



# Microsoft Azure, eCommerce, and the Digital Experience:

## A Short Guide



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Retailers are racing to cater to digitally savvy customers, and their IT departments are tasked with providing better digital experiences in order to convert: personalized offers, end-to-end shopping experiences, IoT integration, better mobile experiences, etc. However, IT teams need to remove the hurdle of clearing the backlog of modernization projects to match the sophistication of modern consumers.

Cloud computing is the best way for a retailer to upgrade its technology without busting its budget. Public cloud is already used by 89% of companies, according to recent surveys, and adoption will only expand in 2018-2019.



But retailers are faced with a real challenge: How do you integrate legacy IT systems and new cloud-based products? How do you decide whether to rebuild your app, buy a SaaS solution, or just lift-and-shift to the cloud? And finally, how can you create a 360 degree view of a customer if every data point is locked away in a different SaaS dashboard or legacy system? In this short guide, we'll give you an overview of these key considerations so that you can begin or grow your public cloud adoption.

## Getting Started: Why Public Cloud for Retail?

### Scale

Retailers use only about 10-15% of the computer capacity in their datacenters. This is standard practice for companies that must plan for scale months in advance to meet the highest possible capacity (usually holiday season), since IT takes several weeks or months to build new capacity.

This makes public cloud's "pay-as-you-go" model especially appealing for eCommerce websites. IT can build out a foundational cloud environment that automatically scales up to meet increased demand ("autoscaling") and scales back in off-peak times to save costs.

### Agility

But cost isn't the only factor; most companies rank "agility" as the top reason they're moving to the public cloud. [At a time when every company is a tech company](#), retailers are paying more attention to digital experiences in order to attract and keep customers. That means building more applications that leverage customer data intelligently, and building those apps more quickly. A platform like Microsoft Azure allows retailers to grow their software engineering teams while giving those teams the tools they need to quickly launch and test applications -- all without having to worry about managing IT infrastructure.

## Data Analytics

Public cloud platforms like Microsoft Azure also provide ready-to-go services like [Azure Stream Analytics](#) that integrates with Power BI to help retailers turn customer data into real-time intelligence. We explore data analytics in more detail below.

While Microsoft Azure provides a significant opportunity for retailers, it provides what is perhaps an even greater opportunity for the SaaS companies that service retailers. Retailers are looking more than ever to SaaS companies that provide POS, ERP, and other key systems to integrate analytics, effectively measure customer feedback, and provide them with higher value. SaaS platforms like [Worldsmart](#) or [Neal Analytics](#) that can come to market first with more scalable, cloud-based products will win significant market share.

## Choosing the Right Cloud Platform for Omnichannel Retail

All retailers want to understand their customers so that they can feature the right products to maximize sales and increase conversion rates. In today's increasingly digital world, this means:

- Mapping the entire customer journey (even the hard-to-track parts, ex. what people try on in store)
- Connecting online and offline selling (same discounts, same products, same look and feel in both store and eCommerce website)
- Marketing products that you know your customer wants (tracking activity both on your own channels and other channels)

Over 70% of retail marketers believe a strong [omnichannel retailing strategy](#) is critical or very important to their organizations, only 35% of retailers currently have an omnichannel strategy. The roadblocks? Retailers listed cost as a number one challenge, followed closely by IT staffing issues and integration of IT silos.

## SaaS vs. IaaS

The truth is that neither SaaS nor IaaS is an easy answer to integration issues. SaaS is undoubtedly the most painless way to modernize specific parts of your IT stack and abandon legacy IT systems. This is an appealing solution to many retailers; according to [Forrester Research](#), eCommerce software spending doubled from 2010 to 2014, and will nearly double again by 2019.

On the surface, SaaS promises greater agility by bypassing traditional IT slow-downs and complex system requirements. And this can be true in many cases. But for mid-sized and large retailers with significant IT staff and legacy IT systems, SaaS can present some data interoperability challenges. Retailers often abandon SaaS projects when they realized that in order to have systems talk to each other, every system would need to be SaaS or cloud-based. It is frequently too costly to modernize everything at once, so the promise of omnichannel, predictive analytics, and cross-departmental data is pushed off to the future.

Enterprises also worry that patching together dozens of SaaS products with middleware and fragile bridges will increase their risk of security breaches and the opportunity for human error. Today, the average retailer uses over 450 speciality applications, more than most other industries. This is not to say that the SaaS providers themselves do not follow security practices, but that getting data to and from the SaaS platform is fraught with opportunities for both human error and malicious attack. [A survey by Aberdeen group](#) found that a third of businesses have experienced SaaS data loss. This has led to the rise of “cloud access security brokers” who place themselves between cloud service consumers and SaaS products to enforce enterprise security policies. In the end, SaaS seems simple, but has its own layers of complexity and risk.

## Public Cloud and Data Interoperability

Every large retailer will answer these difficulties in different ways. In our experience, the largest retailers use a combination of every type of system (colo, SaaS, on-premise, private, public) based on line of business and project needs. But most of the retailers we work with have a long-term end-goal: majority public cloud connected to limited on-premise or colo systems, a.k.a. one of several definitions of a hybrid cloud.

Why public cloud and not another retail SaaS product? To meet business demands for agility without compromising customization and control. Enterprises want to see under the covers of retail cloud systems, and public cloud offers by far the greatest customization potential among public cloud providers. They want SaaS for non-differentiating services, like content management, but for mission-critical, revenue-generating products, they want the controlled availability and performance of IaaS.

This potential for customization actually makes it far easier to integrate with legacy IT systems than a SaaS product. Azure supports nearly every enterprise database and OS. The few enterprise systems that Azure does not support, like [Oracle RAC](#), can be hosted on-premise with secure data pathways to Azure.

When IaaS is working well, you have multiple systems in the same account with data streams that can flow seamlessly between Azure’s data processing tools, BI dashboards, and Azure PaaS services. The end-goal is a universe of systems all living on scalable, modifiable, reproducible infrastructure as if it were operating in your own datacenter. Retailers want infrastructure that not only supports an omnichannel and predictive analytics strategy, but an infrastructure platform that is continually innovating by providing easier and cheaper ways to process and distribute that data.

Also contrary to popular wisdom, the potential for premium service on IaaS is a big differentiator. While IaaS providers themselves offer little or no customer service, [the majority of enterprises](#) will work with an MSP or partner for IaaS, a model they are accustomed to that provides guaranteed SLAs and premium service. Many enterprises have procurement policies that reject software that does not come with a certain service levels.

## Big Data and Analytics on Azure

If you're looking to build a system that tracks consumer information across online and offline activity, Azure is ideal for ingesting, processing, and storing data.

The cloud allows you to connect in-store devices -- like POS devices or tablets that collect information on clothing that customers try on -- to unlimited, secure Blob Storage in Azure. Companies can then take that storage and perform analytics to inform buying and marketing decisions. Azure has built HDInsight, a fully managed cloud service that allows you to spin up clusters running Hadoop, Spark, Hive, and more. This means your team can get a production-scale data analytics service up and running on Azure in days, not months.

Microsoft recently launched Azure Stream Analytics (currently in Preview) to collect data from IoT devices in-store, and instantly perform analytics on that data that is displayed in a PowerBI dashboard. That's an exciting service for any company looking to implement IoT devices in retail stores. [Read Fabletics' case study to learn how they gather information from customers in-store to power mobile experiences.](#)

That said, many retailers choose to begin their analytics efforts by leveraging a SaaS platform that provides built-in tools for ingesting, processing, and displaying data. This can help prove the business case for analytics before the retailer builds their own system.

## Ideal Use Cases for Azure

When tackling a project of significant magnitude, the most challenging part is deciding where to get started. If you already have a project in mind for migration, this step is relatively simple; but if your infrastructure is spread across multiple data centers or multiple teams, without a unified set of metrics for assessing applications, it can be very difficult to identify the set of applications that are best suited for the first wave of migration.

Selecting the right applications for migration is both art and science. But here are a few of the most obvious places to get you started.

<p>.....</p> <h3>LOW-HANGING FRUIT WORKLOADS</h3> <ul style="list-style-type: none"><li>• Fewest dependencies</li><li>• Over-provisioned servers</li><li>• Applications on servers with wasted capacity</li></ul>	<p>.....</p> <h3>MORE CHALLENGING WORKLOADS</h3> <ul style="list-style-type: none"><li>• Large, "temperamental" legacy applications</li><li>• Applications that require low-latency connectivity to local file systems</li><li>• Purpose-built appliances like Oracle Exadata and IBM DataPower</li></ul>
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## Customer-Facing eCommerce Websites

A retailer's eCommerce portal is often one of its most mission-critical workloads. However, due to the highly variable, seasonal nature of most retailers' eCommerce businesses, migrating customer-facing websites to Azure makes a lot of sense.

eCommerce sites on Azure can scale faster and more reliably at peak times, and scale back during off hours to save retailers money. Short-term projects -- like a marketing microsite -- are especially cost-effective on Azure. [Read how Asos' eCommerce site, running on Azure, served 167 million requests on Black Friday](#)

*Tools to Investigate:* Microsoft Azure, Microsoft App Service, Content Delivery Network

## Dev/Test/Stage Environments

Running lower-level environments on the cloud can enable developers to deploy faster and more frequently. Azure TestDev Labs allows you to create multiple instance templates, then put them in a self-service catalog for developers to easily launch and test. Azure TestDev also integrates with popular CI tools.

*Tools to Investigate:* Azure TestDev Labs, Visual Studio Team Services, Azure Container Service

## Back-end Microservices

Back-end services like search and image lookup can be called by APIs that communicate with customer-facing applications, and when these independent "microservices" are built in the cloud, they can be deployed in any combination for any application. Advanced users may even explore [Azure Functions](#), a serverless tool that could potentially be used to build an entire application back-end.

*Tools to Investigate:* Azure Functions, Azure Container Service

## Consumer Analytics

As discussed above, if you're looking to build a new analytics service, Azure is the obvious choice. Building applications that require extensive data storage and analytics on-premises is often both logistically difficult and prohibitively expensive. With Azure, you don't need to make a large upfront investment in time and money to build out a new datacenter.

*Tools to Investigate:* Azure Stream Analytics, Azure Machine Learning, HDInsights

## The Future of Retail and Cloud

Retail has a legacy IT problem that requires a long-term approach. Experts will continue to debate IaaS, SaaS, and PaaS, and enterprises will continue to adopt all three, intelligently, for different purposes.

When enterprises want these cloud systems to talk to each other, they will encounter significant challenges and in the process, become more educated and discriminating about what they want from the cloud. As the cloud conversation matures, expect more Azure adoption as companies see software and analytics as the foundation of a successful customer experience.

## About Logicworks

Logicworks has been helping customers achieve IT operational excellence and cloud compliance for over 25 years. Our innovative platform, dedicated certified engineers, and decades of traditional IT experience combine to enable our customers' success across every stage of the cloud journey. To learn more about Logicworks, visit [www.logicworks.com](http://www.logicworks.com).

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