

# Cloud Computing Through Integration: Realizing the Value Proposition

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## INTRODUCTION

Cloud computing continues to dominate conversations in the banking industry worldwide, and the cloud concept is gaining increased visibility among banking IT executives. Cloud computing is a model for provisioning and consuming IT capabilities on an as-needed basis, allowing the cost to shift from a capital expenditure to an operating expense and making it possible for organizations to become more agile. Most financial institutions—especially the largest ones—are under extreme pressure from regulators to make immediate changes to their processes, risk management procedures, reporting capabilities, and levels of transparency. Many are therefore turning to packaged-integration providers to migrate and integrate both on-premise and cloud-based applications.

Today, the trend for most organizations seeking to become more agile is to virtualize as much of their internal infrastructure as possible. Integrating cloud-computing applications with on-premise legacy applications is the next step in the adoption curve; this implies converging virtualized servers, storage, and network resources into a single, virtual pool that can be drawn upon as needed. Adopting cloud computing can be a daunting challenge for financial institutions, and legitimately brings concerns around compliance, data privacy, and security.

This white paper, prepared for IBM by Aite Group, analyzes how chief information officers (CIOs) and banking IT executives should look at integrating cloud computing as part of their IT strategy. It also describes scenarios in which cloud computing can be effectively leveraged.

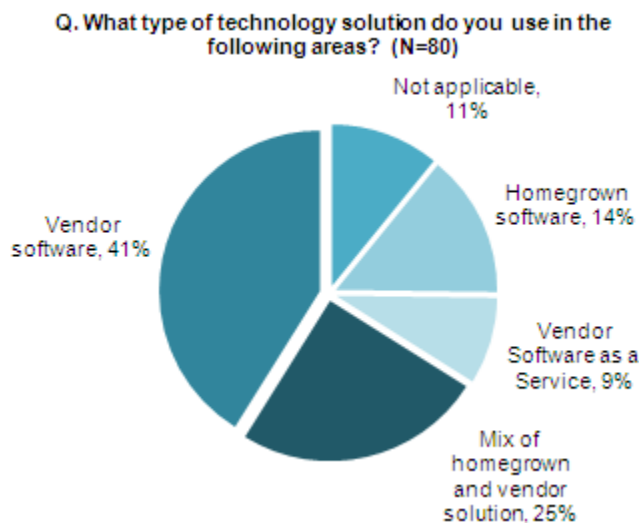
## BANKING TECHNOLOGY TODAY: A HYBRID WORLD

Senior IT management faces challenges in serving ever more complex financial institutions that have vast needs and growing requirements. Rising information security concerns, an increase in regulatory and compliance requirements, and the need to continue innovating (such as in the areas of consumer and business mobile banking) speak to the sheer scale of the task faced by bank CIOs and their staffs. These challenges are magnified by the current economic environment, but more importantly by two main factors: the technology mix of these organizations and the hybrid nature of their banking ecosystems.

### THE BANKING/TECHNOLOGY MIX

About 41% of the technology deployed by banks in the world today has been developed by vendors. An additional 9% has been developed using a Software-as-a-Service (SaaS) model, and about 14% had been developed as a homegrown software. In addition, 25% of the technology deployed by banks is a mix of homegrown and vendor solutions (Figure 1). What this tells us is that every institution has some level of integration in place due to the various technology types they utilize. We know that this infrastructure is not conducive to responding to rapid market changes.

**Figure 1: Level of Penetration of Technology by Type, Across Banks**



Source: Aite Group global survey of CIOs and senior IT executives at 80 large banks, Q1 2011

## **INTEGRATION OF A HYBRID BANKING ECOSYSTEM**

The goal for any banking IT executive is to run a banking technology platform that is built on an open and flexible architecture. This is vital to improving operational efficiencies, enabling tighter integration and real-time information, having a 360-degree view of customer relationships, remaining competitive, and more easily providing the level of transparency and access to information required by customers, regulators, and bank examiners. Achieving this goal is often extremely challenging due to the historical propensity of financial institutions to adopt best-of-breed technology-buying patterns and consequently to run several unintegrated third-party solutions. Most financial institutions, especially the largest ones, also often run multiple core systems simultaneously due to mergers-and-acquisitions activities, and have branches and product sets in multiple states and countries around the world. Additionally, these institutions often perform high levels of customization (using custom code) to existing systems, which must then be maintained.

This hybrid banking ecosystem adds even greater complexity to already difficult technology integration. Despite these challenges, most institutions are under extreme pressure from regulators to make immediate changes to their processes, risk management procedures, reporting capabilities, and levels of transparency. Many are therefore turning to packaged-integration providers to migrate and integrate both on-premise and cloud-based applications.

## COMPONENTS OF CLOUD COMPUTING

While some debate remains around the terminology and categorization of cloud-computing components, the concept of cloud computing has quickly become a viable option for the banking industry. Table A provides a baseline of cloud-computing terms prior to the next section's discussion of the value of integrating cloud computing with legacy systems. Cloud computing is a model for provisioning and consuming IT capabilities on an as-needed basis, allowing computing resources from a massive pool of hardware and networking infrastructure to be managed independently of one another. The processing capability is available on a pay-by-use basis as an infrastructure, platform, or through services such as applications.

**Table A: Components of Cloud Computing**

| Term                        | Definition  |
|-----------------------------|---|
| <b>Cloud infrastructure</b> | Cloud infrastructure consists of virtual servers in the cloud. The primary vehicle for cloud infrastructure is virtualization—running virtual servers in large data centers, thereby removing the need to buy and maintain expensive hardware, and taking advantage of economies of scale by sharing infrastructure resources.  |
| <b>Cloud storage</b>        | Cloud storage refers to any type of data storage that resides in the cloud, including services that provide database-like functionality.  |
| <b>Cloud platform</b>       | A cloud platform is the ability to build, test, deploy, and run in the cloud. Cloud platforms as a general rule are low-cost, highly-scalable hosting and development environments for Web-based applications.  |
| <b>Cloud application</b>    | A cloud application exists either partially or fully within the cloud, and uses cloud services to implement core features within the application. Cloud applications can eliminate the need to install and run the application locally, thereby reducing the expenditure required for software maintenance, deployment, management, and support. This type of application would be considered a Software-as-a-Service (SaaS) application. |
| <b>Core cloud services</b>  | Core cloud services are services that support cloud-based solutions, such as identity management, billing and payment systems, messaging, business process management, or workflow.   |

Source: Aite Group

# WHY BANKING IT EXECUTIVES SHOULD INCLUDE CLOUD COMPUTING AS PART OF THEIR IT STRATEGY

Banking IT executives are faced with delivering more with less. Cloud computing offers the following tangible benefits:

- **Reduction in total cost of ownership** can be achieved by optimally using hardware and software licenses, reducing deployment resources, and shared hosting and maintenance costs.
- **Moving from capital expenditure (CAPEX) to operating expense (OPEX)** eliminates large up-front payments and shifts to a flexible pay-as-you-go term or subscription model.
- **Faster time to market:** Infrastructure can be provisioned quickly when required, accelerating the time to market for new products and services.
- **System scalability** allows for additional demand without the need for incremental investment. Infrastructure can be scaled for peak demand loads. Cloud computing delivers capacity on demand, which can be scaled up or down, further reducing costs.
- **High availability** is mission-critical for customer-facing channels. The vast capacity offered by cloud computing makes 100% real-time availability a reality.
- **Disaster recovery and test environments:** While traditional, high-availability solutions require multiple specialist resources and weeks to assemble, code, test, deploy, and maintain, this model ensures no data loss and requires no manual intervention upon failure—a quantum leap for data centers.

## THE PATH TO SUCCESS

How will banking IT executives deliver more with less? The following three steps are the key to success:

- **Migration:** Audit the banking platform to determine what will be migrated to the cloud; this includes (but is not limited to) data, platforms, applications, capacity needs for infrastructure, storage, etc.
- **Integration:** Utilize a real-time and bi-directional integration to leverage both the stability of legacy systems and the agility of cloud-based applications, and connect the two to share data in order to realize the full value of emerging technologies.
- **Consolidation:** Provide a true 360-degree customer view, decrease service costs, improve service and support of customers, maintain a single source for complete

information about customers, display information in a format that's easy to understand and use, and create a single source for meaningful business intelligence and reporting.



## **INTEGRATION AND THE KEY TO CLOUD COMPUTING SUCCESS**

WebSphere Cast Iron Cloud integration is a rapid, flexible, simple approach to connecting SaaS and on-premise applications. This solution simplifies integration by providing a “configuration, not coding” approach that doesn’t require experts or knowledge tied to a specific application vendor platform. For example, many financial institutions need real-time connectivity between their legacy core system, online banking, mobile banking, and Marketing Customer Information File/Customer Relationship Management (MCIF/CRM) systems, regardless of where those applications are hosted. Financial institutions using the WebSphere Cast Iron Cloud integration can take advantage of a user-friendly interface and a platform-agnostic architecture, allowing its IT department to become self-sufficient. They will not be tied to any specific application architecture, coding language, or vendor for their integration needs. It is also the only integration solution on the market that offers the flexibility to completely map to an organization’s cloud strategy. The solution also offers scalable deployment options: WebSphere Cast Iron Live, a multi-tenant Integration-as-a-Service (IaaS) cloud offering, WebSphere DataPower® Cast Iron Appliance XH40, an integration appliance offering, or WebSphere Cast Iron Hypervisor Edition, a virtual integration appliance.

These three offerings are flexible, enabling an IT department to choose the deployment option that meets its current requirements while allowing it to scale or change deployments as needed to coincide with its strategy moving forward. Below, we look at the offerings in more detail.

### **WEBSHERE CAST IRON LIVE**

WebSphere Cast Iron Live is the Cast Iron Cloud IaaS solution. Using a “develop once, deploy anywhere” approach, WebSphere Cast Iron Live is ideal for customers who base a majority of their applications in the Cast Iron Cloud and that lack on-premise infrastructure. The offering follows the same model as SaaS or on-demand services. SaaS approaches run an organization’s business applications through a network on a remote host, and look and operate exactly as if the organization were running on the organization’s own systems. WebSphere Cast Iron Live runs under the same model, meaning that financial institutions that integrate using this product can integrate their SaaS and Web-based applications in real-time. Financial institutions gain the same benefits with WebSphere Cast Iron Live as with other SaaS applications—subscription pricing, no need to invest in and maintain their own integration IT hardware and software, scalability, support from IBM experts, and no need to invest in integration IT personnel to write custom code.

### **WEBSHERE DATA POWER CAST IRON APPLIANCE XH40**

WebSphere Data Power Cast Iron Appliance XH40 is a standalone, self-contained hardware offering. It is the preferable option for customers who have a majority of applications based on-premise, need a standards-based solution, and find software-based integration solutions to be

too complex. It comes with all of the required programming necessary for a particular integration project. The device is called an “appliance” because it, like a network router, has the same self-contained/dedicated function characteristic as most appliances. It looks like any other rack-mounted box, but is dedicated to one important task: integrating multiple on-premise or SaaS applications.

## WEBSHERE CAST IRON HYPERVISOR EDITION

WebSphere Cast Iron Hypervisor Edition is a virtual instance of the abovementioned appliance offering. This is ideal for organizations seeking to deploy a virtualized IT environment, and can be installed and run on their hardware of choice. Aside from being a virtual offering, it provides the same functionality and environment as its hardware appliance counterpart.

Finally, WebSphere Cast Iron Cloud integration offers rapid and repeatable success. Its template-based architecture provides a foundation for best practices based on successful integration projects for the most common connectivity scenarios and applications. Many times, these template integration processes (TIPs) will bring the project up to 60% completion out-of-the-box. This accelerated advantage equates to eliminating much of the cost associated with integration projects. Regardless of whether the client chooses the Cloud, Appliance, or Virtual offering, the client will get the same highly sophisticated integration logic, data mapping, configuration tools, and management capabilities described above.

## WEBSHERE CAST IRON CLOUD USE CASES

Financial institutions use WebSphere Cast Iron Cloud integration to solve a variety of application integration problems. It does so by providing the following:

- **Single, comprehensive view of customers and products** across multiple legacy core systems, digital channels, MCIF/CRM and call-center applications
- **Lead generation to customer onboarding integration** between marketing automation, CRM, and legacy core systems
- **Data extraction** from legacy systems/MCIF/CRM to reporting, and business intelligence systems
- **Data migration** from legacy systems to new applications
- **Mergers and acquisitions integration**
- **Enabling service-oriented architectures (SOAs)**
- **Elimination of custom code**
- **Elimination of manual or paper-based processes**
- **Decreased call time** in contact center
- **Real-time access to back-office banking systems**

## CONCLUSION

In the past, bank CIOs ordered computer equipment and oversaw the IT department, which ran the bank's mainframe. Today, bank CIOs and banking IT executives deal with daunting challenges as they face ever more complex organizations with vast and growing needs. Rising information-security concerns, increased regulatory and compliance requirements, expanding digital channels such as consumer and business mobile banking, the need to leverage new delivery models such as cloud computing, and the fast-changing technology landscape all speak to the sheer scale of the task faced by bank CIOs and their organizations in the coming year. For this reason, the pendulum continues to swing toward outsourcing activities and processes. In order to survive in a do-more-with-less environment, banks will have to become leaner organizations that rely on third-party vendors for a growing share of their operational and IT needs.

Improvements in performance, 100% availability, virtually unlimited scalability and capacity, and reduced costs of ownership can be realized by using WebSphere Cast Iron Cloud integration.

## ABOUT AITE GROUP

Aite Group is an independent research and advisory firm focused on business, technology, and regulatory issues and their impact on the financial services industry. With expertise in banking, payments, securities & investments, and insurance, Aite Group's analysts deliver comprehensive, actionable advice to key market participants in financial services. Headquartered in Boston with a presence in Chicago, New York, San Francisco, London, and Milan, Aite Group works with its clients as a partner, advisor, and catalyst, challenging their basic assumptions and ensuring they remain at the forefront of industry trends.

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