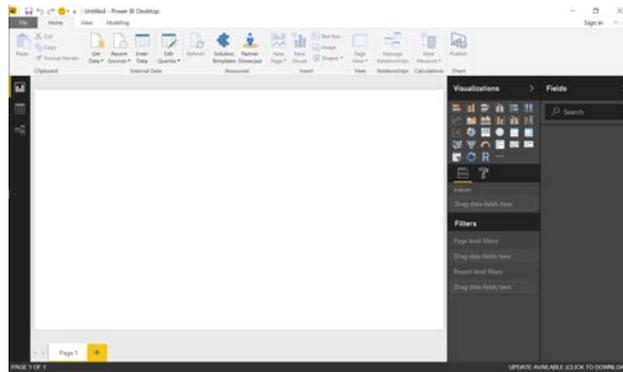


Figure 5: Microsoft Power BI Main Page

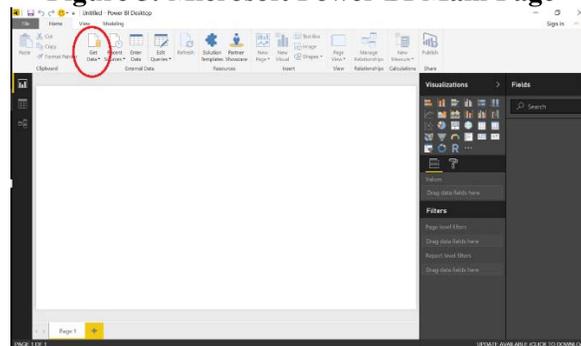


Figure 6: Get Data

Click **Get Data** → Select **Excel** and click **Connect**. The system will connect the data which was selected automatically and show the tables. User can select **Load** to upload the data into the Microsoft Power BI. After uploading the data, user can convert the data into charts (see **Figures 7-13**).

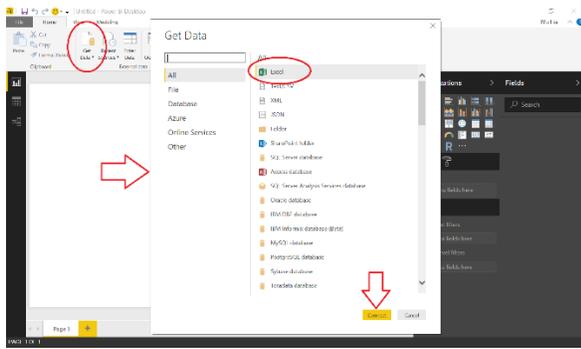


Figure 7: Input Template Data into Microsoft Power BI

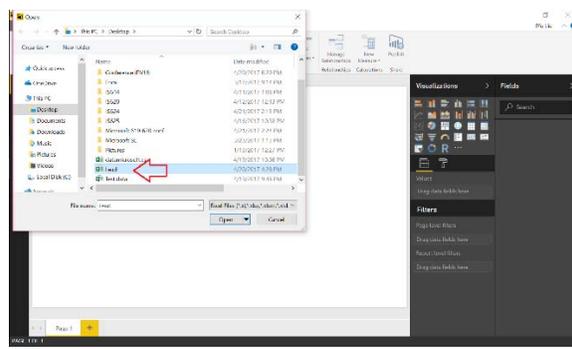


Figure 8: Choose the Excel

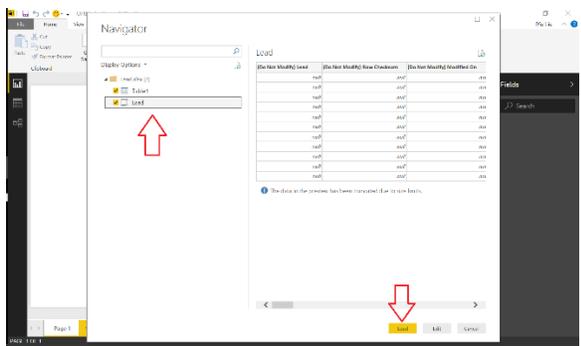


Figure 9: Choose Databases

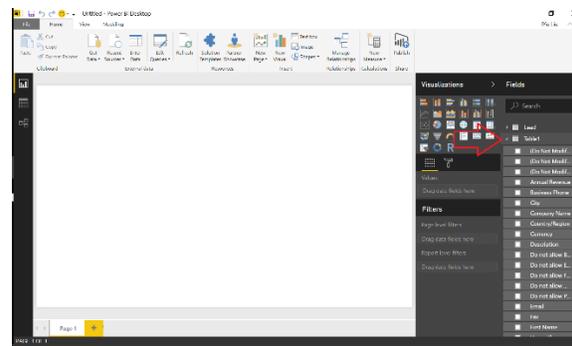


Figure 10: Select the Entities

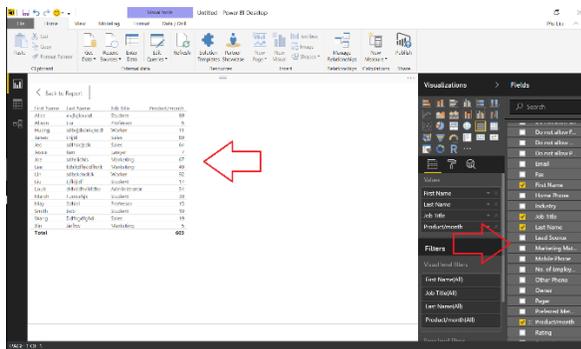


Figure 11: Chart 1

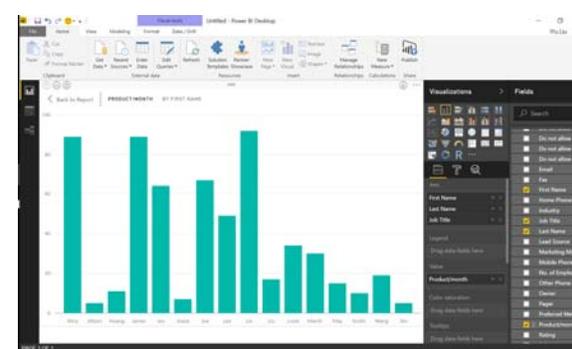


Figure 12: Chart 2

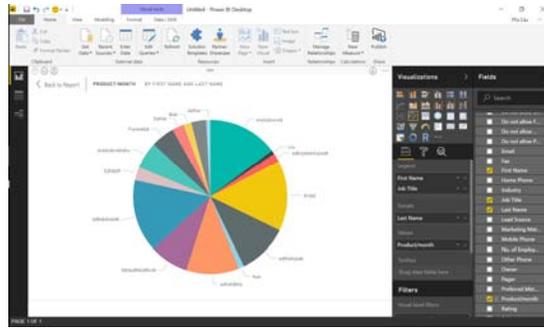


Figure 13: Chart 3

Step-by-step 3: Collecting Facebook Data from Microsoft Power BI

For collecting data from Facebook, first, click **Get Data** → Choose **Facebook** and click **Connect**. Then, the screen will present a dialog for inputting user or object ID and ask to choose the connections. In this step, user can select “None”, and the system will collect all the data from Facebook (see Figures 14-15). After connecting the Facebook data, the data table will show in the left side. Users can click **Record** to see which data from Facebook they need and click **Apply** to upload data into the main dashboard (see Figure 16-19).

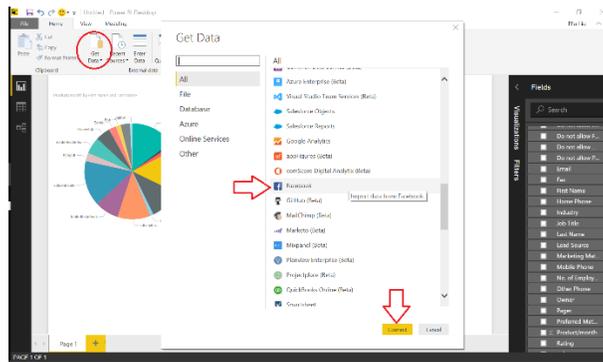


Figure 14: Get Date from Facebook 1

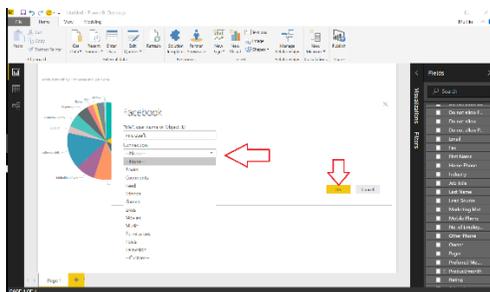


Figure 15: Get Date from Facebook 2

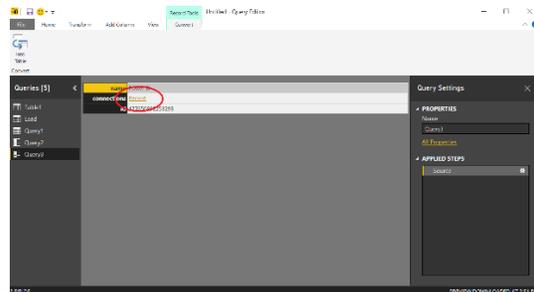


Figure 16: Choose the Specific Data from Record

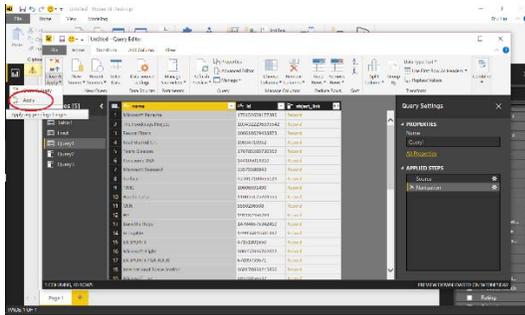


Figure 17: Apply Data into the Main dashboard

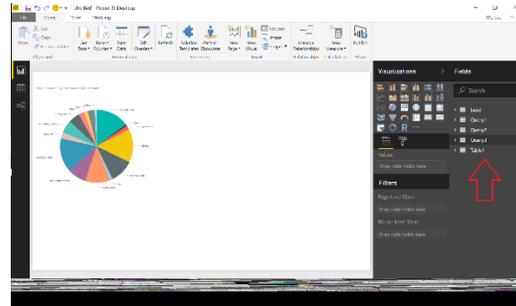


Figure 18: All Data

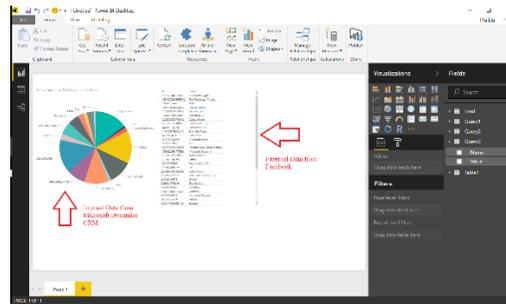


Figure 19: Data Comparison and Analysis

CONCLUSIONS

Business intelligence plays an important role for companies to make strategy or tactic decisions. In the previous BI, the users utilize data mining, data analysis, or machine learning methods. With the advanced techniques developing, social media performs the real customers voice from the external environment. So, social media data begins to become an important information for business to analyze potential customers. The research utilized a method to connect internal and external data from Microsoft Dynamics CRM and Microsoft Power BI. Furthermore, this article uses both data to compare and analyze the customers and leads to create opportunities for companies. The methodology exhibits the process of connection steps for both systems to present the visualization in the dashboard. The result illustrates that the data connection from internal and external is successful. It also shows that the dashboard has clear and obvious interface for the decision makers to analyze the data.

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