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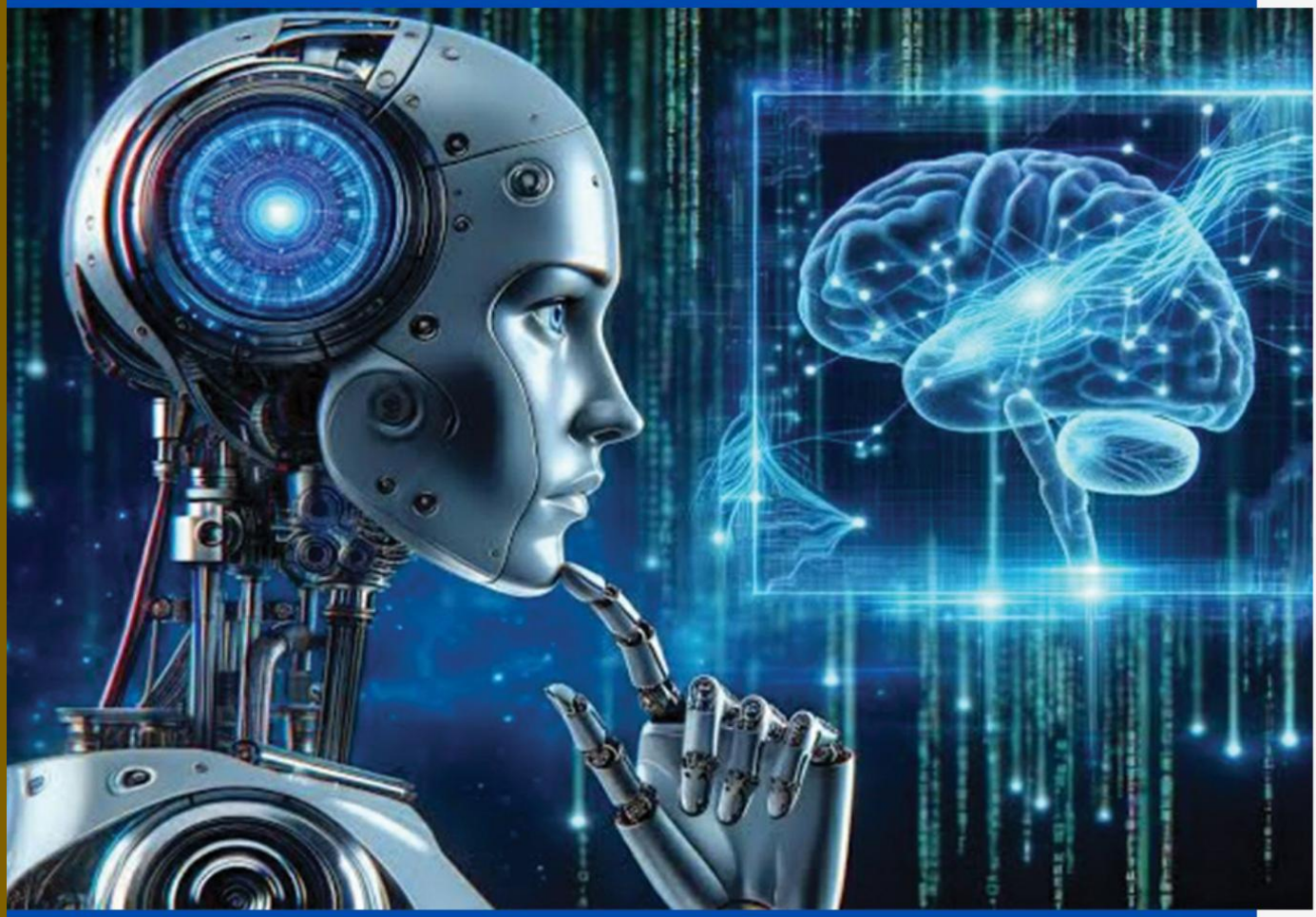

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AI and Technology Integration as Organisational Capability

Lessons from the ASEAN Digital Landscape

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AI and Technology Integration as Organisational Capability: Lessons from the ASEAN Digital Landscape

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Introduction

Digital transformation, particularly the integration of artificial intelligence (AI), has become central to organisational competitiveness. AI, understood as tools emulating human intelligence, enables businesses to enhance performance and identify growth opportunities through data-driven insights [1]. These tools also serve as knowledge systems that enable organisations to identify growth opportunities by deriving significant insights from relevant data. Technologies such as automation, contactless services, and AI-driven diagnostics are delivering tangible benefits in efficiency and customer engagement [2]. In the recent past, ASEAN economies have accelerated digital adoption, recognising its ability to permeate every sector and stimulate growth and transformation [3]. The region's digital ecosystem is anchored in information technology, data and AI, and operational technologies. With over 125,000 new Internet users daily and projected growth of $1 trillion in the coming decade, ASEAN is one of the fastest-growing digital markets globally [4]. The ASEAN Economic Community Blueprint 2025 highlights digital integration into marketing strategies as essential for competitiveness [5], [6]. Drawing on ACES Awards 2025 data and insights from key business leaders, we highlight how organisations in ASEAN are putting AI to work in operations and decision-making. We focus on the practical drivers of adoption—human capability, trust, and organisational learning—while addressing pressing challenges in cybersecurity, governance, and sustainability. These developments are situated within wider debates on responsible AI use, offering a clear view of how digital transformation is strengthening resilience and adaptability across ASEAN businesses.

Digital Transformation Initiatives Across ASEAN Organisations

ASEAN countries are actively reshaping their economies through coordinated digital transformation efforts, creating an enabling environment for technology-driven growth, competitiveness, and improved public services [7]. At the regional level, this transformation is characterised by increased and proactive use of AI and other technological tools. These regional efforts are not merely policy-oriented, but are actively shaping how organisations operationalise digital transformation. Across ASEAN, firms are moving beyond alignment with regulatory frameworks toward the practical integration of artificial intelligence into core business processes. Evidence from ACES Awards 2025 participants highlights this transition, with organisations reporting the adoption of smart technologies for optimisation, real-time monitoring, and advanced analytics to enhance both operational efficiency and customer engagement. This reflects a broader regional trajectory in which AI is evolving from a supplementary tool into a central driver of organisational decision-making, innovation, and performance [8].

This shift is particularly evident across key functional domains. In the financial services sector, AI adoption is transforming how institutions engage with customers and manage service delivery. For example, The manager of COM66, a leading financial institution in Indonesia, reported that in 2021, they launched "*A major digital banking app that enabled customers to*

conduct banking from home—savings, bill payments, investments, loans, and more" which, according to the same manager, "…*handled billions of transactions, with over 30 million users, becoming one of Indonesia's leading retail banking platforms by 2024."* COM71, another financial institute in Singapore built a digital app to help with automated reconciliation & compliance reporting for their crypto-to fiat on/off-ramping business which serves South East Asian (SEA) countries, including Malaysia, Philippines, Indonesia, and Thailand. These reports are consistent with literature reports of increased digital technologies use in the ASEAN financial sector.

For instance, Hong Leong Bank in Malaysia utilises IBM Watson to detect customer emotions and improve service responsiveness, while DBS in Singapore deploys Digibank's virtual assistant to deliver rapid, automated customer support [9]. Similarly, CompareAsia Group applies machine learning algorithms to personalise financial, telecommunications, and utility services across multiple ASEAN markets [9]. These applications illustrate how AI is strengthening customer-centric strategies by enabling firms to leverage large volumes of data for more precise and responsive service offerings, ultimately enhancing customer satisfaction and competitive positioning. In the healthcare sector, digital transformation is enabling more integrated, data-driven systems that improve both efficiency and patient outcomes. Singapore's integrated health information systems (IHIS) demonstrates how nationwide patient data can be leveraged to enhance care coordination and decision-making, while emerging Vietnamese firms such as Holmusk are developing AI-enabled applications to support chronic disease management [9]. These examples highlight the expanding role of AI not only in administrative optimisation but also in clinical and patient-facing contexts, underscoring its potential to address systemic challenges such as rising healthcare demand and resource constraints.

Marketing and customer engagement functions are also undergoing significant transformation. AI-driven analytics are enabling organisations to generate real-time insights into consumer behaviour, allowing for the development of highly personalised and adaptive marketing strategies. Businesses are the leveraging the power of social media to advertise and keep their touch with customers. For instance, COM62, a business in the hospitality sector and COM64, a Malaysian-based event management and entertainment agency both revealed to have revamped their social media presence to increase engagement. The managing director of COM64 revealed to us that *"Recognizing the importance of online visibility and convenience, we enhanced our social media presence, focused on direct booking incentives, and worked closely with RHG's digital team to optimize our listings and booking channels."* Aside from the ACES data, ASEAN-based studies show increased use of digital platforms for marketing and customer engagement. Platforms such as Tokopedia exemplify this shift, using data-driven approaches to refine targeting, enhance user experience, and improve conversion rates [6]. This evolution reflects a broader movement toward precision marketing, where the ability to interpret and act on data in real time becomes a critical source of competitive advantage. Beyond customer-facing applications, AI is increasingly being embedded within internal organisational processes, particularly in human resource management. Insights from ACES Awards 2025 participants indicate that AI-enabled recruitment systems are streamlining hiring processes, improving

candidate selection, and reducing time-to-hire. These findings are supported by empirical studies reporting productivity gains of up to 35% among Malaysian MSMEs that have implemented AI-driven HR solutions [10], [11]. In this context, AI is not only enhancing operational efficiency but also contributing to more strategic talent management, enabling organisations to align workforce capabilities with evolving business needs.

Notably, this transformation is heavily guided by regional frameworks for technology use. Organisational are adhering guides such as the ASEAN Guide on Artificial Intelligence Governance and Ethics (2024), which promotes responsible AI adoption, alongside the ASEAN Digital Masterplan 2025, which emphasises seamless cross-border data exchange, interoperable digital payment systems, and strengthened data privacy protections [5], [12]. These initiatives signal a clear shift from fragmented national policies toward a more integrated and innovation-driven digital ecosystem, positioning ASEAN as a globally competitive digital bloc. Collectively, these developments point to a broader structural shift in how organisations across ASEAN approach digital transformation. Rather than treating AI as a discrete technological investment, firms are increasingly embedding it across multiple functional domains, integrating it into the core architecture of their operations and decision-making processes. This holistic approach is reinforcing organisational agility, enabling faster and more informed decision-making, and supporting sustained performance improvements. At the same time, it reflects a growing recognition that the value of digital transformation lies not only in technology adoption but also in the ability to align technological capabilities with organisational strategy and human capital. Overall, ASEAN organisations are not simply responding to regional digital strategies; they are actively translating these frameworks into tangible operational practices. Through the integration of AI across finance, healthcare, marketing, and human resource management, firms are strengthening efficiency, enhancing innovation, and positioning themselves for long-term competitiveness within an increasingly digital and data-driven global economy.

Human and Organisational Capability- Their Role in Effective AI Integration

While digital transformation is obviously becoming the norm rather than the exception, what happens when organisations and personnel are not ready or equipped with the prerequisite skills? Human and organisational readiness are critical factors in mitigating the fragmentation and coordination challenges that often derail digital transformation initiatives. According to Vivekanantharasa et al. [10], successful digital transformation is not a static event but a dynamic interaction between technology, people, processes, and the environmental context. This interplay is best understood through the Human-Organisation-Technology (HOT) fit theory, which posits that optimal performance is only achievable when there is a precise alignment between these three pillars [13]. Consequently, the integration of AI is not merely a technical upgrade because it necessitates a fundamental evolution of organisational culture and day-to-day work practices to ensure these systems are used effectively. To facilitate this evolution, organisations must cultivate

a culture of continuous learning and adaptation. This proactive shift empowers employees to view technological advancement as an opportunity for growth rather than a threat to their roles.

The human component of the HOT fit framework encompasses how an individual's knowledge, specific skill sets, and internal attitudes influence their interaction with technology. Successful AI integration requires an "innovative and curious" mindset that actively encourages knowledge acquisition [14]. When organisations invest in AI-specific training and facilitate knowledge sharing, they lower the psychological and technical barriers to entry. For instance, Participant 4, the CEO of a Philippines-based marketing services company noted that they continually improve their human capability by "*training our workforce to lead the AI revolution... we stay away from being replaced by AI and embrace it to further strengthen our relationship with clients.*" Relatedly, PT3, the deputy CEO of a Malaysia-n based investment holding and trading in marketable securities When employee capabilities match the demands of new, AI-driven business models, the risk of skills obsolescence is significantly reduced, ensuring the workforce remains a competitive asset.

Organisational learning further solidifies this foundation by developing AI capability—the collective ability to choose, orchestrate, and deploy AI resources effectively [15]. To build this capability, organisations must master two types of learning: exploitative and explorative. Exploitative learning focuses on refining and implementing existing digital technologies to improve efficiency. In contrast, explorative learning involves searching for, discovering, and experimenting with entirely new digital-based resources [15]. Building these capabilities involves capturing contextual specifics, such as the ability to process data within unique organisational systems. A robust learning culture prompts employees to reflect on past experiences and collaborate across traditional "silos." This environment fosters open communication and ensures that digital initiatives are well-funded and supported by leadership. Ultimately, resilient organisations are defined by their ability to learn and reconfigure their resources in real-time. By aligning human capability and trust with technological infrastructure, as emphasised by the HOT-fit framework, organisations do more than just adopt AI—they build a sustainable competitive advantage and long-term resilience in an increasingly volatile, technology-driven global market.

The Real-World Hurdles of AI Integration: What Can We Do About Them?

Moving from AI theory to regional reality is rarely a smooth transition. Across the ASEAN landscape, organizations are hitting three major roadblocks: operational gaps, evolving cyber threats, and a fragmented regulatory map. The primary bottleneck isn't actually the software but the people. According to the ACES Awards 2025 data, a severe shortage of "on-the-ground" skills in data science and AI training is stalling progress. As Gonzalez et al.[8] point out, the success of any digital shift lives or dies by employee capacity and attitude. To solve this, companies are taking matters into their own hands; for instance, Participant 6, the founder of a growing shared their internal strategy: *"Internally, our academy is upskilling our staff in digital construction and leadership to close the skills gap."*

Beyond the technical skills gap, there is a deeper cultural resistance to navigate. When teams feel uncertain or fear they'll be replaced by an algorithm, they naturally push back. Factors such as a lack of trust in their own skills or the perceived threat of automation lead to significant friction. If employees don't trust their own ability to handle new tools, they won't feel confident enough to guarantee the operational efficiency required for innovation-led processes. This lack of confidence creates a psychological barrier that can stall even the most well-funded digital initiatives. Slack of stakeholder trust in the new tools also poses a major risk to the successful and effective adoption of AI and digital tools. Participant 5 illustrated this friction, stating that "*trust in new tools was low and frontline engagement was inconsistent."* When trust is absent, employees may view AI as a surveillance tool or a precursor to layoffs. Conversely, individuals who trust that systems are secure and reliable are more likely to engage in "experimental learning" and interdepartmental knowledge-sharing [16]. Furthermore, Jamaluddin et al. [11] suggests that high levels of AI trust improve an organisation's external reputation, making it easier to recruit high-quality talent who are already aligned with innovation-driven goals.

The second major hurdle is the escalating "arms race" in cybersecurity. Data privacy has become a make-or-break issue for AI adoption. Because machine-learning models are inherently "data-hungry"—often requiring massive amounts of sensitive customer info to function effectively [17]—the stakes for a data breach are massive. One slip-up doesn't just mean a fine; it kills brand reputation and public trust. We are now seeing the rise of AI-driven cyber-attacks, where hackers use machine learning to automate malware and accelerate their strikes to unprecedented speeds. The solution lies in building organizations that can withstand these advanced digital threats. One leader from Malaysia emphasized this lifelong commitment to defence: "*My entire professional life has been dedicated to building organisations that can stand up to the most advanced digital threats."* To stay ahead, Achuthan et al. [18] suggest flipping the script by using advanced ML algorithms to spot patterns and anomalies before they become full-blown attacks. By leveraging predictive analytics and autonomous decision-making, AI can move from mere threat detection to a proactive, defensive shield that anticipates danger. Finally, there is the governance gap. Organizations in ASEAN countries without clear AI strategies find it much harder to attract investment or innovate safely [19]. We are currently seeing a "two-speed" region: Singapore, Indonesia, Thailand, and Vietnam are already ranking as global AI hubs with solid frameworks, while Cambodia and Myanmar are still finding their footing [20]. This disparity means that countries in the early stages of digital development are
still struggling to implement the specific policies needed to foster a stable, innovation-friendly ecosystem.

However, AI governance is finally finding its voice as the region takes the lead in establishing ethical guidelines. The ASEAN Guide on AI Governance and Ethics and the Digital Economy Framework Agreement (DEFA) are now shaping the landscape, addressing everything from digital trade to cross-border e-commerce [20]. With the ASEAN Digital Masterplan 2025, the goal is to make information and trade flow seamlessly across borders. By harmonizing these practices around principles like transparency, fairness, and accountability, the region is creating

a common language for responsible and sustainable AI development [19]. This collective move toward ethical standards ensures that innovation doesn't come at the cost of security or human-centric values

Conclusion

Digital transformation and AI-integration are increasingly shaping how organisations build capability, innovate, and remain competitive in rapidly evolving digital economies. The evidence from ACES Awards 2025 data in combination with broad literature suggests that AI is not merely a technological tool but a strategic organisational capability that enhances operational efficiency, adaptive decision-making, and long-term resilience across sectors such as finance, healthcare, marketing, and human resource management. However, the findings also highlight that technological adoption alone is insufficient to achieve meaningful digital transformation. Effective AI integration depends on the alignment between technological infrastructure, human capability, and organisational systems. Employees must possess the necessary digital skills and confidence to interact with emerging technologies, while organisations must cultivate cultures of continuous learning, trust, and experimentation. At the same time, the study identifies several challenges associated with AI adoption, including skills shortages, cybersecurity risks, and uneven governance frameworks across ASEAN member states. These challenges highlight the importance of coordinated policy efforts and responsible AI governance to ensure that technological advancement occurs in a secure, ethical, and sustainable.

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