

Busting Myths of SaaS and PaaS: Hybrids and Hidden Costs (Feb. 2008)

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Myth:**Enterprise IT buyers benefit from “hybrid” software offerings**

Rapid innovation, and growing momentum of enterprise adoption, in the domain of “Software as a Service” (SaaS) create a threat to established software vendors: a prospect of poor returns on vendors’ past investments.

Complex on-premise product lines have long been a foundation for years of high-margin revenue. Hope for more of the same is endangered, though, by rising acceptance of service-based delivery of applications, and even of Platform-as-a-Service models (PaaS) for enterprise and independent development. On-premise vendors’ attacks against SaaS and PaaS, seeking to stretch the lifetime of their legacy software models, do not stand up to scrutiny.

One common claim, often made as if it were too obvious to require support, is that customers are better off with a choice between several different models of application delivery. Vendors speak of “hybrid” offerings that purport to offer a common set of functions, or perhaps a tiered array of capability subsets, in one or more forms. It’s typical to see a top-of-the-line on-premise product, a middle-tier product that’s offered through hosting and customization partners, and a basic product offered as a service hosted directly by the application vendor.

Such so-called “hybrid” product lines are promoted as advantageous to customers. Proponents tout a greater ease of application deployment in business units of differing size; they assert that hybrid delivery enables customers to begin and maintain a relationship with a vendor that scales from simple service-based products, with minimal infrastructure cost, to top-tier packages as needs and (presumably) IT budgets grow.

Busted:**Hybrid offerings increase customers’ complexity and cost**

Hybrid product lines are inherently more difficult to develop and support—and one way or another, the customer pays the price while rarely seeing promised benefits.

If a vendor tries to maximize the advantages of each delivery model in the corresponding version of its product, the result will be at best a redundant implementation of identical feature sets using different underlying technologies. Costs will rise, schedules will lengthen, and the pace of relevant innovation will decline.

At worst, platform-specific optimization within a hybrid product line will bring forth products without much family resemblance: a lineup whose appearance, behavior and function are so different that users gain little advantage from enterprise-wide deployment or from supposed ease of migration across versions.

If a vendor tries to minimize development cost by consolidating diverse editions of a product into a single code base, none of the resulting versions is likely to be well matched to its target platform. An isolated-tenancy design, originally conceived for on-premise deployment, could perhaps be deployed on a virtualized server; its platform-native user interface could be replaced with generic “webtop” interaction to enable service-mode deployment. But why would customers accept the costs and slowed development cycles of an overly complex foundation for service delivery? Why would they tolerate a product that has the high costs and infrastructure management burdens of on-premise delivery, without platform-specific benefits to strike a favorable balance?

To dare to make such dubious offers to customers, a vendor must harbor the conceit that the customer values the relationship with a vendor—or fears the cost of changing vendors—more than the customer values end-user productivity or IT cost-effectiveness. Vendors who follow the hybrid path risk the unpleasant surprise of finding that today’s standards-empowered customers can choose among IT offerings on their merits, rather than choosing a technology provider and then confining the customer’s final choices within that vendor’s product line.

Heterogeneity in a modern IT portfolio is almost unavoidable, and in standards-based environments it’s increasingly tolerable: customers are therefore increasingly unlikely to compromise capability, and reduce return on IT investment, as the two-part price of only *appearing* to simplify their application portfolios.

Why Salesforce.com Bets on SaaS and PaaS

Next-generation IT begins where software ends. Salesforce.com has demonstrated the technical and economic breakthroughs enabled by a multi-tenant architecture: an IT model that emphasizes innovation rather than infrastructure, both for delivery of packaged applications and for general-purpose application development.

The end of software begins with Software as a Service—and with Force.com, the enterprise Platform as a Service. Read on for more.

Whose Advantage Is It, Anyway?

When a vendor asserts the customer advantage of that vendor's hybrid product line, the customer is entitled to ask: "Compared to what?"

It's hardly impressive if the only advantage in a hybrid lineup is due to the vendor's own lackluster efforts to refine its immature as-a-Service offering. Bank of America analyst Daniel Cummins made an assessment along these very lines in the summer of 2007, characterizing¹ enterprise application providers Oracle, Microsoft and SAP as exhibiting "half-hearted participation in on-demand [customer relationship management software]." Customers are entitled to comparisons, not between mature on-premise products and mediocre service pilot programs, but among the best available offerings of both kinds.

A Service to Whom?

There are many ways for an enterprise IT vendor to wrap its products in the flag of "Software as a Service." Many vendors seek to capitalize on favorable marketplace interest in this label by applying it to simple managed-service models, which merely relocate the complexity and cost of a single-tenant enterprise software stack from a customer's premises to a service provider's site. Others apply the label of SaaS to isolated-tenancy models in single-application service operations: these can offer some economies of scale, but fail to deliver the radical improvements in efficiency of a multi-tenant model.

Only a bottom-up, multi-tenant design can maximize sharing of hardware and software foundations without compromising separation of data, or limiting the customization of application function and behavior for each customer organization and even each individual user profile. Nicholas Carr, author of the widely discussed book *The Big Switch*, has put the SaaS proposition in simple terms: in a blog post,² he characterized "a modern, leading-edge software-as-a-service infrastructure" as being "virtualized and multitenant. In other words, no pieces of hardware are dedicated to individual clients. Everything's pooled together and shared, so it's very efficient and it scales up and down easily." Carr is joined by many other industry observers and analysts who offer almost identical definitions.

More recently, the label of "Platform as a Service" has been advanced for generalized multi-tenant models in which customization goes even deeper, to the point that an arbitrary general application—rather than merely an extension of a packaged application—can be devised for deployment in the multi-tenant "cloud." To qualify as a PaaS, industry innovator Marc Andreessen has asserted,³ the prospective developer must be offered "a system that can be programmed and therefore customized by outside developers—users—and in that way, adapted to countless needs and niches that the platform's original developers could not have possibly contemplated, much less had time to accommodate." In shorter words, Andreessen has said⁴ that "If you can program it, then it's a platform. If you can't, then it's not."

These definitions of SaaS and PaaS are implied in all of this paper's subsequent uses of these terms.

Why Not the Best?

It's hardly surprising if a poorly designed, poorly implemented, poorly operated service that's poorly aligned with a vendor's other offerings leaves that vendor's customers wanting something more. A vendor insults the intelligence of all concerned, though, by pretending to come to the rescue with an on-premise alternative.

The latter behavior is more an indictment of that vendor than it is of the SaaS or PaaS models—and that indictment need not come from competitors, or even from customers, when it can come from the vendor itself.

For example, one major vendor of on-premise applications (which heavily promoted its "hybrid" product line⁵ in May of 2006) was singing quite a different song⁶ in December of 2007: one of its executives was quoted as saying on the latter date that the vendor's customers "have a different expectation—a closed loop from lead to execution. If that works, it has to work in the hybrid model. It is a different model than [single] tenant; it is not stand alone, it is an integration [to the Vendor S back-end systems]. It was just not accomplished."

There's a world of difference, though, between saying (let alone proving) that SaaS can not deliver integration—with on-premise alternatives therefore required—and admitting that a particular vendor has failed to devise a SaaS architecture that delivers enterprise-grade integration opportunities. Robert Ridout, CIO at DuPont, has said⁷ that

¹ 10 August 2007, "Salesforce.com expected to post slight profit gain," marketwatch.com

² 29 November 2006, "SAP's mixed-up confusion," roughtype.com

³ 16 September 2007, "The three kinds of platforms you meet on the Internet," blog.pmarca.com

⁴ *Ibid.*

⁵ 17 May 2006, Press release: "CRM Without Compromise: With Move to Hybrid Model, SAP Offers Customers More Deployment Options and More Flexibility for Growth Without Disruption," SAP AG

⁶ 5 December 2007, "SAP Drops 'Hybrid' Term from CRM Offering," eweek.com

⁷ 13 June 2007, Presentation by Marc Benioff, CEO of salesforce.com to The Research Board

Hybrid Product Lines Solve Vendors' Problems

- :: Vendors seek to extend the lifetime of legacy code designed for on-premise deployment
- :: Low-end service offerings represent an entry point into a product line: they often lead to costly and disruptive "upselling" to on-premise editions
- :: Technical factors make hybrid product lines more costly, more complex, slow to improve, and inconsistent in function and behavior

the salesforce.com SaaS/PaaS platform did in fact deliver “a single standard integration” to Vendor S on-premise systems: Ridout called the result “a terrific success.”

Which Was to be Proved

There are several other vendors whose criticisms of service-model delivery are also leveled primarily at themselves. For example, one major vendor consistently claims that “as-a-Service” is an inadequate model, and that a model of “software plus services” is needed to offer across-the-board capability—but this vision has yet to be backed up by either software or services that rise to the current level of the industry’s best of breed.

One might plausibly argue that it is this vendor’s service offerings, rather than the service model *per se*, whose limitations discourage that vendor’s whole-hearted move into the burgeoning as-a-Service marketplace.

Oddly, that same vendor’s representative at a Washington, D.C. conference in January 2008 asserted⁸ the need to “shrink the perimeter” of the IT organization. This directly contradicts any argument for hybrid product lines, since implementing the same enterprise functions in more than one manner—especially using more than one distinct code base—clearly expands the IT perimeter in an almost fractal way. Every distinct point of function implementation and interface, even if meant to behave identically to those of other product editions, represents additional opportunities for functional error, interface bottleneck, or security loophole due to programmer error or system misconfiguration.

Out of the mouth of another vendor comes another admission that hybrid product lines serve the interests of vendors rather than customers. In a webcast by a senior executive, a lengthy justification of a hybrid offering concluded⁹ with statements that “We have to celebrate the fact that we have two CRM systems... our customers can get a product that integrates one [Vendor O] product to another [Vendor O] product...”

Such incestuous integration isn’t the kind of open-systems capability that today’s IT buyer expects and requires: this statement, rather, supports the observation above that some vendors behave as if the customer’s fealty to a vendor trumps the customer’s own self-interest.

Customer reaction to such a proposition is becoming increasingly skeptical: it has proven difficult to find even a single customer that has actually implemented a vendor’s hybrid product line, in a manner that derives genuine and sustained benefit from the availability of comparable feature sets delivered via multiple models.

Check Your Premises at the Door

Further implied, but not stated, in “hybrid” product-line promotion is the presumption that on-premise architecture still has an enterprise edge: that serious customers will still do better to implement IT function using local infrastructure with a single-tenant software stack, and will therefore benefit from having the option to adopt a vendor’s application in an on-premise form. That presumption should not escape the burden of proof.

In Their Own Words

When vendors promote an on-premise option, they often assert deficiencies in the security, the integration flexibility, and the functional capability of as-a-Service offerings compared to on-premise technology. Other papers in this series address, in depth, the last few years’ transformation of the as-a-Service proposition to include world-class security, extensive integration options, and powerful customization tools for data models, business logic, programmable workflow, and user interaction.

Ignoring such inconvenient truths, many vendors with hybrid product lines use the bygone limitations of first-generation SaaS as an excuse to pigeonhole their *own* on-demand editions as middle-tier solutions. In September 2007, for example, one vendor’s long-awaited announcement of its SaaS intentions included explicit market segmentation: its forthcoming product was described¹⁰ as suitable for organizations with 100 to 500 employees.

That vendor’s own fact sheet, distributed¹¹ on the occasion of that announcement, seemed less concerned with meeting customers’ needs than with assuring investment markets that the vendor would not compete against itself: it asserted, for example, that “The on-demand business software solution complements and does not replace any of the other solutions in the [Vendor S] portfolio.” One might therefore characterize the new product’s selling proposition, stripped of its spin, as “small companies can’t start with it; successful companies can’t grow with it.”

⁸ 16 January 2008, Presentation: “Software + Services: Providing A Flexible Foundation For The Government Enterprise That Enables Cross-Agency Collaboration And New Line Of Business Solutions Using Web Services Standards,” Kurt Colcun, Microsoft Corp.

⁹ 12 November 2007, Webcast recording: “CRM 2.0: Innovation from Technology,” Anthony Lye, Oracle Corp.

¹⁰ 19 September 2007, “ByDesign, SAP introduces on-demand business,” cnet.com

¹¹ 18 October 2007, “SAP unveils mid-market solution...ByDesign,” enterpriseirregulars.com

Market Segments are a Product Line’s Fault Lines

- :: Rigidly designed products embed specific decisions about complexity and capability
- :: Metadata-based customization in a multi-tenant service platform enables far greater flexibility
- :: If any given customer really only has one choice from any given vendor, any benefit from a hybrid approach is the vendor’s alone

State-of-the-Art SaaS? Or Hybrid “Separate but Equal”?

There is no inherent reason why a service-delivered application can not be configurable for scale: able to offer any given user, of any size, an attractive balance of capability and complexity.

Metadata-based customization and user-specific views allow a single code base, delivered as a service, to provide useful capability at affordable cost to the smallest organization—while retaining the ability, backed by a service provider’s own highly scalable infrastructure, to meet the needs of the largest enterprise as well.

Segmented markets, served by hybrid product lines, are symptoms of rigid design and of brittle and cumbersome construction. Market segmentation also gives the lie to the main justification—that of maximizing customer choice—for hybrid product lines.

After all, if any one customer, at any one moment in its growth, has only one way to buy a particular capability from a particular vendor, that vendor’s offering is only “hybrid” from the vendor’s side of the table. From the customer’s side, the resulting proposition is not one of hybrid vigor, but rather of one of discontinuity and disruption—that is, if the customer tries to grow a business within the product family of a vendor whose “hybrid” lineup presents the fast-moving customer with one rip-and-replace speed bump after another.

Hybrid product lines will only appear to be attractive when the arguments in their favor are insinuated as obvious, without ever being stated specifically enough to invite real analysis. When dragged out of the shadows of goes-without-saying implication, and forced to stand in the light of objective measures, these arguments turn out to be as shaky as many other separate-but-equal arguments have long since been shown to be.

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