

Implementation of a Performance Metrics-Based Dashboard Summary Feature on the One Direction Website for Sales Monitoring

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Abstract

Tactical decision-making in the telecommunications industry requires fast and centralized access to sales performance data. However, performance metrics on the internal corporate website used by PT XYZ are currently distributed across separate modules, leading to repetitive navigation and risks of data inconsistency from manual compilation. This study aims to design and implement a Dashboard Summary feature as a centralized monitoring interface for the Eastern Jabotabek regional division. The system was developed using the Prototyping method, utilizing Laravel as the backend framework and Tailwind CSS for the responsive frontend. The feature integrates three key performance metrics, namely Revenue, Broadband Pack (BBPACK), and Market Share, alongside a Managerial Notes module for the structured documentation of managerial action plans. System validation was carried out through Black Box Testing across 43 test scenarios and direct SQL query comparisons, both of which yielded a 100% success rate. User Acceptance Testing (UAT) involving ten purposively selected respondents produced an overall acceptance score of 95.94%, categorized as Very Feasible. These results indicate that the developed Dashboard Summary feature effectively consolidates fragmented performance data into a single, reliable interface, thereby supporting faster and more consistent operational decision-making.

Keywords: dashboard summary, performance metrics, prototyping method, sales monitoring, user acceptance testing.

INTRODUCTION

Data has become a critical asset that fundamentally shapes operational success and decision-making across industries (Azzahra, Setiawan, & Purnomo, 2025; Hizriansyah, 2023; Siskandar et al., 2024; Siskandar, Mandang, Hermawan, & Irzaman, 2023b). Within the hyper-competitive Indonesian telecommunications landscape, the ability to process, analyze, and visualize data quickly and accurately is no longer merely an advantage but a prerequisite for market survival and leadership (Mufiro, Winarno, & Wardhaningrum, 2025). PT XYZ operates an internal website, designated as the One Direction platform, to manage sales data flow and monitor field performance. After approximately eight months in production, the platform continues to undergo incremental feature development to comprehensively address user information requirements.

A preliminary assessment revealed that the platform lacks a unified interface for aggregating, correlating, and visualizing key performance indicators (KPIs) in a centralized manner. Currently, performance metrics are dispersed across multiple modules, requiring employees to navigate between pages, which increases the risk of data misinterpretation and human error (Irzaman et al., 2022; Irzaman, Siskandar, Yuliarto, Zakki Fahmi, & Ferdiansjah, 2020; Murphy, Savoy, Satterly, Sittig, & Singh, 2021; Siskandar, Indrawan, et al., 2020). A centralized integration page is therefore necessary to facilitate performance comparison without switching between modules (Azzahra et al., 2025). Previous literature establishes dashboards as essential tools for presenting summarized information. Kothandapani (2019) notes that dashboards serve as visualization media supporting corporate environments by providing a comprehensive business overview, while operational digital dashboards

can simplify compliance monitoring in multinational enterprises (Adekunle, Chukwuma-Eke, Balogun, & Ogunsola, 2023). Beyond dashboard visualization, purpose-built applications that consolidate operational data have also been shown to support faster and more structured managerial decision-making, as evidenced by decision support tools for optimal order quantity determination (Santosa, Hidayat, & Siskandar, 2021; Siskandar, Fadhil, Kusumah, Irmansyah, & Irzaman, 2020) and smart forecasting models for production scheduling (Hidayat, Santosa, Siskandar, & Rizkiriani, 2023; Santosa, Hidayat, Siskandar, & Husyairi, 2023; Siskandar, Wiyoto, Santosa, Hidayat, et al., 2023; Siskandar, Wiyoto, Santosa, Sari, et al., 2023). These findings reinforce the argument that centralized, application based data access improves the speed and consistency of operational decisions. However, the effectiveness of a dashboard in translating complex data into actionable insights depends on well-organized layout design (Nadj, Maedche, & Schieder, 2020; Yusrina, 2025), highlighting the importance of applying human factors principles in dashboard interface design to ensure information readability (Almasi, Bahaadinbeigy, Ahmadi, Sohrabei, & Rabiei, 2023; Lestari & Siskandar, 2020b).

Previous research has examined dashboard development across diverse organizational settings. Yusrina (2025) created a monitoring dashboard for a Knowledge Management System using ReactJS and Firebase, achieving complete functional success in 28 test scenarios. However, this solution was based on a different technology stack and did not address corporate sales performance monitoring. Ghina (2024) developed an interactive financial performance monitoring dashboard for a regional government using Power BI and the Pureshare method, successfully integrating financial data from multiple sources. Nevertheless, this approach remained dependent on an external BI platform rather than being embedded within an existing web framework such as Laravel. Similarly, Louis, Trisnawarman, and Perdana (2023) designed a Business Intelligence dashboard for accounts receivable data using Power BI and the Waterfall method. While both studies demonstrate the effectiveness of BI based dashboards, their reliance on external BI platforms requires ongoing licensing investment and does not support integration with modules of an existing internal system (Romero, Ortiz, Khalaf, & Prado, 2021). Additionally, executing complex analytical queries directly on operational databases can degrade system performance, as relational databases optimized for transaction processing are not designed to handle high-speed analytical workloads simultaneously (Alatas et al., 2021; Dritsas & Trigka, 2025; Jenie et al., 2021; Karunarathne, Ganesan, Karunarathne, & Somasiri, 2026). Such disruptions in availability can negatively affect operational continuity and erode user trust in the system (Thota, 2018). External BI platforms are also typically unidirectional and lack integrated operational features, such as evaluation note management within the same data view.

Addressing this gap, the current study implements a dashboard summary feature based on key performance metrics, fully integrated within the existing website ecosystem rather than relying on an external business intelligence platform. This approach consolidates dispersed sales data into a unified and comprehensive information view for decision-makers. The research introduces several novel contributions to the existing literature. Primarily, it integrates three interrelated performance metrics, namely Revenue, Broadband Pack (BBPACK), and Market Share, within a single centralized interface embedded in an active production web system. Furthermore, the development incorporates a Managerial Notes module that facilitates structured digital documentation of managerial action plans directly within the dashboard. This specific functionality addresses a limitation found in previous external BI platform studies. Finally, the research adopts a full-stack architectural approach utilizing a pre-aggregated summary table mechanism to separate computational load from user access, thereby preserving operational database stability. From a scientific standpoint, the primary contribution of this study lies not in the use of a specific technology stack but in proposing a replicable embedded monitoring model. In this model, analytical computation is structurally decoupled from operational database access through periodically pre-aggregated summary tables. Validated within an active corporate web ecosystem, this design pattern offers a substantively different approach from external BI platform studies. It enables native integration of operational features, such as Managerial Notes,

within the same data view and it eliminates dependence on third-party licensing. This distinction has not been documented in prior sales performance monitoring literature. Consequently, the study is designed to develop and implement this Dashboard Summary feature, validate its functional correctness through Black Box Testing and SQL data validation, and assess user acceptance through User Acceptance Testing (UAT) to ensure the system meets PT XYZ's operational requirements.

METHODS

Data were gathered through three complementary approaches, namely a literature review, a Focus Group Discussion (FGD), and direct field observation. The literature review provided the theoretical and methodological basis for each development stage, informing the selection of the Laravel 11 and Tailwind CSS technology stack, the creation of Unified Modeling Language (UML) blueprints, the adoption of the Prototyping method, the Use Case Scenario Testing procedure, and the development of a Likert scale evaluation instrument (Irzaman et al., 2024; Jenie et al., 2021). To achieve the research objectives, this study adopted the Prototyping method, a Software Development Life Cycle (SDLC) approach that emphasizes iterative interaction between developers and users to achieve optimal requirement alignment (Nugraha, 2020). This method was selected because analytical dashboard requirements are frequently emergent, meaning that they are not fully defined until users interact with an initial visualization, so that incremental validation mitigates the risk of implementation mismatch (Lestari, Setiawan, & Siskandar, 2020; Lestari & Siskandar, 2020a; Santi et al., 2024). Prototyping emphasizes a rapid development cycle in which interface designs are promptly validated by users to ensure metric and navigation alignment prior to complex backend construction (Irzaman et al., 2018; Mufarrohah et al., 2025; Prabowo, Gaol, & Hidayanto, 2022; Siskandar, Mandang, Hermawan, & Irzaman, 2023a). This method comprises five sequential stages, namely communication, quick plan, modeling quick design, prototype construction also deployment, delivery, and feedback, as depicted in Figure 1. Each of these stages is elaborated in the following subsections.

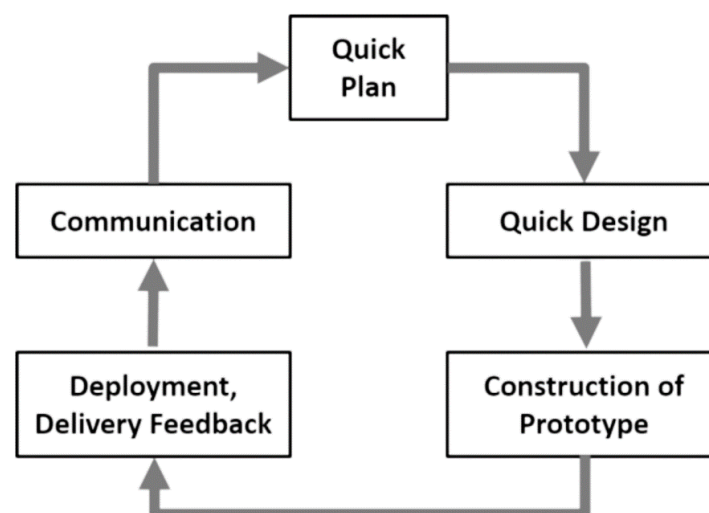


Figure 1. Prototyping Software Development Life Cycle model

Communication

The FGD involved eight participants from the Business Growth Analysis (BGA) Division of PT XYZ Eastern Jabotabek Region, including the BGA Manager and staff members who interact directly with daily sales data. This session focused on eliciting feature expectations, prioritizing key performance metrics, and establishing standardized business logic calculations as a basis for strategic decision-making. Field observation was subsequently performed to examine the existing operational ecosystem of the internal platform. This step focused on identifying fragmented modules containing the performance metrics intended for consolidation into the Dashboard Summary and analyzing the actual workflow to formulate functional system requirements. The current monitoring workflow requires employees to sequentially access three separate modules, namely Business Performance for daily revenue figures, Broadband Pack (BBPACK) for package sales distribution, and Market Share for competitive positioning. Each module is presented in a nationwide spreadsheet format lacking automatic regional filtering, thereby requiring manual searching row by row to locate data relevant to the Eastern Jabotabek scope. Growth comparisons within these existing modules are limited to five indicators, specifically Month-to-Date (MtD), Year-to-Date (YtD), Week-over-Week (WoW), Month-over-Month (MoM), and Year-over-Year (YoY).

Furthermore, the coordination of monitoring results still relies on verbal discussion and external media such as WhatsApp, leaving evaluation notes disconnected from the core performance data. Findings from the FGD and observation were synthesized into six user stories addressing centralized metric access, visual trend representation, growth indicator monitoring, city-level performance ranking, managerial note documentation, and note status management. The prioritization of these user stories was determined based on two criteria applied during the FGD session, such as frequency of mention across all eight participants, and direct alignment with the primary operational monitoring objective. Requirements receiving unanimous agreement among participants were classified as mandatory and formed the basis for the twelve functional requirements defined in the subsequent Quick Plan stage, while those with partial agreement were deferred to future development iterations.

Quick Plan

The Quick Plan stage translated the six formulated user stories into a streamlined business process proposal. Within this workflow, the system is designed to automatically filter data for the Eastern Jabotabek region immediately upon login. Furthermore, this stage mapped the user stories into twelve functional requirements. These requirements encompass user authentication, the Dashboard Summary display, global date filtering, dashboard downloading, and the complete data lifecycle of the Managerial Notes feature, which includes viewing, adding, editing, deleting, resolving, and tracking note history. The simplified proposed business process is depicted in Figure 2.

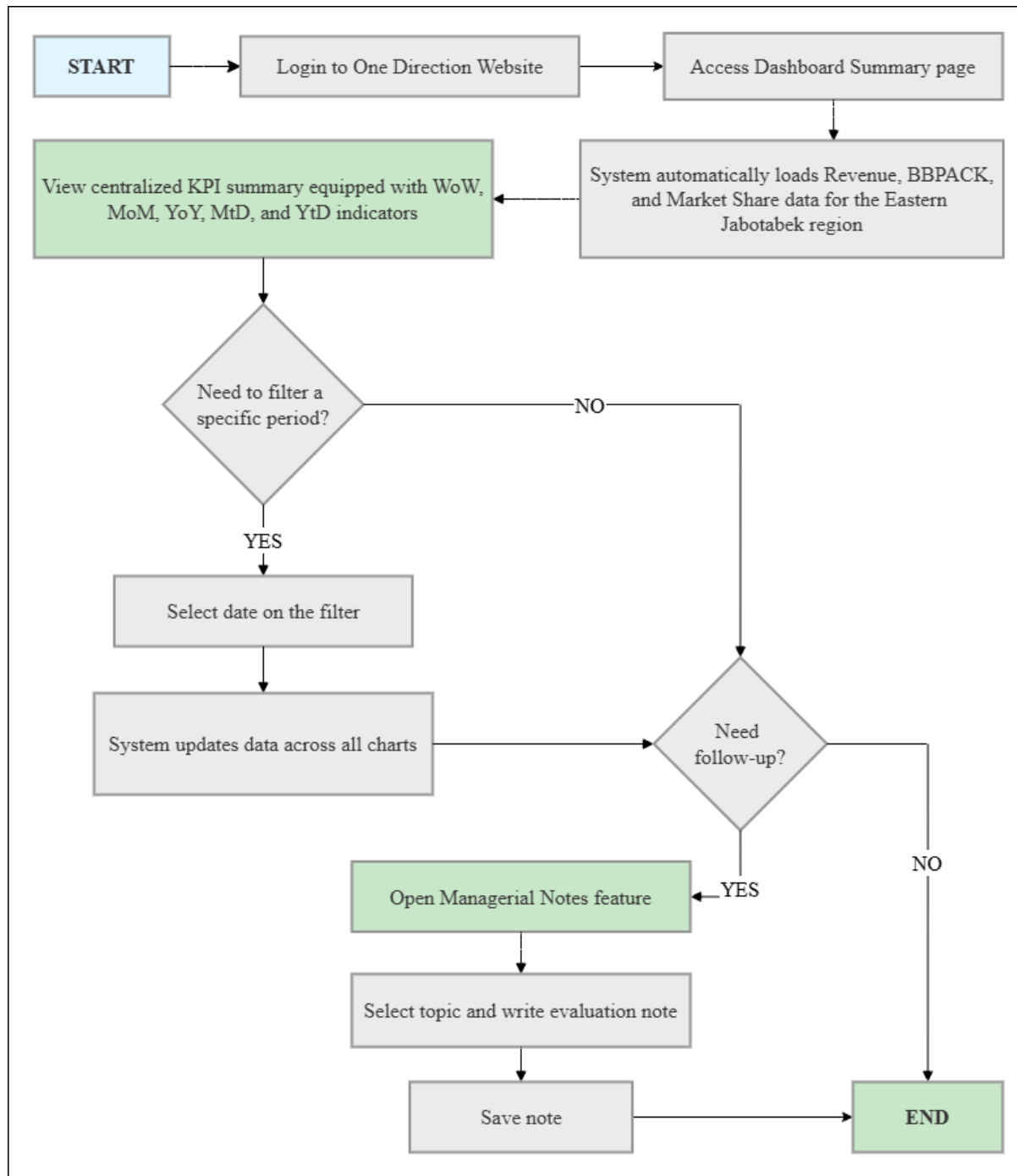


Figure 2. Proposed Business Process for the Monitoring Activity

Modelling Quick Plan

The Modeling Quick Design stage translated the functional requirements into concrete system representations prior to construction. This process utilized Unified Modeling Language (UML) diagrams, specifically use case diagrams, activity diagrams, an Entity Relationship Diagram (ERD), and a class diagram, to depict process flows and inter-element relationships. The use case diagram in Figure 3 illustrates the interaction between the employee, acting as the primary actor, and the system functions available on the One Direction platform. This diagram covers the performance monitoring process within the Dashboard Summary feature as well as note management in the Managerial Notes module.



Figure 3. Use Case Diagram

To further detail the sequential logic of these interactions, an activity diagram was developed to map the step-by-step execution of the regional filtering and note documentation workflows, as depicted in Figure 4. Data structure design was conducted through an Entity Relationship Diagram (ERD), as shown in Figure 5, to model the storage structure and inter-entity relationships required to support monitoring functionality and note documentation. Security aspects are managed through the `user_access_log` table, which archives session history, user identity, and device information. For the note-taking feature, the `managerial_notes` table stores the narrative of follow-up action plans and is directly integrated with the dashboard module interface. To manage the hierarchy of operational regional data, the system employs a master table, `city_reference`, which functions as a dimension table. Meanwhile, to maintain a responsive dashboard, KPI values are not computed directly from raw transactional data but are instead retrieved from a series of pre-aggregated summary tables. To preserve entity integrity and prevent duplicate daily records, all summary tables implement a composite primary key formed from a combination of the time dimension and the spatial dimension.

This approach ensures both data accuracy and optimized query performance during information filtering.

Activity diagram: Access Dashboard Summary page

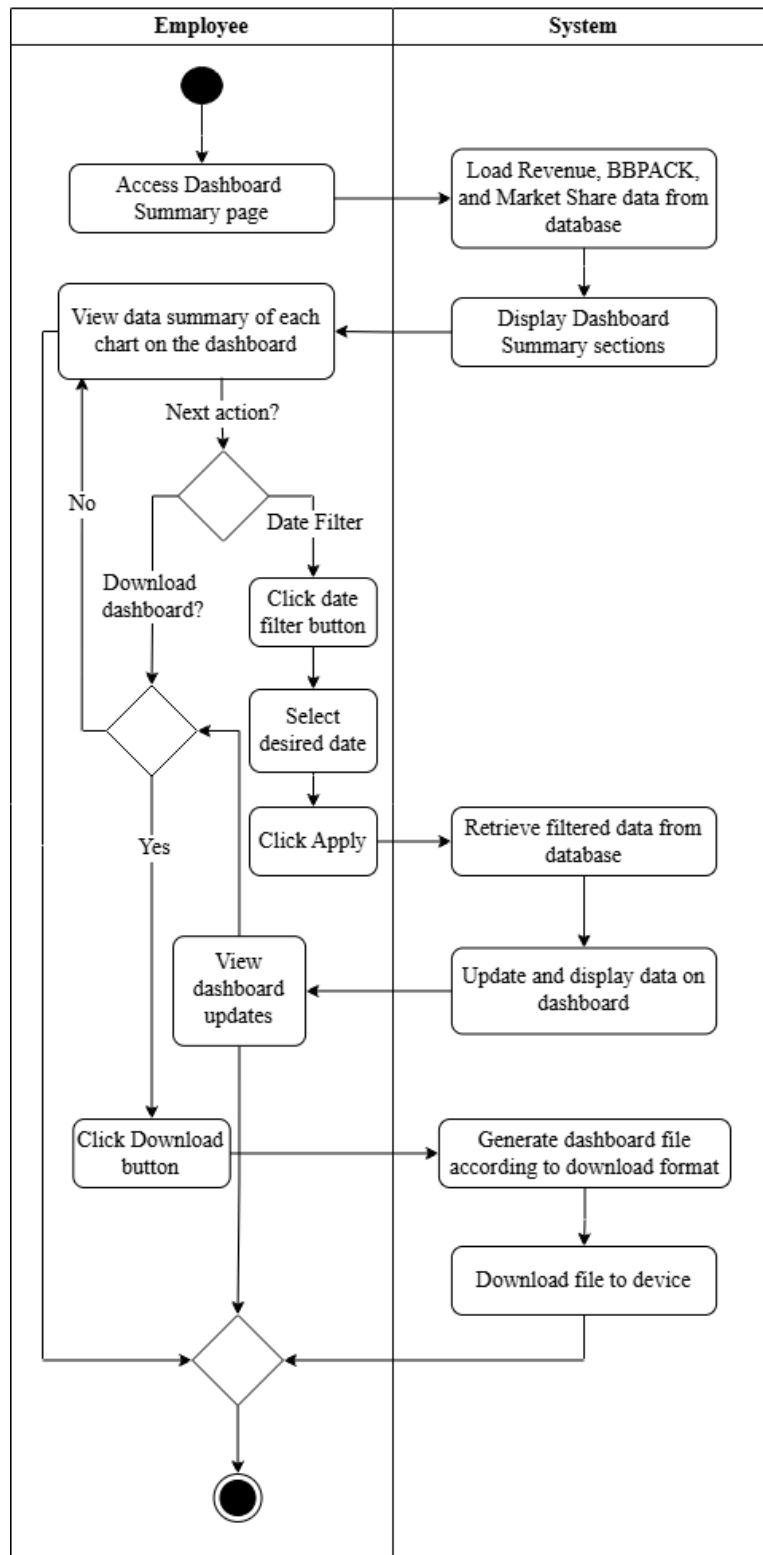


Figure 4. Activity Diagram

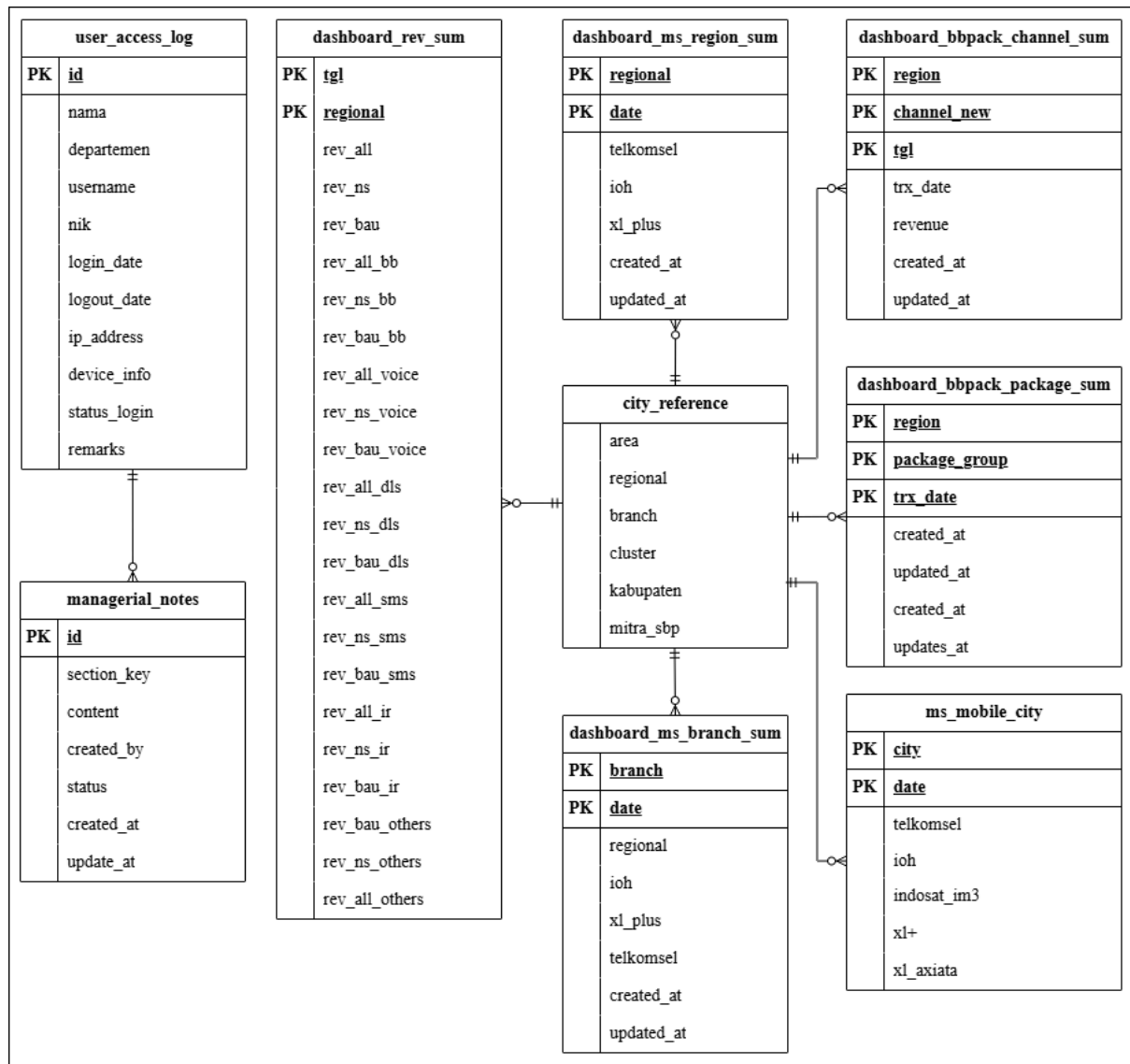


Figure 5. Entity Relationship Diagram (ERD)

Interface design progressed from low-fidelity wireframes to high-fidelity prototypes using Figma. This process was strictly guided by effective data visualization principles to ensure that complex performance metrics could be captured instantly without imposing excessive cognitive load (Few, 2012). To achieve this, the layout implements a modular grid system and establishes a clear visual hierarchy, utilizing semantic color coding to instantly communicate positive or negative growth trajectories.

The resulting high-fidelity design, illustrated in Figure 6, strategically consolidates three principal metric sections, namely Revenue, BBPACK, and Market Share, into a single cohesive view. Each section is tailored with specific graphical representations to maximize analytical clarity. The interface is augmented with prominent scorecards to display primary aggregate values and immediate growth indicators. Furthermore, trend line charts are integrated to map historical data fluctuations over a twelve-month period, while donut charts are employed to visualize the proportional composition of service categories and distribution channels. Finally, the interface incorporates an Executive City Leaderboard designed to highlight the top three and bottom three performing cities based on their growth delta. This specific leaderboard feature serves as a critical diagnostic tool, enabling management to rapidly identify regional anomalies and prioritize immediate operational interventions.

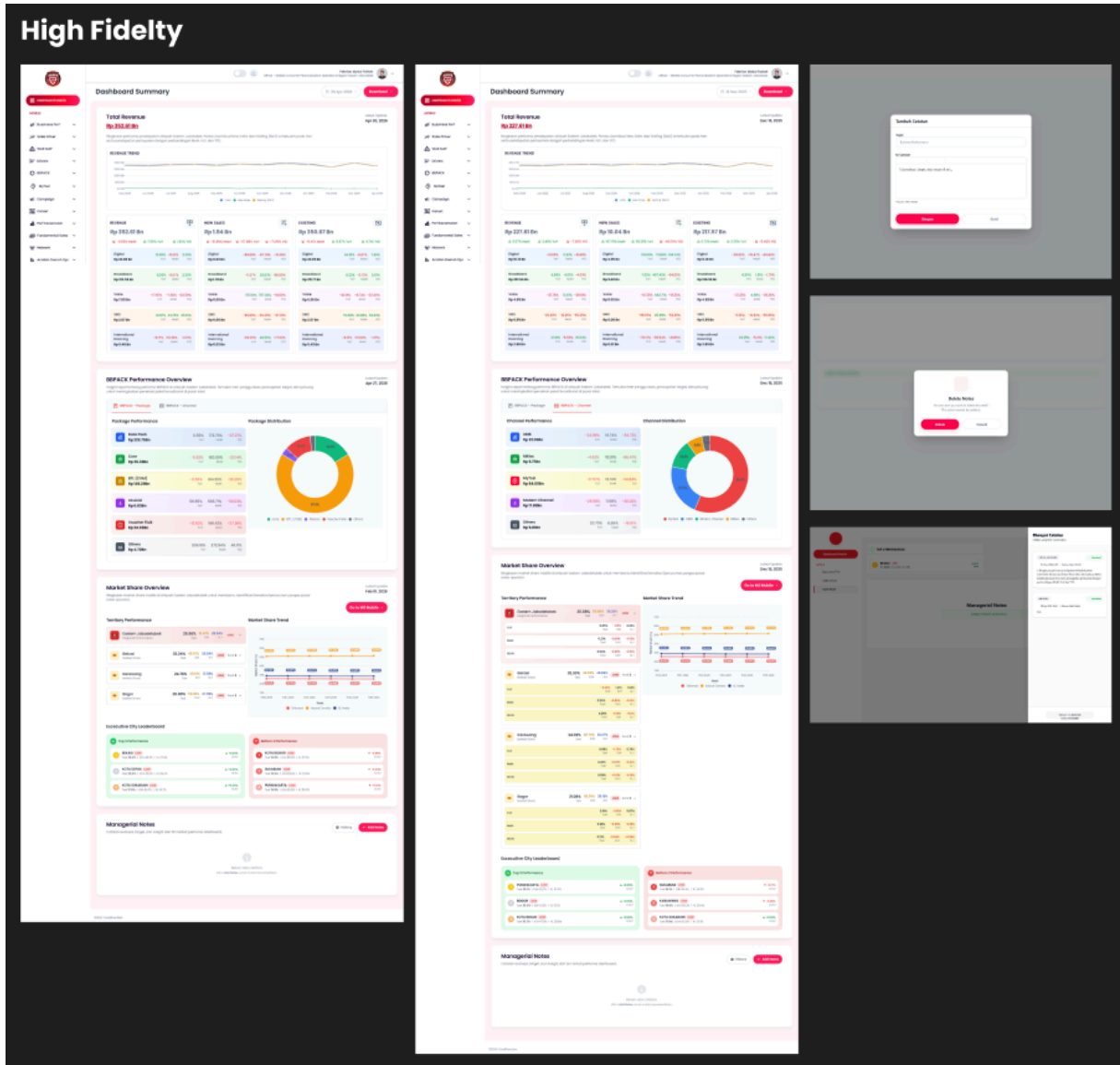


Figure 6. Full-Page High-Fidelity Interfaces of the Dashboard Summary, Add Notes, Delete Notes, and Note History

Construction Protototype

The Prototype Construction stage implemented the system following a Model-View-Controller (MVC) architecture provided by the Laravel framework. On the data layer, four summary tables were constructed to store periodically pre-aggregated KPI values. This architectural decision ensures that heavy analytical computation is decoupled from user access, preserving operational database stability (Ferrer, Usman, Mohammed, & Lastra, 2018). On the business logic layer, the Summary Controller computes five growth indicators for each metric using conditional aggregation techniques directly within SQL queries. An adaptive date resolution mechanism was implemented to automatically retrieve the nearest available prior date whenever the requested reference date lacks aggregated data. Furthermore, a safeguard is applied on every division operation to prevent division by zero errors when no comparative data exists for a given period.

The calculation of the five growth indicators is executed using two distinct schemes depending on the fundamental nature of each metric. For Revenue and BBPACK, which are both expressed as cumulative monetary values, Month-to-Date (MtD) and Year-to-Date (YtD) are computed as the summation of daily values from the first day of the reference period up to the selected date. Conversely, Month-over-Month (MoM), Year-over-Year (YoY), and Week-over-Week (WoW) are computed as a ratio between the current period value and its equivalent prior period. This ratio is expressed as a percentage change, calculated by subtracting one from the division of the

current period value by the prior period value, and subsequently multiplying the result by one hundred percent. For Market Share, which is inherently expressed as a relative percentage rather than a cumulative monetary amount, the growth indicators are computed as an absolute point difference between periods rather than a ratio. This specific calculation subtracts the prior period share directly from the current period share. This distinction is mathematically essential because applying a ratio formula to an existing percentage metric would produce a misleading analytical result. Finally, the system implements only the specific subset of indicators relevant to the analytical purpose of each metric. Revenue applies all five indicators to support both short-term monitoring and cumulative target tracking. BBPACK utilizes MtD, MoM, and WoW to emphasize tactical distribution performance. Meanwhile, Market Share applies WoW, MoM, and YoY to track competitive positioning shifts over time. On the presentation layer, Tailwind CSS was utilized to build a responsive interface, while Alpine.js was employed to manage interactive components such as modals and tab transitions.

Deployment, Delivery, and Feedback

The Deployment, Delivery, and Feedback stage encompassed system validation through three complementary methods. First, functional validation was carried out using Black Box Testing with a Use Case Scenario Testing technique, an approach that evaluates system output against defined input without inspecting the underlying source code (Hardika et al., 2024; Irzaman, Siskandar, Aminullah, Irmansyah, & Alatas, 2016; Siskandar, Santosa, Wiyoto, Kusumah, & Hidayat, 2022; Siskandar, Wiyoto, et al., 2022). This technique simulated actual business scenarios across 43 test cases spanning authentication, dashboard display, interactive filtering, and the complete Managerial Notes lifecycle. A pass rate of 100 percent was required for the system to be considered functionally acceptable. Second, data accuracy validation was performed by executing SQL queries directly against the source tables using parameters identical to those applied on the interface, subsequently comparing the results value by value to confirm numerical consistency (Syafutra et al., 2026). Third, user acceptance was evaluated through User Acceptance Testing (UAT) using a Likert scale questionnaire converted into a feasibility percentage. A threshold of 80% was established as the minimum requirement for the Very Feasible category. The UAT instrument comprised 31 question items distributed across five evaluation dimensions, such as Functionality and Data Accuracy (10 items), Ease of Use and Display (7 items), Business Requirement Suitability (5 items), Performance and Reliability (4 items), and Managerial Notes (5 items). Each item was rated on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The feasibility percentage for each dimension are computed using the Formula 1.

$$P = \left(\frac{\text{Total Score Obtained}}{\text{Total Maximum Score}} \right) \times 100\% \quad (1)$$

The maximum score per item equals 5 multiplied by the number of respondents (10). The overall acceptance score of 95.94% was derived from the weighted mean of all five dimensions, yielding a total actual score of 1,487 from a maximum possible score of 1,550. Ten respondents were selected through purposive sampling. This technique deliberately chooses subjects based on their expertise and relevance to the system workflow rather than at random. The selected participants comprised the BGA Manager and staff members who possess direct authority and a deep understanding of the evaluated business processes (Hambling & Goethem, 2013). Within this framework, Black Box Testing validated functional correctness from a developer perspective, UAT validated user acceptance from an end user perspective, and SQL data validation ensured numerical integrity between the interface and its source data (Aliyah, Hartono, & Muin, 2024; Khusna, Delasano, & Saputra, 2021).

RESULTS AND DISCUSSION

The Total Revenue chart presents scorecards for three revenue segments, specifically Total, New Sales, and Existing. These scorecards display the Month-to-Date (MtD) value alongside

color-coded YoY, MoM, and YtD growth indicators. Furthermore, this section is accompanied by a twelve-month revenue trend chart and a breakdown of contribution by service channels, including digital, broadband, voice, SMS, and international roaming. The complete visualization is shown in Figure 7. The BBPACK Performance chart is organized into two primary tabs. The Package tab presents six package categories accompanied by growth indicators and a donut chart illustrating the distribution composition. Conversely, the Channel tab presents equivalent figures segmented by the distribution channel. The detailed visualization of this module is presented in Figure 8.

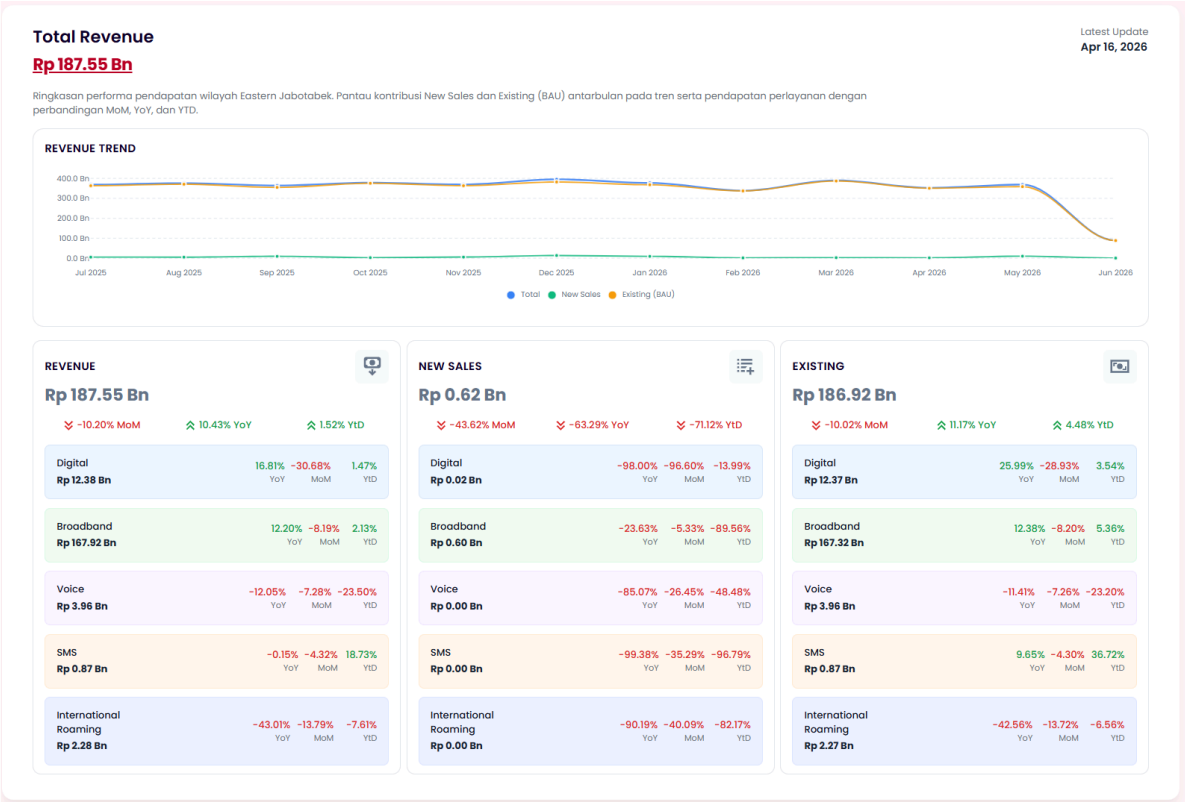


Figure 7. Revenue on Dashboard Summary Interface

Additionally, the Market Share chart, shown in Figure 9, displays the competitive positioning across telecommunications operators. This chart is presented alongside an Executive City Leaderboard that highlights the three cities with the highest and lowest MoM growth delta. This specific feature enables management to instantly identify regions experiencing the most significant fluctuations. The Managerial Notes section, as depicted in Figure 10, allows users to add, edit, delete, and resolve evaluation notes of up to one thousand characters. Once resolved, these notes are automatically transferred to a retrievable history log. This functionality provides a structured digital space for documenting operational action plans directly within the dashboard view.

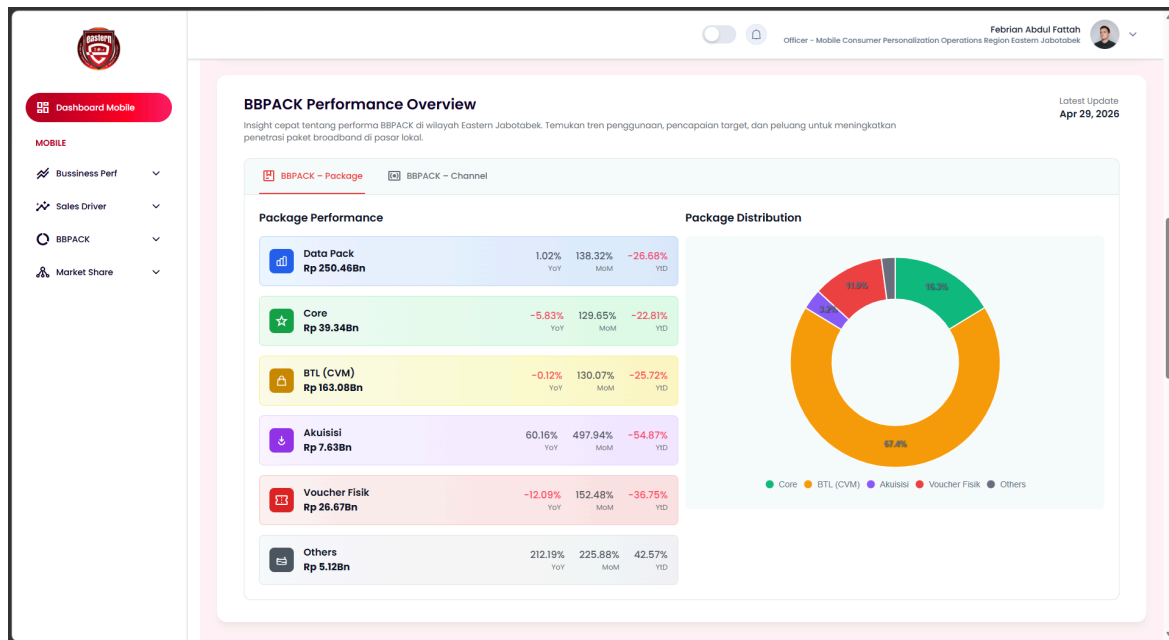


Figure 8. Broadband Pack (BBPACK) on Dashboard Summary Interface

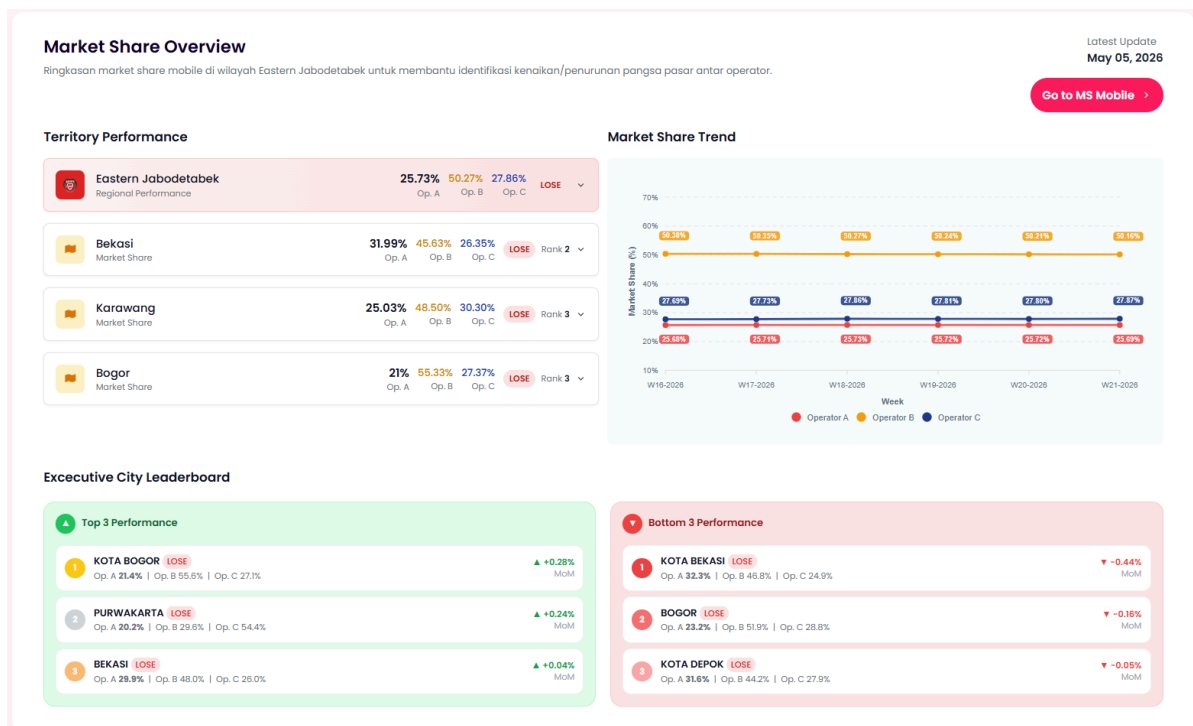


Figure 9. Market Share on Dashboard Summary Interface

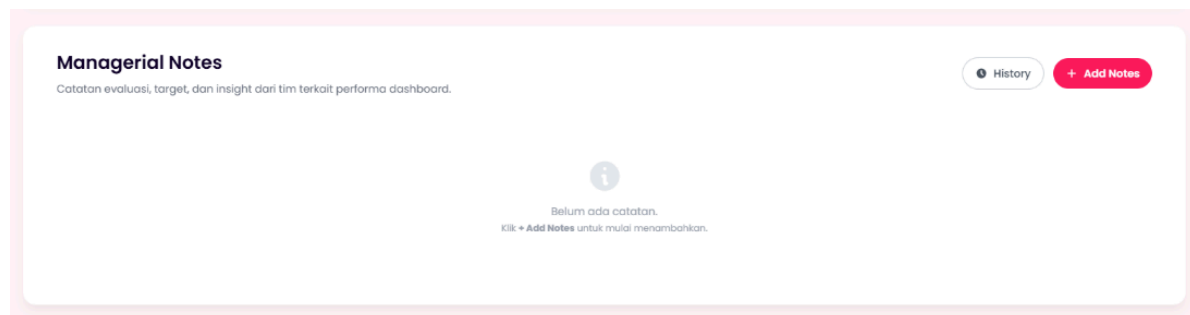


Figure 10. Managerial Notes on Dashboard Summary Interface

To illustrate the analytical value of this integrated implementation, consider a representative monitoring scenario. When the Market Share module surfaces a negative MoM growth delta for one

or more cities within the Eastern Jabotabek region, the Executive City Leaderboard instantly identifies these anomalies by surfacing the three cities with the lowest delta at the bottom of the ranking. This integrated view enables the BGA Manager to immediately assess the severity and scope of the competitive positioning decline without navigating to a separate module. The manager can then open the Managerial Notes module, which is embedded directly within the same dashboard view, to document an action plan, assign it a topic category, and record follow-up steps in a structured digital format. This end-to-end workflow, from anomaly detection to documented response, shows how the integrated dashboard supports faster, structured operational action. The UAT result for the Managerial Notes dimension, which obtained the highest acceptance score of 98.4%, reflects user recognition of this value. To ensure that all of these developed features operate reliably, functional system validation was subsequently conducted across 43 Use Case Scenarios testing cases. These cases covered user authentication, the Dashboard Summary display, interactive filtering, dashboard downloading, and the complete lifecycle of the Managerial Notes module. Table 1 summarizes the aggregated results mapped by functional module.

Table 1. Summary of Black Box Testing Results Across Functional Modules

Functional Module	Number of Test Cases	Pass	Fail	Success Rate (%)
Authentication (Login, Division Selection, Logout)	5	5	0	100
Dashboard Summary Display and Filtering	19	19	0	100
Managerial Notes (Add, Edit, Delete, Resolve, History)	19	19	0	100
Total	43	43	0	100

All 43 test scenarios successfully achieved a pass status, yielding a 100% success rate. This perfect rate confirms that every system function operates in strict accordance with the specified requirements. Furthermore, this result was corroborated by direct SQL data validation. In this process, values retrieved directly from the source tables were compared against the corresponding dashboard output using identical filter parameters. This secondary validation confirmed absolute numerical consistency between the visual interface and its underlying data source. To further contextualize the operational significance of these results, it is important to note the contrast with the pre-implementation workflow. Before this implementation, employees had to access three modules in sequence start from Business Performance, Broadband Pack (BBPACK), and Market Share. Each module was presented in a nationwide spreadsheet format without automatic regional filtering, so the Eastern Jabotabek team had to manually search row by row to locate relevant regional data. Monitoring outcomes were also coordinated through external channels such as WhatsApp, with no integrated record-keeping. After implementation, all three performance metrics are accessible from a single centralized interface with automatic regional filtering applied at login, and evaluation notes are documented directly within the dashboard view. Although systematic time-and-motion measurement was not conducted as part of this study, the UAT response data provides a proxy indicator. Item P17 assessed whether the dashboard saves time compared with previous monitoring methods, and item P19 assessed whether it eliminates the need to navigate across multiple modules. Both items received scores within the Very Feasible range across all ten respondents, all of whom use the One Direction platform on a daily basis. Having established absolute functional and numerical reliability, the evaluation proceeded to measure practical validation through User Acceptance Testing (UAT). This testing was conducted with ten purposively selected respondents, including the BGA Manager and staff supervisors. The evaluation measured five specific dimensions, namely Functionality and Data Accuracy, Ease of Use and Display, Business Requirement Suitability, Performance and Reliability, and Managerial Notes. Table 2 presents the acceptance percentage obtained for each evaluated dimension.

Table 2. Recapitulation of User Acceptance Testing (UAT) Results

Evaluation Dimention	Result (%)	Category
Functionality and Data Accuracy	96.6	Very Feasible
Ease of Use and Display	95.71	Very Feasible
Business Requirement Suitability	94	Very Feasible
Performance and Reliability	94	Very Feasible
Managerial Notes	98.4	Very Feasible
Total	95.94	Very Feasible

The overall acceptance score of 95.94% substantially exceeds the 80% threshold required for the Very Feasible category, indicating strong user acceptance of the developed system. The Managerial Notes dimension recorded the highest score at 98.40 percent, reflecting particularly high user satisfaction with the integrated documentation feature. This enthusiastic reception is highly plausible because the functionality directly addresses a previously unmet need, specifically the absence of a structured and system-embedded mechanism for documenting managerial evaluations prior to this implementation. While still highly feasible, the comparatively lower scores for Business Requirement Suitability and Performance and Reliability, both at 94.00 percent, suggest opportunities for future refinement. These potential improvements include extending regional coverage or optimizing loading time consistency under varying network conditions.

The findings directly resolve the fragmentation problem by consolidating Revenue, BBPACK, and Market Share metrics into a single interface, thereby eliminating repetitive cross-module navigation. This aligns with Kumar and Belwal (2017) and Kothandapani (2019) regarding the necessity of reducing data interpretation complexity. Unlike Power BI-dependent approaches (Ghina, 2024; Louis et al., 2023), this Laravel-embedded solution avoids recurring licensing costs and mitigates operational risks regarding sensitive data. Technically, the 100% Black Box success rate and absolute SQL numerical consistency validate the summary table architecture. Decoupling the analytical load from the operational database effectively addresses established performance risk concerns (Dritsas & Trigka, 2025; Thota, 2018), while the adaptive date resolution mechanism ensures dashboard reliability despite incomplete aggregation cycles. Furthermore, the exceptionally high UAT score for the Managerial Notes feature at 98.40% reinforces that operational dashboards must actively support actionable follow-up routines (Nadj et al., 2020). Collectively, these results confirm that a native ecosystem dashboard matches the analytical capability of external platforms while offering tighter operational integration, lower costs, and superior data control.

CONCLUSION

This study successfully implemented a Dashboard Summary feature on an internal corporate website, establishing a centralized interface that integrates Revenue, Broadband Pack, and Market Share performance metrics from previously fragmented operational modules. Through this implementation, users in the Eastern Jabotabek region can monitor MtD, YtD, WoW, MoM, and YoY growth indicators without repetitive navigation across different modules, resulting in a more structured and consistent daily monitoring process. Furthermore, the integrated Managerial Notes feature provides a digitally organized space for documenting operational action plans. System validation confirmed that all 43 Black Box Testing scenarios achieved a 100% pass rate, consistent with SQL-based data-accuracy validation, while User Acceptance Testing (UAT) among ten respondents yielded a 95.94% score in the Very Feasible category. These results demonstrate that the developed system meets PT XYZ's operational requirements and is highly accepted by its intended users, while also supporting more structured operational monitoring and data-driven decision-making within the Eastern Jabotabek operational context. Future development could extend the regional coverage of the dashboard beyond Eastern Jabotabek to encompass all national operational regions.

Finally, the Managerial Notes feature could be enhanced with an automated team notification mechanism to support coordinated issue resolution directly within the system.

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