Integrating Artificial Intelligence and Programming Interfaces for Social CRM Automation: A TOE-Based Conceptual Framework

Abd Alrahman Ratib Ezmigna[1*], Dr. Norasnita Ahmad[2], Dr. Suraya Miskon[1]

[1]Universiti Teknologi Malaysia, Malaysia

[2]Faculty of Management, Universiti Teknologi Malaysia, Malaysia

***Corresponding author**

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ABSTRACT

Artificial intelligence (AI) and application programming interfaces (APIs) can connect customer messages with organisational records, but technical availability alone does not explain adoption or sustained use. This paper develops a conceptual framework for AI- and API-enabled social customer relationship management (SCRM) automation in business-to-business small and medium-sized enterprises (SMEs). A purposive synthesis of 17 publications dated 2022–2026 combines recent work on the Technology–Organisation–Environment (TOE) framework, SCRM, SME adoption, API integration, and responsible AI. The analysis distinguishes AI interpretation, API connectivity, and organisational authorisation within a customer enquiry workflow. Five propositions explain how integration readiness, workflow ownership, external access and support, task-sensitive review, and recoverability may influence introduction and continuity. The theoretical contribution specifies where established TOE conditions operate when an inferred customer requirement becomes a shared organisational action. Jordanian industrial SMEs provide the intended context for examination, informed by recent local adoption studies. An illustrative workflow links the framework to observable practices without claiming implementation results. The paper offers a basis for qualitative examination and responsible digital innovation; its propositions remain unvalidated.

Keywords: Social CRM, Responsible artificial intelligence, API integration, B2B SMEs, TOE framework

INTRODUCTION

An industrial customer enquiry may contain a product description, dimensions, and a requested delivery date. Progressing that enquiry requires the firm to interpret the message, identify the customer, record the requirements, assign responsibility, and follow up. AI can assist interpretation, while APIs can transfer information between messaging services and CRM applications. Whether that combination becomes a dependable organisational practice depends on how the firm authorises actions, allocates review work, and resolves failures.

The adoption problem therefore concerns a defined customer workflow. An SME may purchase an AI subscription without connecting its outputs to shared records, or connect applications while employees continue transferring information manually. Adoption is defined here as introducing the selected workflow into actual operations. Sustained use means retaining it in routine customer handling and adapting it when staff, systems, or channel conditions change. These outcomes are distinct from productivity or customer satisfaction, which require separate evaluation.

Recent research provides a basis for this distinction. Perez-Vega, Hopkinson, Singhal, and Mariani (2022) review the development of social CRM scholarship, while Religia, Ramawati, Firdausi, and Nainggolan (2025) examine CRM adoption in SMEs. Oldemeyer, Jede, and Teuteberg (2025) synthesise AI implementation challenges, and

Landini and Machado (2026) review AI adoption and performance constructs. Together, these streams motivate examining the organisational conditions under which connected technologies support customer work. They do not establish that accurate interpretation, successful data transfer, and authorised action are equivalent outcomes.

The research question is: How do technological, organisational, and environmental conditions shape the adoption and sustained use of AI- and API-enabled SCRM automation in B2B SMEs? The paper addresses this question by specifying mechanisms within an enquiry workflow. Its contribution is a contextual elaboration of TOE that links familiar adoption conditions to the transition from interpreting a social interaction to taking an accountable CRM action.

Jordanian industrial SMEs are the intended setting for qualitative examination. Recent Jordanian AI adoption studies offer contextual evidence, but their findings cannot independently validate an integrated SCRM workflow. The analysis retains TOE as its sole theoretical framework. It distinguishes the organisational phenomenon being explained from the individual accounts through which future research may investigate it.

The paper also connects responsible digital innovation to the conference theme of innovative collaboration for sustainable entrepreneurship. Employees, customers, managers, and technology providers contribute to defining permissible actions and resolving exceptions. Sustainability is considered in terms of organisational continuity and maintainable customer processes. Environmental benefits and emissions reductions are outside the claims of this conceptual study.

LITERATURE REVIEW

SCRM is treated here as the integration of customer interactions through social platforms and business messaging channels with shared customer management practices. The social interaction must be part of the workflow; synchronising two internal databases alone does not meet this boundary. Emails and historical CRM records may supply context. This operational definition narrows the analysis without replacing the wider SCRM domain reviewed by Perez-Vega et al. (2022).

The relational foundation of SCRM requires attention to how customer information becomes useful across organisational roles. Chatterjee, Chaudhuri, Vrontis, and Thrassou (2023) examine SCRM capability and online marketing communication using responses from employees in Indian firms. Their setting and theoretical approach differ from the present study, but the research reinforces the need to examine organisational use alongside channel integration. Here, the explanatory outcome is adoption and continuity of a customer workflow, rather than a presumed improvement in marketing performance.

AI integration means embedding functions such as classification, extraction, summarisation, or drafting within the workflow. API integration means exchanging information or invoking software operations through defined interfaces. The OpenAPI specification describes HTTP interfaces and their operations and data structures (OpenAPI Initiative, 2025). A specification does not itself grant access, establish data accuracy, or guarantee that a platform supports a proposed operation. Permitted functions must therefore be verified for the chosen channel and CRM service.

Automation is the execution of specified workflow steps with reduced manual intervention. Deterministic operations, such as routing an enquiry using an established customer identifier, differ from interpretive operations, such as inferring a requested product from informal wording. A rules-and-API workflow may automate useful tasks without AI. Conversely, a standalone AI assistant may leave all record transfer and assignment work to employees. The present framework concerns the adoption of an integrated arrangement and allows partial automation where interpretation or consequential commitments require review.

TOE situates organisational technology adoption within technological conditions, internal organisational arrangements, and the external environment. Thomas and Yao's (2023) meta-review traces contemporary TOE research to its original categories and identifies problems in construct classification and contextual coverage. This provides a recent route to the framework's foundations while retaining the present paper's 2022–2026

reference window. Their analysis supports defining conditions in relation to a specific technology, organisational setting, and external environment.

The technological context concerns data quality, identity matching, available functions, integration reliability, and the suitability of AI for the task. The organisational context concerns managerial commitment, resources, staff capability, workflow ownership, and authority to review or correct actions. The environmental context concerns customer channel expectations, platform access rules, provider support, and external obligations. Classification follows the source of the constraint: an external platform restriction differs from the firm's technical ability to maintain a connector or its allocation of staff time for maintenance.

Recent CRM studies show why these contexts require empirical interpretation. Dlamini and Gratsa (2022) apply TOE to SME CRM adoption in KwaZulu Natal. Religia et al. (2025), studying Indonesian SMEs already using CRM, report a prominent role for environmental conditions and digital leadership. Their cross-sectional adopter sample does not explain non-adoption or establish persistence over time. These findings justify examining access and managerial participation without assuming a universal ranking of TOE domains. Other theoretical perspectives used in the cited studies are not incorporated into the present framework.

AI adoption research further distinguishes general willingness from practical implementation. Oldemeyer et al. (2025) identify knowledge, cost, and infrastructure among recurring SME implementation challenges. Landini and Machado (2026) similarly organise adoption and performance research, although their review coverage ends in June 2024. These reviews motivate specifying readiness for the action being delegated. Neither establishes a universal threshold at which every SME should automate customer record creation or responses.

Jordanian evidence supports contextual investigation rather than treating the country as an unexplored setting. Almashawreh, Talukder, Charath, and Khan (2024) survey 364 SME owner-managers and examine technological and organisational conditions shaping attitudes towards AI. Alsawalqah et al. (2026) use interviews with providers, adopters, and firms considering adoption, showing that the salience of conditions differs across stakeholder groups. These studies inform the present attention to capability and readiness. Their findings concern AI adoption more broadly and do not validate the interpretation-to-action mechanisms proposed for industrial SCRM.

API research adds an inter-organisational dimension to connectivity. Heshmatisafa and Seppänen (2023) examine API-driven business models through the case of Amadeus and illustrate the strategic role of exposing digital services to external participants. That large travel-industry case is not evidence of SME SCRM performance. It nevertheless motivates distinguishing the ability to connect from the conditions of participating in another provider's services. In the present framework, external access and support constrain the operations an SME can realistically adopt and maintain.

Evidence on AI-assisted work also limits assumptions about automation benefits. Brynjolfsson, Li, and Raymond (2025) find productivity improvements and variation across workers in a customer support setting. Their findings motivate investigating employee experience and the particular task receiving assistance. They do not establish equivalent benefits for Jordanian industrial SMEs or for autonomous changes to shared CRM records. Performance must be evaluated over the complete handling episode, including review, correction, and follow-up.

Human review requires similar qualification. Vaccaro, Almaatouq, and Malone's (2024) meta-analysis finds that human–AI combinations do not consistently outperform the better standalone performer and that outcomes vary by task. Accordingly, retaining a human approver does not by itself establish effective oversight. The proposed organisational conditions include the reviewer's expertise, available time, access to the source message, and authority to reject or correct an output.

An employee may formally approve an output without checking its meaning or consequences. For example, an inferred delivery date could be accepted as a commitment even though the customer only requested it. The present framework therefore distinguishes nominal responsibility from enacted review. This distinction turns a

general concern about managerial support into an observable question about who examines the original request and what happens when the proposed action is uncertain.

Radich, Basso, and Moraes (2025) examine automatic lead qualification using opinion mining and social media. This demonstrates a relevant technical application, while leaving the present study to explain how an organisation permits and maintains the resulting action. An inferred sentiment or qualification score remains distinguishable from a confirmed customer requirement. Its generation does not authorise a change to shared records.

The framework therefore separates three functions. AI interpretation produces a candidate meaning or draft; API connectivity makes information exchange or a permitted operation possible; organisational authorisation determines whether and by whom the action may proceed. These functions may be combined technically, but each can fail independently. An accurate extraction can reach the wrong account, and a valid transfer can still create an unauthorised commercial commitment.

The resulting gap concerns the passage from a social interaction to shared organisational action. Existing SCRM, CRM adoption, AI assistance, and API studies address related parts of this problem, often at different levels of analysis. Bringing them together allows the enquiry workflow to serve as a boundary within which TOE conditions can be interpreted. The gap is not a claim that earlier research ignored integration or accountability, or that combining the technology labels is itself a theoretical contribution.

The proposed elaboration makes three relationships explicit: readiness depends on the particular action being delegated; responsibility must be enacted through review and exception handling; and continuity depends partly on the capacity to recover after an error or service change. The five propositions below develop these relationships and identify observations that could challenge them. This supplies a more specific explanatory account within TOE while leaving the proposed mechanisms open to empirical revision.

METHODOLOGY

The study uses conceptual model development supported by a purposive literature synthesis. The purpose is to connect established adoption conditions to a defined customer workflow, rather than estimate effect sizes or produce an exhaustive review. The original literature base was checked in September 2026; targeted retrieval for this revision was conducted on 19 November 2026. Seventeen publications dated 2022–2026 are retained in the reference list, comprising scholarly research and two official technical or governance publications.

Discovery used web-indexed scholarly records and targeted publisher and university-repository searches. Search expressions included “technology organization environment” with “2022” and “review”; “social CRM” with “2023” and “review”; “technology organisation environment social CRM SMEs Jordan AI adoption review”; and “API integration enterprise systematic review artificial intelligence SMEs”. Exact-title searches followed relevant leads, including “Exploring API-driven business models” and “Technology-Organization-Environment Meta-Review”. Records were retrieved from sources including SpringerLink, SAGE Journals, ScienceDirect, Frontiers, the University of Hawai‘i repository, and author-affiliated university research portals. These are retrieval sources; no direct Scopus or Web of Science database search is claimed.

Selection required an identifiable publication dated 2022–2026, accessible evidence relevant to at least one analytical component, and sufficient publication information to attribute the claim. Relevant components were TOE foundations or application, SCRM, SME AI adoption, API integration, human–AI work, and governance of automated actions. Jordanian studies were sought to strengthen contextual interpretation. Vendor promotion, unattributed commentary, duplicate records, out-of-window publications, and studies without a clear connection to the workflow argument were excluded. Official OpenAPI and National Institute of Standards and Technology (NIST) publications were retained for interface and risk definitions, not as empirical evidence of adoption.

Titles and available abstracts were examined for relevance, followed by accessible article content, published papers in repositories, or official documentation. Where full text was unavailable, use was restricted to claims

supported by the publisher abstract or author-affiliated publication record. Publication details and persistent links were checked against the accessible source records. The references constitute the retained analytical corpus, not a database-screening flow count. Selection did not use independent duplicate screening. The purposive design and changing web-search rankings limit completeness and reproducibility.

Synthesis proceeded in four steps. First, source notes recorded the study setting, method, focal concept, finding or argument, and limits of transfer to industrial SCRM. Second, the customer enquiry was decomposed into interpretation, exchange, authorisation, and recovery activities. Third, candidate conditions were assigned to TOE domains according to the location of control and the mechanism proposed. Fourth, each proposition linked a condition to adoption or continuity and specified a plausible counterexample. Overlapping conditions were retained where distinct mechanisms could be explained, such as external access permission, technical connector reliability, and organisational maintenance capacity.

The synthesis distinguishes published observations from the authors' conceptual deductions. Research on AI attitudes, CRM adoption, marketing communication, or large organisations informs the problem but does not validate this framework. Candidate explanations were examined against alternatives such as low enquiry volume, adequate manual handling, informal coordination, and customer requirements for direct contact. The contribution is the resulting mechanism-based interpretation and propositions. These are sensitising statements for future inquiry, rather than statistical hypotheses already tested or validated measures.

RESULTS

The conceptual analysis yields a TOE framework and five propositions, accompanied by an illustrative workflow. These outputs are proposed relationships rather than empirical findings. The framework positions the three TOE contexts as equally visible domains of explanation. They are considered together in relation to adoption and sustained use; no ordering of importance is assumed. Table 1 translates the domains into questions that can guide qualitative investigation. Some conditions span domains. API access rules originate externally, whereas the organisation's ability to maintain a connector is technological and organisational. Coding should distinguish these mechanisms rather than force each mention of an API into a single category.

Table 1. Proposed TOE conditions and qualitative indicators

Context	Proposed conditions	Indicative evidence
Technological	Data quality; identity matching; permitted API functions; integration reliability; task suitability	Duplicate records; unavailable fields; failed synchronisation; extraction errors; recovery procedures
Organisational	Management commitment; workflow ownership; staff capability; budget; review authority	Named process owner; training accounts; review workload; maintenance allocation; escalation decisions
Environmental	Customer channel expectations; vendor support; platform access rules; external data obligations	Customer requests; provider assistance; access changes; contractual restrictions; external dependencies

Table 1 identifies the technological, organisational, and environmental conditions and the qualitative evidence through which they may be examined. Figure 1 brings these domains together to show their proposed relationship with the adoption and sustained use of AI- and API-enabled SCRM automation. The figure therefore synthesises the conditions in Table 1 into an explanatory framework for subsequent qualitative inquiry, without implying tested causal effects.

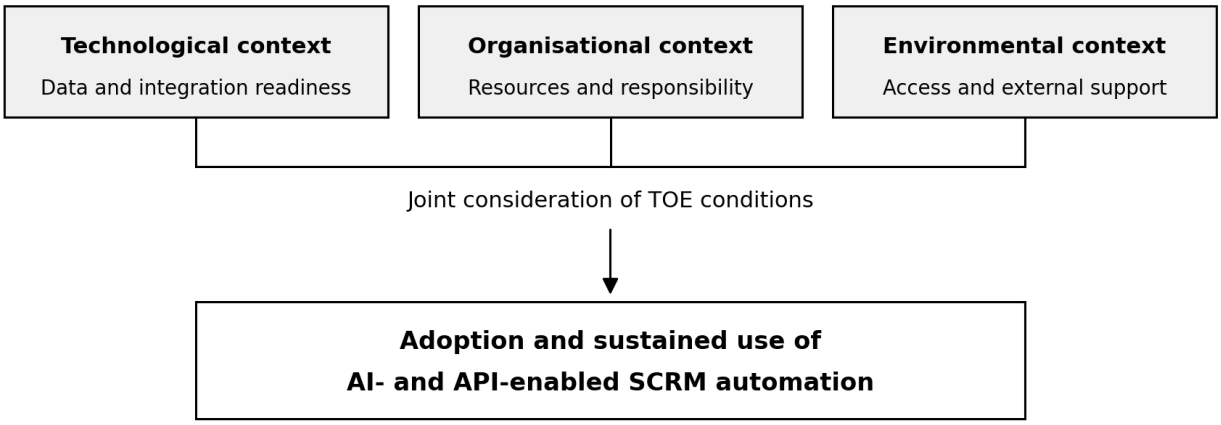


Figure 1. Proposed TOE framework. The arrow denotes an explanatory relationship for qualitative examination, not a tested causal effect. Equal block sizes do not imply equal empirical influence.

Technological readiness is proposed to concern the integrity of the whole transaction. An AI service may extract an enquiry accurately while a connector attaches it to the wrong account. A successful API response may also conceal a semantically incorrect field value. For this reason, the relevant readiness question is whether the workflow preserves the intended meaning and destination of customer information, including when execution is interrupted.

Organisational readiness concerns the ability to absorb the workflow into existing responsibility structures. An automated task still requires someone to define completion, review uncertain outputs, and maintain the process after system changes. If responsibilities remain ambiguous, the system may redistribute manual work into an unattended exception queue. Management support is therefore expressed in allocated time and authority as well as permission to purchase technology.

Environmental conditions concern what the SME cannot determine alone. A customer's preferred channel may create a reason to integrate, but the relevant platform may limit the available operations. External providers may reduce the burden of implementation while creating dependence on their continued support. The framework consequently treats external pressure and external support as distinguishable conditions, rather than assuming that pressure to automate supplies the means to do so.

Research propositions

P1 Integration readiness. Adoption is more likely when the selected workflow has sufficiently consistent customer data and dependable, permitted interfaces. Building on the implementation challenges reviewed by Oldemeyer et al. (2025) and the definition of interface operations in OpenAPI Initiative (2025), this proposition specifies readiness at the point where an interpretation becomes a CRM action. The mechanism is reduced uncertainty about the action's meaning and destination. A firm might nevertheless adopt with poor overall data if a narrow workflow avoids account matching and record modification.

P2 Organisational ownership. Sustained use is more likely when responsibility for operation, exception handling, and maintenance is assigned and resourced. Recent CRM adoption research motivates attention to managerial participation (Religia et al., 2025); the extension here concerns enacted responsibility after introduction. The proposed mechanism is timely resolution of failures that would otherwise return work to manual channels. A named owner without staff time provides weak evidence of this condition, while reliable informal coordination could compensate for limited formal assignment.

P3 External support and access. Customer expectations are more likely to support adoption when permitted platform access and adequate implementation support make the workflow feasible. TOE's external context and API-enabled participation motivate this proposition (Heshmatisafa & Seppänen, 2023; Thomas & Yao, 2023). Its extension distinguishes demand for integration from permission and support to enact it. Strong customer pressure combined with restricted functions may result in partial automation or continued manual handling. External dependence may also complicate later adaptation.

P4 Task ambiguity and retained judgement. For ambiguous specifications or consequential commitments, bounded automation with capable human review is proposed to support sustained use more effectively than delegating the entire response. Task-dependent evidence on AI assistance and human–AI collaboration motivates this conditional relationship (Brynjolfsson et al., 2025; Vaccaro et al., 2024). The extension specifies review capacity as expertise, time, source access, and correction authority. The mechanism is informed control over consequential actions. Review may instead add delay or encourage routine acceptance where these conditions are absent.

P5 Recoverability and continuity. Sustained use is more likely when erroneous or interrupted actions can be detected, traced, and corrected without losing the customer interaction. NIST (2024) motivates attention to generative AI risks; the present deduction treats recovery arrangements as a condition of continued workflow use. The mechanism is reduced dependence on flawless execution. Relevant practices include visible exception queues and verification before repeating a write. Recoverability may matter less for disposable drafts, and this relationship could weaken where manual replacement is inexpensive.

These propositions are intended as sensitising statements for qualitative inquiry. They do not establish statistical moderation or mediation, and they should not be imposed as predetermined interview themes. Evidence that contradicts them is analytically valuable, particularly where informal practices compensate for weak formal controls or where a technically reliable workflow is deliberately rejected.

The required readiness depends on the action delegated. Drafting an internal note can tolerate limitations that would be unacceptable when modifying shared accounts or creating commercial commitments. This boundary condition should be examined through participant accounts, rather than expressed as a universal numerical threshold.

P2 and P4 are connected through the allocation of review work. Comparing nominal approval with actual inspection of source messages could explain different experiences of the same workflow. Formal responsibility alone is insufficient evidence that consequential outputs are being checked.

External support can facilitate introduction while dependence on the same provider constrains later adaptation. Similarly, customers may expect rapid replies while requiring individually negotiated specifications. P3 therefore concerns feasible boundaries of automation rather than assuming that external pressure always increases delegation.

Illustrative automation workflow

Consider a hypothetical industrial SME receiving an enquiry through an authorised business messaging channel. The customer provides a product description, dimensions, and requested delivery date. The proposed workflow captures the message through an available interface, preserves its source identifier, and checks whether it can be associated with an existing customer. Uncertain matches remain unresolved until reviewed; a similar company name alone does not justify merging records.

An AI component proposes structured fields from the message and marks missing information. The original wording remains available beside the extraction. Deterministic checks then test required fields, allowed formats, and unit consistency. The workflow creates a draft opportunity or task using a permitted CRM operation and assigns it to an employee. It may draft a clarification message, but the employee remains responsible for confirming product suitability, prices, and delivery commitments. This example is a design proposal; no implementation success rate is claimed.

Table 2. Proposed workflow boundaries

Step	Automated contribution	Review or control	Link to Table 1
Capture	Receive message and preserve source reference	Use permitted channels and minimise collected data	Environmental: platform access rules, customer channel expectations, and external data obligations.
Interpret	Propose intent, product fields, and a summary	Show original text and unresolved fields	Technological: data quality and task suitability. Organisational: staff capability.
Validate	Check required fields and deterministic rules	Route ambiguous units and account matches	Technological: data quality and identity matching. Organisational: review authority.
Record	Create a draft CRM item and assign responsibility	Prevent duplicate actions and log changes	Technological: integration reliability. Organisational: workflow ownership.
Respond	Prepare a draft acknowledgement or clarification	Approve consequential claims before release	Organisational: staff capability and review authority. Environmental: customer channel expectations.
Recover	Record failures and queue unresolved work	Confirm completion or correct the affected record	Technological: integration reliability and recovery procedures. Organisational: workflow ownership and maintenance allocation.

Customer messages must also be treated as external input rather than instructions that can redefine workflow permissions. Greshake et al. (2023) demonstrate how indirect prompt injection can manipulate applications through retrieved content. The proposed architecture therefore places permission checks outside model-generated text, restricts executable operations, and separates extraction from authorisation. These measures are proposed safeguards, not a guarantee that prompt injection has been eliminated.

The workflow should avoid duplicating records when a message is delivered again or an operation is retried after a timeout. A source identifier can link attempts to one intended action, while unresolved outcomes are checked before repeating a write. Such design choices translate recoverability into an observable organisational practice. They also expose a cost that demonstrations can obscure: somebody must monitor failed transactions and confirm whether the customer's request has actually progressed.

The workflow also requires a distinction between information that is observed and information that is inferred. A customer's explicitly stated delivery date can be stored as a requested date, whereas an inferred urgency label should remain identifiable as a system suggestion. Missing dimensions should remain missing until clarified; plausible completion would change the meaning of the request. Where messages use different languages or units, the system should retain the source expression beside any normalised value. These are proposed design requirements for preserving interpretation, not claims about the language practices of the intended participating firms.

An operational record could link the original message, the proposed extraction, the validation result, the authorised action, and any subsequent correction. Access to that record should reflect employees' responsibilities, and the model should receive only the information necessary for its assigned step. The purpose is to make an unexpected outcome reconstructable: the organisation needs to distinguish a mistaken interpretation from an incorrect account match, a failed transfer, or an employee's later amendment. Recording these distinctions would also support interviews about how staff recognise and repair problems. The appropriate retention period and access arrangements require context-specific decisions before implementation.

Continuity requires a plan for interruptions and changes as well as initial execution. If a connector becomes unavailable, the enquiry should enter a visible queue with a responsible owner and a route for manual handling. When an interface or model version changes, representative enquiries can be checked before the revised

component is allowed to alter live records. Exportable workflow records and documented field mappings may also make replacement of a provider more practicable. These proposals operationalise recoverability and external dependence; they do not imply that an SME can eliminate maintenance costs or guarantee uninterrupted service.

DISCUSSION

The theoretical contribution is a specification of mechanisms within TOE, rather than a new adoption theory or a claim to have discovered integration and accountability. Thomas and Yao (2023) identify contextual and classification problems in TOE research. The present framework responds by locating each condition in a customer workflow and explaining the action it may enable or constrain. Readiness becomes relative to the delegated operation, organisational support becomes observable review and repair work, and external conditions distinguish customer demand from permitted access and provider support.

This distinction also clarifies why apparently similar SMEs may choose different levels of automation. One firm may automate capture and assignment while another delegates drafting as well. Such differences need not represent a simple progression from low to high maturity. They may reflect different task ambiguity, customer expectations, or available review capacity. A defensible automation boundary is therefore part of the adoption decision rather than evidence that implementation is incomplete.

For managers, the model suggests starting with one recurrent workflow and defining both successful completion and exception handling. A comparison should include a manual baseline, a rules-and-API alternative, and an AI-assisted alternative. AI adds value only if the interpretive step improves sufficiently to justify its operating and review burden. Relevant costs include connector maintenance, staff review, and correction of erroneous records, alongside software subscriptions.

Evaluation should separate use from performance. Continued use can be examined through workflow coverage and abandonment patterns. Operational value can be assessed through time to a meaningful response, record completeness, duplicate creation, review minutes per enquiry, and unresolved exceptions. These are proposed indicators, not validated scales. A faster automatic acknowledgement alone would not demonstrate improved handling if the customer still waits for a responsible employee to address the substance of the enquiry.

Evaluation should hold the workflow boundary constant across manual, rules-and-API, and AI-assisted alternatives. Otherwise, an unusually burdensome manual comparison may exaggerate AI's contribution when simpler integration could remove the same transfer work. Both work removed and review or maintenance work introduced belong in the comparison.

Assessment should cover the complete handling episode, including clarification, duplicate repair, and connector maintenance. Quality concerns whether the next action remains faithful to the customer's request and can be progressed by a responsible employee. Acceptable error levels depend on consequences and workload in the particular setting.

The propositions also separate introduction from continuity. P1 primarily explains whether a selected operation appears feasible, whereas P2 and P5 explain how responsibility and repair may maintain use after introduction. P3 explains externally permitted scope, and P4 explains why appropriate automation boundaries vary by task. These relationships elaborate established TOE domains without adding mediation or moderation constructs. They allow a technically connected workflow to be rejected, partially automated, or abandoned for reasons that a general measure of AI adoption intention may conceal.

Responsible innovation and collaborative governance

Collaborative governance is operationalised here through clearly allocated decisions. The SME defines which customer actions may be delegated; employees contribute knowledge about ambiguous enquiries and practical exceptions; customers supply or clarify requirements; and providers explain interface capabilities and maintenance arrangements. These responsibilities can be investigated within TOE rather than treated as an

additional theoretical framework. Their relevance is whether collaboration allows the organisation to identify and correct a problematic action without obscuring responsibility behind the technology.

The ethical contribution concerns the treatment of customer information and the ability to challenge an automated interpretation. In the proposed design, original messages remain distinguishable from inferred values, employees can correct uncertain outputs, and access is limited according to task responsibility. These arrangements give operational meaning to accountability and transparency, consistent with the governance concerns discussed by NIST (2024). They also make trade-offs visible: a rapid response may offer little value if it creates an inaccurate commitment or an unresolved burden for staff. Responsible use consequently requires evaluation of both operational benefits and the work needed to maintain trustworthy customer processes.

Applicability to Jordanian industrial SMEs

Jordan is treated as a context in which to examine the mechanisms, rather than as a sufficient explanation for them. Almashawreh et al. (2024) provide survey evidence on AI attitudes, while Alsawalqah et al. (2026) distinguish the perspectives of providers, adopters, and prospective adopters. The narrower issue addressed here is how an industrial SME converts a socially mediated enquiry into an authorised shared record and sustains that workflow across organisational roles.

Industrial enquiries provide a useful setting because the proposed action can involve product specifications, quantities, units, and requested delivery dates. These are analytical examples, not reported characteristics of the four doctoral case firms. Where an enquiry combines informal wording with a drawing or product code, P1 directs attention to matching and data integrity, while P4 asks whether the reviewer can confirm the intended specification. An uncertain value should prompt clarification rather than completion from an AI-generated guess.

The propositions suggest concrete contextual questions. If account knowledge resides mainly with an owner or salesperson, P2 asks how a shared workflow assigns follow-up when that person is unavailable. If a customer prefers a channel whose permitted interface lacks a required operation, P3 asks how the firm changes the automation boundary. If a record update fails after a network interruption, P5 asks who verifies completion and prevents duplication. Whether such conditions occur, and how participants interpret them, must be established in the Jordanian cases.

Transferability should be assessed through workflow and organisational similarities rather than nationality alone. Relevant distinctions include the consequences of a mistaken specification, reliance on external providers, distribution of customer knowledge, and available review time. A low-volume firm may reasonably retain manual handling despite adequate technology. A more demanding workflow may justify integration while retaining approval for quotations and commitments. These possibilities preserve variation within Jordanian industrial SMEs and avoid treating automation as a predetermined desirable outcome.

Future qualitative investigation and limitations

A subsequent examination could be situated within the wider doctoral study's four Jordanian industrial SME contexts, with individual participants as the unit of analysis. Owners or general managers, IT or digital personnel, sales or business development staff, and customer service or operations employees can explain different aspects of the same workflow. This paper does not analyse those interviews or report case findings. Their existence alone does not validate propositions concerning AI and API integration; relevance, consent, and coverage of the specific workflow must first be established.

Interviews could ask participants to reconstruct a recent enquiry, identify manual transfers, describe system failures, and explain who authorises customer commitments. With appropriate access and consent, workflow documents and demonstrations could help contextualise those accounts. Participants without direct AI experience could discuss readiness and hypothetical scenarios, but their expectations should remain distinct from experienced outcomes. Existing interviews should only support this extension where their content and research permissions actually cover the relevant questions.

The future analysis should align its interpretivist position, inductive coding, and subsequent theoretical interpretation. Braun and Clarke's (2022) discussion of conceptual and design choices in thematic analysis offers a recent methodological reference point. Coding should first attend to participants' meanings; TOE can then support interpretation of recurring patterns without serving as a closed initial codebook. Comparing accounts across firm contexts could reveal why similar technical conditions produce different decisions. Divergence between managerial claims and employees' descriptions of manual repair should remain visible. The propositions would guide analytical questioning without dictating the themes.

The framework remains conceptual and has not been empirically validated. Purposive retrieval cannot establish exhaustive coverage, absence of publication bias, or uniqueness of the proposed mechanisms. Restricting references to 2022–2026 requires engaging with TOE's original foundations through recent retrospective scholarship and limits direct engagement with foundational texts. Evidence from generic CRM, AI attitudes, consumer-facing SCRM, and large organisations has limited transferability to Jordanian industrial workflows. The proposed conditions and indicators require contextual examination and are not validated scales.

The proposed qualitative design should distinguish participants who configure or authorise the workflow from those who use its outputs. Sampling across these roles can reveal why the same automation is described as efficient by one participant and burdensome by another. A participant could be invited to describe an ordinary enquiry and an exception, explain the action taken, and identify what information was available at that moment. Questions should avoid presuming that AI is desirable or that an API connection exists. Where only hypothetical experience is available, the analysis should clearly label anticipated adoption conditions rather than report evidence of sustained use.

Analytical credibility requires a record linking interpretations to interview extracts, contextual notes, and available workflow materials. Reflexive memos should document how researchers' assumptions about automation may influence interpretation. Contradictory accounts, including deliberate preference for manual handling, warrant examination. The four firms remain contexts for interpreting individual accounts, without supporting prevalence estimates for Jordanian SMEs.

Continuity also requires evidence across time. A single interview can reveal an explanation of continued use but cannot establish persistence following a platform change or staff departure. A follow-up discussion or available workflow history could revisit what was retained, abandoned, or repaired. Qualitative examination would assess the plausibility and boundaries of the mechanisms; it would not establish statistical causal effects. Later operational comparisons could assess error rates and handling effort once a suitable implementation and baseline exist.

CONCLUSION

AI interpretation and API connectivity create opportunities for SCRM automation, while TOE helps explain the conditions under which those opportunities may become organisational practice. This paper specifies the transition from an inferred customer requirement to an authorised CRM action and develops five propositions concerning readiness, ownership, external access and support, review capacity, and recovery. Its contribution links established adoption conditions to particular workflow activities and distinguishes introduction from continuity. Recent Jordanian research informs the intended context without validating the proposed framework. The resulting model supports qualitative examination and responsible collaboration among SMEs, employees, customers, and providers. Its explanatory value and operational implications remain to be established through evidence.

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