AI: THE PROMISE OF A GREAT FUTURE FOR RETAILERS

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"This study reinforces what we are hearing our clients say: The possibilities and early use cases of Artificial Intelligence in the retail business, though in need of streamlining, are full of promise. One retailer we are working with is transforming their contact center to include a 'chatbot agent' with an AI program determining which calls to route to the chatbot and which ones to the live agent. Another is figuring out how to leverage machine learning to crash the concept-to-production cycle times for seasonal merchandise well before the season. Yet another is looking to use a machine learning algorithm to determine how promotional campaigns will work and to predict the success of the next customer touchpoint. Natural language processing is also being used extensively to painlessly manage complex contracts and policies with employees, franchisees and suppliers. The way forward is clear. We must find the means for humans and machines to cooperate, so human potential might be amplified and applied to purposes that reimagine the retail experience into something more relevant to our times and for customers who deserve the best experiences that come from these times of being digital."

– An Infosys viewpoint

INTRODUCTION

The retail sector is arguably in a massive state of flux and business transformation. The entire sector is attempting to cope with fast-changing customer shopping habits and the shift of emphasis from the high-street to the Web. This has seen giants of the retail sector announcing store closures that reflect moving consumer demand while others have changed their supply chains to become more Web-centric. However, across the board the retail sector has invested in and innovated with a variety of technologies including Artificial Intelligence (AI), robotics, logistics automation, data analytics and self-service technologies in an effort to become more competitive, more customer-centric and more responsive to demand and opportunity.

As part of its study *Amplifying Human Potential: Towards Purposeful Artificial Intelligence*, Infosys commissioned independent research to investigate the approach and attitudes that senior decision-makers in large organizations have towards AI technology and how they see the future application and development of AI in their industries. As part of the research, 10 industries were surveyed, including Retail, Fast Moving Consumer Goods (FMCG), Utilities, Financial Services, Healthcare, Pharmaceuticals and Life Sciences, Manufacturing, Telecoms, Automotive and Aerospace, and the Public Sector.

What follows is a glimpse into the findings specific to the retail sector.

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TURNING TO AI TO DELIVER COMPETITIVE ADVANTAGE

Retailers have been using AI systems as part of their operations for an average of two years, with 44 percent using AI technology for between one and three years, with a further 20 percent actively using AI for over five years. Overall, 87 percent of retailers surveyed have deployed some form of AI or automation technology as part of their operations and decision-making processes not just for data analytics, but to actually automate decision-making and guidance for human decision-makers. It illustrates just how important autonomy in systems and processes is to fast-paced transactional businesses.

Retailers by the very nature of their transactional business generate and use a great deal of data — individual sales, customer histories, weather information, fashion trend and news reports, financial data on the cost of produce, etc. All of this data, current and historical, can be put to use to deliver functional business insights and inform decision-making, reduce time to market for new products and services, and improve success rates for initiatives. For example, automating and informing decision-making through AI can help a retailer determine what to order and when, what products to merchandise at the front of the store or on the first page of the site, cross-selling and up-selling opportunities to individual customers based on previous purchases and current basket contents, the list goes on. Moreover, this can be done far faster.

The process of planning, procurement, making, distributing, selling and garnering customer feedback can easily take more than 18 months in the retail sector. It's a long lead time that limits response to fast-moving trends. AI can expedite the process, reducing the time from ideation to sale, reducing indecision and informing trading decisions through historical data and trend analysis.

Nearly two-thirds of retailers (62 percent) are investing in big data automation and 43 percent in predictive analytics for just this reason. A fifth (20 percent) are investing in more traditional automation tools like interactive voice response technologies. Yet it is notable that much larger proportions are investing in intelligent solutions such as expert systems (43 percent) and machine learning (42 percent) to foster technology platforms that can be highly adaptive to changing traffic, user habits and trading conditions.

How would you rate your organization's current experience in terms of its implementation and use of AI technologies?

AI technologies fully deployed and they are working as expected	**22%**
AI technologies fully deployed but they are not delivering to expectations	**12%**
AI technologies partially deployed and they are working as expected	**28%**
AI technologies partially deployed but they are not delivering to expectations	**6%**
Limited deployment of AI technologies, results unknown	**8%**
No deployment of AI technologies but we plan to in the future	**12%**
No plans to deploy AI technologies	**13%**

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USING AI TO REIGNITE CUSTOMER SERVICE

Retail is increasingly becoming more about facilitating experiences, but with the ease of transactions. To seamlessly offer great experience to customers, retailers need more tools at their disposal, with AI as their first choice. Almost half (46 percent) of retailers in the study cite improving customer experience as their main motivation for investing in AI and automation. A further 47 percent point to delivering greater customer satisfaction while over a third (36 percent) are looking for ways to identify new customer needs and to further develop new products and services. These include automating cash registers for small item purchases to reduce queuing times as well as other micro-services, in-store and online, to highly personalize the shopping experience. This involves creating a one-to-one interaction using highly-detailed customer history and trend data, even when there are no physical sales assistants present.

Over three-quarters (76 percent) of retailers agree that AI can help them in this journey and is fundamental to the success of their organization's strategy. Not just at the store front, but behind the scenes, we see AI serving this cause. In large warehouse-based retail and fulfillment operations we are seeing AI, robotics, and automation systems being used to increase operating capacity and enable more orders to be processed per hour. At the same time, these organizations are cutting costs by allocating more warehouse floor space to be used for product storage through narrowing shelving aisles. Robotics and automated carts move goods or entire storage units from narrow storage spaces to pickers and packers. It means more products can be held in the same space as well as picked and packed more efficiently.

SUPPORTING THE BOTTOM LINE

Alongside improving customer engagement and satisfaction, underlying financial considerations are also at play in the retail sector. Most retailers traditionally operate on thin margins, with profits and success derived from volume sales. Keeping operating costs low and sales high is essential to maintaining growth in the face of higher taxation and business rates in some markets, rising minimum wages in others, and a greater need to invest in more targeted advertising and marketing to maintain visibility in crowded marketplaces. To this point, more than half of retailers are looking to save costs (54 percent) and almost two-third are looking to boost revenues (64 percent) by investing in and deploying AI and automation.

What benefits has your organization experienced from the use of AI?

Cost savings	49%	Expansion of employee knowledge and skills	27%
Increase in productivity	44%	Faster delivery of new products and services	26%
Increase in revenue	43%	Predictive/prescriptive analytics	24%
More informed business decision-making	40%	Ability to design and test new ideas with customers	24%
Faster resolution of business problems	39%	Increase in innovation	22%
Automated processes and tasks	38%	Attracting new highly skilled employees	11%
Ability to identify new revenue streams	35%	I am not aware of any benefits	1%

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AI is delivering lower operating costs for organizations right now by bringing in the automation efficiencies even in limited deployments. In retail alone, almost half of those surveyed (49 percent) have already seen some form of cost savings as a direct result of AI technology deployment, with 43 percent seeing increased revenues and 44 percent seeing improved productivity within the business.

While AI technology is still in its infancy, the retail sector is enthusiastic about its transformational benefits. Some 29 percent of retailers expect their organizations to hit "mature AI adoption" in terms of technological capabilities and the use of AI by employees and customers in the next two to three years. A further quarter (24 percent) expect the same in three to five years, with 17 percent looking further out

at five to 10 years. Despite the aggressive expectation of AI maturity, a lack of AI skills within retailers is a challenge. More than half (55 percent) admit to a lack of in-house capabilities to implement and manage AI systems. It means that retailers will need to invest more in training as well as in recruiting skilled employees to support and operate the very AI systems that the sector's future is so reliant on.

When do you anticipate your organization to hit "mature AI adoption" in terms of your technological capabilities and the use of those technologies by employees and customers?

Never	4%
In the next one to two years	26%
In the next two to three years	29%
In the next three to five years	24%

In the next five to 10 years	17%
In more than 10 years	0%
Average number of years the respondents expect their organization to hit mature AI adoption	3

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ETHICS AND AI

It is inevitable that AI will eventually take away a number of routine, low-end jobs from the workforce. It will also change the way organizations interact with people internally and externally as well as how the needs of those people are addressed. For example, deployment of AI needs support from the employees who may have concerns about roles that were once perceived as 'skilled' being reclassified as 'unskilled' by the arrival of AI. They may also have reservations about the need to retrain and whether employers expect them to continuously learn or acquire multiple skills. There may even be concerns about employees' access to training courses and employers investing fairly and adequately in multi-skilling.

With some jobs potentially evolving into new roles where people will oversee, manage and augment AI and automation systems, employees may also be worried about being unfairly judged on their AI and automation skills and education rather than their career experience.

Customers and suppliers may be impacted by the loss of a person-to-person interaction. They may also be concerned about the gathering and use of data that they may deem as infringing on what they seem as personal. In all cases, people will expect to be treated fairly, honestly and with respect whenever new technology is inserted into their working day or personal time.

Any technology that is bound to impact the human aspects of the business is going to be a difficult one to assimilate, albeit it is a necessary transformation for the future success of the business. Therefore, considering the ethics of AI is important for any retailer looking to invest in a solution that will materially change the way staff works or the way customers interact with the organization.

Only a third of the respondents believed their organizations have fully considered the ethical issues relating to AI technology use. This is in contrast to 26 percent that have only partially considered the issue of ethics in use of AI in retail. Meanwhile over a third (34 percent) believe their organizations have not weighed up the ethical implications of deploying AI at all. The deficit of ethical debate in the retail sector is second only to the public sector (26 percent) in terms of industries that have failed to consider the ethical impact of AI investment.

Considering that 87 percent of retailers have deployed some form of AI or automation technology, there is a considerable amount of ethical debate yet to take place in the sector that could shape the overall AI strategy of the business and take it on a different path to current investments.

In your opinion, has your organization fully considered the ethical issues relating to AI?
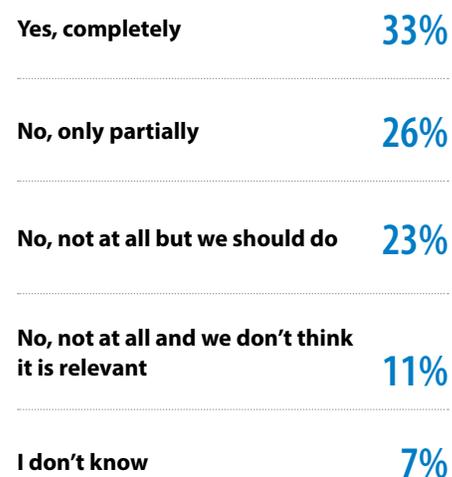
Yes, completely	**33%**
No, only partially	**26%**
No, not at all but we should do	**23%**
No, not at all and we don't think it is relevant	**11%**
I don't know	**7%**

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CONCLUSION

The adoption and use of AI represents an exciting leap forward for many in the retail sector. However, careful consideration must be given to the impact an AI deployment will have on a business to ensure that employees and customers come along for the ride. The length of time that early solutions have been in use bears witness to that.

AI is helping the retail sector to drive both the customer-facing aspects of their businesses as well as automate the increasingly mechanized and growing supply chain backend that enables Web-based sales and physical retail supply. Retail is also using data analytics to inform decisions and recommendations using AI algorithms and previously unrealized data asset value.

The retail sector shares the view that the long-term role of AI in the sector is inevitable. At the same time, the successful use of AI requires balance: greater automation but with equal emphasis on people engagement and skills development.

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