

From Message Volume to Verifiable Outcomes: Developing a Sustainable Monetization Framework for AI-Enabled Digital Messaging Platforms

Varanjot Kaur

Independent Researcher, USA

ARTICLE INFO

ABSTRACT

Digital messaging platforms support extensive interpersonal and commercial communication, yet their widespread adoption does not automatically translate into sustainable revenue. Conventional monetization mechanisms, including premium subscriptions and business-message charges, face constraints arising from consumer pricing expectations, privacy, the purposeful nature of private conversations, and limited opportunities for conventional advertising. The emergence of artificial intelligence (AI) agents creates new possibilities by enabling messaging platforms to execute authorized tasks and deliver identifiable business outcomes rather than merely transmit information. This study examines the structural limitations of traditional messaging monetization and develops an integrated conceptual framework for evaluating AI-enabled revenue models. This analysis addressed the historical development of messaging economics, existing revenue arrangements, conversational commerce, agent capabilities, computational expenditure, privacy, and communication governance. The thematic synthesis identifies seven interconnected dimensions and indicates that agent-enabled services may support subscription-based, usage-based, tiered, outcome-based, and hybrid pricing arrangements. However, sustainable monetization requires reliable task execution, clearly defined outcome verification, adequate cost recovery, appropriate authorization, and the preservation of user trust. An original outcome–trust–viability framework is proposed to integrate these requirements and generate propositions for future empirical investigation. The study concludes that AI-enabled messaging monetization should be evaluated through verified service value, total operating costs, and responsible platform governance rather than communication volume alone. The findings are conceptual and do not represent statistically validated relationships.

Keywords: AI agents; digital messaging; monetization; conversational commerce; outcome-based pricing; platform economics; user trust; communication governance.

1. Introduction

Digital messaging platforms have become important components of contemporary communication infrastructure, supporting interpersonal interactions, customer engagement, business transactions, and the delivery of digital services (Marino et al., 2018). Applications such as WhatsApp, Telegram, WeChat, LINE, KakaoTalk, and iMessage demonstrate the expanding role of messaging beyond conventional text exchange. Their widespread adoption has created opportunities for platform

operators to generate economic value through commercial communication, payment services, and complementary digital products. Nevertheless, the extensive use of messaging applications does not automatically translate into proportionate revenue generation (Cui et al., 2019). A central challenge concerns the difference between the economic characteristics of private messaging and those of digital services designed around advertising, subscriptions, or the consumption of recommended content.

Conventional digital advertising platforms generally provide interfaces in which promotional material can be incorporated into search results, recommended content, or continuously updated feeds (Dickey & Lewis, 2012). Messaging applications, by contrast, primarily support purposeful communication between identifiable participants. Users typically access these applications to contact particular individuals, respond to enquiries, obtain information, or complete specific activities. The introduction of unrelated advertising into these exchanges may therefore interrupt the activity that motivated the interaction (Sundar et al., 2016). Furthermore, end-to-end encryption, where implemented, restricts access to message content and can prevent platform operators from using private conversations for content-based advertising (Gorwa et al., 2020). It is identified privacy, the absence of conventional recommendation inventory, purposeful user attention, expectations of free communication, and network effects as five structural factors underlying the difficulty of monetizing messaging services. This research describes the contradiction between extensive user adoption and limited direct monetization as the ubiquity paradox.

The historical development of telecommunications pricing has further influenced contemporary messaging economics. Traditional short message service (SMS) operated through charges imposed on individual messages or bundled communication packages (Gerpott et al., 2014). Subsequently, unlimited texting arrangements and internet-based messaging applications reduced the marginal cost experienced by consumers (Rao et al., 2006). These developments established expectations that ordinary interpersonal communication should be available without a separate charge for every message. Although the actual operation of messaging services continues to involve expenditure on computing, network infrastructure, storage, security, and maintenance, these costs are frequently recovered through indirect commercial mechanisms (Patwary et al., 2020). Accordingly, the challenge facing messaging platforms is not simply to introduce a price for an existing service but to develop revenue arrangements that preserve the accessibility and utility of communication while capturing value from activities supported by the platform.

Different messaging applications have adopted distinct approaches to this problem. Telegram's Premium service illustrates the use of subscription charges for additional functionality, whereas paid business messaging enables platforms to generate revenue from specified forms of organizational communication (Gebauer et al., 2020). Other applications have expanded into payment services, financial products, third-party applications, and integrated commercial ecosystems. This manuscript uses Telegram, business messaging, iMessage, and regional applications to illustrate the different opportunities and limitations associated with these approaches. It argues that premium subscriptions depend on a segment of users willing to pay for additional functionality, while business messaging depends on organizational demand and the volume of communication that recipients are prepared to accept. These observations suggest that user adoption and commercial activity are related but distinct dimensions of platform performance (Lee et al., 2025).

Conversational commerce introduces another mechanism through which messaging applications can generate economic value (Illescas-Manzano et al., 2021). Conventional digital transactions often distribute product discovery, evaluation, purchasing, and post-purchase assistance across advertisements, websites, payment systems, and customer-service applications. Messaging-based commerce can consolidate several of these activities within a continuous conversation (Iftikhar et al., 2023). Customers may obtain product information, communicate preferences, discuss prices, initiate purchases, and request assistance without repeatedly moving between separate interfaces. This

research describes this development as the collapse of the traditional marketing funnel into a messaging thread. However, the extent of this integration depends on the availability of payment infrastructure and other supporting services (Lotter & Okoro, 2024). Where in-thread transactions are not supported, customers may still need to access external systems. Moreover, an enquiry or product recommendation does not necessarily produce a completed purchase. Commercial engagement and verified economic outcomes should therefore be distinguished when evaluating messaging-based business models.

The emergence of artificial intelligence (AI) agents introduces a further transformation by enabling messaging interfaces to support the execution of operational activities (Heer, 2019). Conventional chatbots primarily respond to questions, retrieve information, or guide users through predefined interactions. AI agents can extend these capabilities by connecting to external systems and performing authorized operations, including processing service requests, scheduling appointments, updating records, and initiating transactions (Huang, 2025). Under this interpretation, the value generated through messaging may increasingly be associated with completed activities rather than with the number of messages exchanged. An agent that successfully resolves a customer complaint or completes an appointment booking may provide an identifiable outcome that can form the basis of a commercial agreement.

Nevertheless, AI-enabled services introduce expenditure and operational responsibilities that differ from conventional message transmission. Agentic interactions may require repeated model inferences, authentication procedures, external application calls, system integration, error handling, and human supervision (Brohi et al., 2025). These activities create costs that vary according to task complexity and may arise even when an agent fails to complete the requested operation. Consequently, charging exclusively for message delivery may not adequately reflect the cost of providing agent-enabled services (Sowon et al., 2024). Emerging pricing arrangements discussed in This research include subscription-based, usage-based, outcome-based, and tiered models. A hybrid approach may combine a basic message-delivery fee with charges for AI-resource consumption and verified outcomes. However, such arrangements require transparent billing, reliable performance measurement, and mechanisms for resolving disagreements about whether a task has been completed successfully.

Privacy, consent, and communication quality are equally relevant to the sustainability of AI-enabled monetization. Messaging platforms may facilitate commercial activities through information that customers intentionally provide to businesses, such as product preferences, purchasing requirements, and service-related details (Ranieri et al., 2024). This research discusses this information through the concept of zero-party data. However, voluntary disclosure for a particular purpose does not automatically establish unrestricted permission for unrelated marketing, onward disclosure, or autonomous actions (Schäfer, 2023). AI agents introduce additional requirements because they may act on behalf of users across multiple connected systems. Clearly defined authorization, permission management, transparency, and revocation mechanisms are therefore important considerations. Furthermore, automated agents can generate substantial communication volumes at relatively low effort, potentially exposing users to excessive commercial outreach (Murero, 2023). The source manuscript proposes an Agentic Sandbox comprising reputation-based message budgets, graduated permission scopes, and recipient-level controls as one possible response to this problem. These mechanisms are intended to preserve the usefulness of communication while accommodating automated services.

The preceding developments reveal a conceptual problem concerning the relationship between AI capabilities, economic value creation, revenue capture, operating expenditure, and platform governance. Traditional monetization arrangements charge for communication access or activity, whereas AI agents create opportunities to charge for completed tasks (Tan & Huang, 2025). However, successful task execution does not automatically guarantee profitability, and revenue generation does not necessarily ensure user satisfaction or long-term sustainability. The present study therefore

examines the structural constraints of messaging monetization, analyzes emerging agent-enabled revenue arrangements, and develops an integrated framework connecting verified outcomes, economic viability, user trust, and communication governance.

The primary objective of the study is to develop a conceptual framework for evaluating sustainable monetization in AI-enabled digital messaging platforms. The investigation specifically examines how historical pricing expectations and platform characteristics constrain established revenue models; how conversational commerce and AI-agent capabilities modify the potential sources of economic value; how emerging pricing arrangements relate to operating expenditure and verified task completion; and how privacy, consent, user trust, and governance influence long-term sustainability. These objectives are addressed through qualitative documentary analysis in this manuscript. The study does not seek to establish statistically validated causal relationships. Instead, it develops a structured interpretation of the source material and identifies propositions suitable for subsequent empirical investigation.

2. Materials and methods

2.1 Research design

The study adopted a qualitative documentary research design involving thematic analysis and conceptual synthesis. This approach was selected because the principal research objective was to identify and integrate economic, technological, organizational, and governance mechanisms rather than estimate relationships through numerical datasets or experimental intervention. The documentary approach enabled examination of the conceptual arguments presented throughout This research, while thematic synthesis provided a means of identifying recurring issues and integrating them into a framework for future investigation.

The research was conceptual in nature. No original surveys, interviews, platform experiments, financial records, or user-behavior datasets were collected. Quantitative statistical procedures, including regression analysis, hypothesis testing, and structural equation modeling, were not performed. Accordingly, the findings should be interpreted as results of documentary interpretation rather than empirical estimates of platform performance.

2.2 Thematic analysis procedure

The analysis involved an initial examination of This research to identify passages related to revenue generation, pricing expectations, commercial integration, task execution, service expenditure, consent, and governance. These passages were organized into thematic categories according to their relationship with the research objectives. Similar concepts appearing across different chapters were then compared to identify recurring patterns, relationships, and tensions.

Particular attention was given to three analytical distinctions. The first was the difference between transmitting a message and completing an operational task. The second was the difference between the cost of message delivery and the additional expenditure required for AI inference and external system interaction. The third was the distinction between commercially productive communication and automated outreach that may reduce user satisfaction. These distinctions were used to interpret how AI agents may alter the economics and responsibilities of messaging platforms.

The thematic categories were subsequently integrated through conceptual synthesis. The resulting framework was developed by linking task-execution capability and outcome verification with revenue capture, operating expenditure, user trust, and governance. Relationships emerging from this synthesis were expressed as research propositions to facilitate future empirical examination.

The procedure was interpretive rather than a formal quantitative content analysis. Coding frequencies, statistical agreement measures, and intercoder reliability coefficients were not calculated. The findings therefore represent a structured conceptual interpretation of the supplied material.

2.3 Conceptual model development

The monetization mechanism was selected as the principal unit of analysis. Supporting analytical units included AI-enabled interactions, completed activities, business workflows, cost components, and governance arrangements. The model-development process considered the relationships among the value generated by an agent, the revenue captured by the service provider, the expenditure incurred in delivering the service, and the conditions required to preserve user trust.

The framework was developed using an interpretive synthesis rather than model fitting. Its dimensions were selected because they reflect the principal themes identified in this manuscript. To maintain conceptual clarity, the framework distinguishes technological capability from actual task completion, verified performance from assumed economic benefit, and immediate revenue from long-term sustainability. The proposed relationships are therefore suitable for hypothesis development but should not be interpreted as empirically demonstrated causal effects.

3. Results

3.1 Structural constraints and emerging opportunities in messaging monetization

The documentary analysis identified a structural mismatch between the widespread use of messaging platforms and the revenue mechanisms traditionally employed to monetize digital services. The source attributes this mismatch to privacy protections, limited opportunities to incorporate advertisements into private conversations, purposeful user attention, established expectations of free personal messaging, and network effects. These factors collectively influence the commercial arrangements that platforms can introduce without disrupting the underlying communication experience.

Established monetization mechanisms address different aspects of the problem. Subscription services generate revenue from additional functionality, while business-message charges monetize organizational access to consumers. Integrated commercial ecosystems create opportunities through payment services and complementary applications. However, the potential of each approach depends on its specific economic and institutional conditions. The analysis indicates that the total volume of communication cannot, by itself, explain the extent of monetizable value within a platform.

Table 1. Thematic synthesis of structural constraints and emerging opportunities in digital messaging monetization

Analytical theme	Observation derived from the literatures	Implication for monetization
Consumer pricing expectations	Historical changes from per-message SMS charges to bundled and internet-based messaging established expectations of low-cost interpersonal communication.	Charging directly for ordinary personal messages may conflict with established user expectations.
Privacy interface structure	Private conversations provide fewer and conventional opportunities for content-based advertising than search results or recommended feeds.	Revenue models must account for the characteristics of private communication rather than relying exclusively on advertising.

Premium and business services	Subscription and business-message arrangements monetize distinct categories of customers and activities.	Revenue diversification is possible, but demand and communication tolerance constrain individual mechanisms.
Conversational commerce	Messaging can integrate enquiries, product information, payments, and customer support.	Platforms may capture value associated with commercial activities rather than message transmission alone.
AI-agent capabilities	Agents can execute authorized operations through connected applications and business systems.	Completed tasks introduce additional potential units of economic value.
Computational expenditure	AI inference, external integrations, and supervision create costs beyond conventional message delivery.	Pricing mechanisms must account for variation in the resources required to provide agentic services.
Communication governance	Automated outreach may increase message volumes and create risks involving consent, authorization, and user experience.	Sustainable revenue generation requires mechanisms that preserve trust and communication quality.

Table 1 demonstrates that the monetization problem extends beyond the selection of a pricing mechanism. It concerns the relationship between platform architecture, user behavior, commercial activity, technological capability, and communication quality. The introduction of AI agents expands the potential sources of economic value but also creates additional operating costs and governance responsibilities. These findings establish the basis for examining monetization as an integrated economic and organizational process.

3.2 Conversational commerce and the transformation of commercial interactions

The analysis identified conversational commerce as an important transition between conventional messaging and fully agent-enabled service delivery. Conventional digital transactions frequently require customers to move between advertisements, product pages, payment systems, and service applications. Messaging-based commerce may consolidate several of these activities within a continuous interaction, allowing customers to obtain information and complete transactions with fewer changes of interface.

This manuscript emphasizes the importance of payment integration because the absence of in-thread payment facilities may require customers to leave the messaging application before completing a purchase. Consequently, the extent of commercial integration depends on supporting infrastructure rather than messaging functionality alone. The analysis also indicates that commercial activities differ in the ease with which they can be completed through messaging. A straightforward retail purchase may be compatible with a short conversation, whereas a complex organizational procurement process may require multiple participants, documentation, and approvals.

These observations suggest that conversational commerce creates opportunities to monetize commercial activities, but the significance of the resulting value depends on the nature of the completed process. Customer enquiries, product evaluations, transaction attempts, and completed purchases should not be treated as equivalent outcomes. This distinction becomes particularly important when commercial charges are linked to agent performance.

3.3 Evolution from communication-based revenue to outcome-oriented services

The third analytical finding concerns the changing unit of value associated with messaging platforms. Traditional SMS arrangements monetized message delivery, while internet-based applications established communication services with low direct charges for personal use. Business messaging introduced commercial access charges, and conversational commerce expanded the potential to capture value associated with transactions and customer relationships. AI agents create a further possibility by performing authorized activities that generate identifiable operational outcomes.

The source distinguishes chatbots from agents according to whether they produce informational responses or execute actions through external systems. This distinction affects how services can be evaluated. An informational chatbot may be assessed through response quality and user satisfaction, whereas an agent performing a transaction or resolving a service request can additionally be evaluated through operational performance. The resulting economic value may therefore be associated with task completion rather than the number of messages required to complete the task.

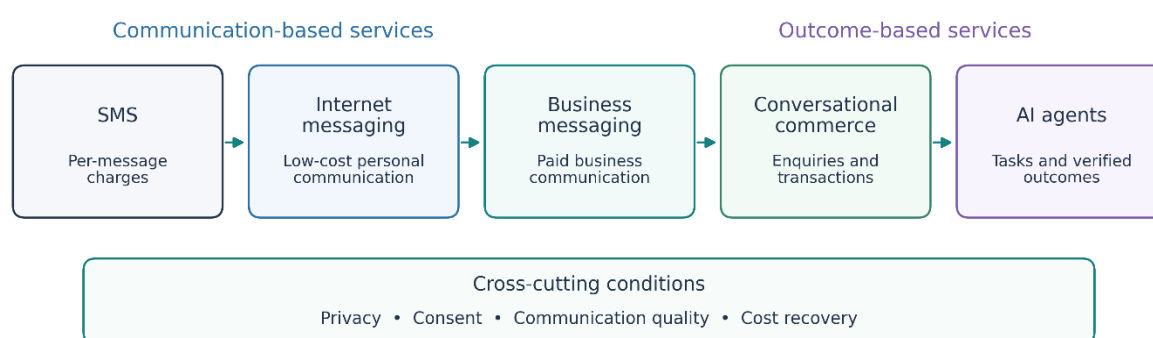


Figure 1. Conceptual evolution of digital messaging monetization from message transmission to AI-enabled outcomes

Figure 1 illustrates the progression from communication-oriented revenue mechanisms toward arrangements associated with commercial interactions and executed tasks. The sequence should not be interpreted as indicating that newer models necessarily replace established arrangements. Rather, the analysis suggests that multiple charging mechanisms may coexist because different activities create different forms of value. Message delivery, premium functionality, computational services, and completed outcomes may each provide a basis for commercial exchange under appropriate conditions.

The transition also affects interface requirements. This research argues that messaging applications supporting agents may need to evolve beyond chronological inboxes to accommodate task status, pending approvals, completed activities, and permission management. Consequently, agent-enabled monetization is associated with changes in both service architecture and the organizational responsibilities of platform operators.

3.4 Economic implications of AI-Agent service delivery

The analysis identified the emergence of differentiated cost structures as a central issue in AI-enabled messaging. Ordinary message transmission involves communication infrastructure, storage, and network expenditure. Agentic interactions may additionally require repeated model inferences, external application calls, authentication, integration, error handling, and operational supervision. These activities vary with task complexity and may generate expenditure regardless of whether the requested outcome is achieved.

This research characterizes this development through the concept of the inference-value inversion. Its central observation is that the expenditure associated with producing AI-enabled content and executing tasks may become economically significant relative to the cost of transmitting the resulting messages. This does not imply that the marginal cost of conventional message delivery has increased. Rather, an additional cost layer has emerged around AI computation and task execution.

For conceptual accounting purposes, total service expenditure may be expressed as:

$$C_{total} = C_{delivery} + C_{inference} + C_{integration} + C_{oversight}$$

where C_{total} represents total service cost, $C_{delivery}$ represents message-delivery expenditure, $C_{inference}$ represents AI-related computational expenditure, $C_{integration}$ represents external system and tool-related expenditure, and $C_{oversight}$ represents operational supervision and governance costs.

The expression is a conceptual accounting identity rather than an estimated empirical model. Its purpose is to demonstrate that the resources required to provide an agentic service extend beyond message transmission. Two interactions involving similar numbers of messages may require substantially different amounts of computation, integration, and human intervention. Consequently, message volume alone may provide an incomplete basis for recovering service expenditure.

The analysis further indicates that expenditure and economic value are not necessarily proportional. A computationally expensive interaction may fail to complete a task, while a comparatively inexpensive interaction may produce a valuable commercial outcome. Sustainable monetization therefore requires separate consideration of resource consumption, outcome verification, and revenue capture.

3.5 Comparative analysis of emerging monetization models

The documentary analysis identified subscription-based, usage-based, outcome-based, and tiered pricing as principal approaches discussed in This research for AI-enabled services. Additional arrangements include success-based fees, priority access charges, agent hosting, and hybrid pricing. These models differ according to the unit of payment, the predictability of expenditure, and the extent to which payments are associated with verified performance.

Table 2. Comparative characteristics of monetization models applicable to AI-enabled messaging platforms

Monetization model	Primary charging mechanism	Potential application	Principal limitation
Subscription-based pricing	Recurring payment for access to specified functionality or service capacity	Premium AI assistants and enterprise agent access	Revenue and customer expenditure may not reflect substantial differences in usage or realized benefit.
Usage-based pricing	Payment according to computational resources, requests, or service units	AI inference and tool-intensive workflows	Expenditure may be difficult to predict and may arise without successful task completion.
Tiered pricing	Charges differentiated by functionality, capacity, priority, or service level	Basic, premium, and enterprise agent services	Service tiers do not necessarily correspond directly to verified outcomes.

Outcome-based pricing	Payment achievement predefined, result	following Completed of a qualified verifiable transactions, and resolved service requests	bookings, leads, attribution, verification, and resolved disputes complicate billing.	Outcome definitions, attribution, verification, and resolved disputes complicate billing.
Agent-hosting model	Charges for deployment, infrastructure, integration, distribution	Third-party or operating messaging environments	agents within	Platform operators retain responsibilities concerning quality, security, and user experience.
Hybrid pricing	Combination of access, resource-consumption, and verified-outcome charges	Enterprise workflows involving communication and AI task execution	Multiple charging components increase billing and contractual complexity.	

Table 2 indicates that the pricing models allocate costs and financial risks differently between platforms and customers. Subscription arrangements provide recurring payments but may not reflect the value produced by individual activities. Usage-based charges more directly reflect resource consumption but may create uncertainty for customers. Tiered arrangements distinguish different service levels without necessarily linking payments to completed tasks. Outcome-based pricing offers a connection between charges and verified activities but requires reliable definitions and measurement procedures.

The analysis identifies hybrid pricing as a mechanism for distinguishing the expenditure associated with message delivery and AI resources from additional fees associated with completed activities. This research specifically discusses a transitional arrangement involving message-delivery charges, AI-usage fees, and outcome-related payments. However, such an arrangement requires clearly documented charging conditions and transparent metering to avoid creating confusion or disputes.

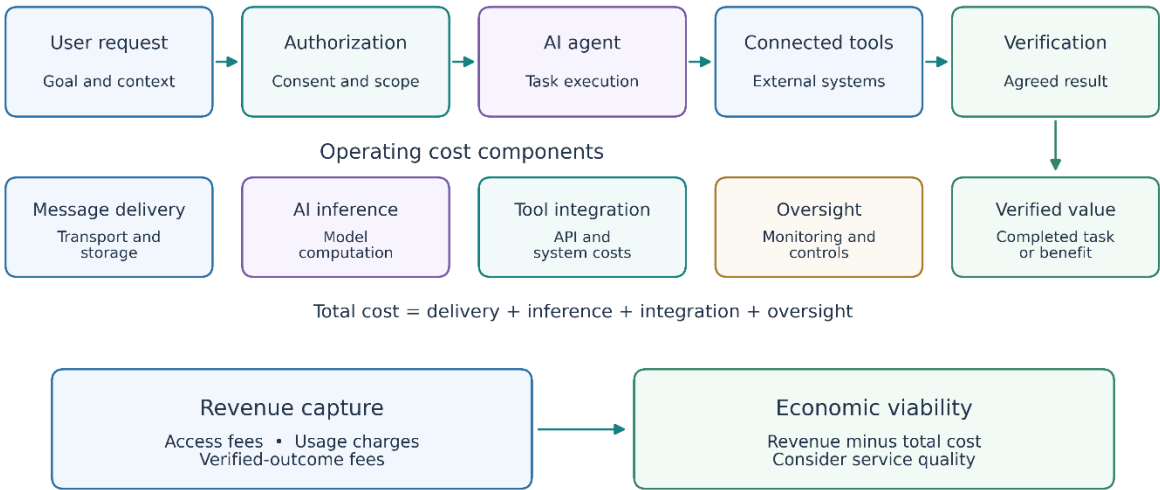


Figure 2. Conceptual relationship among AI-agent task execution, service expenditure, outcome verification, and revenue capture.

Figure 2 illustrates how an agent-enabled interaction may progress from a user request and authorization through task execution, external system integration, and outcome verification. The figure also separates cost components from revenue capture. This distinction is important because successful

execution may create customer value without necessarily generating sufficient revenue to cover the expenditure incurred by the service provider.

The platform-level financial contribution can be expressed conceptually as:

$$\Pi_{service} = R_{service} - C_{total}$$

where $\Pi_{service}$ represents service-level financial contribution, $R_{service}$ represents revenue attributable to the service, and C_{total} represents the relevant total service expenditure. A positive contribution is necessary for the service to recover its identified costs, although broader business profitability may also depend on expenditures outside this accounting boundary.

3.6 Privacy, consent, and user trust

The analysis identified privacy and user trust as important conditions influencing the commercial feasibility of messaging-based services. This research discusses how encrypted messaging can constrain content-based advertising while allowing other revenue mechanisms to operate through business communication, transactions, subscriptions, and information voluntarily shared by customers.

The concept of zero-party data is particularly relevant in this context. Customers may directly communicate their preferences, requirements, and purchasing intentions to businesses during an interaction. Such information can support relevant service delivery without requiring the messaging platform to inspect private conversations for advertising purposes. Nevertheless, voluntary disclosure should not be interpreted as unrestricted authorization. Consent associated with a particular commercial activity does not necessarily permit unrelated outreach, onward sharing, or other uses of the information.

AI agents introduce additional requirements because delegated activities may involve external systems and consequential actions. The analysis therefore identified authorization boundaries, transparent agent identity, permission management, and the ability to review or revoke delegated access as important dimensions of service governance.

3.7 Communication quality and agent governance

The final thematic finding concerns the potential effects of automated communication on the quality of messaging environments. AI agents reduce the effort required to generate personalized messages and initiate commercial outreach. Consequently, a platform may experience increasing automated message volumes even when individual senders comply with applicable permissions or commercial rules.

This research proposes an Agentic Sandbox comprising three mechanisms: reputation-bound message budgeting, graduated permission scopes, and recipient-side dampening. Reputation-based budgets would link an agent's permitted communication volume to recipient responses and other performance indicators. Graduated permissions would allow communication privileges to expand as an agent establishes a positive record, while recipient-side controls would limit aggregate automated outreach. The source also acknowledges potential concerns involving centralized platform authority, barriers affecting new agents, and the possibility of restricting communication that recipients actively want.

The synthesis indicates that communication governance must address both individual agent behavior and the combined effects of automated activity across the platform. A commercially productive interaction may benefit a business while contributing to excessive communication pressure on a recipient. The long-term consequences of monetization therefore depend on preserving the relevance and acceptability of communication rather than increasing message volumes without regard to recipient experience.

4. Discussion

4.1 Transformation of the unit of economic value

The findings indicate that a central feature of AI-enabled messaging monetization is the distinction between communication activity and completed operational outcomes. Traditional pricing mechanisms frequently rely on measurable units such as messages delivered, service access, or premium functionality. These units provide relatively straightforward approaches to billing but may not fully capture the value generated through commercial interactions. Customers generally engage with businesses to accomplish identifiable objectives, including obtaining information, completing purchases, arranging services, and resolving problems (Petri & Jacob, 2016). When AI agents perform these activities, the resulting value may be more closely associated with successful task completion than with the number of messages exchanged.

This distinction does not imply that communication-oriented pricing will necessarily disappear. Message delivery remains an important service, and access-based charges may continue to be appropriate where the principal value concerns the availability of a communication channel. The more significant development is the possibility of separating communication services from computational resources and operational outcomes. Different activities can therefore generate distinct charging units within the same platform.

Figure 1 represents this transition as a conceptual progression rather than a sequence in which each new revenue model replaces its predecessor. Subscription services, paid business messages, conversational commerce, and agent-enabled activities may coexist. Their commercial suitability depends on the nature of the service provided, the expenditure incurred, and the ability to identify a legitimate basis for payment.

4.2 Outcome verification and value attribution

Outcome-based pricing offers a mechanism for connecting payment with the activities completed by AI agents. However, the successful execution of a task, the verification of an agreed result, and the creation of incremental economic value are distinct concepts. A customer service ticket may be marked as resolved even when the customer remains dissatisfied. Similarly, a completed transaction may result from several influences, including previous advertising, product characteristics, customer loyalty, and human assistance (Jaiswal et al., 2018). Consequently, the fact that an agent participated in an activity does not necessarily establish that it generated the entire associated economic benefit.

The findings indicate that outcome-based contracts require clearly defined performance criteria and reliable verification procedures. Where payment depends on resolving a complaint, the parties must agree on what constitutes resolution and how subsequent disputes will be handled. Where charges are associated with qualified leads, qualification criteria should be specified before billing. Completed transactions may provide more readily observable results, although attribution, cancellations, refunds, and other contractual conditions remain relevant.

These requirements suggest that the commercial advantages of outcome-based pricing must be assessed alongside the expenditure associated with performance measurement and dispute resolution (Chidavaenzi et al., 2025). A model may theoretically align customer payments with completed activities while becoming operationally inefficient if verification generates substantial administrative costs. Hybrid arrangements may accommodate this difficulty by recovering identifiable resource expenditure separately from payments associated with verified results. However, this possibility requires empirical testing rather than assumption.

4.3 Economic viability and operational transformation

The findings indicate that agentic services introduce a broader cost structure than conventional communication infrastructure. Although message delivery may remain relatively inexpensive, the expenditure associated with AI inference, connected applications, system integration, and operational supervision can vary substantially among tasks. Consequently, profitability cannot be assessed solely through the number of interactions processed or the volume of revenue generated.

Figure 2 distinguishes the resources consumed during service delivery from the subsequent verification and monetization of results. This separation is important because an agent may consume computational resources without generating a billable outcome. Alternatively, a relatively inexpensive task may produce substantial value for a business. The financial sustainability of the service depends on the relationship between attributable revenue and the total costs of providing it.

AI-agent deployment also introduces organizational responsibilities extending beyond software procurement (Hughes et al., 2025). Businesses may need to establish escalation pathways, determine the scope of delegated authority, monitor performance, correct errors, and supervise exceptional cases. This research's digital employee model emphasizes that deploying an agent involves decisions about responsibilities, authority, oversight, and performance evaluation. The actual economic benefits of such deployment should therefore be assessed using the full range of associated expenditure rather than the price of the AI service alone.

The findings additionally suggest that operational outcomes may vary across business activities. Some processes involve clearly defined tasks and straightforward verification, whereas others require substantial judgment, negotiation, or coordination among participants. The suitability of a pricing arrangement consequently depends on the nature of the workflow and the costs of measuring performance.

4.4 Privacy, trust, and long-term commercial sustainability

The analysis identifies user trust and communication quality as conditions that may influence the sustainability of AI-enabled monetization. Commercial strategies can create immediate revenue while imposing costs on recipients through excessive outreach, unwanted interruptions, or unreliable automated actions. These effects may be difficult to capture through conventional revenue indicators but remain relevant to the continued attractiveness of the messaging environment.

Privacy-preserving commercial interactions provide one approach to creating value while limiting unnecessary access to conversational information. Customers can communicate relevant requirements directly to businesses, and AI agents can perform specified tasks within clearly defined authorization boundaries (Acharya et al., 2025). However, consent should remain specific to the activities for which it was provided. An agent's ability to perform an action does not establish that the user has authorized that action.

The Agentic Sandbox proposal illustrates the relationship between monetization and governance. Reputation-based communication privileges may create incentives for agents to produce interactions that recipients consider useful, while permission controls and recipient-level limits may reduce unwanted outreach (Schmid et al., 2023). Nevertheless, reputation systems also create risks involving the concentration of platform authority and differential treatment of new participants. As the source recognizes, effective governance requires transparent rules, accessible review procedures, and flexibility when recipients actively request high-frequency communication.

The broader implication is that communication quality should be evaluated alongside financial performance. A revenue model that rewards increasing message volume without considering recipient experience may generate different long-term consequences from one associated with verified service

value and appropriate communication practices. The relationship between these factors remains an important subject for empirical investigation.

5. Development of an integrated conceptual framework

5.1 Proposed outcome–trust–viability framework

Based on the thematic synthesis, the present study proposes an outcome–trust–viability framework for evaluating sustainable monetization in AI-enabled messaging platforms. The framework integrates three interdependent dimensions: outcome validity, trust preservation, and economic viability. These dimensions represent the principal requirements identified through the analysis of task execution, pricing, expenditure, privacy, and communication governance.

Outcome validity concerns whether an AI agent performs an authorized activity and produces a result satisfying predefined criteria (Batarseh et al., 2021). This dimension requires reliable execution, clear definitions of successful performance, and appropriate verification. Trust preservation concerns the maintenance of confidence through privacy protection, informed consent, transparent agent behavior, and acceptable communication practices (Li et al., 2024). Economic viability concerns the relationship between revenue capture and the total expenditure associated with service provision, including the costs of computation, integration, supervision, and governance.

The dimensions are interdependent rather than interchangeable. An agent may deliver valid outcomes while remaining financially unsustainable because of excessive operating expenditure. A service may generate revenue while undermining user confidence through intrusive communication or unreliable behavior. Similarly, a service that preserves trust may remain commercially unviable if it does not create sufficient value to justify the resources required for its operation. The framework therefore treats sustainable monetization as an integrated condition involving verified service value, cost recovery, and protected communication.

Table 3. Dimensions, proposed indicators, and research propositions of the outcome–trust–viability framework

Framework dimension	Conceptual meaning	Illustrative indicators for future research	Proposed relationship
Agent capability	Ability to perform authorized activities through connected systems	Supported workflows, task-execution rate, human escalation	Greater task-execution capability may expand the range of commercially valuable services.
Outcome validity	Extent to which completed activities satisfy agreed performance criteria	Verified completions, errors, reopened cases, disputed outcomes	Reliable outcome verification may improve alignment between payments and completed service activities.
Economic viability	Relationship between attributable revenue and total provision costs	Revenue per task, inference expenditure, integration costs, contribution margin	Computational and operational expenditure may influence the financial consequences of agent deployment.

User trust	Confidence in privacy, reliability, authorization, and agent behavior	Satisfaction, consent, withdrawal, complaints, retention	Trust-preserving practices may influence continued participation in agent-enabled services.
Communication governance	Mechanisms controlling automated outreach, permissions, accountability	Unwanted-message reports, and violations, outcomes	Governance controls may reduce unwanted outreach while potentially affecting access for new agents.

Source: Original conceptual framework developed from the documentary synthesis. The indicators and proposed relationships have not been empirically validated.

Table 3 translates the principal findings into dimensions that can be investigated through future empirical studies. Agent capability provides the technological basis for task execution, while outcome validity determines whether agreed performance requirements have been satisfied. Economic viability concerns cost recovery and financial contribution. User trust and communication governance address the conditions under which agent-enabled commercial activities can be sustained without undermining the communication environment.

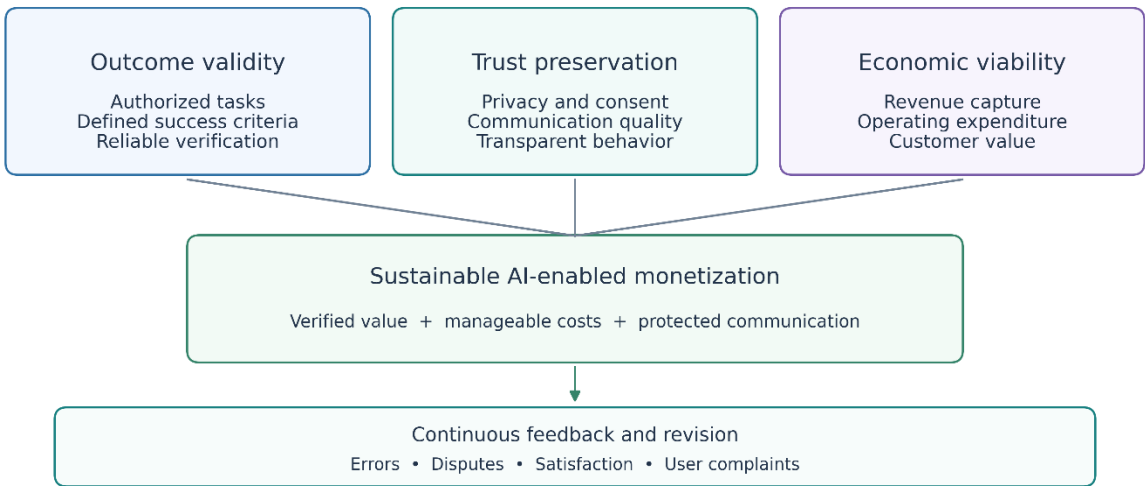


Figure 3. Proposed outcome–trust–viability framework for sustainable AI-enabled messaging monetization

Figure 3 illustrates how outcome validity, trust preservation, and economic viability jointly inform the evaluation of agent-enabled monetization. The framework also includes a feedback dimension through which errors, disputes, satisfaction, and complaints can inform revisions to service design and governance practices. Such feedback is conceptually important because agent performance and user expectations may change as services are deployed across additional activities and populations.

5.2 Development of research propositions

The framework generates several relationships suitable for empirical examination. The first proposition concerns the association between agent capability and the range of commercially valuable activities supported by a messaging platform. As agents become capable of executing additional authorized workflows, platforms may be able to provide services extending beyond communication and

information retrieval. This relationship could be investigated through measures of supported tasks, successful execution, and the commercial value associated with completed operations.

The second proposition concerns the role of outcome verification in pricing. Clearly defined and reliably verified outcomes may improve the alignment between service charges and completed activities. However, the strength of this relationship may depend on the cost and complexity of measurement. Research examining billing disputes, performance accuracy, contract design, and customer satisfaction could assess whether outcome-based arrangements produce the anticipated alignment under different operational conditions.

The third proposition concerns the relationship between computational complexity and economic viability. Activities involving repeated model inferences, multiple external integrations, or substantial human supervision may incur greater expenditure than simpler tasks. Accordingly, the financial consequences of agent deployment may depend on task complexity, technological efficiency, and the structure of the pricing arrangement. This relationship could be investigated using task-level cost records and verified revenue information.

The fourth proposition concerns the potential association between trust-preserving practices and continued participation in messaging services. Appropriate authorization, transparency, and communication controls may influence users' willingness to interact with commercial agents. Relevant measures could include satisfaction, complaint frequency, permission revocation, and retention.

The fifth proposition concerns the effects of communication governance on recipient experience and market participation. Reputation-based budgets and recipient-level controls may reduce unwanted automated communication but may also create access barriers for new agents or businesses. Empirical analysis would therefore need to examine both communication-quality outcomes and the distribution of access across participating agents.

These propositions are theoretically derived from the documentary synthesis. They do not constitute tested hypotheses, and the present study does not establish the direction, magnitude, or statistical significance of the proposed relationships.

6. Theoretical and practical implications

The study contributes to the conceptual understanding of messaging platform economics by distinguishing communication-based revenue generation from monetization associated with completed operational activities. This distinction broadens the consideration of economic value beyond message delivery, service access, and premium functionality. AI-agent integration introduces additional opportunities to capture value from tasks performed within or through messaging environments. However, the analysis indicates that technological capability should be differentiated from actual performance and that completed activities require verification before they can reliably support outcome-related commercial charges.

The proposed framework also integrates user trust and communication governance into the evaluation of commercial sustainability. These dimensions are often treated as operational or compliance considerations, yet the documentary synthesis identifies their relevance to continued platform participation and the quality of commercial interaction. The framework consequently offers an integrated structure connecting task execution, cost recovery, and responsible service provision. Its principal theoretical contribution is the organization of these relationships into a coherent set of dimensions and propositions rather than the demonstration of a new empirical law.

For platform operators, the findings indicate that performance evaluation should extend beyond message volume, service adoption, and immediate revenue. Relevant indicators may include verified task completion, computational expenditure, billing disputes, agent errors, customer satisfaction, and

recipient complaints. Transparent charging arrangements and reliable verification infrastructure become particularly important when payments are associated with outcomes rather than easily counted usage units.

For businesses, the analysis suggests that agent-enabled services should be evaluated through their total operational consequences. Subscription fees and advertised automation capabilities provide an incomplete basis for assessment when implementation, integration, monitoring, human escalation, and error correction also contribute to expenditure. Commercial agreements should therefore specify the activities agents are authorized to perform, the conditions defining successful outcomes, and the procedures for addressing unsuccessful or disputed actions.

For governance, the findings emphasize permission management, transparent agent identification, communication limits, and mechanisms for reviewing consequential actions. The potential benefits of these controls should be considered alongside possible disadvantages involving platform discretion and access restrictions. Monitoring both recipient experience and the treatment of participating businesses would provide a more complete basis for evaluating governance effectiveness.

7. Limitations and future research directions

The present study has several limitations associated with its documentary and conceptual design. Although This research addresses multiple platforms, commercial mechanisms, and organizational issues, the study did not conduct a systematic review of peer-reviewed research or independently compare alternative theoretical frameworks. Industry figures, illustrative business examples, and forward-looking assessments contained in the source were not independently verified against original company disclosures or other primary evidence. Accordingly, the article does not establish the empirical accuracy of those claims. The study also did not involve surveys, interviews, experiments, operational datasets, or statistical analysis. The proposed framework therefore remains conceptual, and the relative contributions of outcome validity, user trust, operating expenditure, and governance to commercial sustainability cannot be determined from the available material.

Future investigations should evaluate the proposed relationships through empirical studies involving messaging platforms, AI-service providers, businesses, and users. Comparative research could examine conventional messaging workflows and agent-enabled workflows using measures of total operating expenditure, successful task completion, error frequency, human intervention, and customer satisfaction. Longitudinal studies could establish whether commercial benefits persist after implementation and maintenance expenditures are considered. Experimental investigations could compare subscription-based, usage-based, outcome-based, and hybrid pricing arrangements under clearly specified conditions. Further research should investigate the consequences of automated communication for recipients, including the relationships among message frequency, permission structures, user satisfaction, and retention. Studies across different geographic and institutional settings could also examine how payment infrastructure, business practices, regulatory requirements, and consumer preferences influence the feasibility of agent-enabled monetization. These investigations would provide the evidence necessary to test, refine, or reject the propositions developed in the present article.

8. Conclusion

The present study examined the transformation of digital messaging monetization through qualitative analysis addressing the economics of messaging platforms and the emergence of AI agents. The findings identified structural constraints associated with privacy, the nature of private conversations, historical pricing expectations, and the limitations of established revenue mechanisms. Conversational commerce creates opportunities to integrate commercial activities within messaging environments, while AI agents introduce additional capabilities by performing authorized tasks and generating identifiable

operational outcomes. These developments expand the potential units of value beyond message delivery and premium access. However, the analysis indicates that sustainable monetization cannot be established through task-execution capability or revenue generation alone. AI-enabled services introduce computational expenditure, integration requirements, verification challenges, operational responsibilities, and governance risks that must be considered alongside the value they create. The proposed outcome–trust–viability framework integrates these considerations through three interdependent dimensions: verified performance, trust preservation, and financial viability. The framework suggests that sustainable monetization requires a relationship between identifiable service value and adequate cost recovery while maintaining the reliability and acceptability of communication. Although the framework requires empirical validation, it provides a structured foundation for examining the changing relationship between AI-agent capabilities, platform economics, and responsible digital service provision.

References

- [1] Acharya, D. B., Kuppan, K., & Divya, B. (2025). Agentic AI: Autonomous intelligence for complex goals—A comprehensive survey. *IEEE Access*, 13, 18912-18936.
- [2] Batarseh, F. A., Freeman, L., & Huang, C. H. (2021). A survey on artificial intelligence assurance. *Journal of Big Data*, 8(1), 60.
- [3] Brohi, S., Mastoi, Q. U. A., Jhanjhi, N. Z., & Pillai, T. R. (2025). A research landscape of agentic AI and large language models: applications, challenges and future directions. *Algorithms*, 18(8), 499.
- [4] Chidavaenzi, G. T., Salie, F., & Grobbelaar, S. S. (2025). Designing and implementing outcome-based models in healthcare: insights and strategies from a scoping review. *Management Review Quarterly*, 1-61.
- [5] Cui, W., Zhang, X., Wang, Y., Huang, H., Chen, B., Fang, L., ... & Zhang, D. (2019). Text-to-viz: Automatic generation of infographics from proportion-related natural language statements. *IEEE transactions on visualization and computer graphics*, 26(1), 906-916.
- [6] Dickey, I. J., & Lewis, W. F. (2012). An overview of digital media and advertising. *E-marketing: Concepts, methodologies, tools, and applications*, 31-61.
- [7] Gebauer, H., Arzt, A., Kohtamäki, M., Lamprecht, C., Parida, V., Witell, L., & Wortmann, F. (2020). How to convert digital offerings into revenue enhancement—Conceptualizing business model dynamics through explorative case studies. *Industrial marketing management*, 91, 429-441.
- [8] Gerpott, T. J., Thomas, S., & Weichert, M. (2014). Usage of established and novel mobile communication services: Substitutional, independent or complementary? An empirical study of residential mobile network operator customers in Germany. *Information Systems Frontiers*, 16(3), 491-507.
- [9] Gorwa, R., Binns, R., & Katzenbach, C. (2020). Algorithmic content moderation: Technical and political challenges in the automation of platform governance. *Big data & society*, 7(1), 2053951719897945.
- [10] Heer, J. (2019). Agency plus automation: Designing artificial intelligence into interactive systems. *Proceedings of the National Academy of Sciences*, 116(6), 1844-1850.
- [11] Huang, K. (2025). Ai agents and business workflow. In *Agentic AI: Theories and practices* (pp. 135-166). Cham: Springer Nature Switzerland.
- [12] Hughes, L., Dwivedi, Y. K., Malik, T., Shawosh, M., Albashrawi, M. A., Jeon, I., ... & Walton, P. (2025). AI agents and agentic systems: A multi-expert analysis. *Journal of Computer Information Systems*, 65(4), 489-517.
- [13] Iftikhar, Z., Ma, Y., & Huang, J. (2023, April). "Together but not together": Evaluating typing indicators for interaction-rich communication. In *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems* (pp. 1-12).

- [14] Illescas-Manzano, M. D., Vicente López, N., Afonso González, N., & Cristofol Rodríguez, C. (2021). Implementation of chatbot in online commerce, and open innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, 7(2), 125.
- [15] Jaiswal, A. K., Niraj, R., Park, C. H., & Agarwal, M. K. (2018). The effect of relationship and transactional characteristics on customer retention in emerging online markets. *Journal of Business Research*, 92, 25-35.
- [16] Lee, D., Liu, T., Fu, Y., & Song, Z. (2025). Unveiling the factors driving the continued adoption intentions of digital platforms among complementors: Insights from SEM and fsQCA. *Acta Psychologica*, 260, 105550.
- [17] Li, Y., Wu, B., Huang, Y., & Luan, S. (2024). Developing trustworthy artificial intelligence: insights from research on interpersonal, human-automation, and human-AI trust. *Frontiers in psychology*, 15, 1382693.
- [18] Lotter, M., & Okoro, C. S. (2024). The role of infrastructure in financial inclusion—An integrative review. *Development and Investment in Infrastructure in Developing Countries: A 10-Year Reflection*, 151-159.
- [19] Marino, V., & Lo Presti, L. (2018). Engagement, satisfaction and customer behavior-based CRM performance: An empirical study of mobile instant messaging. *Journal of Service Theory and Practice*, 28(5), 682-707.
- [20] Murero, M. (2023). Coordinated inauthentic behavior: An innovative manipulation tactic to amplify COVID-19 anti-vaccine communication outreach via social media. *Frontiers in Sociology*, 8, 1141416.
- [21] Patwary, M. N., Nawaz, S. J., Rahman, M. A., Sharma, S. K., Rashid, M. M., & Barnes, S. J. (2020). The potential short-and long-term disruptions and transformative impacts of 5G and beyond wireless networks: Lessons learnt from the development of a 5G testbed environment. *Ieee Access*, 8, 11352-11379.
- [22] Petri, J., & Jacob, F. (2016). The customer as enabler of value (co)-creation in the solution business. *Industrial Marketing Management*, 56, 63-72.
- [23] Ranieri, A., Di Bernardo, I., & Mele, C. (2024). Serving customers through chatbots: positive and negative effects on customer experience. *Journal of Service Theory and Practice*, 34(2), 191-215.
- [24] Rao, B., Angelov, B., & Nov, O. (2006). Fusion of disruptive technologies:: Lessons from the skype case. *European Management Journal*, 24(2-3), 174-188.
- [25] Schäfer, H. B. (2023). Current legal and economic problems of privacy protection, data sharing, and market-opening in the digital economy. *The Antitrust Bulletin*, 68(4), 641-656.
- [26] Schmid, L., Ekbatani, F., Hilbe, C., & Chatterjee, K. (2023). Quantitative assessment can stabilize indirect reciprocity under imperfect information. *Nature Communications*, 14(1), 2086.
- [27] Sowon, K., Luhanga, E., Cranor, L. F., Fanti, G., Tucker, C., & Gueye, A. (2024, May). The role of user-agent interactions on mobile money practices in Kenya and Tanzania. In *2024 IEEE Symposium on Security and Privacy (SP)* (pp. 752-769). IEEE.
- [28] Sundar, S. S., Bellur, S., Oh, J., Jia, H., & Kim, H. S. (2016). Theoretical importance of contingency in human-computer interaction: Effects of message interactivity on user engagement. *Communication Research*, 43(5), 595-625.
- [29] Tan, L. J., & Huang, K. (2025). The AI agent economy. In *Agentic AI: Theories and Practices* (pp. 99-134). Cham: Springer Nature Switzerland.