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Returning to Server-Centric Hospitality System Applications

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Abstract

Application service provider models represent an alternative to in-house information systems and are gaining favor within the hospitality industry: The models, which place technical system components at a remote site, are described as server-centric. ASPs allow hospitality management to share investment dollars, system costs, and technical staff expenditure with an ASP operator, thereby concentrating on providing enhanced guest services. Although considered a viable alternative to in-house processing, not everyone agrees this is a favorable trend.

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Given the escalating cost of purchasing and maintaining specialty software, hiring and retaining qualified staff, and obtaining and configuring robust hardware, many hospitality companies are investigating alternative information system architecture (data integration) and infrastructure (physical connectivity). The application service provider (ASP) model allows hospitality management to share initial capital outlay, application software, and ongoing technical expertise with a specialty operator.

Requisite hardware, software, netware, training, and technical support are fundamental business tools with relatively short life cycles. An ASP contracts activities and expertise aimed at managing information technology for a predetermined level of expenditure. ASPs supply software and software-related services over the Internet or via a virtual private network (VPN) on a fee-per-use basis. The ASP model is a server-centric scheme in which remotely hosted applications are provided via a secure data exchange channel. ASP decisions, which tend to be based on economic factors, are driven largely by frequency of use, processing costs, staffing requirements, on-going maintenance, and enhancement expenses, and represent a return to some of the computer processing modes of the past.

An ASP is capable of simultaneously serving an array of proprietary customers and is likely to

have considerable investment in skilled and certified staff, well-structured data centers, powerful file servers, interconnected hardware devices, and integrated software applications. Companies are forging alliances with ASPs to support an enterprise-grade information technology solution that allows hospitality firms to focus on core business operations, not technology. In essence, guest service remains the focal point, not information handling services.

An ASP guarantees application availability, data security, backup protection, and disaster recovery procedures through a mutually agreed upon service level agreement (SLA). ASPs present an alternative to in-house systems and are being adopted at an unprecedented rate across the hospitality industry landscape. Not everyone agrees this is a favorable trend.[1]

Central processing revisited

Historically, the hospitality industry has involved outside data processing agencies to support or manage some of its mission critical services (e.g., payroll, reservations, communications, etc.).[2] External data processing companies, once referred to as service bureaus, have evolved into sophisticated electronic data processing (EDP) centers capable of hosting a more diverse and complex set of user applications. In many ways ASPs are an enhanced throwback to the timesharing services of the past. The timeshare concept was simple; a hotel or restaurant rented a terminal and modem, dialed up its timesharing company's computer, used its application software, and paid a transactional fee.[3]

Despite the fact that hospitality industry practitioners have become comfortable with desktop computing, there is a renewed interest in returning to large, centralized data processing as evidenced by the success of recent vendor product offerings. Thin client terminals have replaced dumb terminals, and legacy mainframe computers have given way to more powerful devices called servers.[4] Hospitality companies, citing a lack of in-house technology talent, aging legacy systems, and/or scarce resource funding, are turning to the remote processing capabilities of the ASP model. The ASP industry, founded in 1999 with 25 members, now boasts more than 625 members in more than 20 countries with offerings for nearly every industry, including the hospitality industry.[5] Off-premises providers offer modular applications and/or complete information technology (IT) solutions for the hospitality industry. The ASP model, akin to predecessor outsourcing schemes, treats software as a service, thereby transferring responsibility for operational availability and maintenance from the user site to the remote ASP site.

There are six basic questions to ask an ASP provider:
- How and where are user applications and data

stored?: Shared servers are less expensive but represent security risk.

- What are the specifics of the ASP service agreement?: Inclusive of maintenance, upgrades, redundancy and backups.

- What support options are available from the ASP provider?: Consider technical help via telephone, web, and email support.

- What is needed by the user to access remotely stored data?: Buying specialty hardware or software defeats the ASP purpose.

- Can ASP application(s) be integrated with other user programs?: Online applications must work with other applications.

- How accessible is proprietary raw data by the user at the ASP site?: Be sure files are stored in a compatible format for user access.

ASPs manage services

In general, an application service provider develops or licenses software and rents it to an end user. Application service providers are third-party agencies that manage and distribute network-based software services and solutions to clients from a central data center over the Internet or via a VPN.[6] ASPs thereby enable a hospitality company to outsource some or all of its information system needs. Common ASP components include the following:

- application software – software owned and/or operated by ASP

- application server – hardware platform owned and/or operated by ASP

- application accessibility – browser/thin client via network from ASP

- application payments – transaction, fixed, or other fees levied by ASP

- application support – recruited, trained, and responsible staff of the ASP

The ASP model places technical system components at a secure site with highly qualified system personnel, enabling property management to concentrate on hospitality-related operations and guest service.[7] An ASP is expected to offer state-of-the-art applications while the hospitality industry strives to comfort guests and reward staff. An important element in defining an ASP lies in its revenue algorithm. Free applications typically are not counted as ASP products. ASP services can be priced on a transaction fee, fixed fee, subscription fee, or combination fee structure. Fees are typically formalized early in the ASP/client relationship.[8]

Typical ASP characteristics include fixed monthly fee, no hardware obsolescence, minimal onsite qualified staff, simultaneous

upgrading for all users, lower per transaction cost, reduced cost of ownership, and minimal onsite training.

The term ASP was coined in 1997, and by the end of 2000 there were in excess of 500 providers generating nearly $4 billion in revenues. This amount was four times more than 1999 revenues. While there are varying predictions for the future size and scope of the ASP market, all projections favor significant growth. Despite the fact the ASP market is relatively new, the Gartner Group estimates the worldwide ASP market will exceed $25 billion by 2004.[9] Given the durability of outsourced services to the hospitality industry, most experts agree that the ASP phenomenon is not a fad, but is a long-term viable information system alternative[10].

Model involves access

The ASP concept is simple and straightforward. Instead of purchasing hardware, software, netware, technical support and services, an ASP contracts necessary components on a usage basis across the Internet or VPN architecture. In exchange for usage, the user pays the ASP a fee (usually monthly) and assigns system control over to the ASP per terms contained in a service level agreement.[11] The concept of an ASP is analogous to many other business conveniences, such as telecommunications, air transportation, or athletic club membership. Instead of each firm building and

supporting a complex communication system, a user merely buys an affordable telephone and then purchases phone units (access and cost per minute charges). The cost and complexity of owning and operating a fiber optic network is prohibitively high, but paying the shared cost of telephone traffic produces economic feasibility for all users.

Similarly, few people fly often enough to justify the purchase of personal aircraft. Therefore, when air travel is necessary, a user simply rents a seat on board an outbound aircraft. The comparative cost of airplane operation to the cost of an individual trip ticket makes little economic sense. It is the overall volume of travelers and their shared contribution for pilot services, maintenance, fuel, and related expenses that produces feasible air travel. Similarly, an athletic club may offer a weight training facility. Participants do not need to pay for each piece of equipment used, but instead pay a membership fee and gain access to the weight room and other locations[12]. Paying a low incremental price for each use is the basic underpinning of the ASP concept and enables shared operating costs to provide a vehicle for economically sound utilization. An ASP can dramatically reduce the average costs of information technology and related services.

A plethora of popular hospitality software applications are available through ASP sponsorship[13]. Hospitality ASP offerings

include property management systems (PMS), point of sale (POS) systems, central reservation systems (CRS), front office (FO) and back office (BO) applications, human resources (HR) management, accounting and financial applications (AFA), and customer relationship management (CRM) solutions. Since an ASP controls the applications it supplies, often training at the hospitality property is minimal.[14] Instead of property-level applications being supported on local system infrastructure, remote ASP data centers host the applications. The property-level client, using a secure network connection, accesses an ASP remote server.[15]

ASP hospitality applications include management of the following: central reservations system, cashiering, catering, chain, condominium, food and beverage, guest accounting, housekeeping, menu, night audit, point-of-sale, property, registration, reservations, rooms, sales, time-sharing, and yield.

ASP configurations vary

Not every ASP offers every application; some offer client services and some address industry-specific needs, while others strive to support both realms. There are at least three ASP configurations:[16]

- **Full line process provider** – single provider solution – an ASP offering a full line of services; ASP maintains responsibility for all aspects of

operation (application, data center, staffing, retention, maintenance, etc.).

- **Horizontal process provider** – workflow or horizontal market oriented ASP; focus is on business processes (e.g., CRM, HR, AFA).

- **Vertical process provider** – industry or vertical market oriented ASP; tight application integration; end-user driven (e.g., PMS, CRS, POS).

Based upon configuration, ASP payment plans include licenses, implementation, training, management, and user support for hosted applications. It is important to note that ASPs typically charge an initiation (setup) fee in addition to ongoing monthly fees.

ASPs offer advantages

A hospitality company interested in contracting a remote software application should consider the advantages of the ASP model. ASPs offer low cost of entry, minimal setup procedures, incremental payments based on frequency of use, reduced in-house technology staff, no on-premises technology infrastructure, and high-speed bandwidth.[17] Renting programs that run over the Internet or a VPN appear to have financial incentive over purchased, installed in-house programs.[18] Another ASP advantage is convenience. There is no need to shop, purchase, train, install, or acquire additional hardware, software, or netware components. Installation

hassles, incremental upgrades, and ongoing maintenance issues become concerns of the ASP. While many ASP applications are billed on a frequency of use basis, some are available on alternate payment plans.[19] In addition, many ASP applications and services are customizable.

Generally, the ASP model presents these user advantages to the hospitality industry:

- no system shopping

- no hardware or software installation

- no in-house technical training

- no incremental upgrades

- no in-house maintenance staff

- no access problems (24/7/365)

- no connectivity problems (Internet/VPN anywhere)

- no unnecessary applications (custom tailoring)

Similar to an ISP that owns web and email servers that host web pages and distribute messages, ASPs support servers that host applications and related client data. A user simply connects to a high-speed ASP network and accesses custom designed applications and files.

ASP concerns

There are several areas of concern related to the ASP model.[20] Major factors include the following:

- **Transmission speed:** When a hospitality property relies upon a remote entity for real-time data processing, there is always a heavy dependence on speed of data transfer. Although ASP applications are designed for optimal processing and throughput, there is always the possibility of impediments to transmission speed. Bandwidth capabilities, connectivity mode, and avoidance of bottlenecking are important considerations.

- **Data security:** A rigorous security environment is required to ensure user comfort. ASPs tend to feature complex encryption and the fact that all transmitted data are proprietary and mission critical necessitates a disproportionate focus on data privacy and integrity.

- **Connectivity:** Permanent, full-time connectivity is not required for an ASP application, but a reliable connection is critical to effective operations. Connectivity options include dial-up modems that enable a computer to communicate data over telephone lines; cable modems designed to transmit data over cable TV lines; an integrated services digital network (ISDN) that provides high-speed dual telephone lines; digital subscriber line (DSL) services which incorporate sophisticated modulation schemes for data compaction; asymmetric digital subscriber line (ADSL) services that require a special modem but allow more data to be sent over existing telephone lines; and a dedicated T1 telephone line for high speed Internet connectivity. Each varies in terms of speed, reliability, and expenditure.

• **Continuity:** What happens if the link between a hospitality client and the ASP provider becomes inoperable? Most ASP providers claim to maintain an accurate, continuous status report of current operations (especially check-in, check-out, accounts receivable, and occupancy) that is accessible locally (i.e., property-level). This may be a firm requirement in a 24-hour per day, seven-day week per hospitality environment.

• **Training:** While ASPs claim that no on-premises training is necessary, this often is an overstatement as in-house staff continue to control data entry, evaluate output, and initiate many system processes. Although a graphical user interface (GUI) is much more visually intuitive than other forms, ASP applications should be supplemented with online help, web-based training materials, and other multi-media tools.

• **Interoperability:** The ability to share transmitted data with other property-related applications, either locally or remotely, is important to achieving an effective enterprise-wide system. Management must be mindful of the synergy that can be achieved through the interoperability of ASP captured data and other application software, including data warehousing and data mining. This is especially important for multi-unit operators.

• **Fee structure:** Client fees are typically assessed on a fixed basis, a variable usage basis, or a combination of the two; there may be debate over the cost effectiveness of some modular applications when compared to in-house, traditional applications. Operators need to be vigilant to cost tracking, computation, and audit capacities.

Applications abound

In November 1999, Eltrax launched an eSuite of four ASP services including InnDemand, an online hotel management system addressing the unique needs of the hospitality industry; Hre-source, a human resources application; iMessaging, an email and collaboration application; and a web-based customer relationship management CRM application.

In June 2000, Micros/Fidelio and UAS Internetworking announced an agreement to provide an ASP-based suite of application software. One product offering is Opera, which provides hotels with scalable application modules. A significant difference between Opera as a traditional PMS system and as an ASP-based solution is the fact that as new functionality is added by the ASP, there is no need for new hardware components or additional interface protocols. In addition, since the PMS functionality is deployed remotely, there is less reliance on in-house staff to maintain continuous system functionality.

Perceiving that the number one need is for integrated property management system functionality, Northwind Canada created Maestro. Maestro not only focuses on seamless integration between

application modules, but also the integration with the common productivity tools such as word processing and electronic spreadsheet applications. Maestro is a real-time integrated application enabling a property-wide sharing of information. It can be used to manage multiple properties and allows interaction between modules of the same property or modules of interconnected properties. This design enables a customer to interact with multiple hotels yet receive a single, consolidated billing. The ability to monitor and service multiple properties from a central site (be it a working hotel or a data center) can be advantageous for a hospitality firm.[21]

Costs are less

The ASP model relieves hoteliers from having to invest in up-front hardware and software costs. In addition, they claim there is no need to address the ongoing cost of support to upgrade applications as technology advances. Perhaps best of all, an ASP solution provides the capability to manage multiple properties remotely.[22] In fact, some of the major hotel projects using the ASP approach are being completed by chains that are standardizing their PMS operations to permit most of the processing to be transferred to regional or headquarter processing centers. Such configurations are illustrative of an internal ASP, whereby corporate management owns its own ASP.[23]

In June 2000, InfoGenesis and Compass Group combined to produce e-Revelation, an ASP-based POS solution. E-Revelation is described as an enterprise version of Revelation, an existing POS system. As an ASP-based application, e-Revelation is hosted in data center facilities with WAN or Internet connectivity to POS terminals operating in remote client food service locations. Transactions can be processed online or offline and system configuration and menu modification can be processed centrally and deployed to individual sites. The sponsoring companies claim that the key ROI factor is that the ASP model offers a technology dividend from increased revenues and margins that would not normally exist for small to medium operations. Another advantage they cite is that all costs of installing and operating a POS system are reduced to a simple monthly fee.[24] Additionally, restaurant management applications are beginning to be remotely hosted as customizable, centralized data center functions.[25]

Design is customized

An ASP rents remotely hosted software applications to the hospitality industry. Users access applications via the Internet or Virtual Private Network and are relieved from having to invest in hardware and software and related expenditures. In addition, the ASP model enables managers to operate multiple properties from a remote or on-property central server site. Users can determine a unique application configuration and lease

only those applications desired. It is for this reason that the ASP model can be described as a custom or tailored system design.

Accompanying ASP advantages is a set of critical issues highly relevant to the hospitality environment. Maintenance of continuity in connectivity and data transfer speed are essential for preserving effective operations. The proprietary nature of transactional data necessitates extraordinary security measures and complexity of accessibility. In addition, controls over stored programs and data files, fees and related costs, and transportability to other application software must be clearly delineated and understood.

With an ASP, management does not need to purchase or learn how to install new equipment or cumbersome software, and applications are available 24 hours each day, seven days per week, over a network connection. By relying on ASP for service applications, hospitality operators can avoid potential installation hassles, annoying incremental upgrades, and ongoing maintenance. These issues simply become someone else's problem. Based on current ASP fee structures, property management and point of sale applications may well be cost justified. Hoteliers and restaurateurs should take notice!

Appendix A
ASP: Myths vs. reality[26]

• **Myth:** A service-level agreement (SLA) is everything.

• **Reality:** An SLA often covers only the basics of how much the service provider guarantees in the way of uptime, seats, and licenses. Make sure that you and your staff can work with the provider's philosophy and that the provider will be flexible and will stick with you for the long haul.

• **Myth:** Outsourcing is less expensive.

• **Reality:** Service providers usually represent a smaller initial investment than self-hosted applications, and they typically have a monthly or yearly subscription fee. But you may pay a premium for more guaranteed uptime, and you might incur significant additional costs for extra applications or services.

• **Myth:** Outsourcing is more expensive.

• **Reality:** Over several years, you may spend more than if you bought and hosted applications yourself, but many other factors come into play: the hiring and training of support personnel, the cost of upgrades, and other factors depending on the type of applications needed.

• **Myth:** Outsourced companies will always be there.

• **Reality:** A track record is important. Check the company's fiscal heartbeat and make sure it will be around for a while, especially if it's providing mission-critical applications. Don't forget to consider the amount of uptime you will need, remembering that the difference between 99 percent and 99.999 percent uptime is 3.7 days of downtime a year.

Appendix B
ASP provider websites

Applicationstation.com
Appshop.com
Aspindustry.com
@Backup.com
Corio.com
Cwas.net
Cyberqwest.com
Exapps.com
Ex2get.com
Futurelink.net
Microsoft.com
Netledger.com
Navisite.com

Onecore.com
Oracle.com
Qwestcybersolutions.com
Peoplesoft.com
Sicomasp.com
Sigcom.com
SynXis.com
Telecomputing.net
Usi.net
Uss.net
Webharbor.com
Works.com

Appendix C
ASP hospitality-related websites

Adaco.com
Agilera.com
Alohaenterprise.com
Aptechinc.com
Aremissoft.com
Aspeon.com
Centrafuse.com
Centralpointtech.com
Csshotelsystems.com
Fabcosystems.com
Ghsglobal.net
Guestline.com
His.com
Hospitalityzone.com
Hotelaccounting.com
Hotelinfosys.com
Hotelpms.com
Hotelsforbusiness.com
Htoelsforleisure.com
Hoteltools.com
Hssltd.com
Iad-usa.com
Infinitespace.com
Infogenesis.com
Inn-client.com
Inndemand.com

Interrelate.com
Jvln.com
Lodgical.com
Logistix.com Maestropms.com
Megahotel.com
Micros.com
Mirus.com
Msisolutions.com
Netmoves.com
Netpos.com
Pegs.com
Pos.com
Radiant.com
Ramesys.com
Resortdata.com
Rezlink.com
Secure-res.com
Sicom.com
Sivacorp.com
Springermiller.com
Unirez.com
Visualonesystems.com
Vitallink.com
Vivonet.com
Xspeedium.com

Appendix D
ASP application modules

Accounting and bookkeeping
Customer relationship management
Data bases
Desktop publishing
Financial management
Human resources management
Inventory control/management
Payroll accounting
Point of sale management
Sales force automation
Time and attendance

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