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Abstract

The term Application Service Provider (ASP) emerged in 1998 and since then the ASP Model has experienced varying degrees of adoption success by organisations. A school of thought now exists that is further facilitating the growth of the ASP market. It highlights the move away from selling software (licensing model) to providing software services (rental model) for today's e-business climate, and in general, blurs the distinction between the software and services industry. Although, this represents a paradigm shift in application delivery, the market is still in an embryonic stage. With this in mind, organisations need to assess their suitability for ASP Model adoption and ASPs should understand the client's important issues of concern, to facilitate future growth in the market. Therefore, the objective of this paper is to lay the foundations for an ASP Adoption (ASPA) Model through presenting a synthesis of the important issues of concern, focusing on technical/business drivers, benefits of adoption, barriers to adoption, and future trends in the ASP market.

1. Introduction

Application Service Providers have been in existence since the 1970's in the form of service bureaus (Turban et al, 2003). Throughout that period, the options for application outsourcing was limited, with few types of software that business could rent (McKie, 1999). Buying and maintaining IT was practised mainly by large enterprises, while Small to Medium sized Enterprises (SMEs), unable to afford the high expense of buying and maintaining IT, rented application services from a service bureau at affordable prices. By the late 1980's, with a significant drop in the cost-performance ratio of hardware, the need for application services seemed to decrease and most service bureaus disappeared. Against this background, the ASP concept was born in 1998 (Greengard, 2000), and a market was created for an entirely new business model for software: renting access to core applications over the Internet. This market emerged as dot.com mania was at its peak of inflated expectation and nearing implosion, and the market for large-scale integrated enterprise systems implementation was nearing saturation. As a result, pure-play software companies (e.g. salesforce.com) and restructuring B2B verticals (e.g.

echemicals.com), and established enterprise systems vendors (e.g. JBOPS [1]) scrambled for a portion of what seemed like a potentially 'lucrative pie', termed the Application Service Provider (ASP) market.

Although the ASP market is still in its infancy, experts predict that it will soon become a multi-billion dollar industry, fuelled largely by SMEs looking to cash in on the Internet driven 'e-conomy'. Despite the fact that only 20 of the original 480 ASPs are expected to still be in business by 2004, the fact remains that the percentage of commerce via the web will grow rapidly. Furthermore, reports estimate that the total ASP market will be worth between $7.7 Billion in 2004 to $16.1Billion by 2005.

2. ASP Adoption

The use of the ASP Model is proving to be an efficient and attractive alternative for organisations that may be unwilling to plunge huge sums into large-scale Information Technology (IT) investments (Piranfar and Safarzadeh., 2001; Cherry Tree, 1999; Kakabadse et al., 2001). For example, even through the hardware cost-performance ratio continues to drop, overall IT related costs are still spiralling and organisations, especially SMEs, find the complexity and cost of adopting IT, to be beyond their means. Although the term ASP 'went out of style a couple of years ago', it now appears to be re-emerging, and the ASP Model is 'picking up steam' (Margulius, 2003). The ASP 'rebirth' is been driven by, big vendors (IBM, Oracle, SAP) support of the model; with tight budgets, organisations are considering a cheap, low risk alternative to large purchasing decisions; organisations disappointments with packaged software deployment costs and delays; and growth in demand for extended enterprise applications (Margulius, 2003).

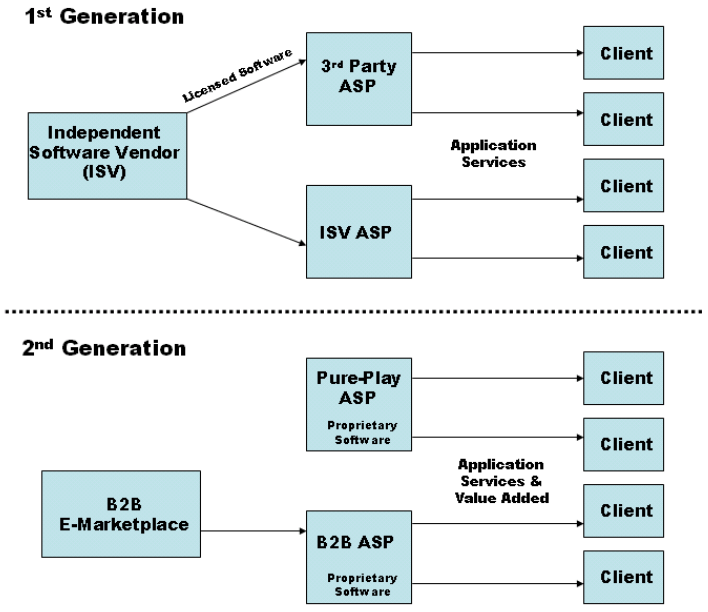

Figure 1: *ASP Generations and Relationship Structure*

[1] JBOPS – a term used to describe the following vendors collectively (JD Edwards, Baan, Oracle, Peoplesoft, SAP).

Figure 1 illustrates the multiple variations of the fundamental 'one-to-many' ASP relationship structure that exists between the ASP and the client. However, there is no clear definition for ASP (Haber, 2001), due to the constantly evolving market and the vast array of providers in existence. Therefore, for the purpose of this study the researchers conclude that the ASP Model can be understood as an ASP providing a subscription-based contractual service offering to deploy, host and manage a client application over the internet.

According to the Meta Group (2000) there are four types of ASP Application Model, as follows: Messaging ASP, Business Process ASP, ERP/CRM ASP, E-Commerce ASP. Furthermore, as illustrated in Figure 1, there are two generations of ASP Model in existence. The second generation have organically developed proprietary software specific to the internet, encapsulating a hosted services methodology, however, the first generation, in direct contrast, use third party software from ISVs, whose software was not initially designed for the internet. However, it is the newly emerging second generation ASPs which appear to be gaining substantial customer momentum (Cherry Tree, 2000). All of these ASPs differ in terms of the services on offer, as illustrated in Table 1. For the purpose of clarity within this study, the researchers refer to the ASP Model to mean an approach to application delivery and ASP Application Model to mean the type of application adopted by a client using the ASP Model.

Table 1: *Types of ASP Application Model*

ASP Type	Application Description
Messaging ASP	Applications used as transmission methods and personal applications
Business Process ASP	Applications that cover an entire business process – process data for core competencies
ERP/CRM ASP	Applications that offer all enterprise package functionality
E-Commerce ASP	All web based solutions such as web publishing, web site hosting, shop systems

Table 2: *Technical and Business Drivers of ASP Adoption*

Technical Drivers	Reference
Shortage of Skilled IT Labour	(Cherry Tree, 1999) (Piranfar and Safarzadeh, 2001) (Dewire, 2001 (Chen and Gant, 2001) (Collins, 2001) (Kakabadse *et al*., 2001) (Brown, 2001)
Utilisation of Emerging Technologies and Best of Breed Applications	(Dewire, 2001) (Breathnach, 2000)
Easier Implementation	(Romeo, 2001) (Koch, 2000)
Scalability of Services –Multiple Locations	(Kakabadse *et al*., 2001) (Dewire, 2001)
Business Drivers	**Reference**
Companies can Outsource Applications to Focus on Core Competencies	(Kakabadse *et al*., 2001) (Collins, 2001)
Minimise the Total Cost of Ownership (TCO)	(Dewire, 2001) (Cherry Tree, 1999) (Adam & O'Doherty, 2000) (Kakabadse *et al*., 2001)

There are a number of technical and business drivers cited in academic and trade literature, which influence the adoption of an ASP Application Model, as listed in Table 2.

However, despite these drivers and the possible benefits derived for the adoption of an ASP Application Model, a number of barriers to adoption exist. These include issues like Customisation, Security, Bandwidth, Integration, and Backup Service and Support (Cherry Tree, 1999; Davenport, 1999; Torode and Hagendorf, 2000; Brown and Karamouzis, 2001; Chen and Gant, 2001; Collins, 2001; Dewire, 2001; Hill, 2001; Kakabadse et al., 2001; Piranfar and Safarzadeh, 2001). As a result of the trade-off between the benefits and barriers, organisations should assess their readiness and suitability for the adoption of an ASP Application Model.

3. The Research Approach

As a result of the recent emergence of ASPs to the area of IS, comprehensive and in-depth research has not yet been undertaken. Since 1998, the ASP Model has not 'set the world on fire' as different problems and issues emerged (Cherry Tree, 2000). Therefore, the objective of this study is to identify the important issues of concern surrounding the adoption of an ASP Application Model and highlight current and future trends in the market. To satisfy this research objective, research questions were formulated to establish why exactly organisations are adopting and using an ASP Application Model, what the expected benefits are, and where the possible current and future problems may exist. As a result, the findings of this study suggest that organisations contemplating adopting an ASP Application Model are highlighting important issues around the drivers and barriers to adoption and the future structure of the ASP Model. The research gathered as part of this study is captured and presented in the ASP Adoption (ASPA) Model.

Due to the exploratory nature of the study, a multiple case study research design was chosen. The rationale used was that the ASP Model is a completely new way of delivering and implementing software applications to organisations and experienced users of the ASP Model would have the implementation experience necessary to be able to explain the issues that they consider critical to the successful adoption of an ASP Application Model. The comparison of these issues across different organisations would lead to the foundation of the ASP Adoption (ASPA) Model. The case study approach is considered appropriate as it allows the researchers to probe the relationship between adoption variables and implementation in more depth than other research methods. The four organisations studied were purposefully chosen to provide a breadth of implementation experience. However, the biggest problem experienced by the researchers was selecting organisations who had adopted an ASP Application Model, due in no small part to the fact that the ASP market is in its infancy. For example, the rate of adoption of the ASP Model by Irish indigenous and multi-national subsidiary organisations is extremely low. Although these organisations represent a minority of industrial sectors, (an issue which is currently being addressed by further studies), the researchers believe that the collective experiences of the adopting organisations is sufficient ground to lay the foundations for the proposed ASP Adoption (ASPA) Model.

The primary data collection methods used for the study were semi-structured interviews, with key decision makers (regarding the ASP Application Model adoption), and document analysis. The decision makers were interviewed over a six-month period in early 2002. Each interview was semi-structured to facilitate an examination of the

organisations experiences in relation to the issues identified, as well as a consideration of other aspects of the organisations ASP initiative.

4. The ASP Clients Studied

This section introduces the four organisations that have adopted an ASP Application Model. Each company is introduced, giving a brief description of their characteristics within the industry in which they compete. Their individual reasons for adopting an ASP Application Model are also outlined. Table 3 describes the characteristics of the four organisations (ASP users) that have been studied. The case descriptions are structured along six dimensions (ASP Application Model, Industry, In-House IT Expertise, Total Staff, User Volume, and Main Adoption Drivers) to provide an insight into the similarities and differences between the cases and highlight several trends with regard to their adoption of the specific ASP Application Model.

Table 3: *ASP Client Characteristics*

Dimensions Company Name	ASP Application Model	Industry	In-House IT Expertise	Total Staff	User Volume	Main Adoption Drivers
Beacon	Business Process	Travel	Low	60 in 7 sites	ALL	Multiple Locations Strategic Focus
Marrakech	ERP/CRM	B2B E-Commerce	High	300 in 4 sites	30 staff	Multiple Locations Paperless Workplace One Standard System
Buzzgolf	E-Commerce	Golf	High	6 in 1 site	3 staff, 300 retailers	Multiple Locations Low Cost
QUMAS	ERP/CRM	Software	High	180 in 5 sites	40 staff	Multiple Locations Low Cost

4.1 Beacon

Formerly known as West Cork Travel World Choice, Beacon has 7 offices in Ireland based in Clonakilty, Bantry, Cork, Skibbereen, Dún Laoighre, Limerick and Shannon. According to the business goal:

> *Beacon was formed in 1966 and is one of the leading Irish travel companies for corporate and leisure travel (www.beacontravel.ie)*

In total Beacon Travel World Choice employs 60 staff and has no IT specialist in-house as it has outsourced all of its IT systems. In early 2000 the decision was made to look at new ways of running their I.T. network. Previously, the IT systems in place were run by Galileo who were leading experts in online travel booking and ticket purchasing. If all of the offices wanted to log into the Galileo system, which was the corporate booking system for buying tickets, they had their own connection to the system. What Beacon required was a giant database of travel agents and airlines with the airlines providing their seat availability and Beacon accessing the database with a view to finding that information. The fact that Beacon was considering expanding and acquiring new

businesses countrywide meant that a new IT system had to be compatible to widespread requirements such as multiple user access.

Management made the decision to outsource their IT infrastructure to enable them to focus on core strategic issues. They looked at other travel industry solution providers but opted for the Amadeus solution, operating out of Germany. Cap Gemini Ernst & Young (CGEY), IT Services and Management Consultants, were involved in several areas of the ASP implementation. CGEY helped Beacon in selecting most of the applications, project-managed the implementation of the infrastructure and managed the network.

4.2 Marrakech

Marrakech was founded in Dublin, in December 1998. The company currently employs over 300 people and their Corporate Headquarters are in Dublin, with offices also in London, Mexico City and Buenos Aires. Marrakech provides a web-portal for Business-To-Business (B2B) transactions between buyers and sellers. According to their mission statement:

> *Marrakech enables companies to reduce costs continuously by streamlining and connecting business processes across trading partners (www.marrakech.com)*

In the Dublin office there is a total of 125 staff; 40 in Sales and Marketing, 15 in Administration and approximately 80 concentrating on IT. Marrakech is a very IT literate organisation and there is an expectation that all of the staff would have a technological outlook on developments. For a number of reasons Marrakech decided in March 2000, that they needed to implement an integrated system for their HR and Finance departments which spanned several countries with numerous payrolls, numerous locations and multiple currencies that were changing daily. Company culture dictated that they should attempt to work in a paperless environment as much as possible. They decided to go for the SAP modules in HR and Finance using the ASP model, which was being supplied by the ASP provider, I-Fusion. SAP was a market leader and other alternatives were unproven. Most of their customers used SAP so they were keen to harmonise their system with that of their customers.

Marrakech also felt that using SAP boosted their reputation. The implementation was straightforward and mainly trouble-free. Most of the technological and telecommunication requirements were already in-house due to the nature of Marrakech's business. The whole project took about 3 months but it was not carried out continuously.

4.3 Buzzgolf

BuzzGolf was launched in June 2000. Based in Wicklow Town, it claims to be the leading (and first) European provider of Internet-based e-commerce solutions for the golf industry. According to their business goal:

> *Buzzgolf provides a range of on-line services for all members of the European Golf Community. This includes: Manufacturers, Distributors, Retailers, Golf Pro's, Green Keepers and Club Secretaries through to the amateur Golfer (www.buzzgolf.com)*

At present there are 6 employees at Buzzgolf; 3 IT, 2 Sales and 1 Administration. Buzzgolf offers buyers (retail outlets, professional shops, greens keepers, and clubhouse mangers) and suppliers a cost efficient technology platform, which streamlines the ordering process and supports intelligent communication. It was decided that a web-based ASP solution would be very cost-efficient for procuring business because there are so many small businesses remotely located. The ASP provider, Softco, had already

developed a product for the print industry called Printorigin.com that creates an online buying environment and allows buyers to aggregate all of their suppliers' offerings in a single product catalogue. Buzzgolf tapped into this product, customised it, marketed their idea to the golf industry and used Softco's ASP service to develop and host Buzzgolfs product. Buzzgolf looked at other solution providers like Ariba and Commerce-One but these were based on a traditional in-house implementation and the costs were enormous compared to Softco's model.

Buzzgolf started researching the Golf industry doing a root and branch review of how the golf industry worked. By January 2002, Buzzgolf had successfully completed a three-month retail pilot scheme involving a live test of the Buzzgolf order management system. As part of the pilot scheme Buzzgolf invited a cross section of retailers within the golf industry to view their suppliers' catalogues and deliver orders using the technology. The pilot scheme involved 12 of the leading suppliers and the 2nd biggest buying group in the UK.

4.4 QUMAS

QUMAS is one of the leading providers of Enterprise Compliance Management Solutions for the Life Sciences industry, such as pharmaceuticals, biotechnology and the medical devices. Using advanced technology and regulatory domain expertise, they devise electronic solutions to help companies manage and control large volumes of documentation in compliance with regulations to deliver U.S. FDA (Food and Drugs Authority), EMEA (European Agency for the Evaluation of Medicinal Products) and ISO-related best practises. According to their mission statement, QUMAS are:

> *Dedicated to the design and development of Enterprise Compliance Management solutions for companies in regulated industries (www.qumas.com)*

QUMAS is a young company, which was formed in 1996 but has received several honours, including recognition as one of the fastest-growing technology companies in the Deloitte and Touche Technology Fast 50 Awards for 2002.

QUMAS is based in Cork, with US headquarters in New Jersey and additional offices in Chicago, Philadelphia and San Francisco. In June 2001, QUMAS decided that they needed a CRM application to help them manage their expanding array of customers. QUMAS did consider using the traditional desktop implementation such as Siebel's CRM offering but the up-front costs and the consultant's fees were too exorbitant. After assessing many different options it was decided that a web-based application would be the best solution as their offices were spread across America and one in Ireland. QUMAS looked at two ASP solutions provided by Salesforce.com and E-ware. Salesforce.com was selected primarily because of their greater experience and track record compared to E-ware. After three weeks implementing the system, QUMAS went live in September 2001.

5. Important Issues of Concern in the Adoption of an ASP Application Model

This section presents the main technical and business drivers that organisations examined in relation to the adoption of an ASP Application Model. For each organisation a rating is assigned for the perceived importance (Not Important [NI], Important [I], Very Important [VI]) of the driver to the adoption of an ASP Application Model.

5.1 Shortage of Skilled IT & Less Staff

Technical Driver	Marrakech	Buzzgolf	QUMAS	Beacon
Shortage of Skilled IT & Less Staff	**I** In a previous in-house implementation Marrakech had to employ 2 full-time support staff. With the ASP Model, Marrakech didn't have to do this	**I** It is a very small company with 6 staff. If Buzzgolf used any other model then more staff (mainly IT staff) would need to have been employed	**I** Qumas did not have to employ any extra IT Staff, plus the ASP Model does not take anytime away from the companies IT staff	**VI** Even though Beacon have 60 full-time staff they do not have one IT specialist employed, as all of the IT is outsourced

The fact that less staff is required and more importantly less IT staff is required with the adoption of an ASP Application Model, was identified as an important driver for three of the four organisations studied and very important in the case of Beacon. This is interesting in light of the fact that Beacon has low in-house IT expertise compared to the other organisations studied. Although Beacon have no need for I.T. staff, they were able to reduce their existing accounting staff by two as a direct result of adopting an ASP Application Model.

5.2 Easier Implementation

Technical Driver	Marrakech	Buzzgolf	QUMAS	Beacon
Easier Implementation	**I** 3 months	**NI** 12 months	**NI** 3 weeks	**I** 6 months

From an analysis of existing literature, a short implementation period is an important factor in adopting an ASP Application Model, however, two of the organisations studied indicated that while implementation via the ASP Model was preferable to an in-house software project, it was not the main driver. For example, Buzzgolf had a 12 month implementation, but, the complexity of their implementation was expected as they were designing a new system from scratch, even though it was based on the pre-existing Softco 'PrintOrigin' product. Buzzgolfs Managing Director describes their attitude to the implementation:

> *we knew that it would take that length of time. It was something that we had budgeted for and planned*

In the case of Marrakech, the short implementation period was important. A low level of project complexity was their number one driving factor, as they had already implemented a Siebel CRM system in the 'traditional' manner and found it extremely complex and expensive. Marrakech had to purchase the software, which was a six-figure sum, had to factor in the cost of two full-time support people, hardware, expensive consultants to configure the system, and also monitor the network. To highlight the major differences in complexity and cost between a traditional CRM project implementation and the

implementation of CRM through the ASP Model, we compare the experiences of Marrakech and QUMAS, as illustrated in Table 4. Although Marrakech is using the ASP Model for their HR applications, they used a traditional style implementation for their CRM application, whereas QUMAS used the ASP Model, provided by Salesforce.com. These comparisons reiterate the fact that savings of greater than 90% can be achieved from implementing a solution through the ASP Model.

Table 4: *Comparison of CRM Traditional/ASP Application Implementation*

	Marrakech	QUMAS
Implementation Type	Traditional Implementation	ASP Model
Application module	Siebel CRM	Salesforce.com Enterprise CRM Edition
Software License Costs	"6 Figure Sum"*	N/A
IT Personnel Support	2	0
IT Infrastructure Costs	Yes	No
Consultants	Yes	No
Project Implementation Time Scale	12-16 Weeks	2-6 Weeks

*- *Quote by Marketing Productions Manager at Marrakech*

5.3 Scalability of Services- Multiple Locations

Technical Driver	Marrakech	Buzzgolf	QUMAS	Beacon
Scalability of Services	**VI** Marrakech's system is accessible from their 4 sites Dublin, London, Mexico City and Buenos Aires and helps unite multiple currencies and multiple payrolls	**VI** Buzzgolf is expecting to be accessible to Europe's 4,000 golf professionals and retailers and 6,000 golf courses	**VI** QUMAS have 5 sites between the US and Ireland with all users accessing the single, centrally based web-application	**VI** Beacon have 7 sites dispersed throughout Ireland, all working off the one central system

The experience of the four organisations studied has overwhelmingly demonstrated that the scalability of services and applications is a prominent factor in the adoption of an ASP Application Model. One of the main benefits of adopting the ASP Application Model is the flexibility afforded to the organisational users, who can log into the system irrespective of their location.

5.4 Minimise Total Cost of Ownership (TCO)

Business Driver	Marrakech	Buzzgolf	QUMAS	Beacon
Minimise Total Cost of Ownership (TCO)	**I** *We selected an ASP model that effectively allowed us to buy into a solution we need now and in the longer term – and at a price similar to that of the smaller package offerings*	**VI** *The competitors were a large 7-figure sum, anywhere upwards of £3 million. The ASP model with Softco was a fraction of the cost*	**VI** *Quite simply, the ASP model is extremely cheaper than any other method*	**I** *You don't have software expenditure, hardware or kit expenditure upfront, so that's attractive. It's a very simple and cost-effective way for us*

All of the organisations studied pointed to the fact that the lower cost associated with the use of the ASP Model was important, or in fact, a very important factor. However, within Marrakech and Beacon, even though TCO was obviously an important factor, it was not one of their top three reasons for adopting an ASP Application Model. In both cases, a quality system that fitted their requirements and which solved their internal problems was their number one concern.

The advent of the ASP Model has removed the costs and hidden costs associated with traditional systems implementation. The organisations studied all agreed that the ASP Model resulted in lower Total Cost of Ownership (TCO) and excellent Return on Investment (ROI), mainly due to its flexible pricing model. The critical element about adopting an ASP Application Model is that it is (typically) up and running within 1-3 months, so organisations have early ROI. For example, Beacon stated that the low cost of the ASP Model was compelling as their up-front costs like software or hardware expenditure was greatly reduced. Another positive factor of the pricing model, which Beacon found attractive, was that by paying per month/per user, the ASP had an incentive to maintain the quality of the application service to a very high level, unlike a traditional style implementation where Beacon would have made an initial up-front payment and an annual maintenance fee thereafter.

5.5 Management Focus on Strategic Matters

Business Driver	Marrakech	Buzzgolf	QUMAS	Beacon
Increase Focus on Core Competencies and Strategic Objectives	**I**	**NI**	**I**	**VI**

An advantage of outsourcing applications is that it allows management to focus on core strategic issues, while leaving the non-essential functions such as application maintenance and monitoring of systems to external IT experts. From an examination of the literature

on ASP, using the ASP Model does allow companies to concentrate on core and more important strategic issues. For example, Marrakech pointed out that as a result of the ASP Model, their more senior staff had more time to look at strategic matters and had a greater reporting role, however, it was not an important factor in the adoption. This appears to be the trend in all of the organisations studied. In three of the organisations studied it was considered an important or very important driver, however, the perceived importance of the driver was identified post-adoption when the organisation realised that they were not being slowed down by complicated issues like application problems.

The main reason for the discrepancy between Beacon (VI) and Buzzgolf (NI) is the attitude of the management to IT. Within Beacon, the Managing Director's approach was to deal with I.T. issues at arms length by outsourcing to someone who can do it quicker and better than them, and leave management concentrate on what they do best, which is selling travel. The ASP Model meant that Beacon could keep their IT expertise to a minimum and not employ high costing IT staff. According to the Managing Director of Beacon:

> *service is still a crucial issue in the travel industry and having our IT outsourced is one way of freeing up staff. It also allows us to concentrate on business growth and cost savings. We will now have time to develop new services that would otherwise take longer to bring to market. If I am out worrying about it related issues like IT Communications or Software /Hardware problems, then we are doing a job that someone else can do better than we can. So if we are doing their job, someone else is doing mine. We are trying to focus on what we can do best and if we can get someone at a reasonable cost to take over our IT headaches then we will jump at it. What we don't want to do is employ people to maintain applications. It's a very simple and cost-effective way for us*

However, the Buzzgolf approach was different because their core strategic focus is IT. Their focus was to understand IT as they are looking to be a one-stop golf 'Solutions Provider' in the next few years.

6. Towards an ASP Adoption (ASPA) Model

The proposed ASP Adoption (ASPA) Model is presented in Table 5. The model is structured across four dimensions, namely, technical/business drivers, benefits of adoption, barriers to adoption, and future trends. The researchers decided to use these dimensions in an effort to extrapolate the important issues of concern from the cases. The perceived importance of the technical/business drivers, benefits of adoption, and barriers to adoption relates to their collective citing in existing ASP literature. The researchers believed that these three dimensions were in fact the key to understanding an organisations ASP adoption. Finally, the fourth dimension, future trends, offers the researchers an insight into possible future evolutions of the ASP market, which is a key for further assessing an organisations suitability for ASP Model adoption and assists ASPs in understanding the adopting clients important issues of concern.

The important issues of concern documented for each dimension emerged from an examination of the similarities across the four cases. The researchers attempted to present a set of findings that built upon existing research in the area of ASP Model adoption and added to the overall practical understanding of such adoptions. For example, on examining the barriers to adoption dimension, certain issues (in particular, customisation and bandwidth) are concerning the ASP more than the adopting client. However, within the future trends dimension, the important issues of concern are based on observations of specific trends that were highlighted by some of the ASP clients

regarding their ASP experience. For example, the fact that quick CRM implementations can be attained through adopting the appropriate ASP Model, may in the future result in an increased successful use of CRM systems, proves invaluable to both ASPs and adopting clients.

Table 5: *The ASP Adoption (ASPA) Model*

	Important Issues of Concern
Technical/Business Drivers	The need for a high quality system that meets requirements. The ability to access an application from any location.
Benefits of Adoption	Adoption of an ASP Application Model does reduce the need for in-house IT expertise and may introduce an overall reduction in staff count. Implementation life-cycle times are drastically reduced. By design, the ASP Model benefits multi-site organisations. Significantly reduces TCO and increases ROI. Benefits focus on core competencies and business growth.
Barriers to Adoption	In all of the organisations studied the frequently referenced barriers to adoption (Customisation, Security, Bandwidth, Integration, and Backup Service and Support) were identified as low risk concerns. Customisation proved to be more of a problem for the ASP than the client. Security is now prerequisite on the internet, but outsourcing confidential data would heighten security concerns for the client. Bandwidth is concerning the ASP more than the client. Occasional periods of downtime are not serious enough to re-evaluate the quality of the ASP Model. The service clients are getting through the ASP Model is far superior to their previous systems infrastructure. Bandwidth is not stopping organisations from using the ASP Model, it is the planning behind purchasing the right levels of IT infrastructure.
Future Trends	The role of the consultant in the ASP market will become redundant. An increase in high-mission critical process delivery over the ASP Model. The advantage of a quick CRM implementation through the ASP Model will become a key factor in the successful use of CRM systems. Organisations with a high level of in-house IT expertise are as likely to use the ASP Model. A Successful ASP will have strong management.

7. Conclusions

To conclude, due to the fact that the ASP Model is relatively new, many organisations are unsure of the underlying important issues of concern associated with the adoption of an ASP Application Model. However, it has to be considered that from a market perspective, the software industry is moving in the direction of the ASP Model. Although the question still remains as to how fast this transformation is occurring?, organisations need to assess their suitability for the ASP Model, and the ASPs need to understand the important issues to achieving sustainable growth and customer momentum in the market. The ASPA Model, presented in Table 5, represents a synthesis of the important issues of concern derived from the organisations studied and presents some interesting initial

findings, however, a more comprehensive study is required to extend and justify these findings.

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