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IDC TECHNOLOGY SPOTLIGHT

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The COVID-19 pandemic has sped up the pace of change in digital commerce with more B2C and B2B customers going online to transact. Successful enterprises must adopt new approaches, such as cloud-native technology, to meet rapidly changing customer expectations.

Powering Agile Commerce Experiences with Cloud-Native Architecture

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Introduction

In today's fast-moving digital economy, B2C and B2B organizations need to deliver great commerce experiences to their customers. Customers are now are in the driver's seat, dictating how businesses must shift to earn consumer trust and dollars. Tech-savvy customers — because of their experiences in the mobile world — are used to instant gratification. As a result, B2C and B2B organizations must become as agile as their customers.

Typically, commerce evolves at a steady pace as new technology and buyer expectations come to the forefront. But the COVID-19 pandemic has drastically accelerated the adoption of ecommerce by B2C and B2B buyers, demanding that merchants move even faster to manage customers across their entire journey. But the digital commerce market has also become commoditized: Most enterprises have similar looking online stores for browsing, to display products, and for checkout. Thus, sellers must double down on their key areas of differentiation as well as express that differentiation through their online store(s) and support it throughout their entire organization.

AT A GLANCE

WHAT'S IMPORTANT

- What makes cloud-native applications unique is their distributed and scalable architectures, which can adapt more quickly to a constantly changing environment.
- Cloud-native applications provide merchants with technology agility, which affords them business agility in turn.
- Perhaps the greatest benefit that cloud-native systems afford merchants is the ability to rapidly innovate.

In this fast-paced environment, cloud-enabled and software-as-a-service (SaaS) digital commerce applications have come to the forefront in the digital commerce space, seen as a solution for merchants making the leap across the digital transformation chasm. But the old paradigm for cloud has worn out its welcome. Legacy applications that have been "lifted and shifted" to the cloud lack the agility, performance, and ease of use that merchants need, while hosted SaaS applications lack customizability and control.

Cloud-native digital commerce, where the technology stack has been containerized and optimized to work across any cloud environment, has arisen as a strong choice for merchants looking to future proof their digital commerce operations. This IDC Technology Spotlight delves into the merits of a cloud-native architecture for digital commerce and why HCL Technologies is betting big on this technology for the future of commerce.

Defining Cloud-Native Commerce

Most technology fields, including digital commerce, have been revolutionized by the introduction of cloud computing over two decades ago. Cloud provides merchants with obvious benefits, such as not needing to invest in infrastructure or maintenance, more scalability, and a shift toward opex over capex. Over this time, the underlying technology powering the cloud has seen enormous improvements. One of these changes started at the bottom of the stack, where infrastructure-as-a-service (IaaS) providers such as Amazon Web Services (AWS), Microsoft Azure, and Google Cloud Platform (GCP) have made it easier for their customers to leverage distributed computing across geographies and even across different providers.

Similarly, containerization has enabled software providers to develop distributed and scalable architectures that can work across any cloud infrastructure. APIs, at the foundation of modern, cloud-native applications, also afford interoperability, so commerce systems better integrate with other critical front- and back-office systems. This is the thesis of cloud-native commerce, which is software that is purpose built to leverage cloud technology while providing merchants control of where and how they run their stores. Table 1 compares three of the most common cloud architectures, including cloud native.

TABLE 1: ***Comparison of the Most Common Cloud Deployment Types in Digital Commerce***

	Managed Single Tenant	(Traditional) Hosted Multitenant SaaS	Cloud-Native Single Tenant
Definition	The software provider has agreements with specific IaaS providers so that customers do not need to manage hosting. Each customer has its own instance.	The software has a modern architecture by being completely containerized and optimized for various IaaS. It can be run on distributed clouds.	The software is a service that is hosted and completely managed by the software provider. Every customer is on the same instance of the software, and the interface is completely self-service.
Customizability	Customers can highly customize the application. The vendor typically provides guidelines for nonbreaking customizations to simplify updates.	Customers can configure — but cannot customize — interfaces, reports, and workflows.	Customers can highly customize the application. The vendor typically provides guidelines for nonbreaking customizations to simplify updates.
Data	Merchants own their data.	Merchants' data typically also belongs to the vendor.	Merchants owns their data.
Portability	The customer can move the application, but only to other IaaS providers pre-approved by the software vendor.	The application is typically aligned with a single IaaS provider and cannot be easily moved.	The customer can deploy the service across different environments, including hybrid and multicloud.
Updates	Customers have the flexibility to consume product updates when they want.	Updates are pushed to clients automatically on a cadence decided by the software provider.	Customers have the flexibility to consume product updates when they want.

Performance	Performance limitations are determined by software providers and their agreement with the IaaS vendor.	Performance and scalability limitations are determined by the software provider. Some providers have limits on compute and/or API calls.	This cloud model is infinitely scalable on the back end. Performance limitations are dependent on the software provider.
Value Proposition	Customers are afforded flexibility but can offload hosting responsibilities on their software provider.	The software provider should handle the technology so that customers can focus on the business. This model typically offers lower costs and complexity.	The technology stack should be optimized for each customer. Containerization provides agility, resiliency, and velocity to make changes.

Source: IDC, 2021

Clearly, merchants have a very wide choice of cloud deployment options, with varying pros and cons. The cloud-native deployment type stands out as a modern option for merchants that highly value end-to-end control of their technology stack, including control over the data, deployment location, DevOps process, and customization and extensibility as well as when innovation is deployed. It is also ideal for merchants that want to benefit from the latest and greatest innovations of IaaS providers, among other reasons.

"Cloud native" refers to how applications are built and run using the cloud as a delivery mechanism. As the name implies, cloud-native applications have been purpose built for the cloud, allowing them to derive more value from cloud infrastructure than they could otherwise. What separates cloud native from simply cloud enabled is the underlying approach to creating applications. Cloud-native applications benefit from underlying IaaS services — such as artificial intelligence baked into AWS, Azure, or GCP — as opposed to datacenter solutions that are modified for the cloud environment. What makes cloud-native applications unique is their distributed and scalable architectures, which can adapt more quickly to a constantly changing environment.

Cloud-native applications are possible thanks to containerization. Unlike virtual machines used by cloud-enabled applications, which run a full operating system, containers are able to run separate instances of an application in a shared operating system. This means less overhead and faster processing. In addition, containerization takes less time to add components/users/customers than in multitenant SaaS solutions.

Essentially, the cloud-native approach is a manifestation of the concept that enterprises should select the cloud option that fits their organization's needs, priorities, and goals and not be force-fed an approach. Cloud-native applications also cut down on the time to market for merchants to deploy or update their system, making a product update as simple as doing a build. Merchants should care about cloud native because in the digital economy, where technology success is a prerequisite to business success, cloud-native applications earn merchants the agility necessary to deliver business success.

Challenges for Online Merchants

B2C and B2B enterprises face many challenges navigating the current digital commerce platform market among hosted multitenant SaaS and managed single-tenant applications, including:

- **Slow time to market.** It is more important than ever for merchants to be able to implement their commerce platform, and spin up additional stores, to react to market changes and expand across geographies. It is difficult with many of the platforms on the market right now.
- **Data ownership.** This challenge is primarily seen with multitenant SaaS platforms, where merchants' sales data is commonly anonymized, aggregated with other merchants' data, and shared publicly.
- **Being unique.** There is a fundamental inability to quickly customize deeply on SaaS, making it more difficult for merchants to stand out from their competition and win based on the customer experience.
- **Performance limitations.** Poor store performance, such as long load times and outages, can ruin the customer experience. Merchants struggle handling peak demand with some commerce platforms not designed to ramp up cloud workloads elastically to handle massive transaction volumes.
- **Control.** While "as a service" is a great way to offload the tasks of implementing updates, the service provider determines the timing, not the merchant.
- **Upgrades.** Upgrades still need to be "downloaded" and installed manually in many single-tenant platforms, creating a lack of automation.

The Benefits of a Cloud-Native Approach

In addition to the previously mentioned characteristics, online merchants we have interviewed have seen the following benefits from using cloud-native digital commerce applications:

- **Agility.** Cloud-native applications provide merchants with technology agility, which affords them business agility in turn. For example, merchants can rapidly spin up curbside pickup. Processes can be automated and added as needed, enabling businesses to quickly make and implement smarter commerce decisions. New services can be added, and containerization minimizes the need to add infrastructure. APIs are key to facilitating this agility because they enable the flow of data between outside systems and commerce services.
- **Differentiation.** As opposed to other cloud delivery models, such as multitenant SaaS, cloud-native commerce applications enable enterprises to differentiate at their own pace and not the pace of everyone else. While merchants should look to their digital commerce platform provider to provide them with a strong foundation to succeed, merchants should actively consider how to customize the platform to act as the face of the brand and a competitive differentiator.
- **Scalability.** Merchants rely on their commerce platforms to perform flawlessly during peak traffic times; this has been especially true during the COVID-19 pandemic, when many merchants have seen Black Friday–like traffic every day. The open source Kubernetes platform for managing containers enables merchants to process massive amounts of traffic by shifting lower overhead and faster containers to where they are needed most.

- **Portability.** Cloud-native commerce applications enable businesses to easily move their applications to different cloud environments. The technology enables complete ownership of an application and associated data combined with the ability to deploy commerce on an IaaS that works best for each service, including hybrid cloud deployments across multiple providers.
- **Velocity.** Perhaps the greatest benefit to enterprises in today's changing digital commerce world is the ability to rapidly innovate. Cloud-native platforms make it easier for businesses to create or purchase new innovative features to drive growth. New services can be snapped into the architecture quickly, giving a potential edge to enterprises as they strive not only to meet but also to stay ahead of the needs of their customers.

Trends Driving Cloud-Native Commerce

What has taken many enterprises by surprise in their shift to digital is the rate at which their markets and customers change. For example, U.S. Census data shows that the rate of growth of retail digital commerce is about three times faster than the rate of growth of the U.S. retail market as a whole. This trend is even more apparent on the B2B commerce side. But market growth is only one part of the story; companies must constantly find ways to reach, educate, service, and even entertain potential customers in a digital world. Some of the major trends that we believe will shape the digital commerce application market over the next 36 months are as follows:

- **Channel explosion and headless commerce.** The number of digital channels where commerce happens is growing quickly, with branded sites, marketplaces, IoT, voice commerce, and social media becoming part of the mix. Demand for both B2C and B2B fluctuates, and customers rush to wherever there is supply. When consumer-to-consumer models of commerce are added, the equation becomes even more complex. As a result, the use of headless (API-first) commerce is emerging to meet changing needs. Headless digital commerce decouples the customer-facing front end from the seller back end, enabling more flexibility in matching supply from multiple sources to changing demand driven by a mobile customer base.
- **B2B and B2C integration.** Whether they are manufacturers going direct to consumer or merchants with multiple brands and business models, more businesses than ever before are looking to stand up ecommerce stores that support both B2C and B2B commerce. Thus, merchants we speak to have increasingly sought out digital commerce platform providers that support both on a single instance. In fact, IDC's 2020 *SaaSPath Survey* found that digital commerce application users consider "B2C and B2B integration" the number 1 priority.
- **Business services.** Increasingly, applications are being architected with microservices, a modern approach to development in which the application is constructed from a collection of small, independently deployable services. These microservices can be written in different languages, have their own databases, work regardless of business model, run their own processes, and easily communicate with each other. Technology giants such as Amazon, Netflix, and Google leverage these architectures, which enable more granular updates, more resilience, and more modular systems for customers. That said, merchants should rarely consume microservices directly because they can quickly become unwieldly/complex with dependencies; only organizations that have a "build it versus buy it" culture are advised to do so.

HCL Reinvents Its Commerce Platform to Be Cloud Native

HCL Technologies is a publicly held provider of IT services and customer experience solutions based in Noida, India. With operations worldwide, the company has more than 150,000 employees. In July 2019, HCL acquired all of IBM's digital commerce software products, including WebSphere Commerce. The acquisition came with many former IBM employees who are experts in commerce and a long list of customers, many of which are leaders in B2B and B2C. Following the acquisition and rebranding to HCL Commerce, the team has heavily invested time and resources to modernize the product by breaking it down into smaller business services and has rewritten the product from the ground up, in containers, to be cloud native. HCL has a long history of supporting both B2C and B2B organizations with digital commerce software and services.

HCL Commerce features containerized business services that can be utilized in a wide range of environments and cloud implementations, enabling merchants to leverage a cloud-native architecture for their entire commerce platform. With this approach, HCL can provide flexible digital commerce solutions that are easily implemented, updated, and scaled to meet the needs of both B2B and B2C businesses in existing and new markets. To support HCL Commerce, the company offers a catalog of premade cloud-native services that streamline the process of creating digital commerce solutions.

In its efforts to modernize the digital commerce platform, HCL has placed a high priority on simplicity for business users and developers. HCL SoFy, or Solution Factory, gives all HCL Commerce customers access to a catalog of services they can run to power commerce. HCL SoFy is built to support business user personas, providing business-user tooling so nonprogrammers can stand up a store without getting a developer involved. The intention of this approach is to provide some of the ease of use that is most associated with multitenant SaaS applications, but with the power and flexibility of cloud native.

HCL and Google Team Up to Unlock Greater Value from Cloud-Native Digital Commerce

To build a cloud-native commerce system that leverages the latest and greatest technologies, HCL has established a deep strategic partnership with Google. Google Cloud is the preferred cloud platform for HCL Commerce as well as other HCL software offerings. While HCL Commerce's cloud-native architecture ensures that customers will always be able to deploy the application anywhere, HCL is working closely with Google to offer HCL customers the following benefits:

- **Modern application management.** Google Anthos enables customers to write workloads once and run them anywhere using Kubernetes.
- **Enterprise-grade infrastructure.** Google Cloud's built-in globalization, security, and elasticity allow customers to expand and stay online at all times, including during periods of peak traffic.
- **AI to power intelligence commerce.** HCL Commerce leverages various Google Cloud services such as Google Voice Assistance and Google IoT to enable experiences that go beyond the webstore.
- **Google Analytics 360.** These tools are used to enable enterprise commerce analytics.
- **Google APIs.** These application programming interfaces are used to help developers innovate the customer experience.

Challenges

Cloud-native technology platforms such as HCL Commerce face the following challenges in the digital commerce platform market:

- **Cultural friction.** For merchants, the shift to cloud-native digital commerce systems is often more challenging from a cultural perspective than a technological perspective. Thus, cloud-native digital commerce vendors may face cultural friction among merchants whose users are used to managing single-tenant and multitenant SaaS offerings. To overcome this challenge, cloud-native digital commerce vendors, such as HCL, must remind merchants that their business success is reliant on their ability to differentiate and act with agility.
- **Multitenant SaaS messaging.** While the digital commerce market continues to evolve, there is still a strong market narrative in support of multitenant SaaS, with some merchants looking specifically for multitenancy during their vendor selection process. It is critical that cloud-native vendors continue to be a leading advocate for cloud-native solutions and help customers with any confusion caused by multitenant SaaS marketing messages.
- **Fierce competition.** Because the whole world of commerce is becoming digital, there are numerous incumbents and market entrants in the digital commerce platform space. IDC tracks over 100 digital commerce platform providers in total. To beat out the noise, cloud-native vendors such as HCL need to look to differentiate their messaging and base product decisions to help customers above all else.

Businesses should care about cloud native because in the digital economy, technology success is a prerequisite to business success.

Conclusion

IDC anticipates that the shift toward digital commerce will only continue in the decade to come, meaning that organizations of all sizes and across every industry must evaluate their digital strategy. To win customers of the future, all merchants need to ensure that they have a digital commerce technology stack that is future proof and supports innovation. Seamless mobile experiences, new shopping channels, and innovative commerce partnerships will define the future of digital commerce. To satisfy these requirements, adapt to future market changes, and differentiate themselves in the market, merchants should prioritize agility, velocity, and ability. IDC recommends that enterprises look at the next generation of digital commerce solutions based on cloud-native architectures, such as HCL Commerce.

About the Analyst

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Jordan Jewell is a Research Manager for IDC's Enterprise Applications and Digital Commerce team and leads IDC's Digital Commerce research practice. In this role, he leads research initiatives addressing both B2B and B2C digital commerce platforms, digital marketplaces, order management software, and adjacent technologies that facilitate online commerce. Jordan joined IDC in 2015.

MESSAGE FROM THE SPONSOR

The path to cloud native is a journey, both for HCL and for our clients. When we started this journey with HCL Commerce, we didn't fully realize the potential that cloud native delivers. It was only when clients started sharing stories of TikTok campaigns generating 4 million website hits in an hour without any issues; or clients updating the customer experience during peak traffic with no interruption of service; or a Fortune 100 client talking about their new-found agility driving everything digital, that we fully understood the value cloud native brings. For HCL, our cloud-native journey continues, and we are enjoying being at the leading edge of technology and making a difference to our clients at a time when digital is more important than ever.

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