Market Analysis of 2.4GHz High Rate Physical Layer Interoperability with Existing 802.11 (1-2Mbps) Physical Layers

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November 12, 1997

Objective

• Understand the decision factors for determining purchase of a wireless LAN product
• Vertical vs horizontal markets- applications
• Target end-users and MIS managers in the SOHO market
• Mobile professionals -- mix of Laptop and Desktop users
• Target end-users with basic understanding of LAN and wireless LAN technology
Marketing Research

• Focus Groups: Sessions held in 4 cities across the US. (Dallas, San Francisco, Cleveland, Boston)
  – Conducted in June 1977
• Two (2) per city  1 hour sessions
  – 15 people per group using an outside market research firm
• Questionnaire Survey
  – 20 questions telephone survey
  – Population sample size 250

Focus Group and Survey Questions

• Fifteen (15) key questions
  – Killer applications (I.e. intranet/internet access)
  – Optimum data rate
  – Cost of a WLAN card
  – Software support
  – Desired range of wireless connectivity
  – Standards based solutions I.e 802.11
  – Interoperability - backward compatibility
  – Data security
  – Laptop battery life
• Ranking the importance of each
Hypothesis Test Results

- Factors inhibiting use of wireless LAN
  - Cost to high compared to wired ethernet
  - Data rates less than 10Mbps
  - No standards, tied to proprietary solutions

Test Results (Scaling Analysis)

Desired Distance Between PC and Peripheral

![Distance vs Percentage of Respondents Graph]

- <99ft: 71%
- 100-149ft: 12%
- 150-199ft: 8%
- 200-249ft: 5%
- >250ft: 4%

Distance

Percentage of Respondents
Test Results (Scaling-Mean Analysis)

<table>
<thead>
<tr>
<th>Top Five (5) Importance Factors In Decision for Purchasing 10Mbps WLANs</th>
<th>Mean Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-Mail Intranet Access</td>
<td>4.19</td>
</tr>
<tr>
<td>File Printing</td>
<td>4.02</td>
</tr>
<tr>
<td>Range of Wireless Coverage</td>
<td>3.98</td>
</tr>
<tr>
<td>Cost of WLAN Card</td>
<td>3.92</td>
</tr>
<tr>
<td>Interoperability and Compatibility with Existing 802.11 standard</td>
<td>4.17</td>
</tr>
</tbody>
</table>

**Findings**

- Ethernet speeds (10Mbps) was optimum
- Multiple PHYs an issue
- 5 Important critical factors
- Focus on mean scores between 4-5 (important)
- Interoperability and compatibility with existing 802.11 standard

**Conclusion and Recommendation**

- Interoperability and compatibility with existing 802.11 PHYs is *equally* important in the decision making process of high rate PHYs
- Key decision factor
- Gear shift from high rate to 1-2Mbps
- Explore ways to adopt
- Pro - Con analysis