

## 2024 Finalist Essay Combined



# Joe Berry Award 2024 Final

## Presentation #1

Topic: 3 Question: Productivity- An In-store Perspective

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### Introduction

The true pioneer of modern day automation we see across retail stores today is highly contested. Some would argue that it had its origins in the North American grocery business, Piggly Wiggly, who offered the first true self-service grocery store in 1916<sup>1</sup>. Others would argue it was even before that in Ancient Rome, whereby Roman retailers in ancient forums would develop and finesse processes<sup>2</sup> designed to attract customers and increase conversion rates.

The reality of such development has been as a result of innovation and entrepreneurship across a multitude of sources which has seen automation reach its peak as we see it today.

Central to the concept of automation within retail stores lies not as the replacement of humans with machinery. Rather, automation refers to the ancillary developments in software and processes to unlock greater efficiencies at store level. The result of such efficiencies, whilst not eliminating all bottlenecks, alleviates key shortages across all departments to ease relevant and pressing issues across the traditional retail platform, allowing for overall growth.

This essay highlights, discusses and evaluates key innovations across retail stores which provide automation to the daily operations of retail stores. It firstly identifies the “burning platform” – the case for change resulting in increased automation within the current macro-economic environment. Further, through leveraging local and foreign case studies across Shelf Optimization, On-Shelf Inventory Management and in-aisle shelf enhancement methods, it will be evidenced that all provide greater automation across retail stores. It concludes with automation methods used in tandem with humans, true shortages are alleviated, and businesses achieve greater performance relative to their metrics. Such results are further exemplified when discussed methods are used con-currently.

### The “Burning Platform” for Change

Current macro-economic factors locally and offshore have resulted in retail stores being left with little option than to think differently and accelerate automation.

Led primarily by the numerous interest rate increases and inflationary pressures over the past 18 months<sup>3</sup>, Australia, along with key retail regions across the world, has fallen victim to a radical change in consumer shopping behaviour<sup>4</sup>.

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<sup>1</sup>[https://www.mckinsey.com/~/media/mckinsey/dotcom/client\\_service/retail/articles/the\\_future\\_of\\_retail\\_grocery\\_in\\_digital\\_world%20\(3\).pdf](https://www.mckinsey.com/~/media/mckinsey/dotcom/client_service/retail/articles/the_future_of_retail_grocery_in_digital_world%20(3).pdf)

<sup>2</sup><https://www.khanacademy.org/humanities/ancient-art-civilizations/roman/x7e914f5b:beginner-guides-to-roman-architecture/a/forum-romanum-the-roman-forum>

<sup>3</sup><https://www.roymorgan.com/findings/mortgage-stress-december-2023>

<sup>4</sup><https://retailworldmagazine.com.au/aussies-changing-shopping-behaviours-amid-cost-of-living-pressure/>

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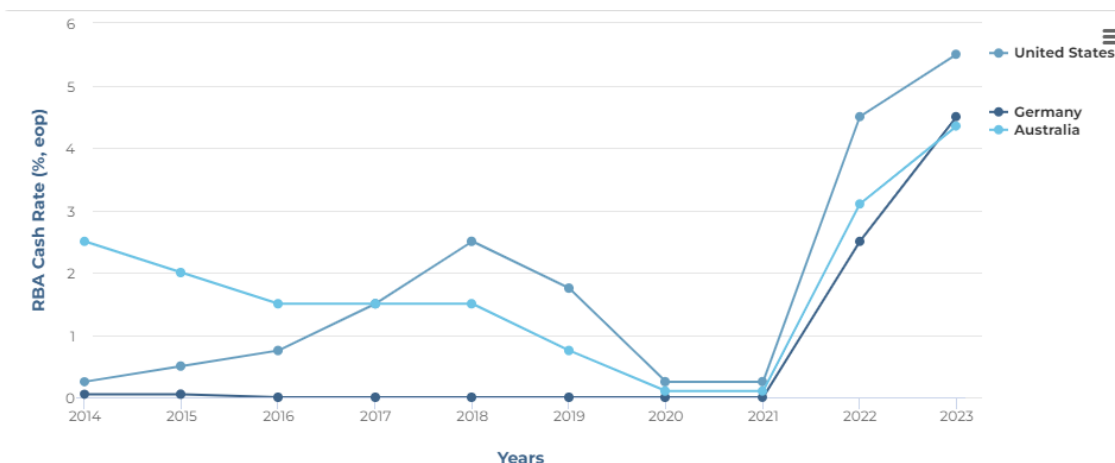


Exhibit 1: Australia has seen an on-trend acceleration in Interest Rates comparative to USA and Germany<sup>5</sup>

As a result, the Australian Supermarket sees on average 40% of its total lines promoted per week, making us one of the most highly price promoted countries in the world<sup>6</sup>. The result of such aggression, results in increased cost & labour pressure for retailers across the traditional bricks-and-mortar store.

Further, the increasing casualisation of the Australian labour force and wage growth-accelerated through the impacts of COVID-19<sup>7</sup> have placed strain on the overall consumer experience. IKEA's Co-worker Experience Manager, Greg Day sees casualisation of employees as a hindrance to the overall consumer experience as "co-workers who join and stay are able to provide a high level of service to customers as they understand the products they are selling"<sup>8</sup>.

These factors, as well as on-going constraints across supply chain and shipping costs, combine to place further pressure on margins<sup>9</sup>. Therefore, automation is a necessity for the longevity of retail stores and the alleviation of such pressures.

<sup>5</sup> <https://www.rba.gov.au/chart-pack/interest-rates.html>

<sup>6</sup> <https://www.obesityevidencehub.org.au/collections/prevention/new-approaches-restrictions-on-price-promotions>

<sup>7</sup> [https://www.aph.gov.au/About\\_Parliament/Parliamentary\\_departments/Parliamentary\\_Library/pubs/rp/rp2122/TrendsCasualEmployment](https://www.aph.gov.au/About_Parliament/Parliamentary_departments/Parliamentary_Library/pubs/rp/rp2122/TrendsCasualEmployment)

<sup>8</sup> <https://www.afr.com/companies/retail/retailers-need-to-be-smart-about-casual-conversion-20240131-p5f1cm>

<sup>9</sup> <https://www.retailerconomics.co.uk/retail-insights-trends/macroeconomic-factors-impacting-uk-retail-in-2022>

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**Automation will have an impact on most elements of the merchant role.**

Projected impact of automation by core merchandising activity

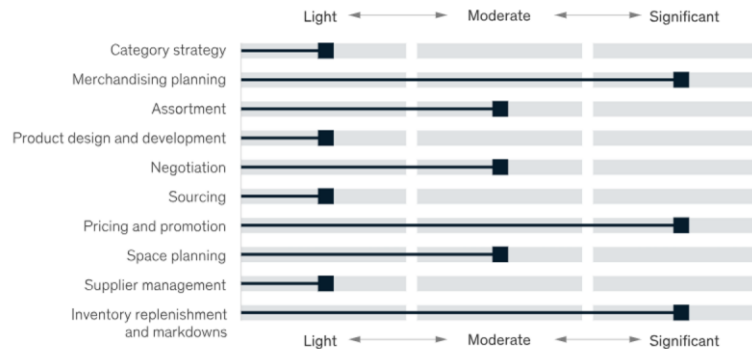


Exhibit: Current macro-economic factors reveal automation has greater impacts on some aspects of retail operations than others<sup>10</sup>.

### On-Shelf Enhancement

The concept of Electronic Shelf Labelling (ESL) is not a new concept to the worldwide retail landscape. However, its success has previously been thwarted by a lack of accompanying technology and featured many errors in roll-out- a key metric meant to be minimized as a result of this automation.

Originating in New Zealand, OZESL is leading the Australian market in Electronic Shelf Labelling roll-out, with majority market share and over 5,000,000 labels being used everyday<sup>11</sup>. With deep roots within grocery and hardware retailers, OZESL recognizes the increasing cost strains of retail stores and uses electronic shelf labelling as a cost-saving measure to drive efficiency, price integrity and shopper satisfaction.

Existing Consumables	\$	Freq.	Total		
Printing	\$580	Monthly	\$6,960		
Paper	\$3,000	Annually	\$3,000		
Last Yard Subscriptions	\$119	Monthly	\$1,428		
Green Shelf Edge Labels	\$742	Annually	\$742		
Labour Savings	\$27.45	Per hour (incl Super)	\$42,395	Installation Items	Total
**29 Hours Per Week				Wiring/Data/Electrical	\$20,000
		Operating Costs	\$53,526	Digital Ticket Cost	\$190,000
				Total Cost	\$210,000

Est payback period 3.92 years for full roll-out

Exhibit 2: Over the long-term, ESL represents compelling savings for retailers especially across their largest cost which is labour<sup>12</sup>.

<sup>10</sup> [https://www.researchgate.net/figure/Figure-no-4-Automation-will-have-an-impact-on-most-elements-of-the-merchant-role-Source\\_fig3\\_334273729](https://www.researchgate.net/figure/Figure-no-4-Automation-will-have-an-impact-on-most-elements-of-the-merchant-role-Source_fig3_334273729)

<sup>11</sup> <https://ozesl.com.au/>

<sup>12</sup> OzESL Case Study Presentation

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ESL ensures price integrity through labels being updated in real-time through a centralised automation system to alleviate significant labour cost and time for the physical actions conducted by an employee. Such automation saves countless costs from a store level as well as from a regulatory perspective. In 2020, New Zealand retailer Pak 'n Save faced 12 charges under the Fair Trading Act 1986 and was fined for charging a higher price at the checkout compared to the paper ticket being displayed in-front of the products<sup>13</sup>. In the context of today's pricing practices under the microscope with Australian retailers, it's clear that a centralised, automated process is unequivocally required to maintain consumer satisfaction. Conversely, retailers risk margin reduction by the pitfalls of the labour-intensive process of managing tickets.

Countless attempts have been made to increase the use of ESL across the retail industry. Many have been unsuccessful due to the advances in technology required for automation. These perceptions have rapidly evolved yet the roll-out of ESL and the growth across the Australian and European markets is testament to its success in alleviating labour shortages and enhancing customer service. Further enhancement through price integrity on shelf have enabled a place for ESL in the future of retail.

### In-Store Inventory Management

We live in an age whereby supermarket retailers across Australia see as much as 5 million tonnes of fresh produce wasted annually<sup>14</sup> - The Sydney Harbour Bridge weighs *only 50,000 tonnes*<sup>15</sup>. Creating this point-of-reference rationalises the heightened scrutiny across mass wastage- both from a sustainability stand-point as much as financially.

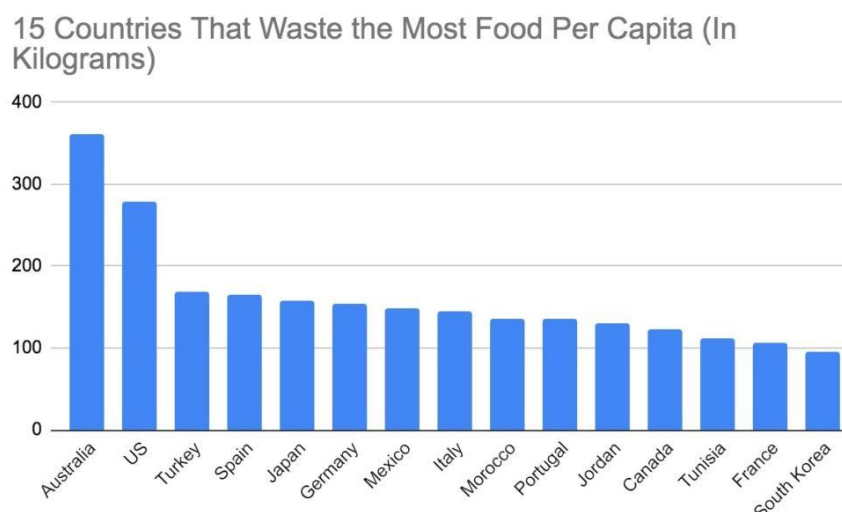


Exhibit 3: A graph of the 15 countries that waste the most food per capita<sup>16</sup>

<sup>13</sup> <https://comcom.govt.nz/news-and-media/media-releases/2019/paknsave-mangere-charged-over-alleged-price-discrepancies>

<sup>14</sup> <https://www.qut.edu.au/study/business/insights/powerful-supermarkets-push-the-cost-of-food-waste-onto-suppliers-charities>

<sup>15</sup> <https://traveltriangle.com/blog/sydney-harbour-bridge/>

<sup>16</sup> <https://earth.org/countries-that-waste-the-most-food/>

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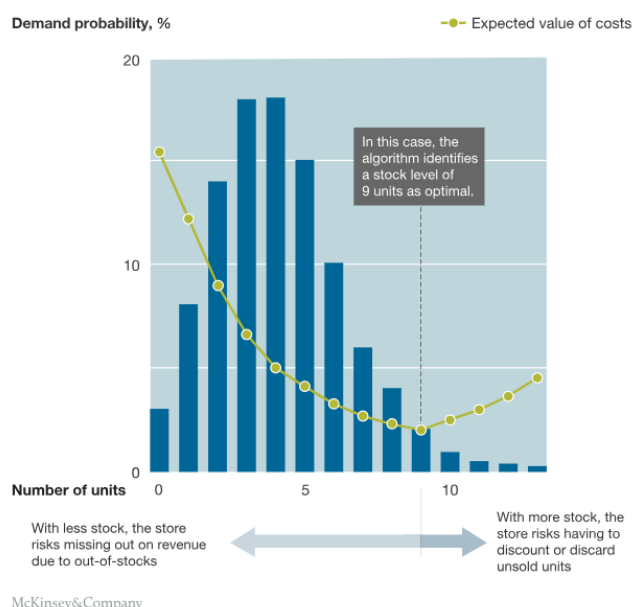
67% of Australians feel businesses which produce or sell food should be responsible for minimising food waste<sup>17</sup>. The result of such statistics has caused supermarket retailers to continuously develop initiatives to lessen the impact of wastage to their bottom line (donation and animal stock feed to only name a couple) ...a band-aid solution to an ever-growing issue at hand.

Key challenges surrounding fresh-food inventory management within retail stores include short shelf lives and the fluctuating demand faced from highly seasonable lines. Automation plays a key role in accurately managing stock levels and forecast demand.

As over 40% of fresh stock losses occur in retail stores across developed economies<sup>18</sup>, areas such as Europe and North America are key geographical locations to observe. Canadian company, Invafresh is leading fresh inventory management across Europe and North America. Partnering with over 350 retailers, the resulting streamlined inventory management system has seen<sup>19</sup>;

1. 40% food waste reduction,
2. An increase in sales growth,
3. Margin enhancement from reducing the number of mark-downs,
4. Reduction in inventory-holding costs, and a
5. Efficiencies from time taken to check dates of items

Research conducted by McKinsey into perishable food replenishment highlights the benefit of machine-learning algorithms, to determine optimal stock levels whilst addressing waste and lost sales<sup>20</sup>.



<sup>17</sup> <https://australiainstitute.org.au/wp-content/uploads/2023/09/P1432-Food-waste-in-Australia-Web.pdf>

<sup>18</sup> <https://earth.org/countries-that-waste-the-most-food/>

<sup>19</sup> <https://invafresh.com/>

<sup>20</sup> <https://www.mckinsey.com/industries/retail/our-insights/the-secret-to-smarter-fresh-food-replenishment-machine-learning>

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Exhibit 4: Machine-learning algorithms help businesses to determine the correct level of stock taking into account fluctuating demand, led primarily by seasonal lines.<sup>21</sup>

Furthermore, leveraging the benefits associated with Inventory management systems and working collaboratively with aforementioned ESL labelling will further enhance store personnel and shopper knowledge. This will alleviate key shortages within retail stores. After the inventory management software is updated, it will be updated simultaneously with the ESL system. Not only will it display product price information, but it can display inventory quantity, storage location, Best-Before-Dates and Use-By Dates.

### **Shelf and Range Optimisation**

With the rapid rise of the e-commerce space across the retail market, there are far more links to the overall consumer experience and perceptions on the physical store layout. Whilst retailers continue to invest heavily in the online space, research from CACI indicates that 37% of online spending is attributable to the halo effect of retailers' physical store presence<sup>22</sup>.

Retailers' progression in planogram optimization has been steadily amplified over the past 30 years. In 1990, UK Retailer Tesco recognised an inherent gap in their systems and realised that the conventional approach to planogram production would not deliver the bottom-line results and market share gains they were inherently seeking<sup>23</sup>. Key issues surrounded:

- Customer dissatisfaction with poor product availability
- Unique store configurations and assortments
- Limited resources- a merchandising team of 16

Through the implementation of automated shelf and range optimization processes across 150 merchandising groups<sup>24</sup>, a number of key issues were alleviated; including:

- Compliance- increased from 30% across the categories to over 90%
- Sales- Across a full year period saw a blended +18.7% increase across all categories

There are a number of third party providers who indeed offer such space and ranging solutions for retailers. Blue Yonder, originally a Supply Chain focussed organisation based in USA is at the forefront of Space and planogram optimization at retail level across Europe and now into Australia. Partnering with leading retailers, support is offered to Retailers to optimize space & floor planning, planogram optimization and space allocation.

Utilising shelf and range optimisation as well as ESL concurrently creates time-savings initiatives. Updated planograms can be filtered down to digital tickets, creating further cost savings, optimising compliance and maximizing retailer opportunity.

<sup>21</sup> <https://www.mckinsey.com/industries/retail/our-insights/the-secret-to-smarter-fresh-food-replenishment-machine-learning>

<sup>22</sup> <https://pages.caci.co.uk/rs>

<sup>23</sup> <https://www.readkong.com/page/case-study-tesco-automated-store-specific-planograms-8237536>

<sup>24</sup> <https://www.readkong.com/page/case-study-tesco-automated-store-specific-planograms-8237536>



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Activity	Manual Hours 	Shelf IQ  <small>SPACE PLANNING</small>
Loading POS Data	5	0.5
Creating Initial Planogram Shelf	16	2
Create and Manage Floating Shelves	80	2
Add/Update Products	4	1
Fully Execute Assortment Changes	8	1
Mirroring Planograms	6	1
Create Product Distribution Report	5	1
Create Distribution Matrix	20	4
Full-Scope Project Reporting	5	0.5
Prepping Planograms for Turn-In	5	1
<b>Total Hours</b>	<b>154 Hours</b>	<b>14 Hours</b>

Exhibit 5: Leveraging Blue Yonder Planogram software, approx. 90% of time is saved as opposed to manual processes<sup>25</sup>

### Conclusion

The origins of automation in retail stretch back to ancient Rome and continue through modern day innovations. However, the contention of who can claim the title of pioneer is a reflection of the complex evolution of automated processes within the landscape.

Regardless of where it began, at the centre of automation within retail lies not as the replacement of humans with machinery, but rather in the enhancement of efficiency through the optimisation of software and processes. This essay has illustrated the vital role played by automation in addressing the issues faced by traditional retail platforms.

By examining case studies and evaluating key innovations such as Electronic Shelf Labelling, Fresh Inventory management and shelf optimisation methods, it is clear that these advancements not only alleviate shortages and bottlenecks but also drive overall growth and performance improvement. These breakthroughs lie within the shopper experience, price integrity, space efficiency, compliance and reduced wastage and greater forecasting. Through the concurrent implementation of various automation strategies, businesses can harness the full potential of their resources and metrics.

The journey of automation within retail is marked by continuous innovation, driven by the need for greater efficiency and competitiveness. As technology continues to evolve, so too will the ways in which automation transforms the retail landscape, shaping the future of the industry for generations to come.

<sup>25</sup> [https://blog.nugleous.com/shelf-ig-save-time-with-planogram-automation-for-category-leaders?trk=article-sr-frontend-pulse\\_publishing-image-block](https://blog.nugleous.com/shelf-ig-save-time-with-planogram-automation-for-category-leaders?trk=article-sr-frontend-pulse_publishing-image-block)