A Confluence Whitepaper

Five Drivers of the Cloud in Asset Management

Already widely recognized as the preferred software delivery model for common enterprise applications, investment managers are accelerating adoption of cloud infrastructures to power their asset management operations.

Executive Summary

Offering the promise of unprecedented business agility, flexibility and scalability — while lowering total cost of ownership (TOC) — cloud computing is revolutionizing business. And asset management is no exception. Already highly adopted as the preferred software delivery model for common applications across the business enterprise, from CRM systems and payroll services to online collaboration tools, SaaS cloud technology is rapidly being adopted to power front-, middle-, and back-office asset management technology applications — and for good reason.

SaaS is a widely recognized core component of the future IT landscape and market share in enterprise applications is growing rapidly. Accordingly to a 2011 study entitled "Sizing the Cloud" by independent research firm Forrester Research, SaaS offers more growth opportunity than any other segment in the market for cloud computing services. Forrester projected that SaaS will retain its position as a leading segment in cloud computing with the SaaS market growing three-fold to $92.8 billion by 2016.

Financial services technology providers are turning to cloud as a delivery model that leverages both its inherent benefits — business agility, flexibility, scalability and lower TOC — and one that most effectively meets the escalating globalization and mobilization needs of their asset management clients. Astute business leaders and their IT counterparts recognize that the cloud is no longer experimental or radical; instead, they are embracing it as a strategic differentiator and competitive advantage.

For asset management, in particular, five market demands are driving SaaS adoption — lower TCO, increased scalability, globalization, greater agility and mobile demand.

Welcome to the new era of the cloud in asset management operations.

Major Types of Cloud Computing

Cloud computing refers to the use of hardware or software that is delivered as a service over a network, typically the Internet. There are many ways that businesses can benefit from cloud-based IT technology. The three major ones are SaaS, PaaS and IaaS.

While this whitepaper focuses primarily on the benefits of SaaS as a software delivery model, it is important to understand the scope of benefits cloud computing affords business enterprises.

Software as a Service (SaaS) is sometimes known as "on-demand software", and is a delivery model in which software and associated data are centrally hosted and accessed by users using a thin client via a web browser. With SaaS, the job of deploying an application and keeping it running from day to day — managing upgrades, monitoring performance, ensuring high availability and so forth — is handled by the SaaS provider. By transferring the responsibility for these "overhead" activities to a third party, the IT department can focus more on high-value activities that align with and support the business goals of the enterprise.

Platform as a Service (PaaS) is a category of cloud computing services that provides a computing platform and a solution stack as a service. In this model, the customer creates the software using tools from the provider. The customer also controls software deployment and configuration settings. The cloud vendor provides the networks, servers, storage and other services. PaaS offerings facilitate the
deployment of applications without the cost and complexity of buying and managing the underlying
hardware and software and provisioning hosting capabilities.

**Infrastructure as a Service (IaaS)** is a model in which an organization outsources the equipment used to
support operations, including storage, hardware, servers and networking components. The service
provider owns the equipment and is responsible for housing, running and maintaining it. The client typically
pays on a per-use basis. IaaS provides the ability to readily conform to the changing requirements of a
business. Because the infrastructure is outsourced, obsolete equipment and upgrades no longer play a
role in a client’s decision to adopt new technology. Due to its economies of scale, IaaS can create
significant efficiency and cost savings.

### Cloud Computing Service Models

<table>
<thead>
<tr>
<th>Service Model</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Software as a Service (SaaS)</strong></td>
<td>End-user applications, delivered as a service, rather than on-premises software</td>
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<tr>
<td><strong>Platform as a Service (PaaS)</strong></td>
<td>Application platform or middleware as a service on which developers can build and deploy custom applications</td>
</tr>
<tr>
<td><strong>Infrastructure as a Service (IaaS)</strong></td>
<td>Compute, storage, or other IT infrastructure as a service, rather than as dedicated capacity</td>
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**The Top Five Drivers of SaaS in Asset Management**

As a cloud-based software delivery model, SaaS demand is being escalated by five key business drivers.

1) **Lower Total Cost of Ownership**

With its on-demand accessibility, SaaS lets asset managers and their service providers spend more time
focusing on their core businesses, servicing their customers and leveraging their technology as a
competitive differentiator — all for a total cost of ownership which is far lower than traditional on-premise software.
Gartner® defines total cost of ownership (TCO) as a comprehensive assessment of information technology (IT) or other costs across enterprise boundaries over time. For IT, TCO includes hardware and software acquisition, management and support, communications, end-user expenses and the opportunity cost of downtime, training and other productivity losses.¹

TCO goes beyond the cost of the solution itself to include different types of costs associated with acquisition, maintenance and operations. As a result, TCO helps to determine the hidden costs of a new technology solution and has proven to provide the most realistic assessment of costs when comparing on-premise software applications against those of a SaaS alternative.

The Business Case for SaaS

Study after study has shown that SaaS yields a lower total cost of ownership than traditional on-premise software alternatives. Just consider these scenarios:

- An analysis of the four-year TCO for SaaS versus on-premise budgeting, forecasting and reporting corporate performance management (CPM) solutions found that the TCO of the SaaS solution was significantly lower than comparable on-premise mid-market CPM solutions — as much as 77% less over four years.²
- Another four-year TCO analysis found that the TCO for a cloud-based integrated solution suite was significantly lower than a comparable on-premise solution. The TCO for cloud-based vs. on-premise business application solutions was as much as 55% less.³

When deploying a SaaS-based solution, there is no capital equipment to purchase, install, and test. There are also no servers to provision and no backups to setup. Over time, hardware and software maintenance are eliminated. The complexity and disruption of upgrades and version control are eliminated as well.

2) Need to Scale

Increased scalability means that asset managers can meet the growth needs of their businesses more readily. In fund administration, that means they can onboard new funds faster. It also means that they can respond quickly to new regulatory reporting requirements — a mission-critical need as regulatory pressure continues to mount in today’s post-credit crisis environment.

SaaS is highly scalable and accessible through the Internet anytime and anywhere — attributes that are highly valued by growing businesses. Compared to traditional software architectures which may require substantial hardware investments and complex installations, SaaS is fast and easy to deploy. As a result, SaaS enables enterprise operations to scale up or down quickly, enabling vast resources to be deployed with speed and agility — whether operations are centralized in a center of excellence, distributed across the enterprise or outsourced to a third-party provider.

For asset managers, the nearly limitless capacity of cloud-based solutions is a distinct scalability advantage over traditional web-based applications, also known as Application Service Providers (ASPs). While both are accessible over the Internet, web-based applications are constrained by the infrastructure that supports them, whereas cloud-based applications offer access to vast remote computing resources on demand. As a result, there is no more waiting in the upgrade queue or capacity constraints at peak reporting periods or to meet growth demands.

3) Global by Design

SaaS has the inherent flexibility to serve different content to different users, making it the architecture of choice to meet the global growth IT infrastructure, multi-language and multi-currency needs of today’s asset managers and their service providers.

In a global economy, developing software that is internationalized is business critical. Supporting localized languages enhances the user experience, optimizes productivity, and opens the door to growth opportunities. Even multi-lingual users find comfort working in a system that speaks to them in their mother tongue. And to succeed in a global marketplace, asset managers and their service providers need systems that can support the complexities of multi-currency processing and reporting.

As firms grow into new geographic markets, they need the flexibility that their software can go there too. For asset managers focused on global growth, a patchwork IT infrastructure supported by disparate and localized systems just won’t work. They need one platform that they can leverage across multiple geographies and this makes SaaS the logical strategic fit.
4) Need for Agility

Agility, the ability to alter and respond to things quickly, is a core attribute of SaaS architecture. Traditional software systems typically require complex upgrade cycles and additional hardware and software installations to support added capabilities and capacity. SaaS solutions, on the other hand, typically provide easy-to-use configuration facilities to make upgrades fast and easy without additional IT infrastructure investments.

In the aftermath of the market downturn, asset management firms need to rapidly respond to unprecedented statutory and regulatory change. They need to upgrade their reporting software quickly to meet risk disclosure mandates and accelerated compliance deadlines. At the same time, firms optimistically focused on growth must have the nimbleness to quickly support new and often complex products.

Gaining agility, however, can be a double-edge sword. With speed often comes loss of control — which for asset managers is a zero tolerance proposition. That’s why it is important for an asset manager or service provider to partner with a SaaS provider who has both the technology expertise and a deep understanding of their business domain.

Cloud-based technology allows asset managers to rapidly respond to the pace of change.

5) Mobile Demand

Mobile demand is on the rise. A recent study by Pew Internet found that by February 2012 85% of American adults have a cell phone, 45% of American adults have a smartphone, and 25% of American adults have a tablet computer — up from 10% in less than a year. Gartner predicts that in 2013 mobile devices will pass PCs as the most common Web access tools and that by 2015 tablet computer shipments will be 50% of all laptop shipments.

Financial services technology vendors who ignore this trend risk leaving their customers at a strategic disadvantage. SaaS offers real on-demand software. That means that fund companies and industry service providers have the flexibility to provide user access to their software anywhere, at anytime and from any device using any internet browser.
# Cloud Computing Vendor Readiness Checklist

The following checklist provides a listing of the key questions asset managers should be asking as they evaluate the readiness of potential SaaS vendors.

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<thead>
<tr>
<th>Provider Due Diligence</th>
<th>Yes/No</th>
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<tbody>
<tr>
<td>Does the provider have a deep understanding of the fund industry?</td>
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<td>Is their core business fund administration technology automation?</td>
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<td>Are they familiar with compliance and regulatory issues that apply to the fund industry?</td>
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<td>Do they have a history of providing hosted application services?</td>
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<td>Is the provider company financially stable?</td>
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<td>Does the provider have a track record of customer successes, including references?</td>
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<td>Is there a working demo you can try?</td>
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<tr>
<td>Are payments predictable, easy to budget for and without a large up-front cost?</td>
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<tr>
<td>Are the provider’s servers in the U.S. or elsewhere in the world?</td>
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<tr>
<td>Does the provider offer services in multiple global locations?</td>
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<tr>
<td>Does the provider have the capability to customize solutions for the asset manager or service provider?</td>
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<tr>
<td>Is the provider’s service level agreement (SLA) comprehensive and does it meet or exceed your organization’s needs and requirements?</td>
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<table>
<thead>
<tr>
<th>Production Environment</th>
<th>Yes/No</th>
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<tr>
<td>As the client, are you in control of the timing of upgrades?</td>
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<tr>
<td>Does the provider make a production and test system available to you?</td>
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<tr>
<td>Does the solution scale quickly up and down as resources are needed?</td>
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<tr>
<td>Does the SaaS offering support mobile devices?</td>
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<table>
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<tr>
<th>Accessibility</th>
<th>Yes/No</th>
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<tr>
<td>Is the SaaS solution multilingual?</td>
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<tr>
<td>Is the SaaS solution multicurrency?</td>
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<tr>
<td>Does the solution support multiple global instrument types, including UCITS, mutual funds and alternative investments?</td>
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<tr>
<td>Does the provider offer automatic upgrades by way of the cloud?</td>
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<tr>
<td>Does the SaaS solution require you to install plug-ins or other software to operate correctly?</td>
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<tr>
<th>Security</th>
<th>Yes/No</th>
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<tbody>
<tr>
<td>Does the provider have a robust business continuity planning model with adequate datacenters for back-up?</td>
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<tr>
<td>Does the provider offer encryption support that allows clients to maintain their own subscription keys?</td>
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<tr>
<td>Do security and privacy protections meet or exceed your internal IT and data security policies?</td>
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<tr>
<td>Is there a clear explanation about where data is stored and how it is handled?</td>
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<tr>
<td>Does the provider support virtual private networks (VPNs) so that the solution can be made accessible via your company’s network?</td>
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**Conclusion**

Fueled by multiple market drivers, cloud computing will have an increasingly profound, positive and lasting impact on asset management operations. With its unprecedented business agility, flexibility, scalability and lower TOC, SaaS is destined to be the software delivery model of choice in today’s asset management back office.

At the forefront of the market demands that are driving SaaS adoption is the need for scalability, which for many is the most attractive attribute of SaaS for business enterprises. No longer can asset management enterprises be held captive to traditional software upgrade delays or the constraints of their limited IT infrastructure capacity at peak times, or to support and respond to growth demands. The global nature of the asset management industry is also driving demand for multi-lingual, multi-currency software solutions that are readily accessible from any desktop across the globe. Plus, the need to respond with agility and control has never been more mission-critical as asset managers face an unprecedented level of compliance mandates and increased new product proliferation. Finally, the growing mobility needs of today’s workforce drive the need for on-demand software solutions that have the flexibility to be accessed from any internet device, anywhere and at any time.

The question of cloud adoption in asset management is no longer a question of "if", but "when." And when that time comes, the key to success is to partner with a technology solutions provider that understands the asset management business, has a proven track record of technology success with their customers, and offers a superior SaaS solution.

**About the Author**

As the Chief Architect and Product Manager for the Confluence install, hosted and SaaS platforms, Chris Evans is responsible for setting Confluence’s global technology vision. Evans is a 20-year Confluence veteran who has been instrumental in introducing game-changing technology to the fund administration industry. Under his technological leadership, Confluence has emerged as a global leader in investment data management and automation.

Evans is credited for multiple technology platform and product innovations. He led the development of the Unity® platform, the industry’s only unified platform for fund administration. The Unity platform features a central data hub that enables fund administrators to repurpose data and to automate processes for multiple fund administration needs — from performance calculation and reporting to regulatory reporting.

More recently, Evans has led the commercialization of Unity NXT™, an enterprise-grade SaaS-enabled platform for fund administration. Offering lower total cost of ownership with greater agility than traditional on-premise solutions, Unity NXT is a global platform that provides web-based access from any internet device.

Evans holds a Bachelor of Science degree in Computer Science and Mathematics from the University of Pittsburgh.
About Confluence

Founded in 1991, Confluence is a global leader in fund administration automation. Confluence helps investment management companies gain unprecedented control by automating every step of the fund administration process — including the collection, creation, confirmation and delivery of investment product data — while maintaining control of the process. Results are lower costs, reduced risk, decreased reporting turnaround times and the scalability to automate more processes without additional resources. Confluence solutions are used by 40 percent of the leading global investment managers, and more than 60 percent of U.S. mutual funds.

Headquartered in Pittsburgh, PA, Confluence serves the international fund industry with key locations in San Francisco, London and Luxembourg. For more information, visit www.confluence.com or email info@confluence.com.

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