KPMG | 85 Be in Front

AI in Healthcare & Life Sciences Sector

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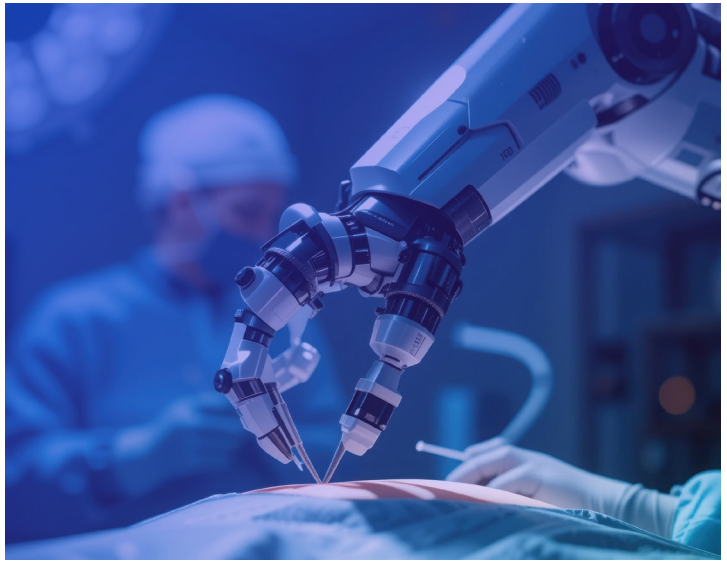

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KPMG

AI in Healthcare & Life Sciences

Trends, opportunities and challenges

HEALTHCARE & LIFE SCIENCES SECTOR - TRENDS, OPPORTUNITIES AND CHALLENGES

AI – a core enabler of next-gen healthcare – scaling prevention, productivity, and precision; while regulation and trust shape the pace of impact

Key Trends Reshaping The Sector	Prevalent Opportunities	Related Challenges
Longitudinal care Structural shifting of healthcare from acute, episodic treatment to continuous, preventive and primary-care-led population health under Healthier SG and healthy longevity agendas	**Predictive prevention at scale** AI can enable large-scale risk stratification, personalised preventive pathways, and proactive health nudges across enrolled populations.	**Data gaps and behavioral inertia** Fragmented longitudinal data, behavioural adherence gaps, and bias risks constrain precision and equitable outcomes at population scale
AI-augmented care delivery The public healthcare system is moving from pilots to system-wide deployment of GenAI and imaging AI to address clinician workload and diagnostic demand.	**Clinician capacity multiplier** Generative AI and imaging automation can significantly reduce documentation burden, accelerate diagnostics, and improve care throughput.	**Safety, trust and workforce friction** Patient safety concerns, limited explainability, and poor workflow integration risk slowing sustainable clinician adoption.
Precision medicine at scale Precision health is being operationalised nationally through the convergence of genomics, AI, and preventive care rather than remaining limited to specialist settings.	**Precision prevention engine** AI enables scalable genomic risk prediction, variant interpretation, and personalised prevention through integrated genetic and clinical data.	**Privacy, consent and model validity** Genetic data sensitivity, consent governance, and limited Asian population generalisability hinder broad clinical uptake.
Advanced life sciences manufacturing Singapore is deepening its role as a global hub for advanced biopharma and medtech manufacturing focused on complex, high-value production.	**AI-driven manufacturing excellence** AI-based quality analytics, process optimisation, and digital twins can materially improve yield, compliance, and resilience.	**Regulatory rigor and talent constraints** GxP validation, OT-IT data silos, and shortage of hybrid data-manufacturing talent slow AI industrialisation.

Sources: 'NDR 2025: 1.3 million enrolled in Healthier SG, more urged to sign up' The Straits Times, Link; 'Inaugural Synapxe conference unveils transformative AI solutions for digital health in Singapore', Healthcare IT News, Link; 'Public healthcare institutions will receive $200m boost to use AI, genomics data for preventive care', The Straits Times, Link; 'US$140 billion opportunity: Mr. John Eng, VP Healthcare, EDB Singapore, on Singapore's MedTech future', MedTech World, Link; 'Singapore revises healthcare AI guidelines, attains WHO top rating for medical device regulation', The Straits Times, Link

PREVALENT AI THEMES IN HEALTHCARE & LIFE SCIENCES SECTOR

The sector is shifting from fragmented innovation to system-wide execution anchored by AI and precision medicine

	Key themes in market	Future imperatives for players
System-wide execution of AI-based healthcare	• Singapore is operationalising AI at a national scale by embedding validated imaging AI and generative AI across clinician workflows and citizen platforms – anchored by **Synapxe's AimSG and HealthHub** ecosystem – to drive consistent, multi-site deployment and personalised care • Use cases such as **Note Buddy, HealthHub AI**, and nationally scaled chest X-ray AI screening signal a shift from pilot-led adoption to system-wide AI-enabled healthcare delivery by end-2026	• Build AI solutions that are interoperable, validated, and deployable at scale across AimSG and HealthHub—not siloed pilots • Hard-wire AI into everyday clinical and citizen journeys to unlock sustained productivity and outcome gains.
AI-led precision and preventive health at population scale	• Singapore is scaling AI-driven precision and preventive care, from genomics-led oncology and drug discovery to continuous, healthspan-focused disease management • This is anchored by initiative such as **National Precision Medicine Programme, AI-enabled clinical innovation (e.g., Project ENTenna), and A*STAR's Precision Preventive Population Health (P3H)** model tailored for Asian populations	• Adopt AI-enabled, continuous and preventive care models rather than episodic treatment pathways • Genomics, AI-driven insights, and personalised interventions will become foundational across R&D, clinical care, and population health
Sovereign AI-powered drug discovery at scale	Singapore is building a globally unique, AI-native drug discovery ecosystem by combining the world's largest natural compound library with high-performance, sovereign compute – bringing together **NYB's biology-led platform**, **HPE's GPU-driven molecular screening**, and **Equinix's secure digital infrastructure** to accelerate next-generation therapeutics	• Re-engineer drug discovery around AI-driven molecular screening and data-led biology, not traditional wet-lab–first approaches. • Ensure consistent access to high-performance, compliant compute and national platforms rather than standalone in-house infrastructure.

Sources: "Momentum in Motion: What Will Shape APAC's Life Sciences Landscape in 2026?", Link; "Engine Biosciences and Experimental Drug Development Centre Partner to Advance Novel Therapies to Combat Cancer", Link; Singapore: Greater integration of AI seen in Singapore's national healthcare strategy, Link; 5 ways Singapore is building trust in AI for better patient care, Link; World's largest natural drug library is being built in Singapore on an AI-powered drug discovery platform', Link

CHALLENGES AND OPPORTUNITIES – HEALTHCARE & LIFE SCIENCES

AI can transform APAC healthcare, but scale depends on trust, interoperability, and security readiness

Tailwinds in AI adoption

Agentic automation to unlock capacity

AI copilots embedded into clinical and administrative workflows can materially expand healthcare capacity by automating documentation, triage, and coordination while keeping clinicians in the loop

75% Asia/Pacific healthcare providers expect greater productivity gains from agentic AI than GenAI without agents(1)

50% Prediction of chronic and rare diseases before symptoms through multimodal AI(1)

AI-enabled preventive and population health

AI-driven risk stratification and personalised interventions can shift Singapore and APAC healthcare systems from episodic treatment to scalable, data-driven prevention and chronic care management

AI-accelerated drug discovery and trials

AI is compressing drug discovery and clinical trial timelines by enabling in-silico discovery, smarter trial design, and faster, evidence-ready regulatory submissions across APAC life sciences

Headwinds in AI adoption

Trust, safety and governance

As AI moves into clinical decisioning, the lack of explainability, accountability, and standardized assurance frameworks is becoming a primary constraint on adoption speed

Fragmented data and interoperability

Uneven EMR maturity and poor interoperability across Southeast Asia limit AI scalability, creating a two-speed market where data readiness – not model quality – determines impact

- **Indonesia**: 96 percent of hospitals implemented EMR by mid-2025
- **Malaysia**: ~15 percent of public hospitals and ~18 percent of health clinics equipped with EMRs as of 2025
- **Philippines**: Urban private hospitals have achieved high adoption rates – with some reaching up to 95 percent usage; many rural health units still transitioning from paper-based systems
- **Singapore**: Singapore's EMR usage is defined by widespread adoption of AI-powered, cloud-based systems, with the market growing at a ~12% CAGR

Cybersecurity and data privacy risk

Rising ransomware incidents and stricter data-protection enforcement mean AI deployments increasingly amplify cyber and privacy risk rather than reduce it if not designed securely.

Note: 1) Results as per IDC's Agentic AI survey

Sources: 'Asia/Pacific Healthcare in 2026 and Beyond: Key Shifts Shaping the Future', IDC Link; 'Snapshot of EMR progress in ASEAN', Hospital Management Asia, Link; 'What Health Care Leaders Have Learned From Deploying AI', AJMC, Link; 'Singapore revises healthcare AI guidelines, attains WHO top rating for medical device regulation', The Straits Times, Link; 'Singapore: MOH and HSA Launch Refreshed AI in Healthcare Guidelines', Baker McKenzie, Link

KPMG HEALTH PUBLICATIONS – KEY FINDINGS

Healthcare leaders prioritize AI investments, yet operational, data, and cybersecurity barriers slow value realization

72% Say their organization is keeping pace with the speed of AI development

Source: KPMG 2025 Healthcare CEO Outlook(1)

"…most successful healthcare organizations are the ones that are making sure that their senior leaders and boards all understand the big picture and have the risks under control" – **Drew Corrigan, US Sector Leader for Healthcare, KPMG US**

92% Agree that board is equipped to navigate adoption of advanced technologies like AI

87% Plan to invest more than 10% of their budgets into AI over the next year

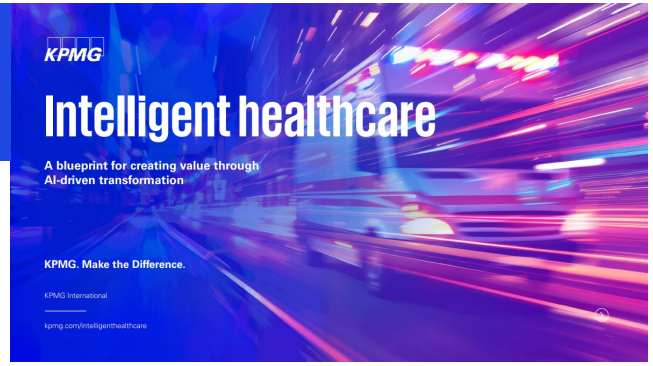
Challenges driving short-term decisions

- **55%** Concerned about data readiness
- **35%** Integration of AI into organization processes
- **35%** Concerned about cybersecurity

59% Have systematically incorporated AI into product and service development

32% Say AI represents >10% of their organization's global tech budget

Source: Intelligent Healthcare(2)



Infrastructure to support AI implementation

- **69%** Are using cloud-based platforms
- **84%** Are using data platforms with AI capabilities
- **85%** Are developing AI solutions in-house

Barriers to progress

- **84%** Face operational challenges when implementing AI
- **76%** Delay major investments until AI landscape matures further

Note(s): 1. Key findings of the survey based on responses from 1,350 CEOs between 05 Aug and 10 Sep 2025; 2. The findings are strengthened by quantitative survey of 1,390 decision-makers across key global markets, including 183 respondents from the healthcare sector
Sources: 'KPMG 2025 Healthcare CEO Outlook', KPMG, Link; 'Intelligent healthcare', KPMG, Link; all accessed in Apr 2026

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AI in Healthcare & Life Sciences

Case Studies

AI CASE STUDIES BY SECTOR – AI IN HEALTHCARE & LIFE SCIENCES (1/4)

Enterprise-wide AI governance aligned stakeholders, ensured regulatory readiness, and unlocked scalable value

KPMG Italy supported a leading pharmaceutical group in defining a company-wide AI Strategy and Governance Framework to ensure coordination, compliance, and value generation across global initiatives

Client challenge

A global pharmaceutical company with operations in over 20 countries launched a corporate initiative to define its long-term AI vision and structure. While multiple AI and data-driven initiatives were already in place across business units and geographies, the organization lacked:

- A clear AI strategy aligned with business priorities. A centralized governance model to coordinate efforts
- Defined roles, responsibilities, and processes to ensure accountability and scalability
- Visibility over existing AI use cases and maturity across departments

The client needed a unified framework to guide investments, foster adoption, and comply with evolving AI regulations.

Our approach

KPMG delivered a structured, collaborative program built around four key areas:

1 **Strategic Analysis**
- Assessed AI maturity across functions and mapped existing initiatives
- Aligned strategy with corporate goals and industry-specific priorities

2 **AI Competence & Role Framework**
- Defined required skills, roles, and responsibilities for AI adoption
- Designed a cross-functional AI organization model

3 **Training and Change Management Plan**
Proposed training paths tailored to different roles and maturity levels

4 **AI Governance Model**
Designed governance principles, decision rights, and an operating model, including processes for project intake, risk assessment, and compliance

The project involved business, IT, and regulatory teams through global interviews and workshops.

Value delivered

- Delivered a comprehensive AI strategy and governance model tailored to a global pharmaceutical context
- Enabled alignment and coordination across countries, functions, and business units
- Clarified roles, responsibilities, and decision-making to accelerate AI project delivery
- Strengthened compliance readiness with regulatory guidance embedded in the model
- Supported cultural change and capability building with a structured training plan

Why KPMG?

- KPMG Italy worked closely with global business, IT, and compliance teams to co-design a practical and effective AI governance model.
- We helped turn high-level principles into clear, actionable processes the client could apply and scale across the organization.

What we have learned

- AI strategy and governance must be co-designed with both business and compliance in mind
- Mapping existing initiatives helps identify hidden value and reduce redundancy
- A clear operating model and shared language around AI roles foster ownership and adoption

AI CASE STUDIES BY SECTOR – AI IN HEALTHCARE & LIFE SCIENCES (2/4)

GenAI-enabled labelling accelerated time-to-market, improved global compliance, and reduced rework across jurisdictions

KPMG supported a Life Sciences client in designing and piloting a GenAI-enabled labeling solution to automate global IFU and product labeling processes, improving compliance, accuracy, and time-to-market across jurisdictions

Client challenge

The client's labelling and IFU process is highly fragmented, taking up to 250 days to complete due to information spread across disparate sources and heavy reliance on email-based workflows. This has resulted in poor traceability, frequent rework, and escalations driven by inconsistencies across translations, increasing cost and delaying manufacturing timelines

Our approach

KPMG designed an end-to-end GenAI-enabled labelling solution that ingests data from multiple product documents to automate content creation, validation, and translation across global jurisdictions. Integrated workflow orchestration ensured consistency, compliance, and traceability across cross-functional review and approval processes.

The approach automates IFU drafting with source traceability, supports artwork and jurisdiction-specific label elements, enables multilingual translations, and compares versions to ensure consistency and compliance across markets

Value delivered

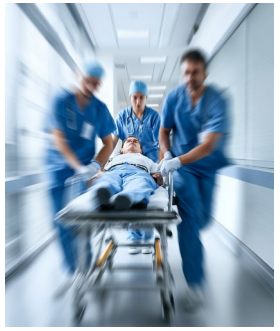
- The PoC validated the feasibility of a GenAI-enabled labeling solution that integrates seamlessly into the client's existing technology ecosystem.
- The approach delivered ~30% FTE efficiency gains, reduced labeling lead times by over 50%, cut translation timelines by up to 90%, and achieved 98% IFU content accuracy, while lowering non-conformances and quality-related issues by 30–60%.
- Overall, the solution demonstrated clear potential to accelerate time-to-market while reducing cost and compliance risk

Why KPMG?

KPMG delivers a modular, GenAI-enabled labeling solution that integrates with the client's existing technology stack, leverages low-code workflows and reusable prompt libraries, and accelerates scalable digitization through proven demos and a structured business-case framework

What we have learned

The engagement highlighted that successful GenAI-driven labeling transformation requires embedded regulatory intelligence, source traceability, structured gap assessments, and robust comparison controls which is beyond automation alone to ensure accuracy and regulatory confidence at global scale



AI CASE STUDIES BY SECTOR – AI IN HEALTHCARE & LIFE SCIENCES (3/4)

AI-driven traffic management cut fatalities, speed up emergency response, and improved traffic flow

To support the client's critical marketing, patient engagement and product development business decisions, KPMG in Australia harnessed actionable insights from complex, unconventional data

Client challenge

A leading pharmaceutical division of a global conglomerate specializing in cutting-edge pharmaceuticals, biotechnology and medical technologies is on a mission to improve human health and well-being globally.

With innovations in drug research and development, and engaging directly with patients and healthcare professionals, they aim to stay ahead of their competitors.

However, disparate and siloed data and insights in Asia Pacific were impeding the company's ability to assess the Burden of Disease (BoD) in the region. Their ability to capitalize on the full potential of the data in understanding the complexity of various diseases, patient journeys and the market in the region was hindered by manual data collection and preparation and difficulties in replicating the analyses and insights that were being produced

Our approach

In collaboration with the client, AI/ML capabilities were harnessed for advanced data handling that included data curation and classification. Insights were gathered through pattern recognition and predictive analysis.

AI was leveraged to improve the quality of the search experience along with more intuitive navigation and enrichment of the data by the users and the data science teams.

The result is a digital ecosystem capable of providing consistent, meaningful and timely scans of Burden of Disease data aided by a patient-centric approach that contributed to both data and insight-driven decision-making across the Asia Pacific region.

It also resulted in the development of five AI/ML use cases focused on treatment adherence, product segmentation, treatment prescription, epidemiology forecasting and social listening.

Value delivered

- The five use cases provided the client with invaluable insights into patient adherence, the competitive market landscape, patients' prescription behaviors, disease trend forecasts and patient sentiment.
- The use of AI and machine learning surfaced insights from traditional and non-traditional data sources on innovative ways for prioritizing opportunities and creating competitive differentiation

Why KPMG?

- Proven leadership in complex AI/ML projects from start to finish.
- A holistic strategy combining technology, strategic insights and patient focus to navigate healthcare complexities.
- Focused on using technology to discover insights for competitive advantage in key disease areas

What we have learned

- The project underscored the transformative potential of AI/ML in healthcare, especially in managing and interpreting large datasets for meaningful insights.
- The importance of cross-functional collaboration emerged as a key learning, highlighting how technology and healthcare expertise must blend to address complex challenges effectively

AI CASE STUDIES BY SECTOR – AI IN HEALTHCARE & LIFE SCIENCES (4/4)

A biopharmaceutical company focuses on responsible AI

KPMG China designed a strong AI governance framework that mitigated privacy and bias issues, improved regulatory compliance and strengthened trust in the responsible use of AI.

Client challenge

A leading biopharmaceutical company in China is pioneering the development of selected AI systems, such as administrative automation with Microsoft Copilot and an automated recommendation system for doctors.

However, the rapidly changing and intricate AI regulatory landscape across key global markets, notably the EU, China and the US is making these developments more challenging.

As well, the responsible use of AI is becoming more crucial given potential privacy breaches and biased outcomes linked to sensitive data handling.

Despite measures such as dedicated compliance teams and Privacy Impact Assessments, the ability to amalgamate all global AI privacy regulations has continued to be a challenge and the company required an effective strategy to align their AI initiatives with up-to-date regulatory standards

Our approach

An AI governance framework aligned with the requirements of AI laws and regulations was developed by utilizing the principles of KPMG's Trusted AI framework.

AI principles were identified, and an AI Committee was established with responsibility for key decisions and coordination, and with defined roles, responsibilities and governance KPIs to track their effectiveness.

A formal AI policy was adopted along with detailed standards for AI system lifecycle management – from design and testing to deployment, operation and retirement.

A risk assessment checklist was also created for the Governance, Risk & Compliance team, Privacy department and AI committee to evaluate the risk levels of the AI systems and implement appropriate risk mitigation strategies.

Value delivered

- A strong AI governance framework was established based on KPMG's Trusted AI framework to ensure compliance.
- The framework transformed how employees approached AI development and fostered a culture of responsible AI usage and a reduction in regulatory risks, which increased business units' confidence in using AI responsibly.
- The strategic focus on responsible AI usage reinforced the company's brand and positioned it as a leader in ethical AI, enhancing its market reputation and competitive advantage

Why KPMG?

- A wealth of expertise in AI governance and in transforming processes for enhanced decision-making and compliance throughout the KPMG China team
- Experience in providing strong, sustainable solutions to companies in the life sciences sector.
- Previous experience on multiple successful projects with the client organisation

What we have learned

- The necessity of a dynamic framework that adapts to diverse legal and regulatory environments, guiding employees towards ethical AI implementation
- The critical role of establishing a dedicated AI committee to foster the adoption of responsible AI practices

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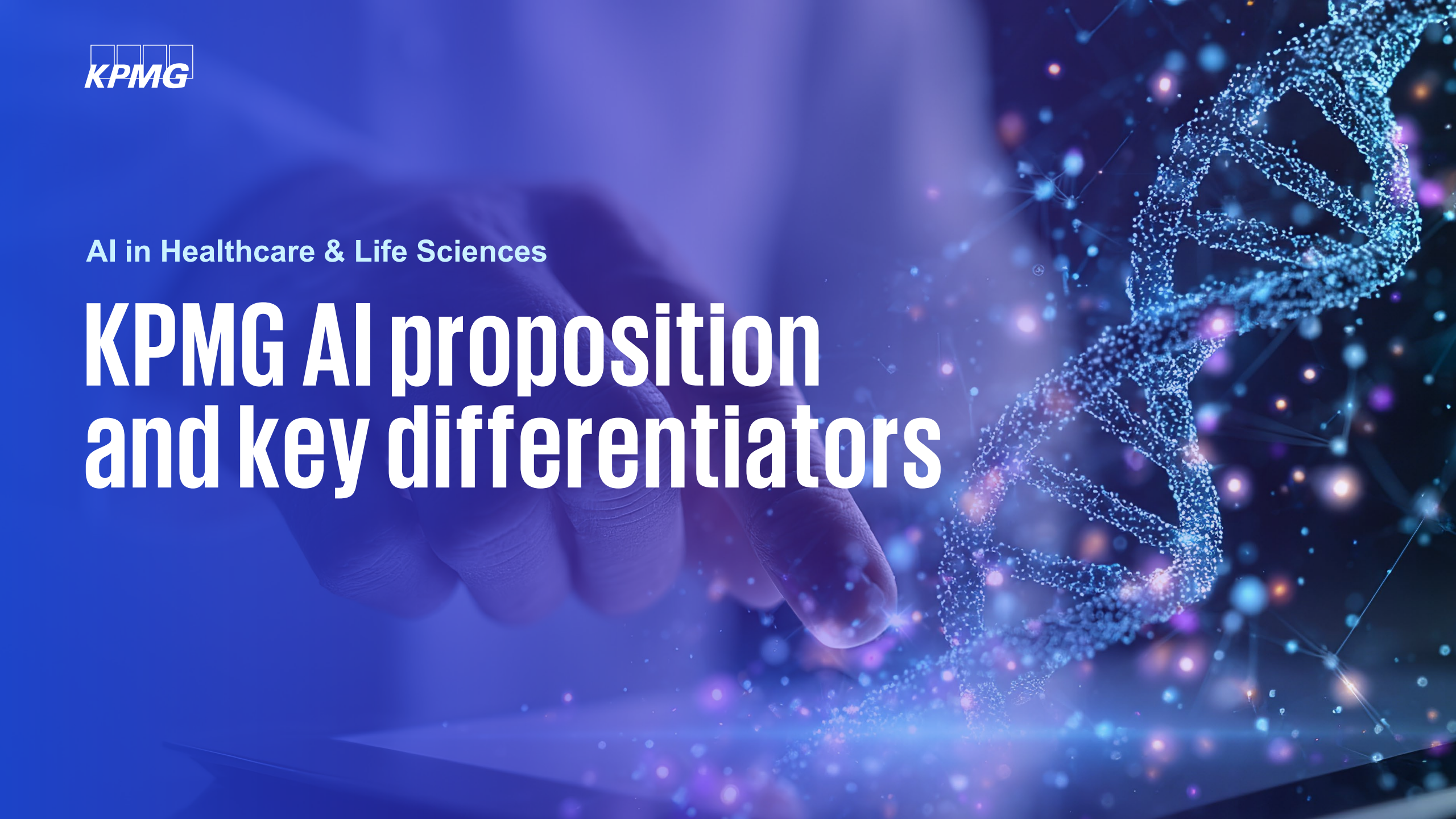
AI in Healthcare & Life Sciences

KPMG AI proposition and key differentiators



The KPMG Trusted AI Centre of Excellence
AI that deliver results, not just pilots.

Most organisations can launch AI pilots.
Very few manage to scale them.
The KPMG Trusted AI CoE exists to fix that.

What we do

We help organisations design, build, and scale AI that:

- Solves real business problems
- Is trusted by leaders, employees, and regulators
- Can be adopted and scaled across the organisation
- Enables intelligent governance, decision-making and operations

The result

AI that people trust, use, and rely on,
that leaders can see, measure, and defend.

Register for a 45 mins demo

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What makes our AI CoE different

KPMG Four-Door Framework

A structured way to scale AI across the enterprise

Value | Trust | People | Data & Tech

VALUE
Turn AI activity into real business impact and ROI.

TRUST
Build AI that's trusted by everyone, from the start.

PEOPLE
Design AI around how people work, so adoption sticks.

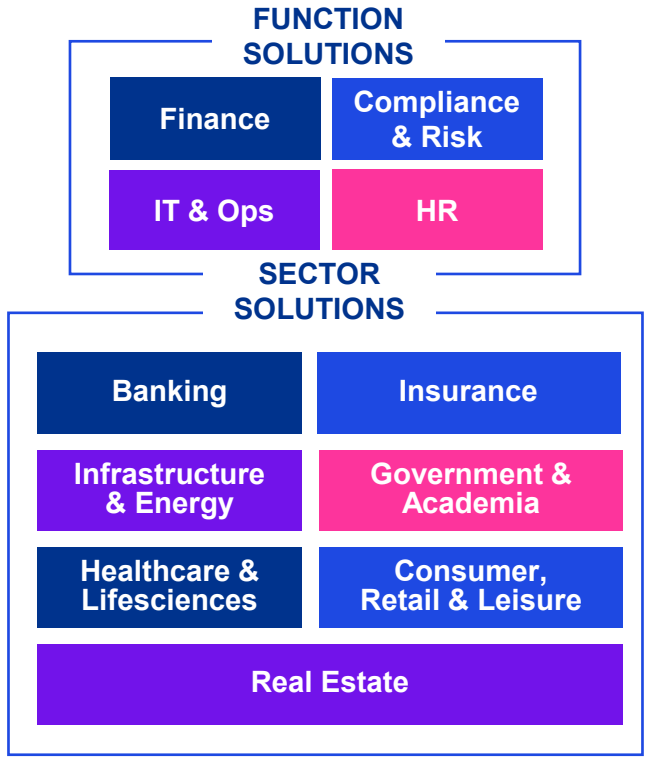
DATA & TECH
Enable AI to scale with the right technology foundation

Trusted ecosystem

KPMG brings together a powerful ecosystem of partners (leading technology companies, academia, industry organisations, and government agencies) to help turn AI ideas into tangible innovative solutions.

Co-creation of solutions

with you, for you in your function and sector



Support from EDB

With grants for

- Solution Design & Rapid Prototyping
- PoC/Pilot Build

Speed to market

- Faster time to market, going from idea to POC to scaled deployment
- Access to proven, reusable AI solutions and accelerators

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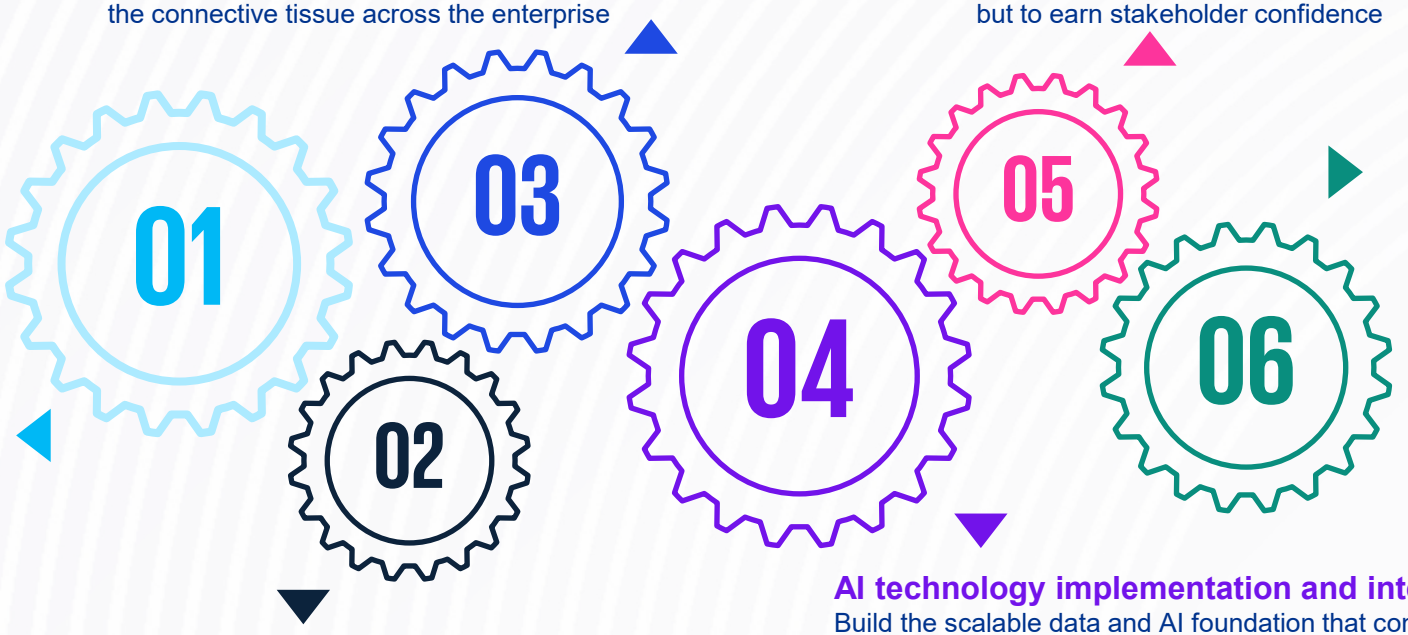
HOW KPMG CAN HELP (1/2)

Driving enterprise-wide AI impact by combining strategy, technology, workforce, and trust

AI strategy and program stand-up
Help clients shape a bold AI vision, underpinned by an enterprise-wide strategy, modern operating model, and trusted governance

Functional AI transformation
Helps re-imagine front- and back-office operations – from hyper-personalized customer engagement to AI-enabled finance, HR, and IT – so AI becomes the connective tissue across the enterprise



Trusted AI
Help clients design trusted AI by embedding ethics, transparency, and fairness at the core – not just to comply, but to earn stakeholder confidence

Bespoke AI solution and product deployment
Co-create bespoke AI solutions – spanning forecasting, pricing, trade promotions, and contract leakage – to power teams with KPMG retail solutions

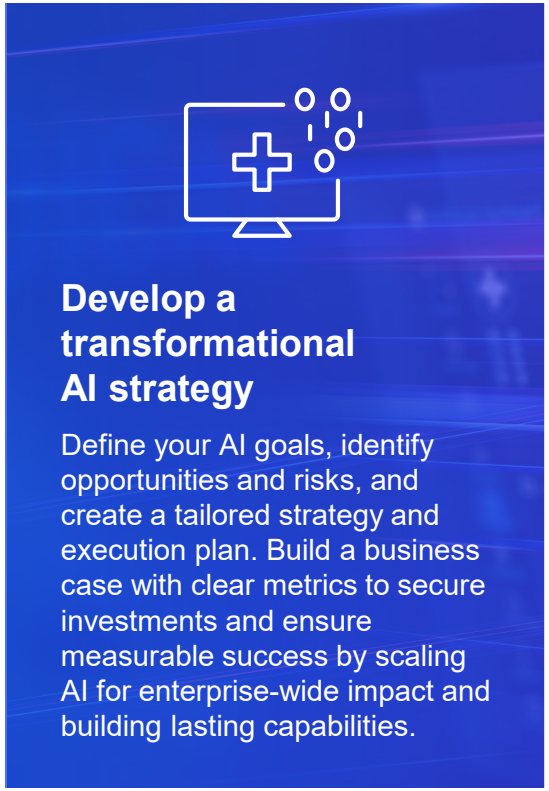
AI change enablement and workforce shaping
Beyond technology, we help create an AI-ready workforce – co-driving adoption, new career paths, and skills that fuel innovation.

AI technology implementation and integration
Build the scalable data and AI foundation that connects your enterprise and powers your intelligent operating engine.

Sources: 'AI in Retail – Global lessons from strategy to storefront', KPMG, Link

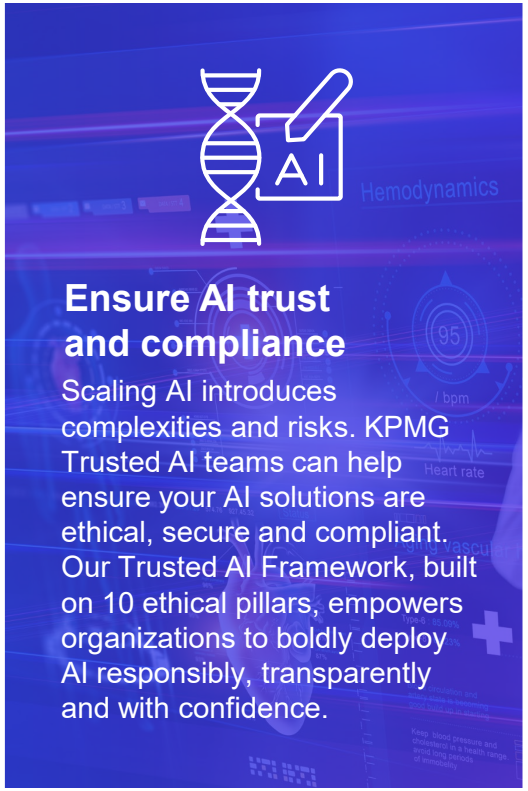
HOW KPMG CAN HELP (2/2)

KPMG can help clients across their AI journeys



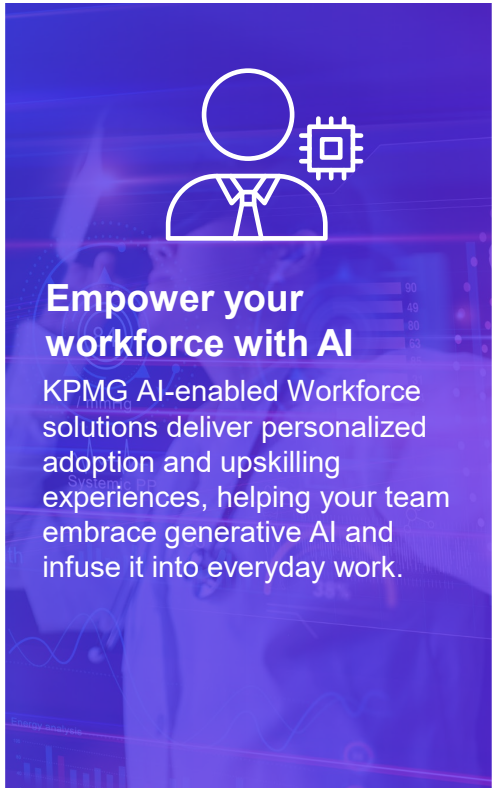
Develop a transformational AI strategy

Define your AI goals, identify opportunities and risks, and create a tailored strategy and execution plan. Build a business case with clear metrics to secure investments and ensure measurable success by scaling AI for enterprise-wide impact and building lasting capabilities.



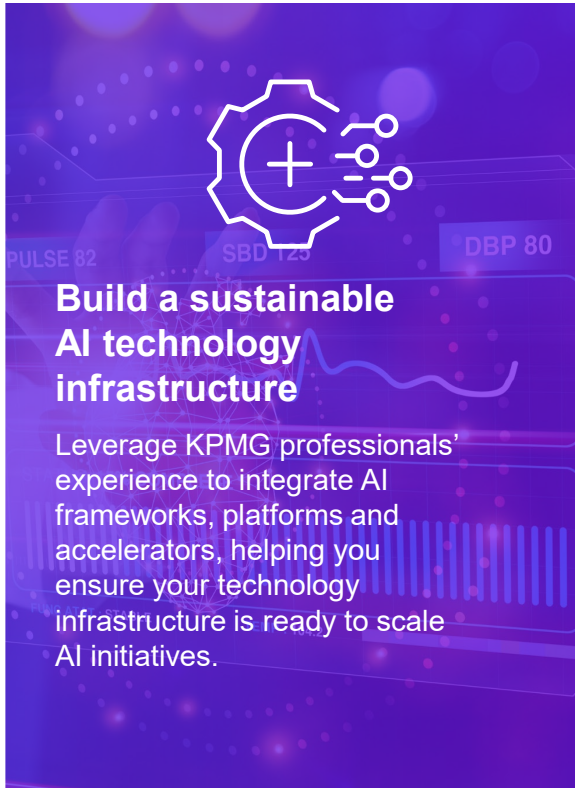
Ensure AI trust and compliance

Scaling AI introduces complexities and risks. KPMG Trusted AI teams can help ensure your AI solutions are ethical, secure and compliant. Our Trusted AI Framework, built on 10 ethical pillars, empowers organizations to boldly deploy AI responsibly, transparently and with confidence.



Empower your workforce with AI

KPMG AI-enabled Workforce solutions deliver personalized adoption and upskilling experiences, helping your team embrace generative AI and infuse it into everyday work.



Build a sustainable AI technology infrastructure

Leverage KPMG professionals' experience to integrate AI frameworks, platforms and accelerators, helping you ensure your technology infrastructure is ready to scale AI initiatives.

Sources: 'Intelligent Retail, KPMG, Link

kpmg.ai/Singapore

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