



## **Beyond Hosting**

Online development and deployment:  
The second disruptive innovation in enterprise computing

Executive POV

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## Introduction

**T**he cardinal driver in the software as a service (SaaS) market continues to be economics. Other issues are coming to the surface but economics continues to trump all others even as the focus of economic benefit shifts.

SaaS has behaved as a classic disruptive innovation since its inception in 2000. The solution type was directed at unserved or underserved customers who provided testing and ideas for improvement. Once the business model solidified, it began moving up market to larger and more demanding customers as the benefits (primarily lower costs of implementation and ownership) proved out and the disadvantages were minimized.

Throughout the process economics has forced even reluctant organizations to evaluate solutions that promised — and delivered — orders of magnitude lower costs for key application areas despite initial reservations about security, performance, and up time. Today CIOs and other executives responsible for planning and managing corporate technology infrastructures are welcoming SaaS — a.k.a. on demand or hosted — applications and recognizing that software delivered in this way makes possible business processes that they could not afford to deliver in any other manner.

As economics has continued to drive uptake, a virtuous circle has formed in which increased demand and additional new market opportunities are driving further acceptance of the model and fundamentally changing the market for enterprise software. The emerging market for SaaS is application development in which organizations that may have committed to pilot front office applications are discovering they can use the development tools upon which their core applications are based to extend and expand their existing solutions or develop completely new applications. This fact is driving a new on demand market.

The benefits of application development on demand are significant. Small or unique applications that have historically been tangential to major application suites and that organizations have routinely built in-house using separate tools or even spreadsheets can now be developed using on demand tools. Most importantly, by virtue of their origins within the same development suites, these in-house developed applications are integrated as a matter of course and can access the same data models and run in the same hosted environment as the packaged applications. This advancement can, over time, reduce or eliminate the tendency towards “islands of information” that many organizations routinely confront. Lastly, partner ecosystems are springing up around these innovative development and delivery mechanisms, further extending the core functionality and driving down the cost of IT.

The emergence of on demand development and deployment environments is a major event which promises to cause significant upheaval in the traditional enterprise application space. Rather than simply observing and reporting on developments in this market as they happen, we have endeavored to project a logical flow for the further evolution of this market. We believe this approach will provide our clients and readers better opportunities to take advantage of the milestones and inflection points that are likely to follow.

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This Beagle Research *Executive POV* examines some of the new opportunities generated by the SaaS model and attempts to forecast some market moves in the near, intermediate, and long term future. As a pure forecast we can make assumptions about the market's evolution but readers should understand that markets can change and shift in unexpected ways. We therefore advise caution when attempting to apply any of the predictions contained here.

#### **The platform innovation**

Hosting may have been the first truly disruptive innovation in the short history of enterprise software. Prior to the introduction of the hosted delivery model in 2000, software had been developed and deployed in the same manner almost since computers were first introduced. Mini-computers, personal computers, local area networks, new operating systems, development tools, relational databases and other innovations helped lower the cost of computing but applications remained a labor intensive and expensive proposition. Hosting was the first innovation that managed to take a significant proportion of cost and labor out of the equation.

Now as the first level benefits of lower costs are dispersing throughout the market, a second wave disruption is beginning to take hold which we refer to as the "platform innovation". Platforms define the building blocks of highly configurable and interoperable heterogeneous application sets that will provide customers with far greater latitude in configuring solutions than ever before.

Almost like a combined language and operating system, platforms are coming to replace what has been referred to in the conventional software market as the "stack" which historically contained the OS, database and language(s), networking and other middleware. The platform goes a long way toward hiding the complexities of modern business computing from the user. Combined with on demand delivery, the conventional model of coding, testing, and deploying software looks time consuming, resource intensive, and too slow for a fast paced business world.

We believe the platform will rapidly become the atomic unit of business computing and that multiple competing platforms will emerge. Once again, economics will drive adoption as customers conclude that the cost benefits of developing their own on demand applications far out weigh the potential down side of procuring software as a service. Software vendors will work to make their solutions compatible with multiple platforms for sound economic reasons.

#### **Definition**

An on demand platform should have three parts:

1. A hosted delivery mechanism;
2. A "stack" of conventional enabling services such as operating system and data base as well as a development environment for modifying existing applications or creating new applications;
3. A core application base upon which customers can make modifications (using the included tools) to customize the application to their specific needs.

Using the development capability to build additional applications from scratch is optional for each user but the capability should exist.

Many software users and vendors will begin to adopt some platform-centric solutions but massive adoption will be paced by formation of a robust market in which there are multiple competitors. In a chicken and egg situation, the market's evolution awaits platform proliferation and specialization which is discussed below.

**Short term: The platform becomes the atomic unit of application delivery**

The first examples of the platform centric application delivery model are already on the market. Companies such as Salesforce.com and NetSuite have delivered AppExchange and NetFlex respectively which accord well with the three element definition cited above. We expect other vendors to enter the market and note that the major enterprise vendors, e.g. SAP and Oracle/Siebel/Peoplesoft have been slow to embrace the full outlines of this model. However, given the stakes in defining the future direction of the market we expect these and other vendors to become more competitive.

At this point, the larger vendors are late to the party and further delay in delivering full platform solutions puts them in long term jeopardy of losing their franchises. There is ample research on the subject of this kind of market leadership change by researchers such as Clayton Christensen who coined the concept of disruptive innovation and more information about the idea can be obtained from his books.

**Platform proliferation**

For the on demand/platform oriented market to gain traction it will be necessary for multiple platform vendors to compete in a robust market. The reasons are many. First, one of the minor drivers (compared to economics) of this phenomenon is the ecosystem of vendors expected to grow up around each platform vendor. Ecosystem partners will seek out platforms that have attracted large populations of users for the core technology. This aggregation of demand will be enticing to partners because the population will be synchronized around a single release of product and the common bond enforced by the homogenization of the platform application should make it relatively easy to sell additional solutions into very large customer bases.

For example, Salesforce.com has a customer base nearing 20,000 companies and well in excess of 350,000 deployed seats. By comparison, Siebel Systems (now Oracle) has deployed nearly 4 million CRM seats. Either customer base would be attractive for partners wishing to sell additional components but the Siebel customers are spread over several version releases, databases, middleware, and operating systems while the Salesforce.com users are synchronized on a single version of the product and stack. From that perspective alone, Salesforce.com is a more partner friendly vendor.

The second point is that the platform approach implies a measure of involvement by the platform vendor in the sale of third party applications into the platform vendor's customer base. For example, Salesforce.com's AppExchange is an online catalogue of third party applications that customers can evaluate and rate on line. Although Salesforce.com currently charges nothing for this service, we can envision a time when AppExchange will be seen as a value add which the company begins to charge for.

At the same time partners will, by investing in selling through the platform vendor, give up a measure of autonomy in sales and marketing. The safe path for partners then will be in having multiple platform vendors with whom they can work thus mitigating the risk that any single platform vendor will be able to dictate pricing, or limit access to the market, for example.

**Platform definition**

We also expect that the term "platform" will be redefined to be less specific as multiple vendors with technologies that do not contain all three platform elements appropriate the term to their own use. We expect that some vendors of point solutions will begin positioning themselves as platforms for niche applications. We believe this will be a mistake because the appropriate move for such vendors will be to develop strong working relationships with true platform vendors to assure themselves of access to the market. End users will choose platform partners not only for the fit and functions of their core applications but

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also for the ecosystem of additional products and services that the customers may need down the road as well as for ease of adoption.

Thus, the platform vendor will become a singularity positioned between a large population of customers and another large population of ecosystem partners. The platform vendor will be seen as a desirable business partner by each population precisely because of the attractiveness of the other population. Platform vendors that reach critical masses of partners and customers early in this cycle will gain dominant positions.

#### **General purpose and specialty platforms**

It is also possible and reasonable to assume that all platforms will not be created equal. Some will focus on very broad capabilities around a core solution set. For example, Salesforce.com and NetSuite have deployed general purpose application development environments around their core CRM and, in the case of NetSuite, ERP solutions. On the other hand, specialty solutions providers may limit their appeals to specific areas; business intelligence (BI) is an example of the latter. Some BI vendors are beginning to position themselves to be leaders in the BI platform area which would, in our estimate, be a legitimate specialty platform.

Other potential platform opportunities exist and will be filled in by emerging companies building solutions in the niches between the major CRM modules. For example, between sales and marketing there exists a niche which is already being filled in which can roughly be referred to as "demand management". Traditional marketing has been overly involved, in our opinion, in outbound messaging to customers and there is strong evidence from a number of quarters that traditional marketing has lost its effectiveness.

Companies in the emerging demand management niche attempt to change the dynamics of marketing by providing tools and methods to reach out to gather customer input or the "voice of the customer" (VOC). Others specialize in nurturing nascent demand until it is fully realized. Moreover our research shows that gathering VOC is an inherently Web based activity that frequently involves third party experts to orchestrate and mediate interactions. We generally refer to applications that operate in this environment as "WebNecessary". Finally, gathering VOC is so important that the demand management niche will offer the potential to several emerging companies to introduce true platforms for interacting with customers at the demand level.

#### **Medium term: Finding a revenue model that works**

The current pricing and sales model for selling third party on demand applications is really a simple modification of the conventional licensing model — a needed first step but nothing more. The AppExchange model, which might be the most advanced of the group so far, simply offers a catalogue of third party applications which the end customer can peruse to evaluate options. The approach resembles book buying on Amazon.com but instead of a conventional shopping cart and checkout, buyers are left to contact vendors (or vice versa) to conduct business.

The shopping cart experience in other areas argues that the revenue model must be integrated with the provisioning model. Nevertheless, considerations for training and other services will continue to require some direct communication between vendor and client. The more complex applications will continue to require vendor-client interactions but a range of simpler applications will not and for that reason a simplified checkout system is warranted.

As a first step it makes a good deal of sense for Salesforce.com to stay out of the transaction since its primary goal right now is to train the public to buy software functionality in this manner, not to make a profit from it. Salesforce.com makes money through a per seat charge for each application seat used regardless of which vendor's software is in-

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volved, but in the future the natural evolution will be for platform vendors to derive some revenue from the value added by assisting in the sales process. Before revenue can be generated in this way some key components must fall into place.

#### **Safety in numbers**

There is additional margin and profit potential in this model for the ecosystem partner if the partner decides to change sales and marketing tactics. Rather than paying a large, full time sales force, ecosystem vendors will gravitate toward selling through the platform partner. As a matter of simple economics it is to everyone's advantage to pay a percentage on successful conclusion of business than to pay a standing sales force for their attempts. Selling through the Internet also has lower associated costs such as reduced travel needs. The situation begins to resemble conventional retailing and marketing will gain importance as each vendor will retain responsibility for some level of demand generation, regardless of who the retailer is.

But transitioning to that model has inherent risks for the ecosystem partner. In giving up all or most of its direct selling in favor of this model, a partner risks becoming captive of the platform vendor, subject to the dictates of the vendor's marketing, sales, and technical departments. As already noted, ecosystem partners will need to make alliances with multiple platform vendors to avoid this situation and therein lays a dilemma.

A critical mass of developers will only embrace the model when there are multiple viable platform competitors. More precisely, the developers will migrate quickly to the new model for at least part of their work, but to gain a majority of the new development work — and new applications — the new model will need to have a thriving population of competitive platforms each with large installed bases, and most developers will ally themselves with multiple platforms.

Here again, the race will go to the first movers. As Salesforce.com is demonstrating, there is currently little downside for ecosystem partners to convert to the AppExchange. Partners are currently not charged for their use of the AppExchange and many of those companies that have already converted still maintain sales and marketing efforts in the general market. But as the market evolves, demand for freestanding applications will decline and the need to bring applications up on multiple platforms at once will increase and so will barriers to successful entry into the market.

#### **Long term: Beyond simple mechanics to improved business processes**

One of the key advantages to this model for end users is the ability to customize and custom develop applications that precisely fit their unique business processes. The enterprise application software market follows what has been described as the economics of the "long tail". Briefly stated, only those applications with the biggest potential markets are developed and sold commercially because traditional application development is very expensive. Large market potential assures developers of the opportunity to recoup their investments and to make profits.

But that situation leaves end users with incomplete inventories of software to support their end-to-end business processes. The traditional solution has been for in-house IT departments to build out additional functionality to fill in the gaps. That approach has been less than successful since IT departments have the same limitations as commercial developers and even fewer resources. At the third level down, line of business users make due with applications developed with PC based tools and databases which do not integrate with the enterprise establishment or they revert to simple spreadsheets to capture and track data.

The consequence of this jerry-built software is jerry-rigged business processes that are very incompletely integrated. The ability to lower the cost of producing and delivering applications opens up more commercial niches for development. This is why a large percent-

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age of the applications that will be sold through the Internet have not been developed yet. Many long tail applications have been built but they have not been made commercially available because their developers are actual user organizations whose primary business is not software sales and marketing.

On demand development and distribution of niche applications will extend the definition of enterprise software and in so doing, it will enable companies to build out their end-to-end business processes with applications that fill in the gaps between major functional areas. Moreover, by virtue of the fact that these applications “live in the cloud” they will be easily accessible globally making it easier to link global business processes, improving communications, and lowering costs for their users.

### **Summary**

The evolving move into software as a service is primarily driven by economics. At first the economic drivers involved lowering the costs of deploying and using enterprise applications; later disruptive innovations are reducing the costs of development for more kinds of applications that enterprises require.

The first lowering was accomplished with the deployment of the on demand or hosted software delivery model which is now widely accepted only a few years after its introduction. This disruptive innovation has left many established conventional software houses flat-footed and these enterprise software vendors are still trying to catch up with the leaders in this new market.

The next cost reduction is now occurring with the decrease in the cost of extending and customizing new applications through hosted development and deployment modalities. We believe economics will continue to drive this market such that most if not all enterprise software will be delivered as hosted services in the future.

On demand development and deployment opens new markets and new profit opportunities for established software vendors, new entrants, and non-traditional developers in private IT departments. Moreover, there are no geographic constraints on where enterprise software will be developed which creates a truly global market.

Global market forces will cause price compression as lower wage developers compete directly with those in richer economies. However, the ability to develop applications in the long tail will open up more avenues for profitable development and will aggregate demand from around the world for niche applications that might not command large enough audiences in a domestic market but which, nevertheless, can be profitable for niche players.

Finally, there is no limitation to who can use on demand tools to build and customize applications. As these applications hide a great deal of application complexity from the user and business people without special training will be able to perform some development. But more importantly, traditional IT departments may find that they have more time to serve their primary customers as a result of the freedom from dealing with the complexities of version and compatibility issues between applications, operating systems, databases, tools, and middleware.

This scenario could usher in IT's next golden age.

### **Conclusions**

After decades of incremental change in enterprise computing, the second wave of disruptive innovation in IT is upon us. On demand enterprise application development and deployment will fundamentally change the industry we know today. In its place will be a lean software production and deployment industry that mirrors the regime that has taken over manufacturing. Some vendors will aggregate demand and provide access to tools and

large markets of customers synchronized around a “stack” and development tools while other vendors will innovate and retail their applications to those communities.

While it is true that the innovations discussed in this paper will disrupt the businesses of many established vendors, these changes are, after all, simply a part of economic life and must be dealt with. They bring numerous opportunities for innovation, investment, and profit and they are agnostically democratic in that they only favor those who will take risks. We prefer to dwell on the opportunities, which are significant, and note that the greatest risk inherent in this ongoing shift will be to do nothing.

### **About Beagle Research Group**

Beagle Research Group is a consulting and market research organization focused on emerging technologies and companies that will have an important impact on the way business is conducted in the years ahead. Our work is based on professional standards of quantitative and qualitative research which informs all of our publications.

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