Has IP Frozen the PBX Market?

Survey of Customer Migration Plans
Primary Research Study on Demand for IP LAN Telephony

- Conducted during 3rd Quarter of 2001
  - 335 Companies Interviewed
    - 210 Enterprises (500 to 200,000 employees)
    - 125 Mid-sized businesses (100 to 499 employees)
  - Both Voice and Data decision-makers

- Definition of IP LAN Telephony
  - IP phones connected directly to your LAN
  - Either replaces or transforms your existing phone system
IP-Enabled Implementation Method

Central Site

- Digital Phones
- Analog Phones
- IP Phones
- Soft Phones
- Port Cards/Gateway
- Circuit Switch
- Communications Server
- PBX
- LAN Switch
- Router
- Applications Server

Remote Site

- IP Phones
- Soft Phones
- Analog Phones
- Digital Phones
- Router
- LAN Switch
- Survivable Media Gateway
- IP WAN
- PSTN
- Analog Phones
- External Site
IP-Centric Implementation Method

Central Site
- Digital Phones
- Analog Phones
- Media Gateways
- IP Phones
- Soft Phones
- LAN Switch
- Router
- Communications Server
- Applications Server

Remote Site
- IP Phones
- Soft Phones
- Analog Phones
- Digital Phones
- Router
- LAN Switch
- Survivable Media Gateway
- IP WAN
- PSTN
- External Site

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Building Client Value...
Participants Represented Good Cross-Section of U.S. Enterprises

No. of Employees | % of Enterprises
--- | ---
500 to 1,000 | 8%
1,001 to 2,500 | 23%
2,501 to 5,000 | 26%
5,001 to 10,000 | 17%
10,001 to 25,000 | 16%
25,001 to 200,000 | 10%

Telecom Managers: 24%
Data Network Managers: 46%
IT Executives (CIO, CTO, CFO): 30%
Actual Implementation is Lagging Projections from 2000 Research

Timeframe to Begin Implementing IP Telephony

% of Enterprises
16% of Enterprises Cancelled or Decreased Their Implementation Plans for 2001

% of Enterprises that changed their plans this year for implementing IP LAN Telephony

<table>
<thead>
<tr>
<th>Type of Changes</th>
<th>Year in which installation plans were affected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implementation plans were cancelled</td>
<td>2001: 9%</td>
</tr>
<tr>
<td></td>
<td>2002: 1%</td>
</tr>
<tr>
<td># of planned installations were decreased</td>
<td>2001: 7%</td>
</tr>
<tr>
<td></td>
<td>2002: 9%</td>
</tr>
<tr>
<td># of planned installations were increased</td>
<td>2001: 3%</td>
</tr>
<tr>
<td></td>
<td>2002: 11%</td>
</tr>
</tbody>
</table>
Budget Cutbacks and Business Case Analysis Impact Implementation Plans for 2001 and 2002

Importance rating of reasons for canceling or decreasing planned installations of IP LAN Telephony for 2001 or 2002

(5=Very Important; 1= Not Very Important)

- Cutback in capital budget: 3.33
- Results of business case analysis: 3.00
- Supplier support capabilities: 2.75
- Infrastructure upgrade requirements: 2.67
- Changes in product capabilities: 2.33
- Results of trial installations: 1.67
IP LAN Telephony Is “Very Likely” at One-Third of Enterprise Sites

% of Total Sites

- Somewhat Likely 26%
- Very Likely 34%
- Not Likely 40%

At least one “Very Likely” site 87%
All sites were “Not Likely” 4%

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Building Client Value...
Data Decision-Makers Have Become More Realistic About the Prospects for IP LAN Telephony

Market Demand (% of Sites) by Type of Decision Maker

**Voice Decision Maker**
- 2000 Study
  - % of Sites: 25% Very Likely, 75% Somewhat Likely or Not Likely

- 2001 Study
  - % of Sites: 33% Very Likely, 67% Somewhat Likely or Not Likely

**Data Decision Maker**
- 2000 Study
  - % of Sites: 62% Very Likely, 38% Somewhat Likely or Not Likely

- 2001 Study
  - % of Sites: 34% Very Likely, 66% Somewhat Likely or Not Likely

Likelihood of Implementing IP Telephony
- Very Likely
- Somewhat Likely or Not Likely
Adding gateway cards to our existing PBXs is a cost-effective migration approach

IP LAN Telephony will enable a new breed of applications

For the next year or two, we will continue to install traditional PBXs

IP LAN Telephony offers lower TCO than traditional PBXs

Even Data Network Managers Support IP-Enabling the Existing PBX

Rationale for implementation decisions regarding IP LAN Telephony

(5=Strongly Agree; 1= Strongly Disagree)
Enterprises with Up to 100 Sites Have the Highest Demand

Market Demand by Size of Enterprise

<table>
<thead>
<tr>
<th>% All Sites</th>
<th>Enterprise Size Segment</th>
<th>% Sites “Very Likely” to implement IP Telephony within next four years</th>
</tr>
</thead>
<tbody>
<tr>
<td>2%</td>
<td>Small (2 to 20 sites)</td>
<td>42%</td>
</tr>
<tr>
<td>6%</td>
<td>Medium (20 to 100 sites)</td>
<td>42%</td>
</tr>
<tr>
<td>20%</td>
<td>Large (100 to 500 sites)</td>
<td>38%</td>
</tr>
<tr>
<td>72%</td>
<td>Very Large (&gt;500 sites)</td>
<td>31%</td>
</tr>
</tbody>
</table>

34% Average
Adoption is Relatively Consistent Across All Industries

Market Demand by Industry Segment

<table>
<thead>
<tr>
<th>% All Sites</th>
<th>Industry Segment</th>
<th>% Sites “Very Likely” to implement IP Telephony within next four years</th>
</tr>
</thead>
<tbody>
<tr>
<td>37%</td>
<td>Financial/Insurance</td>
<td>38%</td>
</tr>
<tr>
<td>30%</td>
<td>Retail/Wholesale</td>
<td>26%</td>
</tr>
<tr>
<td>21%</td>
<td>Services/Utilities</td>
<td>34%</td>
</tr>
<tr>
<td>9%</td>
<td>Manufacturing</td>
<td>37%</td>
</tr>
<tr>
<td>3%</td>
<td>Education/Government</td>
<td>40%</td>
</tr>
</tbody>
</table>

Average: 34%
Very Large Sites and Small Sites Are Prime Targets

Market Demand by Size of Site

<table>
<thead>
<tr>
<th>Site Size Segment</th>
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</thead>
<tbody>
<tr>
<td>% Sites “Very Likely” to implement IP Telephony within next four years</td>
</tr>
<tr>
<td>% All Sites</td>
</tr>
<tr>
<td>2-40 Phones</td>
</tr>
<tr>
<td>41-100 Phones</td>
</tr>
<tr>
<td>101-400 Phones</td>
</tr>
<tr>
<td>401-1,000 Phones</td>
</tr>
<tr>
<td>1,000 + Phones</td>
</tr>
</tbody>
</table>

- 64% 2-40 Phones
- 16% 41-100 Phones
- 9% 101-400 Phones
- 8% 401-1,000 Phones
- 3% 1,000 + Phones

Average: 34%
## Certain Segments are Frozen due to Indecision over IP LAN Telephony

<table>
<thead>
<tr>
<th>Location</th>
<th>Exisiting PBX</th>
<th>New Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large Locations</td>
<td>IP-enable over time</td>
<td>Undecided/FROZEN</td>
</tr>
<tr>
<td>1,000+ phones</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mid-Sized Locations</td>
<td>Undecided/FROZEN</td>
<td>Prefer IP-centric</td>
</tr>
<tr>
<td>41 to 1,000 phones</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small Locations</td>
<td>• Replace with Remote LAN</td>
<td>• Install Remote LAN</td>
</tr>
<tr>
<td>&lt;40 phones</td>
<td>• Upgrade IP WAN?</td>
<td>• Upgrade IP WAN?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PBX Vendors are Enhancing their Architectures to Facilitate Migration From IP-Enabled To IP-Centric

Traditional PBX

- Digital Phones
- Analog Phones
- Port Cabinet
- Circuit Switch
- Communications Server
- Applications Server

IP-Enabled PBX

- Digital Phones
- Analog Phones
- Port Cabinet with Media Gateway
- Circuit Switch
- Communications Server
- Applications Server
- IP Phones
- LAN Switch

IP-Centric LAN Telephony

- Digital Phones
- Analog Phones
- Enhanced Media Gateway
- Open Communications Server
- LAN Switch
- Applications Server
Vendors, VARs and Distributors Need To Improve their Expertise and Support

**Evaluation of Initial Implementation**

**Results vs. Expectations**

<table>
<thead>
<tr>
<th>Category</th>
<th>Exceeded</th>
<th>Met</th>
<th>Did Not Meet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voice Quality</td>
<td>10%</td>
<td>74%</td>
<td>16%</td>
</tr>
<tr>
<td>System Reliability</td>
<td>16%</td>
<td>63%</td>
<td>21%</td>
</tr>
<tr>
<td>Feature Robustness</td>
<td>10%</td>
<td>58%</td>
<td>32%</td>
</tr>
<tr>
<td>Application Functionality</td>
<td>10%</td>
<td>53%</td>
<td>37%</td>
</tr>
<tr>
<td>System Scalability</td>
<td>6%</td>
<td>71%</td>
<td>23%</td>
</tr>
<tr>
<td>Expertise &amp; Support of Equip. Vendor</td>
<td>61%</td>
<td>39%</td>
<td></td>
</tr>
<tr>
<td>Expertise and Support of Distributor/VAR</td>
<td>56%</td>
<td>44%</td>
<td></td>
</tr>
</tbody>
</table>

Results of Enterprises that have Completed Initial Implementation
Almost 40% of Initial Implementers Have Committed to Purchase Additional Systems

Decisions Regarding Further Implementation

- Commitment to Purchase Additional Systems: 39% Decision Made, 39% Pending, 22% Postponed
- Selection of Primary Equipment Vendor: 33% Decision Made, 50% Pending, 17% Postponed
- Decision on Overall Architecture, including IP WAN: 28% Decision Made, 61% Pending, 11% Postponed
- Decision on Rollout Schedule for Additional Systems: 6% Decision Made, 72% Pending, 22% Postponed

Decisions by Enterprises that have Completed Initial Implementation
All Three Decision Maker Groups Favor PBX Distributors for Supporting IP LAN Telephony

Decision Maker Preferences for Supplier to Support IP LAN Telephony

- Telecom Managers
  - Current PBX Vendor or distributor: 49%
  - Current data network equipment vendor or VAR: 28%
  - Other--Systems Integrator, New Convergence VAR, Service Provider: 23%

- Data Network Managers
  - Current PBX Vendor or distributor: 58%
  - Current data network equipment vendor or VAR: 34%
  - Other--Systems Integrator, New Convergence VAR, Service Provider: 8%

- IT Executives (CIO, CTO, CFO)
  - Current PBX Vendor or distributor: 41%
  - Current data network equipment vendor or VAR: 32%
  - Other--Systems Integrator, New Convergence VAR, Service Provider: 27%
Enterprises Question Professional Services
Skills of Current PBX and Data Suppliers

Preferred Supplier for Providing Different Types of Implementation Support

IP LAN Telephony Systems
- Current PBX Vendor or distributor: 48%
- Current data network equipment vendor or VAR: 23%
- Other--Systems Integrator, New Convergence VAR, Service Provider: 29%

Related Professional Services
- Current PBX Vendor or distributor: 47%
- Current data network equipment vendor or VAR: 29%
- Other--Systems Integrator, New Convergence VAR, Service Provider: 24%

Related IP WAN
- Current PBX Vendor or distributor: 34%
- Current data network equipment vendor or VAR: 21%
- Other--Systems Integrator, New Convergence VAR, Service Provider: 45%
Implementation Plans of Mid-sized Businesses are On Track, but Lag Enterprises

% of Mid-Sized Businesses

2000 Research Study 2001 Research Study
Among Mid-sized Businesses, Demand for IP LAN Telephony is Increasing

% of Total Mid-Sized Business Sites

- Very Likely: 22%
- Somewhat Likely: 14%
- Not Likely: 64%

% of Mid-Sized Businesses

- At least one “Very Likely” site: 71%
- All sites were “Not Likely”: 18%
But there is still a Major Gap between the Voice and Data Decision Makers

Voice Decision Maker

- % of Sites: 15% Very Likely, 85% Somewhat Likely or Not Likely

Data Decision Maker

- % of Sites: 34% Very Likely, 66% Somewhat Likely or Not Likely

Likelihood of Implementing IP Telephony

- Very Likely
- Somewhat Likely or Not Likely

[Infographic showing the percentages of sites for Voice and Data Decision Makers]
Small Sites are Constraining the Overall Mid-sized Business Demand

<table>
<thead>
<tr>
<th>% All Sites</th>
<th>Size Segment</th>
<th>% Sites “Very Likely” to implement IP Telephony within next four years</th>
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<tbody>
<tr>
<td>80%</td>
<td>2-40 Phones</td>
<td>20%</td>
</tr>
<tr>
<td>11%</td>
<td>41-100 Phones</td>
<td>27%</td>
</tr>
<tr>
<td>9%</td>
<td>101-400 Phones</td>
<td>37%</td>
</tr>
</tbody>
</table>

Average 22%
By 2006, IP LAN Telephony Will Be 60% of U.S. CPE Revenue, But 13% of Total Revenue

U.S. CPE Revenue ($M)

Total Revenue

2001
$18.0 B

2006
$28.5 B

- Traditional CPE: 34%
- IP LAN Telephony: 23%
- Applications/Adjuncts: 5%
- Services: 38%

Total Revenue

- Traditional CPE: 48%
- IP LAN Telephony: 9%
- Applications/Adjuncts: 13%
- Services: 30%
Conclusions

- Actual implementation is lagging earlier estimates, amid shifts in market demand
- Voice and data decision-makers are closing the gap on their different perspectives of IP LAN Telephony
- Current implementers are evaluating the pros & cons of the initial systems and support and are generally committing to purchase additional systems
- Outlook for IP LAN Telephony remains positive in spite of uncertainty regarding lower TCO
- Enhanced architectures will facilitate IP migration and defrost frozen market segments