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Optimizing Business Process To Government Using Business Process Improvement (BPI) and Bizagi Modeler (Case Study: PT. XYZ)

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ABSTRACT

Business to Government (B2G) processes frequently suffer from inefficiencies caused by manual workflows and limited system integration. This study aims to enhance B2G business process performance at PT XYZ by applying the Business Process Improvement (BPI) approach using Business Process Model and Notation (BPMN) implemented through Bizagi Modeler. The research methodology involves analysing the existing process, designing an optimized process model, and conducting performance simulations based on processing time, operational costs, data accuracy, delay risk, and institutional satisfaction. The results indicate significant improvements, including a 41.7% reduction in processing time, a 26.7% decrease in operational costs, a 90% increase in data accuracy, a 40.9% reduction in delay risk, and an 85% improvement in institutional satisfaction. These findings demonstrate that the integration of BPI and BPMN effectively improves the efficiency and quality of B2G business processes in government procurement.

A. INTRODUCTION

Among various business models, Business to Government (B2G) remains relatively underexplored, even though its potential is equally significant. According to data from the Indonesian Procurement Policy Agency (LKPP), 40% of the government's 2019 expenditure budget was allocated to the procurement of goods and services, amounting to approximately Rp3,621.3 trillion (Silaban & Rahayuningsih, 2025). Collaboration through the B2G model represents an important business approach for understanding the relationship between private companies and government institutions. In the B2G context, successful collaboration depends not only on product price and quality but also on the communication strategies employed by companies to establish and maintain

relationships with government agencies. Effective communication is a crucial factor in building trust and ensuring smooth business processes, particularly during the procurement tender stage. Government procurement processes are inherently complex and bureaucratic, involving multiple stakeholders and therefore requiring high levels of efficiency and transparency (OECD, 2020; Thai, 2017). In practice, B2G arrangements often encounter challenges such as administrative complexity and weak system integration, which can lead to process inefficiencies (Palmer et al., 2023).

PT XYZ is a company operating in several sectors, including government goods and services, electronics, interior design, construction, and software. The company adopts a B2G business model in which goods and services are supplied based on orders from government agencies through official distributors, without independently managing inventory. However, in its implementation, PT XYZ continues to face significant operational challenges. The primary issues identified include service delays and a decline in trust from government agencies (Choiriyah et al., 2023). These problems stem from the absence of structured workflow mapping and poorly organized business processes. Irregular workflows and inaccurate data collection hinder effective coordination and increase the risk of deteriorating relationships with government clients. To address these challenges, business process optimization is required to enhance efficiency and service quality. This study applies the Business Process Improvement (BPI) method to evaluate and improve the company's workflows. BPI is selected because it is capable of identifying non–value-added activities and provides a systematic framework for improving efficiency while thoroughly identifying root causes of problems (Harrington, 1991; Ismail et al., 2019; Syaputra et al., 2024). In implementing BPI, organizational factors such as company culture and management support must also be considered, as they significantly influence the success of process improvement initiatives (Maulana, 2023; Wilasita, 2023).

To support the analysis, the Bizagi Modeler tool, which is based on Business Process Model and Notation (BPMN), is used to visualize workflows in a structured and systematic manner (Aulia & Ginantaka, 2025; Dumas et al., 2018; Jeston, 2018; Rosemann & vom Brocke, 2015). This tool enables more accurate identification of bottlenecks that contribute to service delays (Harmon, 2019; Heizer et al., 2023). Through the application of BPI and Bizagi modelling, it is expected that PT. XYZ will achieve clearer process flows, improved order processing speed, and stronger coordination with distributors and government agencies. This research aims to determine the extent to which BPI implementation and Bizagi modelling can enhance the efficiency of B2G processes, particularly in terms of processing speed, data accuracy, and coordination effectiveness. With a well-defined process model, the findings of this study are also expected to provide constructive recommendations for continuous process improvement. Furthermore, this research may serve as a reference for other organizations seeking to implement BPI and Bizagi Modeler to improve business process quality, especially within the context of government procurement of goods and services.

B. METHODS

This research method is based on the Business Process Improvement framework, which focuses on standard modelling and performance analysis of processes (Akbar et al., 2021; Harmon, 2019). Both the current state analysis and the future state design are enriched with process mining techniques to identify real bottlenecks in the workflow (van der Aalst, 2016). Then, modelling and simulating the processes using BPMN and BPM tools provide a systematic evaluation of the proposed improvements (Khoirunnisa et al., 2021; Teixeira et al., 2024).

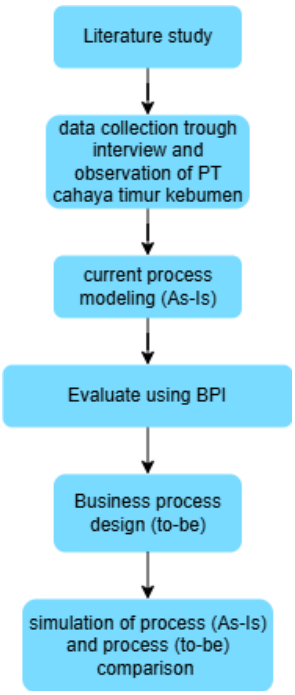

Figure 1. Stage of Research

C. RESULT AND DISCUSSION

1. Business Process Analysis and Modelling (As-Is)

1. Company Identification

PT Cahaya Timur, referred to as **PT XYZ** in this study, is a company engaged in government goods and services, electronics, interior design, furniture, construction, agricultural equipment, and software. The company conducts procurement activities without maintaining inventory by placing orders through authorized distributors. The use of the name **PT XYZ** in this study is intended to protect the company's identity and maintain its reputation. PT XYZ was officially established in 2023 and is located in Kebumen Regency.

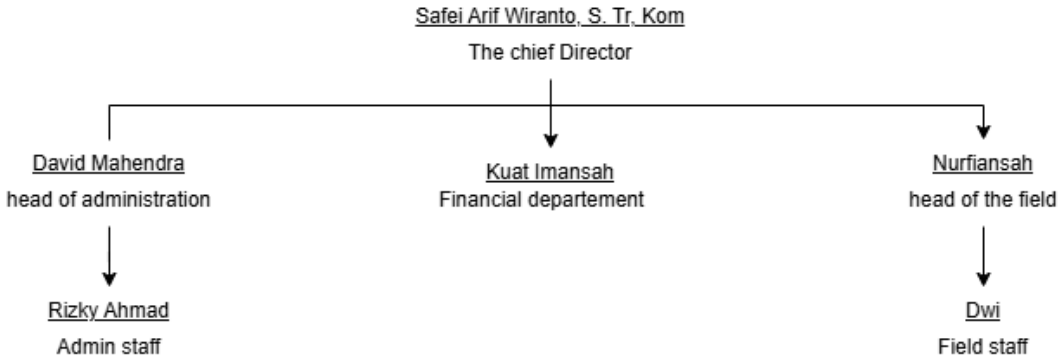

Figure 2. Company Structure

2. Current Business Process Modelling (As-Is)

The following figure illustrates the company's current business process (*as-is*), modelled using Business Process Model and Notation (BPMN) with Bizagi Modeler.

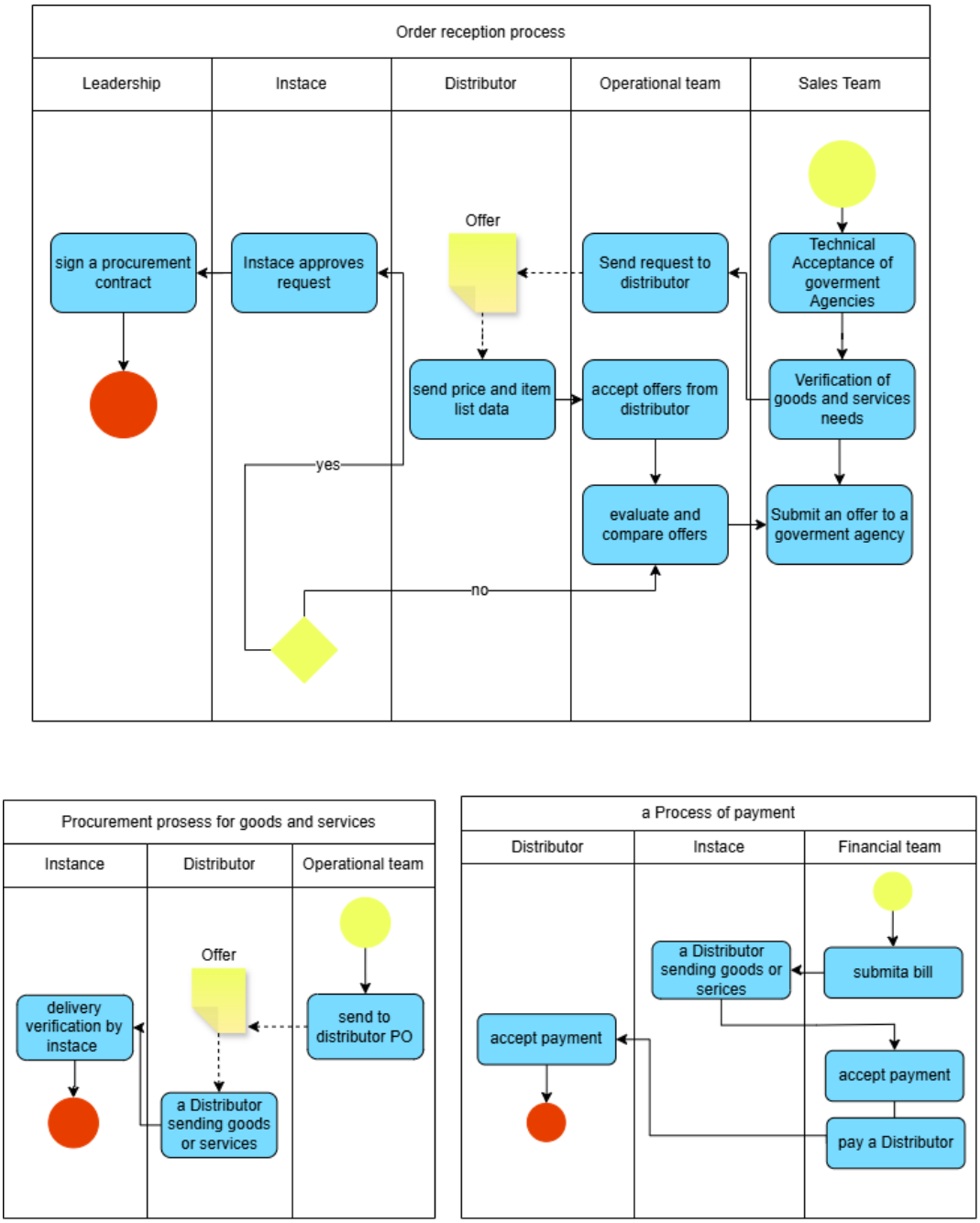

Figure 3. As-Is Business Process BPMN Diagram of PT XYZ

The diagram above describes the order acceptance process, which begins when the company receives a goods or services request from a government agency through the E-Catalogue system. The sales team then verifies the requested goods and services. After verification, the operational team submits a request for an offer to the distributor. The distributor subsequently provides item price list data to the operational team. Upon receipt, the operational team evaluates and compares the price and quality of the offers. The sales team then forwards the evaluation results to the agency for approval. If the proposal is approved, the process continues to the approval stage; if it is rejected, the price and quality evaluation is repeated.

Once approval is obtained, the process proceeds with authorization by company management. The procurement of goods and services is then carried out, where the operational team submits a pre-order purchase list to the distributor. The

distributor delivers the goods and services to the agency, and the delivered items are verified upon arrival. Finally, the payment process takes place. The finance team issues a billing request to the agency, after which the agency transfers payment to the company. Once the payment is received, the finance team completes the payment to the distributor.

3. Evaluation of Current Business Processes

Based on the results of As-Is business process modelling, the evaluation of business processes shows that there is a delay in workflow, the dominance of manual inspection activities, and the weak integration of information between parties involved. These conditions lead to operational inefficiency and increase the potential for process errors, which ultimately result in a decline in productivity and the quality of the resulting service results.

2. Business Process Analysis and Modelling Recommendations (To-Be)

1. Problem Identification

After evaluating the *as-is* business process, a redesign of the *to-be* business process was conducted based on the Business Process Improvement (BPI) approach. The *to-be* business process aims to simplify operations, automate activities, and improve efficiency through system integration.

The following figure illustrates the *to-be* business process modelled using Business Process Model and Notation (BPMN) in Bizagi Modeler:

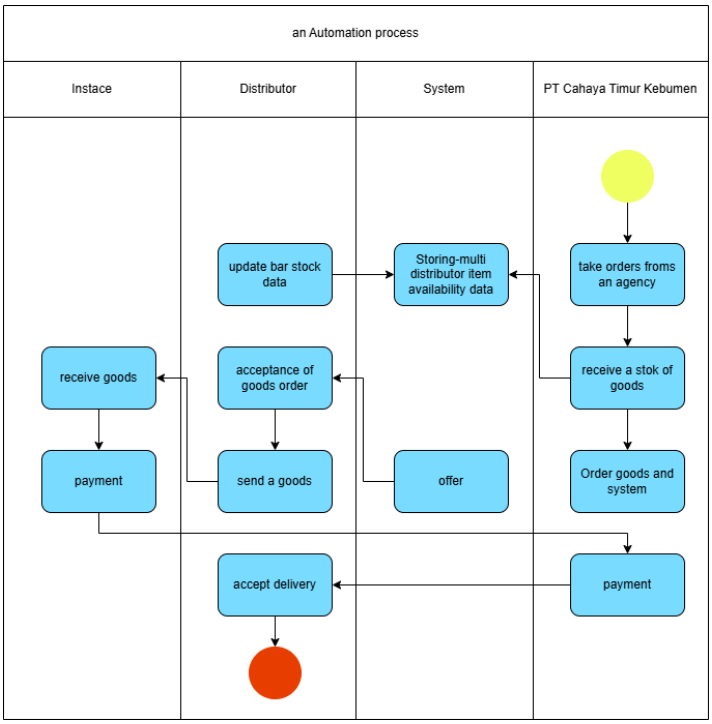

Figure 4. To-Be Business Process Modelling of PT XYZ Using BPMN Notation

Figure 4 presents the *to-be* business process model of PT XYZ, which has been improved through the implementation of the Business Process Improvement (BPI) approach. The primary difference between the *as-is* and *to-be* processes lies in the adoption of digital systems that replace manual procedures, particularly in stock availability checks and the delivery of notifications to customers.

The process begins when PT XYZ receives an order. The system then automatically checks stock availability through an integrated application

programming interface (API). If stock is available, the system displays real-time availability data for the requested goods or services. Any updates from distributors can dynamically modify the availability information through the integrated system. As a result, the role of PT XYZ becomes more streamlined, as there is no longer a need to individually request stock availability information from multiple distributors, given that each distributor is already connected via an API. This improved process is designed to enhance time efficiency, reduce delays, and minimize errors caused by manual communication between parties.

Table 1. Business Process Improvement Plan on Distributor Data

As-Is Process	To-Be Process	Recommended improvements
Demand for stock data 1 by 1 from various distributors.	One-place check.	Implementation of a digital system for stock checking integrated with the distributor database.
Order requires Additional confirmation.	Order just one confirmation.	Implementation of orders via WhatsApp and item links in item stock data.
Each distributor keeps the item stock data private.	Updates to stock item data are shared from each distributor in one place.	API implementation for integration of various distributors In one place.

Table 1 describes comprehensive, streamlining-based business process improvement plans aimed at improving operational efficiency and driving organizational effectiveness through systematic analysis and refinement.

2. Business Process Modelling (To-Be)

Based on the design and improvement of the *to-be* business process, BPMN notation was developed using the Bizagi Modeler application. This modelling represents processes that have been digitized and automated, supporting system integration among customers, dropshippers, and suppliers.

The BPMN diagram presents a simplified process flow that enhances operational efficiency and reduces the likelihood of errors. In addition, the diagram enables real-time order monitoring and provides clear guidance for all stakeholders to follow each process step accurately. This BPMN model also serves as the foundation for the future development of the PT XYZ information system.

3. Process Simulation

Simulation and modelling of business processes provide a strong foundation for measuring the impact of process design changes prior to real implementation (Holotiuk & Brenner, 2023). Simulation of business processes using the Bizagi Modeler, relying on observation data collected from real-world operations. The simulation aims to compare the current as-is process with the to-be model, so that stakeholders can visualize potential improvements. The simulation also aims to validate the effectiveness of the proposed changes, ensure that the changes will improve efficiency, reduce barriers, and support the company's strategic objectives.

a. Simulation Parameters

Parameters used include:

1. Process Time (days): Project implementation duration
2. Operating Cost (Rp million/project): Cost required during operations

3. Number of Connected Distributors : Distributors that can be connected in 1 project
4. Data Accuracy (%) : Data accuracy of distributor
5. Transaction Value : Transaction value generated in a month
6. Project Delay Risk (%) : Project delay risk may occur in the project
7. Instance Satisfaction Level (%) : Average - percentage of satisfaction level of all Instances

b. Simulation Scenarios

The simulation was conducted with the following two scenarios:

1. Scenario 1 as-is process (current process):
   a. Demand for stock data 1 by 1 from various distributors
   b. Confirm all orders from all distributors one at a time
   c. Individual distributors keep item stock data private
2. Scenario 2 to-be process (after repair)
   a. Stock check integrated with distributor database operational costs
   b. Orders via WhatsApp and item links to item stock data
   c. Update item stock data is shared from each distributor on the system database

4. Analysis

a. Efficiency Comparison

The simulation results can compare the amount of time required between the two models as follows:

Table 2. Simulation Efficiency Comparison

Metrics	As-Is Business Process	Process Business (To-Be)	The difference	Efficiency (%)
Process Time (days)	60	35	- 25	41,7%
Operating Expenses (Rp million/project)	150	110	-40	26,7%
Number of Connected Distributors	7	12	+5	71,43%
Data Accuracy (%)	78%	90%	+12	15,4%
Transaction Value	3	5	+2	66,7%
Project Delay Risk (%)	22%	13%	-9	40,9%
Instance Satisfaction Level (%)	68%	85%	+17	25,0%

Source: Data Collection from PT XYZ.

Interpretation of As-Is vs To-Be Business Process Comparison Results:

1. The transformation from As-Is to To-Be resulted in a measured performance improvement with an average efficiency of about 41.1%. Processes become ±1.7x faster, cost more controlled, supported by increased data accuracy, decreased operational risk, and better agency satisfaction.
2. Processing time decreased by 41.7% (60 → 35 days): 1.7x faster processing, accelerating project cycle and cash flow.
3. Operating costs decreased by 26.7% (150 → 110 million/project): Savings of 1.36x, increasing profit margin significantly.
4. Distributor connected up 71.43% (7 → 12): Expansion of network 1.7x, opening up new market access and network effects.

5. Data accuracy increased by 15.4% (78% → 90%): Errors decreased by 2.2x, reducing rework and losses.
6. Transaction value increased by 66.7% (3 → 5 billion/month): Revenue 1.67x, validation of quality growth.
7. Project latency risk decreased by 40.9% (22% → 19%): Operating stability 1.7x better, close to the Six Sigma standard.
8. Institutional satisfaction rose 25% (68% → 85%): Trust and loyalty increased, strengthened cooperative relationships and supported project sustainability.

b. Process Quality

1. Error Reduction

The implementation of the digital system on the To-Be process has a positive effect on the decrease in the process error rate. Based on the results of qualitative evaluation through observation and interviews with relevant parties, the following indications of error reduction were obtained:

a. Data Input Error: decreased from approximately 22% to ±8%.
b. Communication Error: decreased from approximately 18% to ±7%.
c. Stock Check Error: decreased from approximately 12% to ±4%.

2. Improved Visibility

The to-be process provides better visibility through:

a. Real-time Dashboard: Direct project and transaction status monitoring
b. Automatic Notification: Update progress to internal teams and distributors
c. Audit Trail: Full record of every activity in the system

D. CONCLUSION AND SUGGESTIONS

The application of the Business Process Improvement (BPI) method, supported by process modelling using Bizagi Modeler, has proven to significantly enhance the efficiency of Business to Government (B2G) business processes at PT XYZ. The transformation from manual (*as-is*) processes to digitalized (*to-be*) processes resulted in an average performance improvement of 41.1%. This improvement is reflected in a 41.7% reduction in process time (from 60 to 35 days) and a 26.7% decrease in operational costs. In addition, the implementation of an API-based system increased data accuracy by 90% and reduced the risk of project delays by 40.9%, ultimately raising the satisfaction level of government agencies from 68% to 85%. Therefore, process optimization not only accelerates the operational cycle but also strengthens trust and loyalty among government agency clients through more transparent and measurable services.

Based on the research findings, PT XYZ is recommended to implement an integrated information system supported by API technology to ensure real-time accuracy of stock data from distributors. Furthermore, the company should provide training for operational teams to enable optimal management of the automation system and reduce data input errors. For future research, further development may focus on enhancing the security of digital data exchange and expanding distributor networks to increase transaction value and market reach in a sustainable manner.

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