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Billing Systems

# The Exciting World of ASP Billing

Under the word "billing" the first things to come to mind are council tax, phone, gas or electricity bills. Bills are a topic of conversation when they are too large, late, or unpaid. With the advance of the Internet and its latest fluid sales environments e.g. business-to-business exchanges, pricing is fluid and changes are rapid. It's crucial to track these transactions in real-time. By using a customer management and billing system using the latest technologies this allows you to react dynamically to a changing market.

Probably the best example of a business that needs an advanced system like this is the application service provision (ASP) market. ASPs allow end users to access software applications over a network, via a dial-up or

PAUL HOFF

dedicated connections, usually through a Web browser front end. Working in cooperation with the independent software vendors (ISVs) and network service providers (NSPs), these ASPs operate as off-site hosts, consolidating the software, network infrastructure and delivery platform necessary to support software upgrades, system security and technical support. Small to medium-sized businesses and large enterprises are rapidly adopting the ASP model. The Gartner Group estimates that by 2001, 50% of enterprises will selectively

outsource application management. It sounds complicated, as there are many co-dependent business-to-business operators who make up the infrastructure of the ASP model. With many players in one ball game comes the issue of making it work smoothly, keeping the customers happy and of course, making sure that everyone gets their financial share. If analyst predictions are correct, ASPs will need a real-time billing and customer management platform for managing the potential growth of their businesses.

### Challenges for ASPs

There are many challenges for ASPs to circumvent in order to survive. At present, there is a great deal of scepticism surrounding the model. In theory, it makes sense, but outsourcing your entire IT infrastructure to a third party has huge implications to all involved. Potential customers are concerned about the security of the model, the flexibility and reliability

of outsourcing what can sometimes be your missioncritical IT applications. Issues, which are paramount to ASPs succeeding and securing confident customers, include:

### Time to Market

Capturing market share quickly is a key requirement in an industry such as application hosting that is experiencing explosive growth. If ASPs are unable to launch a viable service quickly with suites of applications targeted specifically to their customer base, they risk losing out on attractive new opportunities and jeopardise the distinct advantage to be gained by market leadership.

### Ability to scale Profitably

Not only must ASPs be able to accommodate a rapidly expanding customer base, they must also have systems in place that will allow them to service the growing number of customers without increasing internal staff. To grow profitably, an ASP must automate business processes, such as user registration, credit checking, activating service, and handling remittances to partners. Failure to do so means that increasingly complex, non-scalable manual procedures will restrict the ability to attain or maintain profitability.

### Flexibility to change with the Market

As the industry is largely in its infancy; business models are still in the experimental stages. ASPs will need to be able to adapt their offerings to accommodate changing market conditions. Customers may want a choice of bundled applications offered as services. Some will require a service bundle containing e-mail and human resources and others may want only e-mail. ASPs must be able to quickly develop and offer a variety of services and price them appropriately.

### Complex Business Relationships

ASP business models are changing – becoming far more complex. ASPs are adding new application services to differentiate themselves and enhance revenue streams. It is increasingly common for

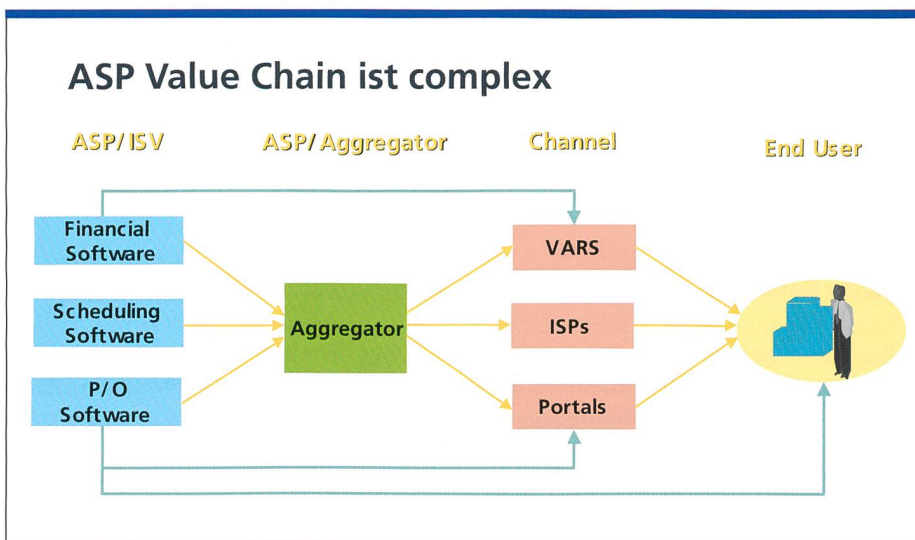


Fig. 1. ASP Value Chain is complex.

these application services to be remarketed from other service providers rather than being operated and managed by the end users' ASP. In parallel, to efficiently gain customers and realise economies of scale, ASPs are also focusing on offering specialised services, and letting other ASPs aggregators and channel partners bundle and resell the application services. In some cases these services retain their original brand identity, but in many cases, the services are private labelled and ultimately teach the end customer as a brand of the service provider. This partnering model creates an ASP 'Internet Value Chain', wherein multiple providers each contribute distinct value to the chain.

### Robust Business Infrastructure

ASPs will require robust business infrastructure to deal with its numerous business relationships and requirements.

### Billing Benefits

Billing and customer management specialists have acknowledged the challenges facing ASPs. Such companies have researched and identified that their unique and rather niche business offerings can complement ASP needs such as time to market, scalability, profitability and managing complex relationships within a sturdy infrastructure.

The latest trend in the billing world is a real-time billing solution. In other words, billing is performed as the business transaction happens, rather than doing batch billing at the end of the month. In terms of ASPs, batch monthly billing would prove impractical due to the sheer volume and complexity of the relationships within the model. This is where the ASP billing model would be unique: its Internet Value Chain including ISVs, NSPs and partners, requires an accurate billing suite which can split revenue as agreed, in real-time.

### Automation of ASP Value Chain

The ASP model therefore requires the automation of the ASP Internet Value Chain as all participants must be able to interoperate. Participants in the Internet Value Chains need to inter-link their business infrastructures, so that information can flow as necessary between companies. The only way to ensure an open flow of information is with an open platform that enables information to be passed from an ASP's billing system to

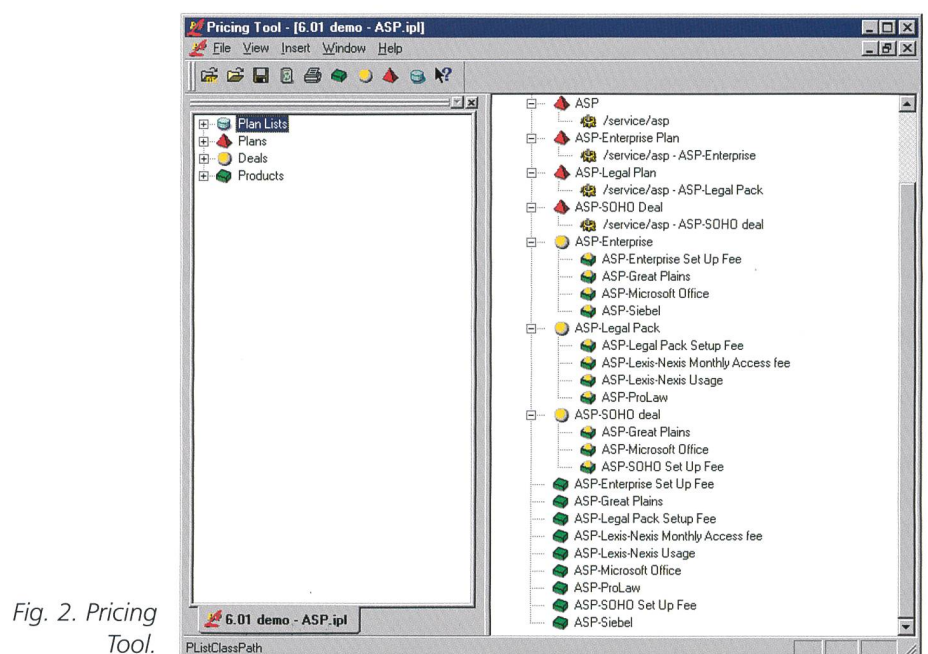


Fig. 2. Pricing Tool.

those of their partners and vice versa. This real-time exchange of information enables flow-through processing across the Internet value chain allowing the chain to operate as smoothly and efficiently as a single-source model. This in turn will help manage the complex business relationships inherent in the ASP business model.

Presently, billing systems can track and calculate recurring fees and application-specific transactions such as revenue sharing and settlements with third parties. For example, the ASP revenue generated by hosting the vendor's application with the ASP's corporate customers. Using an open application platform infrastructure, it is then possible to share this information, in real-time, with the partners in an ASP Internet Value Chain. The billing systems can therefore allow ASPs to precisely track these revenues in order to honour the revenue-sharing agreement.

ASPs may want to allow down-stream resellers of their application services to directly administer and support customers by outsourcing user administration functionality to the resellers who own the customer relationship. Without this capability, ASPs may not be able to reach larger audiences and maximise revenue by taking advantage of the emerging ASP Internet value chain. Or, an ASP may need to bill an ASP aggregator of usage consumed through this channel. If the customer management and billing system is not equipped to handle complex royalty relationships and account hi-

erarchies, the ASP will simply not be able to participate in the increasingly complex business environment.

### Billing and Branding

An effective billing and customer management infrastructure can help reduce the complexity of the ASP Internet value chain through branding. Private branding is the ability of the ASP to host services for a distribution partner or any other downstream provider that wants to offer services under its own brand identity. Private branding enables an ASP to distribute account creation, administration, pricing, rating, billing, customer management, invoicing and other infrastructure functions to any number of value-added resellers (VARs), ISPs, ASP aggregators, Internet portals, or other entities acting on a customer-facing role. ASPs can grow their business by leveraging their infrastructure with incremental business from downstream providers who, in turn, can focus on customer acquisition and retention, and grow their business without having to invest in and manage extensive facilities.

### Corporate Pricing Tracking

For the corporation using an ASP to provide various IT functions to different company hierarchies, the ASP billing model can offer a distinct business benefit. Billing models presently on the market can track account usage within a corporation using hierarchies that match the organisational structure of the company. This enables an ASP to itemise bills

across any number of groups within a corporation and produce invoices that are meaningful to the end customer. In this way, a master invoice can be created, which breaks down a company's usage of ASP services by the marketing group, the sales department and then rolls up into an overall total. This capability is extremely beneficial to corporate customers of ASPs, as it allows them to internally charge back their IT expenditure to the departments that incurred those expenses.

**Flexible Pricing**

Another way in which an ASP can leverage its billing information to offer targeted services to customers is through flexible service bundles. As hosted application offerings proliferate, ASPs will be faced with the demand to offer complex combinations of services such as a product suite. They will require tools to define collections of application services as a bundled offering, associate pricing with these offerings and dynamically alter these bundles as necessary. A good billing system should be able to support any business model with the flexibility for ASPs to create pricing terms that are tailored to fit the specific needs of each customer segment. An ASP can therefore create a series of pricing plans, which can then be customised for a specific customer at the time of account creation. For example, the plan can be customised by changing the product mix or discount structure based on information gathered with the customer registers. In addition to being able to structure different packages, ASPs can choose pricing structures for their business. It need not be usage-based billing only. As the industry evolves, ASPs will find that choosing different billing structures may increase their revenue stream and customer satisfaction. In addition to a per-user, per-month models, other value-based models such as tiering, time of access, number of transactions, and bandwidth consumed are becoming more common. Service offerings will increasingly need to be segmented to address vertical markets or distinct groups of users within a single market or account.

**GUI Pricing Tool**

Yet another benefit to the end user are the Graphic User Interface (GUI) based pricing tools which can be found on spe-

cialised billing systems. These allow for the ability to create and change product bundles and prices without programming. This enables ASPs to increase both customer satisfaction and revenue by engaging with customers in real-time during activities that extend from initial account creation to on-going service use. All adjustments can be performed without downtime or affecting customers; and changes are instantly activated providing the customers with immediate service and the ASP with immediate revenue. The ability to meet market demand within an instant is thus possible.

**Real-time Trend Tracking**

Meeting market demand in real-time represents the perfect opportunity to

outshine competition. Real-time accessibility allows ASPs the ability to have continuous and instant access to the latest account information for each individual customer, as well as for an aggregate of all customers in a given corporation or distribution partner. ASPs can also get billing systems, which provide detailed information of customers over the past year or minute. Customers in turn can also access their account information as and when necessary. This real-time functionality maintains customer satisfaction to the extent of shifting the power of the service to the customers' hands. In turn, the ASP can detect trends in customer behaviour, performance of distribution partner or response to recent promotions and make timely adjustments to

Now	Future
Flat rate per user per app per month	Flat rate per user per app per month Flat rate plus value add Per minute Per transaction Percentage of value Free-then-pay Subscription Time of day Quality of Service Fixed variable costs

Table 1. ASP pricing models are evolving.

**Zusammenfassung**

**Die aufregende Welt des ASP Billing**

Mit dem Siegeszug des Internet und den Absatzmärkten, die es mit Business-to-Business usw. geschaffen hat, ist Bewegung in die Preisgestaltung gekommen, und die Veränderungen vollziehen sich immer schneller. In dieser Situation ist es von entscheidender Bedeutung, dass man diese Transaktionen in Echtzeit verfolgen und gezielt auf die Veränderungen des Marktes reagieren kann. Dazu braucht es ein Kundenmanagement und Abrechnungssysteme, die sich der neuesten Technik bedienen. Das beste Beispiel eines Marktes, der auf solch fortgeschrittene Systeme angewiesen ist, ist der der Application Service Provision (ASP). ASP gestattet den Endbenutzern, über eine Wähl- oder Standleitung – meist mit Hilfe eines Web-Browser-Frontends – auf Software-Anwendungen zuzugreifen. Die ASP arbeiten mit unabhängigen Software-Händlern (independent software vendors, ISV) und Netzbetreibern (network service providers, NSP) zusammen und sind als off-site-Hosts dafür besorgt, die Software, die Netzinfrastruktur und die Lieferplattform, die es zur Unterstützung der Software-Upgrades, der Systemsicherheit und des technischen Supports braucht, zu konsolidieren. Immer mehr kleine, mittlere und grosse Unternehmen entscheiden sich für das ASP-Modell.

plans and marketing strategies accordingly – thus keeping ahead of the game. The application service provision market is burgeoning as confidence and understanding grows. The complicated issues involved in managing customers, tracking prices and settling accounts when there are many different participants means that ASPs are realising it is essential to have an advanced customer management and billing solution in place at the outset. The ASP market has got a long way to go, but the advanced solutions are already available to make it a viable business. 1

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Portal Software are exhibiting at Billing Systems 2001, 24–26th April at Olympia London. Homepage: [www.iir.co.uk/billing](http://www.iir.co.uk/billing)

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### Super-Flachbildschirm

Wer schon länger mit dem Gedanken gespielt hat, sich einen flachen Bildschirm für seinen PC zuzulegen, der sollte jetzt aufpassen: Logitec ist mit einem 17-Zoll-TFT-Flüssigkristalldisplay auf den Markt gegangen, das den SXGA-Standard bedient, eine Auflösung von 1,280 x 1,024 Pixel sowie eine Helligkeit von 250 cd/m<sup>2</sup> und einen Kontrast von 400:1 liefern. Um das Leistungsbild abzurunden, sind noch Hi-Fi-Stereolautsprecher und die notwendigen Verstärker eingebaut. Man braucht nur noch ein zusätzliches Kabel für den Audiokanal zwischen Display und PC. Einen Nachteil gibt es allerdings auch: Der Preis des Displays war bei Redaktionsschluss noch nicht bekannt, dürfte aber nicht gerade niedrig sein.

### Die IEEE-Preisträger des Jahres 2001

Unter Laureaten des IEEE für 2001 ragen einige heraus, weil sie über die Grenzen ihres Fachgebiets hinaus bekannt sind. Dazu gehören Herwig Kogelnik, Chef der Photonics Systems bei den Bell Labs (für Grundlagenarbeiten in der Optoelektronik): Er erhält die Ehrenmedaille des IEEE. Robert H. Dennard von IBM wird für die Erfindung des 1-Transistor-DRAM geehrt und bekommt die Edison-Medaille. Prof. Ulrich Reimers (Institut für Nachrichtentechnik an der Universität Braunschweig) wird für die Entwicklung des DVB-Standards ausgezeichnet. Er erhält den «Masaru Ibuka Consumer Electronics Award». Als Seltenheit ist zu verzeichnen, dass Arun N. Netravali, Präsident der Bell Labs, gleich zweimal geehrt wird: Mit der «Jack S. Kilby Signal Processing Medal» (die er mit Thomas Huang von Texas Instruments teilt) und mit dem «Frederic Philips Award» (für die rasche Umsetzung neuer Forschungserkenntnisse in die Praxis).

### Wachstumsmarkt MEMS

Die zum Cahners-Verlag gehörende In-Stat-Group ist für ihre soliden Voraussagen bekannt. Jetzt hat das Marktforschungsunternehmen eine neue Markt-nische identifiziert, die nach jahrelangen Vorarbeiten nun Geld bringen soll: die MEMS (Micro Electro Mechanical Systems). Diese haben im Endverbrauchermarkt im letzten Jahr weltweit für einen Umsatz in Höhe von rund 200 Mio. US-\$ gesorgt. Nach den Hochrechnungen der

In-Stat-Leute soll diese Summe bis zum Jahr 2005 auf 1,5 Mia. US-\$ steigen. Das würde ein Wachstum von 750% innerhalb von fünf Jahren bedeuten. Das wäre ein beeindruckender Zuwachs.

### Erste Oberflächenwellenfilter für 5 GHz

Im Fujitsu-Konzern entstand durch Zusammenarbeit von drei Tochterfirmen die ersten Oberflächenwellenfilter (SAW-Filter) für das künftige 5-GHz-Band. Sie sind in 0,2- $\mu$ m-Technik entworfen, wobei beim Schreiben der geometrischen Muster Elektronenstrahl-Lithografie und beim Strukturieren reaktives Ionenätzen zum Einsatz kommt. Das erste vorgestellte Filter hat eine Einfügungsdämpfung von weniger als 3 dB und eine Sperrdämpfung von mindestens 25 dB. Das Filter für künftige Mobilfunkgeräte wird ab Herbst in einem Gehäuse von 2,5 x 2 x 1 mm<sup>2</sup> geliefert.

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### Langsamer sprechen, besser verstehen

Diese Erfahrung machen nicht nur Reisende in einem fremden Land, sondern auch alte Menschen am Telefon: Telefongespräche mit den Enkeln sind für Großeltern oft frustrierend, weil sie die schnell redenden Kleinen kaum verstehen. Nach dem Willen von Sanyo Electric kann man das mit einem Chip verbessern: Der neue Baustein mit der Bezeichnung LC850511 verzögert den ankommenden Text nach Firmenangaben um bis zu 35%. Etwas mehr als 20 \$ soll der Chip kosten. Doch irgendwo muss ja die schneller ankommende Information bleiben: Wo sie zwischengespeichert wird, sagt uns das Unternehmen leider nicht.

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