

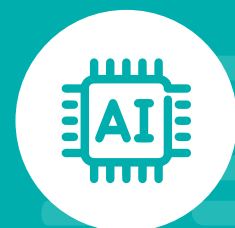


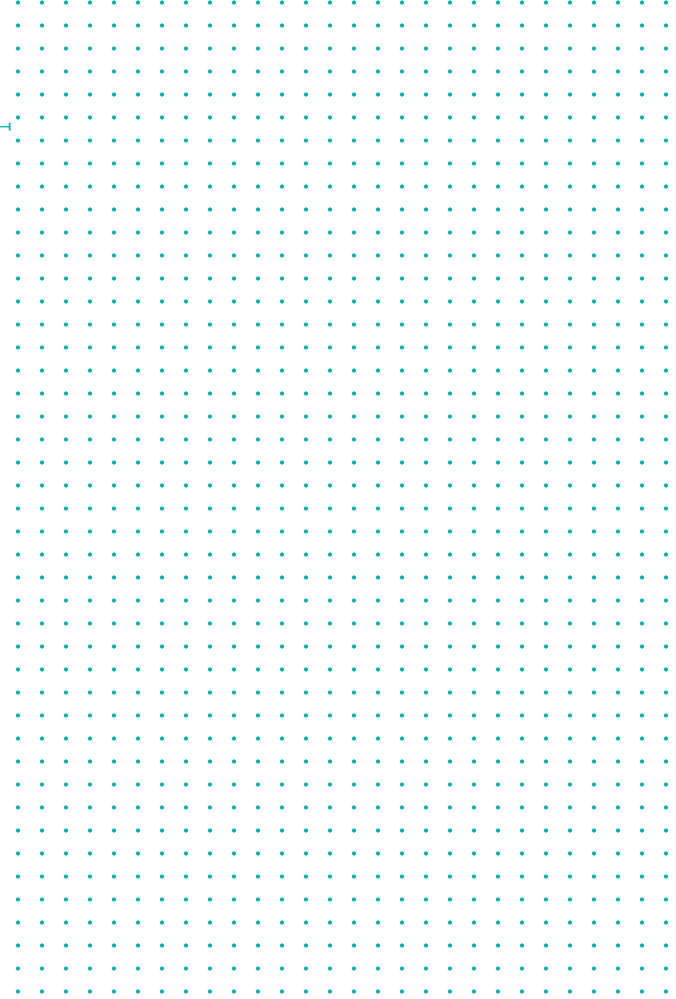
THINQUE



How **Artificial Intelligence** is powering Australian **Retail in 2020** and beyond

Business-focused insight and steps for success for Australian retailers embarking on their AI journey.





Foreword

2020 once sounded futuristic. A distant point beyond tomorrow, when technology's promises would offer us humans deliverance. Now it is here and it will not be a year we will easily forget. A new decade has arrived, with new exponential threats to contend with. Retail, a vital thread in our social fabric, is facing a novel viral peril which is impacting every part of daily lives, routines and community interactions.

Digital disruption and online retail had already been impacting brick-and-mortar brands for more than a decade. To add fuel to the fire, an era of social distancing and quarantines has momentarily suspended the physical 'human touch' and broken critical supply chains. In an era where face-to-face retail has been curtailed, malleable and scalable technologies are perhaps the best tools at retail's – and humanity's – disposal. One of those technologies, Artificial

Intelligence, has the ability to augment and extend human intelligence at a time when we need the best of scientific and creative thinking to quell the exponential threat posed by COVID-19, cyber threats and data privacy breaches.

Therefore, it is heartening that Artificial Intelligence, combined with human ingenuity, is already empowering many Australian retailers to unlock the true value of their data, intellectual property and people. It is giving them the foundation of real capabilities to drive benefits throughout their entire value chain from 'producer to consumer', allowing them to optimise supply chains while better knowing and serving their customers.

This paper aims to help Australian business leaders understand AI in Retail and the practical approaches that are already delivering success. We will dive deep into AI's applications in **Intelligent Supply Chain** and

Knowing Your Customer to provide insights from real-world use cases. We also interview Australian retail leaders, along with their technology providers, to gain AI insights and key findings which have much to offer all areas of retail, and retail's role in our future social fabric.

AI is empowering every person and organisation to achieve more. At a time when we are all asked to 'do more with less', the adoption of Responsible AI is an imperative for the boardroom and IT. To successfully reap the full benefits of AI, retailers must rethink enterprise-wide investments in processes, people and technology.

Ultimately, AI is about better serving customer needs while building trust. That includes the trust of customers when it comes to privacy, security and ethics, as well as trust within the business' culture in order to drive adoption and ultimately digital transformation.

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01

Retail AI in action today

Embarking on the AI journey

As we enter the 2020s, retailers are looking beyond the hype of AI to harness its true potential. They're approaching it through partnerships – around values, people and skills – in order to infuse data as a digital feedback loop which spurs profitable growth.

One of a retailer's most valuable assets is consumer behaviour data indicating commercial intent. The question is: how do they convert this valuable data into actionable insights – delivering benefits to retailers, brands, suppliers and customers? All the while building digital prowess to become empowered as AI-augmented organisations, retaining their data and IP while working with supportive technology partners which are not out to monetise these valuable digital assets.

Physical and online players are feeling the pressure in an ever-evolving retail landscape, with digital disruptors overthrowing complacent giants – including some household names traditionally considered 'too big to fail'. Pressure on margins continues to grow, driven by intense competition from digital-native rivals.

At the same time, customers are increasingly more digital and mobile as their expectations continue to rise. Data-driven retailers are raising the bar in terms of personalised service and new business models.

The adoption of AI-driven intelligent automation in the retail and consumer products industries is projected to leap from 40% of companies today to more than 80% in three years, according to IBM.¹ Yet technology isn't the biggest challenge as organisations embark on this transformational retail odyssey. At its heart AI presents a cultural challenge, according to the Harvard Business Review's *Building the AI-Powered Organisation report*.²

AI brings with it new risks associated with ethics and bias, which must be fully

understood and built into practices and processes. Responsible AI offers customers transparency and certainty when it comes to how their data is used. Likewise, matters of privacy and security become more important than ever in order to manage reputational risks and safeguard customer satisfaction. Managed responsibly, AI has great potential for good, but businesses ignore these risks at their peril.

"While cutting-edge technology and talent are certainly needed, it's equally important to align a company's culture, structure, and ways of working to support broad AI adoption," explains the Harvard Business Review.

"But at most businesses that aren't born digital, traditional mindsets and ways of working run counter to those needed for AI."



While cutting-edge technology and talent are certainly needed, it's equally important to align a company's culture, structure, and ways of working to support broad AI adoption.

Harvard Business Review

Retail is behind other industry sectors, in the race to AI adoption.



"Future Ready Business: Assessing Asia-Pacific's Retail Sector with AI study" - Microsoft Asia and IDC Asia/Pacific³

→ Get started

The AI-Ready transformational journey

Artificial Intelligence promises to be the most transformational technology of our time, but most companies embarking on AI-led transformation are disappointed, according to Northwestern University's Kellogg School of Management.

A concerning 87% of data science projects don't reach production,⁴ while less than 25% of global organisations have an enterprise-wide AI strategy.⁵ What can business leaders do to improve the odds of success and how can they map their AI Transformation Journey?

The first step is to **Get the Data Organised**. Businesses deploying AI initiatives collect massive amounts of data, but are often unable to leverage it. To bridge data silos, they must create an integrated "data refinery" to centralise and standardise data ingestion, storage, enrichment and deployment, says Professor Mohanbir Sawhney – Clinical Professor of Marketing and Director of the Centre for Research in Technology and Innovation at the Kellogg School of Management.

"Think of a robust data infrastructure as the foundation of a building," Sawhney says. "While the foundation may not be visible, the building will not exist without it."

For example, Rolls-Royce has more than 13,000 commercial aircraft engines in service, each generating millions of data points. Rolls-Royce partnered with Microsoft to collect and aggregate data from disparate and geographically distributed sources, analyse that data and apply machine learning at scale. A consolidated data platform was key to powering the company's TotalCare Services "power by the hour" offering, under which customers paid based on engine flying hours. It was a critical foundation which enabled the company to create new business models.

The next step is to **Create a Lean Sandbox**, with AI pilot projects allowing companies to quickly validate business value and understand implementation challenges. Avoid the pursuit of perfection, with endless pilots which fail to achieve scaled deployment. To avoid spinning your wheels, Sawhney recommends incorporating lean thinking. In the AI domain, this means lean data, models, tools and project management.

From here, companies need to **Scale Successful AI Pilots**. They must ensure they don't just focus just on initiatives with the greatest potential business impact. They must also consider the overall amount of value an AI initiative can produce. This includes paying attention to the time to value – how quickly they can productise a pilot, unlock value and see short-term wins.

The final step, **Drive Autonomous Decisioning**, needs to be driven from the top, with senior executives actively sponsoring AI initiatives, says Varun Poddar – Sawhney's business partner

and co-creator of Kellogg School of Management's executive education program Artificial Intelligence: Strategies for Leading Business Transformation. This senior sponsorship includes guiding the development of AI strategy, facilitating collaboration beyond the enterprise and cultivating an AI-ready mindset. Senior executives must ensure AI strategy is closely aligned with the business strategy and they need to impart a sense of urgency in driving AI-led business transformation.

Businesses must think of their AI strategy as a journey, Poddar says, mapping basecamps along the way rather than heading straight for the peak.

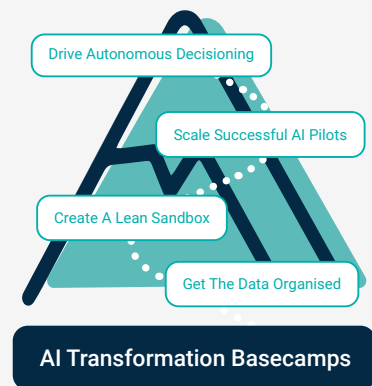
"The key is to break down your journey into small steps with clearly marked milestones," he says. "Make sure business leaders are in the driver's seat and try to get to the nearest basecamp as efficiently as possible."

"By keeping these lessons in mind, you can avoid the pitfalls in the AI journey and truly harness the power of AI for business transformation."



Businesses must think of their AI strategy as a journey... mapping basecamps along the way rather than heading straight for the peak.

Varun Poddar, Co-creator of Kellogg School of Management's executive education program Artificial Intelligence: Strategies for Leading Business Transformation



Source: Kellogg School of Management



One of the keys to success is to do your due diligence and get the fundamentals of your AI strategy right.

Andrew Baxter, Senior Advisor KPMG Australia's Entrepreneurial Customer, Brand & Marketing Advisory business.

Align with the business

To make the most of the technology, AI efforts must be driven by the business, particularly customer and employee needs, rather than IT. AI must be addressed in the boardroom, not just the server room, to ensure the AI strategy remains aligned with the broader business strategy and supports key business drivers.

IT-driven AI point solutions can fail to deliver long-term value when they're not underpinned by a well-rounded underlying AI strategy which is driven from the top, says Andrew Baxter – Senior Advisor with KPMG Australia's entrepreneurial Customer, Brand & Marketing Advisory business.

"One of the keys to success is to do your due diligence and get the fundamentals of your AI strategy right," Baxter says. "Without this

alignment, your AI investments can wither on the vine."

Remaining aligned with the business allows AI to drive a range of key business outcomes such as optimising supply chains, lowering costs, reducing errors, raising productivity, increasing profitability and improving customer service.

AI can also help businesses leverage further value from systems which are already optimised in a siloed context, breaking down barriers in order to extract more value by drawing insights across multiple systems.

Beyond this, AI can become a key pillar of digital business transformation – increasing agility and driving innovation to generate new revenue streams and potentially create new intellectual property.

Take the lead

Despite AI's disruptive potential, 50% of Australian retailers say they are just keeping pace with the global rate of AI adoption, rather than getting out in front and innovating, according to Deloitte's *State of AI in the Enterprise, 2nd Edition* survey.⁶ Meanwhile, only 22% of Australian retailers say they're using AI to widen their lead over the competition or even leapfrog ahead. This situation is reversed in China, where 55% are using AI to move ahead of the competition and only 21% are just keeping pace.

China is the emerging leader in retail AI and the Chinese government has identified it as the main engine of economic growth, with plans to lead the world in AI technology by 2030.⁷

China has embraced digital retail far more quickly than other markets, putting the consumer at the centre, and its shopping festivals dwarf those in the West. China surpassed the US in total retail sales in 2019⁸ – experiencing 8% year-on-year retail sales growth,⁹ compared to 3.1% in the US.¹⁰

Innovators and early adopters are quick off the mark when it comes to embracing waves of innovation such as AI, while such

new technologies and ideas are met with increasing scepticism and inertia by the majorities and laggards, according to the Diffusion of Innovations theory put forward by eminent American communication theorist Everett Rogers. Given the exponential rate of change in the retail landscape and its globalised playing field, Australian retailers must make a strategic and cultural transformation to move towards innovation and early adoption. Even if this starts with small steps to build scalable technology which can simplify and reduce costs.

Deloitte's figures, combined with OECD data revealing Australia's relatively low gross domestic spending on R&D,¹¹ highlight that Australian businesses risk missing a global opportunity when it comes to AI, says the University of Adelaide's Professor Anton van den Hengel – director of the Australian Institute for Machine Learning.

"Embracing AI in retail is not just about levelling the playing field with digital disruptors, it also offers an opportunity for retailers to leverage their strengths and actually get the upper hand over rivals," van den Hengel says.

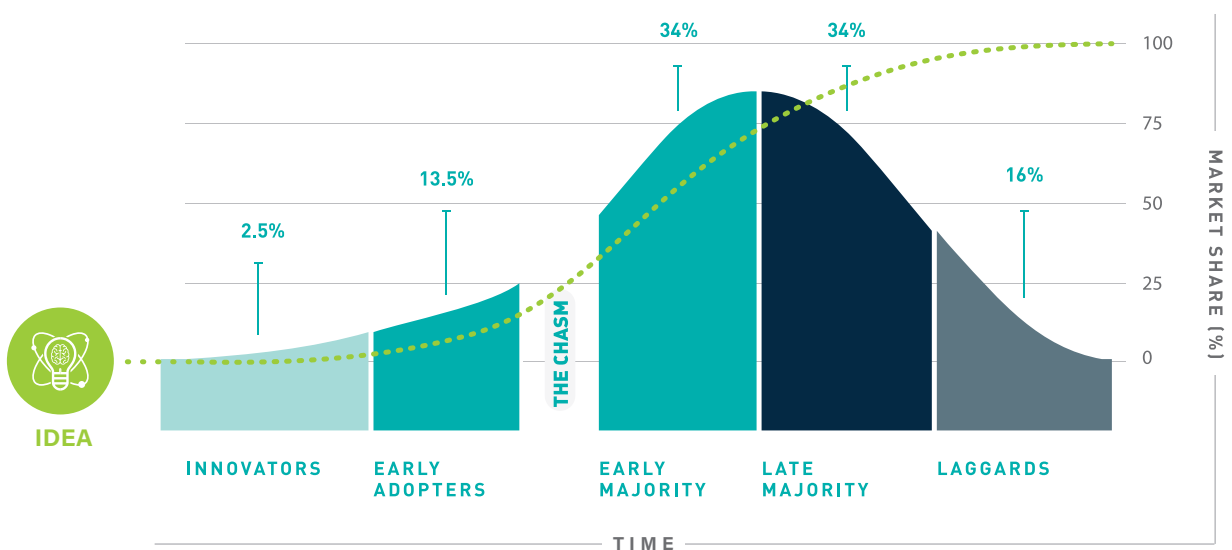


Embracing AI... offers an opportunity for retailers to leverage their strengths and actually get the upper hand over rivals.

Prof. Anton van den Hengel, Director, Australian Institute for Machine Learning

Diffusion of Innovations

The wave of adopting a new technology.¹²






AI is data hungry

Microsoft CEO Satya Nadella emphasised the importance of data, and how it will shape the future of retail, when delivering the keynote at the National Retail Federation BIG Show 2020 in New York. With the retail industry generating 40 terabytes of data every hour, Nadella explained that "Retailers will use their data to know its customers, empower its employees, create an intelligent supply chain and reinvent its business models".

It is worth the effort, as the retail industry could harvest global benefits from AI and analytics worth US\$400 billion to US\$800 billion annually – more than any other industry – according to research from McKinsey Global Institute.¹³ Today, the power of retailers' data drives 30% of e-commerce sales initiated by recommendations, while 75% of shopping begins online, and both figures are only going to increase.

Consuming AI in the business

Elements of AI applications

-  Data
-  AI Tools
-  State of the art data platform

AI Tools

Self development:

Services along with templates and models for developing, implementing and operating company-specific, customised AI applications.

Ready-to-use:

Commonly required AI application areas which are ready-made, for easy implementation in enterprise applications.

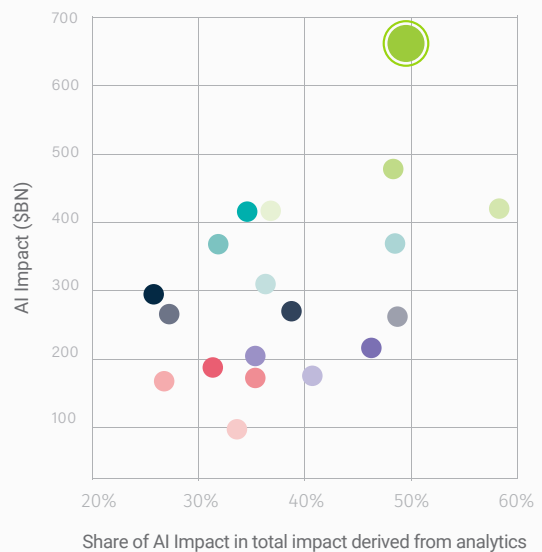
Integrated turn-key solutions:

One of the most efficient ways to make AI usable in a company.

"Artificial Intelligence in the Store: AI drives IT investments" whitepaper - EHI and Microsoft¹⁴

Retail can benefit from AI more than any other industry

-  **Retail**
-  Transport and logistics
-  Travel
-  Consumer Packaged Goods
-  Healthcare Systems & Services
-  Public and social sectors
-  Automotive
-  Banking
-  Advanced electronics
-  Basic Materials
-  Insurance
-  High tech
-  Oil and Gas
-  Media and entertainment
-  Chemicals
-  Telecommunications
-  Agriculture
-  Pharmaceuticals
-  Aerospace and defense



"Notes from the AI frontier: Applications and value of deep learning" - McKinsey Global Institute¹⁵

 → Get started

Ethics, trust & privacy

Businesses employing AI can't afford to treat ethics, privacy and trust as an afterthought. Customer loyalty and trust are one of a business' most valuable assets, they take time to earn but can be lost overnight. One of the biggest challenges in AI adoption is the lack of trust and transparency in automated decision systems and, unless these ethical issues are addressed, AI adoption will slow down, threatening its value for enterprise-wide adoption.

A strong focus on Responsible AI is key, as unintended bias in AI can harm a business' reputation – such as Amazon's initial exclusion of minority neighbourhoods when expanding its US same-day delivery areas. While Amazon's data-driven decision-making did not directly consider ethnic demographics, the glaring omissions in its delivery coverage sparked a public backlash which forced the online retail giant to back down and extend its same-day delivery into the less affluent areas of New York, Chicago and Boston.

To help businesses avoid such pitfalls, the Australian government has issued AI ethics principles to guide organisations

when designing and implementing AI systems.¹⁶ Along with this, Microsoft has developed its own six principles to help customers design AI systems which are trustworthy, safe and transparent.

Traditionally, retailers have experimented and operated initial AI projects as as-a-service "black boxes" – relying on off-the-shelf solutions with little visibility into the decision-making process. As retailers ramp up their internal capabilities, they are committing more to the strategic value of AI and investing in the skills to run it and build IP in-house.

This shift allows retailers to address ethical concerns by developing their own "glass box" algorithms with visibility into the decision-making process, as well as develop a deeper understanding of their

tech provider's ethical frameworks.

These sentiments reflect the need to address an upfront strategy for AI projects, to determine whether use cases will be supported by as-a-service solutions or in-house built algorithms.

Microsoft is addressing ethical considerations internally with the AI and Ethics in Engineering and Research (AETHER) committee, focused on proactively formulating internal policies and processes for responding to specific issues in a responsible way.

It is also a founding member of The Partnership on AI, a consortium of business leaders, policymakers, researchers, academics and representatives of non-governmental groups to advance industry discussion around ethical AI.

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Microsoft's six principles for the ethical use of AI are being embedded operationally as binding development standards for all of Microsoft's AI projects worldwide.



Fairness



Transparency



Inclusiveness



Reliability and Safety



Privacy and Security



Responsibility and Accountability



Once AI is hard at work within a retail business, it actually frees up people to engage in customer interaction – reviving that human element which some retailers have lost – as well as spend time on those tasks which still require a human touch.

Professor Michael Feindt, Chief Scientific Adviser, Blue Yonder

Amplify human intelligence

Talk of AI might sound futuristic but the technology is no longer the stuff of science fiction – it is already hard at work in many Australian enterprises. Hollywood paints AI as the story of self-aware machines rising against us but, in the real world, AI is not out to overthrow humanity or steal jobs.

"Artificial Intelligence" is not simply a question of automation, it is an umbrella term for a range of technologies which emulate the various capabilities of the human brain. Most forms of AI are not aiming to pass as human, but have a human-like ability to cope with new situations and deal with ambiguity. AI can respond to real-world objects and events, interpret unstructured data, make predictions based on previous experience and learn from mistakes.

While AI has a multitude of applications, it becomes particularly impactful when applied to narrow use cases, going beyond automation and roboticisation to

open new horizons. "Machine learning" is the ability of a machine to teach itself by studying data, looking for patterns, drawing its own conclusions and making predictions. Meanwhile, "deep learning" utilises multiple processing layers to look at a problem in different ways simultaneously, similar to the human brain's neural network, allowing machines to find insight when wading through vast amounts of unstructured data.

"Natural language processing" is the ability to comprehend the way humans speak and write, rather than relying on specific commands and sentence structure. "Machine vision" allows machines to comprehend what they see through cameras, such as identifying objects and recognising characteristics.

These technologies are underpinning an AI revolution which will do for human brains what the industrial revolution did for human brawn. In the business world, the true benefit of AI won't be in replacing

humans or removing them from the decision-making process. Rather, it will free people from data-crunching drudgery so they can make smarter decisions and turn their attention to more high-level, value-adding tasks which demand a human touch, says Professor Michael Feindt – Chief Strategic Adviser at retail AI solutions provider Blue Yonder.

An AI pioneer and former CERN researcher specialising in neural networks, Feindt says that to see AI as merely a tool for optimising retail processes – to the point where it completely dehumanises the shopping experience – is to fundamentally misunderstand the technology's full potential.

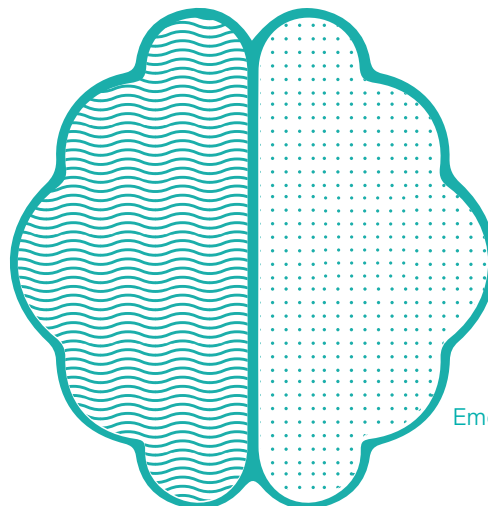
"Once AI is hard at work within a retail business, it actually frees up people to engage in customer interaction – reviving that human element which some retailers have lost – as well as spend time on those tasks which still require a human touch," he says.

Exploring AI's capabilities

Today, AI excels at analytical and methodical 'left-brain' skills such as logic, mathematics and data crunching. Handing over such tasks to machines frees up people to focus their efforts on more creative 'right-brain' skills which are more difficult for AI to master, such as synthesis, innovation and furthermore, emotional intelligence.

Left-Brain Thinking

Linear
Logical
Digital
Analytic
Mathematical
Critical
Reality-based
Rational
Objective
Data crunching



Right-Brain Thinking

Holistic
Intuitive
Spatial
Synthetic
Sensory
Creative
Imaginative
Emotional intelligence
Subjective
Dimensional

THE ICONIC

Case Study

THE ICONIC: Optimising replenishment

AI-powered decision-making based on customer behaviour is providing valuable replenishment insights for Australian online fashion retailer THE ICONIC.

The retailer can now predict return rates with 80% accuracy, a four-times improvement on the previous method, which in turn helps optimise stock levels and ordering, right down to individual sizes for each garment, says Ben Berger – THE ICONIC's Director of Internal Product Management & IT.

AI-driven insights are also helping optimise fulfilment centre operations, such as anticipating sales trends to determine which stock should be loaded into its automated picking system rather than stacked on regular shelving.

"In the past humans would take an educated guess on such things, based on experience and gut feeling, but bringing AI to bear on these challenges has delivered

clear business benefits," Berger says.

On the front-end, THE ICONIC employs AI-powered visual search to make alternative suggestions when a specific garment size is unavailable. This call to action has proven five times more effective than just asking customers if they wish to be notified when their first choice is in stock.

Rather than lock away AI capabilities within an IT department, THE ICONIC favours cross-functional groups – incorporating data scientists – to drive improvements throughout the business.

"Once our in-house skills are no longer siloed, it becomes collaborative between product owners and tech people – they work together and start to understand each other," Berger says.

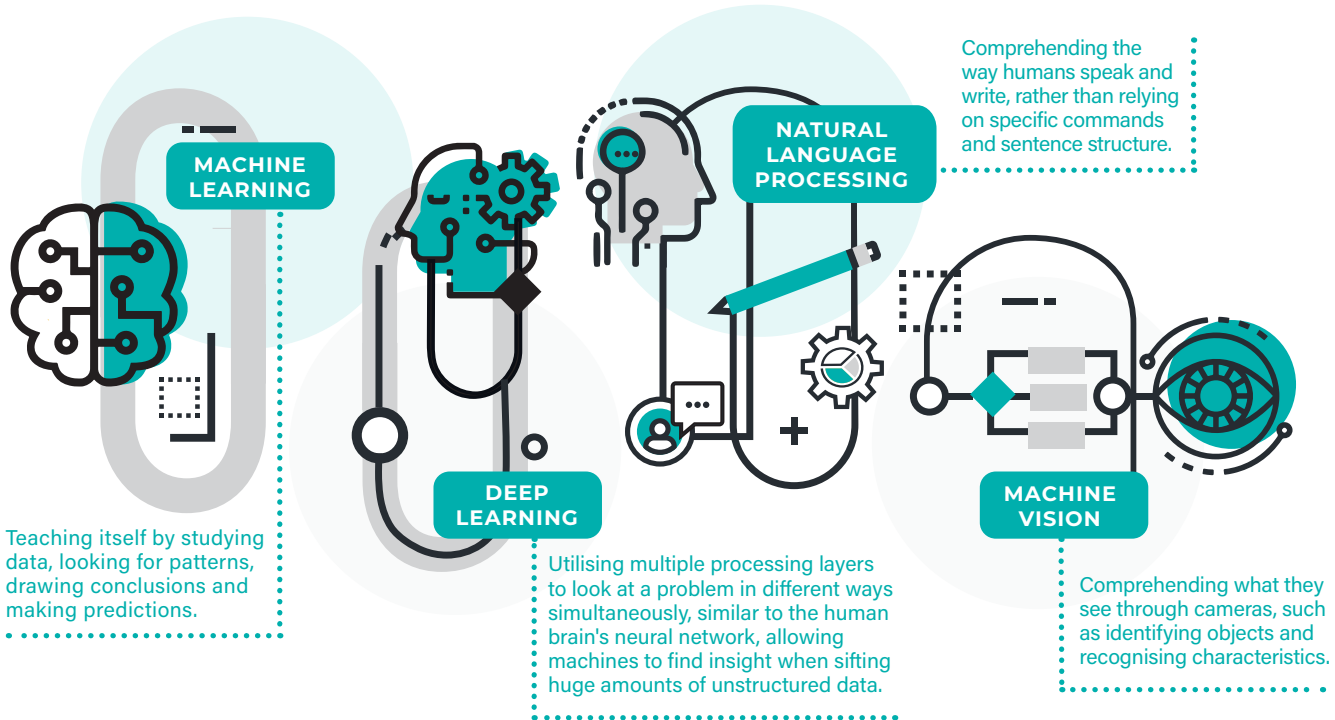
"We look at everything through a customer lens first, our key metric is Net Promoter Score, and this also ensures our AI efforts remain aligned with the business."



We look at everything through a customer lens first... and this also ensures our AI efforts remain aligned with the business.

Ben Berger, Director of Internal Product Management & IT, THE ICONIC

Core elements of AI



Case Study



Accent Group: Improving Margins

The insights delivered by AI allowed Australian footwear retailer conglomerate Accent Group to turn each of its 500 retail outlets into a virtual distribution centre, making \$130 million worth of inventory available to online customers without the need to invest in more stock for its retail chains such as The Athlete's Foot.

The previous wisdom of dispatching online sales from locations nearest to the customer was rendered redundant by standardised national freight rates. Instead, deliveries now focus on preserving margin – using AI to ensure online orders draw on in-store stock from across the

country before it is marked down.

The change has contributed to a 300 basis point improvement in operating margin, with the next phase set to optimise stock levels delivered to each store, says Accent Group chief digital officer Mark Teperson.

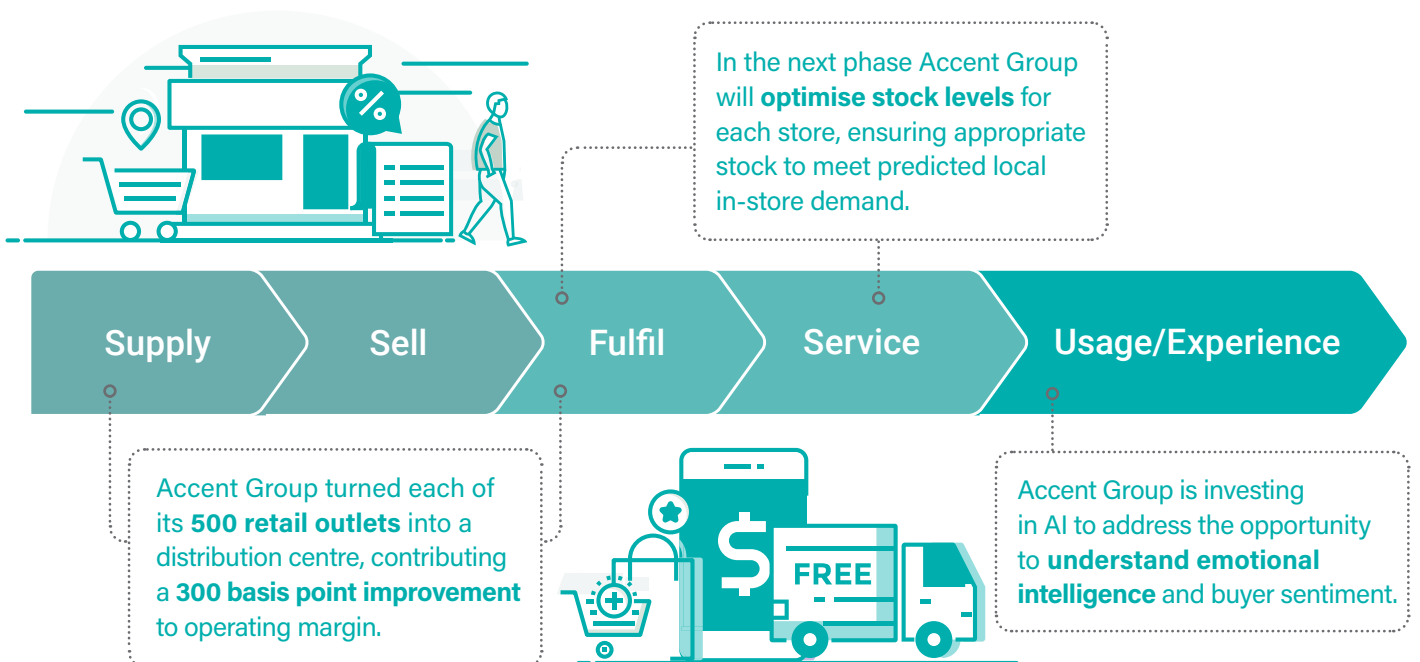
"Effective change management is one of the keys to making the most of AI," Teperson says. "The most important ingredient in positive disruption and innovation is actually emotional intelligence, because you need to understand the sentiment of those key decision makers in the business – where they are and where you need them to be – and then take them on the journey."



You need to understand the sentiment of those key decision makers in the business – where they are and where you need them to be – and then take them on the journey.

Mark Teperson, Chief Digital Officer, Accent Group

Accent Group value chain



02

Retail AI in action today

Intelligent Supply Chain

AI is not merely on the horizon, it is already delivering a wealth of tangible benefits to Australian retailers which are looking beyond the hype. Behind the scenes, AI touches on every aspect of the value chain – including underpinning an intelligent supply chain which extends from real-time quality monitoring of fresh produce, through to optimising logistics and all the way to scanning shelves.

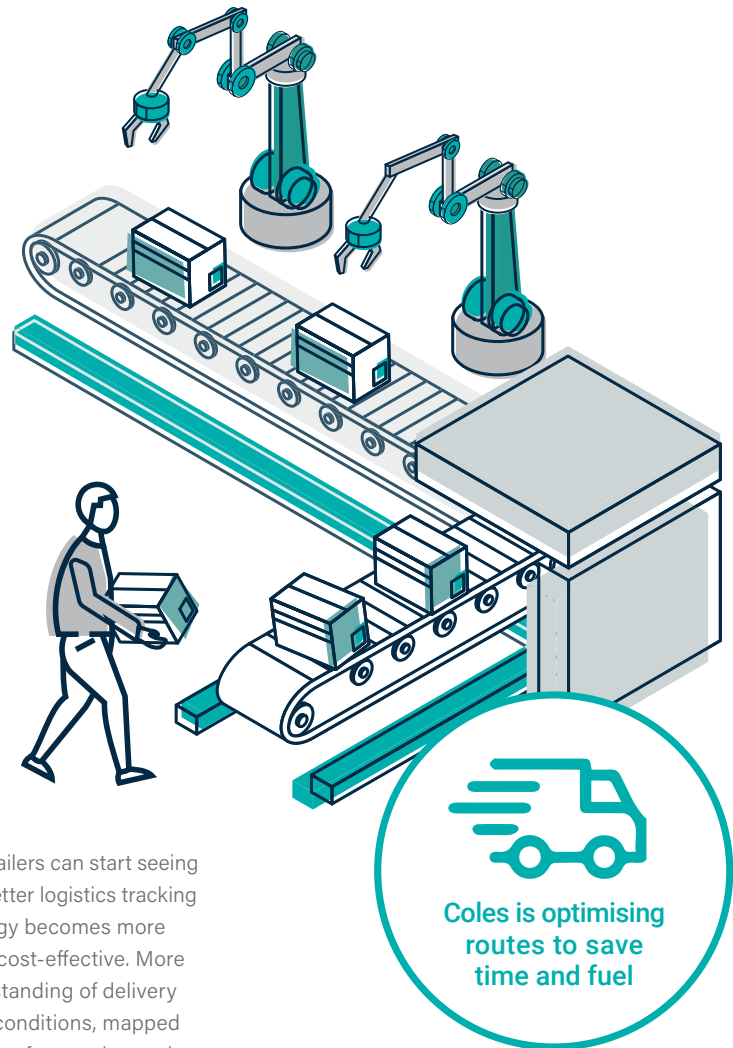
Optimise logistics

AI and robotics are streamlining distribution centres, with supermarkets optimising delivery routes, pallet packing and truck loading to enable the most efficient unloading at the other end. This saves both time and fuel, ensuring AI makes a difference to the bottom line.

Australian retail grocery giant Coles has turned to solutions from British online supermarket Ocado to optimise delivery routes, increase the number of delivery windows and implement intelligent last-mile routing. Coles is also building automated fulfilment centres to speed online order fulfilment and improve efficiency, along with automated warehouses to handle grocery distribution to supermarkets.

Retailers are also integrating AI with line of business applications, allowing legacy systems like logistics to make smarter routing decisions based on a range of internal and external data sources. Many SaaS and platform providers offer libraries of third-party data sources, such as weather and traffic data, which AI can easily draw upon in order to enrich in-house data while making decisions or providing scenarios. Calling up these third-party data sources is now BAU and can have real impact.

Even small retailers can start seeing benefits from better logistics tracking as the technology becomes more accessible and cost-effective. More effective understanding of delivery schedules and conditions, mapped with reliable sales forecasting and demand, offers unprecedented insight into end-to-end operations of retail and opportunity to improve.



Enhance quality control

The retail benefits of AI reach back through to the very beginning of the supply chain. They extend from producer to consumer – or “paddock to plate” – ensuring quality every step of the way to protect both the customer and the brand. Beyond establishing food quality and provenance, AI can also assist with tracking adherence to regulatory standards, including ethical sourcing and environmentally sound practices.

"Real-time analysis of every item that passes through a food processing facility or supply chain – powered by technologies like machine vision and sensor technology – delivers a step change in food safety and quality control compared to traditional techniques such as random sampling and manual inspection," says Ben van Delden – KPMG Australia's Head of AgriFood Tech.

"From a safety and compliance perspective, this kind of data-driven insight goes far above and beyond someone walking along the production line with a clipboard. I see AI as a key pillar for executives seeking to build trust into supply chains."

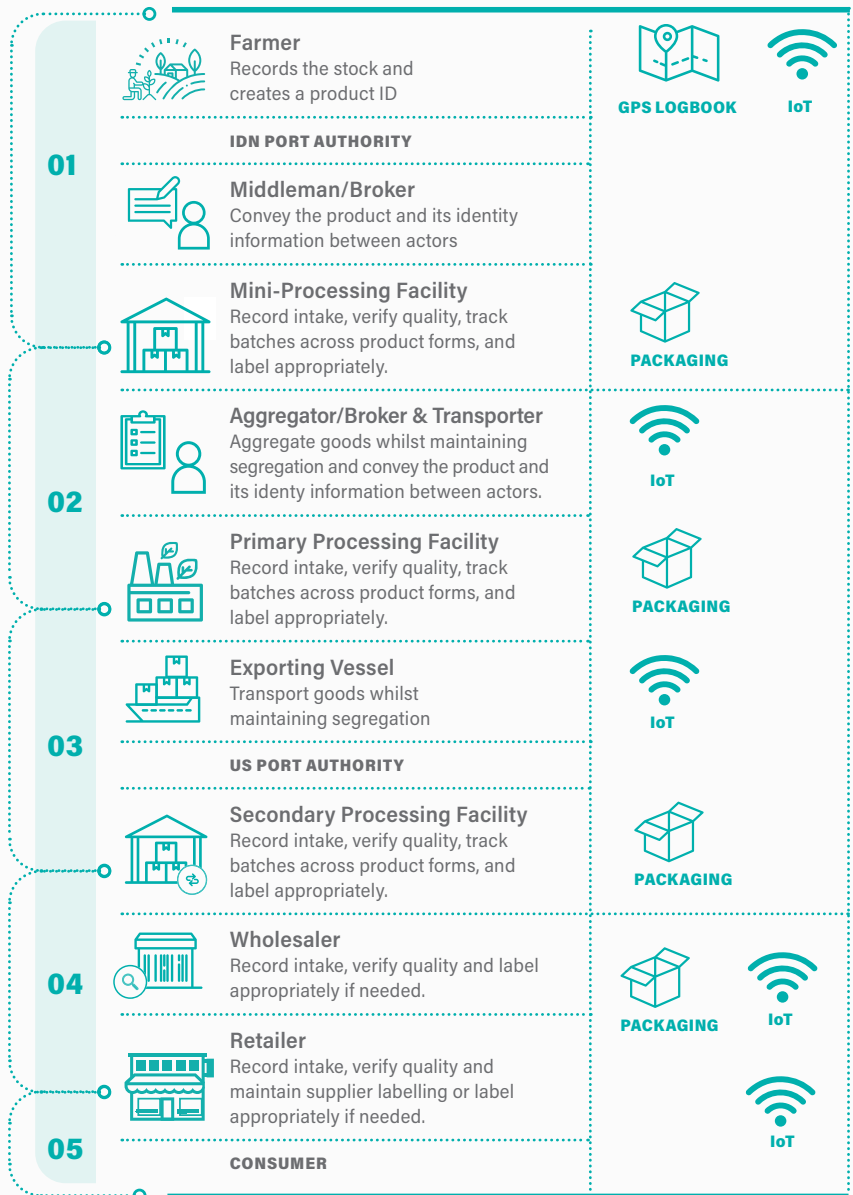
Machine vision literally offers organisations new visibility into their supply chains and customer interactions, from predicting yields and ensuring quality control to streamlining logistics and monitoring inventory levels.

Real-time product sorting, powered by machine vision, ensures bad produce is removed long before it reaches the retail shelves. This allows retailers to take a more proactive approach to quality control, says Jamila Gordon – CEO and founder of Australian AI-powered SaaS platform Lumachain, which tracks and traces the origin, location and condition of individual items in real time.

An Australian startup, Lumachain is working with some of the world's largest food processors using AI, IoT and blockchain to trace beef from paddock to plate in an Australian-first trial. From the moment a steer first arrives at a processing facility, the solution uses AI and blockchain to keep track of meat as it is processed, packaged, warehoused and transported. Contractual and compliance data regarding temperature and shock data is recorded on a blockchain, with IoT-sourced data used to confirm the integrity of cold chains and other conditions which must be met along the supply chain. Any reading outside of prescribed limits is reflected in the blockchain and prompts immediate remedial action.

While ensuring quality and compliance, the solution also allows Australian beef exporters to

Digital verification of paddock to plate



"Tracing The Supply Chain: How blockchain can enable traceability in the food industry" - Accenture and Microsoft

leverage their global reputation for excellence and provenance. They can prove claims such as "Australian made" and "grass-fed", as well as assure customers their food was produced in an ethical and sustainable way.

Lumachain's platform empowers Australian producers to showcase their top-quality beef, ethically and sustainably produced, while helping increase sell-prices, reduce waste, improve shelf-life and ensure quality, Gordon says.

"Around the globe there's a booming demand for transparency and certainty about the provenance and conditions of food products,

which plays to Australia's strengths as we have such a strong reputation for quality," she says.

"With this trial we have shown how, using state of the art technologies, it is possible to collect critical data at every stage of the supply chain and provide certainty to all stakeholders."

"Technologies like AI, IoT and blockchain allow Australian exporters to prove to customers and shoppers around the globe that they can trust what it says on the label – which protects the brand, combats counterfeiting and ensures Australian producers can charge a premium price for a premium product."



So very often our human-centric decision-making system has biases – we have a gut feeling... but sometimes that gut feeling is wrong, so you need to remove that bias if you want to get the most value.

Professor Michael Feindt, Chief Scientific Adviser, Blue Yonder



AI as sustainability

Along with improving the bottom line, AI can also sit at the heart of sustainability efforts – driving efficiencies and reducing waste as retailers transform their businesses and develop their own solutions to create a more sustainable planet.

Sustainability is the new digital transformation – traditionally it would be capital intensive and live in the domain of supply chain, but the cloud and AI are unleashing the potential to address at speed broader themes such as climate change impact.

Roughly one-third of food produced for human consumption is wasted, according to Blue Yonder.¹⁸ This represents 1.3 billion tons of food and nearly \$1 trillion annually – including 10% of food on U.S. grocery shelves – which in turn accounts for approximately 3.3 billion tons of carbon dioxide released into the atmosphere.

Grocers can improve their environmental footprint by using AI in their merchandising and supply chain processes and by changing assortments to include all produce. Other retailers can also use AI to reduce waste which impacts on the environment.

The adoption of AI across even a few sectors has the potential to boost global GDP by up to 4.4%, according to research commissioned from Pricewaterhouse Coopers UK.¹⁹ At the same time, it can reduce global greenhouse gas emissions by as much as 4%, or approximately 2.4 gigatons of CO₂e, which is equivalent to zeroing out the 2030 annual emissions of Australia, Canada and Japan combined.

Connect from end-to-end

Retailers are using AI right along the supply chain, with UK supermarket chain Morrisons implementing retail AI solutions provider Blue Yonder's solution to accurately predict customer demand, order the right level of stock and reduce waste. A great example of an AI turnkey solution, the Blue Yonder Demand Forecast & Replenishment solution has enabled Morrisons to reduce shelf gaps in stores by 30%, as well as record a two- to three-day decrease in stockholding in-store.

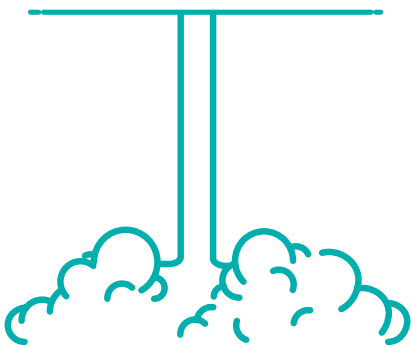
"Taking advantage of AI ensures that the decisions taken are free of human bias," says Professor Michael Feindt – Blue Yonder's Chief Strategic Adviser and former CERN researcher specialising in neural networks.

"So very often our human-centric decision-making system has biases – we have a gut feeling we should allocate more over here and less over there – but sometimes that gut feeling is wrong, so you need to remove that bias if you want to get the most value."



AI-based solutions are outperforming existing applications and human-based processes by solid margins in availability and forecasting use cases, with the added advantage that they are 'always on'.

Peter Bonney, GM Technology, Engineering & Data, Coles



Case Study

coles

Coles: Addressing business challenges

Australian retail grocery giant Coles began its AI journey with the desire not just to engrain data into their operational DNA, but to go beyond this, garnering richer insights that drive business value through surfacing "dark data" from physical edges of our business, says Peter Bonney – GM Technology, Engineering & Data.

Coles focused on introducing AI to key strategic decision-making points that have historically been staunchly human centric, getting business process owners embedded from the beginning made them champions not just recipients, Bonney says.

Team members soon appreciate that AI's value is in helping them work smarter, the objective is for machines to handle low value tasks, freeing up team members to focus on customers, and activities that drive more strategic value for the business. On the retail shop floor, Coles is simplifying adoption by using AI to generate more contextual and relevant information that fits seamlessly into existing tools – rather than rolling out new apps, services and hardware which requires further training.

"We're seeing impressive results. Our AI-based solutions are outperforming existing applications and human-based processes by

solid margins in availability and forecasting use cases, with the added advantage that they are 'always on' and not subject to the limitations of traditional methods," Bonney says.

Keeping one eye on scalability at every stage of the AI development process is key for Coles, rather than treating it as an afterthought. This includes working with Microsoft on developing a unique Intelligent Edge Backbone that underpins their edge AI initiatives, and to provide them competitive advantage when innovating.

"There are at least 70 different use cases for AI in grocery retailing but, when you're supporting over 2,400 stores and tens of thousands of SKUs, the business cases break down if every solution relies on its own infrastructure and technology stack, or its own data scientists," Bonney says. "We've found our Intelligent Edge Backbone, including its remote deployment capabilities, is key to achieving impact at scale."

"That's where partnerships are also crucial, working with Microsoft has enabled us to not only access global AI perspectives on R&D and innovation, it's also given us the additional arms and legs to build out our Intelligent Edge backbone."


03

Retail AI in action today

Know your customer

In this new data-driven age, retailers claiming to be customer-centric while not being data-centric are setting themselves up to fail. In a twist of fate, the most human and empathetic brands may in fact be those using 'artificial' intelligence to scale their 'human' intelligence in order to know their customers. This allows them to create truly individualised, personalised and seamless customer journeys.

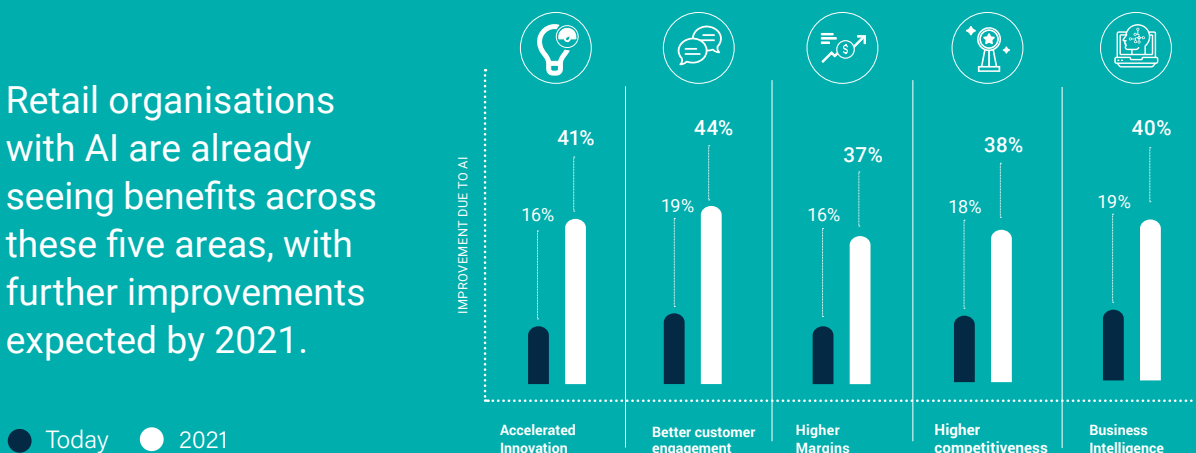
Knowing your customer in order to drive customer service can have a significant impact on the bottom line, as businesses which excel at customer service experience revenue growth 4 to 8% above their market.²⁰ Meanwhile, offering a high-quality customer experience can lower the cost of serving customers by up to 33%.²¹



American consumers will pay 17% more to purchase from a company with a reputation for great service.²²

AI's benefits to Retail

Retail organisations with AI are already seeing benefits across these five areas, with further improvements expected by 2021.



"Future Ready Business: Assessing Asia-Pacific's Retail Sector with AI study" - Microsoft Asia and IDC Asia/Pacific²³

Enrich customer engagement

When it comes to customer-facing efforts, AI can enrich customer engagements through improved customer service, personalisation and recommendations – taking advantage of in-store smart shopping carts, shelves and kiosks as well as natural language processing and voice search.

US grocery giant Kroger is piloting an AI-powered connected store experience, built around a smartphone app and the latest generation of EDGE Shelf (Enhanced Display for Grocery Environment). The smart shelving system uses digital displays to indicate everything from prices and promotions to nutritional and dietary information.

EDGE Shelf will also enable Kroger to create a new revenue stream by selling digital advertising space to consumer packaged goods brands. Using video analytics, personalised offers and advertisements can be presented based on customer demographics.

EDGE Shelf will connect with Kroger's 'Scan, Bag, Go' service, allowing shoppers to scan each item individually as they shop, keeping track of their order total and fuel points. When they're done shopping, they simply tap 'pay now' and present their phone at self-checkout.

These are examples of artificial intelligence augmenting human intelligence – working in tandem to drive back-

end efficiency as well as enhance the customer experience and imbue loyalty.

Digitising the store experience not only helps businesses better understand the customer, it also provides additional data points to create a more complete profile on the in-store customer experience, allowing retailers to test hypotheses and improve overall sales. At this point, Responsible AI and regulatory privacy concerns become paramount, with the Australian Competition and Consumer Commission publishing formal Customer Data Rights Privacy Safeguard Guidelines which empower the Office of the Australian Information Commissioner (OAIC) to establish safeguards for consumer privacy.²⁴

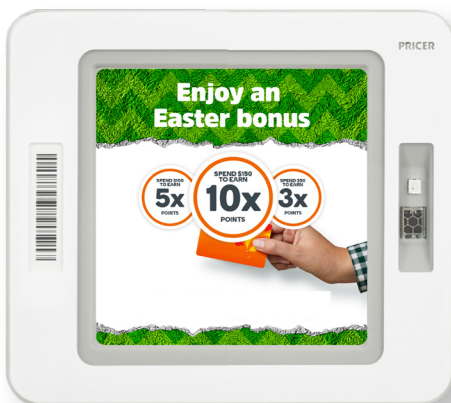
EDGE Smart Shelving System



Kroger is building a seamless ecosystem driven by data and technology to provide our customers with personalised food inspiration and create new profit streams.

Rodney McMullen, Chairman and CEO, Kroger

Promotional



Product & Price



Nutritional



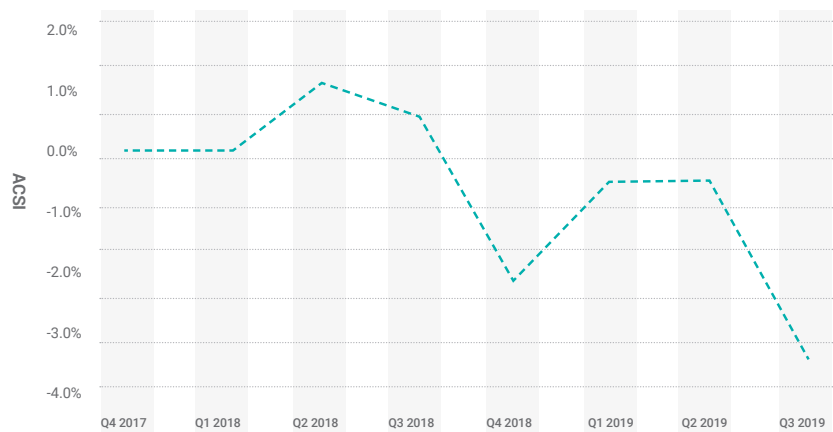
Enhance customer experience

Artificial intelligence is changing how customers interact with brands. By 2025, an estimated 95% of customer experiences will be supported by AI technology, according to omnichannel customer experience solutions provider Servion.²⁵

Digital disruption - making it easy and convenient for consumers to shop online from the comfort of their homes - has shone a harsh light on substandard physical retail experiences. Instead of rising to the challenge - by enhancing the in-store customer experience to make the most of physical retail's tactile strengths - some physical retailers embarked on a cost-cutting race to the bottom in terms of staffing numbers and customer assistance. The result is friction-filled brick-and-mortar customer experiences, driving customers straight back into the arms of online rival retailers.

Customer experience (CX) is a competitive driver of growth when successful and a great source of risk when it fails. Locally, Australians are expressing higher

Decline in consumer satisfaction Quarter 4 2017 - Quarter 3 2019.



American Customer Satisfaction Index²⁸

expectations of customer experience than the global average, according to the Zendesk Customer Experience Trends Report 2019.²⁶ Half of Australian consumers surveyed said their expectations are higher than they were a year prior, compared to the global average of 46%. At the same time, BCG's research shows that friction in the digital customer journey cost Australian retailers \$43.4 billion in 2018.²⁷

Understand customer intent

AI is driving customer satisfaction by helping retailers better understand the wants and needs of their customers, says Alistair Wardlaw - CEO and co-founder of Australian intelligence customer experience provider Mesh AI.

Data insights are essential to AI-driven customer experiences, yet dealing with the data sets is messy and customer behaviours are chaotic. To overcome these challenges retailers can explore turnkey solution providers in order

to leapfrog their competitors. Mesh AI's conversational AI and business messaging platform is designed to engage shoppers by understanding or anticipating their intent, then offering a personalised retail journey across different interactions and channels including voice.

"Online retailers have solved the initial logistical challenges of ecommerce," Wardlaw says. "Now they're focusing on building the online customer experience - finding ways to build a

more human experience into online retail - and this is driven by a change of expectations from today's consumers."

While online retail giants have been early adopters of AI in order to offer personalised recommendations and enhanced customer experience, the power of AI can deliver key benefits to both analogue bricks and digital clicks retail operations. From chatbots to automation, artificial intelligence helps brands learn more about their customers to enhance personalisation.

Predict customer needs

Dutch grocery retailer Albert Heijn is harnessing AI to create rich, hyper-personalised shopping experiences. Previously it relied on multiple on-premise data warehouses and a vast landscape of applications, making it difficult to get data into the hands of internal business owners. The cloud offers a central location for current and historical data, to provide better synergies for data users across the business along with a platform for delivering new services through data science.

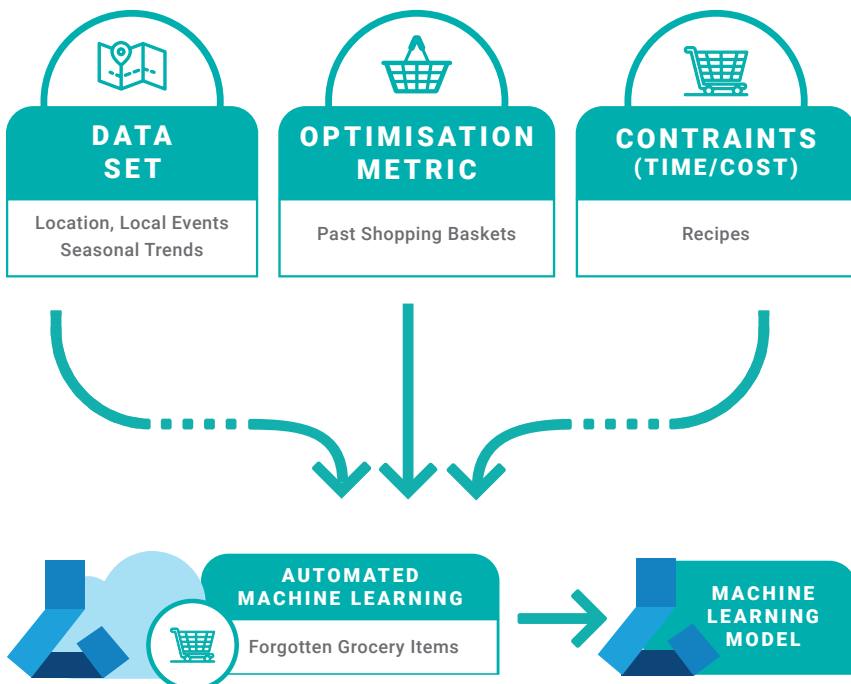
This enabled Albert Heijn to launch new customer-centric initiatives such as its Predict My List tool, which populates customers' online shopping lists based on historical data combined with data such as location, local events

and seasonal trends. It also suggests forgotten grocery items when cross-matching shopping baskets with recipes.

Predict My List has increased sales, with more products added on average to baskets per shop. This kind of hyper-personalisation showcases how retailers can benefit from breaking down data silos and extracting more value from existing data assets.

Such use cases falter without the appropriate infrastructure, which is why a business' data estate and data strategy are so critical. Modernising applications to take advantage of cloud scale can also be valuable. If in-store applications are cloud-enabled, but still rely on legacy on-prem systems, businesses will encounter challenges in leveraging AI to create these insights.

Predict My List



Case Study



Optimise marketing

Footwear retailer Crocs embraced AI and analytics early and has made strides as a leader in the category of Customer Experience Management, using Adobe Experience Cloud's turnkey suite of analytics, personalisation and advertising tools, says Michael Klein, Adobe Systems' Head of Industry Strategy – Retail, Travel & CPG.

These intelligent tools ensure Crocs has a deep understanding of customer needs and preferences, Klein says, and that it is using this insight to activate the right content, at the right time. Crocs can detect statistically significant anomalies in real-time, through Adobe Sensei-powered capabilities in Adobe Analytics, such as a spike of interest in a new style of shoe – taking immediate action to ensure inventory levels can support demand.

"Crocs is taking two thousand different data points and feeding segments of that into different systems, taking advantage of AI and machine learning in order to deliver a much more personalised experience lower in the funnel, especially around owned media, email and advertising," Klein says.

"These kinds of tools are empowering marketers to become more efficient and to focus their efforts on high-value activities, rather than the mundane task of trawling through data."

A key part of Crocs' ability to make critical decisions based on data is its adoption of the latest AI and its machine learning technologies.

Walk in the customer's shoes

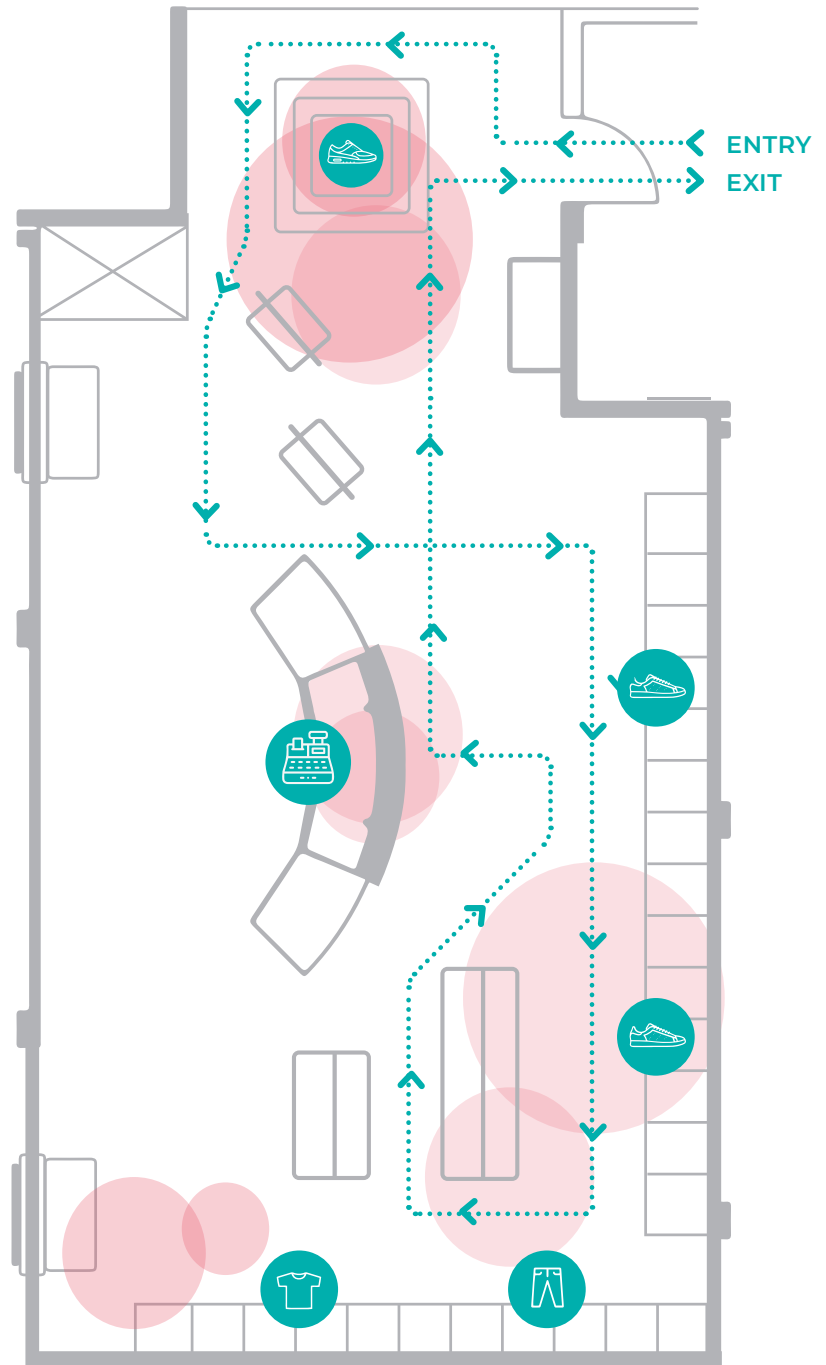
Studying how shoppers navigate the retail floor allows AI to deliver insights in terms of optimising store layouts and planograms in order to increase sales.

A global sports apparel business is using AI and machine vision in its Australian retail stores to study customer traffic routes, dwell times, product interactions and conversion rates. Developed by EY professionals, the solution has delivered insights which have led the retailer to refit stores and optimise layouts to drive extra sales, says Chris Michell, Partner, EY Data and Analytics Asia-Pacific.

The retailer has integrated the solution with its back-end logistics and inventory management, to optimise which products are on which shelves at different times of day. Physical retailers need to capitalise on the fact shoppers still like to get hands-on with some products, Michell says.

"The opportunity for brick-and-mortar retailers is to determine how they can use AI and advanced digital capabilities to enhance that in-store experience, to reduce the "showrooming" effect where potential customers try something in-store but then buy it online elsewhere," he says.

"Equally, you can analyse aspects like staff behaviours in a store to better support your customer experience. What are your staff doing? Where are they spending their time? Are they focused on the right activities at the right time? How are they interacting with customers?"



Machine vision technology along with heatmapping tools provide the ability to understand shopper movements and buying patterns whilst they navigate the store.



Digitise the store

Using AI to understand what is happening in stores does not only allow retailers to better manage stock levels and demand, it also helps them manage issues of shrink and theft as an element of customer behaviour – with these insights flowing back through the supply chain to ensure the right inventory is available at the right time.

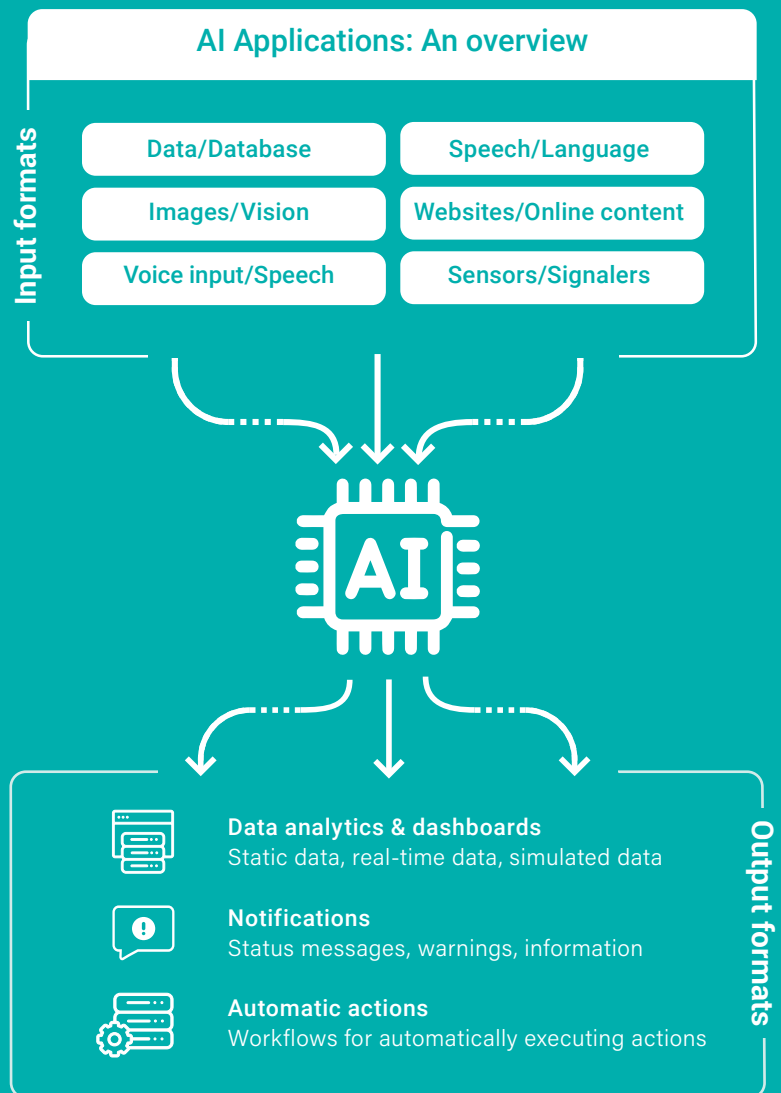
The combination of AI, machine vision and IoT is helping retailers manage theft by monitoring whether customers are acting responsibly at the checkout, particularly in the grocery sector where margins can be thin.

Crime-related loss accounts for 0.92% loss of revenue, revealing a \$3.37 billion direct cost of crime to the industry for the 2017/18 financial year, according to The Australia and New Zealand Retail Crime Survey.²⁹ The majority of these losses are attributed to customer theft, at 57%, and this figure has jumped 16% in less than two years.

Australia's major supermarkets are employing machine vision to detect when shoppers substitute items while scanning the contents of their basket at self-serve checkouts, or fail to scan items and instead leave them in the bottom of their basket. IoT tracking in trolleys and baskets also allows retailers to detect when shoppers exit a store without passing through the checkout, data which can be matched up with CCTV footage.

Australian start-up Black.ai is taking retail-focused machine vision onto the world stage, with international retail giant Walmart exploring the use of its systems in-store, along with major Australian supermarket chains.

Highlighting the innovation coming from Australia, Black.ai's cutting edge "distributed perception" platform takes machine vision to



"Artificial Intelligence in the Store: AI drives IT investments" whitepaper - EHI and Microsoft³⁰

the next level, leveraging an array of 3D sensors to digitise physical environments in real time and drive autonomous decision making.

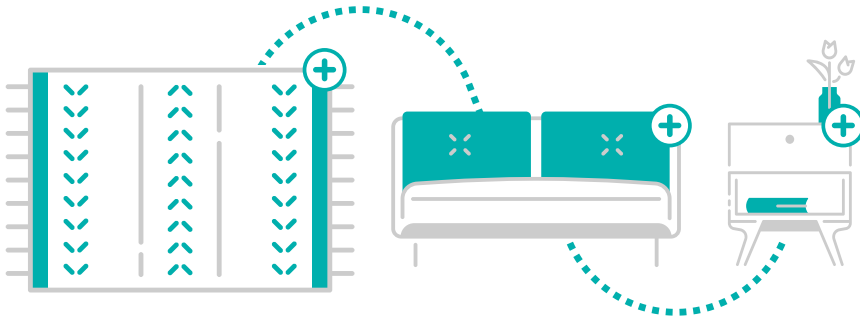
Black.ai's technology offers retailers unprecedented insight into the customer journey in-store. Sensors monitor the path taken as customers wander the aisles, right down to the items they take off the shelves, in an effort to understand commercial intent.

Black.ai's technology can power automated checkout-less retail stores but also delivers a range of impactful business benefits to traditional retailers. Machine vision allows retailers to keep track of inventory, out of stock events, item selection on-shelf and

spillages. It can also detect trolley walkouts and self-checkout shrinkage – reducing the need for bag checks to improve the customer experience.

"It's not just about collecting this data, it's knowing how to make sense of it – meaning it can be easier to partner on this kind of technology rather than try to develop that capability yourself," says Black.ai co-founder and CEO Keaton Okkonen.

"In return, the use of AI can deliver value through changing that relationship between the customer and the store associate – letting associates spend less time focusing on shrinkage and more time on customer service to help enhance the customer experience."



Thanks to AI, retailers can stop viewing sales as merely standalone transactions.

Cameron Bryant, Partner and Founder, Sparro

Understand customer lifetime value

Retailers are also leveraging AI to better understand buying habits in order to optimise customer acquisition costs.

Bringing AI to bear on sales data revealed to one Australian furniture retailer that, when customers buy a rug, it is often the first purchase when remodelling an entire room.

Developed by Australian digital marketing agency Sparro, the turnkey AI solution revealed that those customers

are likely to return and make other high-value purchases such as entertainment cabinets and lounge suites.

"Thanks to AI, retailers can stop viewing sales as merely standalone transactions," says Sparro partner and founder Cameron Bryant.

"This insight gives the furniture retailer the confidence to spend more to acquire that initial rug sale, granting them an advantage over competitors which are purely focused on the margins on that initial sale, rather than focusing on the big picture."

Physical retailers could benefit from similar insights to help sales staff hone their pitches and cross-selling efforts, Bryant says.

"It's not that sales staff on the retail floor don't understand their customers, but their efforts are often based on a 'gut feeling' which draws on their own experience and intuition," he says. "The insight gained from AI is another tool in their arsenal, which draws on a much broader set of data to help further hone their sales technique to drive sales."

Forecast demand as a service

AI can deliver retailers insights to improve sales and demand forecasting. This empowers them to optimise and align their upstream supply chain with downstream marketing efforts, by drawing on business data along with a wide range of third-party data sources.

US clothing retailer Fruit of the Loom used AI to scour its data for insight and found shoppers rush out to stock up on winter fleeces when the autumn forecast predicts a temperature decrease of 12 degrees Fahrenheit or more occurring within six days. Regardless of the actual temperature, it is the size of the drop which impacts buying habits.

Finding this actionable insight began with collecting store-level inventory metrics from a Fruit of the Loom national retail partner, along with local AccuWeather 10-day temperature forecasts. It modelled the data to pinpoint the temperature change which prompts consumers to act.



Armed with insight from this turnkey solution with integrated AI, Fruit of the Loom developed a dashboard which marries weather and inventory data, revealing which stores may not be able to service demand with their current inventory. It offers predictive analytics to make the supply chain more nimble, ensuring physical retail partners have full stocks of fleece products ahead of autumn cold spells in their area. It also allows Fruit of the Loom to hone its marketing efforts when a temperature drop is forecast.

Similar insight can be applied to a wide range of seasonal opportunities, allowing retailers to get the jump on competitors whilst reducing slack in their supply chain. Many retailers collect information on the purchasing habits of their customers, however few enrich their perspective with additional data like weather forecasts, in search of correlations and relationships. Businesses must consider what data they are collecting and what assumptions they are making due to their limited perspective.

Unite physical and online

Analogue brick-and-mortar insights can also be applied digitally, with US activewear retailer Fabletics "brick mining" the foot traffic in its physical stores to inform its online sales techniques.

Fabletics began as an online-only retailer in 2013, opening its first physical stores two years later. Today, Fabletics attributes much of the brand's online growth to its 22 brick-and-mortar stores and mining the data they produce for insight.

In its physical stores, Fabletics tracks various metrics to study how customers connect with specific products. This offers richer data than online analytics alone, such as how often customers try on different garments.

Since Fabletics relies on a membership-

based model, shoppers are often already registered. In physical stores, store associates scan each item customers take into the fitting rooms. Digital signage on each fitting room lets associates identify items and sizes, as well as shoppers' preferences, so associates can push personalised messages and promotions.

Data gathered from brick-and-mortar shoppers allows Fabletics to monitor product satisfaction and tweak assortment. For example, sell-through rates of the brand's best-selling leggings were 81%, but much lower for smaller sizes. Feedback from physical stores indicated fit problems and these sizes were pulled from the online inventory to reduce returns and customer dissatisfaction – addressing one of the key pain points of online retail.



Brick mining is working for Fabletics. Same-store sales increased by 38 percent in 2017 from the previous year.

Ron Harries, Vice President and Head of Retail, Fabletics

Case Study

Harvey Norman®

Harvey Norman: Driving customer satisfaction

Australian retail giant Harvey Norman is employing AI to drive customer satisfaction, using an AI-powered bot to scale up its Level 1 online customer service. Answering commonly asked questions such as opening hours, AI is freeing up the retailer's Australian-based human experts to focus on more complex queries.

Harvey Norman's "concierge bot" can answer around 70% of online chat queries, letting the retailer reach more customers with greater satisfaction levels, as well as scale more easily "without needing to throw more people at the problem", says Harvey Norman chief digital officer Gary Wheelhouse.

"Our people are our greatest asset for achieving that vision, we don't want to replace them with AI, but what we can do is use AI to assist them – taking the more mundane tasks out of the equation and allowing our people to focus on their primary role, which is to help customers," Wheelhouse says.

"It has produced tangible results, including a 30% improvement in CSAT customer satisfaction scores."

Meanwhile, the retailer is also using AI on the back-end to address a customer pain point by optimising home delivery routes and schedules - taking into account factors such as weather, traffic and time of day.

"Our application of AI is always driven by the business," Wheelhouse says. "The strategy is always focused on solving real-world problems for the business, the franchisees and most importantly Harvey Norman customers."

04

Retail AI in action today

Corporate education to drive AI adoption

Retailers that find success with AI do so not by simply embracing the technology, but by embracing change and the need to educate everyone throughout the organisation – from senior business leaders to frontline staff. Many organisations are launching internal academies, according to McKinsey & Co writing in Harvard Business Review.³¹ These incorporate classroom work (online or in person), workshops, on-the-job training and even site visits to experienced industry peers.

Nearly all enterprises will be leveraging AI in three years, according to Gartner's 2019 CIO Survey, but only around one third have started or are planning to start their AI initiatives in the near term.³² When asked about their challenges with adopting AI, executives across industries feared the unknown factors of AI, had trouble finding a starting point, lacked a vendor strategy and were concerned about the maturity of their enterprise.³³

To support initiatives and get started on an AI transformation, retailers can work with their partners and academies to prepare a programme of skills training. In many instances they also put into place processes

to build in-house technical and leadership capabilities. Microsoft has a robust offering of complimentary technical skills courses as well as an AI business school designed specifically for business leaders. Depending on the needs and maturity of the retailers in their AI transformation journey, the offerings can be massive online course (MOOC) based or bespoke content built by business professors from INSEAD, Kellogg and the Australian National University.

McKinsey has outlined four broad types of education skilling initiatives to consider in retail to mobilise and unite technology teams with business and operational people.³⁴

Role-based education across the enterprise

Leader

Gives senior executives and business-unit leaders a high-level understanding of how AI works and ways to identify and prioritise AI opportunities. This also provides a forum for discussions of the impact on workers' roles, barriers to adoption and talent development, as well as offering guidance on instilling the underlying cultural changes required.

Translator

Targets the needs of business staff for fundamental technical training – for instance, in how to apply analytical approaches to business programs and develop AI use cases.

End User

Acknowledges frontline workers in the store may need only a general introduction to new AI tools, followed by on-the job training and coaching in how to use them.

Strategic Decision Maker

Gives senior executives and business unit leaders a high-level understanding of how AI works and ways to identify and prioritise AI opportunities. This also provides a forum for discussions of the impact on workers' roles, barriers to adoption and talent development, as well as offering guidance on instilling the underlying cultural changes required.



Steps to Success

With AI in Retail

01

Lead from the top to get stakeholder buy-in

"For AI to reach its full potential, it really needs to be driven by C-level, CEO or even board-level decisions," says Blue Yonder's Professor Michael Feindt.

"Without strong C-level sponsors it will be hard to make headway with AI, not so much due to the technical challenges but more the structural and change management challenges which demand broad stakeholder buy-in."

Stakeholder engagement is particularly important for retailers, where AI strategies and implementations are likely to extend across a range of departments and data sources. Particularly when working with end-to-end retail which links front-end customer-facing activities to the back-end supply chain.

02

Lay out your vision to drive cultural transformation

Laying out your vision for AI with compelling narratives and effective change management is key and retailers which succeed with AI tend to have a culture which empowers new ways of working throughout the business, says Natalie Nguyen – CEO of Sydney-based AI startup Hyper Anna.

This creates challenges for businesses which weren't born digital, with the temptation to isolate and centralise AI-driven insights. Instead, they must embed them within business units and functions, as well as integrate

them into day-to-day operations.

"AI needs to extend beyond the head office but sometimes it can be very hard to instil a data-driven culture on the ground, which is often necessary in order to unlock AI's full business value," Nguyen says.

"It is important for the executive who sponsors the project to be an advocate for change throughout the organisation – they need to understand the value and benefits of change and then articulate that vision, to ensure that AI reaches into all the corners of the business where it can deliver results."

03

Align your data and cloud strategy to break down silos

Rather than diving in the deep end, retailers must ensure their AI strategy is built upon a well-rounded data and cloud strategy, says Andrew Baxter – Senior Advisor with KPMG Australia's entrepreneurial Customer, Brand & Marketing Advisory business.

"Getting the fundamentals and the foundation of your broader strategy right from day one gives you the best chance for success," Baxter says. "If you don't get those fundamentals right then you'll really struggle to deliver the full benefits of AI."

AI must be led by the business, as the AI strategy needs to align with

data and cloud strategies, which in turn need to align with the business strategy. This builds a foundation for breaking down both data silos and organisational silos to embrace interdisciplinary collaboration. AI has the biggest impact when it is developed by cross-functional teams with a mix of skills and perspectives. Breaking down data silos is a smarter long-term approach to AI than building ad-hoc standalone AI point solutions, which can struggle to make it past the pilot stage when they aren't integrated with the wider business or designed to scale.



For AI to reach its full potential, it really needs to be driven by C-level, CEO or even board-level decisions.

Professor Michael Feindt,
Chief Scientific Adviser, Blue Yonder

04

Define use cases to address pain points

The best approach to implementing AI is to identify solid use cases which solve real business problems with tangible results, and then prioritise those use cases to determine which can bring the best value to the business in appropriate time frames.

This requires identifying different use cases, mapping them out in terms of value and considering the various challenges with each use case – such as the availability and quality of the data, technical capabilities and skill sets. A heat map of value versus feasibility allows retailers to prioritise and create an AI strategy, along with KPIs for comparing value before and after.

Use cases which rely on existing data sets tend to make a good starting point, such as bringing AI to bear on historical data in order to spot trends and anticipate demand.

05

Nurture skills and establish partnerships

Access to internal and external talent with the right skill sets to support AI is one of the biggest challenges for businesses in every sector when embracing AI – whether they're looking to hire new talent, develop in-house capabilities or establish partnerships.

Businesses report lack of talent with appropriate skill sets for AI work is one of the biggest barriers to adopting AI, according to McKinsey.³⁵ Retailers cannot assume hiring

and outsourcing will bridge the AI skill gap, which then places a strong importance on reskilling and upskilling existing employees.

Organisations can build AI capabilities in-house or choose to move quickly with a SaaS AI solution or AI baked into an existing application. Partnerships can be the key to accelerating AI, working with partners like Microsoft to innovate, scale quickly and leverage startups to bring fresh ideas.

06

Start small, be ready to scale

"Don't aim for the moon and tackle the biggest challenges or the most difficult processes first, instead undertake a small AI pilot, take the learnings from that and then expand," says Jamila Gordon – CEO and founder of AI-powered SaaS platform Lumachain.

Assessing business value, feasibility, technical capabilities and time frames allows the business to strike a balance between short-term wins and longer-term payoffs. A clear set of KPIs enables the business to judge

the success of an AI pilot, while a solid underlying AI strategy ensures the business is ready to reap the benefits of a successful AI pilot. Challenges to consider include how it will scale, how it will integrate with other systems and the total cost of ownership.

Data cleansing and data lake projects can underpin AI initiatives, but these projects must align with valuable use cases in order to unlock clear business value each step of the way.



Don't aim for the moon and tackle the biggest challenges or the most difficult processes first, instead undertake a small AI pilot, take the learnings from that and then expand.

Jamila Gordon, CEO & Founder, Lumachain



Conclusion

Marcella Larson, Industry Solutions Executive, Microsoft

There is no doubt that AI is reshaping retail in the 2020s. We can get a sense of what is possible from the global and Australian stories we have shared throughout this paper where AI technology is putting the customer at the centre of an end-to-end personalised journey and driving an intelligent supply chain.

There is no certainty in the era ahead, beyond that retailers will get left behind in the 2020s if they do not start to focus on the opportunity and avoid viewing AI as a standalone technology with immediate returns. The only certainty we foresee is radical uncertainty and the opportunity to apply AI to almost every part of a retailer's value chain.

Whether retailers embrace AI to meet customer needs or are disrupted by new players is dependent on their success – from addressing initial business challenges to empowerment within the organisation to completely reimagine retail and its future business models.

Leaders must start to tell compelling stories of where AI pilots have made a quantitative impact and how early investments are benefiting adaptive organisations. They must address the fear that AI will take away jobs. We have offered six steps, which include addressing the broader themes of culture, skilling and organisational agility. To move at speed, you must organise cross-functional teams

that can address the operational changes AI applications may require.

In our interviews and daily dealings with retailers it is becoming increasingly evident that the business functional areas must lead projects and be responsible for success. We know that technology teams will play a very important role in reimagining retail in the 2020s and the new ways AI can drive growth, loyalty, innovation and efficiency. Retailers that are investing in a transformational journey – a journey on which they continue to learn and adapt to the changes in people, process, roles and culture – will have a great advantage in an era where humans are augmented by machines.

Resources

Learn more about AI in retail through the following resources.

White papers and blogs

Industry Partnership: NRF Big Show 2020 and Microsoft

Microsoft CEO Satya Nadella opened the conference. Discover Microsoft's customer, partner and product announcements.

[See more](#)

Microsoft Retail Industry blog

A comprehensive range of blogs that discuss issues relevant to Retailers, including AI.

[See more](#)

Microsoft AI blog

Everything you need to know about AI, with a focus on how the technology is being used in practice around the world.

[See more](#)

The Future Computed: Artificial Intelligence and its role in society

This book asks how society can ensure AI is designed and used responsibly. How can we govern its use and set ethical principles? How will AI impact employment and jobs?

[See more](#)

White Paper: AI in smart stores

A globally-focused paper that provides an understanding of the technologies behind smart stores so that you can apply this knowledge in the execution of AI in-store networks.

[See more](#)

Australian Government AI Ethics Principles

The Australian government has developed eight principles when designing, developing, integrating or using Artificial Intelligence systems to:

- achieve better outcomes
- reduce the risk of negative impact
- practice the highest standards of business ethics and governance

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Educational Resources

AI Business School

The information, learning materials and resources you need to start integrating AI into your organisation.

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Microsoft Learn

A hands-on learning environment to help you arrive at your goals faster, with more confidence and at your own pace.

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Cloud Adoption Framework

Proven guidance designed to help you create and implement the business and technology strategies necessary for your organisation to succeed in the cloud.

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Microsoft Trust Centre

Tips for how to build trust by focusing on data integrity, security, privacy & compliance.

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Further customer stories

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THINQUE

Thinque is a think tank and trend analysis organisation which provides data-based research, foresight and thought leadership assets for global brands.

The company's vision is to innovate data-driven "avant-garde ideas that expand minds and inspire a change of heart". With clients across 4 continents, Thinque was founded in 2005 by global futurist and author, Anders Sörman-Nilsson, with a special focus on the retail sector and consumer sentiment analysis. His models and Thinque's cognitive outputs in the books "Digilogue: how to win the digital minds and analogue hearts of tomorrow's customers" (Wiley, 2013) and "Seamless: a hero's journey of digital disruption, adaptation and human transformation" (Wiley, 2017) have been credited with strategic retail success for brands like Westpac and Mirvac. Thinque's research and thought leadership have been featured in media like ABC TV, The Australian, Sydney Morning Herald, Australian Financial Review, and Monocle Magazine. While active globally, Thinque's headquarters are in Sydney, Australia where the organisation has provided thought leadership amplification for brands like Microsoft, Facebook, GS1, Visa, Zurich, and Lego.

thinque.com

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