

# **The Desktop is Dead: the Fourth Wave of Business Applications**

**Chris Lynch, VP Product Engineering, eProject**

The death of the desktop has been predicted for many years. Since 1995, everyone from Larry Ellison to Scott McNealy has declared the desktop computing model to be dead at one time or another. These very smart prognosticators were not wrong. They were just too early. Technologies simply weren't ready to support the vision of Software as a Service (SaaS) – nor were business attitudes ready to accept it.

Due to a number of different converging factors, we are finally at a time where the vision of on-demand software is becoming a reality. One important market driver is the growing popularity of online consumer applications like Google Gmail and Microsoft Virtual Earth. These products are changing public perceptions about web-based applications by exposing users to the benefits of having software delivered as a service via the web.

With the growing popularity of web-based business products such as NetSuite and Salesforce.com, applications like ERP and CRM have become drivers in the corporate software arena. These on-demand applications allow businesses to quickly and easily extend the value of a program to the entire enterprise – a previously daunting task for organizations using the client/server-based approach.

## **The Fourth Wave is Coming**

Software-as-a-Service is the *Fourth Wave* of business applications. In the *First Wave* (1940s to 1960s), mainframe applications were built by in-house corporate IT departments. In the *Second Wave* (1960s to 1970s), compilers and other development tools made it possible for independent software vendors to build a highly customized application for each customer. In the *Third Wave* (1980s to 1990s), client/server systems and desktop computers enabled vendors to develop “off the shelf” packaged business applications, making customers largely responsible for customization, integration, and support.

Starting in the late-1990s, a new breed of disruptive technologies emerged, led by the Internet and web browser, which enabled Software-as-a-Service. This means that mission-critical line-of-business applications can now be delivered on-demand anywhere in the world using a standard web browser.

On-demand software is a popular idea because it addresses a global trend of businesses looking for ways to provide information not only to employees, but also to partners, to vendors, and to customers.

According to Gartner research analyst, Daniel B. Stang, “Software-as-a-Service (SAAS) applications present cost-effective alternatives to in-house software licensing options for today’s companies, especially small to mid-size enterprises. SAAS offerings allow an organization to spend more of its software investment money in critical areas, such as services, process definition, and support, as opposed to spending the bulk of the investment money merely on implementing technology. When utilized correctly, a SAAS system can allow an organization to focus on automating proven processes in shorter periods of time (compared to in-house deployments), without committing to a long term (multi-year, multi-phased implementation) relationship with one vendor.”

### **Technology Drivers**

Since 2002, there has been a convergence of new technologies for delivering line-of-business applications over the Internet. Right now, we’re at a critical tipping point. The Web 2.0 concept that we hear about so much today is really just a shorthand way of describing the web as a platform for delivering applications.

Some of the biggest improvement can be seen in the user experience. Today, SaaS can deliver the same features and functions as desktop programs, including rich user interfaces and fast feedback. AJAX (Asynchronous JavaScript and XML) technology, for example, allows a program to update just part of a web page, eliminating the need refresh an entire page and thus providing a smoother experience. Add features like drag

and drop and dynamic spell checking, and all of a sudden a web-based application doesn't have to work any differently than its desktop counterpart.

Better security is another example of advancement. The original web service specification didn't emphasize security features such as message signing and encryption. Now, of course, we have highly secure communication based on strong industry standards.

New developments in integration technologies form the third leg of this stool. Web services can finally get beyond the business firewall. This opens up the possibility of managing identities across the business application domain by integrating securely with systems like Microsoft's Active Directory. Integration is critical because it means that on-demand applications from multiple vendors can be tied together outside of the IT data center at lower cost and in a reusable way.

### **Benefits of Software-as-a-Service (versus Desktop Software)**

Compared with the desktop computing model, Software-as-a-Service provides many compelling benefits. Perhaps the most significant advantage is the ability to have truly "stateless" computing. In other words, wherever I go, my data is with me. There's no need to synchronize data, which is a huge headache for most users. And the application runs on virtually any computer, as long as the system supports a standard web browser.

At the enterprise level, Software-as-a-Service replaces the custom-code model with standardized solutions that can be configured around a specific business process. There are also ways to create entirely new applications without involving IT resources. By emphasizing configuration over customization, deployment time frames for projects shrink from months/years to weeks/months – without custom code.

Software-as-a-Service also delivers a platform for seamless integration into line-of-business applications. SaaS replaces custom Enterprise Application Integration (EAI) with standards-based web services and Service Oriented Architecture (SOA). This means

greater long-term flexibility, allowing applications to grow and change over time as business requirements evolve.

Lower deployment costs are another powerful benefit of on-demand software. There are no CDs, no installations, no PC-refresh, and no massive deployment projects. From a user perspective, SaaS breaks the monolithic application “stack” with modular interfaces and applications. Since SaaS truly is a service, users can build their own solution from a broad selection of applications. Just as Microsoft Office integrates applications on the desktop, SaaS now lets you roll up multiple programs into a custom suite available to the extended enterprise anywhere, anytime.

### **Software as a Service Requires a Different Kind of Vendor**

In the desktop software model, vendors sell end-user licenses. But they also sell costly professional services engagements that focus on heavy customization and one-off integrations. The vendor walks away when the engagement is over, and doesn’t reappear until the next upgrade cycle comes along. Customers pay extra for on-going technical support.

This is an outdated way of doing business, and one that many users are revolting against. In the Software-as-a-Service model, the vendor becomes a partner who provides a complete solution, which usually includes specialized applications, business methodology expertise, IT backbone and infrastructure, customer support services, and more. In contrast to the license-now and upgrade-later way of doing business, the SaaS vendor and customer enter into a long-term relationship, where new solutions, features, and functions are delivered over the entire course of a service contract.

Many people still think of Software-as-a-Service as mere outsourcing, but nothing could be further from the truth. The SaaS vendor takes a holistic approach to serving the customer’s every need, and becomes a trusted and reliable business partner, akin to an overnight delivery service like UPS or FedEx. The SaaS vendor provides everything you

need to support your goals, and can help you solve problems and drive new value from your business.

## **Conclusion**

Disruptive technologies are fulfilling the vision of driving line-of-business applications beyond their current confines on the desktop. Thanks to new technologies like AJAX, on-demand applications now feel like they are installed on desktop – they are responsive, configurable, and fully integrated.

In many ways, the traditional stronghold of the desktop application has already been broken. With Software-as-a-Service, departments like sales, marketing, and finance can control their own resources, reducing the complete reliance on an IT department. Each department can select their own best-of-breed SaaS line-of-business application, and all the applications can be integrated using web services.

The bottom line is that it's no longer a daunting task to extend solutions and services out the entire enterprise, including partners and customers. This not only changes the way businesses are run, but it also challenges mature software markets with new ways to deliver feature sets and benefits.

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