

How to make AI work even with ageing IT infrastructure

Legacy systems, manual processes, siloed data... every organisation is working with imperfect platforms.



While 94% are increasing AI budgets, HPE research reveals a dangerous gap between this confidence and actual infrastructure capability. We explore how selective modernisation can turn multigenerational IT systems into AI-ready assets.

The infrastructure reality every organisation faces

Every organisation operates with a mix of old and new systems, legacy applications running alongside cloud services and manual processes bridging automated workflows. This multigenerational IT environment is the inevitable result of technological evolution and business constraints.

As organisations embrace AI opportunities, this infrastructure reality creates a critical challenge. HPE's recent Architect an AI advantage research¹ surveyed over 2,400 IT leaders globally and found that while 44% believe their organisation is fully set up to realise AI benefits, the actual infrastructure readiness tells a different story.

This mirrors the Australian experience, where 40% of SMEs are now adopting AI², yet the majority face significant capability gaps that could undermine their investments.

Do you have a confidence-capability gap?

The research reveals disconnects between AI ambitions and infrastructure realities. Consider the finding that only 7% of organisations can run the real-time data operations essential for AI. The vast majority are working with data architectures that limit AI effectiveness before projects even begin.

Less than half of IT leaders fully understand the networking and compute requirements across the AI lifecycle stages – from data preparation and model training through to inference

and monitoring. Across each stage, fewer than 48% report a complete understanding of what's actually needed.

The skills challenge is particularly acute locally – more than 1 in 5 Australian businesses identify knowledge and skills gaps as a key constraint³, with many lacking the expertise to properly assess their infrastructure needs.

Perhaps most notable, 80% of organisations run their AI models on owned infrastructure, yet the research shows they're underprepared to support these workloads. Organisations are not recognising the specific demands AI places on infrastructure they assume is ready.

Hidden barriers in ageing IT infrastructure

As we explored in navigating the challenges of ageing IT infrastructure, legacy systems create ongoing operational challenges. But when it comes to AI, these challenges can become blockers.

Data silos and integration challenges:

Legacy systems often trap data in departmental or application-specific silos. Without unified data access, AI models train on incomplete information, resulting in insights that overlook context. The research found that only 37% of organisations have established shared data models with centralised business intelligence – a fundamental requirement for effective AI.



Compute and performance limitations:

Ageing hardware struggles with AI's intensive computational demands. Model training, tuning and inference each require different compute capabilities that organisations often lack. System bottlenecks that might be tolerable for traditional workloads become critical failures for AI applications.



¹ Hewlett Packard Enterprise (HPE): [Architect an AI advantage – Overcoming overconfidence and oversight to help leaders secure long-term business success](#), 2024

² Department of Industry Science and Resources: [AI adoption in Australian businesses for 2024 Q4](#), 2025

³ AI Group: [Technology Adoption in Australian Industry](#), 2024

Technical debt accumulation:

Years of workarounds, patches and temporary fixes create complex dependencies that complicate AI integration. This technical debt slows implementation and actively prevents organisations from leveraging AI capabilities that require clean data pipelines and flexible infrastructure.



Security and compliance gaps:

Older systems may lack the security frameworks needed for AI's data-intensive operations. With 94% of IT leaders acknowledging that AI adoption has increased their security risks, ageing infrastructure amplifies vulnerabilities when organisations can least afford them.



Build on what works with modernisation

Rather than complete infrastructure replacement, most organisations can achieve AI readiness by strategically upgrading key components while maintaining and building on existing investments.

✓ Start with data foundations:

Since data readiness represents the most critical gap, prioritise breaking down silos and establishing unified data architectures. Modern integration platforms can bridge the gap between legacy and contemporary applications without requiring the replacement of all systems.

✓ Leverage hybrid approaches:

Hybrid cloud strategies enable the maintenance of critical on-premises systems while leveraging cloud capabilities for AI workloads, providing flexibility to place workloads where they're best served, whether by keeping sensitive data on-premises or utilising cloud scalability for model training.

✓ Focus on incremental improvements:

Target modernisation efforts where they'll have maximum impact. Upgrading specific components – whether for compute capacity in model training or networking for data movement – can enable AI capabilities without requiring massive infrastructure overhauls.

✓ Build infrastructure visibility:

Before modernising, organisations need clear visibility into their current capabilities and gaps. Understanding what you have, what you need and where the critical differences lie enables strategic rather than reactive upgrades.



Finding the right expertise

Acknowledging infrastructure realities is the first step. Experienced partners become valuable in bridging the gap between current capabilities and AI ambitions.

Providers like HPE, who have researched these challenges extensively, offer modernisation approaches specifically designed to bridge the confidence-capability gap. Similarly, organisations like Nexon can help assess current infrastructure, identify critical gaps and develop practical modernisation roadmaps that align with AI ambitions.

The key is recognising that ageing infrastructure can be transformed through selective modernisation, strategic investments and the right expertise. With these elements, organisations can turn their multigenerational IT systems into AI-ready platforms.

**Ready to assess your infrastructure's AI readiness?
Contact Nexon to discuss how we can help bridge your confidence-capability gap and develop a practical modernisation roadmap.**

To find out more, call us at **1300 800 000**, email us at enquiries@corp.nexon.com.au, or visit nexon.com.au.
