Whaddaya Know? Information Transmission in IT Adoption

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IT Adoption Dynamics

- Decisionmaking about IT adoption in the economy is mostly based on perceptions and information transmission.
- New ITs pose special problems for the market to process information—not always easy to make sense out of potential value.
- So there are often unexpected dynamics—herding, stalling, and complex interactions among firm expectations.
Expectations in the Hype Cycle
Rational Expectations and Herding

Analogy—I Know You Know He or She Knows We Know ... “Knots” by R. D. Laing, 1970s

Expectations must align in the market or else:
- Market-wide perceptions of risk
- No agreed upon willingness-to-pay
- Difficult to get adoption going for vendors

But even when expectations align, still problems can occur
Multi-Partite Valuation: E-Billing

Source: Metavante, Inc., 2003
Payoff Externalities Concepts

- **Rational IT adoption herding**
  - Suppression of private information

- **Network externalities**
  - Installed base of users
    - Think in terms of process and product support
    - Also regional and global externalities

- **Negative adoption externalities**
  - Death spiral for IT value
Externality Payoffs: Wi-Fi Growth of Products Supported
Regional Installed Base, Regional Externality

Atlanta: 57 T-Mobile Wi-Fi Locations

Source: T-Mobile USA, Regional Plans, 2003
Regional Installed Base, Global Externality

Source: T-Mobile USA, Regional Plans, 2003
Informational Cascades Concepts

- Informational asymmetry
- Information incompleteness
- Informational cascades
- Word-of-mouth, “cheap talk”
Learn from Info Transmission in P2P Messaging Adoption: ICQ

- First to market, free, viral marketing
- Competitors came to market quickly: Yahoo!, Microsoft, AOL
- Later purchased by AOL, but no co-branding

"Well heck! If all you smart cookies agree, who am I to dissent?"

The New Yorker Magazine (c) 1972
Managerial Incentives Issues

- Reputational herding
  - Human capital mgmt in IT adoption choice
- Incentive compatibility problems
  - Different goals for different players
- Principal-agent problems
  - Different perspectives in decisionmaking
  - Often leads to agent imitation
Wi-Fi Product Compatibility

Source: Adapted from Wi-Fi Alliance [2003]. Data as of April 2003.
## Security Plans for Wi-Fi: Complicating Expectations

<table>
<thead>
<tr>
<th>Planned Enhancement</th>
<th>Estimated Task Group Completion</th>
<th>Product Availability</th>
<th>Earliest Wi-Fi Alliance Certification</th>
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<tbody>
<tr>
<td>Enhanced Multimedia Support</td>
<td>Q3 2003</td>
<td>Q4 2003</td>
<td>Q1 2004</td>
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<tr>
<td>802.11a for Europe</td>
<td>Q2 2003</td>
<td>Q3 2003</td>
<td>Q4 2003</td>
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<td>Enhanced Security</td>
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<tr>
<td>802.11g</td>
<td>Q2 2003</td>
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<td>Q2 2003</td>
</tr>
</tbody>
</table>

**Source:** Adapted from Wi-Fi Alliance [2003]
Parting Thoughts

- Manage information transmission process aggressively – it’s critical
- Control extent of firm-level heterogeneous valuation by managing concerns about “organizational usability”
- Find the “killer app” to mitigate market difficulties to estimate business value