

# Considerations for Using Cloud Technology in Retail Environments

In this Mindshare, experts from Microsoft and Diebold Nixdorf will take a closer look at the role of the cloud now and in the future. They will also discuss the key considerations to use when evaluating cloud technologies, and the associated risks and benefits of bringing your retail operations to the cloud.



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## WHERE DO YOU SEE THE BIGGEST GROWTH OPPORTUNITIES FOR RETAILERS AS PART OF THEIR DIGITAL TRANSFORMATION?

The last 18 months have seen widespread workforce disruption across the retail industry, with companies mobilizing resources to protect their people while continuing to deliver excellent customer service and business continuity. Throughout this period, business leaders have embraced technology to rapidly evolve the retail environment, boosting workforce productivity through uncertain times. With shoppers returning to the stores, retail investments are flowing to omnichannel priorities.

Research conducted by The Economist shows that retailers saw the pace of, and investment in, digital transformation accelerate during the pandemic. Improving the customer experience was the biggest driver of digital transformation. Retailers are developing, acquiring, and utilizing in-store technologies that give shoppers a new level of convenience, a more personalized experience, and a more consistent offline and online experience.

While customer experience itself may mean different things to different retail segments, one thing is true for all retailers: today's customers seek relevance, convenience and instant fulfillment of their needs. That's why we see the store expanding both in role and responsibility and with online retail quickly becoming part of the core processes. This puts high demands on streamlining and improving omnichannel customer journeys—such as growing the efficiency of order fulfillment processes and effectiveness of personalized loyalty campaigns. Integration and linking of different channels and touchpoints have always been important but now become essential in solving the puzzle.

## WHAT IS YOUR TAKE ON CLOUD-NATIVE VS. "CLOUDIFIED" SOFTWARE SOLUTIONS?

The true innovation power of native cloud platforms is that they are designed to enable fully distributed and hybrid operational technology (OT) and information technology (IT) environment. The Microsoft Cloud platform is designed to be operated and secured consistently wherever the applications are run. The Microsoft cloud platform also comes with a large set of PaaS and SaaS services that enable quicker application development and innovation for our partner and customer ecosystem. Microsoft Cloud capabilities are designed with security and scalability built in, enabling partners and customers to benefit from scale, while simultaneously growing their pace of innovation.

Microsoft's focus on privacy and trust ensures that your customer data won't be monetized, and that your data is always your data to own.

Traditional software applications were often built as standalone, "siloed" solutions, and typically deployed "big bang" as there was no real alternative.

However, cloud computing has raised the bar. Non-functional requirements such as security, scalability, performance but also ease of deployment, upgradability and openness to use the POS software in a wider technology ecosystem are just as important as the functionalities provided. These non-functionals impact the core design of a software solution's architecture, and cannot be easily met by simply "cloudifying" your legacy software solutions. That's why I believe a cloud-native software solution—built from scratch—where these non-functional requirements have been architected correctly from the start while leveraging open cloud standards, is the right way forward if you want to reap the full benefits of cloud computing and cloud centric software.

## WHAT DOES THE CLOUD ARCHITECTURE FOR A "STORE OF THE FUTURE" LOOK LIKE?

The pace of innovation is increasing for retailers, driven by new customer demands. To meet this new reality, retailers need to adopt a hybrid approach of on-prem and cloud infrastructure. This "Intelligent Cloud and Edge" approach helps retailers modernize their applications and ensure their access to innovative capabilities while they prepare for the next generation of technologies.

The Store-of-the-Future (SOTF) will have a broader role compared to the traditional store we know today. The SOTF will be viewed as an asset contributing to the omnichannel customer experience and online-to-offline journey execution.

Continuous readiness to innovate requires native support for flexibility and openness, so retailers can rapidly innovate, expand and adjust customer and staff journeys.

From a software design perspective, this can be realized through highly modular software architecture based on microservices and an API-first design approach. And to complete the picture: the execution of some journeys requires a cloud setup combined with offline enablement. That means cloud-native software should also natively support hybrid deployment models involving Edge devices, so that the software can either run 100% in the cloud, 100% in the store, or in a mixed (hybrid) configuration.

## WHAT KEY CRITERIA RETAILERS SHOULD CONSIDER WHEN EMBARKING ON A TRANSFORMATION TO THE CLOUD?

To gain the long-term benefits from your cloud investments, you need to maximize the value of building on a common platform for your application and business process needs.

Your cloud platform of choice must support relevant industry standards and provide a broad partner ecosystem with solutions that add capabilities to your business.

By using an industry-leading cloud, you will also benefit from the common management, extensibility, and integration across all your applications that run on the same platform.

I already emphasized the importance of flexibility, openness and continuous evolution of journeys. In addition, being touchpoint and channel 'agnostic' to allow service reuse as much as possible and—enabled by cloud network-based centralization and software operations—simplification of the IT infrastructure while ensuring scalability, reliability and more efficient maintenance capabilities are important criteria as well. Last but not least, it is definitely recommended to include network topology flexibility, i.e. native offline operations support AND cloud-enabled centralization as evaluation criteria.

Retailers should also evaluate how they want to actually use their cloud solutions. This is directly related to operational efficiency. Do they want to manage and maintain these themselves, or do they prefer to solely pay for what they use by adopting an as-a-service model, thereby relying on the experience of specialized cloud teams and proven cloud infrastructures?

## WHAT ARE THE RISKS VS. REWARDS OF MOVING RETAIL OPERATIONS TO THE CLOUD?

When you start looking at deploying workloads to the cloud, there are new capabilities that come into play, such as the ability to scale out your resources depending on usage, utilization, and demand. Second to that is availability. It's more costly to build a highly-available infrastructure on-prems, than architecting a highly-available infrastructure in the cloud. Third is security and compliance. Within the cloud, we're always adding to our security infrastructure and toolsets to address current security threats on the global networks. Fourth is cost optimization, paying solely for the resources that you use.

Within a business cycle, you can scale resources or capacity up or down, depending on the demands of your business. The cloud also improves how dynamically you deploy and provision or de-provision resources. Lastly, there are also sustainability benefits. Data centers that host cloud services such as the Microsoft Cloud, work at such a scale that you benefit from decreasing your environmental impact.

There are benefits but also some risks involved when you bring mission critical operations to the cloud. Application availability and data security are often seen as risks, while speed of innovation, scalability, reduced IT costs and more effective collaboration are mentioned as benefits.

The risks can be mitigated by working with reliable technology providers who offer an end-to-end cloud solution and use proven technologies. Criteria to consider are: first, established data and network security policies in accordance with data privacy laws and latest certification and standards. Second, round-the-clock monitoring of the cloud environment to solve most issues before they even occur. Third, near real-time disaster recovery capabilities with fallback data centers in different geographic locations; and not to forget, experienced technical staff around the globe who can solve any issues, with a 24/7 accessible multi-lingual helpdesk. Also important is to work with vendors that offer highly elastic scaling and load balancing services, so that you do not need to worry about performance or data availability.

### THE TAKEAWAY

Laying the right foundation for digital transformation in retail is crucial for future success. Cloud technology helps drive innovations faster and in more flexible and scalable ways, while reducing IT spend. It promotes the collaboration between ecosystem partners, boosts workforce productivity and supports retailers in meeting their sustainability goals. Therefore, the time is now for retailers to look to the cloud and assess its possibilities for their customers and organization. [Explore our cloud platform approach and solutions here.](https://www.dieboldnixdorf.com/mindshare/retail)