

Book Review: AI for Retail - A Practical Guide to Modernize Your Retail Business with AI and Automation

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Book Title: AI for Retail - A Practical Guide to Modernize Your Retail Business with AI and Automation

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1. Introduction

The book provides us with an understanding of how Artificial Intelligence (AI) will revolutionize the retail industry. It is crucial to comprehend how AI has already revolutionized or is currently revolutionizing numerous other industries. A significant advancement must occur in the availability of precise, real-time data. Similarly, a significant advancement must also occur in task-specific algorithms. Moreover, it required someone with the audacity to demonstrate the effectiveness of this new model.

2. Author Expertise

Francois Chaubard serves as the Chief Executive Officer of Focal Systems, an organization specializing in computer vision powered by deep learning technology. The primary objective of this company is to provide assistance to physical retail businesses in automating their day-to-day operations. Chaubard has played a significant role in enabling enterprises to enhance their operations through cutting-edge deep learning techniques, thereby transforming the manner in which stores are managed. Additionally, Chaubard has actively collaborated in the development and delivery of numerous courses pertaining to Artificial Intelligence at Stanford University.

3. Topic of the Book

Chaubard (2023) sympathetically highlights that the underlying reason for all the difficulties faced by retailers is the persistent reliance on traditional thinking to address these challenges over many years. The author compassionately elucidates the transformative potential of AI in revolutionizing the retail industry.

4. Book Discussion Approach

In this book review, the reviewer would only discuss AI with respect to the retail industry.

4.1 Chapter Fifteen, AI for Merchandising

The chapter discusses the merchandising process in retail, which involves selecting products, determining quantities, positioning them in the store, and setting prices. The author suggests the use of an automated system to update stockers' handhelds with changes in planograms (Zola,2022), coordinating with product arrival time. Hence emphasizing the importance of per-store planograms, which are believed to significantly increase sales.

4.2 Chapter Sixteen, AI for Inventory, Ordering, and Supply Chain Management

The goal of the supply chain is to maximize availability, measured as on-shelf availability (OSA), which is the percentage of SKUs that are on the shelf and ready for purchase. There are two types of supply chain strategies: demand-pull and supply-push. During normal operations, most retailers employ demand-pull strategies, but during COVID-19, supply-push strategies were used due to high demand and low supply. Ordering from the store level can range from simple to complex, with the simplest method being ordering "*from the shelf*" by manually scanning holes and lows in the store. Inventory accuracy is crucial for optimal ordering, as inaccurate data can lead to ordering errors and inventory issues. Shelf digitization technology, such as shelf cameras, can provide more accurate and real-time inventory data for efficient ordering.

4.3 Chapter Seventeen, AI for Replenishment and Labor Management

The replenishment process in retail involves maintaining on-shelf availability (OSA) with minimal labor, including ordering, receiving, replenishing shelves, binning backstock, and working backstock or deadstock. Real-time shelf digitization and AI-powered cameras allow retailers to virtually monitor stores, rank-sort them, and identify areas that need attention for improved performance and compliance.

4.4 Chapter Eighteen, AI for Labor Budgets and Scheduling

Labor scheduling should be bottom-up, based on the work needed in the store, rather than sales volume. Allocating labor based on the tasks required can help the store get back on track. Implementing a bottom-up scheduling system, like Kroger's QueVision (Howland,2014), can lead to gains in productivity, customer service, and sales. By detecting line length and diverting idle cashiers to assist in the backroom, free cash flow (FCF) can be increased.

4.5 Chapter Nineteen, AI for E-Commerce and Customer Service

Retailers can achieve greater scalability and higher Net Promoter Scores (NPS) by using data to drive efficiency, reducing substitutions, and addressing mis-skips. Shelf cameras can help validate skips and ensure compliance, improving sales and customer confidence. Dynamic route optimization algorithms and skipping substitutions can increase pick speeds. Shelf cameras can also prevent customers from purchasing products that are not available on the shelf, saving time. After picking, orders are either picked up by customers or delivered by trucks.

4.6 Chapter Twenty, AI for Warehouse and Distribution Centers

Shelf digitization in warehouses can improve inventory accuracy, resulting in faster put-away and pick times, more accurate orders, higher on-shelf availability (OSA) for stores, and smarter ordering. The concept of digital twins and simulation can be applied to the full supply chain,

including distribution centers (DCs), to detect discrepancies in expected on-hands vs. actual, alert managers of theft or shortage, and facilitate faster reactions.

4.7 Chapter Twenty One, AI for Checkout

AI-based systems like MashGin ("Mashgin",2024) can be cost-effective in line length detection and accelerated checkout, reducing the cost per transaction to USD0.048 on average. These systems increase the throughput of self-checkout machines. Accuracy in checkout systems can be affected by accounting work, such as substituting products or refunding customers for unavailable items. Additionally, it is anticipated that the incidence of theft in e-commerce transactions will be minimal. However, potential culprits may include the e-commerce order picker, the delivery personnel, or individuals involved in the handoff process.

4.8 Chapter Twenty Two, AI for Pricing and Promotion

The chapter discusses the potential benefits of implementing an AI system in retail, which could lead to increased free cash flow (FCF) by reducing produce shrinkage, optimizing pricing strategies, and improving customer satisfaction. It suggests iteratively predicting demand, calculating the maximum FCF-producing price, measuring actual demand, and using the difference between predicted and actual demand to improve future pricing decisions.

5. Intended Audience of the Book

This book is intended for retailers who want to be educated in the foundational understanding of what AI is, how it works, how powerful it can be on each aspect of retail business. The researcher could benefit from this book as its case studies could be the empirical evidence when the retailer is moving from traditional and conservative business model into more dynamic strategies with the help of AI.

6. Topic Conclusion

In chapter three, the author stated that *"an AI model will be able to make higher precision, lower error rate decision, faster and with more context and experience than any human alive today. This will result in higher sales, higher profits, higher availability, and higher customer experience."*

Customer experience, also known as CX, pertains to the entirety of an organization's endeavors to provide exceptional encounters, value, and advancement for its clientele. This factor assumes utmost significance in an era where the manner in which a business caters to its customers holds equal, if not greater, importance compared to the actual products and services it offers ("Mckinsey",2022).

7. Reviewer Thought on the Book

The customer experience is what AI could offer in retail industry.

This is inline with qualitative study conducted by Ananda et al. (2023a) whom stated that combining cashless payment transaction data and customer profile, could lead to a better understanding of customer trends and needs. In other words, higher customer experience.

In his book review paper, Ananda et al. (2023b) similary summarized that when combining big data with a customer's private profile, it can produce purchasing trends and needs. Hence, the customer would then feels *"known and appreciated."* It also means higher customer experience.

In today's competitive market in retail business, creating customer experience is the differentiating factor to distinguish one retail amongst others. In turn, attracting more customers and retaining them.

References

- Ananda, M. O., Annuar, S. N. S., Adam, A. A., & Sharkawi, S. (2023a). The pivotal role of cashless system adoption among micro, small, and medium enterprises (MSMEs) in Malaysia: The challenges and opportunities. *South East Asia Journal of Contemporary Business, Economics and Law*, 28(3), 35–43.
- Ananda, M. O., Harun, M. H. M., & Tan, P. L. (2023b). Book Review: Big Data - How the Information Revolution is Transforming Our Lives. *International Journal of Business and Technology Management*, 5(2), 278-281.
- Chaubard, F. (2023). AI for Retail - A Practical Guide to Modernize Your Retail Business with AI and Automation. *John Wiley & Sons, Inc.*
- Howland, D. (2014). QueVision harnesses data to cut checkout lines. <https://www.retaildive.com/news/quevision-harnesses-data-to-cut-checkout-lines/255606/>
- Mashgin. (2024). The World's Fastest AI-Powered Self-Checkout. <https://www.mashgin.com/>
- Mckinsey. (2022). What is CX? <https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-cx>
- Zola, A. (2022). Planogram. <https://www.techtarget.com/whatis/definition/planogram>