Internet Hosted Applications: Markets and Technology

Session 3105
Agenda

- Definition: What Is the ASP Market?
- ASP Market Drivers
- ASP Business Models
- Opportunities for the Service Provider
- Cisco Hosted Application Initiatives
  Update and Accomplishment Programs

ASP Market Opportunity

- Overall ASP market is expected to reach $6.4B in 2001
- Enterprise ASP market expected to reach $2.0B in 2003
- Over 300,000 emerging enterprises in the U.S. with revenues between $40–500M, and IT budgets of $5M or less

Source: C.E. Unterberg, Towbin, Forrester, Infonetics Research, IDC, Cisco
Definitions

- **ASP**: a company that in return for a subscription fee provides a total packaged application solution either directly to end user or through an AIP as part of a broader service offering; services include consulting, system integration, and access to an AIP providing circuit provisioning, hosting, billing and network management; an ASP typically deploys “one to many” sales model

- **AIP**: a company that provides co-location or hosting services, including circuit and or app provisioning services to an ASP or to an end user directly; management services include physical connectivity, operations management, integration, and back office services offering predictable SLAs and different class of application services; supports applications infrastructure in support of multiple ASP’s; the AIP is the “Mall”, and the ASP is the “store in the mall”

Technology and Market Shifts Are Driving the Opportunities for Asps

**Technology Enablers**

- Rise of the Internet as a Secure, Reliable Global Network
- Superior Infrastructure Provides Business Agility, Scalability, More Rapid Deployment
- The Browser as the Accepted Application GUI
- Increasing Availability Applications Via Web-Based, Hosted Services
- Increased Adoption of Server-Based Computing
- Spread of E-commerce, ERP and Supply Chain Management Applications to Medium and Small Enterprise

**Market Drivers**

- Shortage of IT Services Skills
- The Move by SW Vendors to Reach Down-market
- Total Cost of Ownership Data Centers
- Focusing on New Core Competencies
- Desire for Simplicity by End Users (Pre and Post Sales)
- Increased Affordability—Ability to Amortize the Cost of Business Solutions
- Faster Deployment of New Apps to Business User
Cisco’s Vision/Mission for Hosted Applications

- Vision: Hosted Applications help every company participate in the Internet economy
- Mission: Enable and accelerate the hosted application market through industry leadership and industry-leading participants

Emerging Models

- Telcos and Network COs
  - Qwest
  - Frontier
  - PSNet
  - UUNet
  - Verio
- ISPs
  - Digital Island
  - PSNet

- Industry Leaders
  - Cisco
  - Compaq
  - HP
  - Microsoft
  - Sun
  - Intel

- ASPs
  - USInternetworking
  - Corio
  - FutureLink
  - Telecomputing

- Traditional Integrators
  - Anderson Consulting
  - Ciber
  - EDS
  - KPMG
  - IBM Global Services

- Emerging AIPs
  - EbaseOne
  - DataReturn
  - Digex
  - Firstpoint
  - Broadwing
  - Concentric

- Software Providers
  - BAAN
  - SAP
  - PeopleSoft
  - JD Edwards
  - Lawson
Pure ASP: Major Challenges

- Customers have identified major decision criteria in subscribing to ASP services

<table>
<thead>
<tr>
<th>Rank</th>
<th>Criteria</th>
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<tbody>
<tr>
<td>1</td>
<td>Application Performance; Security</td>
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<tr>
<td>2</td>
<td>ASP’s Ability to Provide Comparable or Better Apps Service and Support</td>
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<tr>
<td>3</td>
<td>ASP’s Responsiveness in Changing Business Conditions</td>
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<td>4</td>
<td>Loss of Control over Corporate Resources</td>
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<tr>
<td>5</td>
<td>Unproven Business Model</td>
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- These criteria are primary guides to success factors an ASP should work toward

Source: NetworkWorld, 1999

AIP Challenges

- Security of mission critical data
- Losing control over mission critical applications and data
- Obtaining reliability levels
- Current investment in existing apps infrastructure
- Service design and provisioning
- License definition
- Policy definition
- Apps. performance reporting components
- Speed to implementation
- A common directory (policy, resources, companies)
- Customer embracing application services
AIP Infrastructure Core Services

Data Center
- Server and OS Management
- Server Monitoring
- SLAs
- Support Services
- Security
- Environmental Controls
- Back-office Services

Network Services
- Security Services
- Network Management
- Network Monitoring
- Support Services
- SLAs

Support Services
- Network Management
- Network Monitoring
- SLAs

Application
- Application Management
- Application Help Desk
- Requirements Analysis
- Consulting
- Service Design

Customer Services
- Registration
- Billing
- Authentication
- Customer Care
- Ordering
- Training
- Partners/VARs
- Marketing/Sales
- Consulting
- Service Design

Source: IDC

How Far Up the Stack will AIP and ASP Deliver?

Customers of All Sizes: SME Businesses
- Providing Overall Internet Business Strategy?
- Creating the Roadmap for Specific Internet Business Projects?
- Developing Business Case and Analysis to Support the Hosted Model?
- Helping with Application Definition?
- Assisting with Application and Infrastructure Design?
- Providing Application Development Services?
- Offering App and Infrastructure Deployment/Installation Services?
- Providing Ongoing Application Management and Maintenance?
- Providing Ongoing Server Management and Maintenance?
- Offering Full Hosting Services and Running the Data Centers?
- Providing the Network Access?
Are ASPs Just a Return to Timesharing?

"ASPs are about Economies of Skills, not Economies of Scale"

Unidentified ASP Executive

AIP and ASP Models Emerge from Selected Core Competencies

Application Infrastructure Providers

Data Center

Network Service Provider (Backbone)

Application Service Provider

ISVs

ISP

Internet Service Providers

End-Users
**Business Model Drives the Way They Go to Market**

**Instant On**
- Instant On technology
- Clear, quickly profitable business models
- Inexpensive technology base
- Low cost of entry
- Best efforts Internet SLAs
- Self-service support

**Modular Outsourcing**
- Best practices methods and standardized tool kits
- Ability to pick and choose features deployed from menus
- Pre-defined SLAs
- Self-service and service center

**Custom Outsource**
- Enterprise-centric
- High SI component
- Custom pricing/SLAs
- Dedicated support

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**ASP/AIP Business Models**

**End Users**
- Application Service Providers
  - Front Office
  - Customer Relationship Management Web Centric
- Productivity Applications
- Infrastructure Services
- E-Services
- Desktop Management
- Back-office
  - NOC, Data Center, Servers, OS, Security, Directory, Connectivity, Apps SLA Support

**CPN Service Providers**

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Which Applications to Target?

**Entertainment and Content**

- **Business Process Solutions**
  - ERP, SFA, Payroll, Accounting, Customer Resource Management
- **Extended Enterprise/Workgroup Solutions**
  - Project Management, Collaborative Design, Supply Chain Mgmt
- **Business Productivity/Communications Solutions**
  - E-Mail, Information Repositories, Internet Faxing, Conferencing
- **Web Commerce and Community Services**
  - Hosting Interactive and Transactional Web Sites
- **Content Services**
  - Hosting Basic Web Sites
- **Access Services**
  - Internet Access/Connectivity, Security, QoS, Ntwk Mgt, Billing

Source: Summit Strategies

Intelligent Internet Infrastructure Enables Application-Aware Services

Differentiation Through Advanced IP-Based Services

- Applications
  - Security Controls
  - Application Resource Controls
  - Transport Services
  - Manageability Controls
- Basic Transport Services

Source: Summit Strategies
Customer Requirements

Quality of Service

Security

Reliability

Management

Hosted Applications Ecosystem

Uptime

Data Center

Application Service Provider

ISVs

ISVs

ISVs

Network Service Provider (Backbone)

ISP

ISP

End-Users

End-Users

System Integrator

Technology Vendors

Quality

Reliability

SLAs

Service Customization

Variable Service Provider (VAR/SI)
SLA Focus Needs to Be on User’s Experience

Application Quality of Service Content Networking

Based on a Packet’s Content, Determine Network Services and Behavior Such as Routing, Quality of Service, and Security
Differentiated Services

Traffic Classification by Application in the Campus and WAN Edge

Data Center

ToS or DSCP

WAN

Differentiated Services Provided in the WAN

Security—Dedicated IP VPNs

Customer

IP Backbone

Service Provider(s)

IPSec, L2TP, IP VPN

AIP
Network Edge Where the Last Mile Meets New Services

- Residential
- Telecommuter
- Enterprise

Network Based Services
- Classification
- DiffServ
- Queuing
- RSVP

AIP Managed Backbone/Core

Seamless Deployment of New Services Is Only Capable with a Managed Last Mile

Application Quality of Service Model

Response Time and Throughput at the Application Layer

Endpoint
- XML or HTML
- Windows
- Transport
- Network
- Data Link
- Physical

Performance Endpoint
- Terminal Server
- Or Application
- Transport
- Network
- Data Link
- Physical

TCP/IP

Performance QoS
The End-to-End Solution

Application Flow/Traffic

Latency

End Customer

AIP Managed Core

Co-Location

End Customer

Secondary
- Admission Control
- Classification/Marking
- Queuing

Last Mile

Primary
- Admission Control
- Queuing
- Other Services

AIP/ASP

Primary
- Admission Control
- Classification/Marking
- Queuing (optional)

How Does Hosted Application Network Integration Work?

Browser

Customer Premise

Security
Managed Service
Control Policy
SLA Monitoring

Last Mile

Cisco 8400s or GSRs

Policy Management
Redundancy
Dynamic Allocation
Traffic Engineering

Cisco 7200

Load Balance
Redundancy
Class of Service
Traffic Shaping
Security

Cisco DMZ and Secure Network

Remote Cisco Hosted Applications Environment

Pix Firewall

Local Director

Catalyst 6000

Minicomputer

Minicomputer

Cisco.com
EbaseOne Focus on Saleslogix

- Saw the Internet as a scalable hosting vehicle; partnered with Level 3, CPN SP last mile, Sun hardware and Saleslogix/Great Plains software vendor
- Used the 24 x 7 access and SPOC
- Leased data centers from level 3 as well as WAN backbone
- Delivery—Marimba
- Sales and marketing—direct and partner channels and ISVs channels
- Service—core infrastructure and package solution ASP

Managedops.com
SI Becoming ASP for Great Plains

- Saw the Internet as a distribution of software package vehicle; partnered with Great Plains vendor to become the leading ASP
- Used the 24 x 7 global access of the Internet and virtual private application network and integrate and maintain various GP applications
- Use Frame Relay AT&T for the backbone and Last Mile CPN SPs
- Own data centers and servers for financial database
- Different level of application service packages with SLAs
- Service delivery—automation tools and integration of Metaframe
Cisco Hosted Application Conclusion

Helping Businesses Participate in the Internet Economy

- Bringing expertise
- Architecture models
- Product enhancement
- Joint technology development
- ASP LAB
- Ecosystems

Cisco Hosted Application Initiative

Changing the Way We Work, Live, Learn and Play
Internet Hosted Applications: Markets and Technology

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