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HOW ARTIFICIAL INTELLIGENCE IS DISRUPTING THE TECH LANDSCAPE FOR C-STORES

How Artificial Intelligence is Disrupting the Tech Landscape for C-Stores

Agenda

- Introduction to ROC Associates

- What is Artificial Intelligence/Machine Learning?

- Why Now?

- Types of Artificial Intelligence
  - Video
  - Audio
  - Text/Bot
- Areas of Application and Use Cases
  - Consumer Behavior
  - Customer Service
  - Store Presentation
  - Operational Excellence
  - Loss Prevention and Security

ROC Experience
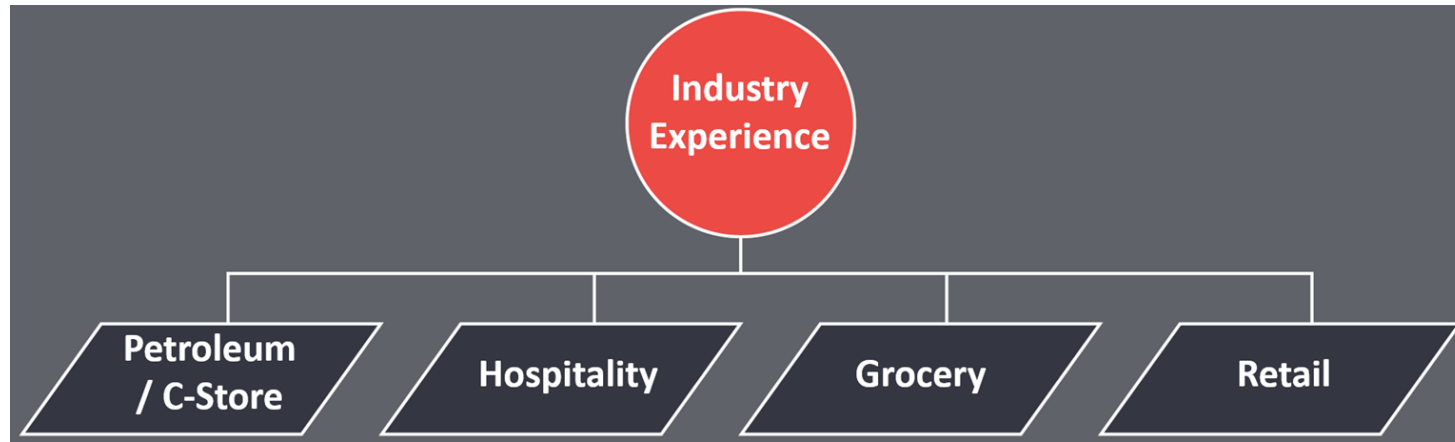
Strategy

- Technology Platforms
- Sourcing the Right Tech
- Business Process Evaluation
- Consumer Experience

Process

- Best Practice Development & Implementation
- Category Management
- Change Management & Training

Technology

- Digital Transformation
- Store Systems
- Inventory Optimization
- Workforce Optimization
- Customized Development Management

ar·ti·fi·cial in·tel·li·gence

/ˈärdəˌfiSH(ə)l ənˈteləj(ə)ns/

noun

1. the theory and development of computer systems able to perform tasks that normally require human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.

- This means that AI machines can collect, process, and analyze the information they are receiving to then help retailers calculate consumer behavior patterns and make future market forecasts.

- This allows retailers to make informed, data-driven decisions about their business plans whether that be which products will sell the best or understanding how consumers like items to be displayed on the shelves by monitoring facial reactions.

- Artificial intelligence models can do so much more than people can to identify patterns and trends in data. And they can do it very, very quickly.

WHAT IS TIME TO A COMPUTER?

The Latest Industry Trend

- At this year's NACS, Artificial Intelligence (AI) was highlighted as a transformative tool that retailers are increasingly turning to in order to differentiate themselves to customers as well to achieve greater operational efficiencies- improving the bottom line.

- According to McKinsey Global Institute, investments by retail and CPG in artificial intelligence are expected to exceed $8 billion by 2024 and impact retail to the tune of $9 trillion in the next decade.

- The capabilities of AI for automating tasks, improving decision-making and operational efficiencies, and personalizing the customer experience are accelerating year over year to great impact.

  - At a high level, these areas are the focus of AI data analytics;

    - Improving the customer experience using data analytics

    - Establishing dynamic pricing strategies for optimal margin

    - Analyzing customer data for marketing and sales campaigns

    - Personalizing marketing campaigns and promotions

Types of Artificial Intelligence

Video

- Artificial Intelligence (AI) can provide impactful opportunities to improve the management of convenience stores already equipped with closed-circuit television cameras that are currently used for after-the-fact incident analysis.
- Utilizing these existing cameras for real-time analysis and data gathering, stores can achieve significant improvements in all areas of performance that result in higher customer loyalty and return business that improves profits through lower marketing costs and larger average purchases.
- Whether it's the payment, fuel measurements, safety measures monitoring, or washroom maintenance, with <u>artificial intelligence</u> and IoT at the forefront, gas stations can drastically improve their overall service and drive customer satisfaction.
- Computer Vision that leverages existing security camera feeds
- Leveraging transaction logs, loyalty data, inventory movement data can all play a part in gaining deep insights into customer behavior which can then be used to further personalize the shopping experience through better product selection, pricing strategies, and marketing campaigns.

Audio

- Audio feeds from in-store microphones that many POS systems already have
- This can evaluate the performance of employees when it comes to customer service.
- Evaluating employee's performance when it comes to upselling and increasing basket size

Text/Chat Bot

- This can automate customer service interactions
- Facilitate product information at a customer's request
- Assist helpdesk staff in gathering initial call information and offering solutions

Diagnostic/Predictive/Prescriptive Analytics

Diagnostic analytics
- Most retailers already work with diagnostic analytics, which focuses on analyzing past data to understand why certain events occurred.

Predictive analytics
- Predictive analytics leverages historical data and statistical modeling techniques to forecast outcomes or events.

Prescriptive analytics
- Once you have a prediction, what you need is a recommendation. Prescriptive analytics uses optimization algorithms and simulation techniques to suggest the best course of action based on what has happened in the past (and why) as well as predictions of what will happen next.
- (i.e.) In promotions, prescriptive analytics could recommend that a retailer promote a certain set of items together — knowing that doing so tends to drive up sales of each of the grouped items.

Forecourt

- Global AI in the Fuel Market size was valued at $2.32 billion in 2021 and is expected to reach $5.32 billion by 2030 [1]
- Leveraging surveillance systems powered by AI algorithms the forecourt can be monitored in real time and improved in the areas of security, safety and gathering important insights such as;
  - Vehicle filling time
  - Peak times by vehicle type
  - Vehicle queue time
  - Capture license plates
  - Gauge general customer demographics (Age and Gender)
  - Analyze traffic patterns such as peak pump to store conversion times
  - Key categories being purchased by the pump to store converted customers
  - Spill detection
- Other Guiding Forces for AI in the Forecourt:
  - Optimizing Fuel Inventory Management
  - Improved Price Forecasting
  - Precise Data Analysis
  - Personalized Customer Experiences

1. https://www.orpak.com/the-impact-of-artificial-intelligence-in-fuel-retail/

Case Studies - Forecourt

- Understanding when most pump to store conversions take place, coupled with the top categories being purchased by those customers provides an opportunity for improvement.
  - Most pump-to-store conversions occur during the morning and afternoon rush hours.
  - The top categories in pump-to-store "converted" baskets are packaged beverages followed by beer
  - Promoting these items to fuel buyers can significantly increase in-store traffic and purchases
  - At the pump, the customer's stored data is used to automatically initiate the refueling process based on vehicle type, fuel type while offering personalized marketing offers during the fueling process
  - Intelligent video surveillance systems powered by AI algorithms are enhancing security and safety in fuel retail operations and can monitor fuel stations in real-time, detecting any suspicious activities or safety hazards.
- AI-based computer vision technologies comprise machine-learning models allowing computers to recognize vehicles and respond by offering a hyper-personalized fueling experience.
  - Once a vehicle is registered on the retailer's app, customers can simply enter a station that supports the new service, where smart cameras will automatically identify the vehicle.
  - At the pump, the customer's stored data is used to automatically initiate the refueling process based on the preferred fuel type and spending amount, offering a faster and smoother customer experience. Customers are informed by a digital screen when the fueling is completed and are also invited to take advantage of personalized offers.

Inside the Store

- Computer vision AI can be used to report and track the time it takes employees to perform key operational tasks such as sweeping the floor or receiving or counting stock which can provide insights into operational efficiencies being realized by certain stores but not others so that those best practices can be trained to others.

- Computer vision AI can also be used to track customer foot traffic and identify areas of the store where customers dwell times are highest which can then be used to improve the store layout and merchandising.
  - Average dwell times fluctuate throughout the day, but the overall percentage of shoppers spending 5 to 10 minutes per trip has grown in 2023.
  - These longer dwell times can be positive (reflecting a shopper willing to linger and browse) or negative (a frustrated shopper who feels like they're wasting time waiting in a checkout line).

- Employee schedules can be optimized, taking into account factors like store traffic, employee availability, and skills. The result is a more efficient workforce, which can create a better in-store experience for customers. One store may require more staff on weekends, while another may need additional people during weekdays.

- It can monitor and report on factors such as employees wearing proper uniforms and greeting customers correctly

- AI tool that uses an audio feed from microphones placed near each register combined with transaction log data to know how successful particular cashier-driven promotional campaigns are.

- It can report how often promotions are suggested by cashiers and how often they are accepted or turned down by the customer.

- AI can proactively identify trends and patterns of loss and identify the likelihood that they will begin showing up at other locations in your network.

  - It can even measure the effectiveness of those recommendations in a self-learning cycle.

  - AI is also being used for making loss prevention research more user friendly such as being able to run natural language queries against the data. (i.e.) A user could type or say: "Show me all employees who issued a refund within one hour of store closing and then sum up the total units sold and refund amounts".

Case Studies – Spark Cognition and TXB

- SparkCognition collected video data from the TXB store for less than two weeks, and in that short time, the TXB team was able to learn:
  - The demographic mix of shoppers
  - Where and how people are traversing the store and spending time
  - Service-level measures at the foodservice and checkout counters
  - Movement of customers from forecourt to store

- A real-time dashboard revealed the insights to the TXB team, and amazingly, they never needed to see the actual video images. SparkCognition's solution "watched" the live feeds for them, utilized their AI capabilities and continued to report back against pre-defined scenarios TXB wanted to observe 24/7.
  - The store manager asked that in addition to mobile alerts, a task list be created that summarizes key things he needed to correct or pay further attention to, which was quickly added to the dashboard.

Case Studies – Monetizing Data

- With inflation remaining relatively high, more consumers are searching for greater value—even with discretionary purchases. As product prices remain high, smart convenience retailers are leveraging CPG-funded promotions as a cost-effective way to attract new customers.

- To leverage this type of spending, retailers must understand their customers better and provide the data that shows why CPGs will be making a wise investment with their promotions.

- Audio-feed based AI that can recognize the frequency and specificity of promotions offered by cashiers to customers can be monetized with CPG's who will be willing to pay for these upselling impressions.

- Retailers are monetizing existing consumer data across CPG brands to support their customer centricity. Data shared by retailers originates from their loyalty program. The cardholder data they share can be;

  - Socio-demographic (e.g. the age of their consumers)

  - Transactional (e.g. what did they buy)

  - Behavioral (e.g. what did they look at, how long was dwell time)

  - Purchase reactions (facial expressions)

Case Studies – Loss Prevention

- By analyzing data from various sources;
  - Point-of-sale systems transaction logs
  - Employee performance records
  - This is coupled with video surveillance footage
- AI algorithms can flag anomalies or patterns indicative of fraudulent behavior. This allows retailers to take appropriate disciplinary or preventive measures;
  - Conducting internal investigations,
  - Implementing stricter access controls, or
  - Providing additional training
- AI's continuous learning capabilities mean that its effectiveness in identifying fraudulent behavior improves over time.
- This dynamic learning approach ensures that the retail business stays ahead of evolving tactics used by dishonest employees.
- AI's ability to analyze vast amounts of data enables retailers to pinpoint subtle anomalies and trends that may otherwise go unnoticed.
  - Identifying irregular transaction patterns and unusual access timings
- This data can trigger real time alerts in order for corrective actions to be taken

Above Store

- Predictive maintenance using AI can prevent equipment failures by predicting when maintenance is needed.
- Optimized pricing
    - Retailers may use AI to make more informed decisions. By leveraging artificial intelligence pricing, retailers can analyze vast amounts of data to gain insights into consumer behavior. Additionally, AI price optimization in retail helps personalize marketing efforts and streamline supply chain management.
    - Retailers can identify patterns and insights that drive AI price optimization in retail decisions by studying historical sales data, market trends, competitor pricing, and consumer behavior. This method deploys complex algorithms and machine learning approaches to estimating demand elasticity, assisting retailers in understanding how price changes affect consumer purchasing behaviors. Furthermore, retail price optimization enables real-time dynamic pricing modifications in response to changes in demand, inventory levels, and market conditions.
    - Retailers can modify their prices to match projected fluctuations in demand by analyzing how demand changes based on factors such as seasons, holidays, and economic situations.
    - Using predictive analytics, merchants can strike the right balance between offering attractive discounts to clear inventory and retaining profit margins.
- It has been reported that Amazon drives 35 percent of its sales through its product recommendations engine.
- Store Layout

Case Studies – Prisma Retail

- The largest C-Store chain in Latin America needed to standardize its pricing decision process.

- To achieve this, it had to capture large volumes of market data and be able to incorporate pricing strategies to improve the store's overall image.

- Rapidly, using transactional and market data, store segmentation and SKU sensitivities were established.

- By broadening the scope and competitor data, Prisma was able to improve the overall price picture, avoiding aggressive pricing on known value items such as dairy products and increasing prices on Snacks and Sweets

  - Achieved a 10% increase in gross margins.

  - Calculated the number of SKU display days per store and aligned this value with supplier lead times, reducing inventory and stock levels by 20%.

  - The implementation was successfully completed in only 3 months, which led to the expansion of the project in another 8 countries within LATAM.

In Conclusion

- AI is transforming the retail industry

- Everyone should be thinking about strategies for leveraging AI tools in their business

- AI technology is making leaps year over year in its capabilities as we have seen at NACS and Conexxus.

- When making technology decisions going forward, AI capabilities both now and in the future need to be part of the evaluation.

  - E.g. selection of security cameras and IoT sensors that can support AI functionality.