Designing a performance dashboard as a monitoring tool at PT Sun Star Motor MT Haryono Semarang: data approach

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Abstract. Information Management of the performance measurement of PT Sun Star Motor MT Haryono Semarang currently still provides less valuable information. This study aims to design a performance dashboard as a tool for monitoring company performance at PT Sun Star Motor MT Haryono Semarang so that information about company performance can be more valuable, especially for leaders. This research was conducted by taking into account the needs of users based on the company's KPI. This research method refers to Hariyati's "Dashboard Development Methodology." This research phase is identifying needs and reviewing dashboard information. The design produced three performance dashboards: Main Dashboard, Service Division Dashboard, and the Unit Division Dashboard. The first dashboard presents performance information of PT Sun Star Motor MT Haryono Semarang as a whole, those who use the dashboard are the branch and acc manager. The second dashboard presents performance information from PT Sun Star Motor MT Haryono Semarang and the party that has access is the service manager. The third dashboard contains company performance information for unit divisions; the user is the supervisor. The dashboard information that has been designed is then reviewed by the user based on the company's KPI and user needs.

1. Introduction

Based on the results of interviews with PT Sun Star Motor MT Haryono Semarang company performance information is displayed in the form of a table that contains the value of each KPI field without any more explicit information about the origin of the assessed value on the KPI score. This made the leaders of each division and branch leaders not understand the information displayed. Management accounting and information systems researchers are increasingly focused on using business intelligence (BI) to facilitate broad-based packages of management controls and enhance organizational learning and performance [1–5]. Performance measures are indicators used to measure, report, and manage the account. KPI is one type of performance measurement, in addition to Performance Indicator (PI) and Key Result Indicator [6]. Key Performance Indicators (KPIs) allows gathering knowledge and exploring the best way to achieve organization goals [7]. KPI is an indicator that represents the performance of the process carried out. KPI states a set of measures regarding the most critical aspects of performance, determining organizational success in the present and the future. KPI can be used to predict the chances of success or failure of the processes carried out by the organization so that the KPI can be used as a tool to improve organizational performance [8] dramatically. According to [9] Dashboard is an information technology that applies Business Intelligence techniques to collect data from various sources and display it in a more communicative form. Dashboards have made it possible for managers to receive management accounting information that is customizable, highly accessible, and available in real-time [10]. Dashboards are expected to
improve decision making by amplifying cognition and capitalizing on human perceptual capabilities. Dashboards have been widely adopted by many companies or businesses [11]. Dashboards are an integral part of how the information and analysis generated by BI systems are provided to decision makers in a usable format [12]. Dashboards are expected to improve decision making by amplifying cognition and capitalizing on human perceptual capabilities [13]. Dashboards that summarize large amounts of information have become a topic of public interest [14]. A performance dashboard is developing a dashboard that applies Business Intelligence technology and combines it with Performance Management to display information about company performance to be more valuable [15]. Dashboards are expected to improve decision making by amplifying cognition and capitalizing on human perceptual capabilities. From the description above, it can be designed a performance dashboard at PT Sun Star Motor MT Haryono Semarang as a tool for monitoring company performance, so that company performance information within a certain period of time becomes more valuable. Monitoring company performance based on KPIs owned by PT Sun Star Motor MT Haryono Semarang. Ease of monitoring company performance can help branch leaders of PT Sun Star Motor MT Haryono Semarang and the leaders of each company in analyzing the company's performance. However, this research will only discuss the data/information approach.

2. Methods
The dashboard development research performance methodology as a company performance monitoring tool that focuses on the broad data approach is depicted in Figure 1. The research methodology used refers to the method proposed in the dashboard development methodology research to monitor organizational performance (case study: Institut Teknologi Bandung) by [7].

![Figure 1. Research Methodology](image)

In this study, the steps taken are only the stage of identifying needs and reviewing information on the dashboard. We only want to determine what information and data are used to produce information on the designed dashboard performance. Identification of needs starts from identifying the high-level scenario dashboard to get a general picture of the information presented through the dashboard performance. Then, from the general overview of the dashboard identification of the organization's KPI and the identification of the type of performance dashboard and its user group, then from the title of the kind of performance dashboard and the user group, the business needs of each user are then identified from the organizational KPI, and the business needs of each user will be identified dashboard KPI.

After the final stage of identifying dashboard needs, the dashboard will be reviewed for information based on the previous KPI report's company performance information. The review is conducted with the aim of whether the information displayed on the dashboard is by user needs and can display company performance information that is more valuable than previous performance information reports.
3. Results and Discussion

3.1. Identification of Needs

The needs identification phase includes identifying high-level dashboard scenarios, company KPIs, types and users of dashboards, business needs of users, and dashboard KPIs.

3.1.1. Identification High-Level Scenario Dashboard. The identification of high-level dashboard scenarios produces development goals, the scope of the dashboard to be designed. The purpose of the dashboard is to monitor and measure the performance of PT Sun Star Motor MT Semarang Haryono. The dashboard will be designed to monitor the performance of PT Sun Star Motor MT Haryono Semarang includes a dashboard that displays the overall performance and each field as well as the performance of the unit division and service division.

3.1.2. Identification Company KPIs. Identification of KPI of PT Sun Star Motor MT Haryono Semarang is conducted internally by PT Sun Star Motor MT Haryono Semarang. KPI of PT Sun Star Motor MT Haryono Semarang is sales, stock month, AR, productivity, costs, profit, and loss.

3.1.3. Identification Dashboard Types and User. Identification type and user produce dashboard-type hierarchy, which will be designed at PT Sun Star Motor MT Haryono Semarang can be seen in Figure 2. Figure 2. shows that there are 3 types of dashboards needed in monitoring the performance of PT Sun Star Motor MT Haryono Semarang, namely PT Sun Star Motor MT Haryono Semarang, unit and service division. PT Dashboard Sun Star Motor MT Haryono Semarang is used to monitor and measure overall company performance, those who have access to PT Sun Star Motor MT Haryono Semarang is the branch manager and acc manager from the Dashboard of PT Sun Star Motor MT Haryono Semarang, both parties can access service dashboards and units to monitor and measure performance in both divisions. Besides being accessed by the branch manager and acc manager, both types of dashboards can also be accessed directly by the unit and service. The unit dashboard can be accessed directly by the team ie the supervisor. The service manager can then access the service dashboard to find out the service division's performance conditions.

3.1.4. Identification Dashboard User Business Needs. To identify the business needs of dashboard users it is necessary to obtain business questions that you want answered through the dashboard, the data needed to answer it and how to analyze it. The data needed to answer the business question comes from the tables that are the source of the data from the KPI. Data from the tables are correlated and a query will be performed to produce answers to existing business questions.

- Branch and Account Manager Business Needs

In general, branch and acc managers have the same business needs to see its performance for all fields in the Company's KPI. Therefore, all company performance information based on KPIs will be displayed through the main dashboard.
This information will be displayed on the main dashboard according to the company's KPI and related business needs of dashboard users. Clearer information from each KPI in each division can be seen in the unit and service dashboard.

- **Supervisor Business Needs**
  Supervisors' business needs are to see the value of company performance in the areas of sales, stock month, and productivity, especially for unit divisions. KPI information displayed is only for the fields of sales, productivity and stock month.

- **Service Manager Business Needs**
  Service managers have business needs to see the value of company performance for all fields contained in the Company's KPI special service division. Therefore, all company performance information based on KPIs in the service division will be displayed through the service dashboard.

### 3.1.5. Identification Dashboard KPIs

Identification of dashboard KPI is done by mapping the KPI documents of PT Sun Star Motor MT Haryono Semarang needs dashboard users, namely the needs of the branch manager, acc manager, service manager, and supervisor. Mapping is done by creating a matrix containing the KPI of PT Sun Star Motor MT Haryono Semarang with CBQ from each user group. The results of the dashboard KPI identification can be seen in Table 1.

**Table 1 Identification Dashboard KPIs**

| Users | Critical Business Questions | KPI Needs |
|-------|----------------------------|-----------|
| **Branch Manager and Acc Manager** | How is the company's overall performance this year? How is the performance of the company in each field? How is the company's performance every month? Why is the company's performance at this value? How is the company's performance in the overall service division this year? How is the company's performance in the service division every month? How is the company's performance in the service division per sector this month? Why is the company's performance in the service division at that value? | All KPI indicators of PT Sun Star Motor Semarang MT Haryono |
| **Service Manager** | How do you achieve the sales unit sales team every month? How is the sale of each member in a sales team? How is the distribution of unit sales each month? | KPI Indicator for PT Sun Star Motor MT Haryono Semarang in the service division, namely: a. Total sales of service b. Age of spare parts stock c. The amount of service receivables that are past due d. Productivity of each mechanic e. Realization and target operating costs and non operating income. f. Realization of company profits sourced from service services |
| **Supervisor** | | KPI Indicator for PT Sun Star Motor MT Haryono Semarang in the unit division, namely: a. Number of unit sales by the sales team b. The number of units sold by each related salesman team |

### 3.2. Review Information on Dashboard

The dashboard that has been generated based on the dashboard KPI analysis in the previous stage is shown in Figure 3, 4, 5.
The next step is testing the information whether the information displayed is in accordance with the user's wishes and contains the company's KPI. Testing is done by providing KPI documents and providing a list of user needs juxtaposed with a dashboard that has been made then the user sees all three and matches. All three dashboard users agree with the resulting dashboard.

4. Conclusion

The design of a dashboard performance in this study based on the KPI of PT Sun Star Motor MT Haryono Semarang as the main information in reference to the company's performance achievements and integrating it with the business needs of dashboard users so that information can be generated on the dashboard that is by the company's KPI and users of each dashboard. From the results of the performance dashboard design, the performance dashboard that is designed can display information that meets the criteria of information aspects that are valuable to its users.
References

[1] M D Peters, B Wieder, S G Sutton, and J Wakefield 2016 *Int. J. Account. Inf. Syst.* 21 1
[2] M D Peters, B Wieder, and S G Sutton 2018 *Int. J. Account. Inf. Syst.* 29 (February) 1
[3] S G Elbashir, Mohamed Z, Collier, Philip A, and Sutton 2011 *Account. Rev.* 155
[4] M T Lee and S K Widener 2015 *J. Inf. Syst.* 30 1
[5] P Rikhardsson and O Yigitbasioglu 2018 *Int. J. Account. Inf. Syst.* 29 (April) 37
[6] Suyadi Prawirosentono 2015 *Manajemen Sumberdaya Manusia- Kinerja & Motivasi Karyawan* (Yogyakarta: BPFE)
[7] M Badawy, A A A El-Aziz, A M Idress, H Hefny, and S Hossam 2016 *Futur. Comput. Informatics J.* 1 (1) 47
[8] E. Hariyanti 2008 *Metodologi Pembangunan Dashboard Sebagai Alat Monitoring Kinerja Organisasi Studi Kasus* (Bandung: Institut Teknologi Bandung)
[9] K Joshi, S Masurkar, A Tawde, and J Gharat 2017 *Int. Res. J. Eng. Technol.* 4 (3) 1658
[10] M A Vasarhelyi and M G Alles 2008 *Int. J. Account. Inf. Syst.* 9(4)227
[11] F Halper 2015 *TDWI Best Pract. Rep.* 27
[12] J Reinking, V Arnold, and S G Sutton 2020 *Int. J. Account. Inf. Syst.*, vol. 37 (xxxx) 100452
[13] O M Yigitbasioglu and O Velcu 2012 *Int. J. Account. Inf. Syst.* 13(1) 41
[14] M Nadj, A Maedche, and C Schieder 2020 *Decis. Support Syst.* 135 113322
[15] W W Eckerson 2015 *Performance Dashboards_ Measuring, Monitoring, and Managing Your Business*