



# ASP Business – a Curate's Egg?

*Application Service Provision, better known as ASP, is one of the latest hot topics in the IT industry. With the usual analysts and pundits predicting multi million dollar revenues, many companies are busily re-inventing themselves as ASPs. But will the new dawn arrive, as many hope, or will this prove to be another case of an attractive idea that gets mugged by reality.*

*This paper by Intercai Consultants, Mark Norris & Maurizio Giacometto, considers the likely future for Application Service Provision from both user and provider points of view. To start with, we examine the ASP business proposition in the light of lessons learned from a similar proposition: outsourcing. We then move on to consider the soundness of the centralized architecture that provides the foundation for current ASPs. In particular, and again drawing on past experience, we explain why peer-to-peer networking provides a more natural alternative in many instances.*

*Our conclusion is that there is a clear role for the ASP but that the buyers (most notably, those large organisations who want a third party to manage their software applications) need to be fully aware of the pros and cons of using one. At the same time, the suppliers need to consider how well the architecture of their delivery platforms fits with the service they are offering.*

## The Patient

Before passing any sort of judgement, we need to make sure that we understand exactly what we are dealing with. The basic ASP concept is very simple: instead of having an IT department who look after your software applications, you engage a third party, an ASP, to provide the same applications. Your people access their familiar applications through the Internet and the ASP looks after security, maintenance, backup and all those other routine chores that many organisations don't want to do or are loath to invest in.

One the face of it, this is fine and it follows the well-established path of facilities management and outsourcing [1]. So we have a perfectly reasonable mechanism for an organisation to divest itself of non-core activity and for a provider to share costs across several customers and to turn a decent profit as they do so. There are caveats and pitfalls in this model but the pros and cons are well known and documented. The table overleaf illustrates (in approximate order of importance to the purchaser) how they translate into the ASP world.



Reward	Risk
Focus on Core Business	Loss of directly controlled expertise
Cost reduction	Subject to negotiation, Dependent on volume
Improved information flow	Single point of failure, Loss of Security
Flexibility	Leverage over third party to respond
Specialist Expertise	Dependency on ASP, Damage if they fail

Ultimately, the decision to outsource or not depends on the relative cost of each option. This is not a simple matter, as the economies of scale offered by many outsourcing companies have to be offset against the cost of negotiating with and managing a third party. That said, one of the main reasons that outsourcing has come to prominence, in the form of the ASP, is that the cost of dealing with third parties has fallen due to advances in electronic business [2].

So, as a commercial proposition, ASP business is looking good. Initial uptake was slow but volumes exceeded \$1Bn last year. By way of comparison, the first Virtual Private Networks (VPNs) were only slowly taken up but are now dominant.

### New Symptoms

Is the future as clear cut for ASPs? The answer is 'probably not' and the reason is that they actually go somewhat further than conventional outsourcing companies. Because their business is founded on the reuse of their facilities across a number of customers, they try to offer a standard configuration of standard applications, rather than the customised versions that are typically run by in-house IT departments. This allows the ASP to construct a price list based on numbers of users and types of applications. The customer sees a very simple rental model. Instead of maintaining a specialist team, they just make a monthly allowance for the software applications they need.

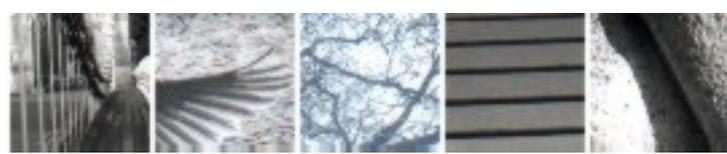
The 'pay-as-you-process' model is a seductive one for software applications. Not only does it lend itself to the provision of conventional server-based applications (such as SAP, Oracle or Peoplesoft); it also lends itself to applications that we would usually regard as sitting on the user's desktop. For instance, with an access technology like Citrix Metaframe and a web browser, it is quite feasible to offer Windows applications that are hosted in a server farm but that are usable from thin client machines.

It is this simple extension of the ASP business that carries a new virus – one that could well defeat any of the medicines developed during the outsourcing experience.

### The Venom

What sort of venom is it that threatens to bring down the burgeoning ASP sector? With so many network operators, development, integration and management companies piling into the market, surely the ASP will quickly become immune and learn to survive. To understand the power of the venom, we need to look back in time – to the origins of the Internet.

When the Darpanet, the forerunner of the Internet, went operational in 1969, it was designed as a network to allow the peer-to-peer interconnection of computers. By this we mean that any computer could talk to any other computer without the assistance of an intermediary. The now ubiquitous IP protocol was developed to carry packets of information between computers and



the TCP protocol controlled the dialogue between them. Communications were essentially end-to-end, irrespective of where the computers were or what sort of network joined them together. The design motto behind all of this was survivability – defence systems needed to stay operational whatever havoc was wreaked.

As this elegant network arrangement was brought, in the guise of the Internet, into civilian use it was, to some extent, mugged by reality. Instead of being a permanently connected and always available network, the Internet user was offered 'best efforts' delivery. One of the main reasons for this was that it suddenly gained a shedload of new users who were connected by dial-up telephone lines which could not be used for permanent connections to the net because they were still being used for good old-fashioned phone calls. Another dilution of the pure Darpanet network model was that security turned out to be something that was quite difficult to provide on an end-to-end basis, so was provided through access controls – firewalls that isolate parts of the network. So much for peer-to-peer! Finally, as the Internet has grown, it has started to exhaust the address space built into IP. To mitigate this, all manner of schemes have been devised to reuse addresses [3].

All in all, the Internet has moved away from its roots. It may be based on peer-to-peer computing but it has practical fixes that make transparent, end-to-end connectivity difficult to achieve. And hence the attraction of Application Service Provision. If services are made available within the network, anyone can access them. This is a very familiar notion – most people use a network-based hosting service for their website, and the ASP is a logical extension of this idea.

So, ASPs look well positioned, given the current state of the Internet. But the clouds on the horizon are moving and just as expediency diluted the Internet's peer-to-peer basis, so technology is restoring it. Perhaps the ASP is the right idea at the wrong time.

### Reality Bites

If the Internet provided genuine peer-to-peer communication, people could host their website on their home PC instead. And if this was the case, anyone could corner the market that the ASPs are vying for. Let's revisit the practical issues discussed in the previous section.

Condition	Cure
Lack of Security	IPSec provides a raft of mechanisms for protecting on-line information, verifying identity and auditing transactions
Lack of Addresses	The new version of IP (v6) will provide enough addresses to assign one to every square metre on the planet, water included
Slow Access	New technologies such as DSL (for fixed access) and GPRS (for mobile access) offer 'always on' access and promise higher speeds also.

The practical issues that removed the Internet from its roots have all been addressed and, all of a sudden, peer-to-peer communication is much more feasible. But is it what we really want?

Well, if you are a business, it is exactly what you want. Business communication is peer-to-peer. If a business sends out an invoice or an order to a third party they want do it directly, not



through an intermediary. The ASP is useful when there is no practical or efficient way of dealing direct but only gets in the way when real peer-to-peer communication is enabled.

To recap, then, peer-to-peer is what the Internet was always supposed to do, it is what businesses want and now it is possible. What does this mean for the business applications market – are ASPs, in their current format in danger of being overtaken by events? There are some clear pointers that would suggest that this could become the case.

In the consumer area, one of the fastest growing and most controversial applications is Napster, which allows people to share MP3 music files. Despite making use of a central server to act as a directory, the actual transfer of the music files is peer-to-peer. The application quite literally sucks the file out of someone else's PC, which is located somewhere else in the world, and deposits it on to your PC (or vice versa). Napster is not a one-off. Peer-to-peer messaging products are starting to emerge. For example, AbbottChat (see [www.abbottsys.com](http://www.abbottsys.com)) offers 'instant messaging' between individuals and uses no intervening server. In much the same vein, many of the emerging interactive games networks are peer-to-peer and the SETI@home screensaver employs a network of peer-level computers to analyse radio data in the search for extra terrestrial life.

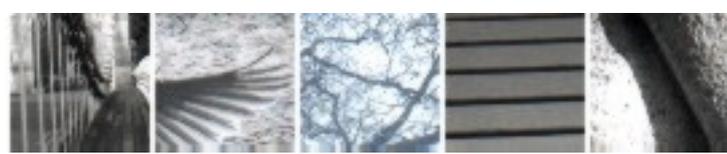
But it is not all music and aliens. Peer-to-peer applications are making inroads into the business market. Ray Ozzie (the inventor of Lotus Notes) has developed the 'groove' application (see [www.groove.net](http://www.groove.net)), which provides a complete peer-to-peer computing environment. Groove provides file sharing, meeting scheduling, shared applications etc and, perhaps most significantly, a basis for third party business packages such as ordering, invoicing, payments, catalogues and many more.

When all of the components that are needed to run an efficient business are supplied from a highly competitive market, why would anyone want an ASP? Consider the success of the Short Messaging Service, SMS. This may be a centrally controlled service at present but is not too much of a leap to see peer-to-peer, instant messaging becoming the preferred solution for electronic mail.

## Diagnosis

One of the general rules of computer networks is that processing will migrate to its most natural place. And for businesses and consumers, who sit on the edge of communication networks, the most natural place for processing to be carried out is where they are, at the periphery. So there is a good argument that both the inherently peer-to-peer applications and some of the traditional client-server applications will move away from the ASP model. Indeed, the standardisation and commoditisation that is being sought by the ASPs to make these applications more profitable and easier to manage may end up making them so easy to manage that we can all do it ourselves!

There are already signs that the inherent flaw in the ASP model is taking hold. With the rise in electronic business, hosted electronic catalogues have always looked to be an ideal ASP application. However, Cobalt.com offer a 'plug and play' electronic catalogue application that is readily installed in a rackmount server. If it is so straightforward to host an application, why pay someone else to do it? At a more general level, with XML and peer-to-peer networks, there is no problem with everyone maintaining their own catalogue: XML provides a standard interface to procurement applications, which find the catalogues through a Napster like service.



## Treatment

It would be foolish to dismiss ASPs simply because there is a promising alternative. Indeed, there are some off-the-shelf pills that can be taken to prolong the lifetime of ASPs as they are currently provided, namely – “Timing”, “Economics” and “WASP”.

Let's go through each of our treatments and see how they might help some ASPs succeed.

### *Pill 1: Timing.*

The pace of change in the current IT and telecoms market is very fast. Operators are entering the value chain, most of them from a different starting point. These might be Telecoms operators or service providers, outsourcing service providers, systems integrators, application developers, middleware providers and so on. Client companies might actually find, in the short term, added value in the ASP offering as it provides them with "off-the-shelf" services in the areas outside their core capability. This is certainly the case for smaller operators, many resellers or ISPs and even operators in the wireless areas such as MVNOs or mobile portals etc.

We are clearly witnessing this phenomenon in the mobile data world where Wireless Application Service Providers are supporting both network operators and end user companies with new applications. These clients just do not have the time, the skills or the finance to develop in-house. In the long term this might change as we predict above, but the short term is different.

### *Pill 2 Economics.*

There is still a clear trend towards outsourcing, and both large and small organisations (though for different reasons) are choosing the outsourcing route, in both the fixed and mobile arena. Recently, the Swedish equipment manufacturer Ericsson has announced it is to outsource the whole of its IT to EDS. We believe this phenomenon does not contradict the arguments above, in that there is only room for so many outsourcing organisations, given the diminishing value add (both financial and in terms of skills or application provision) that the outsourcer can provide vis-à-vis an in-house solution. Simple economics will squeeze margins and will determine a consolidation in the outsourcing industry. A few key players will dominate the market by virtue of their specialisation in specific vertical markets or unique technologies or cost leadership (though there will be only room in the market for one or two of these).

### *Pill 3: WASP.*

The emergence of the Wireless Application Service Provider (WASP) in the mobile world is a phenomenon that cannot be ignored. They are a sought after partner by some operators and enterprises. None (or very few) of these are experts in handling the technical complexity of implementing new wireless application access. Most have too much on their plate already to invest in this type of expertise directly. And the limited capacity (battery, not bandwidth) of mobile devices will reinforce the thin client solution.

This industry value chain in the mobile arena seems to be moving towards a split. On the one side there is crystallisation around large integrated players that are capable of handling the technical and financial complexity of application provision and are therefore occupying all spaces in the chain (access portals, network operators, platform providers, application developers and WASPs when not even content providers).

On the other side, there is a host of smaller network and service providers using the WASP model either for hosting their applications, or their content, or their transaction management.



The (W)ASP thrives in this environment but for how long? They are being squeezed out of the value chain by the larger operators and are finding it difficult to reach profitability with the smaller ones with the result that some platform, application or hosting providers in the mobile arena are already going out of business or merging.

The working of these three pills, either in isolation or in combination, might actually provide a healthy long life for a *selected* number of ASPs in the market. But the proliferation of ASPs, with many companies currently proclaiming themselves as ASPs, will not last long, for simple economics reasons. In other words, the pills are effective but there are only so many to go round...

### Summary

Let's summarise. It seems that the ASP business has inherited many of the characteristics of its outsourcing forebears, but was born with a congenital weakness. So, for all the commercial appeal of Application Service Provision, there is an underlying weakness. The symptoms are already showing and deterioration seems inevitable and, unless the patient evolves into a different life form, the prognosis is for, at best, only partial recovery.

There are a lot of commercial reasons for using an ASP. Just as Virtual Private Networks are replacing private networks, so it seems reasonable that the common elements of software applications will also be handed over to specialist third parties, which can offer economy of scale. Few organisations maintain virus databases or implement their own public key infrastructure. And there are other functions, such as search engines, directories and applications closely allied to the real world (travel, logistics, where the service provider can add value by providing co-ordination and tracking) that will naturally migrate to the centre of the network. Many others, though, lend themselves to peer-to-peer networking and it seems inevitable that applications providing 'Distributed Service Provision' will emerge as strong competitors.

Skilful surgery is needed to transplant ASP resource so that it can live well and prosper in a peer-to-peer world, but where there is a will, there is a way and some of the clinical procedures for the new order have already been tested [4] and found viable. It may be early days, but the path seems clear. As Churchill said, 'This is not the end. It is not even the beginning of the end. It is, though, the end of the beginning'

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[mark.norris@intercai.co.uk](mailto:mark.norris@intercai.co.uk)  
[maurizio.giacometto@intercai.co.uk](mailto:maurizio.giacometto@intercai.co.uk)

Tel: +44(0) 1628 478 470

Intercai Mondiale Ltd, Regatta House, High Street, Marlow, Bucks SL7 1AB, UK  
[www.intercai.co.uk](http://www.intercai.co.uk)