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Enhancing Efficiency in Traditional Travel Agencies: The Implementation of Blockchain Technology at Astrindo Satrya Kharisma

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Abstract: Traditional B2B travel agencies in emerging markets continue to rely on manual, intermediary-heavy workflows despite increasing digitalization in the tourism sector. This study examines how blockchain technology can address operational inefficiencies at Astrindo Satrya Kharisma, an Indonesian travel agency specializing in group tours and MICE services. Using a qualitative case-study approach, data were collected through semi-structured interviews with the Operational Manager and a corporate client, supported by internal document analysis. A fishbone (Ishikawa) analysis identified the root causes of inefficiencies, while Rashideh's (2020) blockchain disintermediation framework was used to evaluate the relevance of five blockchain features: decentralization, trust, security, cost reduction, and speed. The findings reveal that Astrindo's operational challenges stem primarily from low traceability, reflected in limited real-time transaction visibility, inconsistent stakeholder communication, and repetitive administrative processes. To address these issues, a four-phase, twelve-month private blockchain implementation roadmap is proposed, beginning with a pilot involving selected vendors and client accounts before scaling to smart-contract automation of booking confirmation, payment verification, and document management. The study demonstrates that blockchain can function as a structural mechanism for improving traceability and coordination across fragmented B2B travel service chains.

Keywords: Blockchain Technology, Operational Efficiency, Traceability, Disintermediation, Travel Agency.

INTRODUCTION

Tourism remains a structurally important contributor to Indonesia's economy, and the sector's post-pandemic recovery has been accompanied by rising digital expectations rather than a return to pre-2020 operating norms. In the third quarter of 2024, tourism contributed 4.01 percent of national GDP, an increase of 0.11 percentage points from the previous year. While national traveler volume reached 727.56 thousand by June 2025 (Kementerian Pariwisata Republik Indonesia, 2025). Across Southeast Asia, the sector has maintained a significant contribution to regional economic activity, reinforcing the importance of

technology-enabled competitiveness in tourism services (Statista, 2023). Within this recovery, the shift toward digital transformation in Asia's tourism sector is increasingly treated not as a strategic option but as a condition for survival (Nair et al., 2025): travelers now expect real-time service updates, transparent transactions, and seamless digital engagement, expectations that conventional, labor-intensive travel agency operations are structurally ill-equipped to meet.

Astrindo Satrya Kharisma illustrates this tension concretely. Founded in 1987 and operating as a B2B-focused provider of group tours and MICE (Meetings, Incentives, Conferences, and Exhibitions) services, the company has survived four decades of industry change, including a 95 percent revenue collapse during the 2020 pandemic shock, followed by a 280 percent sales recovery in 2021–2022 driven by its corporate client base and hybrid event services. Yet this recovery was achieved without addressing the underlying operating model. Astrindo continues to coordinate bookings, vendor confirmations, payment verification, and client documentation through email threads, spreadsheets, and WhatsApp messaging a centralized, intermediary-dependent workflow that was adequate before the pandemic but is now a structural liability. Such operational dependence on fragmented communication channels remains common among tourism organizations undergoing digital transformation in Asia (Mollah & Sebata, 2022). Digital tools the company has adopted, such as Online Booking Tools (OBT), address surface-level convenience but leave the coordination architecture itself unchanged.

This pattern is not unique to Astrindo. Existing digitization tools available to the tourism sector, including cloud platforms, CRM software, and AI-based chatbots, generally improve efficiency and convenience but do not resolve the deeper problems of trust, traceability, and disintermediation that characterize fragmented, multi-stakeholder service chains (Rashideh, 2020). Blockchain is frequently described as a decentralized digital ledger capable of enabling secure and transparent transactions without centralized control (Swan, 2015). Blockchain technology is distinguished from these tools by its infrastructure-level properties: every transaction is permanently recorded and tamper-proof, smart contracts allow travel terms to self-execute once conditions are met, and peer-to-peer verification reduces dependence on costly intermediaries such as Global Distribution Systems (GDS) and Online Travel Agencies (OTAs) (Rodríguez Bolívar et al., 2025). Recent tourism governance studies further suggest that blockchain can improve transparency, trust, and operational efficiency while reducing dependency on intermediaries across tourism service ecosystems (Nurzynska et al., 2024). For multi-vendor services such as group tours and MICE events, where bookings depend on the coordinated confirmation of hotels, transportation providers, guides, and venues, blockchain's capacity to establish a single, shared source of truth is structurally distinct from incremental digitization.

Despite growing academic interest in blockchain's potential for the tourism sector, the literature remains largely conceptual or sector-level in scope. Rashideh (2020) proposed a foundational disintermediation framework identifying five blockchain features decentralization, trust, security, cost reduction, and speed that jointly reduce reliance on intermediaries in tourism supply chains, but the framework's application has remained largely theoretical. Rodríguez Bolívar et al. (2025) surveyed tourism professionals and found that trust gaps and institutional hesitancy continue to constrain blockchain adoption, while Syed Yaziz et al. (2022) documented that technology adoption across Asia's tourism sector remains uneven and is shaped more by policy readiness and investment capacity than by technological maturity. Recent systematic review evidence indicates that blockchain offers significant potential for enhancing security, transparency, and traceability in tourism and hospitality operations, although practical implementation remains limited and context-dependent (Acikgoz et al., 2024). Nair et al. (2025) argued that strategic innovation,

including blockchain, is essential to Asia's post-COVID tourism recovery, but stopped short of operational specification. Evidence from hospitality and tourism research further suggests that blockchain may improve transparency, coordination, and service efficiency across interconnected stakeholders (Willie, 2019). What remains absent from this literature is a grounded, single-organization account of how blockchain's five disintermediation features map onto the specific, observable inefficiencies of a traditional B2B travel agency, and what an implementation pathway for such an organization would concretely look like.

This gap is particularly consequential for travel agencies operating in emerging Southeast Asian markets, where blockchain adoption remains low despite documented inefficiencies (Rodríguez Bolívar et al., 2025) in vendor communication, manual payment verification, and data retention. Research in logistics and supply-chain settings has shown that blockchain-based systems can significantly improve visibility and traceability among multiple actors involved in a transaction network (Verhoeven et al., 2018). A broader review of blockchain adoption in tourism similarly concluded that implementation barriers are often organizational and institutional rather than purely technological, highlighting the need for applied case-based investigations (Rana et al., 2022). Low adoption in this context represents not only a constraint but an opportunity: early movers stand to redefine service efficiency benchmarks ahead of regulatory and competitive pressure. Astrindo's operational profile B2B group tours and MICE services requiring multi-vendor coordination, repeat-client document handling, and time-sensitive payment verification provides a representative and analytically tractable case for examining this opportunity in concrete operational terms rather than at the level of sector-wide generalization.

Based on this background, the study addresses three research questions. First, what operational inefficiencies currently exist in Astrindo Satrya Kharisma's traditional travel agency model? Second, how can blockchain technology address these inefficiencies and enhance operational efficiency at Astrindo? Third, how does an implementation plan for a blockchain-enabled operational model look for a company in Astrindo's position?

This study contributes to the literature in three ways. First, it provides an empirically grounded, single-organization application of Rashideh's (2020) blockchain disintermediation framework to a B2B group-tour and MICE travel agency, an operational segment that has received limited direct attention relative to consumer-facing OTA platforms. Second, it identifies traceability rather than digitization breadth or cost alone as the structural root cause linking Astrindo's people-, process-, technology-, information-, and coordination-level inefficiencies, offering a diagnostic lens that may generalize to comparable traditional agencies. Third, it translates the disintermediation framework into a concrete, phased private-blockchain implementation roadmap with defined pilot scope, success indicators, and risk mitigation measures, addressing the literature's gap between conceptual blockchain potential and operational implementation guidance.

METHOD

Research Design and Data Sources

This study employs a qualitative case-study design to examine how blockchain technology can address operational inefficiencies within a single traditional travel agency. A case-study approach is particularly appropriate when the objective is to investigate a contemporary phenomenon within its real-world organizational context and where the boundaries between the phenomenon and context are not clearly evident (Yin, 2018). A qualitative approach was selected because the research aims to surface contextual, process-level detail how bookings are coordinated, how documents move between stakeholders, how payments are verified that a quantitative cross-sectional design cannot adequately capture, particularly given blockchain's comparatively limited current application among Indonesian

travel agencies. Qualitative inquiry is well suited to exploring organizational processes, stakeholder experiences, and operational realities that cannot be adequately represented through numerical measurement alone (Creswell & Poth, 2018). The study is solution-oriented: rather than testing a live blockchain deployment, it develops a conceptual model and implementation roadmap grounded in Astrindo’s actual operational constraints.

Primary data were collected through semi-structured interviews with two purposively selected informants: Astrindo’s Operational Manager, whose role spans vendor coordination, cross-departmental communication, and day-to-day administrative processing, and a loyal corporate client who serves simultaneously as the person-in-charge (PIC) for a corporate account and as an individual user of Astrindo’s family travel services. Purposive sampling was employed to select information-rich participants who possessed direct knowledge of the organization’s operational processes and customer interactions (Patton, 2015). This dual-role informant enabled triangulation between institutional and individual customer perspectives within a single interview. Secondary data were drawn from Astrindo’s internal documentation, including booking forms, vendor agreements, standard operating procedures, WhatsApp communication records, and payment approval templates, supplemented by company reports, prior academic literature on blockchain in tourism, and public industry statistics.

Analytical Stages

The analytical procedure followed three sequential stages. The first stage characterized Astrindo’s current operational workflow and identified the structural root cause of observed inefficiencies using a Fishbone (Ishikawa) Diagram. Root causes were classified into five categories people, process, technology, information, and coordination allowing the diverse, stakeholder-reported issues to be traced to a single underlying constraint rather than treated as isolated complaints.

The second stage applied Rashideh (2020) blockchain disintermediation framework to map each of its five constituent features decentralization, trust, security, cost reduction, and speed onto the specific traceability gaps identified in the first stage. This stage produced a structured “as-is” versus “to-be” comparison of Astrindo’s booking, vendor-confirmation, and payment-verification processes.

The third stage translated the conceptual mapping into a phased implementation roadmap, drawing on Cetindamar et al. (2009) technology management framework and Kotter (1996) organizational change model. This stage defined sequential implementation phases, associated key performance indicators, and a risk matrix evaluating organizational, operational, regulatory, and financial risks to adoption.

Table 1. Mapping of Research Questions, Analytical Stages, and Expected Outputs

Research Question	Analytical Stage	Primary Method	Expected Output
RQ1	Operational workflow characterization and root-cause identification	Semi-structured interviews, document analysis, Fishbone (Ishikawa) diagram	Root cause of operational inefficiency identified across people, process, technology, information, and coordination dimensions
RQ2	Blockchain feature-to-inefficiency mapping	Rashideh (2020) disintermediation framework; thematic content analysis	Each blockchain feature linked to a specific traceability gap; as-is/to-be process comparison
RQ3	Implementation roadmap	Technology management	Phased implementation plan

design	framework (Cetindamar et al., 2009); change management principles (Kotter, 1996); risk matrix	with KPIs and risk mitigation measures
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Source: Author’s methodological framework, adapted from the research design described in the underlying thesis.

Data Analysis Method

Given the qualitative nature of the data, content analysis was used as the principal analytical technique. This approach allowed recurring inefficiencies reported across interviews and internal documents to be identified, categorized, and linked to specific blockchain capabilities capable of addressing them for instance, connecting repeated client document resubmission to blockchain’s encrypted, persistent data-storage property, or connecting vendor confirmation delays to smart-contract automation. Content analysis was selected over alternative qualitative methods because the study’s objective was not to generate new theory inductively, but to apply an established conceptual framework (Rashideh, 2020) systematically to a bounded set of operational observations.

Limitations

This study is confined to a single-organization case setting, and its conclusions should be interpreted within Astrindo’s specific operational context rather than generalized to the traditional travel agency sector at large. The qualitative, interview-based design is subject to interpretation bias and may not fully capture real-time transactional complexity. Owing to data confidentiality constraints, some operational and financial details could not be independently verified and are noted accordingly. Furthermore, the study addresses conceptual feasibility and implementation planning rather than live system deployment; consequently, integration costs, IT infrastructure constraints, and post-adoption return on investment fall outside its scope and are identified as directions for future research.

RESULTS AND DISCUSSION

Operational Inefficiency and the Centrality of Traceability

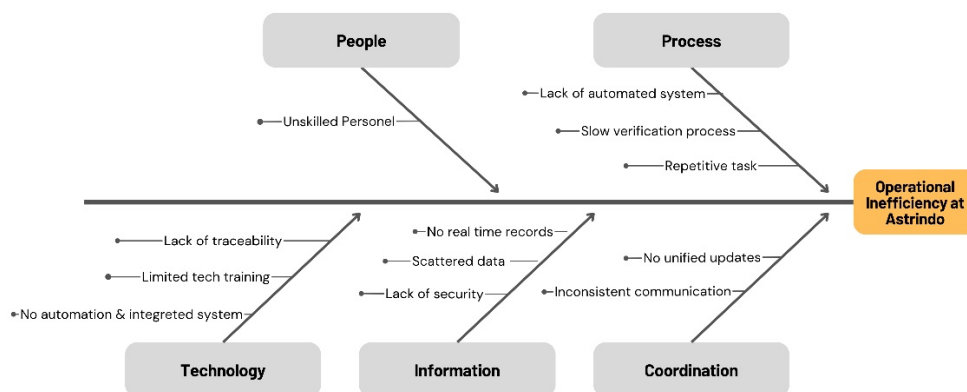
Interviews with Astrindo’s Operational Manager and a loyal corporate client, supported by internal document analysis, indicate that the company’s operational inefficiencies are not isolated procedural complaints but converge on a single structural condition: low traceability. This condition manifests in three interconnected dimensions. First, the absence of real-time transaction tracking. Booking confirmations with hotels, transportation providers, and other vendors are conducted through email and WhatsApp without a centralized dashboard, requiring operations staff to manually contact vendors to confirm availability, pricing, and service adjustments. Payment verification follows the same pattern: customers submit proof of transfer via email or chat, which finance staff then manually cross-check against spreadsheets that are not synchronized with booking records. In time-sensitive bookings, this verification lag has caused missed seat allocations and lost early-bird pricing windows.

Second, inconsistent communication across stakeholders. In the absence of a shared, authoritative record, itinerary changes trigger reactive rather than proactive coordination: staff must manually notify each vendor and revalidate service details, raising the risk of version conflicts where vendors act on outdated information. The Operational Manager reported that this pattern frequently produces late confirmations, payment disputes, and service misalignment during execution consequences that are structural rather than incidental,

since no system exists for any stakeholder to verify the most current transaction status independently.

Third, repetitive manual administrative tasks. Returning clients are required to resubmit full document sets for each new booking, particularly for visa-related travel, because customer data is dispersed across spreadsheets, PDFs, and message logs rather than held in a continuous client record. Operations and finance staff correspondingly spend disproportionate time on reconciliation and follow-up rather than client-facing work, increasing both administrative load and the probability of human error.

A Fishbone (Ishikawa) analysis of these reported issues across five categories people, process, technology, information, and coordination confirms that each category traces back to the same underlying constraint. Unskilled or undertrained personnel produce data-entry errors; manual, repetitive processes generate delay and duplication; fragmented technology prevents any single system from holding an authoritative dataset; scattered, unsecured information undermines data integrity; and inconsistent inter-stakeholder coordination compounds all of the above. None of these categories is independently sufficient to explain Astrindo’s inefficiency; rather, each is a symptom of the absence of a shared, automated, and verifiable record of transactions that is, of low traceability. This finding reframes Astrindo’s challenge: the company does not primarily need more digital tools, but a structural mechanism capable of providing a single source of truth across an inherently multi-party service chain.



Source: Author’s analysis based on interview findings and internal document analysis.
Figure 1. Fishbone (Ishikawa) Diagram of Astrindo’s Operational Inefficiency

Mapping Blockchain’s Disintermediation Features onto Astrindo’s Traceability Gaps

Applying Rashideh (2020) blockchain disintermediation framework to the three traceability dimensions identified above shows that each of blockchain’s five core features addresses a distinct, identifiable aspect of Astrindo’s operational gap, rather than offering a generic digitization benefit.

Decentralization directly targets the absence of real-time transaction tracking and the inconsistency in stakeholder communication. In Astrindo’s current model, the operations department functions as a centralized relay point through which all booking, vendor, and payment information must pass creating a single point of failure and a structural bottleneck. Replacing this relay with a shared, permissioned ledger would give customers, vendors, finance staff, and operations simultaneous, role-based access to the same transaction data, eliminating the need for manual information relay and the version conflicts that arise when stakeholders rely on different, unsynchronized records.

Trust, expressed through blockchain’s transparency, immutability, and timestamping, addresses the lack of a verifiable, real-time record of bookings and payments. Currently,

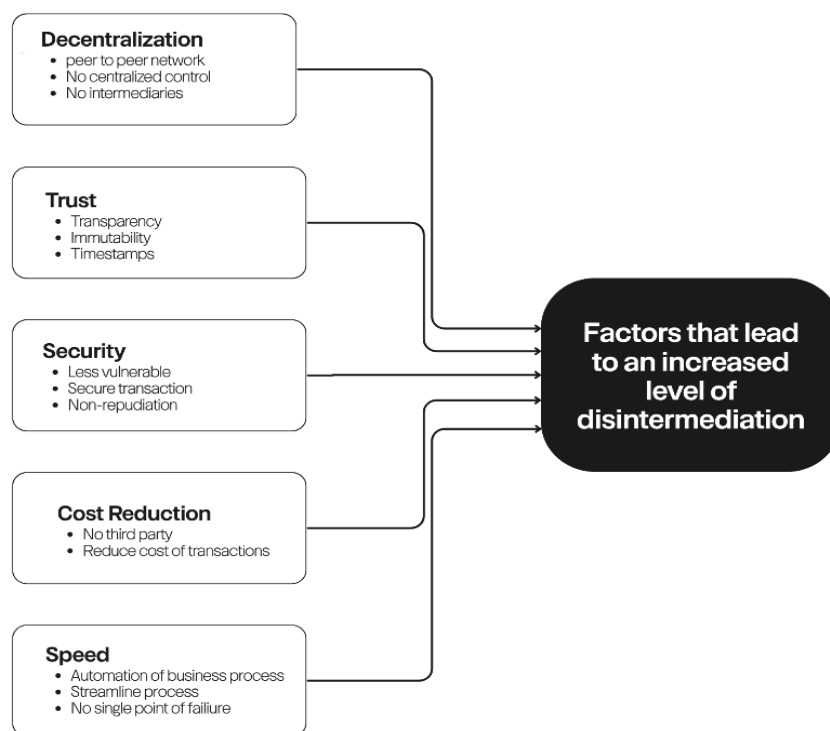
disputes over booking details or payment status at Astrindo are resolved through chat logs and informal recollection rather than authoritative data. A blockchain ledger would generate a permanent, timestamped record of every transaction, visible to all authorized stakeholders, converting traceability from a manual reconstruction exercise into an automatic byproduct of the system’s operation.

Security, comprising vulnerability resistance, secure transaction handling, and non-repudiation, addresses the company’s current practice of transmitting sensitive client data passport numbers, visa documents, payment records through unencrypted messaging applications and email attachments. Encrypting this data on a permissioned ledger, accessible only through authorized keys, would simultaneously reduce data-security risk and eliminate the repeated document resubmission that returning clients currently experience, since verified records could persist securely across bookings.

Cost reduction, achieved by removing reliance on third-party intermediaries such as GDS platforms and OTAs, addresses the financial and visibility costs Astrindo incurs when bookings are routed through external systems that limit insight into real-time pricing and transaction progress. Direct peer-to-peer transactions between Astrindo, its vendors, and its clients would reduce both intermediary fees and the layers of manual verification those intermediary platforms currently necessitate.

Speed, realized through smart-contract automation, addresses Astrindo’s repetitive manual workload most directly. A smart contract can be configured to update booking status automatically once a vendor confirms availability, or to trigger payment reconciliation automatically once proof of payment is validated removing the need for staff to manually re-trigger each of these steps for every transaction.

Table 2 summarizes this mapping, linking each traceability dimension to its corresponding blockchain feature and operational mechanism.



Source: Rashideh (2020)

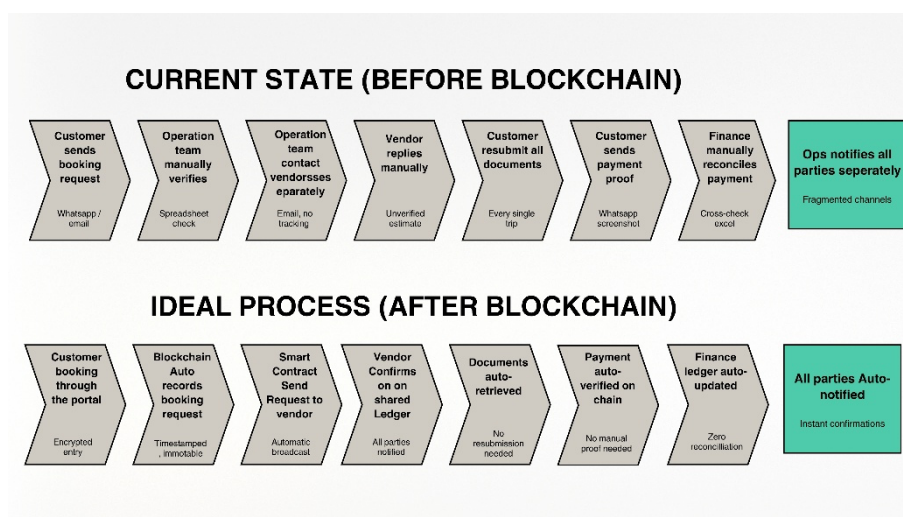
Figure 2. Mapping of Blockchain Disintermediation Features to Astrindo’s Traceability Gaps

Table 2. Mapping of Astrindo’s Traceability Gaps to Blockchain Disintermediation Features

Traceability Gap	Blockchain Feature	Operational Mechanism
Absence of real-time transaction tracking	Decentralization; Trust	Shared, permissioned ledger replaces the operations team as manual relay point; transactions are timestamped and visible to all authorized parties in real time
Inconsistent communication across stakeholders	Decentralization; Security	All stakeholders access a single synchronized record, eliminating version conflicts; access is restricted to authorized participants only
Repetitive manual administrative tasks	Speed; Cost reduction	Smart contracts automate vendor notification, payment confirmation, and booking reconciliation; reduced intermediary reliance lowers manual verification volume

Source: Author’s synthesis based on interview findings and Rashideh (2020) disintermediation framework.

This mapping clarifies an important interpretive point: the shift blockchain offers Astrindo is not simply from “slow” to “fast” processing, but from a system in which information is fragmented and dependent on human intermediaries to one in which a single shared ledger functions as the authoritative source of truth at every step. Figure 3 illustrates this contrast directly across the booking-to-payment cycle: in the current state, each step vendor notification, document resubmission, payment proof submission, reconciliation requires a discrete manual action; in the proposed state, each of these steps is triggered automatically once a predetermined condition is satisfied on the shared ledger.

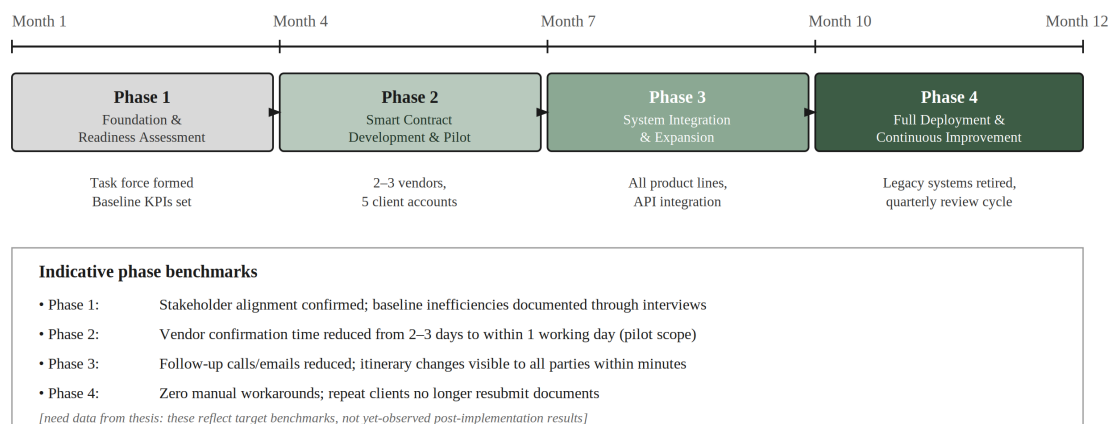


Source: Author’s analysis, adapted from the underlying case-study workflow observation.
Figure 3. Before/After Comparison of Astrindo’s Booking-to-Payment Process Flow

Implementation Roadmap

Given that Astrindo is a privately held corporation handling sensitive client data, a private (permissioned) blockchain is the most appropriate architecture: it restricts ledger access to authorized participants and aligns with the company’s existing data-control expectations more readily than a public blockchain would. Building on Cetindamar et al. (2009) technology management framework and Kotter (1996) organizational change

principles, the proposed implementation roadmap is structured into four sequential phases over a twelve-month horizon, illustrated in Figure 4.



Source: Author’s implementation plan, adapted from Cetindamar et al. (2009) and Kotter (1996).

Figure 4. Four-Phase, Twelve-Month Blockchain Implementation Roadmap for Astrindo

Phase 1 (Months 1–3): Foundation and Readiness Assessment. Management formally commits to the initiative and forms a cross-functional task force spanning IT, Operations, Finance, and a senior vendor representative. This phase conducts an IT infrastructure audit, documents baseline inefficiencies through structured interviews and workflow observation, and establishes the KPI baseline against which all subsequent phases will be measured. The expected outcome is a documented gap analysis identifying which manual workflows are candidates for smart-contract replacement.

Phase 2 (Months 4–6): Smart Contract Development and Pilot. Three priority smart-contract modules booking confirmation, payment verification, and document submission and storage are coded and piloted on a controlled scope: domestic group tours only, with two to three willing vendor partners and five corporate client accounts. Operations and finance staff receive structured training on the new platform, and a minimal client portal is launched to allow repeat customers to submit documents once and track booking status directly. Feedback collected during this phase informs iteration on contract logic and interface design before wider rollout.

Phase 3 (Months 7–9): System Integration and Expansion. The pilot scope expands to all product lines and vendor categories. The blockchain platform is connected to Astrindo’s existing Online Booking Tool and accounting systems via API middleware, and payment automation is extended to cover MICE events, including escrow logic for advance deposits and multi-party disbursements. Legacy manual processes are maintained in parallel for several weeks as a safety net, and a mid-implementation audit compares error rates, verification times, and stakeholder satisfaction against the Phase 1 baseline.

Phase 4 (Months 10–12): Full Deployment and Continuous Improvement. Manual spreadsheet and WhatsApp-based coordination is formally retired, and a real-time dashboard is launched for management, operations, finance, and vendors. A qualitative evaluation is conducted through follow-up stakeholder interviews to assess whether the benefits anticipated in Phase 1 elimination of document resubmission, reduction in vendor follow-up volume, real-time payment visibility have materialized in practice. A quarterly continuous-improvement cycle is established to evaluate new smart-contract use cases, such as loyalty programs or automated visa-status tracking.

Performance is assessed against qualitative success indicators defined at each phase rather than against a single end-state metric, reflecting the conceptual, pre-deployment nature of this study. Indicative benchmarks include a reduction in vendor confirmation time from two to three days to within one working day by the end of the pilot phase, elimination of document resubmission for returning pilot clients, and a measurable reduction in follow-up calls and emails by the integration phase. [need data from thesis: post-implementation KPI results, as these reflect target benchmarks rather than observed outcomes at the time of writing.

Risk Analysis and Mitigation

Implementation risk was assessed across four categories organizational, operational, regulatory, and financial using likelihood and impact ratings derived from the interview findings and document analysis (Table 3).

Table 3. Risk Matrix for Blockchain Implementation at Astrindo

Risk	Category	Likelihood	Impact	Risk Level
Staff resistance to the new system	Organizational	High	Very High	High
Vendor unwillingness to participate	Operational	Medium	High	High
Regulatory and compliance risk (UU PDP No. 27/2022)	Regulatory	Low	Very High	Medium-High
Financial risk (cost overrun)	Financial	Medium	Low	Low-Medium

Source: Author’s risk assessment based on interview findings and internal document analysis.

Staff resistance is the highest-rated risk, reflecting the direct involvement of Operations and Finance personnel in the very processes a blockchain platform would change. Without adequate user buy-in, staff may continue relying on familiar manual methods, neutralizing the system’s intended benefit. Mitigation requires structured, role-specific training, internal blockchain “champions” drawn from Operations and Finance, and a brief parallel-running period during which legacy and blockchain systems operate concurrently to ease the transition.

Vendor unwillingness to participate reflects the reality that a permissioned blockchain’s utility depends on active multi-party participation; smaller vendors with limited technical capacity may be reluctant to onboard. Mitigation involves starting with two to three trusted pilot vendors, emphasizing concrete benefits such as faster confirmation and quicker payment, and ensuring the vendor-facing interface requires no technical blockchain knowledge to use.

Regulatory and compliance risk arises because blockchain’s immutability can conflict with data-minimization and right-to-erasure provisions under Indonesia’s Personal Data Protection Law (UU PDP No. 27/2022) if sensitive client data such as passport numbers is stored directly on-chain. Mitigation requires a privacy-by-design approach in which sensitive personal data is held in a secure off-chain database, with the blockchain recording only anonymized transaction hashes for verification purposes, developed in consultation with legal counsel.

Financial risk is comparatively contained because the phased rollout allows investment to be spread over time and evaluated stage-by-stage before further commitment,

and the use of an open-source platform such as Hyperledger Fabric can reduce software licensing costs relative to proprietary alternatives.

Managerial Implications

Taken together, these findings indicate that blockchain's value for a company in Astrindo's position lies not in digitization for its own sake, but in its capacity to function as a structural traceability mechanism within an inherently fragmented, multi-stakeholder service chain. For operations and MICE teams, the proposed system standardizes procedures and reduces dependence on individual staff to manually bridge information gaps. For the finance division, real-time payment validation reduces reconciliation errors and the verification lag that has previously caused missed pricing windows. For vendors, shared and immutable access to booking and payment data reduces the need for repeated manual follow-up, while for management, the roadmap provides a concrete pathway for future-proofing the company's competitive position in a tourism sector where digital readiness is increasingly tied to vendor selection criteria and client trust (Nair et al., 2025).

This case also offers a broader implication for traditional travel agencies operating in similar B2B, multi-vendor contexts: the diagnostic value of identifying a single structural root cause traceability, in Astrindo's case before evaluating any specific technology. Where digitization efforts proceed without first identifying this kind of structural constraint, they risk addressing symptoms (manual data entry, slow communication) without resolving the underlying condition that produces them. The framework demonstrated here fishbone-based root-cause identification followed by structured feature-to-gap mapping offers a transferable diagnostic sequence for other traditional agencies considering blockchain or comparable infrastructure-level technologies, independent of Astrindo's specific operational details.

CONCLUSION

This study set out to examine whether and how blockchain technology can address operational inefficiencies in a traditional, B2B-focused travel agency, using Astrindo Satrya Kharisma as a case. Three findings respond directly to the study's research questions. First, Astrindo's operational inefficiencies manual coordination, fragmented vendor communication, and repeated document handling are not independent problems but converge on a single structural root cause: low traceability, arising from the absence of a centralized, automated, and verifiable record of transactions. Second, each of Rashideh (2020) five blockchain disintermediation features maps onto a specific dimension of this traceability gap: decentralization and trust address the absence of real-time transaction visibility and inconsistent stakeholder communication, security addresses both data protection and redundant document resubmission, and cost reduction together with speed address the burden of repetitive manual administrative work through reduced intermediary reliance and smart-contract automation. Third, a private, permissioned blockchain implemented through a phased twelve-month roadmap moving from a controlled pilot to full deployment offers a realistic and risk-managed pathway for translating this conceptual mapping into operational practice, provided that staff resistance and vendor onboarding are managed proactively as the highest-rated implementation risks.

The study's principal contribution is to demonstrate that blockchain adoption for a traditional travel agency should be evaluated and sequenced around a single diagnosed structural constraint traceability rather than treated as a generic digital transformation initiative. For Astrindo specifically, this reframes blockchain not as an alternative to its existing digital tools, but as the infrastructure-level layer that determines whether those tools can function as an integrated system rather than as disconnected point solutions. For the broader population of traditional, intermediary-dependent travel agencies in emerging

Southeast Asian markets, the case suggests that sustainable operational transformation depends less on the sophistication of any single technology and more on first correctly diagnosing the structural condition that technology is meant to resolve.

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