Available online at JDR Website: http://journal.unublitar.ac.id/jdr
Journal of Development Research, 9 (2), November 2025, Pages 181-191
DOI: https://doi.org/10.28926/jdr.v9i2.484

# The Redesign of Proposal Seminar Process Using Business Process Modelling and the Devil's Quadrangle Framework

**Cahyaningtyas Sekar Wahyuni[1,*], Mohammad Fahmi[2], Trismawati[3]**

[1,2]Universitas Muhammadiyah Surakarta, Indonesia
[3]Universitas Panca Marga Probolinggo, Indonesia

E-mail: csw200@ums.ac.id[1], l300240089@student.ums.ac.id[2], trismawati@upm.ac.id[3]

*Corresponding Author

Received: 9 November 2025 | Revised: 23 November 2025 | Accepted: 25 November 2025

## *Abstract*

*The proposal seminar is a key academic milestone, yet many institutions still manage it manually, leading to delays, repeated revisions, fragmented documentation, and high administrative workload. Few studies, however, examine lightweight, low-cost approaches for improving such academic workflows without relying on full automation. This study analyses the proposal-seminar process by translating the existing SOP and administrative guidelines into a BPMN model and evaluating its performance using the Devil's Quadrangle framework. The as-is model reveals issues across all four dimensions, i.e. long cycle times, high process effort, inconsistent documentation, and limited flexibility. A lightweight to-be process is proposed, emphasizing simplification, standardization, and the use of existing digital tools such as Google Forms, shared folders, and templates. Evaluation results show positive improvements across time, cost, and quality, demonstrating that modest interventions can enhance academic administrative processes. The study also offers practical implications, showing that faculties can implement these enhancements immediately using existing resources without additional budget or IT infrastructure. Future work may include quantitative performance measurement and gradual integration of automation to further strengthen process efficiency.*

***Keywords:*** *Business Process Management; Business Process Modelling Notation; Devil's Quadrangle; Process Redesign*

## Introduction

The proposal seminar is a key checkpoint in the undergraduate thesis process, where examiners assess topic feasibility, methodological readiness, and students' preparedness for deeper research. Because of its central role, the efficiency of this stage directly affects students' time to graduation and the academic quality produced by the study program (Tinto, 1993).

In practice, many institutions still manage the proposal seminar process manually, from form submission and document checking to scheduling and recording results. Prior studies note that manual academic processes are prone to delays, repeated work, human errors, and coordination issues (Dumas et al., 2018; van der Aalst, 2013). At the study program observed in this research, 150–160 students register per batch, and empirical observations show that approximately nine days are required from registration opening (e.g., 20–26 of the month) to the release of the seminar schedule (around the 29th). This delay is mainly caused by manual document verification, back-and-forth communication with supervisors and examiners, and the absence of automated completeness checks. These issues extend processing time and lower

service quality. By contrast, institutions that adopt partially digital or semi-automated academic workflows report faster scheduling and fewer verification loops, as digitization "saves time and effort" and increases process efficiency (Strimbei et al., 2016).

Business Process Management (BPM) offers a structured approach to analysing and improving such workflows (de Morais et al., 2014). Through explicit modelling, BPM helps identify bottlenecks and guide redesign efforts. BPMN is selected in this study because it provides the most expressive notation for representing roles, decision logic, document flows, and cross-lane coordination, capabilities that EPC, SIPOC, or value-stream mapping do not capture with sufficient granularity for academic administrative processes (Wiechetek et al., 2017). Prior higher-education studies also show that BPMN enables clearer identification of coordination problems and handover delays compared to simpler diagramming tools (Strimbei et al., 2016; Wiechetek et al., 2017). BPMN, as a standardized modelling notation, supports this by clearly mapping activities, roles, and information flows (Aagesen & Krogstie, 2015; Dumas et al., 2018; Object Management Group, 2013; Weske, 2019). Its ability to model multi-actor interaction and document-intensive workflows makes BPMN particularly suitable for representing the seminar-proposal process.

BPM evaluates process performance using frameworks like the Devil's Quadrangle, which looks at four dimensions: time, cost, quality, and flexibility. Other tools such as SIPOC or value-stream mapping focus mostly on visualizing the process flow or identifying waste, so they do not provide a balanced multi-dimensional assessment. This makes them less suitable for academic service processes that involve coordination, verification, and document-quality checks (Wiechetek et al., 2017). Therefore, combining BPMN modelling with the Devil's Quadrangle offers a more complete foundation for understanding the current process and identifying opportunities for redesign (Dumas et al., 2018).

Although inefficiencies in academic administration are widely acknowledged, few studies specifically explore lightweight, low-cost redesigns that improve performance without full workflow automation. This highlights a practical research gap in understanding how simple procedural adjustments and readily available digital tools can enhance academic workflows. Based on this gap, the research problem is formulated into the following Research Questions:

1) RQ 1: How can the existing proposal seminar SOP be modelled to reveal bottlenecks and coordination issues?
2) RQ 2: How well does the process perform across the four dimensions of the Devil's Quadrangle?
3) RQ 3: How can lightweight, non-automated interventions improve time, cost, quality, and flexibility?

This study is bounded by several limitations: it relies primarily on document analysis of the official SOP and administrative guidelines, is limited to one study program, and uses informal student interviews only for validating procedural accuracy.

Given the importance of the proposal seminar and the inefficiencies observed, this study models the as-is process using BPMN, evaluates its performance using the Devil's Quadrangle, and proposes improvements to support efficiency and student progress. Beyond offering practical recommendations such as reducing administrative workload and enhancing transparency, the study contributes theoretically by demonstrating how lightweight BPM interventions can meaningfully improve academic administrative processes.

## Methods

This study employs a qualitative descriptive approach that focuses on business process analysis using official academic guidelines, online procedural instructions, and administrative documents complemented by field validation. The research method consists of four main stages: (A) analysing documents, (B) modelling the process using BPMN, (C) evaluating

performance with the Devil's Quadrangle, and (D) proposing a redesigned process. A concise research flow (Figure 1) is included to clarify the methodological sequence.

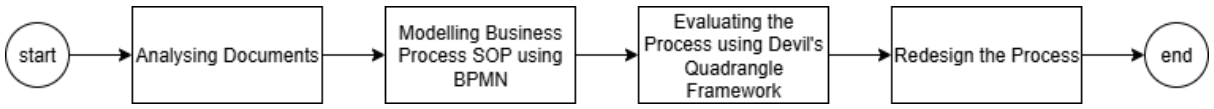


Figure 1. Research Methodology

### A. Document Analysis

Document analysis serves as the primary data source. It is widely recognized as an appropriate first step in understanding formal organizational procedures (Bowen, 2009; Ungan, 2006), particularly when the workflow is fully prescribed by official guidelines. To specify the data scope, four institutional documents were examined, i.e. (1) the proposal seminar SOP published on the study program's website; (2) the Google Form used by students to submit seminar requests; (3) the official Minutes of Meeting (MoM) template, and (4) the Google Form used for uploading the signed MoM.

Because SOPs may not always reflect real practices, light triangulation was conducted through brief informal interviews with final-year students, confirming several operational details such as verification flow, scheduling communication, and MoM handling. This ensures that the as-is model reflects both prescribed and actual steps.

### B. Process Modelling using BPMN

Information extracted from the documents is translated into an as-is process model. The model captures the activity sequence, actor responsibilities, document requirements, verification points, scheduling rules, and task dependencies. BPMN is used because it provides a clear and standardized way to visualise workflows. By incorporating sequence flows, gateways, swim lanes, document artefacts, and message flows, the model enables systematic identification of bottlenecks, repetitive steps, and coordination issues that contribute to delays in the current process.

### C. Process Evaluation Using the Devil's Quadrangle

The as-is model is then evaluated using the four dimensions of the Devil's Quadrangle:

- Time: potential delays and waiting periods,
- Cost: administrative workload and manual effort,
- Quality: accuracy and consistency of outputs, and
- Flexibility: the ability to handle schedule changes and variations in workload.

The evaluation is conceptual and draws on established BPM performance criteria to assess how the current process performs across these dimensions. In this study, an upward arrow (↑) denotes improvement (shorter cycle time, lower effort or cost, higher quality, or greater flexibility), a downward arrow (↓) denotes deterioration (longer duration, higher effort or cost, lower quality, or reduced flexibility), and a value of 0 indicates no meaningful change.

### D. Process Redesign

Based on the evaluation, a to-be model is developed to enhance service speed, reduce administrative effort, strengthen documentation quality, and improve coordination flexibility. The redesigned process prioritizes practical, context-appropriate improvements for higher education settings while remaining aligned with BPM principles.

## Results and Discussions

### A. As-Is Standard Operating Procedure (SOP) Analysis

The proposal seminar SOP is presented as a linear list of steps, explaining what students and staff must do but not how activities connect. Because it lacks interactions, decisions, and information flow, the text alone cannot support deeper process analysis.

To address this, the SOP was modelled using BPMN (Figure 2), revealing that the as-is process consists of 23 activity steps across four actors, including repeated verification loops and multiple document handovers. This numeric structure forms the basis for later comparison with the redesigned process.

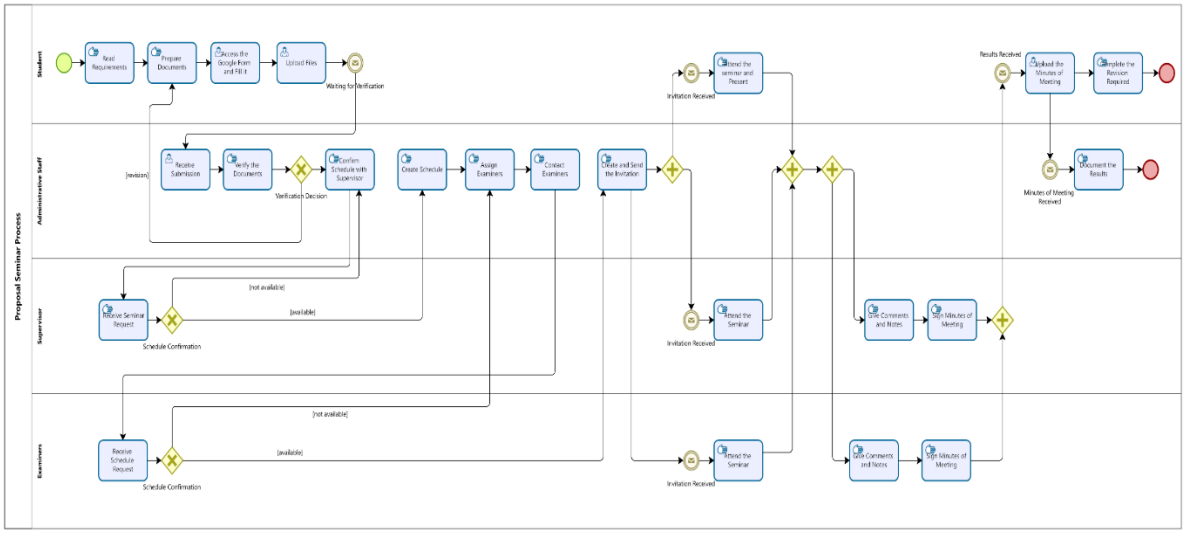


Figure 2. As-Is Standard Operating Procedure (SOP) of Proposal Seminar Process

## B. Problem Identification

Analysis of the as-is SOP process, shown in Figure 2, reveals several structural inefficiencies that are not visible in the textual SOP. Although the document lists the required steps, the BPMN model exposes workflow dependencies, hidden loops, and multi-actor coordination points that slow down execution. These problems are summarized in Table 1.

First, manual document verification frequently leads to repeated revision cycles because students often submit incomplete or incorrectly formatted files. Second, scheduling relies on sequential availability confirmation: staff must contact supervisors and examiners one by one, and any unavailability triggers a rescheduling loop. Third, handling of the Minutes of Meeting involves multiple manual handovers, i.e. examiners sign the file, send it to students, and students upload it, creating risks of file loss, inconsistent formatting, and additional administrative work. Fourth, seminar assessment is fragmented because examiners record feedback separately without a standardized template, causing inconsistency and extra reconciliation. Fifth, revision progress is unmonitored; the SOP provides no tracking mechanism, reducing visibility for supervisors. Finally, communication occurs across scattered channels (email, WhatsApp, online forms), making the process harder to track and prone to miscommunication.

This analysis also answers RQ 1: “How can the existing proposal seminar SOP be modelled to reveal bottlenecks and coordination issues?”. Modelling makes visible several operational metrics that the SOP text does not show. Incomplete submissions triggered an average of 2–3 revision cycles per student (based on administrative staffs and student confirmation), and scheduling typically required 3–5 back-and-forth communications before availability was confirmed. These values demonstrate the magnitude of inefficiencies see Table 1.

Table 1. Summary of Problem Identification

| Problem Category | Description (As-Is SOP Process) | Source / Observation |
|---|---|---|

| | | |
|---|---|---|
| Manual Document Verification | Verification of student submissions is conducted manually, leading to repeated revision cycles when documents are incomplete. | Admin workload spikes; no automated completeness checks. |
| Sequential Scheduling Dependencies | Scheduling requires manual confirmation from supervisor and examiners; unavailability triggers rescheduling loops. | High dependency on individual availability; delays observed in BPMN flow. |
| Multi-Step Document Handover | Minutes of Meeting are signed by examiners, transferred to students, and then uploaded manually. | Risk of file loss, delays, and inconsistent formats. |
| Fragmented Evaluation Recording | Supervisor and examiners enter feedback separately without integrated templates. | Potential inconsistencies in assessment documentation. |
| Unmonitored Revision Process | Students' complete revisions independently; SOP lacks tracking mechanisms. | Risk of prolonged timelines and unclear progress. |
| Limited Workflow Transparency | Process depends on email/WhatsApp for communication; no centralized status visibility. | High risk of miscommunication and delayed responses. |

## C. Devil's Quadrangle As-Is Analysis

This subsection answers RQ 2: "How well does the process perform across the four dimensions of the Devil's Quadrangle?" by evaluating the performance of the existing proposal seminar process using the four dimensions of the Devil's Quadrangle. Following the previous qualitative assessment approach (Reijers & Liman Mansar, 2005), the performance of the as-is SOP was evaluated using directional indicators, which are increase (↑), decrease (↓), and no change (0). For Time and Cost, a decrease reflects longer cycle time and cost, which is bad, while for Quality and Flexibility, an increase is considered positive.

Using the four dimensions of the Devil's Quadrangle, the evaluation shows that the as-is process performs poorly across all areas (Table 2), indicating inefficiencies in speed, workload, reliability, and adaptability.

- Time
  Cycle time is prolonged by manual verification, repeated revisions, and sequential scheduling. Any unavailability triggers rescheduling loops, extending the overall process.
- Cost
  Administrative effort is high due to manual checks, fragmented communication across multiple platforms, and the need to correct student-prepared Minutes of Meeting.
- Quality
  Reliability decreases because documentation is handled manually and mediated by students. Transcription errors, incomplete records, and inconsistent file formats frequently occur.
- Flexibility
  The process adapts poorly to schedule changes because coordination and documentation depend heavily on manual communication and student actions, with no built-in tracking mechanisms.

Across all four dimensions, the as-is SOP demonstrates structural weaknesses that result in slow heavy administrative burden, inconsistent documentation, and high flexibility. Modelling the process with BPMN and evaluating it through the Devil's Quadrangle (Figure 2) makes these issues explicit and underscores the need for a redesigned workflow.processing,

Table 2. Directional Impact of the As-Is SOP Process Based on the Devil's Quadrangle

| Dimension | Directional Impact | Explanation |
|---|---|---|
| Time | ↓ (High cycle time) | 23 total steps, 4 wait points, 2–3 revision loops, sequential scheduling. |
| Cost | ↓ (High cost) | Heavy administrative workload due to manual verification (5 manual verification points, 3 manual handovers), rework, and dispersed communication. |
| Quality | ↓ (Low quality) | inconsistent MoM formats |
| Flexibility | ↑ (High flexibility) | Can reschedule repeatedly and upload document repeatedly due to manual checking. |

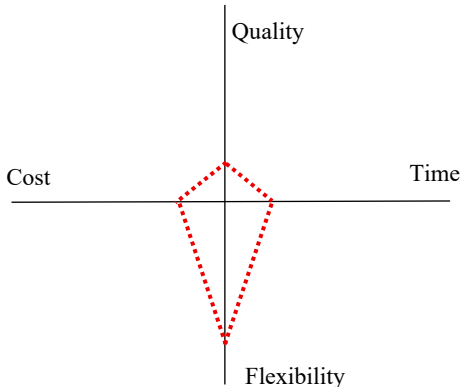


Figure 2. Devil's Quadrangle As-Is Analysis

**D. To-Be Process (Redesign)**

To address RQ 3: "How can lightweight, non-automated interventions improve time, cost, quality, and flexibility?" this subsection presents a redesigned workflow based on the issues identified in the as-is model and the Devil's Quadrangle analysis.

Insights from the as-is analysis and the Devil's Quadrangle evaluation (Figure 3) show several structural issues that need targeted improvement. With institutional constraints in mind, the redesigned process focuses on simplification and lightweight digital support using existing tools such as Google Forms, Google Drive, standardized templates, and automated email notifications. This approach keeps the redesign practical, low-cost, and easy to deploy. The improvements are aligned with the problem categories summarized in Table 3.

1. Streamlining Document Verification
   The to-be process reduces repeated revision cycles by introducing:
   - a standardized checklist in the submission form,
   - mandatory upload fields,
   - automatic email confirmation summarizing submitted files.

   This shortens verification time and minimizes avoidable corrections.
2. Simplifying the Scheduling Process
   To remove the sequential communication bottleneck, the redesign adds:
   - a single availability form for supervisors and examiners,
   - predefined time slots shared at the start of the semester,
   - simultaneous collection of availability.

   This cuts coordination effort and increases flexibility.
3. Improving Quality and Consistency of Seminar Output
   To avoid transcription errors caused by student-filled documents, the to-be process uses:
   - a standardized digital Minutes of Meeting (MoM) template,

- direct examiner input,
- optional digital signatures.

This improves accuracy and document consistency.

4. Enhancing Documentation Flow and Result Submission

The redesign removes multi-step file handover by allowing:

- supervisors and examiners to upload signed MoM directly to a designated Google Drive folder,
- automatic folder access assignments,
- automated notifications to administrative staff.

This strengthens data integrity and shortens processing time.

5. Improving Revision Tracking in a Lightweight Manner

Minimal improvements are introduced through:

- revision status fields in the MoM,
- a simple revision checklist for students,
- progress updates through existing supervision logs.

This adds structure and visibility without requiring automation.

Overall, the proposed improvements offer a simple but effective upgrade to the workflow. They directly resolve the problems in the as-is SOP and create a smoother, more consistent, and more transparent process without requiring complex systems. The redesigned model clearly improves speed, reduces administrative effort, enhances documentation quality, and increases coordination flexibility.

However, lightweight solutions also have limitations. Their strengths, i.e. simplicity, low cost, minimal training, and compatibility with existing tools, come with the absence of automated enforcement, real-time monitoring, and integrated scheduling, so some manual coordination remains. These trade-offs make lightweight redesigns a practical transitional step: they provide immediate benefits while still allowing the process to evolve toward full automation in the future.

Figure 4 shows how these improvements are reflected in the redesigned workflow. The model removes unnecessary handovers, reduces coordination delays, and clarifies responsibilities across lanes. Document verification becomes faster with structured checklists, scheduling shifts to simultaneous availability collection, and the MoM is completed directly by assessors in a shared template. Revision status is recorded within the same document, giving the process a clear endpoint. Overall, Figure 4 illustrates how the redesign resolves the structural bottlenecks identified earlier.

To quantify the structural improvements, the number of activities decreased from 23 in the as-is model to 13 in the to-be model, eliminating approximately 43% of the original steps. The verification cycle is reduced from 2–3 loops on average to 0–1 loop due to the mandatory completeness checklist and automated email confirmation. Scheduling is reduced from 3–5 individual confirmations to a single availability submission per actor. These values demonstrate measurable simplification. This numerical reduction confirms that the redesigned workflow is more streamlined and operationally efficient.

Table 3. Comparison Between the As-Is SOP Process and the To-Be Improved Process

| Problem | As-Is Condition | To-Be Improvement | Expected Impact |
|---|---|---|---|
| Manual Document Verification | Verification relies entirely on manual checking; incomplete submissions cause repeated revision cycles. | Standardized submission checklist; mandatory upload fields; auto-email confirmation; simple completeness validation in Google Form. | Fewer revision cycles; reduced admin workload; faster verification. |

| | | | |
|---|---|---|---|
| Sequential Scheduling Dependencies | Scheduling requires individual confirmation from supervisor/examiners; unavailability triggers rescheduling loops. | Centralized availability form; predefined seminar time slots; simultaneous availability check. | Shorter scheduling lead time; minimized back-and-forth communication. |
| Multi-Step Document Handover | MoM signed by examiners → given to student → uploaded to admin manually; risk of file loss/delay. | Digital MoM template; examiners upload directly via Google Drive folder; auto-notification to admin. | Higher data integrity; fewer handover steps; reduced delay and file inconsistencies. |
| Fragmented Evaluation Recording | Supervisor/examiners enter notes separately without template; risk of inconsistent feedback. | Standardized digital evaluation template; optional examiner e-signature; direct entry by assessors. | More reliable documentation; reduced transcription errors; consistent feedback format. |
| Unmonitored Revision Process | Student completes revisions independently; no tracking; unclear progress. | Revision checklist; supervisor records revision status in MoM; continued supervision log. | Clearer visibility; improved follow-through; reduced uncertainty. |
| Limited Workflow Transparency | Process scattered across email/WhatsApp; no centralized tracking; risk of miscommunication. | Centralized folder structure (Google Drive); automated email notifications; uniform templates. | Improved process visibility; clearer communication; better traceability. |

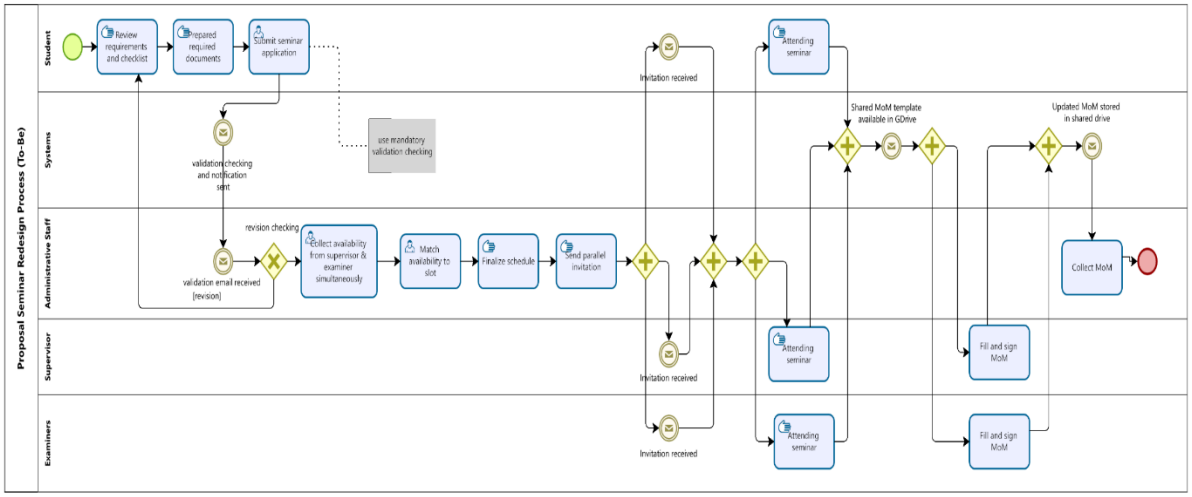


Figure 4. Redesign Standard Operating Procedure (SOP) of Proposal Seminar Process

## E. Devil's Quadrangle Evaluation of the To-Be Process

The redesigned process, following the previous qualitative assessment approach (Reijers & Liman Mansar, 2005), was evaluated using the same four dimensions of the Devil's Quadrangle to assess how the lightweight improvements address the weaknesses of the as-is SOP. By focusing on simplification, standardization, and light digital support, the to-be design reduces delays and administrative effort while improving documentation consistency. As shown in Table 4, all four dimensions display positive directional changes: Time, Cost, and Quality are increasing, while Flexibility decrease; indicating that even a low-complexity redesign can significantly enhance overall process performance.

Figure 5 shows a clear contrast between the as-is and to-be profiles. The as-is (red) profile is narrow on Cost, Time, and Quality, indicating high workload, long processing durations, and inconsistent documentation. However, its strong downward extension on Flexibility represents high adaptability, showing that the current process can adjust easily to changes or exceptions. In contrast, the to-be (blue) profile expands considerably on Cost, Time, and Quality, reflecting reduced manual effort, shorter cycle times, and more reliable outputs. However, its Flexibility decreases, as indicated by the shorter downward point. This suggests that while the redesigned process becomes more efficient and consistent, it is also more structured and therefore less flexible than the as-is version.

**Table 4. Directional Impact of the To-Be Process Based on the Devil's Quadrangle**

| Dimension | Directional Impact | Explanation |
|---|---|---|
| Time | ↑ (Shorter cycle time) | Standardized checklists, fewer revision loops, and centralized availability collection shorten the overall lead time. |
| Cost | ↑ (Lower administrative effort) | Reduced manual verification, less rework, and fewer document handovers decrease administrative workload. |
| Quality | ↑ (Higher consistency and reliability) | Direct examiner input and standardized digital templates improve accuracy and reduce formatting or transcription errors. |
| Flexibility | ↓ (Lower) | Predefined time slots, centralized scheduling info, formal MoM templates and document verification, and structured revision tracking allow smoother adjustment to changes. |

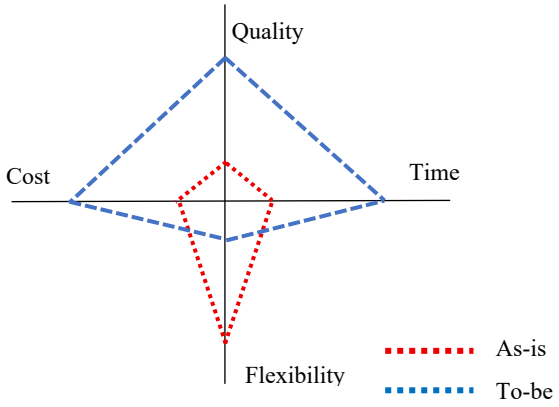


Figure 5. Devil's Quadrangle Comparison As-Is vs. To-Be

## F. Operational Implementation Recommendation

To support effective implementation, several operational steps are recommended. First, the administrative team should standardize all digital forms and templates and store them in a centralized Google Drive folder. Second, the program should establish a fixed scheduling cycle each semester to allow supervisors and examiners to submit availability earlier. Third, brief training for administrative staff is needed to ensure consistent validation and notification routines. A small pilot test with a limited group of students can then verify usability before full deployment.

A concise implementation roadmap is proposed in Table 5. Months 1–3 focus on preparation: standardizing templates, organizing the shared folder, and conducting internal briefings. Months 4–6 involve coordinated rollout, including socialization, a small pilot test,

and refinement based on feedback. Months 7–9 address adjustments to forms and notification flows, followed by a partial rollout with performance monitoring. Months 10–12 finalize the process through full implementation and preparation of pre–post evaluation materials for future analysis.

Table 5. Implementation Planning Roadmap

| Activities | Month | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Standardize all digital forms | | | | | | | | | | | | |
| Prepare shared Google Drive structure | | | | | | | | | | | | |
| Conduct internal briefing & training for staff | | | | | | | | | | | | |
| Socialization to supervisors & examiners | | | | | | | | | | | | |
| Pilot test with small group (20–30 students) | | | | | | | | | | | | |
| Collect feedback | | | | | | | | | | | | |
| Refine templates & process based on feedback | | | | | | | | | | | | |
| Adjust form, notification, and MoM workflow | | | | | | | | | | | | |
| Begin partial rollout for 1 full batch | | | | | | | | | | | | |
| Monitor key metrics (cycle time, error rate, etc) | | | | | | | | | | | | |
| Full institutional rollout | | | | | | | | | | | | |
| Prepare pre/post evaluation & documentation | | | | | | | | | | | | |

## Conclusions

This study modelled the proposal seminar SOP using BPMN and evaluated its performance with the Devil's Quadrangle. The as-is process showed clear inefficiencies: long cycle times, high administrative workload, and inconsistent documentation. These issues emerged mainly from manual checks, fragmented communication, and multi-step document handling. Modelling the SOP made these bottlenecks explicit.

A lightweight to-be process was designed using simplification, standardization, and existing digital tools (Google Forms, shared folders, and structured templates). Although not fully automated, the redesigned workflow improves all four dimensions of the Devil's Quadrangle by reducing delays, lowering administrative effort, improving documentation quality, and increasing process adaptability. The primary practical contribution of this study lies in demonstrating that meaningful process improvement in academic administration can be achieved rapidly and at low cost without requiring a full workflow system.

In addition to its practical value, this research contributes theoretically to BPM literature in higher education by showing that lightweight redesign, i.e. supported only by modelling and structured templates, can yield improvement patterns comparable to those reported in studies using more advanced systems. This reinforces the relevance of BPMN and Devil's Quadrangle as analytical tools for academic administrative processes.

Future work may include quantitative measurement of cycle time, revision loops, scheduling delays, and workload to validate the improvements empirically. Simulation or customer survey could offer deeper performance insights. Gradual introduction of workflow automation such as completeness checks, integrated scheduling, or digital signatures may further enhance efficiency in future iterations.

## References

Aagesen, G., & Krogstie, J. (2015). BPMN 2.0 for Modeling Business Processes. In *Handbook on Business Process Management 1: Introduction, Methods, and Information Systems*

(pp. 219–250). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-45100-3_10

Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, *9*(2), 27–40. https://doi.org/10.3316/QRJ0902027

de Morais, R. M., Kazan, S., de Pádua, S. I. D., & Costa, A. L. (2014). An analysis of BPM lifecycles: From a literature review to a framework proposal. *Business Process Management Journal*, *20*(3), 412–432. https://doi.org/10.1108/BPMJ-03-2013-0035

Dumas, M., La Rosa, M., Mendling, J., & Reijers, H. A. (2018). *Fundamentals of Business Process Management* (2nd ed.). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-662-56509-4

Object Management Group. (2013). *Business Process Model and Notation (BPMN)*.

Reijers, H. A., & Liman Mansar, S. (2005). Best practices in business process redesign: An overview and qualitative evaluation of successful redesign heuristics. *Omega*, *33*(4), 283–306. https://doi.org/10.1016/j.omega.2004.04.012

Strimbei, C., Dospinescu, O., Strainu, R., & Nistor, A. (2016). *THE BPMN APPROACH OF THE UNIVERSITY INFORMATION SYSTEMS*. https://www.researchgate.net/publication/306040734

Tinto, V. (1993). *Leaving College: Rethinking the Causes and Cures of Student Attrition* (Second Edition). University of Chicago Press. https://doi.org/10.7208/chicago/9780226922461.001.0001

Ungan, M. (2006). Towards a better understanding of process documentation. *The TQM Magazine*, *18*, 400–409. https://doi.org/10.1108/09544780610671066

van der Aalst, W. M. P. (2013). Business Process Management: A Comprehensive Survey. *ISRN Software Engineering*, *2013*, 1–37. https://doi.org/10.1155/2013/507984

Weske, M. (2019). *Business Process Management*. Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-662-69518-0

Wiechetek, Ł., Mędrek, M., & Banaś, J. (2017). Business Process Management in Higher Education. The Case of Students of Logistics. *Problemy Zarzadzania*, *15*(4 (71)), 146–164. https://doi.org/10.7172/1644-9584.71.10