HARNESSING ARTIFICIAL INTELLIGENCE (AI) TO SUSTAINABLY ENHANCE THE BUSINESS CAPABILITIES OF MODERN ENTREPRENEURS

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ABSTRACT

This article examines the role of Artificial Intelligence (AI) in strengthening the competitiveness of entrepreneurs in the digital era by integrating key theoretical perspectives, including the Resource-Based View (RBV), the Technology Acceptance Model (TAM), the Disruptive Innovation Theory, and the Diffusion of Innovations Theory within the context of real-world business applications. The findings indicate that AI enhances operational efficiency, reduces costs, supports data-driven decision-making, and accelerates innovation, thereby contributing directly to business competitiveness, particularly for small and medium-sized enterprises (SMEs). However, the adoption of AI is constrained by several challenges, such as high implementation costs, shortages of skilled professionals, poor data quality, difficulties in integrating with legacy systems, and uncertainty about return on investment.

To address these issues, the article proposes a set of policy and strategic recommendations, including investing in digital infrastructure, upskilling the workforce, fostering cross-sector collaboration, providing financial incentives, and ensuring ethical governance. By outlining these measures, the article aims to offer practical policy directions and actionable strategies that enable modern entrepreneurs to effectively and sustainably integrate AI into their business operations.

Keywords: Artificial Intelligence, Modern Entrepreneurs, Business Capabilities.

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INTRODUCTION

The 21st century has witnessed an unprecedented digital transformation that is reshaping entrepreneurial landscapes across the globe. As digital technologies permeate every facet of business, Artificial Intelligence (AI) has become a cornerstone of digital entrepreneurship serving not only as a tool for enhancing operational efficiency but also as a catalyst for innovation, value creation, and sustained competitive advantage in an increasingly volatile and data driven market environment. For today's digital entrepreneurs, AI offers transformative capabilities that enable agile responses to customer needs, data informed decision making, and the rapid development of novel products and services (Davenport & Ronanki, 2018, pp. 108-116). Over the past decade, the practical application of AI in entrepreneurial ventures has expanded significantly. AI powered big data analytics allow for precise forecasting of market dynamics and consumer preferences, while natural language processing (NLP) enhances customer experience through intelligent chatbots and automated communication platforms. Machine learning algorithms optimize logistics and supply chain decisions, and AI-driven financial systems automate complex accounting tasks, thereby reducing costs, minimizing human error, and accelerating business processes (World Economic Forum, Online, 2023). These technologies have been especially impactful for small and medium-sized enterprises (SMEs), which often operate under resource constraints yet require high levels of adaptability and digital agility. According to the OECD (Online, 2025), AI integration has led to a productivity increase of approximately 30-40% within SMEs, particularly in service sectors, online commerce, and the information technology domain.

However, AI adoption in digital entrepreneurship ecosystems is not without its challenges. Limited access to capital, a shortage of adequate digital infrastructure, and a lack of AI-literate human capital remain significant barriers to widespread implementation. Moreover, a clearly stipulated strategic vision and an ability to match AI technologies with business models and value propositions are required by digital entrepreneurs. Strategic investment in workforce development, ensuring that teams have the relevant digital competencies to match rapidly changing technological trends, is important. Governmental support and public-private partnership also remain very important for an enabling environment for AI-driven entrepreneurship. This forms a basis upon which investments into digital infrastructure, innovation ecosystems, and regulatory frameworks supporting ethical and inclusive deployment of AI are developed (McKinsey & Company, Online, 2023). As noted by the OECD (2024, pp. 6-8), a responsible AI adoption strategy

should take into account data governance, algorithmic transparency, and ethical considerations, as privacy and non-discrimination reduce potential societal and business risks.

FUNDAMENTAL THEORETICAL CONCEPTS ON THE APPLICATION OF AI IN BUSINESS

Davenport & Ronanki (2018, pp. 108-116) conceptualize Artificial Intelligence (AI) not merely as a technical tool, but as a strategic resource that plays a critical role in supporting organizational decision making. They emphasize that AI enables capabilities such as trend forecasting, performance optimization and the facilitation of innovation, all of which are essential to sustaining competitive advantage in contemporary business environments. Meanwhile, Gartner (Online, 2022) highlights the multidimensional relationship between Artificial Intelligence (AI) and Business Intelligence (BI). In the AI era, organizations are increasingly becoming data-driven enterprises, where AI is leveraged to transform vast volumes of data into actionable insights that are crucial for strategic and operational decision-making. The concept of Business Intelligence (BI) thus emerges as a foundational framework for strategic data management and plays a pivotal role in the integration of AI within business contexts. BI systems offer structured datasets that serve as fertile ground for the application of AI and machine learning models. Through this synergy, AI can uncover hidden patterns, identify predictive trends, and enhance forecasting accuracy for instance, by using BI datasets to predict future sales or customer behavior. The interplay between BI and AI can be summarized as a dynamic relationship in which BI provides the structured data infrastructure and strategic context, while AI adds analytical depth and predictive capabilities. This integration supports evidence-based decision-making and empowers modern executives and entrepreneurs to navigate complex and uncertain business landscapes with greater confidence and agility.

Table 1 The Relationship between Business Intelligence (BI) and Artificial Intelligence (AI)

Aspect	Business Intelligence (BI)	Artificial Intelligence (AI)
Objective	To summarize and visualize data	To predict trends and support automated decision-making
Data Type	Statistical and historical data	Behavioral and predictive data
Applications	Dashboards and reporting tools	Chatbots, forecasting systems, and process automation
Relationship	AI can build upon BI to enable more advanced levels of analytics	–

The application of Artificial Intelligence (AI) in business can be clearly categorized into two primary approaches including automation and augmentation (McAfee & Brynjolfsson, 2017, pp. 32-35). These approaches serve distinct purposes and exert different impacts on business operations, which can be summarized as follows:

Table 2 Approaches to utilizing AI through Automation and Augmentation in Business

Aspect	Automation	Augmentation
Objective	To reduce costs and increase operational speed.	To enhance decision-making capabilities.
Human Role	Humans are replaced in certain processes.	Humans collaborate with AI to amplify their potential.
Nature of Tasks	Repetitive and rule-based tasks with clearly defined procedures.	Complex tasks requiring analysis, judgment or creativity.
Examples	Robotic Process Automation (RPA), chatbots, AI quality control.	Customer recommendation systems, AI-assisted financial planning.

The theory related to the application of AI in business proposed by Barney (1991, pp. 99-120) is the Resource-Based View (RBV), a fundamental concept in strategic management. This theory argues that an organization's sustainable competitive advantage does not rely solely on its industry or external environment but depends largely on the organization's unique internal resources. AI is considered such a resource that is valuable, rare, difficult to imitate and well-organized qualities that can serve as the foundation for competitive advantage. Applying the

Resource-Based View (RBV) theory to AI in business involves using AI to enhance operational efficiency (Valuable) such as customer data analysis, while simultaneously developing proprietary AI models that are unique to the organization (Rare). For example, intelligent recommendation systems utilize algorithms and data analysis to offer products or content tailored to users' interests or needs, based on their past behavior and relevant data. This integration of AI with exclusive internal data unavailable to competitors (Inimitable) such as behavioral data from the company's own app combined with a skilled data analysis team, robust IT systems, infrastructure and a culture supportive of AI adoption (Organized), strengthens the organization's competitive position. Global companies exemplifying the application of RBV with AI to develop their businesses and enhance competitiveness include Amazon, which employs AI to analyze customer data in real time alongside its proprietary logistics system, making it difficult for competitors to replicate. Similarly, Netflix leverages personalized viewing behavior to tailor its recommendations uniquely for each user.

Several theories are relevant to the application of Artificial Intelligence (AI) in business. One prominent example is the Technology Acceptance Model (TAM), which has been widely employed to study the readiness and behavior of individuals or organizations in adopting new technologies, including AI. Davis (1989, pp. 319-340) introduced TAM, positing that users' acceptance or rejection of technology depends primarily on two factors including perceived usefulness, defined as the degree to which a person believes that using a particular technology will enhance their job performance, and perceived ease of use, which refers to the extent to which a person believes that using the technology will be free of effort. When users perceive a technology as both useful and easy to use, they tend to develop a positive attitude toward its adoption, which subsequently leads to actual usage behavior. In contrast, Christensen (1997, pp. 39-43) proposed the Disruptive Innovation Theory, which views AI as an exemplar of disruptive innovation capable of transforming existing business models. According to this theory, AI begins as a novel technology that initially targets a small market segment that is underserved or unserved by incumbent solutions. Over time, it progressively improves until it displaces established technologies or methods, thereby fundamentally restructuring the market. Similarly, Rogers (2003, pp. 219-224) introduced the Diffusion of Innovations Theory, which explains the process by which innovations such as AI disseminate within business contexts. This diffusion occurs through sequential stages including awareness, trial, and eventual full adoption, with the pace and extent of adoption influenced by opinion leaders and organizational structures.

Based on the aforementioned theoretical frameworks, the author summarizes the linkage between these theories and the practical implementation of AI in the business sector as follows:

Table 3 Summary of the linkages between theories and the application of AI in business

Theory	Key Theoretical Concept	Practical Applications in Business
Technology Acceptance Model (TAM)	If AI is perceived as useful (Perceived Usefulness) and easy to use (Perceived Ease of Use), it is more likely to be widely adopted.	• Design AI system interfaces to be user-friendly • Provide training programs for employees to understand the benefits of AI • Apply AI in areas with rapid visible outcomes, such as chatbots or sales assistance systems
Resource-Based View (RBV)	AI can be considered a strategic resource. If an organization can develop proprietary AI systems, it can gain long-term competitive advantage.	• Develop AI models tailored to organization-specific data (e.g., local customer behavior) • Invest in infrastructure such as data warehouses and data science teams • Create barriers to imitation by competitors
Disruptive Innovation Theory	AI has the potential to disrupt existing business models by enabling more efficient, technology-driven alternatives. Understanding both risks and opportunities is essential.	• Traditional businesses should rapidly adapt to avoid being displaced by AI-driven startups • Entrepreneurs should target underserved niche markets where AI can add value • Develop “lean-fast-flexible” products/ services using AI
Diffusion of Innovations Theory	The diffusion of AI follows a gradual adoption process through five adopter categories. This helps in designing strategies for AI adoption at scale.	• Begin with “early adopters,” such as sales/ marketing teams that seek data-driven insights • Use internal case studies to demonstrate successful outcomes to encourage the “early majority” • Promote trialability and observability to foster adoption

In addition to applying these four theoretical concepts in real-world business contexts, the author has examined the strengths and weaknesses of each theory to provide readers with a

comprehensive understanding of both the potential benefits and possible negative implications of implementing AI within organizations. The researcher has summarized these points as follows:

Table 4 Summary of the strengths and weaknesses of the four Theories

Theory	Strengths	Weaknesses
Resource-Based View (RBV)	• Emphasizes unique internal resources to create long-term strategic advantages • Suitable for developing proprietary AI that is difficult to replicate	• Overlooks external factors such as rapidly changing technologies or market behaviors • Lacks analysis of social and ethical impacts
Technology Acceptance Model (TAM)	• Provides a systematic framework for analyzing user behavior and technology acceptance in a comprehensive manner • Serves as a valuable foundation for designing systems and developing structured training programs	• Primarily emphasizes the perspective of individual users, without adequately addressing organizational or complex structural factors • Fails to sufficiently consider social, cultural, or technical constraints
Disruptive Innovation Theory	• Highlights the transformation of business models and opportunities arising from AI-driven innovation • Encourages incumbent organizations to accelerate their adaptation	• Focuses on market dynamics and innovation but lacks emphasis on resource management and internal organizational governance • Does not address ethical considerations or social risks associated with AI implementation
Diffusion of Innovations Theory	• Explains the process of technology diffusion and the roles of different user groups • Assists in strategizing the expansion of AI adoption through Early Adopters	• Focuses primarily on the diffusion process without in-depth analysis of strategic dimensions or economic and social impacts • Unsuitable for assessing policy-level effects or managing AI resources within large organizations

Based on the author's analysis of the theoretical frameworks related to the application of AI as discussed above, a critical perspective can be offered as follows: Although AI holds significant potential to enhance efficiency and create competitive advantages, its implementation also entails important limitations and risks. One major concern is the impact on labor as many human workers may be displaced, leading to widespread job insecurity. Consequently, organizations must establish policies for skill development such as reskilling and upskilling to effectively address this transition. Moreover, digital inequality between large enterprises with abundant resources and SMEs with limited capabilities exacerbates the technological gap. For instance, Amazon invests heavily in AI technologies to develop real-time customer behavior-based recommendation systems, as well as complex AI-driven warehouse and logistics management. These innovations significantly improve efficiency and reduce costs but require strong technological infrastructure, data science teams and substantial financial resources that most SMEs cannot allocate.

In contrast, local SMEs such as restaurants tend to adopt simpler, low-cost AI applications like chatbots on social media platforms for order taking or basic automated table reservation systems. These represent introductory levels of AI usage that demand minimal investment but are limited in their capacity for deep data analytics or the development of proprietary AI systems. As a result, SMEs face constrained opportunities to leverage AI for competitive advantage compared to large corporations. This case study highlights the critical issue of technological and resource disparities between large businesses and SMEs, which must be addressed to promote inclusive and sustainable AI adoption across the business sector.

Regarding ethics and privacy, risks include the unauthorized use of data, algorithmic bias, and the opacity of AI decision-making processes, which raise questions about accountability when errors occur. Therefore, AI deployment in business should be accompanied by the establishment of robust governance frameworks and risk management strategies to ensure responsible and sustainable use of AI technologies.

TRANSLATING THEORETICAL FRAMEWORKS INTO PRACTICE THROUGH THE STRATEGIC USE OF ARTIFICIAL INTELLIGENCE

According to McKinsey & Company (Online, 2023), integrating theoretical foundations with the practical implementation of artificial intelligence (AI) extends beyond merely adopting new technology; it involves strategic planning grounded in a comprehensive understanding of

user behavior, organizational structure, and evolving market dynamics. This strategic alignment enables organizations to deploy AI in a manner that is efficient, sustainable, and conducive to long-term competitiveness. Central to this process is the formulation of organizational AI strategies, including the design of training programs that foster AI acceptance among employees. Furthermore, such an approach facilitates the assessment of the long-term value and impact of AI implementation. From a marketing perspective, AI is employed to analyze consumer behavior and personalize marketing content for individual users. In the realms of production and logistics, machine learning algorithms are used to forecast demand and optimize production planning with greater precision. In customer service, AI-powered chatbots and virtual assistants enable 24/7 support, thereby reducing human workload and improving service responsiveness. In the financial domain, AI systems are utilized for risk analysis, fraud detection, and the automation of financial reporting. Based on these developments, the author summarizes the key AI tools currently popular among modern entrepreneurs as follows:

Table 5 Summary of popular AI tools currently sed by modern entrepreneurs

Application Area	AI Tools	Benefits of AI Tool Utilization
Marketing	ChatGPT, Jasper AI	Automates content generation for targeted marketing communication.
Data Analytics	Tableau integrated with AI, Google Analytics	Analyzes customer trends and generates predictive insights.
Finance	QuickBooks with AI features	Forecasts revenue and expenses with greater accuracy.
Customer Service	Chatbots (e.g., ManyChat, Dialogflow)	Provides automated, real-time customer support and interaction.

Based on the analysis of the linkage between theory and practice through AI application above, the author posits that implementing AI within organizations is not merely a matter of adopting technology. Instead, it requires strategic planning grounded in an understanding of user behavior, organizational structure and market dynamics to achieve sustainability and long-term competitive advantage. Organizations should prioritize strategy design, training and fostering AI acceptance alongside evaluating cost-effectiveness and long-term impacts. The author observes that AI can create value across multiple dimensions, including marketing,

production and logistics, customer service and finance. Widely used tools exemplifying this trend include ChatGPT, Jasper AI, Tableau integrated with AI, Google Analytics, QuickBooks enhanced with AI and various chatbot applications. These tools collectively enhance operational efficiency and help modern organizations secure competitive advantages.

THE BENEFITS OF ARTIFICIAL INTELLIGENCE (AI) FOR MODERN ENTREPRENEURS

According to the OECD (2024, pp. 6-8), small and medium-sized enterprises (SMEs) that systematically adopt AI technologies can enhance their productivity by approximately 30-40% within just 1-2 years. The integration of AI offers multifaceted advantages for modern entrepreneurs, which the author has synthesized and summarized as follows:

1. Enhancing Operational Efficiency: AI significantly improves business operations by reducing time spent on repetitive tasks, such as document processing, responding to emails, and data entry. Automation systems and Robotic Process Automation (RPA) can substitute routine labor, allowing entrepreneurs to focus more on strategic planning and high-value activities.

2. Gaining Competitive Advantage: AI facilitates market differentiation through intelligent systems like recommendation engines and AI-driven pricing strategies. Particularly for SMEs, leveraging efficient AI technologies can narrow the competitive gap with larger firms, enabling them to compete more effectively in dynamic markets.

3. Supporting Data-Driven Decision-Making: AI enhances decision-making accuracy by rapidly analyzing vast volumes of data, including sales figures, consumer behaviors, and market trends. This empowers entrepreneurs to formulate well-informed strategies for marketing, inventory management, and resource allocation.

4. Reducing Business Costs: AI helps lower operational costs by minimizing the need for human labor in specific roles for instance, deploying chatbots instead of traditional call centers. Moreover, AI reduces human error through automated quality assurance and monitoring systems, thereby improving reliability and consistency.

5. Generating Deeper Customer Insights: AI enables in-depth analysis of consumer behavior, including purchasing patterns, clickstreams, and web interactions. These insights support the development of personalized customer experiences, such as offering targeted promotions or tailoring services to individual preferences.

6. Accelerating Innovation and Product Development: Entrepreneurs can use AI to identify market demands and product gaps by simulating outcomes of new ideas before actual

implementation. Tools such as generative AI can support rapid prototyping and design, thus shortening the product development cycle.

7. Enabling Scalability: AI systems operate continuously without the constraints of human limitations, enabling businesses to scale efficiently without proportional increases in staffing. This capability allows modern entrepreneurs to expand their operations rapidly while maintaining stable operational costs.

Based on the benefits of AI for modern entrepreneurs discussed above, the author suggests that the application of AI in SMEs, as highlighted in the OECD (2024, pp. 6-8) report, demonstrates the tangible potential of this technology to enhance organizational efficiency and competitiveness. The author views AI not merely as a technical tool but as a strategic resource that helps reduce costs, accelerate processes and support data-driven decision-making. Furthermore, AI enables SMEs to compete with larger organizations through advanced data analytics, personalized customer experiences and accelerated product innovation.

However, the author acknowledges the necessity of careful strategic planning, emphasizing the importance of investing in infrastructure and workforce skill development alongside AI adoption to ensure long-term sustainability. Additionally, considerations of digital equity and ethical issues must be addressed to prevent potential negative impacts arising from the use of this technology.

CHALLENGES IN ADOPTING ARTIFICIAL INTELLIGENCE (AI) AMONG MODERN ENTREPRENEURS

Pandey (Online, 2025) argues that while modern entrepreneurs increasingly recognize the potential of artificial intelligence (AI), they are confronted with a multitude of challenges ranging from financial constraints and talent shortages to data governance, legal frameworks, and organizational culture. Udinmwen (Online, 2025) emphasizes that developing a comprehensive strategy encompassing data management, workforce upskilling, and internal policy design is key to ensuring that AI adoption is both effective and sustainable. The challenges faced by modern entrepreneurs in integrating AI into business operations can be summarized as follows:

1. High Implementation Costs: The first and foremost challenge is the high cost required for the implementation of AI. Many small and medium-scale enterprises do not have adequate resources to acquire the hardware, software, and skills of experts. According to a report from Infocomm Media Development Authority (Online, 2025), only 4.2% of SMEs in

Singapore have adopted AI technologies, and this is mainly attributed to high initial costs and the lack of skilled personnel (Bhandari & Fook, Online, 2025).

2. Skills Gap and Talent Shortage: The lack of AI professionals is a key constraint. Many SMEs are unable to employ or develop staff with the required technical skills, as reported by Deloitte, which cites that 65% of SMEs see gaps in workforce skills as a key challenge to integrating AI, and Infocomm Media Development Authority (Online, 2025) has identified a lack of agility and fundamental knowledge. (ITSoli, Online, 2025).

3. Data Quality and Governance: AI systems rely heavily on structured, accurate, and well-governed data. The University of Technology Sydney (Online, 2025) reports that many SMEs struggle with poor data quality and insufficient data governance practices, which in turn affect AI performance. Supporting this, Cisco (Online, 2024) found that fewer than one-third of organizations possess adequate data readiness, thereby limiting the effectiveness of AI deployment.

4. Integration with Legacy Systems: The integration of AI into legacy IT systems is a challenge on many technological and financial fronts. Most of the legacy systems are not compatible with AI frameworks; infrastructure overhauls are required, and these are usually expensive. According to the University of Technology Sydney (Online, 2025) states that "The complexity of the integration of AI into existing systems is often inevitable, along with the costs for an entrepreneur".

5. Privacy and Security Concerns: The application of AI in handling personal or transactional data invokes major concerns in cybersecurity and data protection. According to a 2025 survey conducted by Udinmwen (Online, 2025) 64% of European businesses are concerned about deepfake technologies, but only 18% are investing in strong measures related to data privacy and security. Moreover, a report released by, The University of Technology Sydney (Online, 2025) states that most AI-powered products lack accuracy in data handling and cause consumer privacy concerns.

6. Organizational Culture and Resistance to Change: Cultural resistance within organizations remains a major obstacle. Many small firms are hesitant to adopt AI, fearing system errors or job displacement. Forbes reports that a lack of trust and understanding about AI technology significantly hinders its acceptance (Hickman, Online, 2025).

7. Unclear Return on Investment (ROI): Most businesses cannot clearly define the short-term returns from AI implementation, which in turn gives them pause in continuing or

scaling AI initiatives. Forbes' report by Poinski (Online, 2025) suggests that a fair share of business owners still remain uncertain about whether AI can yield tangible and measurable ROI.

From the author's analytical perspective, the challenges of adopting AI in modern entrepreneurial businesses are complex and interconnected, involving multiple factors such as resources, personnel, and organizational structure. The author identifies high costs and a shortage of skilled professionals as significant barriers preventing SMEs from fully investing in AI. Simultaneously, issues related to data quality and unstructured data management, along with difficulties integrating AI with existing systems, further complicate implementation efforts.

Moreover, concerns regarding security, privacy, and cultural resistance within organizations contribute to limited acceptance of AI. The author therefore argues that addressing these challenges requires a holistic strategy encompassing investment in infrastructure, workforce skill development, fostering an organizational culture receptive to technology, and establishing clear ROI metrics. Such an integrated approach is essential to ensure that AI adoption delivers lasting value and sustainability.

SUSTAINABLE PROMOTION OF AI ADOPTION AMONG MODERN ENTREPRENEURS

As previously discussed, this paper has explored fundamental theoretical perspectives on the application of Artificial Intelligence (AI) in business, and examined how these theories can be practically integrated to enhance the operations of modern entrepreneurs. While the numerous benefits of AI adoption have been outlined, the author has also addressed the multifaceted challenges associated with implementing AI in the business context. In this section, the author proposes strategies to promote the sustainable integration of AI among modern entrepreneurs to ensure long-term resilience and growth. These strategies are summarized as follows:

1. Development of Digital Infrastructure: According to the OECD (Online, 2025), the full potential of AI can only be realized when supported by robust Information and Communication Technology (ICT) infrastructure, including cloud systems and standardized data interoperability. Key components of such infrastructure include:

- Hardware Infrastructure: Computers, servers, networking devices (e.g., routers, switches), and data storage systems (e.g., NAS, storage servers).

- Software Infrastructure: Operating systems (OS), database management systems (DBMS), cybersecurity tools, ERP/CRM systems, cloud platforms and data processing applications.

- Network & Connectivity: High-speed internet, 5G, Wi-Fi, VPNs, intranet systems, and fiber optic networks for enterprise and government use.

- Cybersecurity Infrastructure: Firewalls, intrusion detection and prevention systems (IDS/IPS), and data encryption technologies.

- Backup & Recovery Systems: Data centers, cloud infrastructure (e.g., AWS, Azure, GCP), and edge computing systems.

- Big Data Platforms: Systems for large-scale data storage and analytics, supported by human and organizational infrastructure including system administrators, data engineers, and cybersecurity officers.

2. Development of Workforce Skills: The OECD (Online, 2025) emphasizes that a significant skills gap in AI remains a major barrier to its implementation. SMEs and new entrepreneurs require access to targeted training programs, hands-on learning opportunities, and partnerships with universities and industry players to build AI competencies.

3. Building an Enabling Ecosystem: OECD (2024, pp. 6-8) highlights the Digital for SMEs (D4SME) initiative, which promotes cooperation among governments, businesses, and academia to share AI best practices and facilitate co-learning activities (Badghish & Soomro, 2024). In the United Kingdom, initiatives such as the AI Champion for SMEs provide tailored guidance and policy adaptation for businesses of various sizes (The Times, Online, 2025).

4. Financial Incentives and Tax Benefits: While the Help to Grow-Digital initiative in the United Kingdom yielded limited success, the European Union has effectively supported AI adoption through low-interest loans and tax incentives for SMEs. Policies such as R&D tax credits and grants for developing AI proof-of-concept models have also played a vital role (The Times, Online, 2025).

5. Ethical and Sustainable Governance: The OECD (Online, 2025) advocates for ethical AI use grounded in transparency, fairness, and accountability. Small businesses and SMEs should establish clear policies on data privacy and responsible AI usage to foster consumer trust and ensure regulatory compliance.

6. Evaluation and Monitoring Frameworks: According to the OECD (Online, 2025), policymakers should implement structured monitoring frameworks to evaluate AI adoption outcomes. This includes defining stepwise Key Performance Indicators (KPIs) and issuing periodic AI usage reports to support continuous improvement and adaptive governance.

From the author's analytical perspective, promoting sustainable AI adoption among modern entrepreneurs requires an integrated approach across technological, human resource, and policy dimensions. A key priority is developing a robust digital infrastructure including hardware, software, networking systems, and cybersecurity measures to enable AI to operate at full capacity. This must be accompanied by enhancing workforce skills through training programs and collaborative efforts among government agencies, universities, and the business sector. Furthermore, establishing an ecosystem that fosters collaboration, provides financial incentives and implements transparent, ethical governance policies is essential for building consumer trust. The author also emphasizes the importance of systematic monitoring and evaluation of AI usage through clear performance indicators, enabling entrepreneurs to continuously improve and refine their AI applications. Collectively, these measures will contribute to building sustainable competitive advantage over the long term.

SUMMARY

Based on the comprehensive information presented above, the author aims to highlight the interconnectedness of various concepts and theories with the practical application of AI in contemporary entrepreneurial businesses. This includes elucidating the benefits AI offers to these entrepreneurs, while simultaneously addressing the challenges that may arise during AI implementation. Furthermore, the author proposes sustainable approaches to promoting AI adoption among modern entrepreneurs. The key points presented can be summarized as follows.

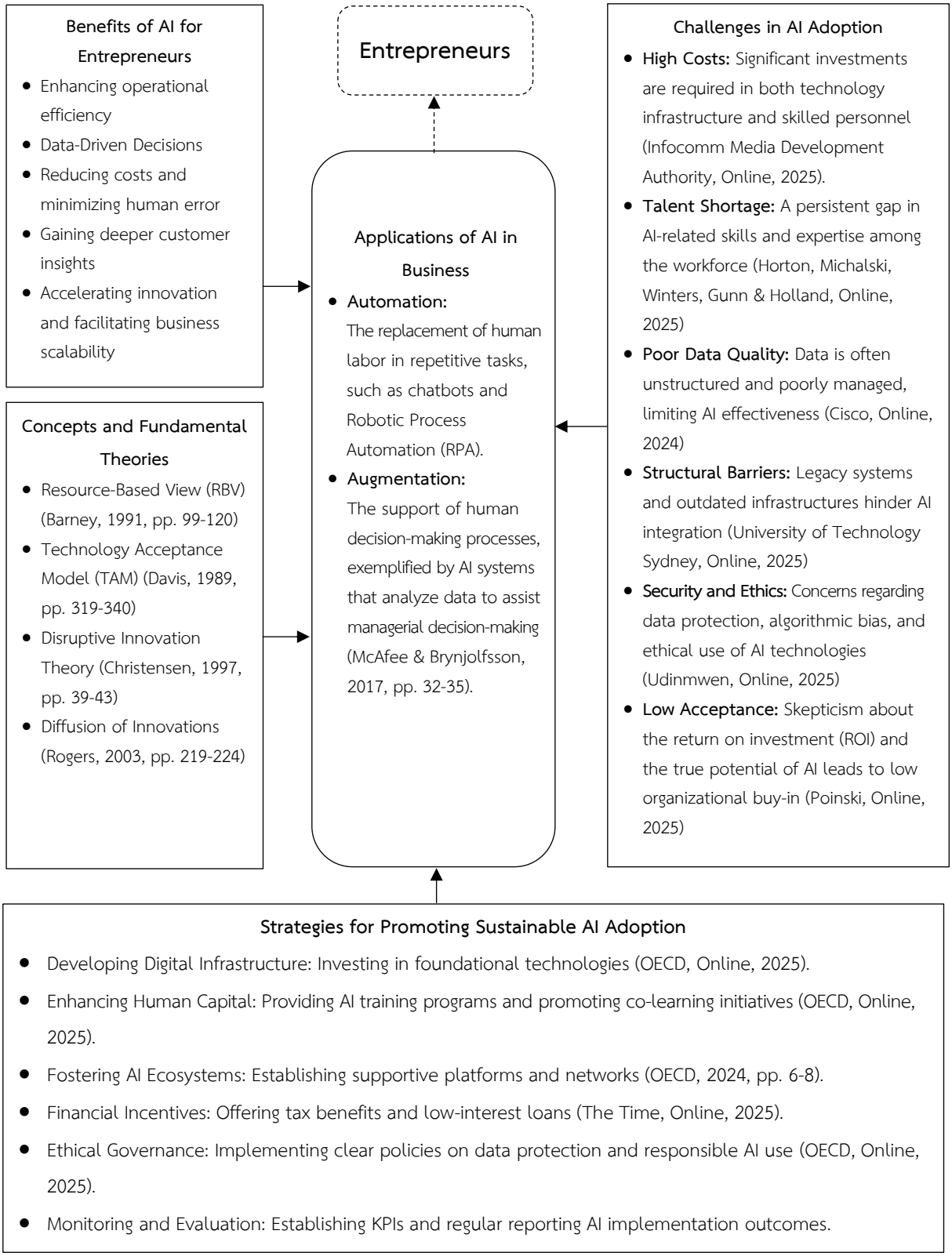

Figure 1 Framework for Promoting Sustainable AI Adoption Among Modern Entrepreneurs

Based on the framework for promoting sustainable AI adoption among modern entrepreneurs presented in Figure 1, the author highlights the systematic integration of key concepts and theories with the practical application of AI in business. The author argues that AI is not merely a tool for enhancing efficiency but a strategic resource that generates competitive advantage through data-driven decision-making, cost reduction and deep customer insights. At the same time, the author emphasizes the challenges businesses face, including high costs, workforce limitations, data readiness, infrastructure issues, and concerns over ethics and data security, all of which must be addressed to ensure sustainable benefits from AI use. To this end, the author proposes a comprehensive promotion approach encompassing investment in infrastructure, workforce skill development, collaborative ecosystems, financial support, and transparent, ethical governance. This perspective reflects that effective and sustainable AI implementation requires integrated strategic planning that combines technology, human resources, and policy dimensions in a cohesive manner. Such an approach will enable organizations to operate efficiently and respond effectively to the challenges of today's digital business environment.

RECOMMENDATIONS

This article has presented a synthesis of key concepts and foundational theories related to artificial intelligence (AI), while also demonstrating how these theoretical foundations can be translated into practice through the application of AI. It has outlined the benefits of AI implementation and emphasized the challenges faced by modern entrepreneurs. Moreover, it has proposed strategies to promote sustainable AI adoption among new generation entrepreneurs. Based on these insights, the author would like to offer the following recommendations as guidelines to maximize the benefits of AI adoption in entrepreneurial settings:

1. POLICY RECOMMENDATIONS

First, the government should play a more proactive role in supporting AI adoption through clearer and more targeted policies than in the past. This could begin with launching dedicated AI support programs for small and medium-sized enterprises (SMEs), such as AI-as-a-Service or AI sandboxes. In parallel, existing programs like the Digital Transformation Voucher should be expanded to improve SMEs' access to technology. A national strategy that integrates AI, digital skills, and sustainability should also be developed to ensure alignment across sectors.

Second, investment in digital infrastructure development should be elevated to a national agenda. This includes prioritizing investments in cloud data centers and high-speed

internet connectivity. Simultaneously, organizations must be supported in upgrading legacy IT systems to become AI-compatible. Tax incentives should be granted to new-generation entrepreneurs who invest in AI systems and digital technologies, thereby encouraging broader AI adoption.

Third, efforts must be made to strengthen digital skills and AI literacy among the workforce. This can be achieved by developing tailored AI curricula for entrepreneurs at all levels, in collaboration with universities, vocational colleges, and technology firms. Initiatives such as bootcamps, micro-certification programs, and structured upskilling/reskilling programs in data analytics, machine learning, and AI tools should be promoted to address the talent gap.

Fourth, there is a need to foster an AI innovation ecosystem through enhanced collaboration among government agencies, the private sector, and academic institutions. This includes establishing Innovation Hubs and AI Incubators, as well as promoting public-private partnerships and startup-SME collaborations via open innovation platforms. Moreover, organizing knowledge-sharing platforms such as the "AI Best Practice Conference" for Thai entrepreneurs would help accelerate learning and adoption.

Fifth, ethical and transparent AI usage should be promoted by developing clear guidelines and ethical standards applicable across all levels of entrepreneurial activities. Simultaneously, awareness of data privacy and compliance with the Personal Data Protection Act (PDPA) should be raised. The adoption of Explainable AI (XAI) should also be encouraged to build trust and understanding among users and stakeholders.

Finally, mechanisms for monitoring and evaluating the value of AI implementation should be established. This includes designing performance indicators (KPIs) that are tailored to the context of small businesses and supporting the preparation of AI impact assessments measuring outcomes such as productivity gains, return on investment (ROI) and cost savings. Organizations should also be encouraged to produce long-term AI Impact Reports to track and evaluate the effectiveness of AI deployment over time.

2. Recommendations for Entrepreneurs

First, Entrepreneurs should provide continuous training for their employees and foster collaboration with external institutions to enhance AI expertise. This addresses the identified skills gap, which is a significant barrier to AI development and application.

Second, Entrepreneurs need to establish clear key performance indicators (KPIs) to monitor AI outcomes and adjust strategies based on empirical data, ensuring that AI investments deliver maximum effectiveness.

Third, Entrepreneurs should align AI objectives and roles with their overall organizational strategy by specifying areas where AI can create value-such as improving efficiency, reducing costs, or driving innovation-to provide clear direction and measurable results for AI investments.

Fourth, Entrepreneurs must develop data privacy protection policies and responsible AI usage guidelines to build trust and mitigate legal and ethical risks.

Fifth, Entrepreneurs are encouraged to start AI adoption with small-scale projects that yield quick results-such as implementing chatbots or sales data analytics systems-before evaluating outcomes and scaling up in areas that generate the highest value.

Finally, Entrepreneurs should enhance data management systems by upgrading IT infrastructure and software to enable seamless integration with AI technologies. Effective AI deployment depends on high-quality data and appropriate digital infrastructure.

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