Top Omni-Channel Challenges in Retail and its Single Platform Solution

Whitepaper

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Next Generation Integration Platform
After remarkable improvements in technology in retailing, there is an increased scope for better shopping experience in online purchase.

Even Brick-and-Mortar retailers are willing to invest in tools and technologies that could enable their multichannel purchasing options as below:

- Brick-and-Mortar
- Click and Collect (In-Store Pick up)
- Online Purchase via Mobile Site.
- Online Purchase via Smart Device Apps.
- Online Purchase via e-Commerce Site
- Online Market Place & Social Media.
- Order via Telephone
- Kiosks

From all these channels, retailers are looking for seamless operations such as consistency of information, multiple vendor collaboration, forecasting, competitive price, customer support, reduced go-to-market timeline, returns, tracking the order, notification etc.

While the expectations are rapidly challenging, it poses lot of challenges for the retailers to give competitive edge, new platforms, Seamless Scaling, Increased Customer Support Cost, etc. This also demands the retailers aggressively plan for their near and long term investments to sustain the growth.
Today’s customers are looking for seamless purchasing experiences and rapidly switching between retailers, judging them based on the overall performance but not limited to quick delivery of purchased product.

For example, below are the increased conveniences the users are experiencing from the various advanced retailers:
In order to provide these experiences, the retailers have to equip themselves with various People, Process and Technology to progress themselves from Brick-and-Mortar to Omni-Channel Retailers. The retailers need to plan to introduce and incorporate the below business strategies to retain the existing customers and attract new ones:

- Adapt their websites to mobile sites
- Introduce new mobile apps quickly
- Add scalable e-Commerce platform
- Provide In-store product information via iBeacons

The Retailers also need to plan the below technology strategies in order to enable them towards Omni-channel retailing:

- Real time integration of product catalog and promotion
- In-Store and After-purchase analytics
- Order integration for In-store options
- Ability to scale to long-term changes
- Ability to make quick changes in business process
- On-time notification to customers for better decision making
In the following sections, we can discuss in detail the key challenges faced in progressing towards Omni-Channel retailing.

1. **Adapting to Changes**

The critical challenge for the retail industry is to have their enterprise systems ready to incorporate new changes seamlessly such that they are ready to grow aggressively in terms of modern needs and provide better customer experience.

For example, their web sites would need to have mobile compatibility in addition to their existing browser based e-Commerce system. In an extreme situation, they should be responsive enough to be accessed from any modern device such as Smart Phones from various platforms including Android and iOS, Tabs and Kiosks. In this case, the UI would need to be accessed via mouse-click as well as a finger touch.

Moreover, the e-Commerce application would be equipped with the provision to enter phone-orders to cater to the need of users who does not have instant access to internet. If the systems are equipped to incorporate new changes, it is easy for the decision maker to bring in more business enablers.

2. **Information Silos**

Need for the connected systems are the basic requirement in a multi-channel retail business and in turn is a challenge. To have connected systems requires not only the long term vision but a careful planning and investment of time as well.

The timely access to information is invaluable in multi-channel sales to be able to decide and adjust the business parameters dynamically based on the factors that affect sales. For example, products frequently searched by the users, potential products that will be likely to be sold on the given period of time, available inventory, product wise, regionwise, branch-wise sales statistics, vendor capacity analysis are the key details to be centralized and integrated to all the systems to make the best use of the available data to improve the business.
The growing demand in the retailer for the immediate access to the latest and updated information poses a lot of challenges due to volume of data required to be ported from different systems to rest of the systems. The challenge lies in keeping the interval to minimum and frequency to the maximum in a way the systems are kept up to date of each other’s update.

For example, when the OMS (Order Management System) is updated with the new order and delivery or receipt information, it is important to keep the central inventory system about the sold or received items so that the information displayed to the customer is consistent. Since this impacts the business or customer experience in the long run, the retailer has to take immense care to sync up the inventory, store sales, web sales, weekly or daily inventory prediction, and real-time inventory updated accurately for every minute. The same is applicable when the inventory goes to red, the system promptly needs to raise the PO to back-fill the shortage.

Loosely Coupled Systems

The enterprise should look to build its applications loosely connected to the central inventory system and the same should be built such that it is centrally integrated via the suitable integration platform to be able to receive the latest update in the inventory, price and promotion data to the other systems. This will help the business introduce the new channel of business with very minimum cost and efforts surrounding other systems.

Consider that the PoS is undergoing a change, it should not affect the growing business. The effective integration using the platform like WSO2 would still allow the updated PoS system to connect to the central inventory system by making changes without impacting its core business objects and its data model.
4 Scalability for Business Growth

In the business world time is money and timely access to information makes all the differences between productivity and underutilization. When the situation demands, especially when there is an opportunity for more business, the retailer needs to be capable enough to quickly scale up the Process and Technology.

The technology scaling requires good amount of vision and planning. It also involves careful consideration of choosing integration design and architecture that is suitable for the different systems and capabilities. For example, the integration system needs to be robust enough to scale from 100s of messages to 1000s without having to make any explicit code changes.

The Technology scaling requires the integration platform that is flexible enough to compensate the handicap of the different system as well as capable enough to leverage the available capabilities to the maximum. For example, consider the ERP system is very old and not capable enough for real-time communications via web-services but can send emails. If the integration system is capable to read emails, receive the information, transform the data suitably to communicate via other systems, the system would still be considered scalable.
Preventive and Predictive Analytics

The analytics is like a time-machine which helps the business discover what went wrong in the past and what will go well in future. Easier said than done, it is the most challenging task for every business to visualize the current trend and prepare to meet the future.

The retailer needs to have a system that tracks every event, information, sales dynamics, the trends in buying the products, region to focus for different products and brands, scaling needs, investment needs and the inventory details to keep the inventory to the optimum level, etc. Once the system is designed to collect and track these data and events, the business can access and use the data to arrive at the necessary information in different dimensions.

The challenge here is to consistently design the systems well in advance to track the key events and data that will help the business. This is because, if the data are inconsistent between different systems, it will become an overkill and eventually unusable for analytics.

Growing Infrastructure Investments

The infrastructure required to integrate these systems is always considered as an expense rather than the investment for better business. This is because, these infrastructures incur expenses to maintain the code, server, database, monitoring of services and their performance, etc. This also requires significant manual efforts to troubleshoot and recover from infrastructure related errors.

The delay in maintenance and recovery might lead to the loss of business and eventually loss of customers due to frustration.
Traditionally each technology initiative is looked at individually rather than holistically. But today technologies are not silos, they are all interconnected or dependent on each other. All above retail challenges cannot be resolved by single technology initiatives. This requires combination of multiple technical architecture to seamlessly address various current and growing needs. Example, delivering content to various channels (Store, ecommerce, mobile, smart device and kiosk) required common architecture model and delivery patterns rather than looking individually.

This demand required a Unified Architecture approach with combination of various technologies from integration, data quality, process engine, analytics, device connectors etc. This unified reference architecture must also be aimed to guide the development, standardization and evolution of concrete software architectures for new systems and related integration.

This reference architecture will address and provide solutions to recurring issues such as network failure, High service availability, Error handling and Recovery, Canonical Schema to streamline multiple message formats and more importantly should address tracking of events and associated data for potential business analytics purpose.

Aspire designed an Aspire Unified Reference Architecture Solution (AURAS) to effectively address the said challenges seamlessly by means of a prebuilt retail integration solution. AURAS provides the platform to effectively address the Omnichannel challenges and helps the retailers focus on key business areas. This solution is designed to address the content delivery challenges, data integrity, consolidation, multi system connections, standards, inbuilt analytics engine and reports with scalable architecture to handle any volume, fault tolerance, assured message delivery via message broker and seamless integration with PoS and other Omni-Channel platform.

The following are the values driven by AURAS Retail Integration Platform:

**Unified Architecture**
AURAS is a truly unified architecture approach that combines the best of breed technologies from SOA, ESB, Messaging, API, Monitoring, Analytics, Cloud and the futuristic device interfacing. A single architecture platform for today and tomorrow’s demands.

**Pre-Built Framework**
AURAS Retail Platform solution comes with prebuilt components and services for application integration, Omni-Channel Integration (Stores, eCommerce and Marketplace).
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<th><strong>SOA Approach</strong></th>
<th>AURAS platform is a layer based SOA approach enhances the service re-usability and faster time-to-market. This ensures lower TCO and higher ROI realization at an early stage.</th>
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<td><strong>Data Driven Architecture</strong></td>
<td>AURAS is truly a Data Driven Architecture to support customization and enhancement for various needs. The entire platform is built on top of metadata repository where all functional and technical artifacts are persisted.</td>
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<td><strong>100% Availability of the Platform</strong></td>
<td>Any configuration changes or addition can be achieved with just an update in specific record without shutting down the environment. This ensures 100% availability of the platform 24 x 7 x 365.</td>
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<td><strong>National Retail Federation</strong></td>
<td>AURAS Retail Platform’s data exchange and messaging models are built based on NRF (National Retail Federation) ARTS XML Schema and Data models.</td>
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<td><strong>Plug-and-Play Approach</strong></td>
<td>AURAS platform can support any retail business operations (either apparels, restaurant or grocery) without major division. Any ARTS supported application systems (ex: Oracle Retail) can be integrated as a plug-and-play approach.</td>
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<td><strong>Faster Implementation Cycle</strong></td>
<td>AURAS Implementation process includes pre-defined documentation templates, implementation process, iterative methodology, service registry and technofunctional expertise that will help to accelerate the implementation cycle up to 70%</td>
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Aspire Systems is a global technology services firm committed to serve global enterprises to establish their visionary enterprise IT and operations. We are passionate about ‘Enterprise Solutions’ - our approach of creating modern IT that helps to establish solid business value through technologies.

For more information about our Enterprise Integration and Information Management offerings please reach us auras@aspireys.com