Data-informed innovation in Higher Education

Harnessing the power of AI and Analytics to drive research and operational excellence

This ebook is sponsored by Nexon Asia Pacific and HPE.

Innovate or capitulate: The pressure is building for higher education providers

Universities and higher education providers across Australia are facing an array of increasing pressures and challenges - seemingly coming from all directions at once. The role of digital-first experiences and digital learning options in tertiary settings has lasted long past the end of the COVID pandemic and seems only to be gaining momentum. As a result, expectations of students and staff are also continuing to change, as is the perceived value of higher education, who can access it, and how… and most importantly when.

Institutions are at a crossroads when it comes to being able to survive and thrive in a rapidly changing landscape and are looking for new ways to innovate and respond to a number of key challenges, including:

Attracting and retaining students

As online learning options expand, competition for student enrolments intensifies. The challenge extends beyond simply attracting students; institutions must also ensure they complete their first year of study to secure funding from the Commonwealth Service Placement Fund.

Compounding this issue is the impending cap on international student enrolments, which further pressures providers. Universities must navigate the heightened competition to attract and engage these students and the economic implications of a potential decrease in full-fee-paying enrolments.

Optimising staff & resources

Many universities across Australia have recently executed enterprise bargain agreements to increase staff costs, with further increases likely to follow. As costs grow, ensuring staff are supported to improve efficiency, deliverables, and ROI is increasingly becoming a struggle for providers offering large-scale services across various departments.

Initiating digital experiences & optimising programs

Ensuring offerings are fit for purpose, courses are viable and meaningful whilst being delivered in ways that optimise learning outcomes and satisfaction. Addressing these challenges and adapting to changes in demand and expectations is becoming more important and increasingly difficult for higher education providers.

Delivering digital experiences that make staff and students' lives easier, more rewarding, and more efficient is a serious challenge. The urgency for transformation is clear in a landscape where booking a ride-share offers a more intuitive and efficient digital experience than a leading educational institution. Higher education must leverage cutting-edge technology to enhance user experiences, streamline processes, and meet the evolving expectations of students and staff alike.
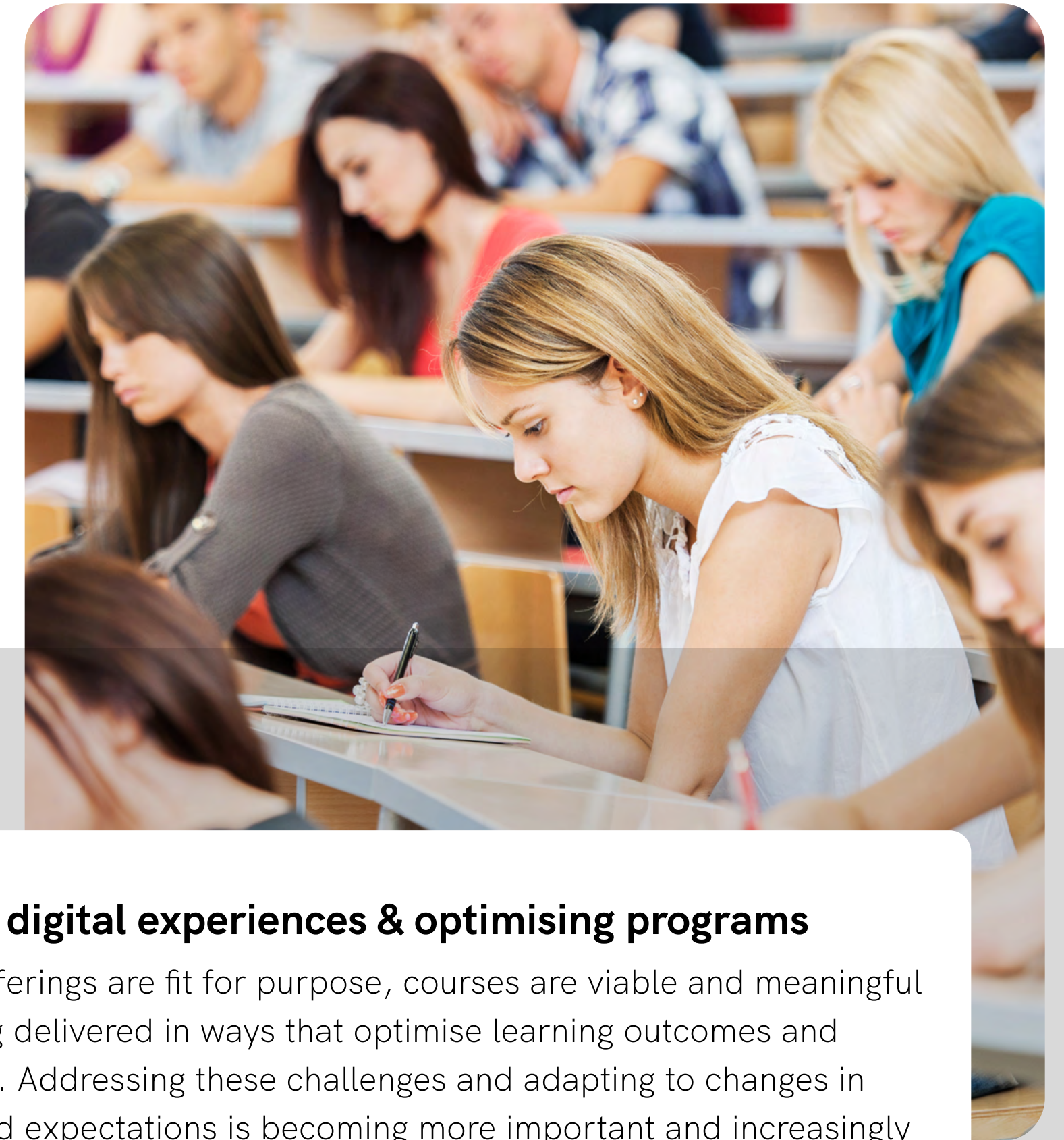
Each of these challenges, compounded by complex daily operations, makes it increasingly harder for higher education institutions to deliver operational excellence and optimal student outcomes while remaining profitable and valued institutions. We are already seeing the initial impact of these changes.

61%

Only **61%** of undergraduate students rated learner engagement positively.

Source: https://www.qilt.edu.au/surveys/student-experience-survey-(ses)#report

3-4%

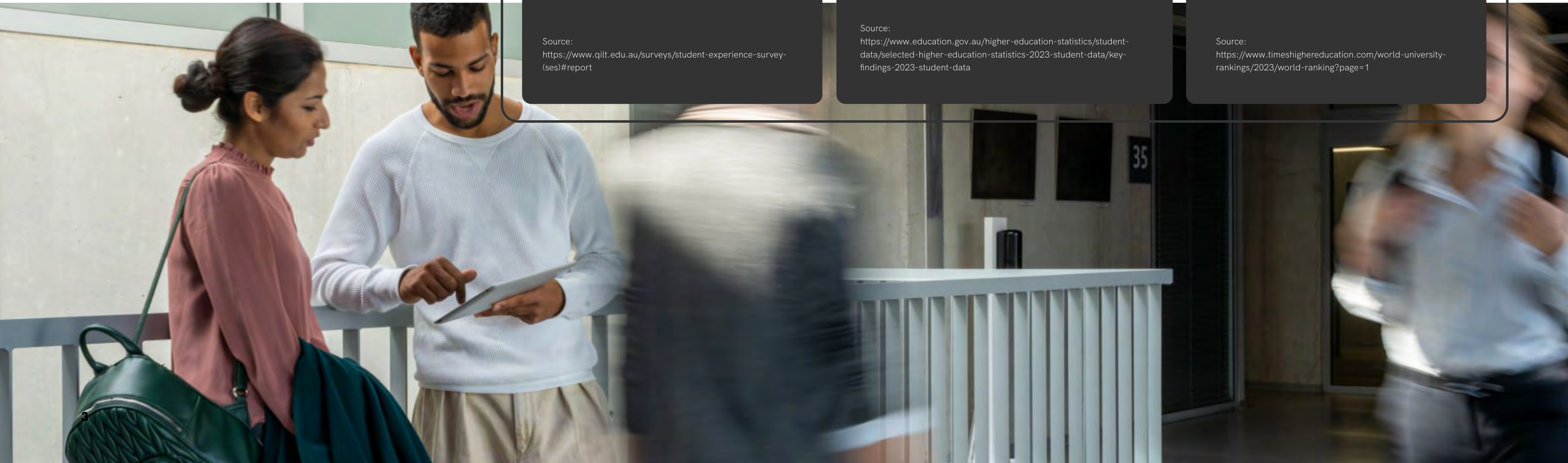Enrolment numbers fluctuated. Across certain groups, enrolment dropped between **3-4%.**

Source: https://www.education.gov.au/higher-education-statistics/student-data/selected-higher-education-statistics-2023-student-data/key-findings-2023-student-data

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Only **one** Australian university ranks in the global top 50.

Source: https://www.timeshighereducation.com/world-university-rankings/2023/world-ranking?page=1

Technology and AI have become integral to the operation of higher education institutions

While these circumstances create challenges, they also present a number of opportunities.

The ever-evolving capabilities of digital technology, data analytics and AI are opening new doors for providers that are willing and able to embrace them. Higher education providers possess vast amounts of valuable data. Optimising data quality and utilising data points to inform practices, processes and better decisions can enable providers to stay ahead of changing expectations and industry challenges.

Most providers likely have some comprehensive systems in place, but they are not fully connected across all systems and functions to maximise the capabilities of shared data. There is a huge opportunity to empower entire organisations to pivot and flex as needed.

Quality data also enables the adoption of AI and the ability to maximise it positively way to improve efficiency and accuracy in everything from research to student services to communication to resourcing. Ultimately, this will help to minimise the impact of changing economies, policies, and expectations.

The thing about AI

AI is a controversial topic and is especially complex in learning institutions, as it can be seen as both a friend and a foe. Many conversations are being had about the use of generative AI amongst students to complete academic work and assignments and how providers monitor and respond to this usage.

However, AI also provides opportunities for providers themselves to harness new capabilities, relieve some of the pressure on education and overcome key challenges in current environments.

Just as AI impacts how we learn, it can revolutionise how higher education providers deliver experiences for students and staff and drive excellence throughout every level of operations.

80%
of institutions globally are expected to incorporate AI into their operations by the end of 2024.

Source:
https://www.intelligent.com/8-in-10-colleges-will-use-ai-in-admissions-by-2024/

Strategic opportunities exist around every corner

Institutions have abundant strategic opportunities, and core solutions can effectively address key challenges, enabling quick and impactful implementation.

Identifying and mitigating risks

From courses offered to students at risk of dropping out, data can be used to make the right decisions and step in at the right time to mitigate organisational risks. Collating and analysing attendance, grades, enrolments and even offerings of competing institutions can enable providers to make more informed decisions about aspects that impact the profitability of their operations and the experience of their students and staff.

Efficient and consistent communications

Staff, students, prospective students, and their families all require access to different information in different ways and at different times. The right technology and optimisation of AI tools (including chatbots, virtual assistants, predictive messaging, and enhanced search functionality) can ensure access to correct, consistent, and customised information per appropriate policies and requirements.

Ending data silos
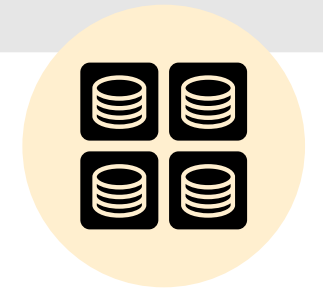
A holistic view of data enables informed decision-making across departments, leading to better strategic planning and resource allocation. This, in turn, fosters a culture of collaboration, where departments can collaborate on initiatives, share insights, and align on common goals. Streamlined access to data reduces time spent searching for information, enabling staff to focus on more value-added activities and ultimately improving efficiency, leading to a more effective allocation of costs and resources.

Personalising experiences

Customised learning pathways and and systems designed to fit individual learning styles and needs can improve experiences for students, helping to increase time spent enrolled and overall educational outcomes. Institutions can improve student success by ensuring students are in the right programs and providing better support across their educational journey, both on campus and online.

Better teaching and learning outcomes

Ensuring students get the right practical and hands-on experience can be difficult in some areas of study. This can impact the transition into employment and real-world application of learning. Some universities are overcoming this challenge by integrating AI into various academic and practical training areas, such as using AI avatars for medical training or AI tools in crisis management simulations, to provide students with a more well-rounded learning experience.

The hurdles standing between providers and data-informed operations

Most providers are keen to explore AI's capabilities, utilise the rich data sources, and better connect their processes and systems to improve efficiency and eliminate waste. While most have committed to the ongoing adoption of digital technology. Lately, the capabilities and demands for such technology (and AI in particular) have moved at a pace that few have been able to keep up with.

There are several roadblocks to how higher education providers implement and use AI and analytics technology.

System fragmentation

Relying on multiple systems to carry out all the organisational tasks and elements can make finding and utilising data virtually impossible. A mix of on-premise, cloud and SaaS systems with no built-in integration leads to every system generating its own data. Institutions are left with multiple datasets telling different stories and no way to know which is correct.

Misaligned KPIs and goals

Higher education institutions' sheer size and complexity can hinder their implementation of data-informed processes and practices. Gathering all stakeholders with different (and sometimes competing) roles, goals, and KPIs brings with them a huge challenge, both logistically and politically.

Data security

The amount of confidential and personal data collected and stored by higher education providers means security is high on the priority list. Yet it's likely that there is unprotected data out there at present.

Any new systems or processes brought in to maximise the use of data need to also ensure robust and compliant governing processes that can secure and control data while still enabling it to be analysed and maximised for valuable and accurate decision-making.

Data volume

Education providers generate much data from research, phone calls, interactions and student enrolment information. Currently, many providers are struggling with too much unstructured data that is being collected and stored in multiple different places and are unsure where sources of data are coming from, if they can be trusted, or how to interpret and understand data in a meaningful way.

Data hygiene

Fragmented systems, inconsistent data entry practices, and a lack of centralised data management leads to poor data hygiene, undermining trust in data-driven approaches and foster resistance to AI tools. Poor data hygiene can ultimately prevent higher education institutions from achieving a satisfactory return on investment from AI initiatives.

Australian Universities achieving AI success and expanding the possibilities for tertiary education

Achieving success is possible with the right approach, knowledge, and expertise. How can this help you address a unique challenge or goal for your students and staff? Across Australia, institutions that embrace these possibilities and collaborate with experts are effectively managing and overcoming obstacles, leading to remarkable achievements. Below are some key examples of transformative AI and data work that universities across Australia have implemented with the help of Nexon:

Simplifying knowledge summarisation and sharing

Objective: To make knowledge within ServiceNow more accessible and easier to navigate, improving efficiency in conversational AI use cases.

Had the information, but couldn't easily access or use it, making information less valuable and more inefficient.

This project focused on summarising ServiceNow knowledge articles into more compact, digestible items. These summarised articles were then embedded within conversational AI workflows, designing user pathways to utilise chatbots to enable immediate access to accurate information delivered in a more concise format.

Policy management

Objective: To streamline policy management by automating responses and making policy-related information more accessible, improving efficiency in query handling.

Description: This solution focuses on ingesting over 200 policies to expedite query resolution within a body of knowledge. It likely involves augmenting traditional customer service channels (like voice and email) with AI-driven responses that provide quick, accurate answers.

Improving student acquisition and experience
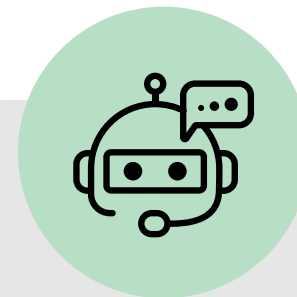
Objective: To improve communication and engagement with potential students and recruitment efforts by offering personalised query responses in their native languages.

Lots of questions for existing, new and prospective students, but also their families and other contacts when they are coming into a new university environment. Many different questions, languages and time zones.

This AI solution was built to support student acquisition and experience by providing a multilingual AI agent that can handle both domestic and international inquiries in their native languages. Provides a 24/7 support offering to provide immediate answers.

Every year more and more Australian tertiary education providers implementing AI and technology applications, including cybersecurity, cloud migration, remote learning, process digitisation and more.

We will continue to see more varied and exciting use cases as the students, staff and learning needs continue to grow and change and the possibilities of technology continue to evolve.

This constant evolution of technological possibilities is both an advantage and a challenge, and it is why industry partnerships are crucial to ensuring the success of AI and automation projects.

Nexon has adapted swiftly to exploit the many benefits from ground-breaking Large Language Models and the emergent capabilities that they offer, as well as continuing to stay abreast of leading vendors pioneering this space, reviving our methodologies, architecture and solution sets as appropriate.

Unlocking your potential through AI

Unlocking the potential from automation to advanced analytics requires understanding key business requirements and goals, as well as the challenges that stand in the way of maximising tech and AI - and pathways to acknowledge and overcome for better outcomes.

Success occurs when strategy and approach are built around unique environments and desired outcomes (whether that's cost efficiencies, productivity gains, or addressing resource gaps).

The best way to achieve sustainable change and success is to take an advisory-led approach that expertly assesses your specific requirements, identifies areas where AI can deliver the most value, and tailors solutions that seamlessly integrate with your current systems.

Nexon helps accelerate your AI and automation journeys in sync with the pace of industry evolution. Our bespoke AI roadmaps are carefully crafted to suit your organisation's needs, guiding you with tailored precision to deliver measurable business value.

We guide tertiary institutions in pinpointing areas where AI can endorse transformative change, reshaping outcomes and optimising efficiency. Through adept strategy and technology implementation, we achieve the balance of ensuring tangible value and successful adoption of AI.

AI solutions guided by Nexon

AI Accelerator

Designed to accelerate your organisation's AI capabilities by facilitating the exploration and implementation of AI technologies that address critical business challenges.

The solution includes:

- ✓ Advisory workshops
- ✓ Training and enablement
- ✓ Solutions showcase
- ✓ Business case development
- ✓ Customised pilot
- ✓ Shared learnings

Smart Knowledge

Designed to transform your operations by consolidating and enhancing your existing knowledge sources into a unified, AI-powered solution.

This includes:

- ✓ Centralises knowledge sources
- ✓ Evaluates knowledge
- ✓ Provides AI-powered knowledge surfacing
- ✓ Utilises Customer-facing bots

Advanced Analytics

Designed to help you uncover valuable insights through Advanced Analytics capabilities.

This solution includes:

- ✓ Advisory workshops
- ✓ Training and enablement
- ✓ Solutions showcase
- ✓ Business case development
- ✓ Customised pilot
- ✓ Shared learnings
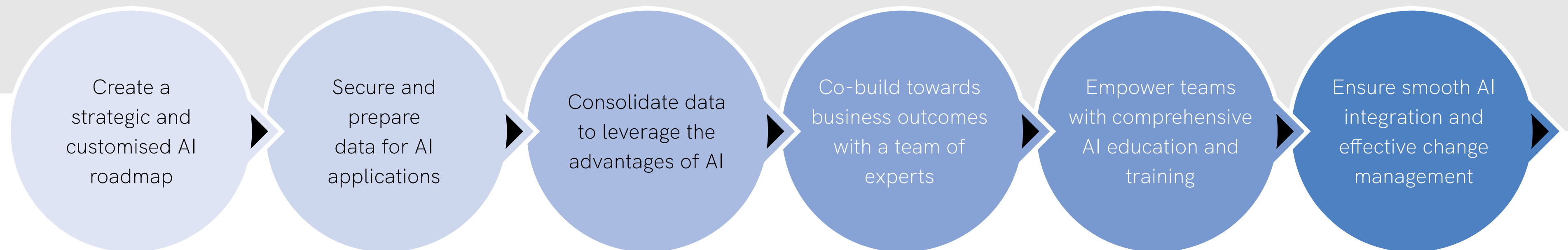
Intelligent Automation

Designed to transform service delivery by automating and integrating operations across your entire ecosystem.

This solution includes:

- ✓ Advisory workshops
- ✓ Training and enablement
- ✓ Solutions showcase
- ✓ Business case development
- ✓ Customised pilot
- ✓ Shared learnings

A proven approach

- Create a strategic and customised AI roadmap
- Secure and prepare data for AI applications
- Consolidate data to leverage the advantages of AI
- Co-build towards business outcomes with a team of experts
- Empower teams with comprehensive AI education and training
- Ensure smooth AI integration and effective change management

Trusted expertise

About Hewlett Packard Enterprise (HPE)

Hewlett Packard Enterprise is the global edge-to-cloud platform-as-a-service company that helps organisations accelerate outcomes by unlocking value from all their data, everywhere.

Built on decades of reimagining the future and innovating to advance the way we live and work, HPE delivers unique, open, and intelligent technology solutions, with a consistent experience across all clouds and edges, to help customers develop new business models, engage in new ways, and increase operational performance.

http://www.hpe.com

About Nexon Asia Pacific

Nexon Asia Pacific (Nexon) is an award-winning digital consulting and managed services partner for mid-market and government organisations across Australia.

We have a uniquely broad suite of solutions to service clients who require end-to-end capabilities coupled with specialist expertise in security, cloud, and digital solutions. Our end-to-end solutions help clients to solve problems, address frictions, and accelerate growth.

As a certified and accredited local and state government provider, CREST, and ISO-certified, Nexon is committed to delivering innovative solutions and service excellence. We achieve this by partnering with world-class technology vendors.

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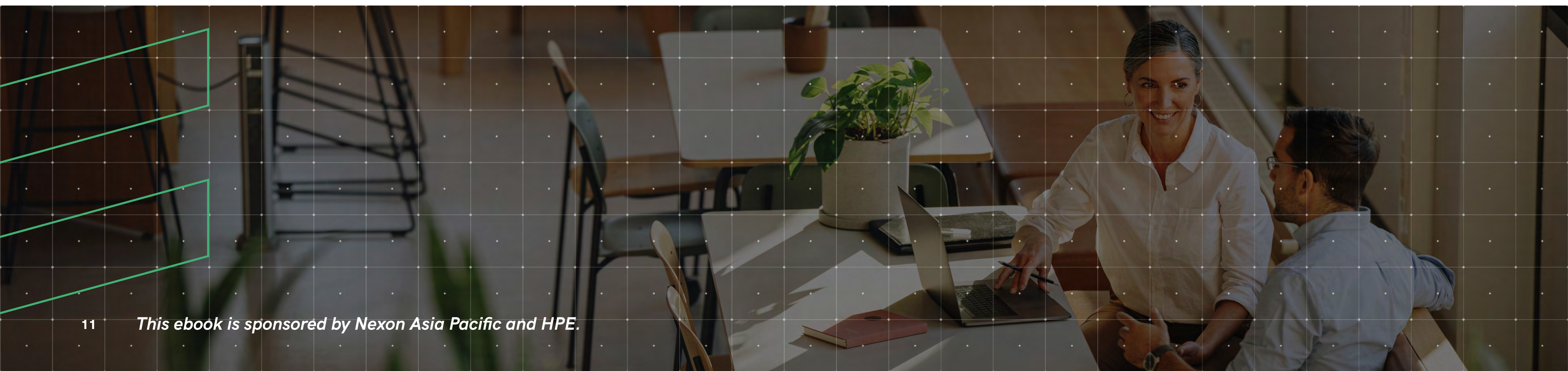
Take the next step

To learn more about our AI solutions and services for higher education, get in touch with the Nexon team today.

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https://www.intelligent.com/8-in-10-colleges-will-use-ai-in-admissions-by-2024/
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