ASSIGNMENT: BI ANALYSIS

Subject: 32558 Business Intelligence

Student Name – Vishal Poojary

Student ID - 13739863

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Contents

Task 1 - Business Intelligence in the Banking Industry

A. Why Business Intelligence in Banking Industry

The report contains an extensive analysis of how business intelligence is currently shaping the banking industry. The motivation behind selecting the banking industry comes from two and half years of work experience that I possess within the industry in India. Having the responsibility to administer the management system and meet reporting needs for my department gives me an upper hand to explore how BI can be an advantage in this space.

B. Benefits of Business Intelligence to achieve positive outcomes

Competitive Advantage

The banking industry is extremely competitive; hence it is imperative for all the players to constantly enhance their capabilities. Focussing on customers and gaining operational efficiency are two important factors in this domain that provide competitive advantage attained through Business Intelligence (Panja & Paul, 2014) (Lakshmi, 2019).

Customer Churn Analysis and Prediction

Business Intelligence can provide the banking industry to undertake and visualize customer churn analysis and prediction. The analysis can reveal branches and specific location where the customer is switching to the competitors and can also make a prediction of customers who are likely to churn in the future (Microsoft 2019). The outcome of such analysis can lead to decision to improve customer service and products.

Personalized Marketing Campaigns

BI can also allow the banking industry to identify customers who are more profitable based on factors such as income, account type, households, and their spending patterns. Leading to personalized marketing campaigns to avoid attrition (Panja & Paul, 2014).

Risk Management and Customer Lifetime Value

BI can play a major role in avoiding loan defaults, detect and predict frauds. It can also estimate expected revenue from the customer in the future (Acheampong & Moyaid, 2016).

Note: For a detailed description of the above points with charts, please refer to appendix.

Task 2 - Business functions in the Banking Industry

A. Elaborate on business functions in the Banking Industry

Banking is a service industry where its function has been divided into primary and secondary activities.

Primary activities include accepting deposits, granting loans, generate and allocate credits, conduct foreign exchange deals and be the intermediaries to collect funds (Verdhan, 2019). Funds shall be required by Bank to carry out certain activities such as granting loans. Source of funds available to Bank are deposits, borrowed capital (debt) shareholders' capital (equity). The aim of the bank is to raise funds from sources having lower cost of capital and higher length of time for repayment (Lamarque, 2000). Therefore, the percentage of funds raised through above means depends on its cost of capital such as interest, admin expenses, etc.

Secondary functions include those that support the primary function. Some of them are Human Resources Management to manage human capital, Information Technology Infrastructure to provide data security, privacy and appropriate system support to manage vast number of day-to-day transactions (Pratap 2017).

B. From the above-mentioned business functions, a possible scenario in which Business Intelligence is extensively used in the banking industry are:

- Fast, accurate and real-time conversion of foreign exchange transactions to conduct efficient foreign exchange deals.
- Data modelling i.e. Online Transaction Processing is used in ATM as money withdrawals, transfers, deposits to conduct data analysis.
- Visualizing data to get insights on loans granted to the customers
- Boosting efficiency by meeting reporting needs in Human Resource Department
- In online banking, BI is used for checking account balances and directing the fund balances

Managing Human Resources through Power BI

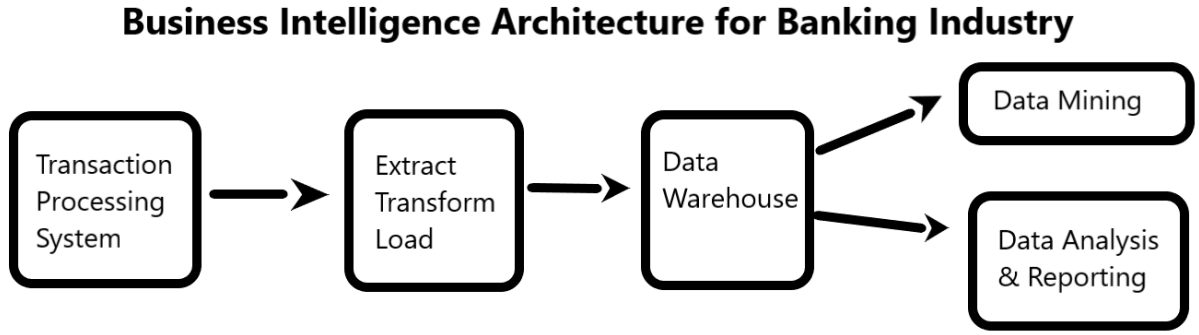
Major HR reporting consists of ad-hoc reporting meaning all the required data are manually combined, especially within the learning and development vertical. Business Intelligence tools can enable data aggregation and facilitate automated reporting from multiple systems. Consider a scenario where the management needs a report which gives a holistic view of the performance of every employee in online and offline training. BI tools can visualize data from multiple systems to meet such needs and initiate faster and accurate reporting leading to higher efficiency. The likelihood of usage of BI is high in this space since HR managers not only need to constantly keep records of Key Performance Indicators but also need to have a thorough analysis of employee onboarding and exit procedures

Insights on loans granted to the customers

The lending loan being one of the core activities of the banking sector and is also said to be the backbone for revenue generation for the industry. Being up to date with the industry trend in this space is of utmost important to gain a competitive advantage hence the probability of BI being utilized in this function is extremely high.

Task 3. - How BI practices could help in getting insights on loans granted to the customers.

Multinational banks conduct lending of loans at a large scale; hence it is imperative for such banks to compare the amount granted, the amount received from those grants, and arrears (debt that is overdue).



(Villanova University, 2020), (Jigsaw, 2016) (Kumar & Rao, 2011)

All day-to-day business-to-consumer transactions can be captured by a transactional processing system (TPS) and stored in the system's database. Extract, Transform, Load process e.g.: Oracle Data Integrator can then extract data from various databases of TPS and store them into a data warehouse. The data warehouse will provide cross-functional analysis (Jyotsna 2016). Such BI practices will enable banks to monitor the distribution of funds across geographical locations over specific period in real-time. By integrating data warehouse to Power BI (data visualization tool, management can get the following insights:

- Regions where maximum/minimum loan has been granted and recovered
- Region where the maximum/minimum loan has been paid on time
- Loan distribution as per marital status – Married, Single
- The type of loan i.e. family, marriage that is generating the highest amount of revenue compared to its fixed and variable cost.

These insights may lead to decisions such as products modification of underperformed loans. New product development targeted towards untapped market. Focusing on regions where major chunk of loan is yet to be recovered by analysing activities which did not worked as per the plan and make alteration accordingly.

Task 4 - Other possible usages of BI and outcomes in the Banking Industry.

Artificial Intelligence Techniques

Few of the functions that heavily impacts the financial stability of the banking industry are Credit Rating of the customers and Customer service. All the areas can be immensely benefitted through artificial intelligence techniques. Decision tree algorithms can provide predictions by analyzing loan applications to conclude which

applicants are more likely to fail to repay the loan and the applicants who are likely to succeed. Based on such a forecast, bank authority can take appropriate decisions by accepting the application which are most likely to repay the loan and rejecting the rest (Satheesh & Nagaraj 2021).

Chatbots

Artificial Intelligence solutions such as chatbots on online banking platforms can reduce pressure on call centres by answering frequently asked questions by the customers. Chatbots can also provide suggestions and financial tips based on previous records, leading to a personalized and relevant customer experience for the consumers in the banking domain.

Task 5 - Reflection

A. How much did I know about the banking industry before I started the assignment?

Before commencing the assignment, I had limited knowledge of the banking industry. Wasn't aware of the different business function and the artificial intelligence techniques such as decision tree algorithms which are used within the industry. Since I was working with the human resource development team, my knowledge was restricted to the HR domain.

B. Additional skills and capabilities have this assignment offered to learn

By going through numerous literatures, I got to learn how business intelligence is applied throughout the industry, mainly in the primary function i.e., How BI components such as Transaction Processing System, Extract Transform Load, Data warehouse, Data visualization together can help the banking industry to get a deeper understanding of their loan operation which can lead to appropriate decisions. I am in a better position to apply the same framework to other industries/organization such as the scenario in which a company has a need for amalgamation of data from databases of their legacy system but don't want to go through the process of changing their existing system, now I can confidently advise them to implement data warehouse which will add the same functionality without tampering the existing business processes. Throughout the assignment, along with research skills, I also developed capability to read and understand different types of graphs such as line graphs, bar graphs, map charts and many more.

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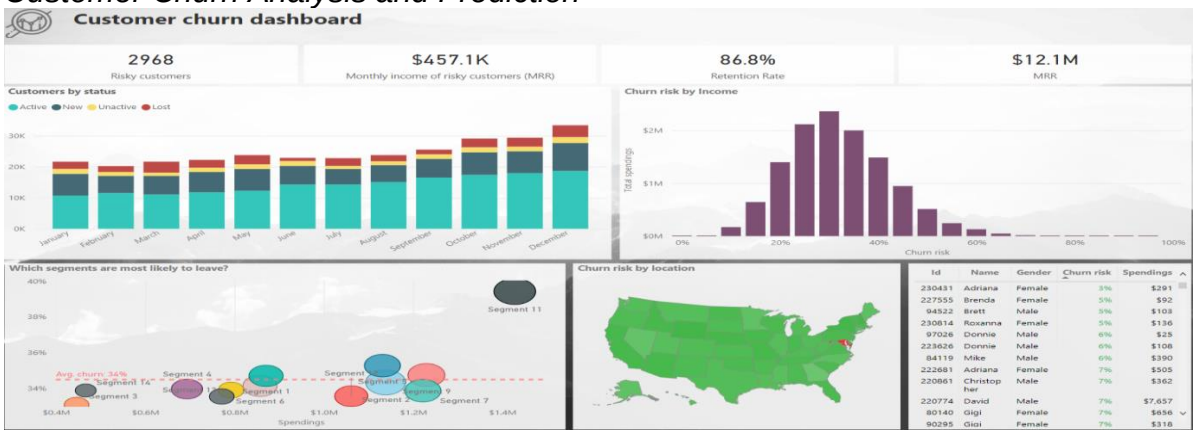
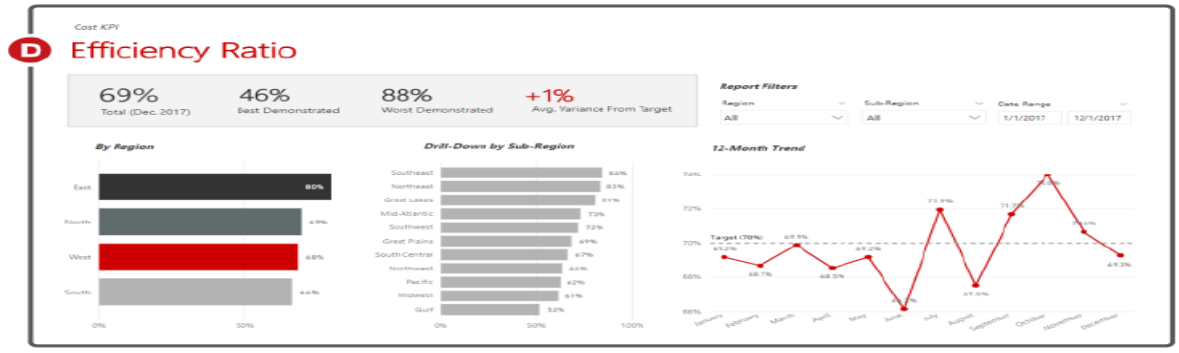
Appendix

Figure 1
Customer Churn Analysis and Prediction



Note. From *Customer Churn Analysis and Prediction,* by Microsoft, 2019, Power BI Community (https://community.powerbi.com/t5/Data-Stories-Gallery/Customer-Churn-Analysis-and-Prediction/m-p/762920) Copyright by Microsoft.

Figure 2
Efficiency Ratio



Note. From *Efficiency Ratio,* by Opsdog, 2021, Opsdog (*https://opsdog.com/resources/top-three-banking-dashboard-examples/*). Copyright by Opsdog.

The dashboard in (Figure 1) has been created by analysing large data sets to predict customer churn rate and the (Figure 2) depicts an overall view of performance of each region. The outcome of such findings can be that the management now knows which region are likely to have the highest customer churn rate. The spending amount by those customers portrays the amount that the industry might lose if the predictions turns out to be true. Reaction of such analysis may also lead to decision of increasing marketing activity in order to retain customer in that area and alter the investments towards regions based on their performance i.e. allocating more resources to regions which are performing well and initiating training to those who are yet to reach their allocated goals.