

Collaborative Risk and Change Governance in BPM Projects: The MAP-BPM Approach

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Abstract. *Context: BPM projects involve socio-technical changes that require communication, coordination, and shared decision-making among multiple stakeholders; however, risk analysis and change management are often treated separately, limiting collaborative governance. Objective: This paper proposes MAP-BPM, a methodology that integrates risk analysis and change management across the BPM lifecycle to support collaborative assessment and multi-stakeholder coordination. Method: The approach was grounded in a Systematic Literature Review and evaluated through surveys with BPM professionals. Results: Integrating risk and change improves transparency, decision traceability, stakeholder alignment, and organizational resilience. Conclusions: The study advances collaborative governance in BPM by providing a structured methodology for integrated socio-technical process transformation.*

1. Introduction

The increasing complexity of organizational environments, characterized by accelerated digital transformation, integration of emerging technologies, and continuous pressure for efficiency, has intensified the need for structured approaches to business process management. In this context, Business Process Management (BPM) has consolidated itself as a fundamental discipline to promote strategic alignment, governance, and continuous improvement of organizational processes [Dumas et al. 2013]. Beyond modeling techniques, BPM is recognized as an organizational capability aimed at adaptation and sustainable value generation in dynamic environments [Ongena and Ravesteyn 2020].

BPM projects rarely evolve through isolated decisions [Vivacqua et al. 2025]. In practice, process changes usually involve analysts, managers, technical teams, and process owners who must communicate, coordinate actions, and jointly assess impacts, priorities, and risks. From this perspective, BPM change governance can also be understood as a collaborative systems challenge, since effective process transformation depends on shared understanding, interdependent decision-making, and alignment among multiple stakeholders.

Despite the conceptual maturity of BPM and the widespread adoption of structured lifecycle models involving process modeling, implementation, monitoring, and optimization, organizations still face significant challenges in managing changes during or after BPM project implementation. These challenges are frequently associated with the absence of formal mechanisms to handle change requests, assess organizational impacts, and manage risks arising from modifications in workflows, business rules, and responsibilities.

The change management literature emphasizes leadership, structured communication, and stakeholder engagement as critical factors for consolidating organizational transformations [Kotter 2012]. In parallel, risk management provides well-established approaches for identifying, analyzing, and monitoring uncertainties in projects and strategic initiatives [Hutchins 2018]. However, recent evidence suggests that within BPM projects these two dimensions remain largely fragmented, with limited methodological integration [Binci et al. 2020].

To better understand the state of the art regarding the integration of risk management and change management in BPM projects, we conducted a Systematic Literature Review (SLR) following established guidelines for secondary studies in Software Engineering and Information Systems. The review covered major scientific databases and a final set of studies aligned with the research scope was identified.

Quantitative analysis of the selected studies revealed that although there is consolidated research on organizational change management and on risk analysis in projects, the explicit intersection of these two domains within BPM initiatives remains limited. Most studies approach change management from organizational or behavioral perspectives, while risk management is frequently treated from a technical or project management standpoint. Few works propose integrated models that formally connect impact assessment, change prioritization, and risk analysis within the BPM lifecycle. Additionally, the literature is dominated by conceptual discussions and isolated case studies, with a scarcity of structured and empirically validated methodological proposals to support governance in process-oriented environments.

Qualitative synthesis further highlighted three recurring limitations: (i) conceptual fragmentation between risk and change management, (ii) predominantly reactive handling of process changes without structured impact evaluation, and (iii) the absence of operational artifacts defining clear stages, documentation mechanisms, and objective decision criteria. These limitations become particularly critical in dynamic organizational settings, where frequent process alterations may compromise governance, stability, and the long-term sustainability of improvements.

From this analysis, the following research gap was identified: although well-established approaches exist for organizational change management and risk analysis independently, there is a lack of structured methodologies that explicitly integrate these domains within BPM projects, supporting impact evaluation, governance, and decision-making in process-oriented environments.

This gap motivates the proposal of the MAP-BPM methodology, which aims to provide a structured mechanism for integrating risk analysis and change management practices throughout the BPM project lifecycle. MAP-BPM is also aligned with the 3C collaboration model, as it structures communication among stakeholders, coordination of responsibilities, and cooperative decision-making during BPM transformations [Fuks et al. 2011].

The remainder of this article is organized as follows: Section 2 presents the theoretical background; Section 3 details the research method; Section 4 presents the MAP-BPM methodology; Section 5 discusses the results of the empirical evaluation; Section 6 presents conclusions and future research directions.

2. Goals

3. Research Methods

This study adopted a structured methodological approach organized into multiple stages, combining secondary and primary research to support the foundation, development, and evaluation of the proposed methodology. The research design was structured into four main phases: (i) Systematic Literature Review; (ii) exploratory survey with professionals involved in BPM projects; (iii) development of the MAP-BPM methodology; and (iv) validation survey with experts.

3.1. Phase 1: Systematic Literature Review

The Systematic Literature Review (SLR) aimed to identify existing approaches related to change management and risk analysis in Business Process Management (BPM) projects. Research questions, search strategies, scientific databases, and inclusion and exclusion criteria were defined in advance.

The process involved filtering by title and abstract, full-text reading of potentially relevant studies, and methodological quality assessment. The synthesis of results enabled the identification of conceptual gaps and recurring limitations, particularly regarding the formal integration between risk management and change management in process-oriented environments.

Table 1. Summary of Selected Studies in the Systematic Literature Review

| Category | No. of Studies | Main Identified Contributions |
|----------------------------------|----------------|--|
| Change Management in BPM | 22 | Focus on organizational resistance, communication, leadership, and critical success factors in transformation initiatives. |
| Risk Analysis in Processes | 18 | Identification, assessment, and mitigation of risks in projects and processes, emphasizing structured analysis methods. |
| BPM and Governance | 20 | Strategic alignment, control, process maturity, and integration between processes and organizational objectives. |
| Risk + Change Integration in BPM | 6 | Partial proposals integrating risk and change management, without a consolidated methodological structure. |
| Total Selected Studies | 66 | Final studies after applying inclusion, exclusion, and quality assessment criteria. |

3.2. Phase 2: Exploratory Survey

To understand organizational practice, an exploratory survey was conducted with professionals involved in BPM projects. The questionnaire included questions regarding the occurrence of changes during and after project implementation, strategies adopted to handle modifications, challenges faced, and risk analysis practices used.

The collected data enabled the characterization of respondent profiles and the identification of recurring patterns in managing changes in BPM projects. The results indicate that although the importance of change management is widely recognized, its practical application is heterogeneous and, in many cases, not structurally integrated with formal risk analysis practices.

3.3. Phase 3: Development of the MAP-BPM Methodology

Based on the integration of findings from the SLR and the exploratory survey, the MAP-BPM methodology (Methodology for Risk Analysis and Change Management in BPM Projects) was developed. The proposal was designed to directly address the identified gaps by structuring interrelated stages and decision-support artifacts, as presented in Table 1.

The methodology integrates organizational impact assessment, change formalization, risk analysis, prioritization criteria, and structured monitoring of implementation.

3.4. Phase 4: Validation Survey

To evaluate the clarity, applicability, and relevance of the proposed methodology, a second survey was conducted with experts experienced in BPM initiatives and organizational transformation projects.

The evaluation instrument included questions regarding the understanding of methodological stages, adequacy of proposed artifacts, usefulness for governance support, and potential application in real-world contexts. The results provided preliminary evidence of acceptance and highlighted opportunities for refinement.

The combination of these four phases enabled theoretical grounding of the proposal, confrontation with organizational practice, and the generation of initial evidence regarding its applicability, strengthening the methodological rigor of the study.

4. The MAP-BPM Methodology

This section presents the MAP-BPM methodology (*Methodology for Risk Analysis and Change Management in BPM Projects*), proposed to structurally integrate risk analysis and change management practices within process-oriented initiatives.

MAP-BPM was designed based on gaps identified in the literature and challenges highlighted by the exploratory survey, aiming to provide a structured mechanism to support change governance throughout the BPM project lifecycle.

4.1. Overview of the Methodology

The methodology is organized into six interrelated stages, structured iteratively, allowing changes to be handled in a controlled, documented, and strategically aligned manner. The proposed stages are:

1. Initial Checkpoint – Request Validation
2. Impact and Dependency Analysis
3. Change Proposal Formalization
4. Cost, Risk, and Acceptance Assessment
5. Execution and Monitoring

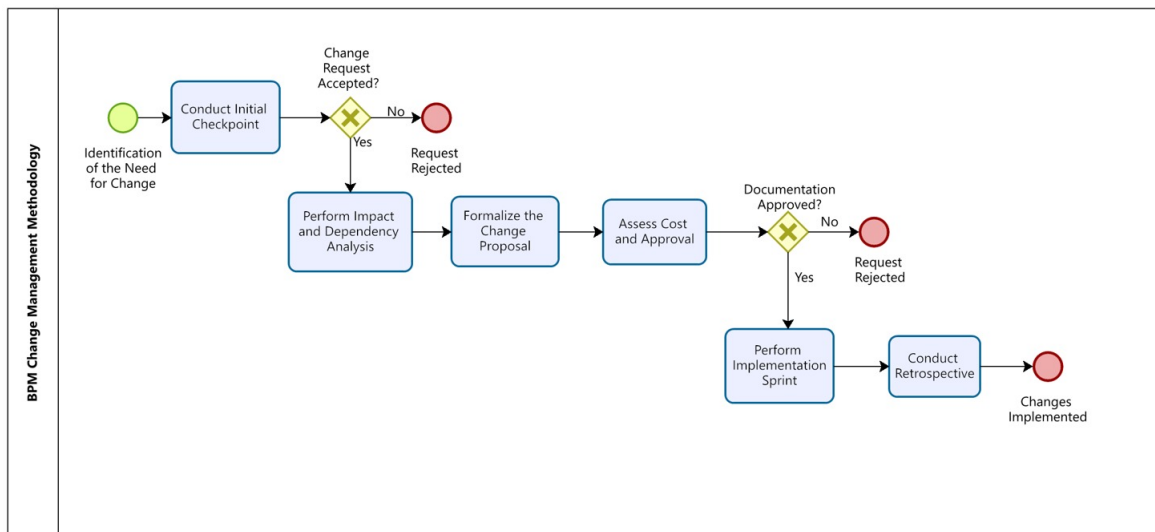


Figure 1. MAP-BPM Methodology Stages

6. Retrospective and Organizational Learning

The methodological flow integrates technical assessment, organizational analysis, and structured decision criteria, promoting greater transparency and traceability in implemented changes.

4.2. Description of the Stages

4.2.1. Stage 1: Initial Checkpoint – Request Validation

This stage aims to formally register and validate the change request. Essential information is collected regarding the identified issue, justification for the modification, and expected objectives.

The initial checkpoint prevents informal or reactive changes by establishing a structured entry point for decision-making.

4.2.2. Stage 2: Impact and Dependency Analysis

At this stage, processes, departments, systems, and stakeholders potentially affected by the proposed change are identified. The analysis considers inter-process dependencies, organizational impacts, and possible side effects.

This stage contributes to reducing risks associated with previously unassessed modifications by promoting a systemic view of the organizational environment.

4.2.3. Stage 3: Change Proposal Formalization

Following impact analysis, the change proposal is formally documented, including scope definition, responsibilities, success criteria, and monitoring indicators.

Formalization enhances organizational clarity and stakeholder alignment, reducing ambiguity and interpretation conflicts.

4.2.4. Stage 4: Cost, Risk, and Acceptance Assessment

This stage explicitly integrates risk analysis practices into the change management process. Factors such as estimated effort, probability of negative impacts, interdepartmental dependencies, and level of organizational acceptance are evaluated.

The structured integration of risk and change allows decisions to be based on objective criteria rather than perceived urgency.

4.2.5. Stage 5: Execution and Monitoring

The approved change is executed in a controlled manner, with monitoring of previously defined indicators. Monitoring enables evaluation of expected results and identification of deviations or unforeseen impacts.

This stage reinforces continuous measurement as a governance mechanism in BPM environments.

4.2.6. Stage 6: Retrospective and Organizational Learning

The final stage includes a structured retrospective, documenting lessons learned, evaluating outcomes, and identifying future improvements.

Organizational learning is incorporated into the methodological cycle, strengthening process governance maturity and supporting continuous improvement.

4.3. Integration Between Risk and Change Management

Unlike traditional approaches that treat risk and change as independent dimensions, MAP-BPM promotes explicit integration of these domains throughout the methodological flow. Organizational impact analysis, risk probability and severity assessment, and acceptance criteria are considered prior to change execution, enabling more informed decision-making.

This integration contributes to enhanced organizational resilience, reduced rework, and improved quality of process-oriented transformation initiatives.

5. Empirical Evaluation

This section contextualizes the empirical results obtained from the two primary data collection phases: (i) the exploratory survey, aimed at understanding how organizations handle changes in BPM projects, and (ii) the validation survey, designed to assess the clarity, applicability, and usefulness of the MAP-BPM methodology.

5.1. Participant Profile

The exploratory survey included professionals with experience in Business Process Management projects, operating across different organizational sectors and levels of process management maturity. Respondents included process analysts, project managers, consultants, and technology professionals with varying levels of experience.

The validation survey targeted specialists with experience in BPM initiatives and organizational transformation projects, seeking to evaluate the methodology from the perspective of practical applicability and contribution to governance. The diversity of participant profiles contributed to strengthening the external validity of the findings, although the study does not aim at broad statistical generalization.

5.2. Exploratory Survey Results

The results of the exploratory survey indicate that changes in BPM projects occur frequently both during execution and after process implementation. However, such changes are often conducted in an unstructured manner.

Among the main challenges reported by participants were: Difficulty in assessing organizational impacts, Stakeholder resistance, Lack of objective criteria for change prioritization, Absence of integration between risk analysis and process change decisions.

Although most respondents acknowledge the importance of change management, the data indicate that its practical application is heterogeneous and, in many cases, disconnected from formal risk analysis practices. Additionally, it was observed that changes implemented during early project phases tend to produce better outcomes, reinforcing the importance of structured mechanisms for proactive impact assessment.

5.3. Validation Survey Results

The evaluation of the MAP-BPM methodology by specialists indicated a positive perception regarding the clarity of the proposed stages, the coherence of the methodological flow, and the usefulness of the decision-support artifacts.

Overall, participants highlighted as strengths of the methodology:

- Explicit integration between risk analysis and change management;
- Clear and sequential structuring of stages;
- Support for governance and decision traceability;
- Inclusion of organizational retrospection and continuous learning.

Most specialists assessed the methodology as applicable to real organizational contexts, indicating potential contribution to increased maturity in managing changes in process-oriented environments.

Specific suggestions for refinement were identified, mainly related to detailing prioritization criteria and adapting the methodology to organizations of different sizes.

5.4. Integrated Synthesis of Results

The integrated analysis of both surveys reveals coherence between the diagnosis of organizational practice and the proposed methodology. While the exploratory survey highlighted gaps in structured change handling and integration with risk analysis practices, the validation survey indicated that MAP-BPM directly addresses these needs.

The empirical findings provide preliminary evidence that the proposed methodology contributes to more structured change governance in BPM projects, promoting more informed decision-making, risk reduction, and strengthened organizational learning.

Although the results do not allow for broad generalizations, they offer initial support for the applicability and relevance of the proposal, reinforcing its contribution to both practice and research in process-oriented Information Systems.

6. Discussion and Threats to Validity

This section analyzes the results obtained from the reviewed literature and discusses the main theoretical and practical contributions of the MAP-BPM methodology, as well as its limitations.

6.1. Contributions to Research

The findings of this study reinforce prior evidence in the literature indicating that BPM initiatives face significant challenges related to organizational change and risk management. However, unlike approaches that treat these domains separately, MAP-BPM proposes a structured integration of risk analysis and change management throughout the BPM project lifecycle.

This integration addresses the gap identified in the Systematic Literature Review by offering a methodological model that articulates organizational impact assessment, formalized decision-making, prioritization criteria, and continuous learning. Thus, the study advances the field by proposing not only a conceptual model but also a structured operational flow with defined stages and artifacts.

Furthermore, the combination of systematic review and empirical evidence obtained through surveys strengthens the positioning of the proposal within the Information Systems field, bridging theory and organizational practice.

6.2. Contributions to Organizational Practice

From a practical perspective, MAP-BPM provides organizations with a structured mechanism to manage changes in BPM projects, reducing informality and reactive handling of process modifications.

The formalization of stages such as impact assessment, risk evaluation, and organizational retrospection promotes greater decision transparency, change traceability, and alignment among involved areas. This structuring can contribute to reducing rework, mitigating interdepartmental conflicts, and improving predictability of outcomes.

Additionally, the explicit incorporation of organizational acceptance criteria broadens the traditional risk management perspective, which often prioritizes technical or financial aspects, by including social and governance dimensions.

6.3. Implications for Governance and Socio-Technical Perspective

The findings indicate that the integration of risk analysis and change management should not be treated merely as an operational mechanism, but as a central component of collaborative process governance. In BPM-driven transformations, decision-making rarely

occurs in isolation; instead, it involves multiple stakeholders with distinct roles, expectations, and risk perceptions.

MAP-BPM can be interpreted as a collaborative governance artifact, since it structures communication flows, interdepartmental coordination, and collective decision criteria during process transformation.

From a socio-technical perspective, process changes simultaneously affect technical dimensions (workflows, systems, performance indicators) and social dimensions (roles, culture, communication practices, and stakeholder acceptance). The MAP-BPM methodology contributes by structuring a transparent decision-making flow that explicitly connects impact assessment, risk evaluation, and change formalization, thereby supporting shared understanding among involved actors before implementation.

By formalizing communication artifacts and decision criteria, the methodology enhances traceability and reduces ambiguity in interdepartmental coordination. This structured approach fosters greater alignment between technical teams, process owners, and managerial stakeholders, mitigating conflicts that often emerge from fragmented change handling.

Moreover, by promoting explicit evaluation and documentation of impacts and risks, MAP-BPM strengthens collaborative awareness and collective responsibility in transformation initiatives. Such an approach supports more informed, participatory decision-making and contributes to organizational resilience in dynamic environments, reducing unintended consequences derived from reactive or poorly communicated modifications.

6.4. Limitations and Threats to Validity

Despite its contributions, this study presents limitations that must be acknowledged. First, the surveys conducted were non-probabilistic, limiting broad statistical generalization.

Second, the evaluation of the methodology relied primarily on expert perception regarding clarity and applicability, without longitudinal application across multiple organizational contexts.

Another limitation concerns the participant profile, predominantly associated with organizations exhibiting some degree of BPM maturity, which may influence perceived usefulness of the proposal.

Future research may expand empirical validation through in-depth case studies, controlled experiments, or longitudinal application of the methodology across diverse organizational sectors.

7. Conclusions and Future Work

This paper presented the MAP-BPM methodology, proposed to structurally integrate risk analysis and change management practices within Business Process Management (BPM) projects. The study was motivated by evidence from a Systematic Literature Review indicating that these domains are frequently treated in a fragmented manner in process-oriented transformation initiatives, limiting collaborative governance and shared decision-making.

Through triangulation between literature review and empirical evidence obtained from surveys, the research identified critical gaps related to reactive change handling, the absence of structured prioritization criteria, and the limited integration between organizational impact assessment and risk evaluation. These limitations weaken collective awareness and hinder coordinated action among stakeholders involved in BPM-driven transformations.

As its main contribution, MAP-BPM provides a methodological flow composed of six interrelated stages, integrating formal change registration, impact assessment, risk analysis, decision criteria, monitoring, and organizational retrospection. By structuring these elements, the methodology supports transparency, traceability, and collaborative governance in socio-technical process redesign. The evaluation conducted with experts indicated a positive perception regarding the clarity, applicability, and potential contribution of the methodology to structured change governance in process-oriented environments.

Although the results do not allow broad generalization, they provide preliminary evidence that structured integration between risk and change can strengthen organizational resilience, improve decision traceability, and enhance collective maturity in process management within dynamic and interconnected environments.

Future work includes: (i) longitudinal application of the methodology across different organizational contexts, enabling comparative analysis of collaborative outcomes; (ii) in-depth case studies to assess quantitative impacts on performance indicators; (iii) adaptation of the methodology to specific contexts such as public sector organizations or highly regulated environments; and (iv) investigation of MAP-BPM integration with digital tools and collaborative platforms for process automation, monitoring, and distributed governance.

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