Delivering enterprise resource planning systems through application service providers

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Abstract
This paper presents research findings from an in-depth study on the global application service provider (ASP) industry. It explores the potential for Web-enabling enterprise resource planning (ERP) systems for small and medium-sized companies on a per-seat, per-month basis. Findings from field research suggest that, while the ASP business model offers many advantages for customers, few companies are prepared to outsource their mission-critical ERP systems to ASPs. This situation has led to many large and small ASP vendors to re-think their strategic business plans, with some high profile failures. Evaluating the situation from a market, organizational and technical analysis of the ASP industry, this paper argues that, while the ASP model is currently immature, the next three years will see the emergence of more clearly defined enterprise ASP offerings from key players in the software and computing services industry.

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Introduction
The convergence of software and IT infrastructure toward an Internet/net-centric environment has enabled the application service provider (ASP) concept to emerge (Currie and Seltsikas, 2001a). In recent years software has evolved from custom-coded, proprietary applications to pre-packaged off-the-shelf offerings and now to the development of net-centric applications. Likewise, IT infrastructure has emerged from a closed mainframe environment to distributed computing and now towards a net-centric infrastructure with the potential to link customers and suppliers. ASPs are third-party service firms, which deploy, manage and remotely host software applications through centrally located services in a rental or lease agreement. ASPs are important for those researching into IT strategy and outsourcing practice, since they potentially offer a new value proposition to the customer, moving away from a product-based approach to software procurement to software-as-a-service. Thus, “in contrast with traditional outsourcing, the ASP model involves renting access to core business applications over the Internet or some other network – not simply handing over operational control of your existing data centre” (Lauchlan, 2000, p. 29). But, for the model to work, the ASP will need to achieve economies of scale by offering a “one-to-many” service rather than the one-to-one relationship found in traditional outsourcing.

ASPs currently procure and implement software systems for their customers, many of which are non-mission critical business-related packages (e-mail, calendaring, travel and expenses modules, etc.). However, ASPs have ambitions to provide customers with a comprehensive alternative to building and managing internal information technology operations through the provision of complex enterprise resource planning (ERP) systems. The main advantage for the vendor will be to develop new business opportunities with small and medium-sized companies. For the customer, access to enterprise software at an affordable rate will enhance efficiency through re-engineering business processes and operations. Applications outsourcing of ERP systems to ASPs is suggested by some pundits as the way forward for small and medium enterprises, although key questions
arise as to whether this business model will succeed in the short to medium term, if at all.

IT outsourcing is defined as a contract which calls for vendors to provide resources for a monetary fee, that are then deployed under the buyer’s management and control (Willecocks and Lester, 1996). Demand for IT outsourcing, systems consulting and integration services has increased in recent years due to the changes in deregulation, globalisation and mergers and acquisitions taking place in organizations (Currie, 2000). In the 1980s and 1990s, IT outsourcing tended to proliferate for a variety of complex political, economic and technical reasons (Loh and Venkatraman, 1992). As outsourcing continued to gain momentum, there were concerns that small and medium companies, with low IT budgets, were unable to reap the benefits afforded to their larger counterparts (McLellan et al., 1995). ERP systems were only affordable to customers with large IT budgets, who would purchase several modules on a company-wide scale (Holland and Light, 1999). But, as the Internet offers new possibilities for software companies, novel business opportunities are being presented to enable small and medium companies to participate in e-business (Siebel, 2001).

This paper is divided into four sections. The first section discusses a five-year research programme on e-business, focusing in particular on the development of application outsourcing through ASPs. This research is funded by grants from the European Union, the Engineering and Physical Sciences Research Council (EPSRC) and the Economic and Social Research Council (ESRC). The second section gives an overview of the evolution of the ASP model. Here the authors present a taxonomy of different ASPs, though it is outside the scope of the project to discuss all of them. The third section focuses on implementing traditional (non-Web-enabled) ERP systems and some of the problems associated with this delivery method. The fourth section discusses the marketing strategies used by enterprise ASPs in reaching small and medium companies. Here, the challenges facing the enterprise ASPs are highlighted. The paper concludes by reflecting on the challenges facing major ERP companies and the third-party solutions that are competing in the enterprise market.

The research study

Against a background of the changes in IT outsourcing in the last four decades, a research study was developed to compare and contrast traditional outsourcing practices with the recent phenomenon of application outsourcing via ASPs. While much of the previous academic research has focused on the client-side of IT outsourcing, with particular emphasis on identifying success and failure scenarios through case study analysis, this research study was designed to explore the supply-side of IT outsourcing, using ASPs for two reasons. First, the supply-side of IT outsourcing remains under-researched in the academic literature. Yet a deeper knowledge of client strategies and outcomes of IT outsourcing may only be gained through an understanding of how IT vendors, together with their channel partners, develop and define their IT outsourcing business. Second, the emerging ASP industry, currently vendor-driven with few customers adopting ASP solutions, is a phenomenon which may have significant implications for global IT outsourcing policy and practice, particularly as Web-enabled or remote outsourcing contracts may be more difficult to manage and control.

While the use of ERP systems is not always placed within an outsourcing context, initial field research into the ASP industry showed that it comprised many different service offerings, from vanilla (de-scope) ERP applications (from SAP, J.D. Edwards and others) to non-mission critical, business-focused applications (e.g. accounting packages, travel and expenses, HR applications, etc.). In this paper, we focus on how the vendors are attempting to sell enterprise ASP solutions.

Research methodology

The research study is an empirical investigation into software and computing companies offering ASP services in the USA and Europe. An inductive-descriptive approach is used with fieldwork continuing over a five-year period, beginning in July 1999. The first phase of the fieldwork was conducted in Silicon Valley, California and in the UK. Fieldwork into a range of established and start-up companies elicited responses from key personnel responsible for developing an ASP strategy. A semi-structured
questionnaire was used to elicit data and information on the three key themes outlined in Table I. The interviewees in most cases were founding members, CEOs and senior managers responsible for developing ASP strategies and services within their own organizations. Job titles of interviewees have included: CEO, CIO, COO, director of technology, business development director/manager, chief operating officer, VP, European and Asian operations, marketing director, product marketing manager, technology strategist. Interviews lasted between one and three hours and were tape-recorded. An ASP taxonomy was developed, as it became apparent that the scale and scope of ASP offerings were wide in terms of market opportunity, company size, applications requirements, complexity of solution, integration and security issues. However, even the sub-division of the ASP industry into a taxonomy (enterprise, horizontal, vertical, pure-play and enabler) was merely an exercise in classification rather than one designed to pin-point similarities or dissimilarities both between and within different types. Rather, the benefit of using the ASP taxonomy was to recognize the inherent complexity of the ASP model, with each type of ASP pursuing strategic alliances, channel partnering and market opportunities relevant to its own position within the ASP industry.

The evaluation of different ASP business models was divided into four broad categories of delivery, integration, management and operations and enablement which are used by the ASP Industry Consortium in their ASPire Awards programme. The performance criteria may vary across different ASP types, with data security being a major priority where ERP applications are delivered by enterprise ASPs, and time-to-market the major priority where e-mail and calendaring applications are delivered to start-ups by pure-play ASPs.

Clearly, case studies were likely to generate data and information on varying quality and detail on each of the three themes, the types of ASP business models adopted, and the evaluation criteria. This was not seen as problematic, as the interviews with a range of companies were intended to generate rich and meaningful insights into the emerging ASP industry rather than provide definitive answers to complex questions.

**ASP business model**

An ASP is a firm which “manages and delivers application capabilities to multiple entities from datacentres across a wide area network” (Currie and Seltsikas, 2001b). An ASP may be a commercial entity, providing a paid service to customers or, conversely, a not-for-profit or a government organization supporting end-users. To some extent, the ASP concept revisits the service bureau model of the 1960s and 1970s, which were preceded the large-scale IT outsourcing contracts of the 1980s and 1990s. But the service bureau

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<th>Table I Key themes in the emerging ASP business model</th>
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<td><strong>Key themes</strong></td>
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Source: Currie and Seltsikas (2001a)
model was limited in the scale and scope of software applications it provided customers, and proved to be relatively expensive to small and medium companies with limited IT budgets and infrastructure capabilities. ASP solutions, on the other hand, are application-centric, which means that the core value of ASPs is to provide access to, and management of, an application that is commercially available. ASPs’ “sell” application access to customers. Through application hosting, ASPs claim to remove the burden of day-to-day IT management by assuming total responsibility for application delivery, updates and ongoing maintenance and support. This “third wave IT outsourcing” typically means that the end user organizations are charged a fixed, monthly fee based on application usage and services offered. These applications are managed in a central location rather than at the customer site. Customers, therefore, access the applications remotely through the Internet or via leased lines.

The ASP offering is designed to be a one-to-many solution (limited or no customisation) to enable ASPs and their customers to achieve economies of scale, and thus cost savings. But the ASP solution in the context of ERP is potentially complex, since it requires the integration of a range of business processes in addition to the expertise from suppliers, such as the ASP vendor, an independent software vendor (ISV), a data centre or co-locator, a systems integrator, a management consultancy, a networking company, and possibly a telco (Soltisikas and Currie, 2002). So, in order to offer an end-to-end solution, an ASP has to partner with other vendors who are able to provide the necessary resources and expertise. Having provided such a comprehensive solution, the ASP hopes to retain its position as the single point of contact between itself and the customer.

An overview of the ASP industry prior to the dot.com shake-out of 2000-2001 showed that there were many different types of ASPs. At the high end of the ASP market, enterprise ASPs were establishing relationships with ERP vendors to offer enterprise solutions. For example, Corio and USInternetworking (both based in the USA) were offering enterprise-class software services to small and medium-sized organizations. This was in addition to the big-five ERP vendors (J.D. Edwards, Baan, Oracle, Peoplesoft, and SAP) also offering Web-enabled ERP solutions. Other ASP carved out a specialist niche to offer software applications to vertical markets, such as education (e.g. Learningstation.com) or health care (Trizetto). Placing these offerings in the context of different market, business and technical drivers, suggests that benefits would be afforded to large, medium and small companies at varying degrees, and possibly dependent on size of investment in the ASP solution (see Table II). For example, it is unlikely that a small company would achieve total cost of ownership (TCO) benefits from an ASP, given that its investment in IT infrastructure and applications would be low anyway. This was found to be the case by one large ASP vendor, who subsequently found that it was inappropriate to justify the benefits of the ASP solution on the grounds of TCO reduction. As the business development manager said, “Most SMEs spend under £200,000 on their IT, so TCO is not appropriate”. This company then moved to using flexibility and ease of use as two key ASP benefits, before subsequently closing its ASP business at the end of 2001 due to low customer up-take.

Along with the hype surrounding the development and deployment of e-business solutions, ASP vendors initially promoted the above market, business, and technical drivers to help sell their solutions (Cherry Tree Spotlight Report, 2000). Gartner Group claimed that application outsourcing could reduce TCO by 50 percent or more (for large and medium-sized companies). But perhaps the most attractive potential benefit from ASP solutions was the rapid access to a range of different software applications at low cost. ASP vendors argued that, since most start-up companies, which were mostly dot-coms, did not have access to large financial resources, with little or no IT infrastructure, they would benefit from this one-stop-shop form of outsourcing. Yet the dot.com shake-out from 2000 onwards had a negative impact on the ASP industry, with many start-up ASPs going out of business due to thin business plans and the failure to secure second-round venture capital.

Like the rhetoric supporting traditional IT Outsourcing, ASPs are perceived to allow the customer to focus on their core competencies (Prahalad and Hamel, 1990). As the vendors suggest, the provision of an end-to-end
solution allows the customer to outsource the procurement of the software application, the licence, data centre maintenance, the management of the software implementation and some integration activities. Other benefits are linked to the global information technology skill shortage. Acquiring and retaining skilled IT employees is a problem for most companies, but more so for those small and medium which are unable to match high IT salary scales offered by large companies. The ASP solution suggests that companies will benefit from economies of skill, as ASPs provide a packaged solution to their customers on a pay-as-you-go basis. The current pricing-model of ASPs provides a predictable cash-flow, because the pricing is typically based on the number of users or seats per month. Reliability, scalability and availability (RAS) are also promoted by ASPs as key benefits, which align with other e-business solutions. The extent to which these market, business and technical drivers have penetrated the potential customer market for ASP solutions is an important dimension of this research programme.

**Taxonomy of ASPs**

A taxonomy was developed to classify different types of ASP offering (see Figure 1). In general, four distinct types of ASPs emerged to provide enterprise, pure-play, vertical, and horizontal solutions to customers. Enterprise ASPs were usually start-up companies which were forging links with large ERP vendors such as SAP, Siebel, Peoplesoft, Baan (now Invensys) and J.D. Edwards. Two such ASPs are Corio and USInternetworking. A typical enterprise ASP offers an end-to-end solution which is integrated, built around applications extending from front-end to back-end operations. This led to all the major ERP vendors setting up their own direct channel (e.g. mySAP.com from SAP, e-Center from Peoplesoft, and Oracle.com from Oracle).

A second category of ASP is the pure play. These companies offer ASP solutions, which are Web-enabled. Pure play ASPs offer horizontal applications or point solutions to their customers, who are typically dot.coms or other high growth start-ups. Pure-play companies target customers, which have minimum legacy systems to avoid integration issues. In short, the pure-play solution is usually offered by an ASP start-up for a dot.com start-up or at least a small company with little or no IT infrastructure. The pure-play ASP is often one which wants to explore wireless or remote solutions. As such, the term WASP or wirelessASP had emerged (e.g. Aspective).

Vertical ASPs have created their solutions for a specific market sector, such as health care or high-tech manufacturing. Vertical solutions can be either an enterprise solution (e.g. AristaSoft, an ASP which offers end-to-end ERP and customer care products for the
high-tech manufacturing market) or a target product offering such as The LearningStation.com offerings, which include individual education software products or teacher-productivity solutions. As Figure 1 suggests, each type of ASP is attempting to move to a position where it can provide a full service or an end-to-end solution. To do this, ASPs in all categories will need to establish strong partnerships or strategic alliances with other companies, as well as offering an application outsourcing solution which is highly attractive to the customer on the basis of cost, quality and functionality. While the antecedents of some players fall outside the ASP industry, i.e. the large ERP vendors, large software companies (Microsoft), hardware companies and telcos, these companies will play a significant part in the ASP space in the future. For the purposes of this paper, we focus on enterprise ASPs. The following discussion gives a brief overview of ERP systems before moving on to the challenges of implementing ERP systems in an ASP context.

ERP systems

ERP systems that automate corporate processing such as manufacturing, accounting, and human resource management were introduced to the market in the 1980s, gaining momentum in the 1990s with numerous implementations in large companies. ERP systems are “comprehensive packaged software solutions that integrate organizational processes through shared information and data flows” with a market forecast to grow to $21 billion by 2004 (Shanks and Seddon, 2000). The ability to reduce the costs of operational systems and the ability to integrate applications which inevitably allow for more efficiency are major justifications for adopting ERP systems (Sumner, 2000). Presently JBOPS[1] companies own major shares in the ERP market and in 1998 approximately 40 percent of companies with annual revenues over $1 billion had implemented ERP systems (Caldwell and Stein, 1998).

However, the late 1990s saw a downturn in the global ERP marketplace, with revenues falling significantly. This was attributed to the Y2K problem, which led to companies spending vast amounts of their IT budgets often to tackle often perceived rather than real problems. As such, IT budgets were re-focused away from ERP investment and upgrades (Markus et al., 2000). Other reasons saw a saturation in the high-end ERP market, coupled with many large ERP customers moving towards e-business solutions other than ERP systems (Kremers and Dissel, 2000). To some extent, ASPs were part of this distraction, as many formed to offer vanilla ERP solutions to the mid-sized market (Marti et al., 2000).

Problems associated ERP systems implementation

Despite the advantages offered by ERP systems, empirical evidence suggests that there are many instances where organizations have abandoned the implementation process or eventually had to stop using the systems. For example, Dell Computer Corporation intended to implement SAP R/3 (an ERP application), but this was abandoned, as the CIO claimed that the software was unable to keep pace with Dell’s extraordinary growth rate (Slater, 1999). Other organizations have failed in their attempt to install ERP systems (Bulkeley, 1996). According to KPMG, many have failed to achieve the financial gains they expected.

Implementing ERP systems involves huge costs. For example, SAP installation for a Fortune 500 company costs about $30 million in licence fees and $200 million in professional services (Marti et al., 2000). According to Berger (1998) the ERP implementation costs and related services (mainly consultancy) could incur around five to seven times the cost of the licence fee. Retaining experienced staff is another major issue encountered by some companies which have adopted ERP systems (Adam and O’Doherty, 2000; Sumner, 2000). This is because there is a tendency for staff with experience in using ERP systems to be poached by competitors. On the technical side, many companies have encountered problems related to integration. At the basic level, ERP software has to be integrated with the platform on which it will run. This process could be complex, since there might be problems due to incompatibilities with different systems. For example, the hardware and the operating system might not support
the ERP software. Another major challenge is to integrate existing legacy systems and other applications with the ERP system to provide a common interface. Also, to a certain extent ERP software imposes its own logic on company strategy, organization and the culture (Davenport, 1998). In addition, the use of vendor-developed “best practices” could cause many mismatches and create considerable implementation and adaptation problems and customers have to change their business processes to fit with the ERP suite rather than the other way round (Kumar and Hillegersberg, 2000).

Since many ERP vendors update the versions of software regularly, companies have to migrate to new systems prior to getting used to the existing version. Migrations are considered to be a time-consuming and costly process and things could be worse, if organizations have made modifications to the existing software (AberdeenGroup, 2001). Taking all these factors into consideration, three questions arise regarding the development and deployment of ERP systems by ASPs. First, what are the target customer markets for enterprise ASP offerings? Second, how will existing ERP-related problems be overcome for customers adopting Web-enabled ERP solutions? Third, what are the significant benefits and risks from enterprise ASPs? These questions will be answered to some extent in the next section which explores the phenomenon of enterprise ASPs.

Enterprise ASPs

In recent years, ERP systems have focused on areas like supply change management (SCM), customer relationship management (CRM) and electronic marketplace software (Shanks and Seddon, 2000). The thrust towards e-business has fuelled the growth of these applications, especially for the mid-market (Kumar and Hillegersberg, 2000). ERP vendors have all focused their attention on developing the ASP business model to provide enterprise solutions to the untapped SME market. Given that revenues from their large customers have been slowing down from the late 1990s into the twenty-first century, new customers are sought. However, the SME market is diverse in both scale and scope. Notwithstanding this, ERP vendors have opined that vanilla ERP offerings will be attractive to SMEs, because they will gain access to best of breed ERP solutions without having to pay large up-front software licence, installation and maintenance costs. Throughout the late 1990s and early 2000s, the JBOPS companies launched a number of initiatives designed to capitalise on the application outsourcing model. Two distinct strategies emerged to enable ERP companies to enter the ASP market. First, ERP software would be delivered through third-party ASPs like USi, Corio, and Aristasoft. These companies would take an enterprise solution and offer it direct to customers. In the case of Aristasoft, the J.D. Edwards ERP software would be offered to customers in the high-tech equipment manufacturing area. Aristasoft (a vertical ASP) would provide the market sector knowledge and, coupled with the ERP software, the customer would receive a powerful enterprise solution. Second, ERP companies began to host their own solutions. For example, PeopleSoft’s e-Center and Oracle’s Business Online which was launched in 2000[2]. Oracle also provides software through its ASP partners Agilera and Interliant. This is a major trend in Oracle’s ASP strategy, as it has moved away from serving its customers through third parties only, to hosting its own e-business suite. Oracle claims to provide a 100 per cent ASP solution with Oracle-managed infrastructure and Oracle applications through its internal service.

Another major ERP vendor, SAP, offers SAP solutions through ASPs such as Corio, eOnline as well as hosting SAP solutions through its own mySAP.com, which was launched in 1999. It covers generic solutions, where it claims that customers can achieve usage in as few as ten days. Electronic Data Systems Corporation (EDS) and Hewlett-Packard (HP) are the preferred data centre providers for SAP hosting. They provide data centre operations, infrastructure services, telecommunications and a full range of complementary systems including the integration of legacy systems. PeopleSoft, another ERP company, which specialises in human resources applications, also launched its internal ASP offering eCenter, while also serving customers through third-party ASPs such as USi and Agilera. Even though some ERP companies deliver Internet-enabled applications, which are not specifically
designed for the Web, e-Center offerings are developed specifically for Web delivery. PeopleSoft has partnered with Exodus for data centre operations. Table III gives a breakdown of the JBOPS companies in terms of their ERP market share, annual revenues and ASP offerings.

**Third-party enterprise ASPs**

ASPs like USi, Corio, Interliant specialise in delivering best of breed applications for the customer. As mentioned earlier, these companies act as value added resellers (VARs) for the ERP companies. USi delivers applications of Siebel, Oracle, and PeopleSoft, while Corio delivers applications of PeopleSoft and SAP. Apart from delivering ERP software, they provide an array of offerings including e-business, e-procurement, desktop applications which belong to different vendors. Typically, these companies pay a licence fee in order to acquire software from the developers of software.

Like most ASPs these companies have made several partnerships and acquisitions in recent months. The trend among best-of-breed companies is to acquire companies with domain expertise in implementing ERP applications and other applications delivered by them. For example, while Interliant acquired PeopleSoft integrator Soft Link, USi has acquired Conklin and Conklin, a system integration firm that specializes in implementing Lawson software (*Cherry Tree Spotlight Report*, 2000). These partnerships are seen as a primary way of acquiring the skills needed to compete in the ASP industry. Table IV represents some of the applications delivered by the best-of-breed solution providers.

**Challenges for enterprise ASPs**

Research into the development and delivery of enterprise ASP offerings by ERP vendors and ASPS themselves has demonstrated some major problems ([Seltisikas and Currie, 2002]), which are not dissimilar from the challenges highlighted by other researchers (Sumner, 2000; Markus et al., 2000). Field research conducted with over 40 ASP suppliers and customers has shown that, whereas many customers are willing to adopt ASP solutions for non-mission-critical software applications, they are reluctant to invest in Web-enabled ERP solutions, especially for their mission-

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<th>Table III JBOPS companies’ ASP solutions</th>
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<td><strong>Annual revenue 1998 (S$)</strong></td>
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<td><strong>ASP business (direct hosting initiative)</strong></td>
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<td><strong>ASP partners</strong></td>
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<td><strong>Number of customers (1998/1999)</strong></td>
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<td><strong>Note:</strong> A business unit of Invensys plc from September 2000</td>
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critical business processes (see Table V). One IT director at a large chemical company, who recently investigated the prospect of adopting a CRM application, said:

The vendors are playing all sorts of tricks right now. One vendor said that we could use an ASP solution, if we bought more software licences from them. This sounded attractive at first, but they told us that they wanted named users. This would mean that we would have to pay much more and I was not sure how useful the ASP solution would be anyway.

Notwithstanding the business case for remote delivery of applications as a business benefit, many companies remained concerned about data security and availability of applications. Clearly, non-mission-critical data were not a major consideration. But important data relating to customer accounts and sales forecasts were a key concern of potential ASP customers (Ring, 2000). Many questions remain about the suitability of the ASP model regarding the hosting of mission-critical applications. So far, the targeting of SMEs has not met with as much success as some would have hoped. Delivering ERP applications is more difficult than other

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<th>Theme</th>
<th>Challenges and issues</th>
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<td>Market/cultural</td>
<td>Too few customer reference sites for enterprise ASPs</td>
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<td>Fears about data security</td>
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<td>ERP vendors have little experience of SME market</td>
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<td>Different selling approach to SMEs</td>
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<td>Confusing array of ASP offerings, creating channel conflicts</td>
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<td>Organizational</td>
<td>SMEs have little or no experience of ERP systems</td>
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<td>Difficult to identify key &quot;contact&quot; person in SME (e.g. management accountant may run IT)</td>
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<td>Management do not understand ASP business model</td>
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<td>Technical/IT personnel</td>
<td>Existing technical infrastructure adequate</td>
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<td>IT staff engaged in troubleshooting not strategy</td>
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<td>ERP too complex</td>
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<td>Cost</td>
<td>TCO not appropriate for SME</td>
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<td></td>
<td>Enterprise ASP too expensive</td>
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<td>Low IT budget</td>
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<td>Unwilling to upgrade existing IT infrastructure/applications</td>
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Source: Cherry Tree & Co., www.informationweek.com and company Web sites
applications. Some of these complications may be due to the delivery of applications, which are not developed purely for Web delivery. This is because most hosted ERP applications delivered by most ASPs are Web-enabled applications designed for client/server systems.

By setting up online ASP business, ERP vendors are developing Web-enabled software solutions for the SME marketplace. Empirical research conducted by the authors has shown that the mid-sized market (companies with over 500 employees) are more likely to adopt an ERP solution than their smaller counterparts. Moreover, little revenue will be acquired from serving the small company marketplace, especially since companies do require some level of customisation. Field research with potential customers has found that many require between 5 and 10 per cent of customisation, especially if they are to consider an ERP solution. Unfortunately, the ERP vendors wishing to serve the SME market are reluctant to customise software applications, as this would severely affect profit margins.

There are a variety of issues facing the traditional ERP vendors in embracing the ASP concept, not least because moving to a rental or utility pricing model will significantly impact on the traditional pricing model (e.g. software + licence + maintenance + service, etc.). Such concerns are also shared by other software vendors, many of whom are currently evaluating whether the ASP model would be good for their own business. Even though large software vendors such as Oracle and PeopleSoft have decided to provide third-party service offerings (through USInternetworking, Corio) apart from having their own ASP offerings, how they would charge for licensing costs (which are very high) for the third-party providers is a concern of customers. If JBOPS software companies demanded high licensing costs from third-party enterprise ASPs, the economic advantage of using the service through these companies may be considerably reduced.

Up to now, the take-up of ERP applications has not been as high as was expected. This was one of the reasons which led to the termination of JDE.Sourcing, which was the internal offering of J.D. Edwards. What appears to be lacking is a strategy for educating the target customer marketplace. While targeting vertical industries may help to increase customer know-how about the ASP business model, the majority of SMEs with little or no history of outsourcing are reluctant to embrace a business model in which they neither understand nor can identify the business benefits. As we have discussed above, implementing ERP systems requires expertise and commitment from the vendors as well as the customers. It requires much expertise which ASPs can only acquire by developing partnerships with other companies. Therefore, successful partnership management is critical to ASPs. Enterprise ASPs ideally should have integration expertise or have partnerships with SIs in order to provide a viable end-to-end solution. Even though it is economical to offer non-customised solutions, some level of customisation will be inevitable based on the diversity of target markets. Therefore, the challenge is to create the right balance between cost and customisation. This may lead to the value-added service provided to customers through vertical ASPs, which will create a massive opportunity for ASPs adopting this approach.

For the ERP vendor, ASP creates a new channel to reach customers. However, this may lead to concerns regarding ownership of customers and losing brand recognition. Reaching customers through both methods internally as well as through third parties may lead to channel conflicts (Currie and Seltis, 2000). ASP business needs huge investment. Developing a strategic differentiation strategy is critical for enterprise ASPs, especially if they provide software from a large company which already sells direct to the customer.

**Discussion and conclusion**

The ASP model brings many challenges to best of breed providers as well as ERP companies. Making a successful transition from the traditional model to the hosted model requires developing, deploying and managing software applications cost-effectively. Determining the best pricing strategy for the ASP model, developing new delivery mechanisms to reach the end customer, surviving the market transition with brand strength, overcoming channel conflicts are some of the issues faced by ERP
companies entering the ASP industry. However, ERP vendors need to develop strategies for entering the ASP market, which are different from those used to serve the larger customer. Developing and deploying an ASP solution requires the seamless integration of several skills and resources mostly acquired through external partners. Even though software companies have the capabilities of providing expertise related to the provision of software solutions, entry into the ASP market must convince the potential customer of the value added benefits which are over and above just another delivery mode for their software applications. Vendors should carefully consider the capabilities needed to host enterprise solutions. For a successful ASP strategy, partnership management is critical, as there are several partners who contribute to the seamless integration of the end delivery.

ASPs should carefully evaluate the capabilities of companies before forming partnerships with them. The lessons of the early twenty-first century have been more about failure than success in the ASP model. Not only have many start-up ASPs gone out of business, but even large ERP vendors have changed their ASP business strategies almost overnight. Some have moved from using a channel approach to a direct approach, while others have opted for the reverse. Such actions have only further confused the customer marketplace, as high profile ASP failures have convinced many that the ASP business model is still too immature to be taken seriously. In addition, many of the customers of failed ASPs have been left pondering why they did not develop an appropriate “exit strategy” as a contingency, if/when their ASP supplier goes into liquidation.

While this research study has found the enterprise ASP market deficient in many respects, the authors argue that part of the problem is market immaturity rather than a terminal problem with the ASP model itself. Like all new business models, the ASP model is in many way similar to its parent, the service bureau model of the 1970s. However, the potential scale and scope of the ASP model are more complex and challenging. Such challenges cannot simply be met with a “quick-fix” business or technical solution. Rather, to develop and deploy enterprise ASP solutions will take time and patience and will be fraught with many difficulties. Much of the success will only occur when potential customers gradually migrate to the ASP business model rather than adopt a dual approach of trying to integrate legacy with Web-enabled systems. Over time, as companies adopt more remote software applications, notably for their non-mission-critical activities, and realise business benefits by so doing, they will then adopt more sophisticated software applications, largely from a vendor with some experience and credibility within the industry. At this stage, it is too early to predict the market conditions in three years’ time. However, suffice it to say that the ASP will continue to undergo a major shake-out, with many established ERP companies forming relationships and taking over other companies (e.g. vertical ASPs, VARs, SIs, etc.). While it is unlikely that many ASPs will survive, the large companies may be able to offer real economies of scale to SMEs, although this market will be restricted by the IT budgets, capabilities and requirements of the customer base rather than the business and technical advantages offered by the ASP model.

Notes

1. BOPS is an acronym comprising the first letter of the following companies: I.D. Edwards, Baan, Oracle, Peoplesoft and SAP.
2. Business Online was renamed Oracle.com during the first quarter of 2001.

References


Lauchlan, S. (2000), "ASPs: are you ready to play?", Computing, 3 February, p. 29.


Further reading


