AI + ML IN RETAIL: BEST PRACTICES

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Artificial intelligence (AI) and machine learning (ML) are two of the biggest technology buzzwords on the market. But how can retailers benefit from them in practice?

While Amazon looms in the background for most retailers, the possibilities for making unique AI and ML solutions are endless. Personalize the customer experience by learning what they want—and providing it—from discovering customer personas via psychometrics, to visual product recommendations, to immersive experiences, and more.

In this white paper, discover how to implement AI and ML successfully to save time, energy, and money.
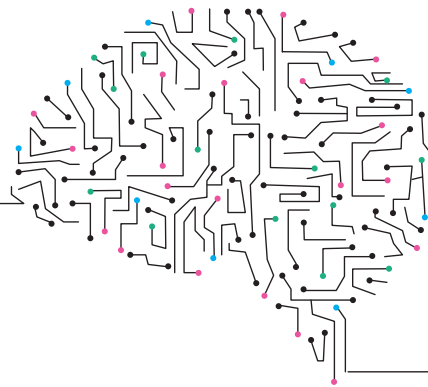
Why AI and ML?

The retail industry is one of the most data-driven industries, and retailers have run analytics projects for decades. So, what has changed with new technologies like AI and ML?

It's a good question. While traditional analytics provide a strong methodology, AI and ML are more powerful and can give better insights on larger amounts and varieties of data.

But there are also human and process aspects to consider. Previously, retail subject matter experts (SMEs) and business stakeholders gave a task to their analytics team to obtain specific analysis or statistics. Today, data science engineers are able to explore all combinations of data, using hundreds of AI/ML algorithms to extract correlations and anomalies from the data independently and then explain findings to stakeholders.

In other words, traditional analytics used to support what was already known. AI and ML, by contrast, are tailored to provide yet unknown insights, opening new horizons for improving the business.

Finding the focus of AI/ML projects in retail

With considerable customer demand for click-and-collect solutions and personalization, AI and ML algorithms allow for competition with retail giants like Amazon, enabling the same (or better) speed, impact, and efficiency in:

- Delivery
- Fulfillment
- Assortment planning
- Price optimization
- Personalization

And it all starts with data.

A great algorithm is impossible without a sufficient variety and volume of quality data.

Quality is crucial. Improving poorly structured, inaccurate, or contradictory data will take time, leaving little room for developing the algorithm itself. And sufficient volume is required for the maximum efficiency of AI/ML algorithms. For example, a history of any 10 transactions results in limited accuracy, while algorithms with millions of transactions show maximum efficiency.

Variety is also important. Business leaders should make sure that the algorithm covers all influence factors; not just the obvious transactional and regional data, but something that goes above and beyond. Consider the most unusual data sources available from customers for a complete picture of customer needs. Even when considering "obvious" data sources, think outside the box and look at traditional data from another angle.

AI and ML are not replacements

A common misconception is that AI and ML solutions can and should replace any, if not all, existing applications and infrastructure. That's not the case.

AI and ML algorithms operate on the data delivered from informational systems. In many cases, the insights and results from AI and ML algorithms are then used within existing informational systems.

AI and ML make the existing infrastructure and application landscape smarter.

Consider e-commerce websites and ML product recommendation engines. Algorithms capture an image of a product, generate attributes for recommendations based on the image, and then suggesting similar or related items from inventory. Such an algorithm doesn't replace the e-commerce website, but

integrates into the website using APIs, greatly empowering the user experience.

And while AI and ML algorithms can provide unbelievable insights, it's important to remember to give them time: they might be limited in scalability until insights are automatically picked up and used. Make it an ultimate goal for your AI and ML projects to automatically push promotion campaigns, change price, and submit order requests to vendors—eventually. At least, once you are comfortable with the accuracy of the insights. Doing so helps scale the business to cut back on human error, increase speed, and boost revenue streams.

Bringing in the pros

When building AI and ML solutions, data scientists and ML engineers provide crucial value.
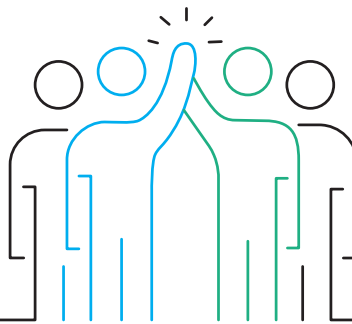
It's no secret that data science and ML engineering are professions in high demand and low supply. Google, Facebook, Amazon—all hunt these professionals far in advance. And the competition for talent is only beginning.

Our best advice is to start building relations with data science communities, universities, and even schools to build a connection with your brand and grow relationships with engineers. Find a data science community or meet-up group within your region and network in advance.

Once you have the experts on your side, know where and when to implement their expertise for the best value.

It isn't unusual to hire data science/machine learning experts before the data layer and infrastructure are ready. However, this causes top experts to sit underutilized, waiting for the data infrastructure to be built, and for data to be cleansed and ready for analysis.

Data engineers should be involved in building the data infrastructure and managing quality assurance before hiring talented data science engineers.

This saves time and money and keeps pensioned data science engineers engaged—not standing by, waiting for action.

Data science engineers also need as much freedom as possible. The best-case scenario for data science engineers is finding insights within the business and then sitting down and explaining them.

For the best results, engineers should have access to the data and computation power they need, and enough time to think and experiment.

Let talented engineers do what they do best: dream, plan, and execute. Doing so can result in amazing results.

The waiting game

Even with all of these components in place, it must still be acknowledged that ML and AI projects are time-consuming due to a significant R&D component and should be projected accordingly. Normally, several iterations are required before considerable value is realized.

Manage stakeholder expectations from the very beginning, commit long-term in general, and be as agile as possible to adjust course direction when required.

At SoftServe we say, "Think big, start small, start now." There's no need for overreaching initial budgets any more than there is for prolonged delay. Identify value points early and deliver them consistently, starting with "quick win" tasks that build momentum and trust—and do it now rather than later.

Also, perpetually track and improve results. Even if your algorithm is far from ideal, demonstrating reasonable evidence of the algorithm's progress is a good way to keep stakeholders motivated to keep investing into the project.

Conclusion

It's impossible to talk about innovation in retail without talking about Amazon. There is much to be gleaned and replicated for those brands willing to emulate without attempting to be Amazon.

AI and ML solutions deliver information about customers, automate processes, and grow revenue—but it's all in the execution. Knowing how and where to start, hiring the right professionals, and managing expectations are the best way to get a foothold in the market.

Is your retail business reaching its full potential with AI and ML? Contact SoftServe to get started today.

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SoftServe is a global digital authority and consulting company, operating at the cutting edge of technology. We reveal, transform, accelerate, and optimize the way large enterprises and software companies do business. With expertise across healthcare, retail, media, financial services, software, and more, we implement end-to-end solutions to deliver the innovation, quality, and speed that our clients' users expect.

SoftServe delivers open innovation – from generating compelling new ideas, to developing and implementing transformational products and services. Our work and client experience is built on a foundation of empathetic, human-focused experience design that ensures continuity from concept to release.

Ultimately, we empower businesses to re-identify their differentiation, accelerate market position, and vigorously compete in today's digital, global economy.

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