Implementation of Business Intelligence in Product Services a Banking (Case Study: PT Bank Sumsel Babel Baturaja Branch)

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Abstract

Business Intelligence (BI) is a collection of theories, methodologies, processes, architectures, and technologies that convert raw data into quality information for business purposes. BI can handle a large amount of information that can help in identifying problems and developing new opportunities. In designing and implementing Business Intelligence (BI) concept for monitoring banking product service using reference business intelligence roadmap approach. Business intelligence roadmap is one example of BI development that can be emulated because of its agile and adaptive nature and is intended to support the development of BI. By utilizing Business Intelligence application on transaction history of banking product data, it is hoped able to produce information that can support in giving recommendation and decision making appropriately. The data and information generated also become more accessible and easier to understand (user friendly).

Keywords: business intelligence, business intelligence roadmap, OLAP, banking products

1. Introduction

Business Intelligence (BI) is a collection of theories, methodologies, processes, architectures, and technologies that convert raw data into quality information for b usiness purposes. BI can handle a large amount of information that can help in identifying problems and developing new opportunities. Utilizing new opportunities and implementing effective strategies can provide a competitive market advantage and long-term stability [1]. Common functions of Business Intelligence are report monitoring, On-line Analytical Processing (OLAP) analysis, data mining, spreadsheets, and so on [2].

In previous research the implementation of Business Intelligence on banking products will be able to ease in terms of managing risk and can take a new knowledge from the data history in the form of business growth value and credit score [3]. In addition, there is research that states that by applying Business Intelligence to one of the banks located in Jordanian can help increase the credit score with data accuracy rate reaches 91.3% from the previous which only about 74.87% and can save time analysis and cost [4].

From the previous research, Business Intelligence can be used as analysis of banking product history data with case study which is found in PT Bank Sumsel Babel to evaluate the performance of banking products services quickly and support decision making in determining strategy/ policy/ work program for the next period to increase Performance of banking products services. The results of transaction data of banking products will be collected in the data warehouse. The data contained in the data warehouse is analyzed to produce information that can be used by PT Bank Sumsel Babel to facilitate,

simplify and streamline the process of monitoring the banking products services in business decision making.

The role of information technology can help PT Bank Sumsel Babel in obtaining and producing the required information. Business Intelligence as one form of implementation that is able to answer the needs of the existing banking companies, especially in addressing the demand for customers who perform banking products transactions. Business Intelligence has been widely used by companies in managing data and information up to support in decision making. In addition, the process of measuring the achievement of such a long banking product target will be more effective and efficient if assisted with the development of Web-based Business Intelligence technology that can generate value Calculation in real time and presented in the form of visualization [5].

2. Research Methodology
2.1 Business Intelligence Roadmap

In designing and implementing Business Intelligence (BI) concepts for monitoring banking product services using a benchmark approach to business intelligence roadmap [6].
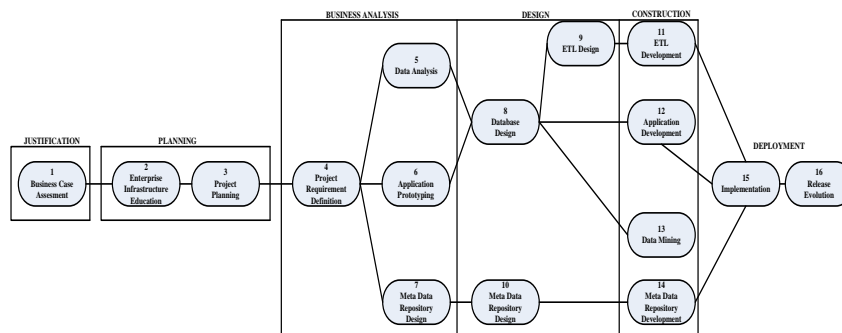

Figure 1. business intelligence roadmap

The discussion conducted on the business intelligence roadmap only includes the following analysis phase:

1. Phase Justification

   This phase discusses the business case assessment that is an evaluation of business needs. It also defines the problems and business opportunities then propose BI solutions to those things.

2. Planning Phase

   The planning phase focuses on developing a strategic and tactical plan that generates how the BI projects will be worked out and completed. This phase is divided into several stages as follows:

   a. Enterprise Infrastructure Evaluation

To design the BI applications required infrastructure to support the successful implementation. The required infrastructure consists of 2 components, namely technical infrastructure and non technical infrastructure.

b. Project Planning

The BI project is dynamic so that any changes that occur in the scope can affect the success of a BI project. Therefore, project planning should be made more detailed and current progress should always be monitored and reported. Project planning is also required in project planning so that applications can be completed in a timely manner.

3. Business Analysis Phase

Business analysis phase focuses on conducting a detailed analysis of business problems and opportunities to gain a deep understanding of the business requirements of product solutions. The phases that are passed in this phase are as follows.

a. Project requirement definition

At this stage it is discussed about existing infrastructure, be it technical or non technical whether it is adequate to be implemented BI applications.

b. Data analysis

This stage basically displays system analysis Adapted to a design to be built. This stage analyzes the suitability between business data and the required data.

c. Application prototype

Prototype can be used as a means to see the potential and limitation of BI technology that will be created and also provides an opportunity to add / change the needs and expectations of the BI project.

d. Metadata repository analysis

At this stage a logical meta model is created which is represented from the metadata object in the form of Star schema. The reason for using Star Schema is because the definition of the metadata object can be understood and can describe the relationship between the objects.

4. Phase Design

After passing the business analysis stage, the next is to do the design process, where this stage there are 3 main activities, namely:

a. Database Design

Activities undertaken at this stage are to re-examine data access needs, determine aggregate or summary needs, design BI databases, design physical database structures, create BI databases, create procedures Maintaining the database, preparing the design of monitoring and tuning the database, and preparing the design of monitoring and tuning queries.

b. Extract / Transform / Load Design

The Extract / Transform / Load (ETL) process is the most complex process in a BI project because this is where the quality of a data warehouse is taken into account, where data validation, data cleansing is done in the ETL process. In this stage, the

depiction of the ETL process that occurs in the BI application system, whether using queries or using ETL process support tools.

c. Metadata Repository Design

At this stage, the design of the results of meta-data repository analysis performed in the previous stage. The activities undertaken at this stage are designing the meta data repository database, installing and testing metadata data repository products, designing meta data applications, and designing the meta data migration process.

Key Performance Indicators PT Bank Sumsel Babel Baturaja

One way to measure the level of achievement of target banking products is with Key Performance Indicators. The calculation phases are as follows:

1. Calculates the percentage value of KPI items

Here is the formula to calculate the percentage value of KPI items:

$$\text{Percentage of item value KPI} = \frac{Realization}{Target} x 100 \tag{1}$$

In this study, using data from 5 products of savings products, deposits, current accounts, ATMs, and priority customers with a span of time from 2011-2015.

2. Determining the value of KPI items based on the rating scale

The assessment scale for realization category is expected to be higher than target is as follows:

Table 1. KPI Item Value
Based on Rating Scale Value Description

| Nilai	Keterangan
5	Satisfactory (>100%)
4	Good (76%-100%)
3	Enough (46%-75%)
2	Needs Improvement (20%-45%)
1	Less (<20%)

3. Results and Discussion

With the implementation of Business Intelligence (BI) on banking product transactions, users can view the transaction history of banking products and can provide banking product recommendations based on user needs.

Figure 3.1 and 3.2 shows the achievement of transaction target of banking products based on KPI weight and percentage of KPI value obtained.
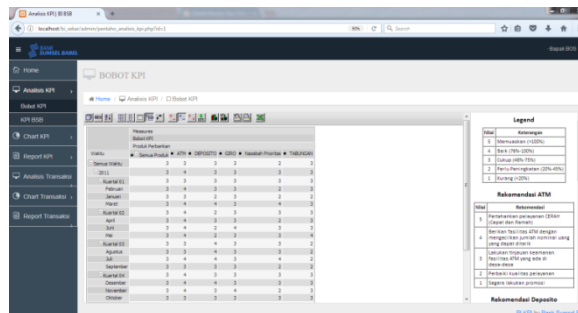
**Figure 2. Key Performance Indicators (KPI)**
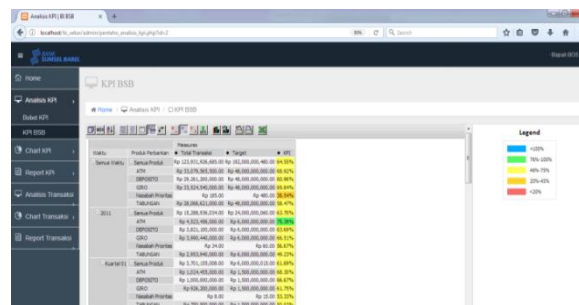
Figure 3. Key Performance Indicators (KPI) Analysis

Then, in Figure 3.3 shows the movement of the level of achievement of target banking products. By looking at these achievements, users can analyze the transaction data of banking products by recommendation in order to increase the number of customers and the number of transactions banking products and anticipate the decline for the following years.
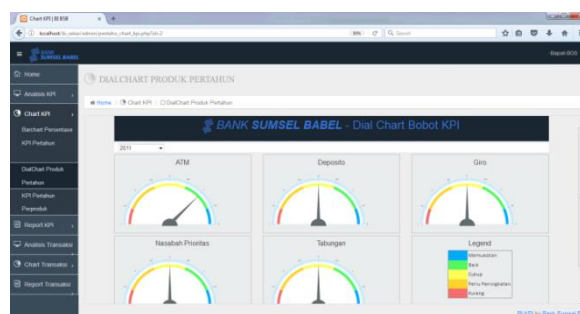
Figure 4. Dial Chart Product of Year

While in Figure 3.4 shows that with the implementation of Business Intelligence can see the customer transaction history data in details.
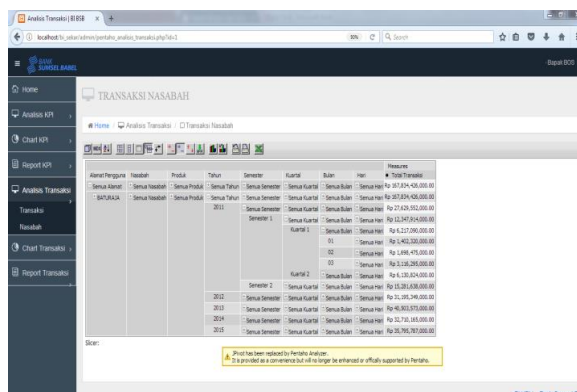
Figure 5. Transaction Analysis

4. Conclusions

Implementation of Business Intelligence (BI) can facilitate the process of monitoring customer transactions and can facilitate in making a policy.

5. Suggestions

Further development for the application of the concept of Business Intelligence (BI), not only limited to OLAP design and report creation but more added data mining in order to form a new pattern of existing data.

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