Next-Gen AI for Business Transformation

Tippawan Meepung[1]

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Abstract

This academic paper examines the process of transforming business to modern era with artificial intelligence technology. To serve as a guide for digital entrepreneurs in Thailand. Referring to information from global indices and government policies that support the creation of artificial intelligence innovation for the public and private sectors. Business transformation involves many factors, including the integration of advanced technologies into business processes. Adapting new business strategies and models Developing skills in using artificial intelligence for personnel, determining operational measures. Reorganization and culture evolution. The business transition to the artificial intelligence era with agentic AI is an evolution of AI that could understand commands or targets and turn them into a series of complex actions without relying on human control. It is considered a change in AI that supports entrepreneurs in the digital era for competition. The Artificial Intelligence regulatory framework under the EU AI Act and the National AI Action Plan for Thailand's Development establishes guidelines for data management to associate technology, ethics, and good governance, build consumer confidence, and promote social responsibility.

Keywords: Business transformation, AI transformation, Agentic AI, AI Governance

[1] Faculty of Business Administration and Information Technology, Rajamangala University of Technology Tawan-ok, Thailand.
Corresponding author, e-mail: tippawan_me@rmutto.ac.th

Introduction

The Networked Readiness Index (NRI) report, a global digital index survey by the World Economic Forum (WEF), reflects the potential of Thai entrepreneurs to adapt and use technology at a medium level. Thailand is ranks 53rd out of 133 countries, while its innovating ranking is 40th . These results reflect the ability of Thai business to adapt to the digital age (Portulans Institute, 2024). The continuous promotion of the digital economy in Thailand encompasses various sectors across manufacturing and service industries related to digital technology. These are divided into five components: hardware and smart device, software, communications, digital service, and digital content (Jongwanich, 2024).

According to the 2025 global survey and ranking by the International Institute for Management Development (IMD, 2025), Thailand's competitiveness based on over 330 assessment criteria - demonstrates its structural readiness as a key foundation for the transition to the AI Era. Thai economy is expanding, driven by investment and government policies. Entrepreneurs are responding to these changes by developing necessary infrastructure to increase business efficiency and compete nationally and globally.

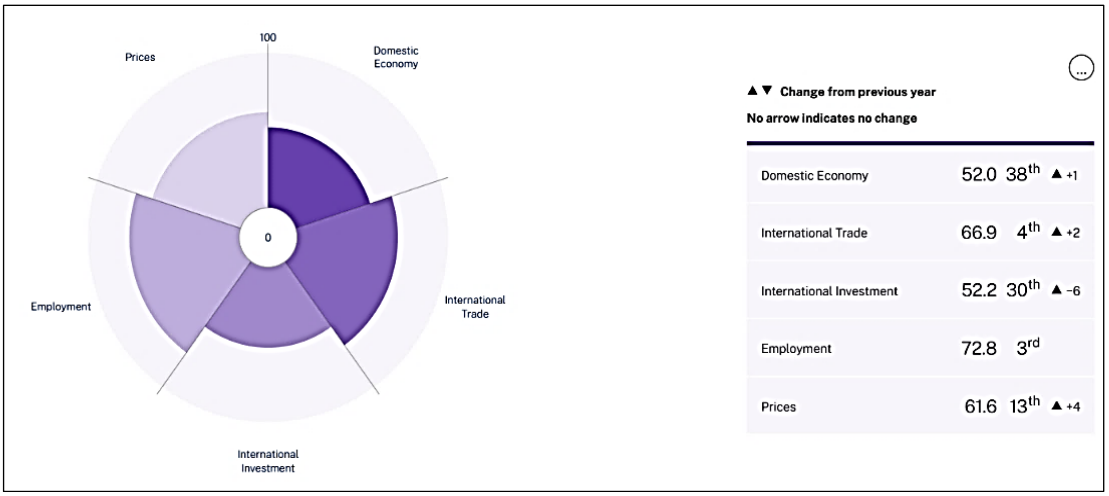

Figure 1 Thailand rankings

Source : IMD (2025) (IMD, 2025)

Figure 1 shows that Thailand's overall economic strength is ranked 38th in the world, 4th in international trade and 4th in international investment. There are still gaps for entrepreneurs in many areas, such as promoting the domestic economy or international investment using artificial intelligence (AI) technology.

Figure 2 show Thailand's strengths in employment and international trade. Entrepreneurs are leveraging these advantages to drive their businesses with AI technology, which is now a key focus and part of the National Economic and Social Development Plan (Digital Thailand Plan). The goal is to enhance business capabilities over a 20-year period, from 2018 to 2037. This is achieved by promoting: 1) AI skills; 2) the creation of workforce assessment tools and support for workforce planning; 3) enhancing the capabilities of Thai workers for the global market; and 4) the application of AI to create an advantage in international trade, based on global market trends and predicting international transportation, export, and logistics costs (Digital Government Development Agency, 2023)

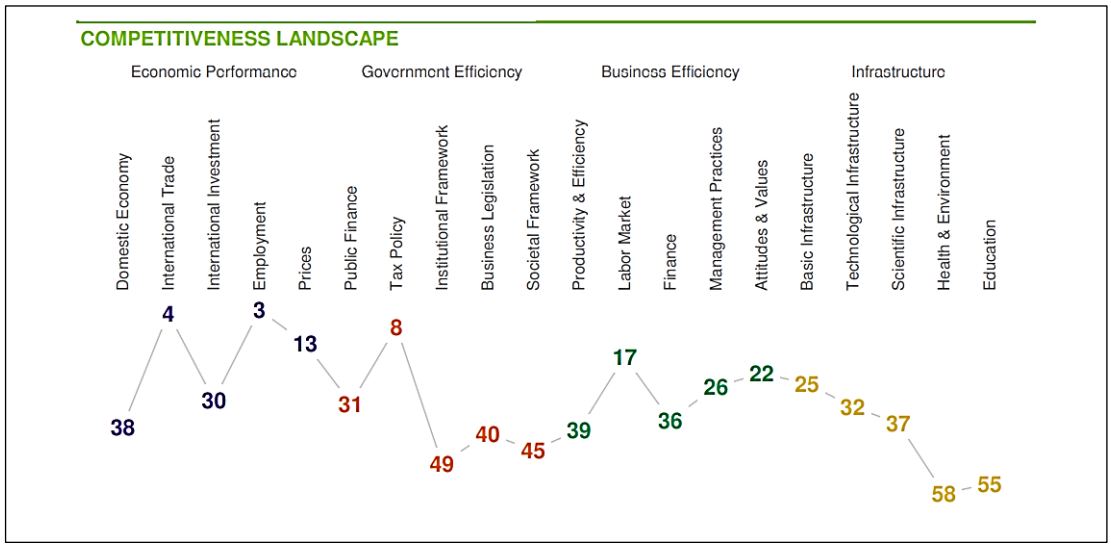

Figure 2 Thailand's competitive landscape

Source: IMD (2025) (IMD, 2025)

The 2024 policy of the Ministry of Digital Economy and Society (MDES) and related agencies aim to increase the digital economy's share through the development of digital infrastructure, fostering a robust ecosystem, and promoting the development of labor skills in key industries and technologies, including semiconductors, electric vehicles (EVs), and artificial intelligence (AI). This policy is also aimed at promoting the adoption of technology in all sectors of business, startups, and emerging technology development (TIDC, 2024).

The transition to a digital economy, coupled with the adoption of artificial intelligence (AI) to promote business development in Thailand, is underway. The government has set a target for

the digital economy to contribute 30% of the country's GDP by 2030, aiming to enhance economic stability and global competitiveness (Reuters, 2024).

This article examines the development of businesses focused on AI-driven businesses, coupled with business processes, in line with the EU's AI Act and the AI Action Plan for Thailand. These approaches are crucial for digital entrepreneurs.

Business Transformation

By 2025, artificial intelligence (AI) technology will be rapidly transforming the economic structure, labor market, organizational culture, and society, transforming it into a new AI-driven economy, often referred to as the AI Economy. This will impact on the industrial sector as it restructures its operations to align with this technology.

Table 1 Presents the key factors related to business transformation into the AI Era

Factors related to business transformation	(Sagio et al., 2025)	(Yildiz et al., 2024)	(Shireesha et al., 2024)	(Ávila-Guerrero et al., 2023)	(Bastian Stahl et al., 2023)	(Stukalina & Zervina, 2023)	(Escóbar, 2023)	(Morozova et al., 2023)	frequency
Technology Adoption	•	•	•	•	•	•	•	•	8
Business Model Strategy	•	•	•	•	•	•	•	•	8
Employee & New Skills	•	•	•	•	•	•	•	•	8
Policies & Best Practices	•		•		•		•	•	5
Cybersecurity & Data Privacy	•		•				•	•	4
Organizational Culture		•		•	•			•	4
Organizational Structure				•	•			•	3
Data Management/Analytics	•				•	•			3
Customer Value Creation / Personalization	•			•	•				3
Partnerships/External Expertise		•				•			2
Technology Acceptance	•		•						2

Source: Data collected by the author (2025)

From the synthesis of factors related to business transformation to the AI Era, the following key factors were identified:

1. Advanced technology integration in preparing for technological expansion by establishing a foundation on global digital platform. Creating an ecosystem to support users and integrate digital platforms and tools into work processes. This includes incorporating advanced technologies such as automation, autonomous vehicles, data analytics, cloud computing, artificial intelligence, big data, blockchain, IoT, AR/VR, quantum technology, robotics into business operations and innovation.

2. Business strategies and business models focus on setting strategic goals and technology strategies to drive business growth. Applying technology appropriately to the current era, providing flexibility, helping to increase operational efficiency, increasing opportunities and creating new markets. Such technology makes communication with customers more effective, creating quantitative success indicators using digital indicators instead of traditional KPIs.

3. Reskilling focuses on supporting employee reskilling to understand technology adoption and AI-driven processes.

4. Policies and Practices focus on establishing guidelines under the AI governance framework for business operations to ensure customer confidence in accuracy, transparency, and security of data.

5. Cybersecurity and Data Privacy focus on establishing guidelines for protecting personal data in business processes, risk management, loss prevention, and data security.

6. Organizational Culture focuses on creating an organizational culture that encourages employees to adapt and adapt to changing work methods, including restructuring and reducing staff as needed, and monitoring changes.

In summary, to successfully transform today's business operations, entrepreneurs need to integrate AI technology into their business strategies to add value and create new, personalized customer experiences. This includes investing in employee reskilling, establishing policies and practices, restructuring, and building an organizational culture.

The following guidelines can be summarized as business transformation approaches to the AI era:

1. Current Situation Analysis (AS-IS) is conducted to assess the current situation, analyze the organization's strengths, weaknesses, opportunities, and risks.

2. New Vision and Strategy involves defining the vision, creating new strategies, and goals to align with the business direction and AI.

3. Organizational Restructuring focuses on changing work styles and prepare necessary resources for new work processes.

4. AI Technology Adoption is conducted to implement AI in business processes and support decision-making.

5. Automation involves improving automated work processes, redundancy, and integration of AI into workflows.

6. Organizational Culture is conducted to create new values and focus on internal communication to understand AI-driven changes.

7. Training focuses on developing AI skills for employees.

8. Monitoring and Evaluation is conducted to monitor and evaluate the progress of the changes.

Comparing Business Transformation to the Artificial Intelligence Era.

Artificial intelligence technology has significantly transformed current business processes. Technology has increased efficiency. Entrepreneurs in the AI era need to restructure their organizations. Automating work processes instead of traditional methods has resulted in employee layoffs and reduced salary costs. AI supports the creation of a new, agile organizational culture, fostering innovation.

Before 2024, entrepreneurs will use digital technology to conduct business, primarily driven by employees. Operational data collection, access, and processing of data will be done on the cloud. Software applications include accounting and finance programs, CRM systems, and online marketing platforms. Related devices include computers, servers, IoT devices, and motion sensors. Supporting technologies include email systems, electronic document management systems, and online marketing tools.

Executive decisions are based on employee reports and knowledge gained from experience. Business costs vary depending on relevant factors, and organizational growth is primarily dependent on the efficiency of employees and infrastructure.

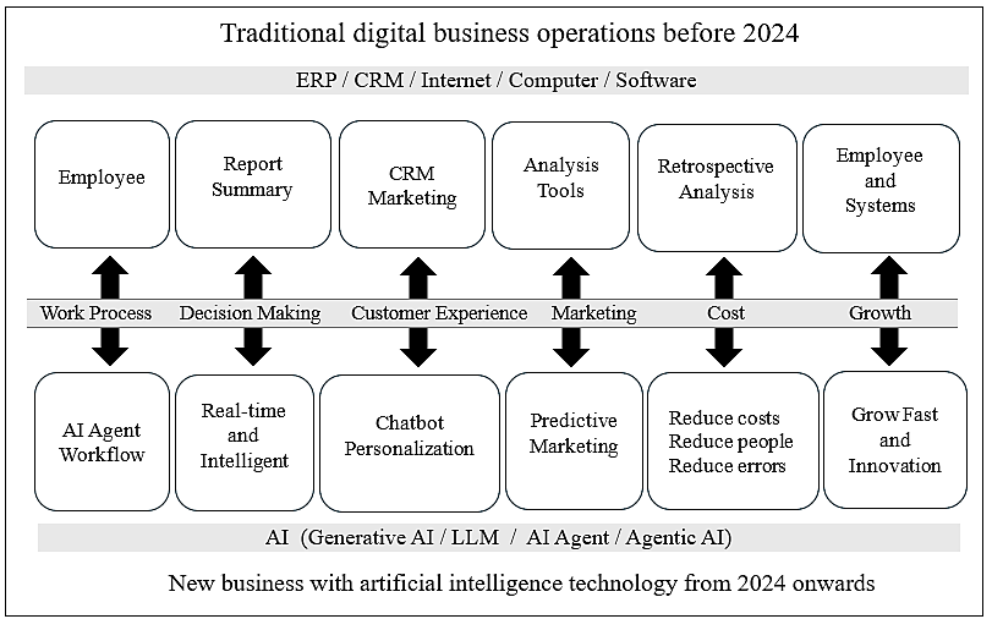

Figure 3 Compare business transformation to AI technology

Source : Created by the author (2025)

Since 2024, digital entrepreneurs have been implementing AI in business processes to reduce redundant processes and automate them, increase agility, and reduce errors. Work patterns after 2024 are undergoing a transformation, with artificial intelligence replacing humans in many organizational roles. Artificial intelligence relies on analyzing complex, large-scale data and making decisions on behalf of humans. Generative AI is a development in artificial intelligence that efficiently creates content, marketing campaigns, and various forms of digital media, saving time and operating costs. It also helps develop professional marketing strategies and creates personalized customer experience by recommending products of interest, automatically answering questions, and providing after-sales support.

AI Transformation

The transformation to AI-powered business means fully integrating AI technology into business processes. Organizational restructuring shifts from traditional digital technologies to AI-driven automation. Entrepreneurs are reshaping their business models, rethinking their strategies, and making comprehensive changes to their work processes, decision-making, and organizational culture to align with the times and changing technologies, while also considering energy and the environment (Chen, L, 2023). AI is a technology that reduces operating costs, detects data

anomalies, analyzes financial risks, and improves credit and investment efficiency. This creates new revenue streams, as well as analyzes customer behavior and responds to customer needs (depa, 2024).

The shift to AI is a transition to modern technologies for business processes and delivering new experiences to customers. This transformation includes improving algorithms and working with AI agents, which automate tasks from the beginning to the end (Bai et al., 2025). AI decision-making is dynamic, supports collaborative workflows, increases flexibility and accuracy, and provides real-time feedback to solve complex problems across industries (Singh et al., 2025). Artificial intelligence technologies include large language models (LLMs) that are pre-trained on massive amounts of data and can operate independently (Yuksel & Sawaf, 2024). AI agents automate business processes by learning from data and making decisions to achieve goals without the need for humans (Khanda, 2024).

Artificial intelligence-driven automation supports employee performance, enabling internal process restructuring, improving data utilization, increasing employee efficiency, and creating innovative, personalized customer service offerings, increasing competitiveness across industries (Bulchand-Gidumal et al., 2024). Artificial intelligence drives business innovation and fosters customer engagement (Wang et al., 2023). AI-powered systems reduce processing time, provide 24/7 customer service, and support insights into consumer behavior, enabling businesses to leverage their marketing efforts and create promotions that truly appeal to their target customers (Gao Xueyuan & Feng Hua, 2023).

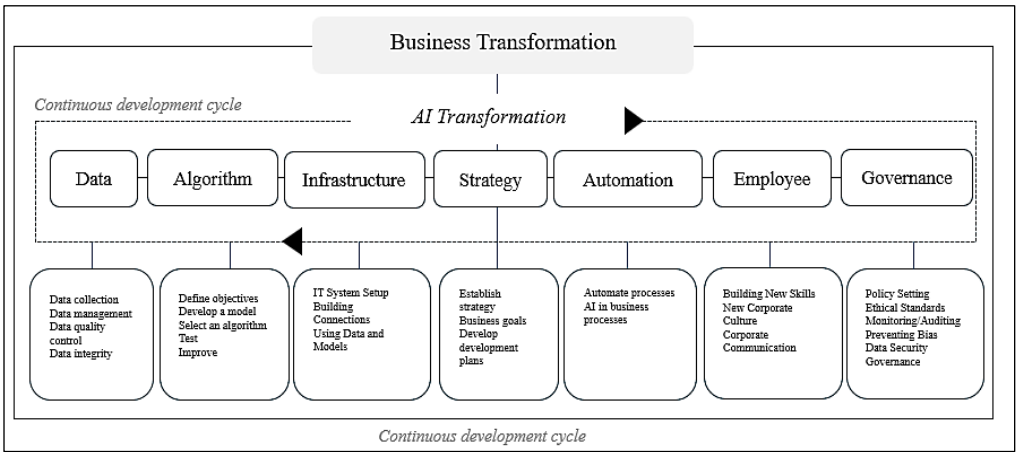

Figure 4 Components of Business Transformation with AI Technology

Source : Created by the author (2025)

The transition to the AI era consists of:

1. Data: This focuses on all data related to business operations, such as customer data, product data, and financial transaction data.

2. Algorithms: These involve step-by-step methods for solving problems and completing tasks. AI learns from the data and generates insights.

3. Infrastructure: This includes technological infrastructure, devices, and systems and databases that support operations.

4. Strategy: This supports business strategies that support new business activities.

5. Automation: This aims to integrate AI to increase efficiency through automated tools.

6. Employees: This focuses on developing new skills to understand the interplay between humans and AI.

7. Governance and Ethics: This establishes responsible and transparent AI governance policies for customers.

From 2025 onwards, amid ongoing technological change, entrepreneurs who can adapt quickly will find new opportunities for their own businesses or new businesses facing unprecedented competition.

Agentic AI

Agentic AI is the next evolution of AI, with capabilities superior to Agent AI. This signals a significant shift for digital entrepreneurs in the AI era (Pipakdee, 2025). Agentic AI further automates business processes, enabling automated decision-making, autonomous operation, rapid response, and proactive work, reducing previous limitations (Mohajan, 2025). Multi-agent collaboration (Sawant, 2025) increases business efficiency and supports personalized customer experiences (Wongcharoensangsiri & Athikulrat, 2025). Implementation must be coupled with relevant AI governance frameworks (Hosseini & Seilani, 2025) and accountable (Dechachai et al., 2025; Murugesan, 2025).

Agent AI impacts various industries. The lifecycle of agentic AI in business processes involves the management of data via AI by each department within an organization. These include:

1. Users, meaning customers, employees, or those interested in a product. By requesting information by submitting a query to the relevant system.

2. System refers to an agentic artificial intelligence developed for use in business activities, adhering to AI ethics regulations.

3. Agentic Operating System refers to a data management system consisting of an Orchestration Layer that coordinates communication with the core and formats the results. The Integration Layer connects data from various systems, including ERP, CRM, and MDM, to facilitate AI operations.

Internal communication within Agentic AI is categorized as follows:

1. Agent-to-Agent Communication

2. Agent-to-Human Communication

3. Agent-to-Agent Communication, which still requires human participation for verification.

The Data Management Agentic Marketplace is a data management platform for Agentic AI, consisting of 1. Data Discovery Agent, 2. Data Processing Agent, 3. Data Modeling Agent Insights, 4. Data & Metadata Generation Agent, 5. Quality Agent, and 6. Data Observability Agent. Digital entrepreneurs in the AI era must be aware of standard practices, integration, and data management to ensure the security of the data generated by AI-driven systems.

Explain the overall workflow

1. The user enters a login query.

2. The system performs Integration Layer checks.

3. The Orchestration Engine breaks down tasks into smaller tasks and assigns them to agents or humans as appropriate.

4. The Agentic Marketplace performs data exploration, processing, modeling, and quality control.

5. The results are refined and validated before being displayed.

This framework enables organizations to efficiently manage data and AI systems, integrate automated and human-generated data, and ensure comprehensive ethical auditing of results.

Agentic AI's Five Key Steps:

1. Goal focuses on achieving a goal or mission.

2. Plan aims to create a plan by integrating relevant data.

3. Execute involves acting in conjunction with systems or data sources.

4. Reflect focuses on evaluating and refining outcomes using memory or previous experience.

5. Respond involves presenting a response or outcome.

Agentic AI is highly effective because it can automatically think, plan, act, and refine outcomes, closely mirroring human cognitive processes.

The Benefits of Agent-Based Artificial Intelligence for Business in the AI Era

1. Automation: Artificial intelligence focuses on improving efficiency in automation, saving time and resources.

2. Insights-Driven: Artificial intelligence analyzes big data and applies it to business processes, such as information on products customers are interested in or products that correlate with higher sales, including seasonal promotional events.

3. Customer Experiences: AI creates personalized experiences through communication channels such as chatbots and virtual assistants, providing 24/7 customer support.

4. Predictive Analytics and Forecasting: AI aids in predicting market trends, accurately analyzing customer needs based on historical data.

5. Competition and Innovation: AI supports new business strategies, reduces operating costs, and creates innovative products or services that differentiate them.

6. Personalized Marketing: AI supports marketing campaigns by providing accurate data forecasts and recommending products and services that truly meet customer needs.

7. Fulfillment Center: Artificial intelligence automatically manages inventory and monitors out-of-stock items. The system notifies employees and analyzes sales, new products to order, unsold items, and customer purchasing behavior.

AI Governance Framework

The EU AI Act is the first global AI regulation, enacted by the European Union. It provides guidelines for the regulation of AI in organizations, addressing fundamental rights and the safety of AI-powered systems. These include: 1) transparency, 2) accountability, 3) fairness, and 4) governance. To prevent the misuse of AI, the Act protects citizens' fundamental rights, promotes responsible innovation, builds trust in technology, and prepares organizations for global competition (European Commission, 2025).

AI is categorized into four levels of risk.

1. Unacceptable Risk - AI systems that pose a significant risk to humans are considered dangerous and should never be used. Examples include AI systems related to cognitive manipulation, social scoring based on personal data, facial recognition in public spaces, biometric classification of individuals, and discrimination based on biometric data.

All AI systems deemed to pose a clear threat to the safety, livelihood, and rights of citizens are banned. The AI Act prohibits the following.

1. Malicious manipulation and deception using AI
2. Malicious exploitation of vulnerabilities using AI
3. Social scoring
4. Assessment or prediction of individual crime risk
5. Unspecified collection of internet or CCTV data to build or expand facial recognition databases
6. Emotion recognition in workplaces and educational institutions
7. Biometric classification to identify protected characteristics
8. Real-time remote biometric identification for law enforcement purposes in public accessible spaces

2. High Risk - AI systems that pose risk to human health, safety, or fundamental rights, such as AI use in facial recognition, education, or employment. Developers must adhere to strict regulations.

High-risk AI systems must comply with strict requirements before they can be deployed or placed on the market.

1. Appropriate risk assessment and mitigation mechanisms
2. High-quality data fed into the system to minimize the risk of discrimination outcomes
3. Activity logging to ensure traceability of system outcomes
4. Comprehensive documentation providing all necessary information about system and its objectives for regulatory assessment
5. Clear and sufficient instruction for deployers and users
6. Co-human Governance

7. Cybersecurity

3. Limited Risk - AI systems that require transparency and inform users about their AI processing, such as chatbots or video analytics tools.

This refers to AI systems that have limited risk but require transparency about their use. The AI Act imposes specific disclosure obligations to ensure that humans are adequately informed when interacting with AI. Thereby maintaining trust. For example, when using AI systems such as chatbots, users should be aware that they are interacting with machines so they can make informed decisions. Additionally, providers of creative AI must ensure that AI-generated content is clearly identifiable. Certain AI-generated content, such as deepfakes or messages intended to inform the published on public interest, should be clearly and visibly labeled.

4. Minimal Risk - AI systems that should be used with transparency and safety, such as AI in video games, spam filters, and generative AI.

The AI Act does not regulate AI that poses minimal or no risk. Most AI systems currently in use in the EU fall into this category, including applications such as AI-powered video games or spam filters. Once an AI system is deployed, relevant authorities are responsible for market surveillance. The system implementers are monitored and controlled by humans, and the service provider maintains a post-launch monitoring system. Both the service provider and the system implementer are also required to report any serious incidents or malfunctions.

The National AI Guidelines for Thailand's Development, 6-Year Plan (2022-2027)

Aims to develop AI personnel, develop AI innovations and prototypes that can be applied practically, increase GDP from AI, and increase the use of AI innovations by both public and private sectors.

Summary of key points (National Science and Technology Development Agency, 2022)

1. Prepare society, ethics, laws, and regulations regarding AI, and raise awareness and ethics of AI in society.

2. Develop AI infrastructure and support systems, establish a central data platform and research and development network, invest in digital infrastructure and advanced processing systems.

3. Enhance the potential of AI personnel and education, promote the production and development of AI personnel, promote curriculum development, and create AI-based teaching materials.

4. Develop AI technology and innovation, promote research and prototype development, and lead to practical application. Promote the use of AI in new prototypes and products.

5. Apply AI in the public and private sectors, creating an ecosystem for comprehensive AI adoption in services and education.

Thailand's development plan provides AI-era entrepreneurs with the following

1. Networking with AI-skilled personnel, such as engineers, analysts, and AI creatives. They can utilize a centralized data platform and AI research tools provided by the government and its networks, reducing costs, risks, and development time.

2. Entrepreneurs can utilize AI prototypes and innovations for practical use, increasing competitiveness, improving product and service quality, and opening new markets.

3. Businesses can quickly apply AI to manufacturing processes, communications, customer analysis, and after-sales services.

4. Efficient AI development and deployment options are available, combined with cloud computing, advanced processing systems, and interfaces developed by the government.

5. Support from government policies and promotional measures, including new legal, ethical, and regulatory measures, fostering confidence, legality, and social responsibility.

6. Opportunities to become partners in large-scale government projects.

7. Apply AI in education and services to expand the customer base for the education and services sector.

As described by Phuyung Meesaj (AI literacy and the application of the Artificial Intelligence Act in the Digital Era under the Project Ethics, Volunteer Spirit, and Organizational Mindfulness, 21 August 2025), promoting and supporting responsible AI innovation demonstrates the integration of innovation with digital economy policy. (Meesaj, 2025)

Specific laws governing AI include the Cybersecurity Act, the Personal Data Protection Act (PDPA), and the Aircraft Act. These laws cover four main aspects:

1. Artificial intelligence innovations - AI software or hardware that are significantly newly discovered or developed.

2. AI entrepreneurs - entities that sell or provide AI services, including researchers, universities, startups, independent developers, open-source, free service providers, or for the public good.

3. AI innovation testing centers – established as central mechanisms for testing and evaluating AI before entering the market.

4. Data exchanging and sharing – promoting information exchange among individuals, agencies, or the data ecosystem without monopolizing the market.

Conclusion

This study business development guidelines in the era of artificial intelligence by presenting guidelines for the application of artificial intelligence in the retail business in Thailand, where entrepreneurs use AI systems to analyze customer purchasing behavior. According to the report of the Digital Economy Promotion Agency (depa, 2024) states that department stores and large retailers are already applying AI to customer data management, sales forecasting, and personalized promotions. By adopting the AI Governance Framework, which aligns with the EU AI Act (Nemko Digital, 2025), as a guideline for transparent customer data governance and algorithmic modeling, trust can be maintained and personal data risks effectively mitigated. In the financial sector, AI systems are being used to enhance security and improve service efficiency, such as in areas like credit scoring and fraud detection, and are among the High-Risk AI Systems defined by the EU AI Act. According to the Bank of Thailand (BOT, 2024), large financial institutions in the country have developed machine learning models to analyze the probability of default and are using AI chatbots to provide financial advice to customers. Development must be under Limited-Risk AI criteria, with a data disclosure process and oversight framework aligned with the AI regulatory framework for using AI-powered systems to detect machine malfunctions and analyze potential downtime in advance.

This reduces maintenance costs by more than 25% per year. Furthermore, major logistics companies such as SCG Logistics and Flash Express have developed AI-powered routing systems to optimize delivery routes. This aligns with Thailand's National AI Action Plan (2022-2027), which aims to promote the use of AI to increase productivity and drive innovation.

The study found that business practices for managing organizational change in the AI era are becoming a key factor in determining Thailand's future competitiveness, as indicated in

reports from the WEF and IMD. Given that Thailand is moderately prepared to adapt to the digital economy, it is necessary to accelerate the development of policies and governance frameworks (AI Governance Framework) to build trust, oversight, and ethical use of technology among Thai enterprises. The EU AI Act, which serves as a model for ethical, safety, and transparency standards in AI systems, classifies AI into four risk levels: Unacceptable Risk, High Risk, Limited Risk, and Minimal Risk. These classifications provide guidance for government and private sectors to adopt AI responsibly.

Policy proposals for business transformation in the AI era:

1. Establish an agency to regulate AI for digital entrepreneurs to establish a framework, standards, and ethics for AI to build confidence among consumers both domestically and internationally.

2. Provide tax incentives and investment support for agencies developing AI research and innovation.

3. Promote the use of agent-based AI in the business sector to enhance competitiveness.

4. Develop a human resource development plan to produce AI-savvy personnel to meet future labor market demands.

Considerations for increasing efficiency using AI as a tool for modern entrepreneurs should consider the potential for increased efficiency and consumer benefits, while considering potential risks.

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