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DASHBOARD DESIGN FOR SERVICES ORDERING REPORTS

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ABSTRACT

In today's data-driven world, businesses are constantly looking for ways to gain insight and make informed decisions. Data continues to develop as companies develop. Sometimes a company has difficulty answering management's questions to see the condition of the company. For example, how much profit are you currently making? What products are most interested in by consumers? To answer these difficulties, one of the sophisticated tools that can be used is Power BI (Business Intelligence). Power BI is developed and released by Microsoft Corporation. Microsoft Power BI is part of the broader Business Intelligence and data analytics ecosystem. Power BI can be used for data visualization, business analysis, and report creation which allows companies to explore business insights from various data sources. With various kinds of visuals or charts such as Column Chart, Bar Chart, Line Chart, Pie Chart, Map Chart and others offered by Power BI, it makes it easier for companies, especially decision makers (Management) to analyze the state of the company, make decisions based on data for the company's business in the future[18]. Likewise, this happened to PT. Sustraco Adikreasi. This time the researcher will research creating dashboards using Power BI. The aim of creating a dashboard is to increase efficiency and profitability by providing a visual representation of key metrics and trends and the use of Business Intelligence for the smoothness and ease of the company's business, because it utilizes the potential of data and information that can be extracted and used for the company [17]. By analyzing this information, companies can identify areas for improvement and implement strategies to drive growth.

INDEX TERMS: Business Intelligence, POWER BI, Dashboard, Data, Data Analysis.

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I. INTRODUCTION

Business developments that run from year to year produce data that continues to increase every day [4]. Companies are required to manage and utilize this data well. Especially in this era of globalization, information is really needed quickly and accurately. This information can later be used to create a report or to make decisions for the business. This includes producing daily, weekly, monthly or annual operational reports. To produce fast and accurate information, of course you need a good tool or application. Likewise in the company PT. Sustraco Adikreasi which every day produces data about offers and service orders. This increased data has not been processed optimally so it cannot produce fast and accurate information.

This invites researchers to help design the creation of a dashboard using the Power BI application. Power BI is a business intelligence application that is used to display information[1]. This is expected to help the company PT. Sustraco Adikreasi to get fast and accurate information. By using the dashboard the data is collected properly, it can be added dynamically then the data can be aggregated using Sum, Count, Min or others. After that, create or select the desired visualization according to the data being processed [3]. Then create a dashboard, in the dashboard the user can also filter quickly based on the user's wishes. The dashboard prototype was built using a user-centric approach with four main stages, namely needs identification, planning, prototype design and prototype evaluation. Dashboards are one that is often used for visualization [7]. The characteristics of a dashboard should include graphic display mechanisms such as traffic lights and various types of gauges and meters, many of which are similar to the fuel gauges and speedometers found in cars [8].

With various kinds of visuals or charts such as Column Chart, Bar Chart, Line Chart, Pie Chart, Map Chart and others offered by Power BI, it makes it easier for companies, especially decision makers (Management) to analyze the state of the company, make decisions based on data for the company's business. in the future[18]. Likewise, this happened to PT. Sustraco Adikreasi. This time the researcher will research creating dashboards using Power BI. The aim of creating a dashboard is to increase efficiency and profitability by providing a visual representation of key metrics and trends and also the use of Business Intelligence for the smoothness and ease of the company's business, because it utilizes the potential of data and information that can be extracted and used for the company [17].

Several studies have examined the benefits and advantages of using dashboards. Here are some common methods that can be used to assess the benefits of dashboards[2]:

Operational Efficiency

- **Time:** Evaluate the extent to which the use of dashboards reduces the time required to analyze data and make decisions.[9]

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- **Resources:** Compare the efficiency of resource use by comparing previous manual work with dashboard use.

Decision Accuracy

- **Information Quality:** Compare whether the use of dashboards improves the quality of information used to make decisions in the company.
- **Timeliness:** Analyze whether decisions are made more quickly and whether they positively impact business outcomes.

Increased Productivity

- **Team Productivity:** Compare whether teams can do more work or focus more on strategic tasks after leveraging dashboards.
- **Collaboration:** Evaluate a team's ability to collaborate and share insights using dashboards.

Cost Savings

- **Operational Costs:** Check whether using the dashboard reduces operational costs, such as printing costs, paper usage, and other administrative costs.
- **Efficiency Improvements:** Compare whether operational efficiencies gained from dashboards result in cost savings.

Increased Sales and Revenue

- **Increased Sales:** Analyze whether the use of dashboards contributes to increased sales or effectiveness of marketing strategies.
- **Cross-Selling or Upselling:** Note whether the dashboard helps in identifying cross-selling or upselling opportunities.

Improved Risk Management

- **Early Detection of Risk:** Evaluate whether the dashboard helps in early detection of business risks or potential operational problems.
- **Better Risk Management:** Review whether the dashboard helps in making better decisions regarding risk management.

Increased User Engagement

- **Use of Dashboards:** Review the level of adoption and use of dashboards by teams and management in decision making.
- **Training and Support:** Ensure that there is adequate training and support to increase user engagement.
- **Problem Formulation.** How to find the best accuracy value and the benefits of designing a dashboard using Power BI at PT. Sustraco Adikreasi.

The purpose of this research is to test whether the Power BI dashboard can help answer the problems of PT. Sustraco Adikreasi and whether designing the Power BI dashboard helps the development of PT's business progress. Sustraco Adikreasi. The contribution of this research is that by designing a Power BI dashboard, it can be a good example for other companies so that they can immediately switch to using this dashboard instead of using a manual system.

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In previous research, entitled designing a Dashboard Model for Reporting and Visualizing Health Data as a Monitoring System at the Gunungkidul Health Service [13] produced a display in a modular design consisting of five main menus and submenus, namely main page, health center, health status, health efforts and SPM. This research focuses more on SPM. The modular display was chosen to facilitate data presentation and minimize difficulties in data interpretation, and also to ensure that the design can be adopted and adapted to future organizational needs. Then Designing a Dashboard for Product Sales Management at PT. Nutragen Global Esana [14] produces a display that displays data visually and interactively using the tools used to create dashboards, namely the Digital Dashboard. Digital Dashboard is a tool that can be used to represent data visually and interactively. Then create a business data dashboard as a tool for decision-making [15] which produces a management information system dashboard, companies can process raw data obtained in the field into real time information to be analyzed and assist in decision making. Then, the development of a dashboard for monitoring attendance management information systems (case study at the Faculty of Industrial Technology, Islamic University of Indonesia) [16] produced a dashboard that helped produce important information related to attendance as supporting data from the SIM that had been implemented at FTI UII. Data presentation techniques using visualization make the information displayed more interesting and interactive so that it can be a solution for monitoring attendance easily and making decisions effectively.

In supporting the 2030 agenda, sustainable living without missing a single person, this research can help people to prepare from an early age what is outlined in the SDGs, namely no poverty, no hunger, healthy and prosperous life, terrestrial ecosystems. By utilizing the Power BI application, the best visualization will be displayed which will help business people in making decisions and also help in classifying community readiness in facing the food crisis. So that the government can take policies that support the implementation of the SDGs.

II. METHODOLOGY

The research methods are as follows:

A. Data Collection Methods

At this stage, several processes are carried out to collect data that will be used in research on the Services Order dashboard using the pureshare method for the case study of Services Orders at PT. Sustraco Adikreasi, namely as follows:

1. Literature Study

Literature studies are used to collect library data and process research materials. This process was carried out to examine in more depth the dashboard and pureshare method.

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2. Data Collection from Ongoing Service Orders

In this process, data is collected which is stored in Excel files. The data obtained will later be used to analyze needs in building a Services Order dashboard.

B. Analysis Method

According to Kusnawi [10], the stages contained in pure share method is as follows:

1. Planning and Design (Planning and Design Stage Highlights)

This stage is carried out to analyze user needs and be able to communicate with the user to determine what will be displayed on the dashboard.

2. System and Data Review (System and Data Review Highlights)

This stage will be carried out by identifying data sources and collecting feedback to be developed and adapted to user needs.

3. Prototype Design (Prototype Stage Highlights)

At this stage it will be designed to build a dashboard with take a top-down and bottom-up approach simultaneously.

4. Refinement of Prototype (Refinement Stage Highlights)

Based on a series of prototypes that have been built, a review will be carried out to obtain feedback for development that suits user needs.

5. Release

When the dashboard has passed the user testing stage, the dashboard will be implemented and used by the Services Order Dashboard manager.

6. Continuous Improvement (Continuous Improvement)

This stage is the stage for developing and disseminating dashboards to other areas in an organization if needed.

III. EVALUATION

PT. Sustraco Adikreasi as a resource in this research in the form of information on ordering services. Ordering services and the ordering company will be a simulation of the research, this is to maintain the privacy of company data to unauthorized outside parties.

From the results of the discussion, it can be concluded that at least 5 main data tables are needed, consisting of: Company table, Order table, Transaction table, Services table and Sales table. The Company table, Services table and Sales table will become Master tables, while the Orders and Transaction tables will become transaction tables.

After we get the required tables, we carry out a data cleaning process by checking the data type, the similarity in naming the attributes that will become the primary key and foreign key, checking for writing errors or empty data. After ensuring that the data is valid and matches the data type, we then start making the calculations or aggregates needed

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to answer PT's needs. Sustraco Adikreasi in making service order reports.

This research has limitations, namely helping to monitor the status of service orders until completion of work, helping to see service orders by grouping them by company, helping to see service orders based on sales that offer services to companies, helping to calculate total revenue from the company. This was done for 1 year.

The activity of monitoring and viewing service orders is not updated properly because it still uses a manual system with Excel, so the creation of a services ordering dashboard follows the current system so that it can be used immediately.

In this dashboard we need to see the order status which will be updated by the admin or by sales as the person responsible for each service order, by using the dashboard everyone involved in the service order can see it directly from the application and this is the latest data (update).

Apart from that, we also calculate total income from service orders by calculating the agreed service prices. We will group service orders based on the company ordering and based on the sales person offering the service. This will be used as a benchmark for the performance of each salesperson.

From these results, we can create a dashboard that displays graphs depicting the company's total revenue which can be seen per month and per year. The results can be analyzed to determine future decision making. Then we will also display a graph depicting the total services obtained by sales which can be seen per month and per year. The results can be used by management to assess sales performance. And we will also make graphs to see the status of service orders per month and per year. By looking at the status, people involved in ordering these services know what future actions they need to take.

The results of the dashboard that we designed are as follows:

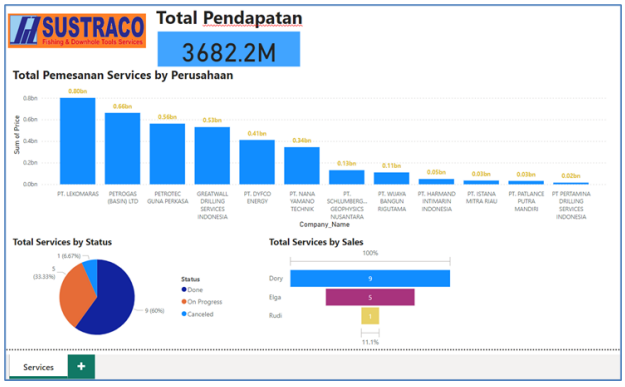

Figure 1. Service Order Dashboard Design

The table relationships we use are as follows:

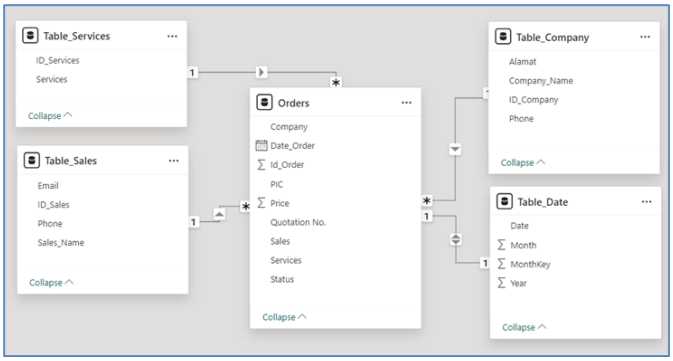

Figure 2. Service Order Dashboard Design Table Relationships

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