Achieving Retail Agility

Is Cloud Computing the Answer?

By Bharat Popat and Jon Stine

It's safe to say that almost every senior retail executive wishes the IT organization could be more agile. Today's business climate demands that retailers quickly roll out new capabilities across stores and channels; create new, technology-driven processes in weeks, not years; and drive technology-based innovation throughout the entire company.

Given these challenges, is cloud computing the answer?

According to the Cisco® Internet Business Solutions Group (IBSG), the answer is "yes." Simply stated, cloud computing encompasses a combination of well-tested IT best practices that have high impact in terms of cost, speed, and agility. And while cloud is the subject of considerable publicity (and perhaps hype), it is already speeding time to market, accelerating innovation, lowering costs, and improving management for leading retailers. Cloud consists of the following best practices for the retail industry:

- **Virtualization** of data center and store computing resources to increase utilization.
- **Network-based architectures** that centralize IT resources, reduce costs, and serve mobile workers.
- **Sourcing** of computing services in pre-assembled stacks to speed delivery of new retail solutions.
- **Flexible payment models** to ease the burden of financing large capital expenditures.

Increasingly, the experience of industry leaders has proven that implementing these best practices—and doing so according to the needs of customers, business partners, and associates—will dramatically improve the economics and business agility of their companies.

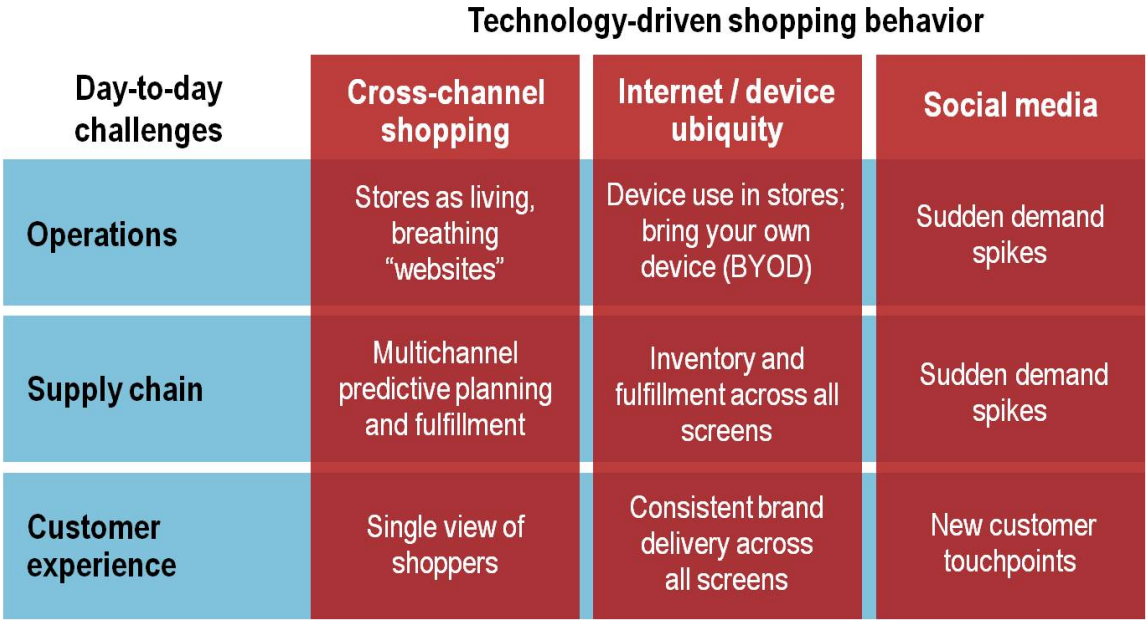
Retail's "Burning Platform"

The revolution in consumer technology, e-commerce, and social networking, combined with price transparency and intense competition, is confronting retailers with significant shifts in consumer shopping behavior and pressure on margins. As a result, IT executives are caught between conflicting mandates of rapid innovation and cost cutting. This conundrum is further complicated by the ongoing need for technology investments to address the day-to-day business challenges of operating more efficiently, responding faster to rapidly

changing consumer demands, and providing a "sticky," differentiated customer experience.

At the intersection of new, technology-driven shopping behaviors and day-to-day challenges, a new set of business imperatives emerges (see Figure 1). Cisco IBSG believes these imperatives are important because they determine if a retailer can successfully transition to "omnichannel" retailing.[1] Given this, the big question for retailers now is "How do we achieve the imperatives given the challenges we face?"

Figure 1. Imperatives Emerge Where Business and Technology Challenges Intersect.



Source: Cisco IBSG, 2012

Achieving the Imperatives

To catch up to the new customer-driven demands and, if possible, get ahead of them, retail IT leaders must achieve three mandates:

1. **Increase the capacity for innovation.** Shopper behavior and the competitive landscape are evolving at an accelerating pace. Constant innovation is required just to keep pace.
2. **Invest in new technology.** Retailers need to pay for whole new capabilities to simply stay in business in an environment of stagnant margins.
3. **Create an agile infrastructure.** To succeed, retailers must have a flexible IT infrastructure that enables rapid development and deployment of new solutions.

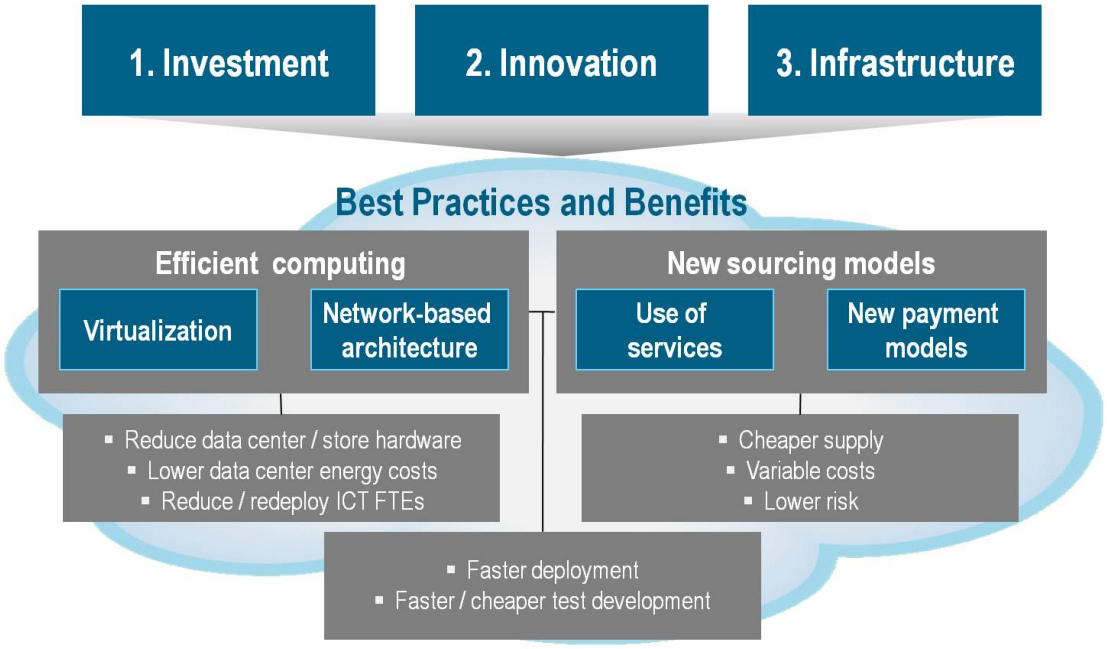
Cloud Computing: Faster, Smarter, and Less Expensive

The cloud-centric best practices described in this paper are not new. They have simply evolved from earlier IT paradigms, including thin-client computing, grid computing, and service-orientated computing. What has changed is the accelerated adoption of these best practices as large, Internet-based technology players innovate to meet their technology and business-model challenges. For example, Google operates massive data centers, estimated

to contain more than 900,000 servers, and has had to invest heavily to virtualize servers to reduce hardware and energy costs. Amazon Web Services needed to develop self-provisioning tools and a pay-per-use business model. Microsoft's Office 365 online service needed massive multi-tenant scalability. Technology businesses such as Cisco, VMware, and Citrix have, in turn, built scalable platforms to meet the operational needs of these companies from which all enterprises can now benefit.

Applying cloud best practices can help retailers achieve the imperatives of boosting capacity for innovation, investing in new technology without increasing the budget, and creating an agile infrastructure (see Figure 2).

Figure 2. Best Practices for "Efficient Computing" and "New Sourcing Models" Drive Significant Benefits.



Source: Cisco IBSG, 2012

1. **Virtualization** of computing resources in data centers and stores reduces hardware and related energy costs. IBM and other sources estimate that 85 to 90 percent of today's servers are underutilized due to legacy one-to-one relationships between applications and hardware.[2] Virtualization enables various applications and operating systems to coexist on a common server, thereby increasing utilization.
2. **Network-centric enterprise and store architectures** reduce the estimated 35 percent of retail IT budgets spent on locating computing resources close to users due to historical concerns about latency and network resilience.[3] With today's intelligent, self-healing networks, value can be unlocked by centralizing content and applications within data centers and enabling shoppers and store associates to access almost any content, anywhere, on demand.
3. **Services sourcing,** rather than assembling IT components in-house, reduces time to market and trims the hidden costs of IT development and operations that inflate the

real total cost of ownership (TCO). Today, various portions of the IT stack are available on demand, making it easy for retailers to rent computing, OS, application, and even human resources to operate the process.

4. **New payment models** offer flexibility by determining the terms upon which financial commitments are made, as well as the mix of fixed and variable costs based on expected usage. This flexibility gives retailers room to reduce TCO and, more important, to decrease the lag time between IT expenditures and resulting business value.

Best-Practice Combinations Create Value and the Right Cloud for You

So, how do you use these best practices to meet the new demands being placed on your organization? To answer this question, Cisco IBSG explored three approaches used by leading retailers. Each involves various combinations of the four best practices.

Accelerate IT Innovation

Challenge: Enable faster innovation with technology.
Solution: Combine "use of services" and "new payment models" best practices.

A full range of services, including compute, storage, applications, and business processes, is now available from third-party cloud providers. These services can be obtained using various sourcing models ranging from managed hosting to pay-for-use. By sourcing these services, retailers can redirect internal resources away from development and operations, and toward initiatives that increase innovation.

Tesco, for example, launched its F&F clothing brand by sourcing its e-commerce site from a cloud provider. With uncertainty over peak transaction volumes and the need to rapidly create and deploy new features and functionality, Tesco concentrated on business innovation while the cloud service provider managed scalability and functional development.[4] The success of the F&F brand has allowed Tesco to expand its reach to many countries outside the United Kingdom.

Further increases in innovation capacity can be achieved by driving multiple projects in parallel to reduce the time required to make important decisions. The multiple development and test platforms required (often called sandboxes) can be created on pay-for-use platforms such as Amazon Web Services.

Invest in New Store Technology

Challenge: Reduce in-store technology footprints to lower costs and streamline operations.
Solution: Combine "virtualization" and "network-based architecture" best practices.

The increase of technology in stores to support innovative solutions represents a special challenge for retail IT executives. This is because the high cost and complexity of distributed computing create an inflexible infrastructure that is not conducive to the rapid deployment of new solutions. Virtualization can fix this situation by offering immediate cost savings. In addition, centralizing computing resources and using the network for reliable service delivery to stores offer further savings and the ability to deploy new solutions faster.

For example, Target reduced the number of servers in each store from seven to just two. In all, Target retired 8,650 in-store servers, saving millions of dollars in hardware and energy

costs. This approach also gives the retailer a rapid software deployment capability in which all stores can now be upgraded in just 45 days.[5] Another large North American specialty retailer used a network-centric approach to move servers from stores to regional data centers where they could be virtualized. This reduced the number of servers by 10 times (from 900 to only 90) and lowered server-related costs by 75 percent.[6]

Create an Agile Infrastructure

Challenge: Create an infrastructure that enables rapid development and deployment of new, yet unknown solutions.
Solution: Combine "network-based architecture," "services sourcing," and "new payment models" best practices.

In an environment of rapid change, the value IT solutions can deliver is in a constant state of flux. Retailers can achieve optimum value from IT by mastering the sourcing and integration of cloud-based services from multiple providers over a network-based architecture. Further, by coupling this approach with the on-demand nature of most cloud services, retailers can deliver new capabilities in weeks rather than months.

Home Depot, for example, established a business-to-business service for banks to quickly renovate large numbers of foreclosed properties. The Force.com cloud-based platform enabled Home Depot to build and deploy the custom application, which easily scaled from the planned 4,000 to 15,000 projects in a fraction of the time it would have taken using traditional methods.

Additionally, several leading retailers are incorporating cloud best practices as they design next-generation infrastructures capable of delivering rich, personalized content to customers with minimal in-store technology footprints. This approach also allows these retailers to design solutions for anticipated (yet unknown) growth in bandwidth and computing power while paying less than they are today.

Overcoming Objections

Even with the clear benefits of cloud computing, healthy skepticism is warranted. Many IT leaders have expressed concerns about data security, service levels, customization, and deployment flexibility. Even so, a close look across the retail landscape shows growing, even accelerating adoption of cloud best practices.

In fact, most major retailers—including Best Buy, Costco, Carrefour, Tesco, and others—are already running parts of their operations in the cloud. Network-centric data center services from major cloud providers such as Amazon Web Services and Google are providing service levels at or above the performance of on-premise data centers. In addition, Salesforce.com and other software-as-a-service (SaaS) providers have demonstrated that data security in a multi-tenant, off-premise environment is equal to, if not better than, on-premise security.

From Here to There

Retail is going through a seismic shift. This transition is being fueled by a revolution in consumer technology, e-commerce, and social networking. Retailers are under pressure to respond by shifting their IT strategies to enable business agility and lower costs.

Fortunately, a set of IT best practices, now known as the cloud, can help retailers reach these goals. And while the journey to the cloud can take many paths, IT executives can lead their companies by answering the questions in the following five steps.

1. **Readiness assessment.** Is your company ready to implement cloud best practices? Is there a commonly held vision of what the future of retailing will demand of your brand? Is IT leadership prepared to drive change? Are core infrastructure elements (network, computing, storage) in place?
2. **Core-versus-context assessment.** Which capabilities are candidates for outsourcing? Which processes must be kept in-house? A strategic core-versus-context assessment of IT capabilities should guide your outsourcing decisions.
3. **Application-readiness assessment.** Which applications can be migrated from a client-server to a network-centric architecture? Which software can be delivered by a third party rather than developed in-house? Which applications are highly customized? Is there a high business risk of taking applications off premises?
4. **Opportunity assessment.** Which relevant services are being offered in the marketplace? What is the maturity of these offerings? Which ones are of greatest value to your business?
5. **Value assessment.** Where will the combination of the best practices drive the most value for your business? Where do the best practices intersect with the strategic imperatives of your brand?

For more information, or to discuss cloud strategies for your retail business, please contact:

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Endnotes

1. According to Cisco IBSG, the term "omnichannel" describes the current phase of how consumers view the shopping process—using all channels simultaneously to find, purchase, and service what they want. The first iteration was single-channel shopping, where consumers went to stores to make purchases in-person. The advent of e-commerce and m-commerce led to multichannel shopping. As technology has advanced, shoppers no longer think in terms of channels; instead, they view the shopping experience in its entirety.
2. Source: IBM, 2010
3. Source: IBM, 2010
4. Source: Econsultancy, 2010
5. Source: Microsoft, 2011
6. Source: Cisco IBSG, 2012

More Information

Cisco Internet Business Solutions Group (IBSG), the company's global consultancy, helps CXOs from the world's largest public and private organizations solve critical business challenges. By connecting strategy, process, and technology, Cisco IBSG industry experts enable customers to turn visionary ideas into value.

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