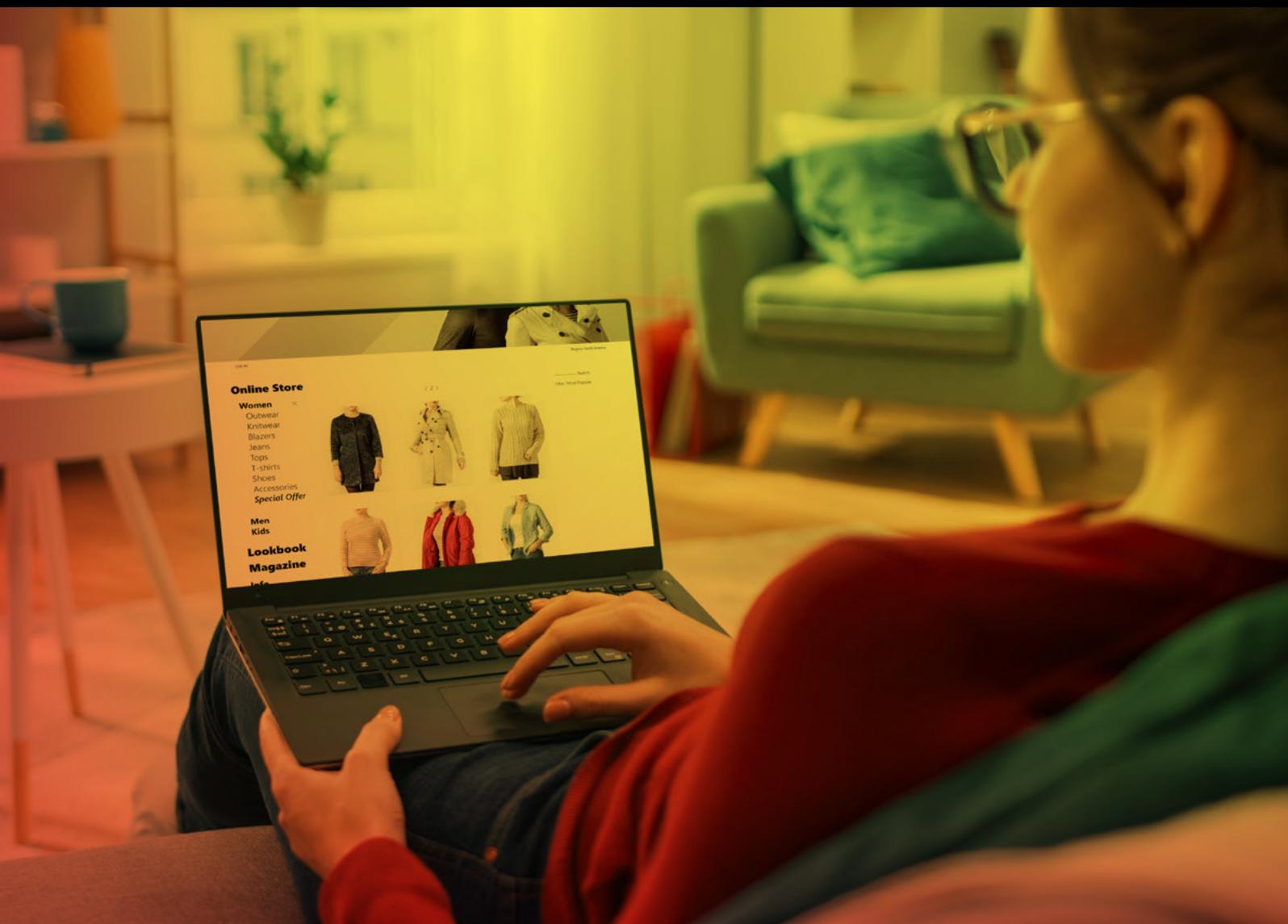


Intelligent, modern digital commerce has to be a lot more than headless



Abstract

Many enterprises today seek to be more agile and innovate faster than currently when they struggle with legacy, monolithic commerce platforms. As COVID accelerates digital adoption, businesses are looking for intelligent, evolving and composable commerce to modernize modularly, compose multiple best-of-breed technology solutions, products, and capabilities to deliver more personalized and curated experiences to individual customer needs.

Customers today demand engaging experience and personalized interaction. With the evolving market dynamics and demands of customers, enterprises are foraying into new business models (B2C, B2B, D2C, marketplace) and geographies, as a logical extension of their current digital commerce capabilities.

As trends in ecommerce modernization seed a new generation of commerce and content-driven solutions, just moving to “headless commerce” alone may not be enough. When evaluating options for digital transformation, enterprises need to take into consideration some key components to drive future capabilities. Composing these components together in a modern commerce architecture will help business and digital commerce teams to realize the agility and flexibility needed for success.

Headless commerce vs intelligent modern commerce architecture

Headless commerce can be described as the separation of the front-end presentation layer and the back-end commerce functionality of an ecommerce application (Figure 1). Though this approach is not new to enterprises, it has gained significant momentum of late, becoming a major focus for ecommerce organizations.¹ Decoupling the front-end from the back-end will make it easier for enterprises to have an experience-driven commerce site and give front-end teams more control for rapid deployments to keep experiences fresh.

^[1] <https://www.yottaa.com/resources/2020-ecommerce-leaders-survey>

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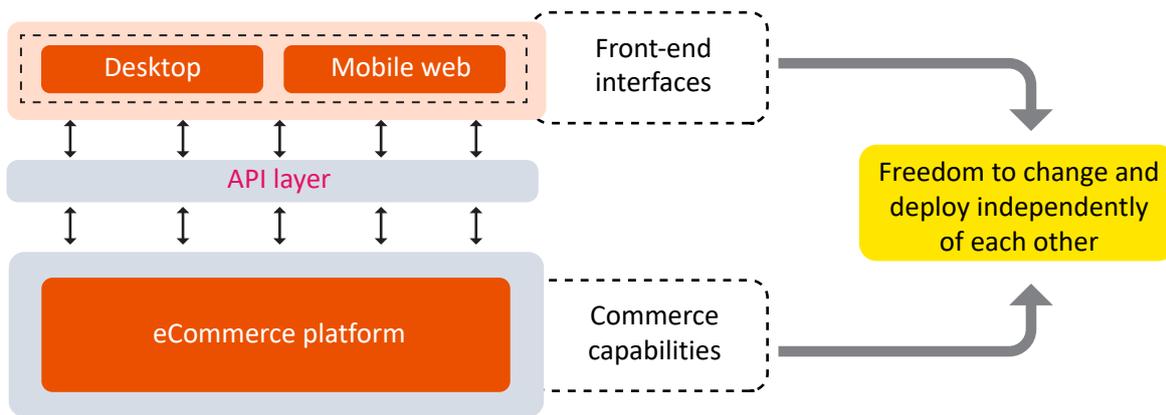


Figure 1 - Headless commerce architecture

Intelligent commerce architecture: Moving beyond headless

However, this headless separation alone does not ensure the full benefits of flexibility and agility that an intelligent modern commerce architecture provides. A modern commerce architecture comes with a modular mobile-first front-end, microservices-based composable commerce services, open API-based design, and cloud-first approach with easily expandable partner ecosystem.

Modern commerce architectures—iMACH (intelligent, micro-services-based, API-first, cloud native, headless) are becoming inherently intelligent, composable with elastic scalability providing flexible business controls and enabling autonomous operations.

Many successful retailers have infused intelligence to the digital commerce platform leveraging AI-ML to differentiate themselves from competition. IKEA, for example, uses AI engine that provides personalized and real-time recommendations to customers, helping the business improve the AOV (average order value) by over 2% and click-through rate by over 30%. Similarly, Tommy Hilfiger and Burberry use AI-ML-powered smart chatbots to help customers discover new collections, complete the look, and suggest similar products.

Key components of an intelligent, modern commerce architecture

There are five key components of a modern commerce architecture. (Figure 2)

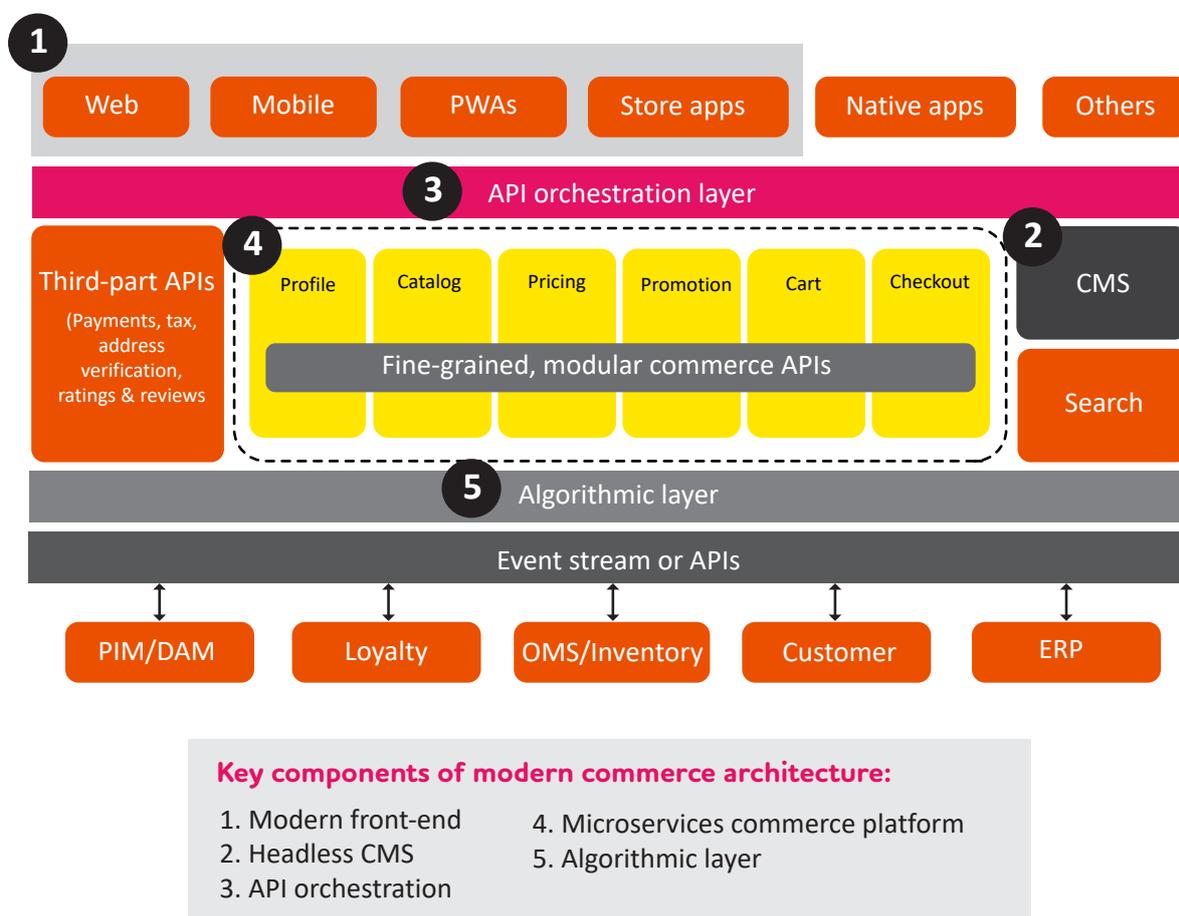


Figure 2 – Intelligent, modern commerce architecture

1. Modern front-end

There is a fundamental shift happening in modern front-ends, considering the evolving business and developer needs. The front-end solutions in modern architectures have evolved from being based on development frameworks like React or Angular.js to leveraging digital experience platform (DXP) or adopting low-code- or no-code-based modern storefront solution to dynamically create and manage the front-end experience.

Enterprises want to dynamically assemble, personalize, and effortlessly orchestrate the front-end user experience. Modern front-end will evolve into a gallery of loosely coupled, reusable, independent components to provide agility for enterprises. The global mobile commerce (mCommerce) market accelerated by COVID (\$628 billion in 2020) is expected to grow at a CAGR of 34% between 2021-26². Enterprises are increasingly adopting PWAs (progressive web apps) that will provide native app capability with the reach of web and enable offline mobile experience to end-customers. Studies prove that PWAs have 36% higher conversion rate than native mobile application³.

^[2] <https://www.businesswire.com/news/home/20210907005436/en/>

^[3] <https://www.beezer.com/important-pwa-statistics/>

Individual product teams can now choose the right front-end technologies to create differentiated experience, leveraging heterogeneous, modern technology stack by adopting industry-leading SecDevops practices. Developers are now responsible for ensuring that the front-end is highly performant, secure, responsive, and gets the top Google page score. The future front-end will be ingrained with aspects of SEO, SEM, usability, and accessibility needs.

2. Headless CMS

Headless CMS (content management system) decouples content from the structure or style in which it's displayed, provides content as a service with API-first design to orchestrate and provide curated user experience based on the channel or end-user device.

Headless CMS helps enterprises decouple content from the delivery layer. But, with the advent of many unstructured contents across the customer shopping experience, enterprises will start adopting a hybrid headless approach to manage and deliver unstructured content. Enterprises are also fundamentally looking at intelligent CMS with built-in personalization capabilities, auto-tagging and easily customizable workflows.

As headless CMS evolves, developers demand robust controls to author, preview and publish content. The CMS' evolution will provide developers the capability to not just control content but also easily compose SPA (single page application) layouts and automatically suggest the placement of contents.

3. Modular microservices commerce platform

Traditional headless architecture can still use legacy monolithic ecommerce platforms, and most providers of these platforms offer "headless" versions today. However, for teams to develop and independently deploy new capabilities quickly the backend commerce platform has to be modernized modularly with microservices.

Until a few years back, the only option for enterprises that wanted this type of platform was to embark on a custom solution. But new products now offer microservices-based ecommerce platforms as a SaaS with cloud-native services, making it easier for enterprises to deploy independently and realize the true benefits of microservices by providing business agility.

Though microservices provide modularity and improve time to market, growing business needs will ultimately result in the evolution of microservices into FaaS (function as a service)-based model. Enterprises' demands for intelligent commerce platforms will lead to the evolution of intelligent microservices with in-memory computing and run-time analytical capabilities.

With a large number of developers across different enterprises working on creating microservices for specific needs, the future will evolve into a centralized and standardized microservices sharing economy, giving rise to a new service model – MaaS (microservices as a service).

4. APIs-driven customer experience orchestration

APIs are at the core of modern commerce architecture. These open APIs provide enterprises with autonomy to design, orchestrate and curate personalized customer experience journeys. These flexible and open APIs also enable easy integration of third party solutions with core platform capabilities. This allows enterprises to easily build ecosystems of business partners for delivering differentiated customer propositions.

As enterprises strive to be more proactive and infuse automation into their customer engagement strategies, the next generation of APIs will evolve to be more intelligent and capable of making decisions on behalf of the customer. With the advent of OpenAPI Initiative (OAI), APIs of the future will be standardized and become programming language-agnostic.

Evolving developer API marketplace will enable creation of an eco-system of APIs through collaboration and provide enterprises the ability to select, assemble and launch APIs for specific needs, enabling faster time to market. Increasing business needs and complexities is increasing the number of APIs. In future, APIs will also require governance at scale. API metering and monetization of these APIs with comprehensive analytics and monitoring tools to track consumption, usage, and security will be the next big focus area for enterprises.

5. Algorithmic layer

The brain of the modern digital platforms, algo layer, delivers the intelligence required to provide customer-centric experiences and enable autonomous operations. This embedded intelligence layer consists of AI-ML models, cognitive services, data science, and decision engines that consume underlying data and information, detect anomalies, create meaningful and actionable real-time insights from multiple applications and services, and deliver personalized engagements for every customer. Modern platforms also provide business users with intelligent dashboards with co-related insights that help them in pro-active decision-making.

Enterprises will invest and research largely in perfecting this algorithmic layer as they look for the right insights to create a differentiated proposition. The adoption of digital twin, as a digital replica of real-time customer, will take center stage as enterprise intelligence evolves to ensure customer engagement is right every time. Sainsbury's, for example, have developed a virtual queuing app that lets customers remotely select and monitor their position in a line at a store, without being physically present, to stay safe and shop conveniently in the time of the pandemic.

Stitching it all together

The transformation from a monolithic ecommerce platform to a modern architecture is the future of digital commerce. It will allow enterprises drive innovation; engage intelligently and relevantly and create exceptional digital experiences for customers; and scale their business with partner ecosystem.

This transformation is not just a technology change, it will involve shifts in business processes, vendor relationships, enterprise resource skills, capabilities, and team compositions. Selecting the right technologies, solutions, and partners is the key to success in this change. New solutions weave one or more of the key components (Figure 2) together, reducing the complexities and risks of working in multi-vendor and multi-cloud environments while still providing the benefits of a modern architecture and microservices-based applications.

These end-to-end modern digital commerce solutions will make the overall transformation process for enterprises faster, less costly, and easier to manage. They will also provide business agility and extreme flexibility at all layers for enterprises to deliver at speed and scale, give them exclusive control and ownership of content and customer data that will help to orchestrate personalized digital experiences.

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Balaji Raghavan is a digital transformation leader with over 23 years of industry experience. An innovation and technology evangelist, he has worked with leading retailers and global enterprises to drive digital-led growth and transformation and helped them to progressively move up the digital maturity curve through modern digital architecture.

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Awards and accolades



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