

**DEVELOPING AN OPERATIONAL GUIDELINE AS A VALUE-BASED  
DECISION-SUPPORT MECHANISM FOR RICEFW BACKLOG  
PRIORITIZATION IN SAP S/4HANA IMPLEMENTATION USING VFT AND  
SMART AT PT BUKIT ASAM**



**Dimas Istanto<sup>1</sup>**

**School of Business and Management, Institut Teknologi Bandung, Indonesia**  
[29123402@mahasiswa.itb.ac.id](mailto:29123402@mahasiswa.itb.ac.id)

**Pri Hermawan<sup>2</sup>**

**School of Business and Management, Institut Teknologi Bandung, Indonesia**  
[dimasistanto@gmail.com](mailto:dimasistanto@gmail.com)

---

**Abstract**

This research is motivated by the need, during PT Bukit Asam's (PTBA) 1ERP SAP S/4HANA implementation, to prioritise a cross-module RICEFW backlog under limited time and delivery-capacity constraints. In the observed condition, prioritization tends to be influenced by short-term urgency and unit-level preferences because a structured, transparent, feasible, and documented value-based decision-support mechanism is not yet available to guide cross-functional discussion. Therefore, this study develops a documented value-based decision-support mechanism that can provide a shared evaluation standard and support consistent prioritization and trade-off deliberation across functions. To develop the required mechanism, this study follows the conceptual framework and operationalises it into three sequential stages: Problem Structuring and Criteria Design, Assessment and Initial Prioritization, and Priority Shortlist and Robustness Review. The research is conducted as a value-based MCDA single-case study in the context of PTBA's SAP S/4HANA implementation. Value-Focused Thinking (VFT) is used to derive decision objectives and translate them into a fixed criteria set (C1–C5) with clear definitions and 1–5 scoring rubrics. Cross-functional assessments are collected using the rubrics and aggregated using a SMART-type additive value model to produce a baseline ranking and an initial priority shortlist. Robustness is then examined by applying discrete weight profiles to assess the stability of the resulting ranking and shortlist. The mechanism is documented as an Operational Guideline that consolidates the evaluation standard, prioritization results, and a decision trail summary as a practical input for cross-functional decision meetings. The outputs of this study include a fixed criteria set with scoring rubrics, a baseline ranking of 27 predefined RICEFW groupings, and a provisional Top-15 priority shortlist intended as discussion material for release planning. Across the tested discrete weight profiles, the Top-15 overlap is 14 out of 15 under Weight Profile A and 14 out of 15 under Weight Profile B; in addition, 13 groupings form a stable core that consistently remains in the shortlist across all tested profiles. Weight Profile C is identical to the baseline and is included as a replication check rather than a preference-shift case. In conclusion, these outputs are compiled and documented into an Operational Guideline as a value-based decision-support mechanism that provides a shared evaluation standard, supports consistent cross-functional prioritization discussions, and improves traceability through documented decision inputs.

**Keywords:** SAP S/4HANA; RICEFW Backlog Prioritization; MCDA; VFT; SMART; Operational Guideline; Decision-Support Mechanism; Robustness

## INTRODUCTION

ERP implementation initiatives, including SAP S/4HANA programmes, commonly result in a growing inventory of RICEFW objects (reports, interfaces, conversions, enhancements, forms, and workflows) required to enable target business processes and data integration. As projects progress into the build and testing phases, this backlog frequently expands more rapidly than the available delivery capacity and project timelines. This situation creates an ongoing governance issue concerning how to determine delivery order, identify items that can be postponed, and manage trade-offs under constrained resources. In environments involving multiple stakeholders, prioritization is inherently complex. Perceptions of urgency and business impact often vary across functions, while technical and process interdependencies influence development sequencing, system integration testing (SIT), user acceptance testing (UAT) readiness, and cutover planning. In the absence of a common and well-documented reference framework, prioritization decisions tend to be ad hoc and reactive, driven by immediate pressures and functional preferences. Such practices can result in frequent reprioritization, limited transparency regarding decision rationales, and weak alignment between prioritization outcomes, dependency management, testing scope, and go-live preparedness.

Research in decision-support systems indicates that prioritization decisions are more robust when objectives are clearly articulated, translated into a concise and well-defined set of criteria, and supported by a transparent aggregation approach that incorporates cross-functional perspectives. Multi-Criteria Decision Analysis (MCDA) is widely applied in contexts involving multiple evaluation dimensions and explicit trade-offs. In this study, Value-Focused Thinking (VFT) is employed to elicit and structure decision objectives and to derive evaluation criteria, while a SMART-based additive value model is used to aggregate criterion-level assessments through rubric-based scoring and weighted values. Given that stakeholder preferences and the relative importance of criteria may vary across decision cycles, discrete variations in weight profiles are applied to assess the stability of the resulting priority shortlist under plausible preference shifts. Within this context, the present research examines the SAP S/4HANA implementation at PT Bukit Asam, where a cross-module RICEFW backlog must be prioritised amid limitations in time and delivery capacity. The study seeks to develop an Operational Guideline that formalises a value-based prioritization mechanism suitable for use in cross-functional governance settings. Specifically, the research aims to: (i) articulate decision objectives and translate them into a fixed set of evaluation criteria with clearly defined rubric anchors; (ii) gather and aggregate cross-functional assessments to generate an initial prioritization order; and (iii) produce a priority shortlist and summarise its robustness across multiple discrete weight profiles to support sequencing and project planning discussions.

## REVIEW OF LITERATURE

RICEFW is a commonly used practitioner classification for organising implementation build components in SAP programmes, including reports, interfaces, conversions, enhancements, forms, and workflows (Acharya, 2020; LeanIX, n.d.). In fit-to-standard implementation approaches, these components are typically managed as a backlog and delivered according to agreed priorities. As a result, the RICEFW backlog serves as a

practical unit of analysis and decision-making for governance processes operating under delivery capacity and schedule constraints (SAP SE, n.d.).

Prioritization has long been recognised as a core activity in requirements engineering, particularly when implementation demand exceeds available capacity, because it determines which requirements or backlog items are addressed first and which are postponed. A systematic literature review by Achimugu et al. (2014) consolidates a broad range of prioritization techniques and highlights that their adoption in practice is influenced not only by methodological characteristics, but also by contextual factors such as backlog size, the diversity of stakeholder groups, and the need to reach agreement under time constraints. In multi-stakeholder environments, divergent perceptions of importance and inconsistent interpretations of value often lead to disagreement and volatility in priority-setting, especially when the comparison basis is neither standardised nor traceable across decision cycles.

Multi-Criteria Decision Analysis (MCDA) is widely applied to support decisions that require explicit trade-offs across multiple evaluation criteria when alternatives must be assessed using heterogeneous evidence and perspectives from different stakeholders. Practical guidance for MCDA emphasises the importance of clearly defined criteria, transparency in weighting logic, and outputs that can be readily interpreted and justified in decision forums. In *Multi-Criteria Analysis: A Manual*, Dodgson et al. underscore the central role of robustness testing, arguing that sensitivity analysis is a necessary and integral element of MCA if it is to be useful for policy and governance decisions (Dodgson et al., 2009). This emphasis is directly relevant to prioritization contexts, where outcomes must be defensible, explainable, and open to revision rather than treated as fixed, one-off rankings. MCDA offers a structured framework for assessing alternatives against multiple, potentially competing criteria and for making trade-offs explicit in a transparent manner (Ishizaka & Nemery, 2013; Cinelli et al., 2020). This makes it well suited to cross-functional ERP prioritization, where different organisational units may place varying levels of importance on factors such as compliance risk, business process impact, and delivery feasibility. Through MCDA, it becomes possible to document how a shared priority shortlist emerges from these differing value perspectives.

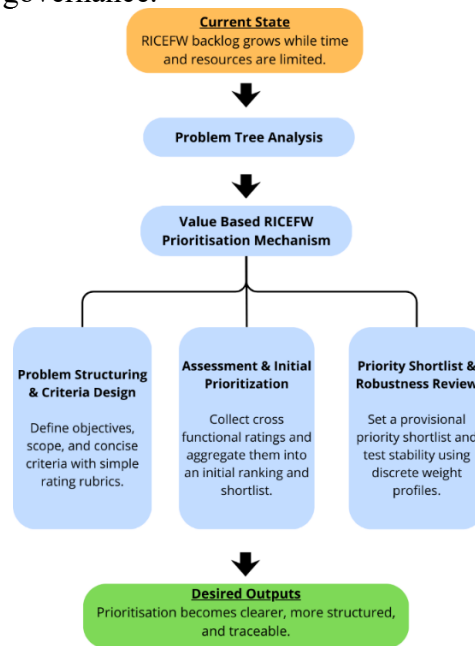
Value Focused Thinking (VFT) approaches decision making by first clarifying the underlying values and fundamental objectives of the decision, and then translating these objectives into operational evaluation criteria (Keeney, 1992). Recent reviews and applied studies indicate that VFT enhances transparency during problem structuring and provides a robust and defensible foundation for subsequent multi-criteria evaluation (Parnell et al., 2013; Françoço et al., 2022). For aggregating criterion level assessments, simple additive value models are frequently selected when clarity, interpretability, and practical usability are priorities. The SMART family of methods, including extensions such as SMARTS and SMARTER, offers an intuitive approach for scoring alternatives against defined attributes and combining these scores using weights, while remaining grounded in the principles of multi-attribute value and utility theory. Edwards and Barron (1994) characterise SMARTS and SMARTER as approximate multi-attribute utility methods based on weight elicitation, noting their reliance on an additive structure to integrate single criterion evaluations into an overall score.

Because judgements about relative importance and weighting can vary across stakeholders and change over time, sensitivity analysis is commonly employed to assess

whether decision outcomes remain stable under plausible variations in model assumptions. Saltelli et al. (2008) define sensitivity analysis as the examination of how uncertainty in model outputs can be attributed to different sources of uncertainty in the inputs. In applied decision-making, this often involves varying criterion weights to reflect alternative preference emphases and observing whether the resulting rankings or shortlists change in a meaningful way. In line with this, Dodgson et al. (2009) describe weight based sensitivity analysis as a means of “simulating different perspectives,” supporting the use of discrete weight profile variation as a pragmatic robustness check in multi-stakeholder prioritization contexts.

### Conceptual Framework

This section outlines the conceptual framework that underpins the study by describing the logical progression from the initial conditions to the intended outcomes. The framework illustrates the relationships between causes and effects within the SAP S/4HANA implementation environment at PT Bukit Asam (PTBA) and demonstrates how the identified business needs are transformed into a structured mechanism for prioritising the RICEFW backlog to support project governance.



**Figure 1.**

### Conceptual framework for the development of a value-based RICEFW prioritization mechanism

The figure presents the underlying research logic, beginning with the initial situation of an expanding cross-module RICEFW backlog constrained by limited time and delivery capacity, progressing through problem tree analysis, and culminating in the design of a value based prioritization mechanism. In this setting, prioritization constitutes a cross functional governance decision influenced by interdependencies among backlog items, which in turn affect development sequencing, readiness for system integration testing (SIT) and user acceptance testing (UAT), as well as cutover planning. In the absence of a straightforward,

shared, and well-documented reference framework, prioritization decisions tend to be reactive, guided by immediate pressures and functional-level preferences. Consequently, priority orders may fluctuate across decision cycles, and the rationale behind changes often becomes difficult to track.

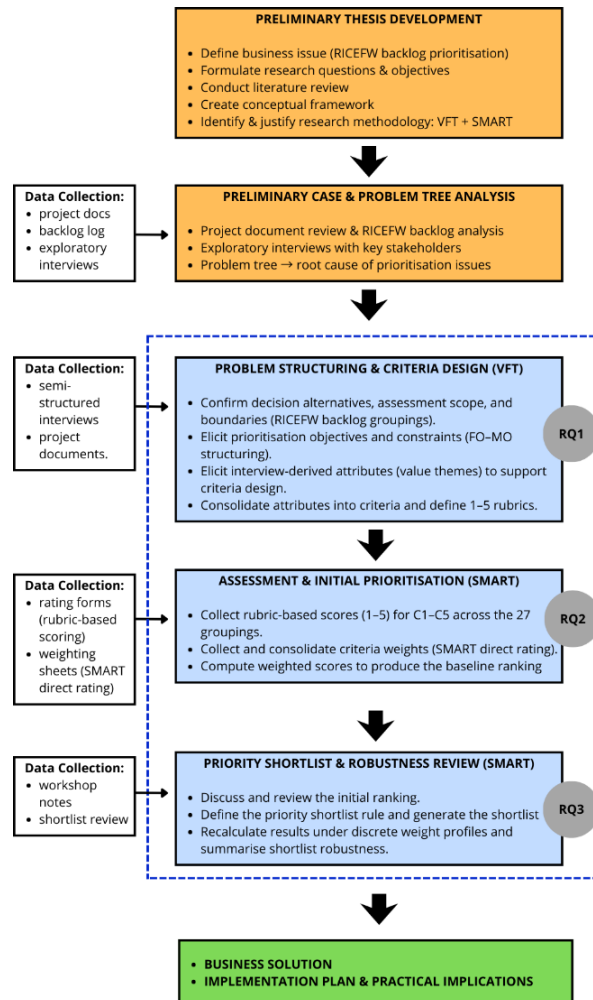
To operationalise this requirement, the framework is structured around three interrelated components. First, Problem Structuring and Criteria Design establishes decision objectives, defines the scope of evaluated alternatives such as backlog groupings, and formulates a compact set of evaluation criteria supported by 1–5 scoring rubrics. Second, Assessment and Initial Prioritization gathers rubric-based assessments from multiple functions and aggregates them into an initial priority ranking and candidate shortlist using a SMART-type additive value model. Third, Priority Shortlist and Robustness Review identifies a provisional shortlist and examines its stability by applying several discrete weight profiles that reflect plausible variations in stakeholder preference emphasis. The framework culminates in the anticipated outcomes: a prioritization process grounded in a clearer evaluative basis, more systematic procedural steps, and improved traceability from results back to criteria, rubrics, and assessment inputs, all supported by appropriate documentation. Accordingly, this study delivers not only a ranked list of priorities but also an Operational Guideline that formalises a value-based decision-support mechanism for RICEFW backlog prioritization within PT Bukit Asam’s SAP S/4HANA implementation project.

## RESEARCH METHOD

This research adopts a design oriented single case study approach situated within PT Bukit Asam’s SAP S/4HANA implementation. The study is intended to develop and illustrate a practical, value-based mechanism for prioritising a cross module RICEFW backlog in the presence of time and delivery-capacity constraints. The selected case context is appropriate because the prioritization challenge is embedded within an active project governance process that involves multiple organisational functions, divergent value perspectives, and interdependencies among backlog items that influence development sequencing, readiness for system integration testing (SIT) and user acceptance testing (UAT), as well as cutover planning. The primary research outcome is an Operational Guideline that documents the decision support prioritization mechanism and its supporting artefacts, enabling its application across multiple decision cycles.

The study draws on both qualitative and quantitative data. Qualitative inputs consist of problem tree analysis outputs, notes from interviews and workshops, and documented formulations of decision objectives, evaluation criteria, and rubric anchors designed to standardise cross-functional interpretation. Quantitative data include rubric based scores assigned to each RICEFW grouping across the defined criteria, baseline and alternative discrete weight profiles, and the resulting SMART aggregate scores, rankings, and shortlist outcomes. Data analysis follows a sequential process aligned with the research design: problem tree analysis is first used to translate observed symptoms into design requirements for the prioritization mechanism; Value-Focused Thinking (VFT) is then applied to structure decision objectives and derive a fixed set of evaluation criteria; SMART based aggregation is subsequently employed to generate the baseline ranking and priority shortlist; and finally, robustness is assessed through discrete weight profile comparisons, in which results are recalculated for each profile and evaluated against the baseline using Top 15 overlap and

rank shifts ( $\Delta$ Rank). Weight Profile C is identical to the baseline and is therefore treated as a replication check rather than as a preference-variation scenario.



**Figure 2.**  
**Research design and data collection flow for the development of a value-based RICEFW backlog prioritization mechanism.**

The figure illustrates the complete research process, starting from the initial case review and problem tree analysis and extending through the three core stages associated with RQ1 RQ3: problem structuring and criteria formulation using Value Focused Thinking (VFT), assessment and initial prioritization employing the SMART method, and the development of a priority shortlist accompanied by robustness analysis based on discrete weight profiles. The figure also identifies the main data collection tools applied at each stage, including project documentation, interviews, rubric-based evaluation forms, and workshop records. Outputs from these stages are subsequently integrated into the proposed business solution and its practical implications. Data collection draws on a combination of project document analysis, exploratory and semi-structured interviews, and structured assessment exercises. Project documentation is used to establish the decision context and to define the

set of prioritization alternatives, including the backlog register and the grouping scheme applied during evaluation. In this study, the decision space consists of 69 RICEFW objects organised into 27 formally approved RICEFW groupings, representing an estimated cumulative development and testing effort of 797 person-days. Interviews and stakeholder discussions with key functional groups involved in the implementation programme are conducted to clarify decision objectives, constraints, and underlying value considerations that inform the design of evaluation criteria. Structured assessment activities are then used to collect rubric based scores and weighting inputs required to generate the baseline prioritization results, followed by workshop based review sessions to confirm the shortlisting rule and to interpret the robustness analysis outcomes.

**RESULTS AND DISCUSSION**

The findings indicate that the prioritization challenge observed in the case setting is not driven solely by the size of the backlog. Instead, it primarily stems from the absence of a shared and well-documented value based reference that enables cross-functional assessments to be aligned and trade-offs to be made explicit and consistent across decision cycles. As synthesised in the problem tree analysis, this insight was consolidated into a single overarching design requirement for the proposed solution: the establishment of an explicit prioritization mechanism characterised by clearly defined objectives, a fixed set of criteria with standardised rubric anchors, a transparent method for aggregating assessments, and a traceable audit trail of decision making.

Consistent with the principles of Value-Focused Thinking, the study structured the decision framework around three fundamental objectives that reflect the key considerations commonly identified as important across functions: safeguarding compliance and control exposure; maximising business process value and operational continuity; and maintaining deliverability under project constraints. These objectives provide a clear value rationale for the prioritization mechanism, in line with the VFT premise that “values are what we care about” and should therefore serve as the foundation of decision-making (Keeney, 1992). The objectives were subsequently translated into a fixed catalogue of evaluation criteria (C1–C5), each supported by explicit definitions, value orientations, and rubric anchors designed to standardise interpretation and scoring across assessors.

**Table 1.**  
**Criteria Catalogue and Rubric Anchors (C1–C5)**

<b>Criterion</b>	<b>Meaning</b>	<b>Score 1 Descriptor</b>	<b>Score 3 Descriptor</b>	<b>Score 5 Descriptor</b>	<b>Value Direction</b>
C1	External obligations & controls	No material link to regulations, audits, tax reporting, or critical internal controls; primarily convenience-driven or	Supports internal policies and controls and improves traceability; limited exposure to external compliance risks	Critical for meeting external regulatory, audit, tax, or compliance requirements and/or preventing control gaps; deferral creates	Benefit (higher is better)

Criterion	Meaning	Score 1 Descriptor	Score 3 Descriptor	Score 5 Descriptor	Value Direction
		reflecting local preferences.	if delivery is deferred.	clear compliance or audit exposure.	
C2	Core process / business impact	Impacts a narrow, non-critical activity; negligible effect on the continuity, throughput, or reliability of core value streams.	Enhances the performance or reliability of an important subprocess; noticeable impact within a specific business area but not enterprise-critical.	Directly affects the continuity and reliability of core value streams; absence results in major disruption, material inefficiencies, or inability to operate key processes.	Benefit (higher is better)
C3	Usage reach & frequency	Used infrequently and by a limited number of specialist users; low operational frequency and narrow reach.	Used on a regular basis by a defined user group or function (e.g., weekly or monthly) and/or has moderate user reach.	Used daily or near-daily and/or impacts a large user base across multiple functions; high operational frequency and broad organisational reach.	Benefit (higher is better)
C4	Integration & change footprint	Confined to a single module or process; minimal integration dependencies and limited change impact.	Involves some cross-functional integration or noticeable change impact; coordination and testing requirements remain manageable.	Requires multi-module or multi-system integration with substantial change impact; high coordination and testing effort and increased dependency risk if delayed.	Benefit (higher is better)
C5	Delivery effort & complexity	Involves simple configuration or minor enhancement; limited build and test effort with	Requires moderate effort with a contained technical scope; medium build and test complexity with	Entails high effort and complex build and test scope (e.g., multi-layer changes, extensive integration and	Cost (reverse-scored to benefit)

Criterion	Meaning	Score 1 Descriptor	Score 3 Descriptor	Score 5 Descriptor	Value Direction
		low technical complexity.	manageable dependencies.	testing); significant delivery risk within the planning window.	

Table 1 presents the five evaluation criteria and their associated rubric anchors, which are used to convert qualitative judgements into consistent 1–5 ratings that can be compared across assessors and organisational functions. An important modelling consideration relates to the effort and complexity criterion (C5). Within the case context, delivery effort represents a cost-type factor, meaning that higher effort is less desirable when delivery capacity and timelines are constrained. To ensure consistency within the additive value model, reverse scoring is applied to C5 so that a higher transformed score corresponds to lower effort and complexity, while retaining the intent of the original rubric descriptors. This approach enhances clarity in governance discussions, as all criteria then share a common value direction, allowing higher aggregate scores to be interpreted unambiguously as indicating more preferred candidates under a given weight configuration.

For aggregation, the study employs a SMART-based additive model using a baseline set of weights alongside several alternative discrete weight profiles that capture plausible variations in decision emphasis. The baseline profile assigns the greatest importance to compliance and control exposure as well as business process impact, whereas the alternative profiles shift emphasis toward a risk-driven governance perspective or toward business value and deliverability. These weight profiles are not intended to represent a fresh elicitation of stakeholders’ true preferences, but rather serve as structured robustness scenarios that reflect realistic changes in emphasis that may arise in cross-functional decision-making forums.

**Table 2.**  
**Baseline and Discrete Weight-Profile Configurations**

Weight Profile	C1	C2	C3	C4	C5	Total
Baseline	0.2875	0.2625	0.1750	0.1688	0.1063	1.000
Weight Profile A (Compliance & Risk First)	0.4000	0.2000	0.1200	0.2000	0.0800	1.000
Weight Profile B (Business Value & Quick Wins)	0.1000	0.3800	0.2800	0.0600	0.1800	1.000
Weight Profile C (Balanced Delivery)	0.2875	0.2625	0.1750	0.1688	0.1063	1.000

Table 2 displays the baseline weighting scheme together with the discrete weight profiles (WpA–WpC) applied to examine whether the resulting rankings and shortlist remain stable under plausible variations in weighting emphasis. Weight Profile C represents the balanced delivery perspective adopted as the baseline and is identical to the baseline weights;

accordingly, it is treated as a no-change reference used for replication purposes, while the robustness analysis concentrates on the variations observed under Weight Profiles A and B. Based on rubric-based assessments provided by multiple functions for the 27 predefined RICEFW groupings, the SMART aggregation generated a baseline prioritization and a Top 15 shortlist that functions as a practical input to the project’s governance forum. The shortlist is headed by several high-scoring groupings characterised by strong relevance to compliance and control requirements as well as broad business process impact, suggesting that the mechanism captures value dimensions that commonly drive ERP go-live readiness and governance decisions. Notably, the shortlist does not consist solely of low-effort items: delivery effort among the Top-15 candidates varies substantially, indicating that the prioritization process makes trade-offs explicit rather than favouring items that are simply easier to implement. From an operational perspective, this distinction enables the decision forum to differentiate between high-value but resource-intensive items that require careful sequencing and capacity planning and those that can be delivered earlier as stabilising quick wins.

To support structured governance discussions, the study adopts a fixed Top-15 threshold (N = 15) as the baseline priority shortlist for each decision cycle. This threshold is not intended to represent a theoretical optimum, but rather to keep the outputs focused and manageable in line with the forum’s decision-making capacity and planning horizon, while ensuring consistency across cycles. This approach aligns with established MCDA practice, where analysis is commonly used “to short-list a limited number of options for subsequent detailed appraisal” (Dodgson et al., 2009).

**Table 3.**  
**Baseline Top-15 Prioritization Results**

Rank	RICEFW ID	Total Value	Effort (Mandays)	N Raters
1	HC-I001	4.5750	51.0	3
2	FI-I004	4.5063	34.5	4
3	FI-I021	4.5063	15.0	4
4	FI-I010	4.4000	44.0	4
5	PP-I001	4.2875	188.0	4
6	HC-E008	4.2375	49.0	3
7	HC-I003	4.2250	45.5	3
8	FI-I008	4.1813	11.5	4
9	MM-I006	4.1125	47.0	5
10	FI-E004	3.9438	18.0	4
11	PP-E002	3.9438	22.0	4
12	SD-I001	3.9438	18.0	4
13	HC-R002	3.9063	18.0	3
14	FI-R001	3.8375	12.0	4
15	FI-I015	3.7875	23.0	4

Table 3 presents the baseline Top-15 shortlist, reporting the aggregate value scores together with supporting attributes, such as estimated delivery effort, that facilitate interpretation of trade-offs and planning considerations. For each RICEFW grouping, ratings provided by multiple assessors were first combined by calculating the mean score for each criterion prior to SMART aggregation. Robustness testing based on discrete variations in weight profiles shows that the resulting shortlist is largely stable, with only minor adjustments. When compared pairwise with the baseline results, the Top 15 overlap reaches 14 out of 15 items under both Weight Profile A and Weight Profile B, indicating that in each scenario, only a single grouping differs at the shortlist threshold. Across all tested profiles, 13 groupings constitute a stable core that consistently remains within the Top-15, while the remaining positions are occupied by borderline candidates whose inclusion depends on shifts in weighting emphasis. Weight Profile C is deliberately defined to be identical to the baseline and is therefore treated as a replication check representing a no-change condition; accordingly, the robustness interpretation centres on the variations observed under Weight Profiles A and B.

**Table 4.**  
**Shortlist Robustness Membership Across Discrete Weight Profiles**

Baseline Rank	RICEFW ID	In WpA?	In WpB?	In WpC?	Stable (All)
1	HC-I001	Y	Y	Y	Y
2	FI-I004	Y	Y	Y	Y
3	FI-I021	Y	Y	Y	Y
4	FI-I010	Y	Y	Y	Y
5	PP-I001	Y	Y	Y	Y
6	HC-E008	Y	Y	Y	Y
7	HC-I003	Y	Y	Y	Y
8	FI-I008	Y	Y	Y	Y
9	MM-I006	Y	Y	Y	Y
10	FI-E004	Y	Y	Y	Y
11	PP-E002	Y	Y	Y	Y
12	SD-I001	Y	Y	Y	Y
13	HC-R002	Y	Y	Y	Y
14	FI-R001	Y	N	Y	N
15	FI-I015	N	Y	Y	N

Table 4 presents an overview of shortlist stability by comparing the baseline Top 15 with the results obtained under each discrete weight profile. The overlap with the baseline shortlist is 14 out of 15 items for both Weight Profile A and Weight Profile B, showing that only a single item changes at the shortlist threshold under each tested shift in preference emphasis. Across all profiles, 13 items constitute a stable core that consistently remains within the Top-15, while the remaining slots are occupied by borderline candidates whose

inclusion varies according to the weighting configuration. In addition to generating a prioritised ranking and a robustness assessment, the principal outcome of this study is the development of an Operational Guideline that formalises the decision-support prioritization mechanism together with its supporting documentation, enabling its application across successive decision cycles. The guideline brings together the decision context, objectives, criteria definitions, rubric anchors, weight configurations, aggregation procedures, the shortlisting rule, and a decision-trail log template to ensure that each prioritization cycle can be reproduced, reviewed, and audited. This approach addresses a common shortcoming in multi-stakeholder prioritization practice, where decisions may be reached but the underlying rationale is difficult to communicate consistently or to revisit when project constraints evolve. From a practical standpoint, the guideline is intentionally designed to be concise and suitable for use in governance forums, complemented by supporting appendices such as the scoring matrix, so that usability under time constraints is maintained without compromising transparency and traceability.

**Table 5.**  
**Operational Guideline Contents and Prioritization Key Contents**

<b>Operational Guideline Component</b>	<b>Purpose in Governance Forum</b>	<b>Key Contents</b>	<b>Link to Research Stage</b>
Decision context & scope	Aligns the decision focus and defines its boundaries.	Decision statement, decision cycle scope, involved units, list of alternatives (RICEFW groupings), key assumptions	Case review and problem tree analysis
Objectives and criteria set	Establishes a shared reference for the values guiding the decision.	Fundamental objectives (FO1–FO3), criteria catalogue (C1–C5), value orientation	VFT structuring
Rubric anchors (rating guidelines)	Standardises score interpretation across assessors.	1–5 scoring anchors per criterion, evidence cues, illustrative examples for each level	Criteria design
Weight configuration	Makes trade-offs explicit and consistent across decision cycles.	Baseline weight set, alternative discrete weight profiles for robustness analysis, rules governing profile selection	Weighting and sensitivity analysis
Aggregation and shortlist rules	Ensures that results are repeatable, transparent, and easy to communicate.	SMART aggregation formula, treatment of cost-type criterion (reverse scoring for C5), Top-N shortlist rule and tie-handling approach	SMART scoring
Robustness summary	Directs discussion toward borderline and sensitive items.	Summary of shortlist stability across weight profiles,	Robustness review

Operational Guideline Component	Purpose in Governance Forum	Key Contents	Link to Research Stage
		identification of stable core versus borderline candidates	
Decision trail log	Preserves traceability and accountability of decisions.	Log template capturing decisions made, supporting evidence, overrides, and underlying rationale	Governance integration

Table 5 summarises the principal elements of the Operational Guideline and illustrates how each component contributes to transparency, consistency, and traceability in cross-functional decision making. Collectively, the findings present a structured and practically applicable approach to prioritising cross-module RICEFW backlogs that explicitly links stakeholder values to evaluation criteria, standardises assessments through the use of rubric anchors, and strengthens the defensibility of decisions through transparent aggregation and systematic robustness analysis. The study advances existing prioritization practice by embedding the method within a governance-oriented Operational Guideline that enables repeatable use and the maintenance of documented decision trails. This contribution is particularly significant for ERP implementation contexts, where prioritization decisions have direct implications for downstream dependency management, testing scope, and go-live readiness, and therefore need to remain explainable and revisitable across successive project cycles.

## CONCLUSION

This study produces an Operational Guideline as the primary solution for implementing value-based prioritization of a cross module RICEFW backlog within PT Bukit Asam’s SAP S/4HANA programme. The guideline translates the prioritization approach into a repeatable decision-support mechanism by integrating the decision context, clearly articulated objectives, a concise set of evaluation criteria supported by rubric anchors, weight-profile configurations, SMART-type additive aggregation and shortlisting rules, a robustness review based on discrete weight profiles, and a decision-trail log template. In practice, the mechanism generates a baseline ranking and a Top 15 shortlist to support governance discussions, while explicitly revealing trade-offs and strengthening traceability from shortlist outcomes back to criteria, rubrics, and cross-functional assessment inputs.

Empirical findings suggest that the core prioritization challenge is not merely the size of the backlog, but rather the lack of a shared and documented value-based reference to guide cross-functional decisions under constraints of time and delivery capacity. By structuring decision objectives, translating them into operational criteria, and aggregating cross-functional assessments through a transparent modelling approach, the study demonstrates that the resulting shortlist exhibits a stable core under plausible variations in weighting emphasis, with observed changes largely confined to borderline items near the cut-off. The study contributes by reframing ERP backlog prioritization as a repeatable governance decision process rather than a one-off ranking exercise, emphasising that decision quality

depends on explicit objectives, operationalised criteria, and traceable reasoning. From a methodological perspective, it shows that moderate variations in weight profiles can serve as a practical and easily interpretable robustness check within project decision forums, enabling decision-makers to distinguish between stable core candidates and borderline items without relying on more complex and resource-intensive sensitivity techniques. From a practical standpoint, the Operational Guideline offers concrete mechanisms to support consistency, transparency, and accountability when priorities are revisited across successive decision cycles.

Future research could assess the mechanism across multiple prioritization cycles to examine whether it reduces volatility in priority-setting and strengthens links to downstream delivery outcomes, such as testing readiness and cutover stability. Comparative studies across different ERP programmes or industry contexts may further evaluate the transferability of the criteria and rubric structures and identify necessary context-specific adaptations. Methodological extensions could also incorporate additional sources of uncertainty, such as assessor confidence levels or explicitly modelled dependency constraints, to enhance robustness analysis while maintaining usability in governance forums.

## REFERENCES

- Acharya, G. (2020). *Developing WRICEF Objects for SAP S/4HANA Cloud*. Rheinwerk Publishing, Inc. (SAP PRESS). Retrieved from [https://www.sap-press.com/developing-wricef-objects-for-sap-s4hana-cloud\\_4952/](https://www.sap-press.com/developing-wricef-objects-for-sap-s4hana-cloud_4952/)
- Achimugu, P., Selamat, A., Ibrahim, R., & Mahrin, M. N. (2014). A systematic literature review of software requirements prioritization research. *Information and Software Technology*, 56(6), 568–585. <https://doi.org/10.1016/j.infsof.2014.02.001>
- Cinelli, M., Kadzinski, M., Gonzalez, M., & Slowinski, R. (2020). How to support the application of multiple criteria decision analysis: A comprehensive taxonomy. *Omega*, 96. <https://doi.org/10.1016/j.omega.2020.102261>
- Dodgson, J. S., Spackman, M., Pearman, A., & Phillips, L. D. (2009). *Multi-criteria analysis: A manual*. Department for Communities and Local Government.
- Edwards, W., & Barron, F. H. (1994). SMARTS and SMARTER: Improved simple methods for multiattribute utility measurement. *Organizational Behavior and Human Decision Processes*, 60(3), 306–325. <https://doi.org/10.1006/obhd.1994.1087>
- Françoço, R., Paucar-Caceres, A., & Belderrain, M. C. (2022). Combining value-focused thinking and soft systems methodology: A systemic framework to structure the planning process at a special educational needs school in Brazil. *Journal of the Operational Research Society*, 73(5), 994–1013. <https://doi.org/10.1080/01605682.2021.1880298>
- Ishizaka, A., & Nemery, P. (2013). *Multi-criteria decision analysis: Methods and software*. John Wiley & Sons. <https://doi.org/10.1002/9781118644898>
- Isbahi, M. B., Zuana, M. M. M., & Toha, M. (2024). The Multi-Social Relation of the Cattle Industry in the Plaosan Subdistrict Animal Market of Magetan Regency. *Malacca: Journal of Management and Business Development*, 1(1), 31–46. <https://doi.org/10.69965/malacca.v1i1.51>

- Keeney, R. L. (1992). *Value-focused thinking: A path to creative decision making*. Harvard University Press.
- LeanIX. (n.d.). *What is RICEFW in SAP? Meaning and examples*. Retrieved June 11, 2025, from LeanIX Wiki: <https://www.leanix.net/en/wiki/tech-transformation/sap-ricefw>
- Parnell, G. S., Hughes, D. W., Burk, R. C., Driscoll, P. J., Kucik, P. D., Morales, B. L., & Nunn, L. R. (2013). Invited review—Survey of value-focused thinking: Applications, research developments and areas for future research. *Journal of Multi-Criteria Decision Analysis*, 20(1–2), 49–60. <https://doi.org/10.1002/mcda.1483>
- Saltelli, A., Ratto, M., Andres, T., Campolongo, F., Cariboni, J., Gatelli, D., ... Tarantola, S. (2008). *Global sensitivity analysis: The primer*. John Wiley & Sons, Ltd.
- SAP SE. (n.d.). *Describing the methodology structure*. Retrieved June 11, 2025, from SAP Learning: <https://learning.sap.com/learning-journeys/managing-sap-s-4hana-cloud-public-edition-projects/describing-the-methodology-structure>