By Clay Dickinson and Kevin Short

SOA in the Hospitality Industry

How are We Doing?

It has been a year a half since our article entitled, "Service-Oriented Architecture and the Hospitality Industry: Cure or Chimera," was published in *Hospitality Upgrade* Magazine. Much has transpired in hospitality industry technology since then, but what specifically has been occurring with regard to service-oriented architecture (SOA)? Has the industry embraced SOA in any real way, or are we only playing at the margins? Are there any examples of SOA environments that have been put into production and, if so, what can we learn from their experience? Has SOA delivered on the various benefits that have been ascribed to it?

Before delving into these questions, the sidebar (to the right) is a quick reminder of the possible SOA benefits cited in the original article.

Delivery of even a subset of the benefits mentioned is a tall order. Understandably, skepticism is running high as SOA has fallen from the peak of inflated expectations in Gartner's 2007 "Emerging Technology Hype Cycle" and is just emerging from the "through of disillusionment" into the slope of enlightenment[1]. This indicates that mainstream adoption is expected to occur within two to five years. In fact, a recent study conducted by Gartner Custom Research (GCR) indicated that enthusiasm for SOA among larger companies in North America and Europe is much less tempered than may be the case in the general IT population. This conclusion is bolstered by the finding that, while IT cost savings remains the primary driver for the SOA vision within their company (30 percent), the leading business impacts executives anticipate as a result of deploying SOA are the business agility-related benefits of customer service improvements (65 percent) and faster time to market (56 percent). Notwithstanding these positive impacts, the study also indicated that obstacles to justifying SOA remain formidable with lack of confidence in a big SOA payoff (at 54 percent) and securing funding (at 47 percent) as the most prominent[2].

Empirical evidence of SOA's alleged benefits derived from actual implementation experience would help propel the adoption and diffusion of SOA throughout the hospitality and other industries. Understandably, few companies are willing to 'bet the farm' on such a new approach until such benefits are proven, preferring instead to fall back on one of the primary enabling attributes of SOA itself – that of the controlled modernization of existing legacy systems, their migration to less expensive platforms, and the simplification of interfaces. Our experience with a number of travel and hospitality companies supports this hypothesis.

Let's take a look at some actual and projected data from one such SOA environment. The figure below depicts the projected annual operating costs and actual performance data of a representative legacy environment and application versus an SOA environment in the travel and hospitality industry. This SOA environment has been in production for one year. While the projected operating costs are expressed as percentages to ensure confidentiality, they represent forward costs that have been contractually committed to, and hence, may be considered to be accurate approximations. Significant costs savings can be realized migrating to a SOA environment as evidenced by projected costs (inflated) decreasing to approximately 64 percent of current costs. Meanwhile, indexed performance data illustrates that these lower costs can be attained without compromising message response performance or system availability.

In addition, components of legacy systems from a number of different travel companies have been migrated into this representative SOA environment over the past year, which has resulted in average increases in transaction volume of over 600 percent per month and reaching well over 30 million messages per month, all while maintaining an average annual availability of approximately 99.9 percent. These performance metrics highlight a number of benefits ascribed to SOA, including vendor diversity, lower costs, scalability and performance.

SOA is not, however, devoid of a very

SOA BENEFITS

Agility – Loosely coupled design enables the rapid creation of highly functional and flexible applications based upon the dynamic composition of unique Web services that will run in virtually any IT infrastructure.

Reusability/Speed to market – SOA promotes the use of encapsulated Web services that can be reused in a variety of separate applications. This can dramatically decrease development costs and increase the speed to market.

Vendor diversity – Fully encapsulated SOA-designed Web services can run in virtually any environment, giving companies the option of migrating to cheaper platforms.

Business involvement/IT alignment – Active involvement of the business is required as many services comprise combinations of the company's business processes.

Accurate metrics/ROI – Monitored usage enables new cost recovery and allocation models, a more precise calculation of ROI, and constant improvement of business processes.

Legacy modernization – SOA enables interoperability between disparate applications and platforms, allowing for the graceful modernization or retirement of legacy.

Integration expense – Build once and run anywhere, interoperable applications reduce costs by eliminating the need for point-to-point integrations.

real set of challenges – challenges that are becoming more pronounced as SOA leaves the conceptual realm and enters everyday practice. Real experiences, including the one discussed above, are surfacing challenges that are consistent with those increasingly cited in recent research. These challenges can be broadly categorized within the same three dimensions often involved in the successful adoption of any new technology.

People – Issues ranging from a persistent hesitance of business executives to recognize that SOA is as much about changing attitudes, ideas and governance as it is about technology, to a shortage of IT resources trained in a consistent interpretation of SOA principles and practices, are illustrative of the people-related obstacles of greater and more successful SOA adoption.

Process – Issues relating to accepted methodologies for determining where to start SOA within an enterprise, or such things as how to best contain project scope, design a data-centric business model or model new, modular business processes have yet to be developed, leading (paradoxically) to different flavors of SOA and a protracted confusion over SOA process best practices.

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Technology – The deployment of SOA remains, at least partially, contingent upon the efforts and advances of technology vendors and, without careful design, can lead to an unnecessary degree of continued vendor and platform dependence. Efforts by industry organizations, such as OpenTravel Alliance and Hotel Technology Next Generation are dedicated to making inroads here.

Again, these issues are typical constraints to the diffusion of most new technologies and innovations. The distillation of the more challenging issues should be viewed as a positive development for it is, in and of itself, a by-product of the desired SOA diffusion. It may be the most tangible evidence we have that SOA is moving to a plateau of common adoption – the point at which its benefits will become even more manifest.

Experiences such as those discussed in this article are being replicated in thousands of enterprises around the world, possibly heralding an unprecedented level of system interoperability within the hospitality industry that enables new economies, efficiencies and capabilities through a variety of yet-to-be-conceived business models.

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[1] Gartner Hype Cycle for Emerging Technologies, as of July, 2007.
[2] GCR Custom Research, SOA Research: SOA Justification, 2007.