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The Impact of Artificial Intelligence Adoption on Business Model Innovation and Competitive Advantage in Management System (ISO) Consulting Firms: A Qualitative Study of Industry Experts in Saudi Arabia

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Abstract

This study explores how the adoption of artificial intelligence (AI) affects business model innovation and competitive advantage in management system (ISO) consulting firms operating in Saudi Arabia, and identifies the technological, organizational, environmental and entrepreneurial factors that shape this relationship.

An exploratory qualitative design was adopted within an interpretive philosophy. Data were generated through five in-depth semi-structured interviews with industry experts occupying contrasting organizational positions — a general manager, practicing consultants, and an independent external auditor — and were analyzed using reflexive thematic analysis following Braun and Clarke, employing a hybrid coding strategy that combined deduction from the conceptual framework with induction from the data.

The analysis produced nine themes. Adoption was found to reconfigure the mechanisms of value creation and delivery before extending, in some firms, to full business model innovation; the depth of that innovation related to the firm's strategic horizon rather than to mere possession of the tool. The study reached full saturation on the centrality of human expertise as the inimitable resource in which competitive advantage now resides, given that the tool itself has become universally available. Two themes emerged inductively and were absent from the initial framework: the unintended consequences of adoption (cognitive dependency, escalating subscription costs, tool-proliferation fatigue, client data-privacy constraints and geopolitical access risk), and an inversion of risk perception whereby apprehension shifted from using AI to not using it.

The study concludes with a refined conceptual framework that adds a negative feedback loop to the initial model, and offers practical recommendations for consultants, decision-makers and policymakers, together with directions for future research.

Keywords: artificial intelligence; business model innovation; competitive advantage; management systems (ISO); dynamic capabilities; effectuation; Saudi Arabia.

Table of Contents

Abstract.....	2
Chapter One: Introduction.....	4
Chapter Two: Literature Review and Theoretical Framework.....	7
Chapter Three: Methodology	10
Chapter Four: Findings.....	13
Chapter Five: Discussion	19
Chapter Six: Conclusion and Recommendations	22
References	25
Appendices.....	27

Chapter One

Introduction

1.1 Background

The current decade has witnessed an accelerating digital transformation led by artificial intelligence as a general-purpose technology that is reshaping business models and sources of competitive advantage across sectors. AI has moved from being a means of task automation to becoming a strategic enabler for redesigning how value is created, delivered and captured, particularly in knowledge-intensive industries such as professional consulting.

Management system consulting, built on the standards of the International Organization for Standardization, is among the most knowledge-intensive of these industries, depending on the expertise of certified consultants and auditors in certification readiness, auditing and continual improvement. The publication of ISO/IEC 42001:2023, the first international standard for an AI management system, marked a pivotal moment: these standards themselves became simultaneously the subject of consulting work and a new service domain.

Nationally, Saudi Arabia has established an institutional infrastructure supporting the transition to a knowledge-based economy through Vision 2030 and the National Strategy for Data and Artificial Intelligence, alongside the designation of 2026 as a year for artificial intelligence, which situates this study firmly within a current developmental priority.

1.2 Problem Statement

ISO consulting firms in Saudi Arabia face a dual challenge. On one hand, the rapid diffusion of AI tools places pressure on the traditional service model premised on billable hours and consultant headcount. On the other hand, AI opens opportunities to redesign the business model and strengthen competitive advantage by improving operational efficiency in speed, quality and cost, and by introducing new services. Yet the adoption decision is taken under considerable uncertainty regarding feasibility, risk and the durability of any advantage gained.

The relevant literature remains fragmented. AI adoption in professional services has been examined qualitatively through the TOE framework (Yang, Blount & Amrollahi, 2024), though within Australian auditing and without addressing business model innovation, competitive advantage or the Gulf context. AI adoption in Saudi Arabia has been examined quantitatively among SMEs generally (Badghish & Soomro, 2024), without qualitative depth, sectoral focus on management system consulting, or an entrepreneurial lens. The intersection of these dimensions therefore remains unexplored.

The study is accordingly guided by the following central question: How does the adoption of artificial intelligence affect business model innovation and competitive advantage in management system (ISO) consulting firms in Saudi Arabia, and which technological, organizational, environmental and entrepreneurial factors shape this effect?

1.3 Significance of the Study

Theoretical significance

- Addressing a precise research gap by integrating four dimensions not previously examined together: AI adoption, the ISO consulting context, business model innovation and competitive advantage through an entrepreneurial lens, and the Saudi context using a qualitative approach.
- Extending the two anchor studies by deepening the qualitative dimension of the Saudi literature and transferring findings from the professional-services literature into the ISO consulting context.
- Contributing to the integration of the TOE framework with dynamic capabilities theory, business model innovation theory and effectuation theory within a single explanatory model, subsequently refined inductively from field data.

Practical significance

- Providing consultants, certified auditors and quality managers with a grounded understanding of how AI may be deployed to redesign services and pricing models and to strengthen competitive position.
- Offering applicable insights into adoption barriers and enablers in firms that are predominantly small and owner-operated.

National significance

- Aligning with Vision 2030 and the National Strategy for Data and Artificial Intelligence, thereby supporting the competitiveness of a promising knowledge-services sector.

1.4 Research Objectives

1. To explore the technological, organizational and environmental factors influencing AI adoption in Saudi ISO consulting firms.
2. To understand how AI adoption contributes to business model innovation in value creation, delivery and capture.
3. To analyze the effect of AI adoption on the sources and durability of competitive advantage from a dynamic capabilities perspective.
4. To uncover the entrepreneurial logic guiding consultants' adoption decisions under uncertainty.
5. To formulate practical recommendations and future research directions serving the sector and its decision-makers.

1.5 Research Questions

1. Which technological, organizational and environmental factors encourage or impede AI adoption in ISO consulting firms?
2. How does AI adoption reshape the components of the business model — value creation, delivery and capture?
3. How does AI adoption contribute to operational efficiency, competitive advantage and its sustainability?
4. What entrepreneurial logic guides experts' adoption decisions under uncertainty?

1.6 Operational Definitions

- **AI adoption:** The firm's decision and practical implementation of AI tools within its operations and consulting services.
- **Business model innovation:** A substantive change in how the consulting firm creates, delivers and captures value as a result of deploying AI.
- **Competitive advantage:** The firm's ability to achieve superior and sustained performance relative to competitors, viewed through dynamic capabilities.
- **Operational efficiency:** A composite of three dimensions: speed of service delivery, output quality and cost of provision.

1.7 Scope and Delimitations

- **Subject scope:** Limited to AI adoption and its effect on business model innovation and competitive advantage within management system (ISO) consulting firms.
- **Geographic scope:** The Kingdom of Saudi Arabia.
- **Temporal scope:** Field data were generated during 2026.
- **Human scope:** Certified ISO auditors, quality managers and experienced management system consultants.

Chapter Two

Literature Review and Theoretical Framework

2.1 Theoretical Literature

2.1.1 The Technology–Organization–Environment (TOE) framework

Tornatzky and Fleischer (1990) proposed a framework explaining the adoption of technological innovation at firm level through three interacting contexts: the technological context, comprising the characteristics of the technology itself in terms of compatibility, complexity and relative advantage; the organizational context, comprising firm size, resources, culture and leadership support; and the environmental context, comprising competitive pressure, client expectations and the regulatory landscape.

The framework's strength lies in its alignment with the organizational unit of analysis, which renders it more suitable than individual-level acceptance models for studying adoption decisions in consulting firms. It was employed here as the organizing structure for classifying influencing factors, while remaining open to contextual factors not contained in the original formulation.

2.1.2 Dynamic capabilities theory

Dynamic capabilities theory (Teece, Pisano & Shuen, 1997; Teece, 2007) explains how firms sustain competitive advantage in rapidly changing environments through three sequential capabilities: sensing opportunities and threats, seizing them through resource commitment, and reconfiguring the resource base and structures.

This lens acquires particular relevance in the AI context, since the tool itself is universally available at comparatively low cost, meaning that mere possession cannot generate durable advantage. Advantage instead arises from the organizational capacity to convert the tool into institutional practice and to reconfigure processes around it — a capacity that is difficult to imitate.

2.1.3 Business model innovation

A business model is defined as the logic by which a firm creates value, delivers it to the customer and captures a portion of it (Teece, 2010). Business model innovation denotes a substantive change in one or more of these three components (Amit & Zott, 2001; Foss & Saebi, 2017).

The literature distinguishes two levels that should not be conflated: operational improvement, which raises the efficiency of executing the existing model without altering its logic, and business model innovation, which alters that logic itself. This distinction forms a principal analytical axis of the present study. Chesbrough (2010) further observes that barriers to business model innovation are typically organizational and cognitive rather than technical — a proposition the present findings corroborate.

2.1.4 Effectuation and entrepreneurial logic

Effectuation theory (Sarasvathy, 2001) distinguishes two decision logics: causal logic, which begins with a predetermined goal and searches for means, and effectual logic, which begins with available means and discovers possible ends. Effectual logic rests on principles including starting from what is at hand, an

affordable-loss criterion rather than expected return, converting surprises into opportunities, and focusing on the controllable rather than the predictable.

This lens suits the explanation of adoption decisions concerning an emergent technology surrounded by high uncertainty, since conventional feasibility appraisal is scarcely possible for a rapidly changing technology of unknown return. It is complemented by the concept of opportunity recognition (Shane & Venkataraman, 2000).

2.2 Prior Empirical Studies

2.2.1 The methodological anchor

Yang, Blount and Amrollahi (2024) conducted a qualitative multiple-case study of three Australian audit firms grounded in the TOE framework, identifying six factors influencing AI adoption that varied by firm size. This constitutes the closest methodological model for the present study, though it did not address management system consulting, business model innovation, or the Gulf context.

2.2.2 The contextual anchor

Badghish and Soomro (2024) conducted a quantitative study using structural equation modelling among Saudi SMEs, demonstrating the effect of TOE factors on AI adoption and performance improvement within the Vision 2030 framework. It provides a reliable contextual anchor, but is quantitative and general, addressing neither the entrepreneurial lens, business model innovation, nor the ISO sector specifically.

2.2.3 AI and business model innovation

Recent systematic reviews (Jorzik et al., 2024; Mariani et al., 2023) confirm that capturing value from AI generally requires business model innovation rather than operational improvement alone. Sjödin et al. (2021) present a co-evolutionary model demonstrating that the scaling of AI capabilities within a business model occurs through iterative feedback loops rather than a single leap. The Saudi literature meanwhile remains predominantly quantitative (Soomro et al., 2025), reinforcing the value of a qualitative design grounded in expert interviews.

2.3 The Research Gap

A review of the available literature indicates that existing studies remain distributed across separate strands: work addressing AI adoption in professional services without linking it to the business model; work addressing AI-driven business model innovation without specificity to standards-based consulting; and general Saudi quantitative studies that do not penetrate the depth of the phenomenon. No study was identified that combines all four dimensions, and it is this intersection the present research addresses.

2.4 The Preliminary Conceptual Framework

On this basis, a preliminary conceptual framework was formulated integrating the four theoretical lenses into a multi-level causal model: TOE factors drive the adoption decision, which is taken through entrepreneurial logic under uncertainty; adoption converts into value only through dynamic capabilities, which produce business model innovation, itself the source of sustainable competitive advantage, with a feedback loop reflecting iterative learning.

Preliminary Conceptual Framework

Derived from the theoretical literature prior to fieldwork

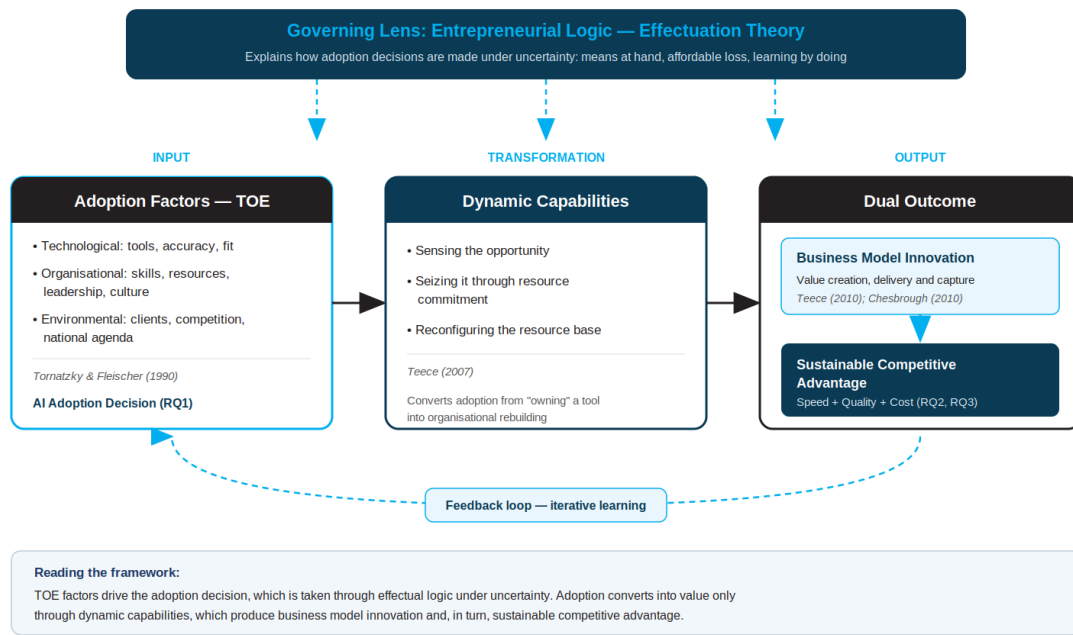


Figure 1: The preliminary conceptual framework — developed by the researcher.

It is emphasized that this framework is orienting rather than constraining: it guided instrument design and initial coding while leaving scope for themes to emerge from the data, as duly occurred and is set out in Chapter Four.

Chapter Three

Methodology

3.1 Research Design and Philosophy

The study adopted an exploratory qualitative design informed by the research onion of Saunders et al. (2023). It is situated within an interpretive philosophy, which holds that social reality is constructed through the meanings and interpretations of actors — the position best suited to understanding how experts perceive the effect of AI on their work and its underlying models.

The study follows an inductive approach, building understanding from data towards theorization, and an exploratory purpose appropriate to a recent phenomenon that remains under-theorized in its context. A qualitative rather than quantitative method was selected for two reasons: the emergent nature of the phenomenon, which calls for deep understanding rather than measurement of predetermined variables; and the limited feasibility of accessing a large quantitative sample within a specialized and numerically restricted domain.

3.2 Population and Sampling

The study population comprises certified ISO auditors, quality managers and management system consultants operating in Saudi Arabia. Purposive non-probability sampling with maximum variation was employed in order to capture the phenomenon across contrasting organizational levels.

Five participants were included, consistent with the position of Braun and Clarke (2021), who reject rigid numerical saturation and relate sample adequacy to information richness and the aims and nature of the study rather than to a predetermined count. The interviews together lasted approximately three hours and generated a textual corpus exceeding twenty-two thousand words.

Code	Role and organisational position	Experience	Firm	Duration
P1	Practicing consultant (safety, quality, digital transformation)	Practicing consultant	Firm A	35 min
P2	General manager — decision-maker	27 years	Firm B	40 min
P3	Consulting engineer, management systems	16 years	Firm B	52 min
P4	Independent consultant and external auditor	ISO since 2016	Independent	33 min
P5	Senior consultant, PhD in strategic planning	20+ years; ISO since 2000	Firm C	30 min

The sample thus combines the decision-making level (P2), the professional practice level (P1, P3, P5) and independent practice outside an organizational structure (P4), permitting comparison of perceptions across organizational positions.

3.3 Data Collection Instrument

A semi-structured interview guide was designed comprising eight core questions distributed across four axes corresponding to the components of the conceptual framework, supported by probing questions enabling depth. Care was taken to avoid leading formulations, to refrain from using theoretical terminology in the participants' presence, and to adopt indirect phrasing on sensitive matters such as pricing.

Axis	Research question addressed	Theoretical basis
One: adoption factors	RQ1	TOE framework
Two: business model innovation	RQ2	BMI literature
Three: competitive advantage	RQ3	Dynamic capabilities
Four: entrepreneurial logic	RQ4	Effectuation theory

Interviews were conducted remotely via video-conferencing platforms, audio-recorded with participants' consent, transcribed and manually reviewed.

3.4 Data Analysis

Reflexive thematic analysis was employed following Braun and Clarke (2006, 2019) across its six phases: familiarization with the data, generation of initial codes, searching for themes, reviewing them, defining and naming them, and producing the report.

A hybrid coding strategy was used: deductive coding derived from the components of the conceptual framework, alongside open inductive coding permitting new themes to emerge from the data. The latter yielded two principal themes absent from the initial framework, as Chapter Four sets out.

3.5 Trustworthiness

The study observed the four established criteria for qualitative rigour:

- **Credibility:** Enhanced through diversity of participants in role and firm size, and by returning to one participant to clarify incomplete data.
- **Transferability:** Supported by thick description of the Saudi context and participant characteristics, enabling readers to judge applicability.
- **Dependability:** Maintained through an audit trail documenting each methodological and analytical decision, including the initial coding report.
- **Confirmability:** Secured by anchoring every theme in direct participant quotations and separating the researcher's voice from the data.

Reflexivity statement

The researcher possesses extended professional experience within the management system consulting sector under study. This positioning assisted access to experts, contextual understanding and interpretation of technical terminology, but carries a potential for bias in question formulation and data interpretation. To address this transparently, neutral open questions were used, participants were invited

to add matters not asked about, and divergent cases were identified and foregrounded rather than marginalized — as is evident in the treatment of the fourth case.

3.6 Methodological Disclosures

In the interest of scholarly transparency, the study discloses the following matters concerning sampling and data generation:

Disclosures concerning sample and data

- **Shared firm:** Participants P2 and P3 belong to the same firm. Analytically, their cases were treated as within-case triangulation permitting comparison between decision-maker and practitioner perceptions within the same organizational setting, rather than as two independent cases.
- **Kinship:** Participants P2 and P4 are related by kinship, arising from sampling based on the researcher's professional network. This is disclosed because case independence conditions the interpretation of convergence between cases; however, the two operate in different settings (organizational firm versus independent practice) and diverged substantively on the environmental factor, reducing the likelihood of mutual influence.
- **Independence of remaining cases:** Participants P1 and P5 are wholly independent of the preceding network and operate in different firms; their data served as a reference for testing whether patterns extended beyond that network.
- **Variation in interview duration:** Durations ranged from 21 to 52 minutes. The researcher acknowledges that the shorter interviews yielded less dense material, which was weighted accordingly in theme construction.

3.7 Ethical Considerations

Recorded verbal informed consent was obtained from each participant prior to recording, following notification of the study's aims, expected duration, and the participant's right to decline any question or terminate the interview at any time without consequence. Confidentiality of participant identities and firm data was assured, names were coded in the analysis, data use was confined to research purposes, and participants were undertaken to be provided with a summary of findings upon completion.

Chapter Four

Findings

4.1 Introduction

This chapter presents the findings of the reflexive thematic analysis of five interviews. The analysis yielded nine principal themes: seven deductive themes relating to components of the preliminary conceptual framework, and two inductive themes that emerged from the data and were absent from that framework. Themes are presented with supporting direct quotations, indicating their recurrence across cases.

Theme	Recurrence	Origin
1. Adoption between competitive necessity and exploratory initiative	5/5	Deductive
2. The knowledge gap and training as a decisive enabler	5/5	Deductive
3. Reconfiguration of value creation and delivery	5/5	Deductive
4. Graduated business model innovation by strategic horizon	5/5	Deductive
5. Human expertise as the bulwark of competitive advantage	5/5 — saturated	Deductive
6. Continuous reconfiguring to preserve competitive distance	4/5	Deductive
7. Hybrid logic: from experimentation to formalization	5/5	Deductive
8. Unintended consequences of adoption	5/5	Inductive
9. Inversion of risk perception	4/5	Inductive

4.2 Theme One: Adoption between Competitive Necessity and Exploratory Initiative

The data revealed that adoption motives operate at two levels: external environmental pressures rendering adoption closer to compulsion, and internal exploratory initiative rendering it a choice. The former dominated four of the five cases.

Environmental pressure as the dominant driver

Client time pressure emerged as the most frequently cited driver, linked directly by participants to the prospect of losing the client:

“Clients need a certain output within a defined time; otherwise they will go to someone other than you” (P1)

For the decision-maker this pressure reached the point of negating choice altogether, with six simultaneous drivers cited including internal initiative, client demand for higher quality, competition, delivery speed, resource optimisation and forward outlook:

“People have become compelled, not given a choice” (P2)

The fifth participant added a dimension mentioned by no other — the firm's reputational standing in the market as an adoption driver:

"The external drivers were very substantial: the shape of competition, the shape of outputs, client expectations, and even building the firm's image in the eyes of others" (P5)

The divergent case: adoption as exploratory choice

The fourth participant departed explicitly from this pattern, denying any external pressure and attributing his adoption to purely internal curiosity:

"There were no explicit external factors, so much as it being a new opportunity... there were no direct external indicators or pressures; it was a choice" (P4)

His turning point was a training course rather than market pressure. This divergence is explicable by his position as an independent external auditor and consultant rather than an employee of a firm competing directly for clients, which attenuates his exposure to immediate competitive pressure. This divergent case constitutes an important constraint on generalizing the compulsory-adoption proposition, and suggests that the environmental factor within TOE is itself moderated by the actor's degree of market exposure.

4.3 Theme Two: The Knowledge Gap and Training as a Decisive Enabler

All cases concurred that the primary barrier to adoption is cognitive and cultural rather than technical, and that training is the most effective instrument of change management.

"At first people were apprehensive and hesitant and unwilling to take the risk... then we took the initiative and began involving people in the outputs that came from AI" (P2)

The third participant indicated that his firm preceded adoption with workshops and training courses, and that this was the direct cause of the shift in attitude:

"Management proposed a number of workshops and courses... when people attended those workshops and training courses they came to see that using AI increases productivity and reduces project time" (P3)

The fifth participant elevates the analysis to the level of organizational culture, treating it as the deeper structural barrier:

"Many organizations still adopt the traditional way of working... so the culture of the organization itself is an obstacle for many colleagues... it requires changing the values inside the organization" (P5)

A notable further dimension emerged with the fifth participant: using the tool itself as a means of continuous self-directed learning, thereby reducing dependence on repeated external training.

4.4 Theme Three: Reconfiguration of Value Creation and Delivery

The data showed consensus that a substantive shift had occurred in how services are produced and delivered, manifest in four respects.

(a) Temporal compression

"A project that takes three or four months can now be completed within ten days to a fortnight... and it is highly professional" (P3)

The first participant confirmed the same shift at task level, from two to four days towards a single day, while the fifth reported projects occasionally completed ahead of schedule.

(b) Digitalization of delivery

"It did not change the name of the service the client requests, but it fundamentally changed the way I deliver that service to him" (P1)

(c) Customization replacing templates

This represents one of the study's most significant findings, revealing a shift from reliance on standardized historical outputs to producing bespoke systems for each client:

"We no longer rely on having historical outputs... there is now a difference between the outputs we produce for each client... the client receives a distinctive, integrated system that belongs to him and is customized to his activity" (P5)

This constitutes a change in the substance of the value offered, not merely in the speed of its delivery.

(d) Breaking the scalability constraint

Three participants reported that adoption released the firm from the historical constraint tying project volume to consultant headcount:

"Previously this was difficult given the limited number of consultants in a single firm... now any firm has the capacity to handle what is sometimes an unlimited number of projects" (P5)

This constraint touches the core of the traditional model premised on selling consultant hours.

4.5 Theme Four: Graduated Business Model Innovation by Strategic Horizon

The analysis revealed a systematic variation in the depth of business model innovation perceived by participants, arrayed along a continuum from operational improvement to full innovation.

The first pole: delivery change without offering change

"I do not see that it added a new service. It added a new mode of delivery and a new mode of preparation" (P1)

The second pole: innovation in model and product

"Its role is more than improving operational processes; it is in the way of thinking, in generating new products, new ways of working, a new business model and a new network of relationships" (P2)

This pole culminates in the digital platform the firm is building to manage ISO services, representing a transition from selling consulting time to a scalable digital product:

"The platform... carries a substantial difference and very high competitive value... because it is very largely built on artificial intelligence" (P3)

Positions of the remaining cases

The fourth participant, despite operating independently, reported a broad perception of the model's possibilities:

"Most certainly, because it opens unlimited space for offering new services, different business models and innovative ideas" (P4)

The fifth participant added a further dimension: extending service scope to standards the consultant had never previously worked with:

"It helps him build a complete system for a standard he has never dealt with before" (P5)

This indicates a partial dismantling of the specialization barrier that formerly limited a firm's service portfolio. Considered together, the cases indicate that the depth of perceived innovation relates not to organizational position alone but to the actor's strategic horizon and the extent to which the tool is regarded as an enabler of redesign rather than a means of accelerating the existing.

Effect on value capture

Perceptions of the pricing effect diverged. The third participant holds that maintaining prior prices against reduced cost raises margin:

"If projects are priced at the old prices, we find the profit is better for the executing firm" (P3)

The decision-maker, by contrast, identifies a newly introduced cost item in subscriptions, while judging the net effect positive. Notably, the perceived burden of subscriptions intensifies among those bearing budgetary responsibility and lessens among end users — a divergence observed within a single firm.

4.6 Theme Five: Human Expertise as the Bulwark of Competitive Advantage

This is the most saturated finding of the study, appearing across all five cases in closely comparable formulations despite the complete independence of some cases. Its substance is that the universal availability of the tool has relocated advantage from possession of the technology to professional judgement in its deployment and in reviewing its outputs.

"Whatever its capabilities and quality, it will not substitute for the expert consultant... here I am betting on my accumulated experience" (P1)

"The tool helps you build the document, but its application — carrying the value in the document across to the client — requires very high expertise and considerable knowledge on the consultant's part" (P3)

"Without expertise, you will not know whether you are working correctly or incorrectly" (P4)

The fifth participant adds a qualitatively distinct dimension concerning the tool's limits before human judgement in composition:

"AI does not have the capacity to produce things containing a human sense, whether in the literary aspect or in the drafting" (P5)

Participants expressed this operationally through specific reliance ratios: 60–70 per cent on the tool against 30–40 per cent human review for the first participant, evolving with maturity of practice for the third to 90–95 per cent against 5–10 per cent human intervention. This indicates that the proportion of human intervention contracts quantitatively while remaining decisive qualitatively.

Alongside individual expertise, the decision-maker identified complementary organisational assets resistant to imitation: team cohesion and loyalty, the accumulated client base, and flexibility in adapting tools — resources extending beyond the individual to the institutional level.

4.7 Theme Six: Continuous Reconfiguring to Preserve Competitive Distance

The data revealed explicit awareness of rapid competitive imitation, and a counter-strategy premised on continuous advancement rather than stasis:

"When competitors' level rises, we look for superior distinction and move to a more advanced point so that we are not close to them" (P2)

The same logic appears in the periodic updating of the digital platform on the basis of user feedback, and in the fifth participant's continuous daily learning. This constitutes a direct field expression of the reconfiguring capability within dynamic capabilities theory.

The first participant stands outside this pattern, perceiving no competition and inclining instead towards diffusing knowledge among colleagues — consistent with his position as an individual practitioner rather than a custodian of an institutional competitive position.

4.8 Theme Seven: Hybrid Logic — from Experimentation to Formalization

The analysis revealed a recurrent pattern in decision logic: an effectual beginning grounded in low-cost experimentation, followed by transition to planned causal logic once feasibility was demonstrated.

“Frankly it was an experiment, but after I saw the effect... I decided to put a plan in place... I consider it an investment, not a loss” (P1)

“We travelled both paths: we began by learning, and then we put in place a clear plan we adopted” (P2)

The affordable-loss principle is evident in descriptions of initial cost as negligible and within reach, rendering the risk bearable without elaborate return calculation.

The fourth case, however, constrains this pattern: the participant began effectually but did not transition to formal planning. This suggests that the move to formalization may be conditional upon an organizational structure that requires and funds it — a structure the independent practitioner lacks.

The fifth participant displays a differently ordered route: institutional availability of the tool first, then personal adoption, then holistic planning, reflecting variety in the entry points to hybrid logic rather than a single pattern.

4.9 Theme Eight (Inductive): Unintended Consequences of Adoption

This theme constitutes the principal yield of the inductive strategy, being absent from the preliminary framework. Most of its elements were raised spontaneously by participants at the close of interviews, with explicit recommendations that the study not overlook them. It comprises five dimensions.

(a) Cognitive dependency and skill erosion

“I have begun to suffer from this now, in that I find any other work difficult if there is no AI tool... it has become like someone forgetting how to read and write” (P2)

(b) Escalating subscription costs

“The escalating cost of AI companies and tools... the matter has become an addiction requiring you to provide a number of budgets” (P2)

“The subscription value becomes something very burdensome, leading to abandonment of AI and the technology” (P4)

The fifth participant reveals an organizational dimension to this cost, linking limited access to paid versions to a phase of institutional trust-building, with direct consequences for output quality.

(c) Tool-proliferation fatigue

“Every day we wake up to ten new tools” (P2)

(d) Client data privacy as an environmental barrier

This dimension represents a novel finding specific to the ISO context, in which the constraint shifts from within the firm to the client:

"We are not entirely certain whether the privacy agreements in AI programmes are binding or fully applied... or whether they are using the data we feed in for other purposes" (P4)

"Some entities frankly refuse to let you use the data... not every client will permit you to use the tools, owing to differing privacy policies" (P4)

(e) Geopolitical access risk

The fourth participant identified an external dimension beyond the firm's control: the possibility of tools being blocked for political or regulatory reasons, threatening continuity of services built upon them.

4.10 Theme Nine (Inductive): Inversion of Risk Perception

The analysis identified a fundamental shift in the location of risk within participants' thinking: where apprehension once attached to using AI, it now attaches to not using it.

"Previously, at the beginning, we were apprehensive about using it... now the apprehension is about not using it" (P3)

"Anyone who now thinks he can isolate himself from this technology is sentencing himself to extinction in the market" (P5)

"A developer of the business model if you adopt it, and a threat if you do not absorb it" (P2)

The fourth participant offers a more composite reading: total refusal constitutes a risk, yet abstention from public tools may become an advantage if coupled with building proprietary AI systems guaranteeing control over data and privacy — linking this theme to the fourth dimension of the preceding one.

Chapter Five

Discussion

5.1 Introduction

This chapter discusses the findings in light of the theoretical framework and prior studies, addresses each research question in turn, and presents the refined conceptual framework as the study's principal theoretical contribution.

5.2 Research Question One: Adoption Factors

The findings accord with the TOE framework in classifying factors across its three contexts, yet reveal a different ordering of their relative weight. Whereas the literature tends to foreground the characteristics of the technology as a primary determinant, this study found the organizational and environmental contexts to be dominant, and the foremost barrier to be cognitive and cultural rather than technical.

This aligns with Yang et al. (2024) in finding that adoption factors vary by firm size, explicitly confirmed here in three cases: participants linked larger firms' adoption capacity to financial and human resources, while the decision-maker characterized smaller firms' agility as an advantage in decision speed. The present study nevertheless adds a dimension absent from the Australian study — organizational culture as a structural barrier requiring a change of values rather than training alone.

The most consequential addition to TOE concerns the emergence of client data privacy as an environmental barrier originating with the client rather than the firm. This factor acquires particular salience in ISO consulting, where firms handle sensitive client documentation, some of it falling within the scope of information security standards themselves. This represents a contextual extension of TOE not captured by either anchor study.

The divergent case further demonstrates that the environmental factor is not homogeneous in effect but is moderated by the actor's exposure to direct market competition, suggesting a boundary condition for interpreting environmental influence in professional services.

5.3 Research Question Two: Business Model Innovation

The findings support Jorzik et al. (2024) and Mariani et al. (2023) in holding that capturing value from AI generally requires moving beyond operational improvement to business model innovation. The study adds, however, that this transition is not binary but occupies a graduated continuum observed across the five cases.

At the lower end, the mode of delivery changes while the value proposition remains constant — corresponding to operational improvement. In the middle, customization replaces standardized templates, constituting a change in the mechanism of value creation rather than its speed. At the upper end appears the transition to a scalable digital product, a full innovation altering the logic of value capture from selling time to selling access.

Breaking the scalability constraint constitutes the theoretically most significant finding, touching the foundational assumption of the professional services model — the proportional relationship between revenue and consultant headcount. When a firm can execute multiple projects in parallel without commensurate increases in staff, revenue decouples from time expended, which is the structural condition rendering business model innovation possible rather than merely desirable.

The dismantling of the specialization barrier adds a further dimension, since the tool permits building systems for standards the consultant has not previously handled, widening the service portfolio without a corresponding widening of specialist expertise. This is a double-edged finding: an expansion of opportunity, and a potential threat to the differentiation of specialists.

Variation in perceived depth is explained by strategic horizon rather than functional position alone, consistent with Chesbrough (2010) on the primarily cognitive character of barriers to business model innovation.

5.4 Research Question Three: Competitive Advantage

Findings on this axis accord fully with the logic of dynamic capabilities and the resource-based view. Once the tool becomes universally available at low cost, it forfeits rarity and therefore the capacity to generate durable advantage in itself. Participants articulated this with notable clarity, converging on the view that advantage settles upon expertise and professional judgement.

The saturation of this theme across all five cases, despite the complete independence of several, constitutes strong evidence of its robustness. The dimension of human sense in drafting and literary judgement adds a qualitative element the tool cannot readily substitute, consistent with the literature on inimitable complementary assets.

Notably, the proportion of human intervention contracts as practice matures (from 30–40 to 5–10 per cent) without losing its decisiveness. This suggests advantage resides not in the quantity of intervention but in its quality: the capacity to detect error and judge contextual fit, a cumulative capability that cannot be purchased.

Continuous reconfiguring in response to competitive imitation constitutes a direct field instantiation of Teece's (2007) reconfiguring dimension, and aligns with Sjödin et al. (2021) on iterative feedback loops rather than a single leap.

5.5 Research Question Four: Entrepreneurial Logic

The study corroborates the applicability of effectuation theory to AI adoption decisions in this sector, with its core principles clearly evident: starting from available means, the affordable-loss criterion in place of expected-return calculation, learning by doing, and converting obstacles into opportunities.

The more precise contribution, however, lies in identifying a sequential hybrid pattern: an effectual beginning followed by transition to causal logic once feasibility is established. This enriches the ongoing debate in the entrepreneurship literature regarding the relationship between the two logics, suggesting they are not mutually exclusive alternatives but successive phases of a single trajectory.

The divergent case acquires particular importance here, since the independent practitioner did not transition to formal planning despite an effectual start. This suggests that the move to formalization is conditional upon an organizational structure that requires and funds it — a boundary condition not previously identified in this context.

5.6 Theoretical Contribution: The Refined Framework

On the foregoing basis, the preliminary framework is modified in three respects, constituting the study's principal theoretical contribution:

Modifications to the conceptual framework arising from field data

- **Addition of a new environmental barrier:** Client data privacy and its contractual constraints are added to the environmental context of TOE, as a barrier originating with the client rather than the firm — a factor of high specificity to the management systems sector.
- **Addition of a negative feedback loop:** A return path is added representing the unintended consequences of adoption (cognitive dependency, escalating subscription costs, tool-proliferation fatigue and access risk), which may erode the very competitive advantage adoption produced, converting the relationship from linear and ascending into conditional.
- **Refinement of the entrepreneurial logic path:** The logic is characterized as sequentially hybrid (effectual then causal) rather than purely effectual, subject to the boundary condition that transition to formalization depends upon a supporting organizational structure.

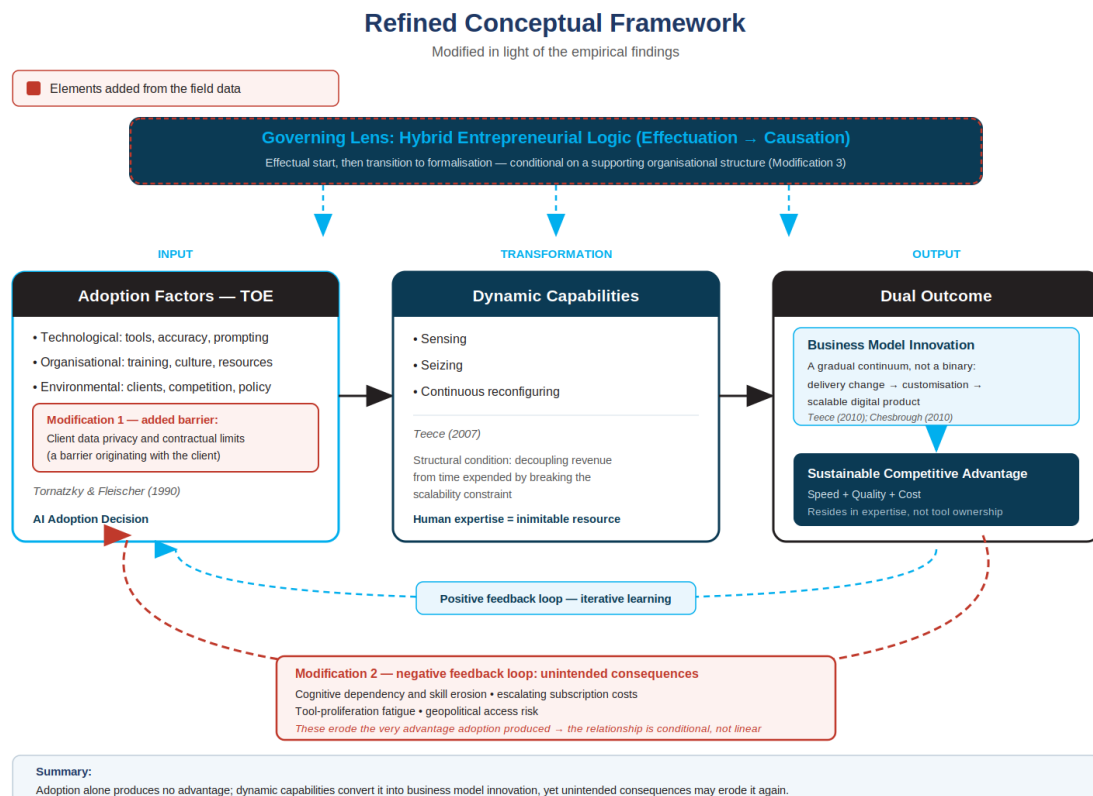


Figure 2: The refined conceptual framework following analysis — developed by the researcher. Elements outlined in red denote modifications derived from field data.

A further conceptual refinement holds that AI-enabled business model innovation occupies a graduated continuum rather than a sharp dichotomy, and that the structural condition for a firm's movement along

that continuum is the decoupling of revenue from time expended through breaking the scalability constraint.

Chapter Six

Conclusion and Recommendations

6.1 Summary of the Study

This study set out to explore the impact of AI adoption on business model innovation and competitive advantage in management system consulting firms in Saudi Arabia, through an exploratory qualitative design grounded in five in-depth interviews with experts occupying contrasting organizational positions.

It concludes that adoption first reconfigures the mechanisms of value creation and delivery — manifest in temporal compression, digitalized delivery, customization and the breaking of the scalability constraint — before extending, in some firms, to full business model innovation in the form of scalable digital products. This effect is not automatic, however: it is mediated by the firm's possession of dynamic capabilities that convert the tool into institutional practice.

It further concludes that competitive advantage no longer resides in possession of the tool, now universally available, but in human expertise and professional judgement — the study's most saturated theme; and that decision logic is hybrid, beginning effectually and moving towards formalization conditional upon a supporting organizational structure.

Inductively, the study added two dimensions absent from its initial framework: the unintended consequences of adoption, and an inversion of risk perception from fear of using AI to fear of not using it.

6.2 Recommendations

6.2.1 For consulting firms and decision-makers

- Moving from regarding AI as a means of accelerating existing work towards regarding it as an enabler of redesigning the model itself, including exploration of scalable digital products.
- Investing in structured training before adoption rather than after, since the data establish that pre-adoption workshops were the decisive factor in overcoming resistance.
- Treating subscription costs as a structural budget line rather than an incidental expense, with a clear policy for tier upgrades proportionate to project volumes.
- Establishing a written policy on client data privacy specifying what may be entered into public tools and what requires closed solutions, and disclosing it to clients as an element of trust rather than a constraint.
- Maintaining human review as a mandatory quality assurance regardless of improvements in tool accuracy, with reliance and intervention ratios documented within operating procedures.

6.2.2 For individual consultants

- Developing prompt-engineering skill as the differentiating capability separating a professional output from a defective one, since the data converge on output quality being contingent upon input quality.

- Employing the tool itself as a means of continuous learning, reducing the cost of keeping pace with rapid tool evolution.
- Guarding against the excessive cognitive dependency participants identified, by maintaining independent practice of core skills.

6.2.3 For policymakers and certification bodies

- Developing guidance frameworks for AI use in auditing and certification readiness that preserve the integrity of the certification process and clarify the limits of reliance on automated outputs.
- Supporting specialized training programs addressing the knowledge gap identified as the foremost barrier, consistent with the objectives of the National Strategy for Data and Artificial Intelligence.
- Considering the access and continuity risks raised by participants, by encouraging local or institutional solutions ensuring control over data.

6.3 Limitations

- The sample comprised five participants, affording depth rather than statistical generalization, consistent with the nature and aims of qualitative inquiry.
- Two participants belong to the same firm, and two others are related by kinship arising from professional-network sampling; this was addressed through disclosure and by reframing the overlapping cases as within-case triangulation.
- All participants were actual adopters of AI; the study did not include those refusing adoption, limiting understanding of the rationale for abstention.
- The study is cross-sectional, describing perceptions at a moment characterized by exceptionally rapid tool evolution.

6.4 Directions for Future Research

- A quantitative study testing the relationships proposed by the refined framework on a broader sample, particularly the conditional relationship between adoption and advantage mediated by dynamic capabilities.
- A dedicated qualitative study of consultants and firms abstaining from adoption, to understand the logic of abstention and its risks as they themselves perceive them.
- In-depth investigation of client data privacy as an emergent barrier, and its relationship to information security and AI management standards.
- A longitudinal study tracking firms that have moved to scalable digital products, to observe effects on the durability of advantage and on revenue models.
- A comparative study between the Saudi context and other Gulf or international contexts, to test the transferability of the patterns identified here.

6.5 Concluding Remarks

This study demonstrates that artificial intelligence is no longer a competitive technological option within the management system consulting sector, but has become a condition of remaining in the market, as participants expressed with clarity. Yet the genuine impact of this technology lies not in the speed with

which it accomplishes what was already being accomplished, but in its capacity to redefine what can be accomplished at all, and thereby to reshape the logic of business in this sector.

The deeper conclusion remains that the tool, however advanced, generates no advantage of itself; it is equally available to all. Advantage arises instead from the expertise that deploys it well, from the organizational capacity that converts it from individual use into institutional practice, and from the awareness that identifies its unintended consequences before they harden into dependency. This, in the estimation of the present study, is what separates a firm that has used artificial intelligence from one that has been transformed by it.

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Appendices

Appendix 1: Interview Guide

Informed consent statement

“Thank you for your time. This interview forms part of an academic study on the impact of AI adoption on the work of ISO consulting firms in the Kingdom. It will take approximately 45 to 60 minutes. Your participation is entirely voluntary, and you may decline any question or stop the interview at any point without consequence. With your permission I will record the audio solely to ensure accuracy of documentation. Your identity and your firm's data will remain wholly confidential and will be used for research purposes only. Do you consent to participate and to the recording?”

Axis One: Adoption factors

- Tell me about your journey with AI in your consulting work: how it began, what prompted you, and what challenges you faced.
- If we imagine a colleague still hesitant to adopt AI, what in your view holds them back, and what would they need to be persuaded?

Axis Two: Business model innovation

- How has AI changed the way you deliver your services in terms of speed, form and the types of services offered?
- Generally in the market, do you see a shift in how consulting services are priced because of AI?

Axis Three: Competitive advantage

- Give me a specific example where AI made you faster, better or lower-cost in serving a client.
- Have your competitors attempted to imitate what you do, and how have you maintained your distinction?

Axis Four: Entrepreneurial logic

- When you decided to adopt AI, did you have a clear prior plan, or did you begin experimenting and learn along the way?
- Did you encounter a surprise or obstacle during implementation that you converted into an opportunity?

Closing questions

- What is the greatest challenge still facing you? What advice would you give a colleague starting now? Is there an important aspect I have not asked about?

Appendix 2: Themes and Constituent Codes

Theme	Principal constituent codes
1. Adoption drivers	Client time pressure; competitive pressure; reputational standing; adoption as necessity; exploratory initiative
2. Knowledge gap and training	Initial apprehension; persuasion by demonstration; pre-adoption workshops; organizational culture as barrier
3. Reconfiguration of value creation	Temporal compression; digitalized delivery; customization; breaking the scalability constraint
4. Graduated model innovation	Constant offering with changed delivery; new services; digital platform; dismantling the specialization barrier
5. Expertise as bulwark	Tool not substitute; human review; human sense; complementary assets
6. Continuous reconfiguring	Competitive imitation; pre-emptive advancement; periodic updating; continuous learning
7. Hybrid logic	Low-cost experimentation; affordable loss; transition to planning; organizational-structure condition
8. Unintended consequences	Cognitive dependency; subscription costs; tool fatigue; data privacy; access risk
9. Risk inversion	Fear of non-use; market extinction; threat versus enabler