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Building Workforce AI Fluency

An Overview



Workforce AI Fluency: An Overview

About this Overview

This overview is an extract from the Workforce AI Fluency Playbook, developed by Temasek in partnership with EY, with contributions from Temasek Portfolio Companies (TPCs), and insights drawn from NTUC's experience[1] working with companies through Company Training Committees (CTC)[2]. It distils the key ideas and lessons, highlighting practical principles and case studies from TPCs across the five pillars of workforce AI fluency.

Designed as non-binding guidance for those leading or supporting AI adoption, including management, human resources and technology teams, union representatives and business managers, this overview provides a starting point for discussion and action. Organisations can adapt its guidance to their workforce strategy and transformation efforts.

Why this Effort Matters

Organisations today deploy AI tools in pursuit of better decisions, faster service, safer operations and higher productivity. But technology deployment alone does not deliver those gains. Realising AI's potential depends on building a workforce where people are empowered to use AI confidently, responsibly and productively. This raises a fundamental question: what does it take to build a workforce that can adopt AI effectively and at scale?

Workforce AI fluency is an organisation's ability to embed AI within its workflows by identifying where it creates value, applying human judgement to its outputs, and scaling what works. Done well, it can strengthen competitiveness while giving employees a clearer stake in the future of work.

Putting People at the Centre of Transformation

Building workforce AI fluency, however, comes with its challenges. Some teams are moving quickly, while others remain uncertain. Some pilots show promise but never scale. Employees may see AI's potential but still have questions about job security, trust, accountability, evolving skill requirements, or the loss of human judgement. These are not simply technology challenges. They are workforce transformation challenges, shaped by leadership, governance and readiness for change.

Whether that change lands well depends less on the technology than on the people using it.

> *"AI transformation must remain people-centred because AI does not create business value on its own. People do. The real value of AI is realised when people trust it, understand how to use it and are empowered to redesign the way work gets done. And if AI is treated purely as a technology deployment, organisations risk low adoption, fear and resistance. Ultimately, workforce buy-in is critical."*
>
> ***– Sherlyn Lim, Chief People Officer, Temasek***

A Shared Journey

Building workforce AI fluency requires collaboration across government, employers and workers. Government helps set national direction and creates the conditions for responsible adoption. Unions help ensure that workers are heard and equipped to benefit from change. TPC leaders can drive change by investing in people, redesigning workflows, and making AI adoption measurable.

None of these efforts can succeed in isolation. Together, they can build a practical and trusted model for workforce transformation.

The diversity of our Temasek ecosystem creates an opportunity to go further by gathering experience across companies and sectors, distilling what works into shared practical guidance, and helping each TPC apply those lessons in its unique context.

This effort is a starting point for that shared journey. It invites leaders across government, unions and TPCs to work together to build confidence, protect trust, redesign work responsibly and help employees thrive in the AI-enabled future. The journey will require experimentation, discipline and partnership. With the right foundations, AI fluency can become a source of enduring advantage for our Singapore-based companies.

[1] Case studies featuring Changi General Hospital, Raffles Hotel and Tan Tock Seng Hospital were contributed by NTUC in consultation with the respective organisations.
[2] An initiative by Singapore's Labour Movement that brings together company management alongside union and/or worker representatives to collaborate on business and workforce transformation.

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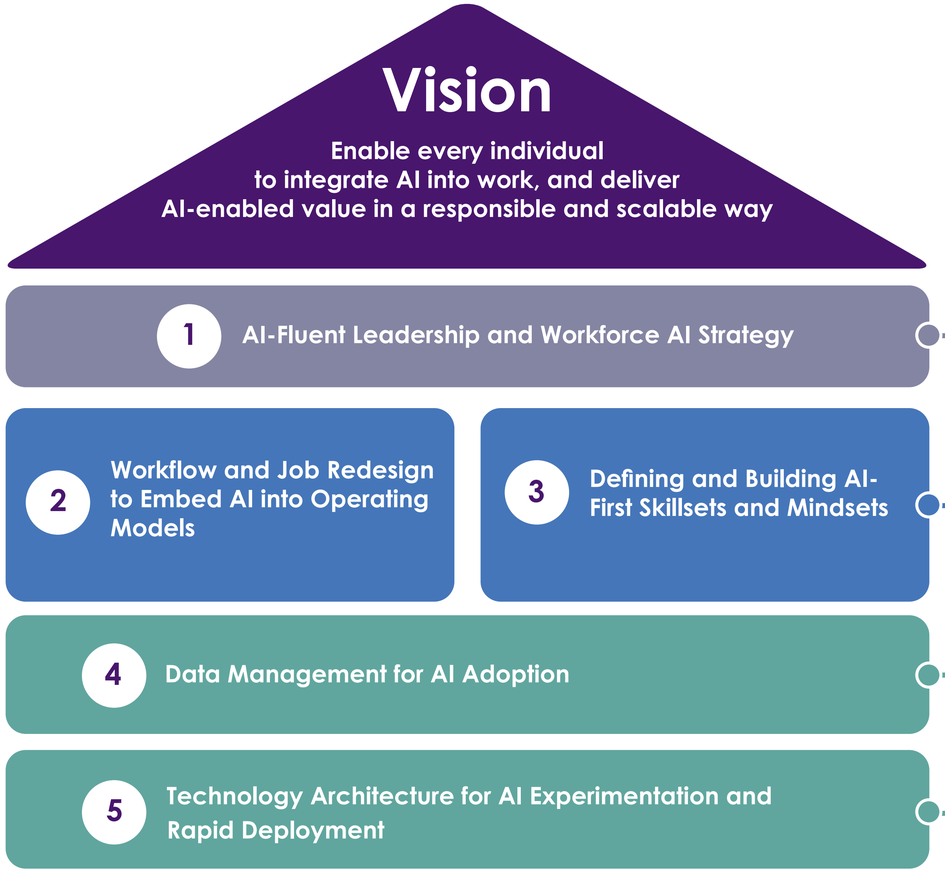
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Five-Pillar Framework for Workforce AI Fluency

An AI-fluent workforce is one where every individual is empowered to integrate AI into their work and deliver value responsibly and at scale.



Fulfilling the Workforce AI Fluency Vision requires three mutually reinforcing approaches:

Establish Strategic Direction

Senior leaders require the competencies to articulate a strategic direction for AI Fluency, the organisation's "AI North Star" – to evaluate, sponsor, govern, and scale the right AI initiatives for their organisation.

Embed Critical Enablers

These are levers that translate strategy into adoption by embedding AI into daily work: redesigning workflows, jobs and talent practices around AI, and defining, developing, and sustaining the skills and mindsets required for AI-enabled ways of working.

Build Technology Foundations

Underpinning the above is the need for structured, governed, and accessible data and technology foundations. Well-planned data management ensures AI systems can access relevant, trusted, and responsibly governed information, while fit-for-purpose technology architecture enables employees to experiment safely, deploy solutions quickly, monitor performance, manage agentic AI risks, and scale what works.

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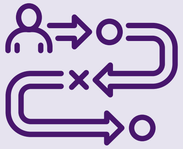
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PILLAR 1: AI-FLUENT LEADERSHIP & WORKFORCE AI STRATEGY

Set a Clear Direction and Equip Leaders to Lead the Change

Leaders decide whether AI remains a set of experiments or leads to meaningful changes in how work gets done. Senior executives and people leaders need practical understanding of AI to set direction, decide where it adds most value, build trust with employees, and put in place the safeguards to scale responsibly.

Sub-Pillars	Principles
 **Set a clear AI direction**	C-suite leaders should define where AI supports the organisation's goals, focus effort on the highest-value opportunities, and set clear guardrails for responsible use.
 **Build practical leadership fluency, not sponsorship**	Leaders need to keep up with AI developments and use the tools in their own work, so they can ask sharper questions, weigh trade-offs and set the example on responsible use.
 **Be clear on who decides and how progress is measured**	Set out who makes which decisions, how risks are managed, and how progress and value will be tracked.

Building Leadership Capability Through AI-Focused Learning Programmes

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Temasek International Institute – a platform to convene leaders to exchange insights, develop future-ready capabilities, and catalyse transformation – organised two AI immersion programmes with leaders from Temasek and its portfolio companies, as well as Singapore Government officials, to learn from frontier AI practitioners, strengthen leadership AI fluency, and translate external insights into enterprise AI strategies.

Takeaways

- **Connect leaders with frontier AI leaders and practitioners:** Enable learning from academic, industry and enterprise perspectives on AI's opportunities and practical constraints.
- **Turn AI awareness into enterprise direction:** Help leaders convert external insights into clear priorities and high-impact transformation initiatives.
- **Strengthen ecosystem learning:** Bring together leaders, practitioners and government stakeholders to share lessons and identify opportunities for collaboration.



Participants at the Stanford AI Leadership Programme in March 2026.
(Source: Temasek Review 2026)

Context

Many organisations struggle to build leadership conviction around AI because opportunities for cross-sector learning and exposure to real-world implementation are often fragmented. Temasek recognised that its portfolio companies were facing similar questions about where AI can create value, how fast to move, what capabilities to build, and how to mobilise the workforce.

Details

Under the Temasek International Institute programmes, leaders from Temasek and its portfolio companies, as well as Singapore Government officials were brought together to participate in the following:

- The Stanford AI Leadership Programme in March 2026 gathered more than 70 participants to learn from faculty, industry leaders, and domain experts on emerging AI developments, adoption approaches, and strategic implications.
- A separate China AI Study Trip in May 2026 involved more than 50 leaders and focused on how AI is being deployed at scale across industries, infrastructure, cities, hospitals, logistics networks, and consumer platforms.

Outcomes

The programmes strengthened leadership AI readiness across the Temasek ecosystem, creating momentum to develop enterprise AI strategies and identify priority AI initiatives. They also helped leaders translate AI direction to the next level of leadership, articulate strong AI ambitions and hero missions for their organisations, and strengthen relationships among portfolio companies, government stakeholders, and external experts.

Together, the experiences demonstrated how immersive learning can build leadership conviction, sharpen judgement, and turn external developments into practical organisational action.

Driving AI Adoption Through Leadership Accountability

To scale AI adoption across the organisation, CapitaLand Investment (CLI) established strong leadership sponsorship, accountability mechanisms, and enablement structures. This approach enabled CLI to launch 110 AI initiatives in 2025, exceeding its target of 100, with AI-enabled initiatives delivering more than S$12 million in revenue uplift.

Takeaways

- **Give every use case a senior champion:** Appoint senior leaders for each initiative, so barriers get cleared, momentum holds, and accountability for results stays clear.
- **Use a small central team to enable business owners:** Let a central team supply governance, tools, capability-building, and coordination, while retaining decentralised ownership of the use cases by the respective business and functional teams.

Context

CLI wanted to build broad-based AI fluency while creating visible momentum for AI adoption across its businesses and corporate functions. It also needed to encourage business ownership of AI while providing sufficient governance, support and coordination to accelerate adoption responsibly.

Details

CLI launched an enterprise-wide AI programme targeting the development of 100 AI initiatives within 2025. Teams across CLI's business and corporate functions identified use cases based on their operational needs, ensuring these addressed real priorities. Each initiative was sponsored by a senior leader, championing the use cases, clearing barriers, and remaining accountable for outcomes. Members of the Executive Committee also took part in the learning sessions, visibly using AI themselves.

A small central team comprising employees from the Digital and Technology, Innovation, and the Learning & Development team coordinated the programme by providing the requisite AI tools, governance, and capability-building support, while designated representatives within each business and function identified use cases and drove local adoption efforts.

Approved enterprise tools and controlled environments enabled employees to test ideas while managing risk. This created a federated adoption model: The central team provided structure, governance and enablement, while identification, development, and ownership of use cases resided with the businesses and functions closest to the work.

Outcomes

CLI launched 110 AI initiatives in 2025, exceeding its original target. In FY2025, AI-enabled initiatives delivered measurable outcomes including over S$12 million in revenue uplift.



A discussion during the CapitaLand Leadership Series, where internal and external speakers are invited to share insights. (Source: CapitaLand Investment: A Journey of AI and Digital Innovation)

Source: Information gathered from stakeholders from CapitaLand Investment, Annual Report 2025

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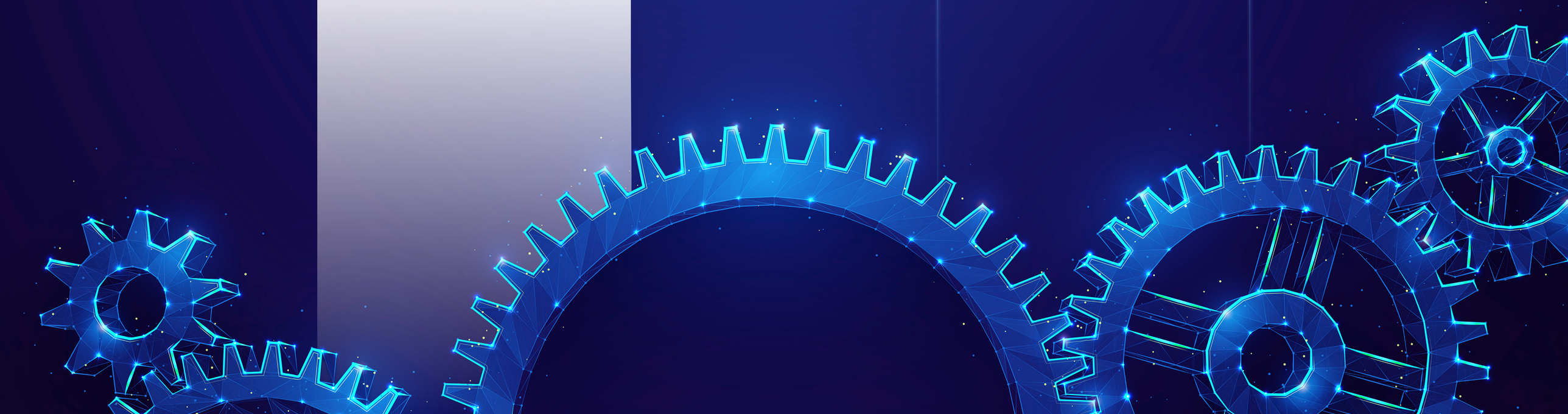
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PILLAR 2: WORKFLOW AND JOB REDESIGN TO EMBED AI INTO OPERATING MODELS

Redesign Business Processes Before Redesigning Jobs

AI creates sustained value when organisations reimagine end-to-end workflows, and then reshape roles, skills and how people are hired, developed and progressed to draw on the distinct strengths of people and AI.

Sub-Pillars	 **Start with the work, not the tool**	 **Be clear on what people do and what AI does**	 **Update roles and skills as the work changes**
Principles	AI creates value when workflows are redesigned around the organisation's goals, rather than simply automating individual tasks within existing processes.	Decide which tasks are best handled by people, AI or both, and keep people clearly accountable for judgement, escalation and outcomes.	Job redesign should follow workflow redesign, with roles, skills and career pathways evolving with the work. AI-enabled ways of working should be reinforced through recruitment, development and performance management.

Redesigning Workflows Through AI Operating Model Transformations

At DBS, AI must create capacity to drive growth. DBS sees AI as a cognitive enhancer that augments human capability, enabling its people to spend more time on impactful and complex work. This shapes DBS' approach to job redesign, identifying repetitive or rule-based tasks where AI can free up capacity, as well as areas where AI capabilities can lead to materially greater value for customers and the bank. For employees, this means less time on repetitive work and more capacity for critical thinking.

Takeaways

- **Fear is not a strategy:** change the narrative. Position AI as a cognitive enhancer. Shift the conversation from "What will AI do to me?" to "What can AI do for me?", helping employees apply their judgement and capabilities to their work.
- **Make it pervasive:** AI to the core. Put AI tools in everyone's hands while redesigning core workflows and building the skills needed to translate adoption into business value.
- **Bring people along, with a heart:** Support employees through change with learning, career guidance and opportunities to move into enhanced roles, guided by the philosophy "save people, not jobs".

Context

Transformation is not new to DBS. The introduction of GenAI in 2023 marked a further step in its digital transformation journey, which spans more than a decade. By removing repetitive work, AI frees employees' time and energy for critical thinking, problem-solving, relationship-building and better decisions. The philosophy "save people, not jobs" recognises that roles will transform, while emphasising investment in people's skills and support for their career transitions.

Details

DBS makes AI pervasive through both horizontal and vertical adoption. Horizontal adoption makes AI accessible across the workforce through DBS GPT and Microsoft Copilot, enabling employees to improve everyday work. Vertical transformation goes deeper through business-led Operating Model Transformations (OMTs), redesigning end-to-end workflows, and embedding AI into core processes.



DBS' vision and commitment to be the Best AI-enabled bank with a heart.
(Source: DBS Annual Report 2026)

For each OMT, the business unit works with Transformation and HR to map current tasks against future work, identify changing skill requirements, and develop upskilling, reskilling and redeployment pathways, together with change management support. Progress is assessed against revenue, cost, productivity and risk outcomes, supported by AI governance and guardrails.

Bringing people along is central to DBS' AI transformation – it is very much a human story shaped by its culture and how people think, learn and embrace change. DBS uses its 5Es framework to sustain change: Excite employees about the possibilities through practical examples and peer stories; Enable them with accessible tools and safe environments to experiment; Educate them through foundational AI learning and role-specific development; Empower them with career coaching, advisory support and opportunities to apply new skills; and Embed AI into everyday workflows and management practices. Leaders help employees understand the changes, build confidence, and navigate transitions with care.

Outcomes

In 2025, DBS deployed more than 2,000 AI models across over 430 use cases and generated approximately SGD 1 billion in economic value from data analytics and AI/ML. Its AI-enabled tools are reshaping customer and employee journeys, while enterprise-wide initiatives are redesigning complex workflows around human-AI collaboration. These efforts are guided by robust governance and controls to ensure AI is deployed safely and responsibly.

Source: Interview with stakeholders from DBS, Annual Report 2025

Scaling Flexible Work Shifts Through AI-Supported Rostering

Tan Tock Seng Hospital
NHG Health

Tan Tock Seng Hospital (TTSH) addressed nurse burnout, attrition, and the growing need for flexible nursing schedules through its Liquid Nursing workforce optimisation model. Supported by the Healthcare Services Employees' Union and enabled through the Company Training Committee (CTC) and CTC Grant funding by NTUC, TTSH redesigned workflows and implemented an AI-enabled scheduling system to operationalise flexible work arrangements while maintaining high standards of patient care and job satisfaction levels.

Takeaways

- **Measure AI success through workforce well-being:** TTSH's workforce transformation initiative focused on reducing burnout and attrition, while improving flexibility, adequate rest, and timely shift completion.
- **Transform workflows before scaling with AI:** Redesigned nursing roles, modular nursing, and streamlined shift handover processes created the foundation for flexible scheduling. AI-enabled rostering made it efficient and scalable across wards.

Context

Post-pandemic job satisfaction, workforce attrition and addressing demands for flexible work arrangements became key priorities for many healthcare institutions, including TTSH. Through focus group discussions, nurses identified rigid work schedules, work-life balance, working hours (including extended hours) and staff break times as areas for growth and improvement. This highlighted the need to redesign workforce scheduling and care delivery models.

Details

TTSH's response began with a comprehensive workforce redesign initiative. The project team conducted focus group discussions, explored preferred shift patterns, and undertook a time-motion study to align staffing patterns with patient care demands.
The resulting workforce model introduced two complementary nursing roles:

- **Principal Nurses (Base Nurses):** Nurses working regular shifts who retain overall responsibility for patient care, including assessments, doctor's rounds, clinical decision-making, and documentation.
- **Modular Nurses (Flexi Nurses):** Nurses working flexible shifts who provide targeted support for patient-care activities such as bedside procedures, caregiver training, and patient transportation, enabling principal nurses to focus on core clinical responsibilities.

TTSH also redesigned its shift handover process. Incoming nurses review digital patient records and conduct safety checks before verbal handovers focusing only on critical updates and clarifications. This significantly reduced handover duration while maintaining continuity of care.

As flexibility increased, manual roster planning became increasingly complex. To support workforce deployment at scale, TTSH introduced an AI-enabled flexi-scheduling system that optimises roster arrangements while balancing staffing requirements, nurse preferences, and operational needs. The platform has been deployed across all general wards, while nurse managers retain final approval of schedules.

Outcomes

System Efficiency and Care Delivery
Post-implementation time-motion studies found that modular nursing roles reduced peak patient-care workload intensity. Modular nurses enabled reduced interruptions for principal nurses, allowing greater focus on direct clinical care.

The revised process reduced handover duration from 75 to 15 minutes, creating more time for direct patient care, staff breaks, and timely shift completion. The AI-enabled scheduling system reduced roster planning time by 83%, from 90 to 15 minutes per workspace.



Senior staff nurses opting for the flexi-shift arrangement at TTSH (Source: Lianhe Zaobao, via The Straits Times)

Staff Well-Being
Survey data collected from 1,199 nurses across 55 inpatient wards found that:

- 87% perceived their work schedules as flexible;
- 68% reported a reduction in burnout;
- Nurses in flexi-wards were more likely to take uninterrupted breaks (54% vs. 43% in non-flexi wards);
- Nurses in flexi-wards reported a higher ability to leave work on time (74% versus 67% in non-flexi wards).

Workforce and Organisational Impact
Since its pilot in May 2023, the Liquid Nursing workforce model has been scaled across all inpatient general wards in TTSH. The initiative has also supported knowledge-sharing with other healthcare institutions through a growing community of practice.

Sources: NTUC AI Playbook – Essential Domestic Services Sectors (NTUC AI-Ready SG), Straits Times, National Healthcare Group, Channel NewsAsia, French Chamber of Commerce, Prime Minister's Office Singapore, Tan Tock Seng Hospital

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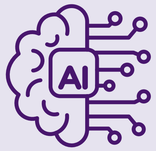
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PILLAR 3: DEFINING AND BUILDING AI-FIRST SKILLSETS AND MINDSETS

Build AI Fluency Through Role-Based Skills and Everyday Practice

Organisations need to define the capabilities required for different roles, create opportunities to practise AI in everyday work, and reinforce the behaviours and judgement needed for sustained adoption.

Sub-Pillars	 **Build role-based fluency through application**	 **Keep human judgement in the loop**	 **Make learning practical, safe and continuous**
Principles	Employees need the technical and human skills that fit their roles, and opportunities to build confidence by using AI on real work rather than by completing one-off training.	Employees should know how to prompt, check and challenge AI outputs, when to escalate, and when not to use AI at all. Used this way, AI sharpens rather than dulls thinking.	Immediate application, peer learning, manager support, protected practice time and visible success stories help AI behaviours become part of daily work. Progress should be measured through changed behaviour and value created, not training completion alone.

Enhancing AI Capabilities Through a Progressive Literacy Framework

Certis Group collaborated with the Singapore University of Technology and Design (SUTD) to develop a three-tier AI literacy framework for employees across frontline, operational, managerial and technical roles. This framework comprises a progression from everyday AI use to workplace solution building and advanced development.

Takeaways

- **Differentiate AI competencies by proficiency level:** Identify distinct capabilities for AI users, workplace solution builders and technical specialists.
- **Create progression from use to development:** Provide a pathway from no-code tools to agents, model fine-tuning, and advanced applications.
- **Define capabilities through practical outcomes:** Specify what employees should accomplish at each tier, beyond the courses they complete.

Context

As the transformative possibilities of AI became evident in incident reporting, knowledge support, and security operations, Certis Group needed to build AI literacy across employees with different roles and technical starting points. A standard programme for every individual would not adequately prepare the different types of workers for using AI in their respective roles. In particular, the skill needs of everyday users, workplace solution builders and AI specialists would differ. Certis Group therefore partnered with SUTD to launch an AI literacy programme linking capability depth to practical workplace outcomes.

Details

The initiative organises AI literacy into three tiers:

- **Digital Discovery:** Develops competencies in basic AI usage such as AI fundamentals, data awareness, output verification, responsible use, and no-code tools like Microsoft Copilot.
- **Digital Mastery:** Builds competencies for low-code development, large language models, chatbots and workplace agents.
- **Digital Expertise:** Develops advanced system competencies such as creating proofs-of-concept, model fine-tuning, retrieval-augmented generation, speech-to-text, and image recognition.

Together, the tiers form a learning framework for AI users, workplace solution builders, and technical specialists across business and operational functions.

Outcomes

The initiative created a clear pathway for scaling AI literacy across the security sector. Certis Group aimed to upskill 5,000 professionals, beginning with 2,000 Certis Group managers and security supervisors by 2025. Over 90% of management staff had received training. Employees can apply these skills to AI-enabled incident reporting and knowledge support, with further uses planned across operational learning, resource allocation, and command-centre operations.



Certis employees presenting project work during the AI Basics for Productivity course at SUTD in 2024 (Source: Certis Group)

Sources: Singapore University of Technology and Design, Certis, Channel NewsAsia, Certis University

Encouraging AI Learning Through Dedicated Experimentation Time

Temasek Trust allocated protected time for employees to do hands-on AI learning through a ‘Learning Week’. Centred around an AI bootcamp comprising three half-day sessions, the programme gave employees dedicated time to learn, experiment, and apply AI to practical work scenarios in group settings.

Takeaways

- **Protect time for learning:** Reserve calendar time so employees have the capacity to build AI skills.
- **Move quickly from awareness to application:** Use hands-on exercises to help staff apply AI concepts to real work.
- **Sustain adoption after training:** Keep tools and support available so learning translates into workplace use.

Context

Temasek Trust recognised that employees needed dedicated time and practical support to build AI capabilities, alongside their day-to-day responsibilities. Rather than relying only on conventional training, it created a shared learning experience to build confidence and encourage practical experimentation.

Details

A ‘Learning Week’ was organised around a three half-day AI bootcamp for employees, with time reserved in advance, alternative sessions arranged where needed, and active senior leadership participation.

Employees were introduced to generative and agentic AI, before selecting learning tracks suited to their interests and needs. Temasek Trust partnered with training providers and supplemented technical learning with internal sessions on AI policies, governance, change management, and responsible adoption.

Practical creation was central to the programme. Employees used AI tools to build outputs such as websites, videos, and data analyses, with a focus on tools that could operate within Temasek Trust’s technology environment and support real work processes.

AI champions nominated by business teams, together with AI Sponsors and the Analytics and Digital Transformation team, supported further experimentation, workflow redesign, and development of AI use cases.

Governance guardrails enabled safe experimentation. Guidance was provided on data handling, responsible use, and review processes for higher-risk applications. Departments could also submit ideas through an internal AI Award programme, to further develop promising concepts.

Outcomes

Following the bootcamp, Temasek Trust saw increased interest in and the use of its platforms. Employees began incorporating AI-assisted content into presentations and town halls, while some continued developing projects started during Learning Week.



Temasek Trust’s inaugural Learning Week in March 2026 (Source: Temasek Trust Impact Hub)

Strengthening AI Capability Through a Multi-Layered Enablement Ecosystem

As Singtel Group transforms into an AI-led connectivity, digital infrastructure, and services group, it recognised that foundational AI training alone is not enough to sustain long-term adoption. Singtel Group's multi-layered enablement ecosystem combines training, peer support, leadership reinforcement, and opportunities to experiment. Underpinning this approach is Singtel Group's HI×AI×CI model, which brings together Human Intelligence, Artificial Intelligence, and Culture Intelligence. It reflects the interplay between human judgement and contextual understanding, AI capability, and a culture that enables learning, experimentation, and sustained adoption.

Takeaways

- **Build human capability alongside AI capability:** Go beyond technical proficiency by strengthening employees' judgement, confidence, and ability to apply AI effectively in the context of their work.
- **Turn learning into practical application:** Reinforce foundational training through peer guidance, practitioner sharing, and opportunities to experiment with AI in real work.
- **Extend and sustain adoption through local networks:** Appoint AI Influencers in each business unit, who understand local workflows and needs, providing contextual support, surfacing recurring barriers, and reinforcing new ways of working.

Context

Singtel incorporated its AI efforts into its strategy, as it recognised that technology and foundational training alone would not sustain adoption. Sustained adoption required AI capability to be complemented by human judgement and contextual understanding, within a culture that supported learning and new ways of working. Its central AI team also could not directly support every business area. Singtel therefore needed a distributed model that made practical guidance locally accessible and reinforced AI use through multiple channels.



Singtel marked its strategic partnership with Digital Industry Singapore (DISG) to accelerate AI transformation in June 2026 (Source: Singtel)

Details

Singtel combined classroom learning, online training, and workshops with peer guidance and practitioner sharing, to help employees apply AI in daily work. Hackathons, AI talks, and expert sessions provided continued exposure to new applications and encouraged experimentation.

The central team expanded its reach by building a hub-and-spoke network, appointing AI Influencers across business units. These AI Influencers combined their AI capability with an understanding of their own teams' workflows and needs, enabling them to share practical knowledge and support colleagues in applying AI within their local context. The network also surfaced recurring barriers and employee needs to the central team, creating a two-way connection between enterprise direction and day-to-day experience. Senior leaders reinforced the change visibly: for example, the Group CEO led the Group AI Strategy, while the Group CFO participated in a finance hackathon by judging ideas and challenging proposed solutions. Initiatives were introduced in waves so lessons from each AI use case could strengthen subsequent efforts.

Outcomes

The approach reinforced adoption beyond one-off training by combining local peer support, practical guidance, expert exposure, and experimentation. The AI Influencer network also gave the central team clearer visibility of recurring barriers, while leadership participation and phased rollout helped sustain practical AI use as adoption expanded.

Together, these interventions demonstrate HI×AI×CI in practice by combining AI capability with contextual understanding, while creating the peer, leadership, and organisational conditions for adoption to take root and scale.

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PILLAR 4: DATA MANAGEMENT FOR AI ADOPTION

Build Trusted Data Foundations for Responsible AI

AI depends on data that is both usable and trusted. Organisations need rules that work in day-to-day practice, employees who know how to handle data responsibly, and secure systems that give people and AI access to reliable information.

Sub-Pillars	Make the rules part of everyday work, not just policy	Be clear on everyone's responsibility for data	Make trusted data accessible
Principles	Build data and AI governance into everyday workflows, experimentation and technical controls, so innovation can move quickly while security, compliance and accountability are maintained.	Employees should know what is expected of them when they create, update, protect and use data, and have the knowledge and tools to do it well.	Give people and AI reliable organisational information through secure, well-designed access, while steering users towards governed data as the default choice.

Elevating Service Excellence Through Smart Operations

Raffles Hotel Singapore integrated fragmented sales, inventory and production data into a unified AI-powered platform, while equipping employees with the skills to interpret data-driven insights and make informed decisions. With support from the Food, Drinks and Allied Workers Union (FDAWU), through the CTC and CTC Grant funding initiatives by NTUC, Raffles Hotel implemented AI-powered solutions across kitchen, operations, sales and administration, and management functions.

Takeaways

- **Unify fragmented data before automating decisions:** Integrating disparate sales, inventory and production systems into a single view creates a reliable source of truth, reducing redundancies and errors while enabling more agile decision-making.
- **Strong data foundations and staff training enhance both service and workforce outcomes:** Timely access to data enables staff to deliver more seamless, consistent and personalised customer experiences. At the same time, upskilling empowers employees to evolve from primarily operational roles into higher-value, data-enabled positions.

Context

Raffles Hotel Singapore manages large-scale festive takeaway operations that require a high degree of precision, efficiency and coordination across multiple channels, particularly during peak periods.

With data residing across different systems, teams had limited real-time visibility across sales, inventory and production, making it more challenging to anticipate demand and coordinate planning efficiently. At the same time, the high volume of customer enquiries during festive periods required significant manual handling, limiting the team's ability to respond as quickly and consistently as desired at peak times. Manual route planning similarly added complexity to delivery scheduling and resource allocation. Together, these processes placed additional pressure on teams during periods of exceptionally high demand and highlighted opportunities to use technology to further enhance operational efficiency and service delivery.

Details

With support from the Food, Drinks and Allied Workers Union (FDAWU), through the CTC and CTC Grant funding initiatives by NTUC, Raffles Hotel implemented an AI-powered operations platform across kitchen, operations, sales and administration, and management staff.

The hotel implemented three connected capabilities:

- **An Integrated Data Intelligence and Automated Forecasting platform** combines data from multiple systems into a unified view across sales, inventory and production, enabling proactive forecasting and data-driven planning;
- **An Intelligent Chatbot with Natural Language Processing (NLP)** enables teams to manage routine customer enquiries more efficiently and consistently, supporting timely responses while allowing employees to focus on interactions requiring a more personalised touch; and
- **An AI-powered route optimisation solution** recommends efficient routes and schedules based on delivery addresses and priorities, improving delivery planning and resource utilisation.

A targeted upskilling programme was also delivered with NTUC LearningHub and AI solution vendors. It covered the fundamentals of AI and data analytics, enabling staff to interpret insights and make informed decisions using AI-powered tools.

Workers also benefited from opportunities to move into higher value-added job scopes:

- **Kitchen staff** transitioned to Production Analysts, managing AI-driven inventory and predictive production planning;
- **Operations staff** transitioned to Logistics Coordinators, overseeing AI-optimised delivery systems, while sales and administration staff evolved into CRM Specialists, using AI insights to enhance corporate client relationships; and
- **Customer Management staff** transitioned to Customer Experience Strategists, leveraging AI analytics to further enhance service quality and the guest experience.



Raffles Hotel Singapore equips employees with digital skills and technology, including digital workstations, to support more efficient operations and guest services (Source: Raffles Hotel Singapore)

Outcomes

The hotel has achieved increased productivity through real-time data visibility, more streamlined logistics and reduced reliance on manual processes. The new capabilities have also enabled teams to respond more efficiently during periods of high demand, while supporting greater consistency and personalisation in customer engagement. Importantly, automation has allowed employees to devote more time to higher-value activities and meaningful customer interactions, reinforcing the personalised service and attention to detail synonymous with Raffles Hotel Singapore.

Sources: NTUC AI Playbook – Hospitality and Consumer Business Sectors (NTUC AI-Ready SG)

Transforming Facilities Work Through Smart Facilities Management

Changi General Hospital
SingHealth

Changi General Hospital (CGH) replaced manual, labour-intensive meter reading with a smart facilities management system powered by AI for predictive maintenance. It equipped facilities staff with the skills to operate the new equipment and interpret its data-driven insights. With support from the Healthcare Services Employees' Union (HSEU), and through the CTC with CTC Grant funding by NTUC, CGH implemented the system, developed jointly with Schneider Electric, across its facilities management teams.

Takeaways

- **Integrate data fluency into technical roles to improve workforce outcomes:** Operating and maintaining smart systems enable facilities management staff to gain leadership skills and accelerate their career progression.
- **Improve work quality and job satisfaction for frontline workers with AI:** Automating the data collection from water and power meters reduced the need for workers to physically access meters in tight spaces, improving safety and driving work satisfaction as jobs pivoted towards data analysis.

Context

Conventionally, CGH's facilities management team relied on manual data collection. Obtaining readings from water and power meters, which were often located in tight or elevated spaces, was labour-intensive, time-consuming, and physically challenging. Collating and tracking monthly utilities usage manually took time away from deeper analysis, constraining the team's ability to perform holistic assessments and derive actionable insights. This resulted in skilled engineers spending more time gathering data rather than using it.

Details

With support from the Healthcare Services Employees' Union (HSEU), through the CTC with CTC Grant funding from NTUC, CGH implemented a smart facilities management system powered by AI for predictive maintenance. This was developed jointly with Schneider Electric, and training was extended across the hospital's facilities management engineers.

CGH implemented two connected capabilities:

- **The AI-powered Automated Data Collection System** automatically transmits utility readings to a central cloud platform, eliminating manual data capture and spreadsheet entry.
- **The Smart Facilities Management System** with built-in analytics and AI-enabled predictive maintenance allows the team to detect anomalies early and take preventive measures that minimise operational downtime.

Two training tracks supported implementation:

- **Digital Systems & IoT Equipment Training** equipped workers to operate, maintain, and troubleshoot the equipment and data-collection platform.
- **AI & Predictive Maintenance Training** enabled workers to understand the models used to generate equipment-health insights and to interpret those insights correctly. This made the difference between receiving an alert and knowing what it means.



CGH facilities management employees (Source: Changi General Hospital)

Outcomes

Facilities management roles evolved from manual, labour-intensive tasks to higher-value technical functions. Instead of manually obtaining and collating data, engineers now operate and maintain a network of smart meters and sensors, ensure system interoperability, and support robotic operations within CGH as part of the hospital's automation drive. The redesign also created a new career pathway; progression to a manager role now focuses on strategic oversight, innovation, and data-driven decision-making.

Sources: NTUC AI Playbook – Essential Domestic Services Sectors (NTUC AI-Ready SG)

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AI-Fluent Leadership & Workforce AI Strategy

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Workflow and Job Redesign to Embed AI into Operating Models

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Defining and Building AI-First Skillsets and Mindsets

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Technology Architecture for AI Experimentation and Rapid Deployment



PILLAR 5: TECHNOLOGY ARCHITECTURE FOR AI EXPERIMENTATION AND RAPID DEPLOYMENT

Make Safe AI Experimentation Accessible and Scale What Works

Employees need practical access to AI tools without compromising enterprise security and control. Systems should make safe experimentation accessible, give organisations a clear view of how AI is being used, and allow what works to be reused and scaled.

Sub-Pillars	 **Create clear, accessible pathways for experimentation**	 **Build safeguards in from the start**	 **Design for reuse and scale**
Principles	Employees need trusted tools, sandbox environments and guardrails that enable them to explore AI confidently and responsibly.	Build monitoring, governance and control points into distributed AI experimentation before employee-built solutions become enterprise blind spots.	Architecture should turn successful agents, workflows and solution patterns into reusable capabilities, while maintaining controls and interoperability needed for enterprise deployment.

Empowering Employees to Experiment Through a Unified AI Platform

Singapore Airlines (SIA) deployed "JARVIS", a safe and secure platform to experiment with AI, in early 2024. JARVIS started as an internal GenAI assistant that allowed any employee, regardless of technical background, to access different AI models and retrieve information from internal knowledge bases. It has since evolved into a container for AI applications across SIA Group, helping staff complete tasks end-to-end through guided workflows, run research and analysis, generate strategy and work content, and build no-code mini AI applications within enterprise guardrails.

Takeaways

- **Provide a safe and secure avenue for experimentation:** Give employees a shared environment to explore, build and reuse AI solutions within enterprise guardrails.
- **Build AI applications within the platform:** Enable staff and departments to create and publish no-code AI apps/agents inside JARVIS, so teams can create solutions that fit their day-to-day workflows.
- **Turn experiments into reusable workflows:** Enable employees to save useful agents, prompts, and knowledge bases for repeated use.
- **Combine capabilities in a unified platform:** Bring together different AI models, shared tools, and business-specific support so teams can move from idea to execution faster.

Context

SIA needed a secure platform for general and business-specific AI use. One-off prompting limited employees' ability to retain knowledge, build repeatable workflows, or reuse solutions. The airline therefore created one internal environment combining model choice, organisational knowledge, and practical tools within enterprise controls, so that experimentation could translate into reusable capability at scale.

Details

SIA built JARVIS, an internal intelligent assistant bringing together models from OpenAI, Anthropic, Google, and others, along with organisational knowledge and shared tools such as document analysis and work review. Business units could also access capabilities designed for specific needs, such as copywriting and translation. The platform supported experimentation through:

- **Building agents:** Employees could build agents and save customised workflows for repeated tasks. When this capability launched in April 2026, employees created more than 1,500 AI agents in the first month – a strong signal that gives teams a governed platform that turns curiosity into reusable workflows and everyday productivity.
- **Business-specific AI applications:** Departments can build and tailor AI applications within JARVIS, based on SIA domain knowledge and business context, so the tools fit their processes and standards and deliver more consistent, faster execution. The first version was developed in around eight weeks by a small team of three people, providing a practical platform for staff-led experimentation relatively quickly.



JARVIS 101 training workshop for employees
(Source: SIA Annual Sustainability Report FY2025/26)

Outcomes

JARVIS gave employees one internal environment to explore different AI models and build mini AI apps and agents to work on recurring tasks. This helped move AI outputs beyond one-off uses, while improving productivity and speed to market. Its broader internal-platform approach achieved close to 100% adoption among employees using JARVIS at least once in the past 12 months, with more than 65% monthly active usage and a 75% satisfaction rating.

Standardising Agent Design Through a SMARTER Prompt Framework

TEMASEK

With growing adoption of AI agents in Temasek, the technology team developed SMARTER, a reusable agent harness[1] that transforms ad hoc agent creation into a consistent, repeatable process. Guided by seven design parameters, SMARTER helps employees capture and codify workforce expertise, making it easier to develop scalable agents while ensuring quality, reliability and governance.

Takeaways

- **Standardise agent design:** Use a common framework to define an agent's role, context, tools, output and safeguards.
- **Embed workforce expertise in the harness:** Capture employees' task knowledge as structured instructions that an AI agent can follow.
- **Build for uncertainty:** Embed clarification, fallback, and escalation mechanisms to help agents respond consistently when information is incomplete or errors occur.

Context

As Temasek expanded its use of AI agents across the organisation, with teams building agents for different use cases and platforms, it needed a scalable approach to agent development. Without a common design framework, inconsistent approaches could lead to uneven performance, duplicated effort, and governance challenges.

Examples provide sample inputs and corresponding outputs, illustrating both desired and undesired responses to guide the agent towards outputs that align with expectations.

SMARTER, a reusable agent harness script for designing AI agent prompts, was developed. The framework guides employees to design agents across seven parameters:

- **System Instructions** define the agent's role, operational rules, and constraints.
- **Memory** specifies context for the agent to retain or disregard, in consideration of sensitive information.
- **Actions and Skills** outline authorised tools, data sources and rules governing their use.
- **Response Structure** establishes the required output format, tone, and style.
- **Task Decomposition** breaks complex requests into logical steps and rules.
- **Examples** illustrate desired and undesired agent behaviour through sample prompts and corresponding outputs.
- **Recovery and Guardrails** define fallback actions and require the agent to seek clarification when uncertain.

SMARTER acts as a prompt designer, identifying gaps and asking targeted questions to help employees create structured prompts. This enables employees to translate task expertise into clear instructions, examples, and guardrails for agents. Temasek also incorporated SMARTER into a CEO Challenge hands-on exercise, giving employees a practical way to apply the framework.



Temasek 2025 CEO Challenge (Source: Temasek Review 2026)

Outcomes

SMARTER provided a repeatable method for well-structured agent designs. It laid the foundation for scaling workforce-created agents, while maintaining a shared approach to quality, governance, and reliability.

[1]Harness (frequently discussed as an AI agent harness or harness engineering) refers to the surrounding code, orchestration logic, tools, and security guardrails built around a Large Language Model (LLM) to turn raw model reasoning into safe, reliable, and practical action, accessible only to a number of organisations.

Looking Ahead:
A Continuous Journey



AI Fluency is a Continuous Journey

Workforce AI fluency is not a one-time transformation effort. As AI technologies, workforce practices and business priorities continue to evolve, organisations need to continuously capture emerging insights, refresh guidance and translate ongoing lessons into new actions.

While the Playbook is a first attempt at compiling key insights for workforce AI fluency today, organisations must continue to learn from one another, exchange insights within and beyond the Temasek ecosystem, and build on proven approaches to deliver long-term impact for workforce and organisational AI readiness.

Success Depends On

Continued Ecosystem Collaboration



Continuous contributions from within and beyond the Temasek Ecosystem to keep the Playbook relevant with new insights, lessons learned, tools and resources.

Active Adoption and Application



Active adoption and application by TPCs, using the Playbook not as a reference but as a practical guide to inform AI workforce transformation decisions.

Feedback and Adaptation



Ongoing feedback and iteration to refine recommendations, close emerging gaps, and keep guidance aligned with AI transformation needs.

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