



A SOLIDFIRE PAPER

Enabling Agile SaaS Infrastructure

Enabling agile SaaS: The key in IT infrastructure

SaaS providers aren't delivering just a product but a complete solution. The ability to drive improved delivery, support, and maintenance at the infrastructure layer is critical.

What's inside

Illustrate the growth (and growing importance) of the SaaS market

Outline the challenges SaaS companies face

Highlight how the right IT infrastructure can enable iterative, innovative SaaS offerings

It's no surprise that the Software-as-a-Service (SaaS) market is exploding; its benefits are evident and mounting. In fact, IDC1 predicts the SaaS market will grow to \$99 billion by 2020. SaaS end users are reaping the benefits of greater software efficiency, agility, reduced operational headaches, and trading CapEx for OpEx. The SaaS model enables low cost to entry, scale, and no maintenance as opposed to traditional software which placed these burdens on the end user.

If customers turn to SaaS for efficient, agile, simple solutions, SaaS providers must demand the same from their infrastructure vendors. After all, SaaS providers aren't delivering just a product but a complete solution, and the ability to drive improved delivery, support, and maintenance at the infrastructure layer is critical.

SaaS companies have varied in size and success. Some like Salesforce and SurveyMonkey are native to this business and built to capitalize on the efficiencies of the SaaS infrastructures. Others like Microsoft or Tableau have adapted their business models as SaaS has matured and the industry faced massive digital disruption. By expanding into SaaS delivery, these companies have increased their sales by cross-selling and developing their traditional software into services complete with features like data storage (Microsoft) or data analytics tools (Tableau).

For SaaS vendors looking to provide cloud-based software applications, realizing market penetration and a fast path to revenue comes with a unique set of challenges:

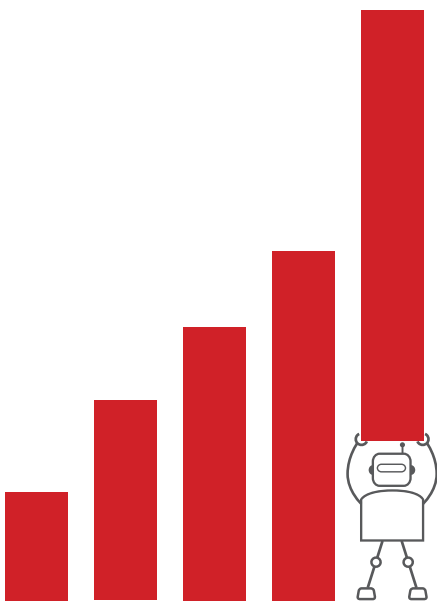
- How to sell a comprehensive service vs. a product
- How to ensure IT infrastructure enables agile SaaS delivery
- How to stay focused on forward innovation with competitive product offerings

The growing SaaS market

As more companies gain greater familiarity with SaaS offerings and realize the advantages over on-premises software, the market's grown significantly — and shows no signs of slowing. IDC¹ predicts the SaaS market will grow to \$99 billion by 2020 (up from \$46.8 billion in 2015) and states that SaaS will grow five times as fast as traditional software delivery.

Growth doesn't just stem from attracting new customers. For SaaS companies, revenue is primarily driven by adding new functionalities for existing customers (70 to 95% of revenue) while market expansion and recruiting net new customers makes up just 5 to 30% of revenue. As a result, product innovation and positive customer experience is a top priority for SaaS providers to build their margins and grow share.

Growth expectations clearly indicate end users are embracing cloud-delivered applications, creating opportunities for SaaS companies to introduce offerings and differentiated services to end users who are weary of managing endless iterations of vendor-specific software. SaaS delivers unique software to solve specific end user needs while integrating into their existing tools or hardware. No maintenance is required by the end user.



¹ IDC, WW SaaS and Cloud Software Revenue Forecast, 2014-2020, August 2016

Delivering smart SaaS

SaaS Case Study

Ultimate Software is a leading cloud provider of comprehensive human capital management (HCM) solutions delivered via Software as a Service (SaaS). Now, they are thriving and their customers are getting a better experience from delivering business-critical apps through a shared storage infrastructure with guaranteed storage performance.

Effectively delivering SaaS to an ever-more savvy and demanding mobile customer base isn't without challenges. It requires companies not just sell a software product but an accompanying range of complementary services.

In doing so, SaaS providers are met with a number of challenges including:

- **Reduce complexity and time to value:** SaaS allows more frequent software releases, whereas traditional software worked on 18-month deployment cycles. Developers need the support and flexibility to quickly move from one environment to the next without disrupting end user activity. Testing to deploy on a variety of APIs also helps to ensure the user experience is seamless every time. SaaS often combines web interfaces with new applications via their API, enabling unusual partnerships among different software combinations. It's critical for SaaS companies to track and understand what partnerships are most valuable to their customer base to build the most seamless API experiences to enhance their offering.
- **Expand revenue streams through differentiated offer:** High growth in the SaaS market also means high competition for SaaS providers. In order to remain competitive and retain existing customers, SaaS companies feel a strong need to differentiate by regularly developing and integrating competitive features. Continuous integration (CI) and continuous development (CD) practices

are used to help accelerate the ability to innovate, scale, and deploy to retain their customer base and build "custom" end user experiences and smoother handoffs.

- **Improve customer experience and satisfaction:** SaaS users don't just expect software delivery, they expect it as a service. By bundling software into a highly available, maintenance-free tool, SaaS companies deliver highly customized end user experiences that leverage information like customer location, weather, or other saved settings. This custom experience can also be used to generate additional revenue streams. The pace at which companies can turn customer interactions into insight, insight into strategy, and then into product functionality has a direct effect on the bottom line.
- **Balance storage spend with revenue:** SaaS companies require the flexibility to grow with their business. Whether it's a storage expansion or the need for incremental performance, expanding the storage behind SaaS comes at a cost. To balance these costs with the company's incoming revenue, the ability to scale granularly and based on business needs helps SaaS customers grow on an efficient cost basis.

Offering a good "product" doesn't guarantee success in the SaaS market. By building complete solutions (product AND services), SaaS providers not only improve their customer retention and margins but also establish businesses that can build and maintain competitive advantages.

Addressing savvy SaaS users

In general, SaaS delivery cycles consist of 7 basic stages:

1. Specification and planning
2. Development and testing
3. Release
4. Infrastructure provisioning and configuration
5. Deployment
6. Performance monitoring
7. Ongoing management

End users aren't just looking for relief from operational headaches and escalating CapEx budgets. They're looking for:

- Software tailored to meet their unique, specific needs. SaaS provides common features and quick delivery, and SaaS vendors realize significant cost reduction through supporting only a single software version. Custom functionality can be achieved by building software specific to verticals (healthcare, finance, etc.) or user input (interface, weather, location).
- Rapid deployment of chosen SaaS solutions. Customers expect instant service upon signing up for SaaS applications. Delays to add and setup new users or access new developed features are unacceptable to the end user. To the end user, the SaaS value proposition

not only includes delivery of a product but also a service (which includes setup, storage, etc.) and maintenance activity is expected to be invisible to the end user. Each additional second of load time delay decreases customer satisfaction by 16%².

- SaaS-to-SaaS integration. Vendor lock-in is anathema to SaaS, but users also are looking for a software solution that integrates with other platforms, even those from different vendors.

Among the many reasons customers migrate to SaaS is the desire to reduce operational headaches. Is your infrastructure up to the task? Iterating and innovating faster, easier, and more predictably will create an environment that empowers agile development environments while driving your business and revenues up and to the right.

Infrastructure that enables

To build an agile SaaS solution, take a critical look at your infrastructure choice and give it the SaaS IT readiness litmus test:

- Will you have to spend more time managing the nuances of your infrastructure instead of focusing forward on innovating new features your customers are clamoring for?

- Will adding new users require a myriad of manual tasks and fire drills for administrators?
- Are the costs and growth challenges of your infrastructure enough that profitability might suffer?

It's time for IT infrastructure that enables your business.

² Kissmetrics blog, How Loading Time Affects Your Bottom Line. Available at <https://blog.kissmetrics.com/loading-time/?wide=1>. Accessed November 2015

Focusing your SaaS strategy on the future

Adding users quickly and easily, developing new features the market is keen on, working on API integrations, and providing holistic software service to customers can be a reality. In order to focus on driving your SaaS strategy your infrastructure must:

1. **Make development, testing, and deployment easy:** Infrastructure should deploy quickly into new and existing environments. Waiting days, weeks, or months to deploy new hardware has a trickle-down effect, delaying the onboarding of new SaaS users, new features, and generally delaying time to revenue. Spend less time creating development and test environments on real-time production data and more time innovating and developing revenue driving features.
2. **Provide end-to-end automation:** APIs and support for common scripting tools, such as Python or OpenStack, help you automate previously manual tasks. When you're no longer having to write vendor-specific code to ease your infrastructure management, you can spend that time innovating and writing code to improve your specific software implementation. Building a system with APIs in mind enables more open and collaborative environments for your customer to further customize their experience with your software. APIs enable SaaS automation and management integration with third-party products and custom-built tools and workflows.
3. **Make user onboarding easy:** Automating infrastructure tasks can enable self-service. Adding new users ceases to be an administration task, now enactable by the end users themselves. With a utility consumption model, users get to work in your SaaS solution faster, allowing you spend less time managing tasks critical to a growing user base – and more users typically equal more revenue.
4. **Optimize your resource management:** As if deploying high-performing, right-sized, feature-rich infrastructure in support of your SaaS weren't daunting enough, trying to accurately plan for growth can seem impossible. By choosing infrastructure that scales granularly, seamlessly, and non-disruptively, you can remove the pain in growth planning. Grow cost-effectively, on your terms, and ensure users never have to suffer through maintenance windows – or worse, service outages, again.
5. **Be portable and flexible:** Eliminating vendor lock-in is a key reason users look to SaaS solutions. The infrastructure SaaS runs on should be no different. Rather than hard-coding your software to your infrastructure components (for example, mapping users directly to storage array resources), consider taking a loosely coupled approach, and treat the infrastructure as pools of resources, thus avoiding vendor lock-in. When SaaS providers unlock their hardware, they free up cycles to focus on what their users value, unlocking SaaS software and deepening SaaS-to-SaaS integration.
6. **SaaS data security and data segregation:** It's critical to segment customer environments to ensure total data privacy. Data access and policies make sure data is only accessible by the users/entities who require access to the data and to the extent to which they need that data. SaaS providers must make sure the security postures, including access controls throughout the cloud solutions, are consistent with the organization's security policies.

SolidFire: Effortless SaaS success

SaaS Success at a Glance

With SolidFire, Ultimate Software customers now don't need to sacrifice convenience for performance. Ultimate's HCM solutions are faster, easier, and much more effective at ensuring predictable, reliable SaaS experiences. Customers can also count on proven uptime with SolidFire's disruption-free scalability.

SaaS deployments demand an infrastructure to enable agile SaaS implementations. Built on five elements for success, SolidFire's unique deployment not only enables effortless IT with greater storage automation but allows for accelerated innovation and experimentation and generating a faster path to revenue.

SolidFire delivers on five elements:

1. **Automated management:** "Application Programming Interfaces (API) are a big deal too. We wanted to be able to automate our tasks — and SolidFire API were much more mature than others. SolidFire's direct integration with OpenStack and that community was absolutely compelling when it came to our purchasing decision," TJ (Thomas) McAteer, system engineer, HedgeServ
2. **Storage elasticity and scale-out:** "I used to worry about the ability to scale and grow to meet our customers' needs in a 24/7 environment. With SolidFire, we can add nodes and simply manage flexible pools of capacity and performance. We can take nodes away and put them in a different cluster if we want. We can grow the business without taking the business down." Mitul Patel, IT manager and senior architect, Endicia
3. **Global efficiencies:** "Deduplication and the compression SolidFire uses definitely lowers our footprint as we replace some of our existing SANs." Karl Liin, hardware architect, Ultimate Software
4. **Guaranteed performance:** "...there's always that risk of a noisy neighbor chewing up storage IOPS. We needed something that could provide a guaranteed level of service to our customers. That's SolidFire." Donald Talton, senior manager, platform operations & cloud engineering, FICO
5. **Data assurance:** "As we've expanded our array, we like the fact that we can have multiple nodes go down at the same time and not only have zero impact on performance but zero data loss and zero impact on performance on rebuild. That's really big for us." Edward Dibeler, chief information officer, AHCS

Conclusion

The SaaS market continues to enjoy substantial revenue growth largely because the benefits are so compelling and allow SaaS providers to better address marketplace demands. As the market evolves the software follows to deliver the most relevant and advanced solutions for SaaS customers.

By deploying infrastructure that enables a forward-looking focus, SaaS differentiate their offerings through innovative development and holistic solution offerings, accelerating customer adoption.

SolidFire redesigned the next generation data center to directly address these needs and allow SaaS companies to spend more time innovating and deploying their solutions and less time managing storage.

Learn more about how SolidFire enabled faster time to market, more efficient scale and cost structure, and reduced system footprint for other SaaS customers at solidfire.com.

