

THE DEVELOPMENT OF ELECTRONIC GUIDEBOOK FOR THE IMPLEMENTATION OF PROCUREMENT

Vanessa Christina Paskah Nikijuluw

Faculty of Economics, Universitas Negeri Jakarta, Indonesia

Email: vanessacpn27@gmail.com

Roni Faslah

Faculty of Economics, Universitas Negeri Jakarta, Indonesia

Email: ronifaslah@unj.ac.id

Rizki Firdausi Rachmadania

Faculty of Economics, Universitas Negeri Jakarta, Indonesia

Email: rachmadania92@gmail.com

ABSTRACT

This study aims to produce an e-book guide on the implementation of procurement of goods and services, which helps employees and partner companies understand general provisions such as policies, rights and obligations, sanctions, and the procurement process of goods and services at PT. Pelabuhan Indonesia (Persero). The study uses the ADDIE model, which includes the stages of analysis, design, development, implementation, and evaluation. Based on expert trials, the e-book received an average validity value of 81%, which means "Very Eligible" for use. One-to-one trials through interviews concluded that the guidebook was good. Field test trials received an average value of 84%, which indicates that this e-book is very feasible for use. Overall, the results of all stages of the trial indicate that the development of the e-book guide for procurement of goods and services is good and follows the correct development procedures. This e-book can facilitate learning for employees of PT. Pelabuhan Indonesia (Persero) and partner companies in the procurement process of goods and services.

Keyword: Guidebook, Procurement, Facilitating learning

ABSTRAK

Penelitian ini bertujuan untuk menghasilkan *e-book* panduan tentang pelaksanaan pengadaan barang dan jasa, yang membantu karyawan dan perusahaan rekanan memahami ketentuan umum seperti kebijakan, hak dan kewajiban, sanksi, serta proses pengadaan barang dan jasa di PT. Pelabuhan Indonesia (Persero). Penelitian menggunakan model ADDIE, yang meliputi tahapan analisis, desain, pengembangan, implementasi, dan evaluasi. Berdasarkan uji coba ahli, *e-book* mendapatkan rata-rata nilai validitas sebesar 81%, yang berarti "Sangat Layak" digunakan. Uji coba *one-to-one* melalui wawancara menyimpulkan bahwa buku panduan tersebut sudah baik. Uji coba *field test* mendapatkan rata-rata nilai sebesar 84%, yang menunjukkan bahwa *e-book* ini sangat layak digunakan. Secara keseluruhan, hasil dari semua tahapan uji coba menunjukkan bahwa pengembangan *e-book* panduan pengadaan barang dan jasa sudah baik dan mengikuti prosedur pengembangan yang tepat. *E-book* ini dapat memfasilitasi pembelajaran bagi karyawan PT. Pelabuhan Indonesia (Persero) dan perusahaan rekanan dalam proses pengadaan barang dan jasa.

Kata kunci: E-book panduan, pengadaan, memfasilitasi pembelajaran

INTRODUCTION

The procurement of electronic goods and services is the practice of buying business to business that uses *e-commerce* to find sources of supply, buy goods and services, make

payment transactions and communicate with suppliers. The procurement of electronic goods and services will enable the Company to shorten the procurement period, obtain a reasonable offer, and accelerate the launch of products or services.

According to Utojo (2019) the procurement of goods and services is a cycle of stages starting from the process of recording master data, purchase requests, selecting vendors, purchasing processes, monitoring purchase orders, receiving services/goods, verifying invoices by finance as payment references to reporting on bookkeeping using an integrated system.

The implementation of complex electronic procurement of goods and services involves a series of steps and procedures that must be followed carefully. This begins with the identification of the needs of the supplier, the formulation of technical specifications, and the formulation of the budget to be allocated for the procurement. Then, the auction or supplier selection process is carried out through an electronic platform or e-procurement system, which often allows for online valuation, negotiation, and bidding. In addition, contracts must be carefully concluded and managed, including monitoring the performance of the supplier of goods and services during the contract period. Additional complexity arises from the legal and regulatory requirements that must be complied with, as well as the need to ensure transparency, accountability and timeliness in all electronic procurement processes (Auliyana, 2013).

The SSC Procurement Division at PT Pelabuhan Indonesia (Persero) which joined in 2021, has caused all port entities from Sabang to Melaka that have requests for procurement of goods and services to have to submit their requests through the SSC Procurement Division first, then processed administratively until the work is carried out. The changes in business systems and procedures have resulted in several parties such as suppliers, suppliers or vendors, internal staff (organizers and suppliers) and even interns experiencing difficulties in understanding and following the procedures and rules/regulations for the procurement of goods and services.

To overcome the above challenges, developers develop electronic guidance materials for the implementation of goods and services, where the guidance materials function as a clear and comprehensive foundation for all parties involved in the implementation of goods and services. According to Kelnt W. Johnson in his book "The 21st Century Handbook: A Guide to Understanding Information, Formats, and Structures," electronic guidance materials are "electronic documents containing information and practical guidelines that are followed to assist individuals or organizations in understanding, managing, or carrying out tasks or procedures." Electronic guidance materials provide step-by-step guidance that outlines procedures, responsibilities, and rules that must be followed, thus minimizing the potential for errors, ambiguity, or inappropriate actions (Maydiantoro, 2019). It is hoped that this electronic guidance material will provide useful guidance for its users in various references whose contents can be accounted for (Okpatrioka, 2023).

The development of this electronic procurement system is expected to facilitate the organizers and providers or vendors in understanding the requirements and procedures for participating in the procurement of electronic goods and services at PT Pelabuhan Indonesia. Thus, this electronic procurement system will not only facilitate the process, but also mitigate risks, improve service quality, help achieve the goal of efficiency, availability in the procurement of electronic goods and services and provide flexible and easily accessible files anytime and anywhere (Maharcika et al., 2021).

Based on the research, there is a research that examines the topic of procurement of goods and services and the spirit of the developer in exploring the knowledge of the system and procedures for procurement of goods and services in a BUMN company, namely PT Pelabuhan Indonesia (Persero), so the purpose of this research is to developing an electronic guidebook to help the relevant involved in the procurement of goods and services at PT. Pelabuhan Indonesia (Persero).

LITERATURE REVIEW

Electronic Book

E-books are electronic formats accessible on devices like computers and phones, utilizing formats such as PDF, JPEG, LIT, HTML, and EPUB (Hendrawati, 2014). They offer environmental friendliness, content flexibility, ease of access, practicality, and durability advantages. Meanwhile, guidebooks provide detailed instructions for various organizational tasks, categorized into organizational instructions, procedural guidelines, and regulatory rules, emphasizing clarity, user-friendliness, accuracy, completeness, and relevance. Their design includes considerations like book size, layout, font size, spacing, diagrams, and overall structure, aimed at providing clear, comprehensible guidance for technical tasks and processes.

Development Study

Development research in education, as noted by Asim (cited in Amarta, 2016), focuses on creating and testing products for learning processes. The National Science Board (Kakham Rosyid, 2019) defines it as the systematic application of knowledge to produce beneficial products. Seels & Richey (cited in Devina Oktavian, 2018) detail it as interpreting design specifications into physical features. Development, particularly in creating learning materials, includes broad analyses such as initial and final analyses and contextual analysis (Januszewski & Molenda, 2010). Sugiyono emphasizes it involves deepening existing knowledge, and fundamentally, it is a conscious, planned, systematic educational effort to develop balanced personalities and enhance knowledge and skills. Research and development (R&D) methods are crucial for improving educational outcomes (Sugiyono, 2013; Oktavia et al., 2020). Gay's models of R&D underscore the creation of effective educational products. In conclusion, R&D methods validate and improve educational products, exemplified in the creation of an electronic guidebook for Procurement of Goods and Services. The ADDIE model, comprising Analysis, Design, Development, Implementation, and Evaluation (Khoiriyah & Nuryono, 2017), guides systematic curriculum and instructional development, ensuring quality through rigorous evaluation, albeit with potential limitations in flexibility.

Procurement of Goods and Services

Procurement of goods and services is crucial for sustaining operational continuity in companies. It involves acquiring items and services to achieve optimal expenditure in terms of quality, quantity, timing, and location, aiming to directly benefit the organization (Mulyono, 2020). E-Procurement, as defined by various sources, is the electronic acquisition of goods and services managing business transactions online (Muhar & Setyadiharja, in Mavidis & Folinas, n.d.; Oliviera, Damayunita, 2022). It integrates internet-based systems across communication networks, encompassing purchasing stages (Croom & Jones) and adopting internet-based systems in purchasing stages (Neef).

The procurement process in State-Owned Enterprises (BUMN) is governed by Ministerial Regulation PER-15/MBU/2012, an amendment to PER-05/MBU/2008, guiding the procurement of goods and services. Principles of procurement include efficiency, effectiveness, openness, competitiveness, transparency, non-discrimination, and accountability (Hamkah & Purwanto, 2018). The scope encompasses three major stages: preparation, provider selection, and contract implementation (Arsana, 2016), covering procurement of goods, construction work, consulting services, and other services (Aminah et al., 2018). Ethics in procurement emphasize order, responsibility, professionalism, independence, confidentiality, avoidance of influence, accountability, prevention of waste, and avoidance of abuse of authority or bribery (Setyadiharja, 2017). Various procurement systems include open tenders, limited tenders, and direct appointments, each applicable based on the value and specific requirements of the procurement (Nurmandi, 2014).

Canva App

Canva is an online graphic design platform that provides convenience in creating e-books and other visual content with various intuitive templates and features. The platform not only facilitates users in easily creating posters, certificates, infographics, and presentations but also offers options to add elements such as text, photos, and backgrounds flexibly. With accessibility across various devices including desktop, Android, and iOS, as well as support for animation, Canva is an ideal choice for anyone looking to create engaging and professional e-books efficiently.

METHOD

The research employs the ADDIE model for its implementation, which consists of five phases: Analysis, Design, Development, Implementation, and Evaluation. According to Mayangsari & Bintari (2014), an instrument of study is a tool used to assist individuals in effectively and efficiently accomplishing tasks or achieving goals. Similarly, Putri (2014) views an instrument of study as a tool used by a developer to measure natural or social phenomena. These perspectives converge on the notion that study instruments serve as measurement tools that facilitate research activities in data processing or the measurement of observed phenomena by developers. The study applies a questionnaire as its research instrument, covering validity testing by content and media experts, practicality testing by providers or potential providers, organizers, users, and the team lead of the SSC Procurement division at PT Pelabuhan Indonesia (Persero) through one-to-one and field trials.

Table 1. Likert Scale

Criteria	Score
Very feasible	5
Feasible	4
Simply	3
Less feasible	2
Very less feasible	1

To present the results of the media and content validation assessments and the practicality trials by the Likert Scale method, the following criteria indicate media feasibility based on the percentage levels of media and content validation (Pireraningtias, 2016):

Table 2. The Percentage Analysis of Feasibility Criteria

No	Percentages	Description
1.	81.00% - 100.00%	Very valid, very effective, very good, can be used without improvement.
2.	61.00% - 80.00%	Fair, quite effective, good enough, can be used but needs minor repairs.
3.	41.00% - 60.00%	Less valid, less effective, or less good, need major repairs, it is recommended not to be used.
4.	21.00% - 40.00%	Invalid, ineffective, not good, cannot be used.
5.	00.00% - 20.00%	Very invalid, very ineffective, very bad, unusable

RESULTS AND DISCUSSION

This research produces an e-book of procurement guidelines for goods and services that are compiled using the Canva platform and packaged in PDF format that can be read by employees and company partners involved in the procurement process of goods and services of PT Pelabuhan Indonesia (Persero). The purpose of developing this e-book of procurement guidelines for goods and services is to provide employees and company partners with valid and

comprehensive information about the procurement implementation process that can be accessed independently.

The research of this e-book development guideline uses the ADDIE model. This development model consists of Analysis, Design, Development, Implementation, and Evaluation. In the analysis phase, the developer conducted interviews with various supervisors from the SSC Procurement of PT Pelabuhan Indonesia (Persero) to evaluate the obstacles faced and to find out whether they used the existing guidance guideline. The results showed that supervisors and staff of the SSC Procurement of PT Pelabuhan Indonesia (Persero) passed the guidance guideline for the procurement of goods and services and prospective suppliers participated in the procurement process of goods and services.

In the development phase, the developer designs the product to be developed, including storyboard development, layout, layout, graphic design, and reflects the content to be included in the development process. In the development process, the first activity is carried out, namely developing a systematic review of the goods and services through individual discussions with each service provider in the Procurement SSC. This discussion continues to evaluate and submit systematic review chapters. In addition, the developer also designs the cover and layout of the material. The result is an initial draft of the procurement guidelines for goods and services which includes an explanation of the working procedures for each part of the procurement system.

In the implementation phase, a Group Discussion Forum (FGD) will be held with the Procurement Team from SSC to review the products that have been developed for the provider as the main provider. After going through this trial, it is concluded that the procurement guidelines for goods and services have reached final results and can be published. The evaluation carried out is a formative test, which is carried out through a Group Discussion Forum (FGD). In the FGD, in addition to testing the product, an evaluation is also carried out by accepting suggestions or input. Although the suffrage test has been carried out, the result is that the procurement guidelines for goods and services have been finalized, and the results of this suffrage test will become recommendations for further research.



Figure 1. Cover of Guide E-Book

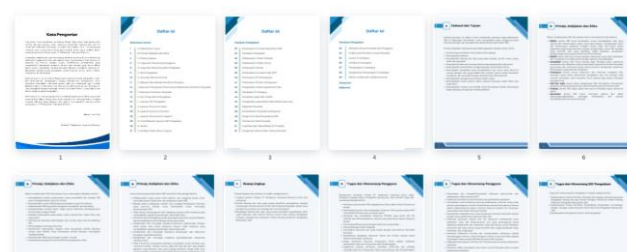


Figure 2. Contents of Guide E-book

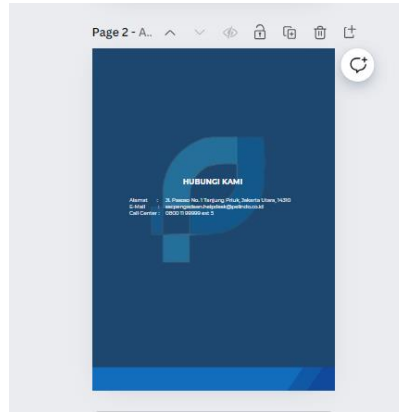


Figure 3. Contents of Guide E-book

Feasibility of Electronic Guidebook

In this development research, the evaluation was carried out through three stages, namely expert review, one-to-one trial, and field test trial. In the expert review, two reviewers were involved, namely Mr. Adi Kusuma as a material expert and Senior Staff in the SSC Procurement division, who gave a score of 85% (Very Eligible), and Mr. Adnan Kasofi, S.Pd., MBA., as a material expert, who also gave a total assessment result of 83% (Very Eligible).

Overall, the evaluation results from the experts showed that the development of this guideline e-book was Very Eligible to be used. The next stage is the One-to-One Trial. This test was conducted on three samples who worked in the SSC Procurement division with different job descriptions and length of service. Evaluation was conducted through interviews, and the conclusion showed that the development of the goods and services procurement guide e-book was good.

Then the last, Field Test Test was a test conducted on 20 respondents. The respondents consisted of 10 SSC Procurement employees of PT Pelabuhan Indonesia (Persero), 4 employees of PT. Pelabuhan Indonesia representing each region I, II, III and IV and 6 employees from different partner companies. The evaluation was conducted by providing a questionnaire, the results of which showed an average value of 3.5 (very good). This shows that the material presented is in accordance with the business process of procurement of goods and services and is easily understood by the customer. This positive evaluation aligns with previous studies that emphasize the importance of expert validation in developing educational materials (Yolanda et al., 2022). This result is consistent with previous research by Vaidya and Campbell (2016), which found that comprehensive field testing with diverse participants ensures the material's applicability across different contexts. Overall, the high evaluation scores across all stages suggest that the e-book is well-designed and meets the business process requirements, corroborating earlier studies that highlight the significance of rigorous multi-stage evaluation in educational material development.

CONCLUSION AND RECOMMENDATION

This development research produced the "Procurement of Goods and Services" guide e-book for PT. Pelabuhan Indonesia (Persero) employees and registered vendor companies, designed to facilitate learning about procurement processes. The content covers general provisions and business processes, developed using the ADDIE model through analysis, design, development, implementation, and evaluation stages. The e-book received validation scores of 83% for content ("Highly Eligible") and 79% for media ("Eligible"), with positive feedback from practical tests involving employees and vendors. The guidebook aids understanding of procurement processes, serves as a reference for product developers, and adds

to educational literature in Office Administration. Based on the research results, practical recommendations are formulated so that companies can use the guidebook sustainably, and subsequent researchers can carry out comprehensive field testing in future research.

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