The Agility Paradox

Based on research projects with Jeanne Ross and George Westerman

Peter Weill
Director, Center for Information Systems Research (CISR)
MIT Sloan School of Management
Phone: (617) 253-2930, Fax: (617) 253-4424
pweill@mit.edu; http://mitsloan.mit.edu/cisr/
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*Managing the IT Resource*
- Effective IT Oversight
- The Future of the IT Organization
- IT Governance in Top Performing Firms
- Enterprise Architecture as Strategy
- IT Portfolio Investment Benchmarks & Links to Firm Performance
- Reducing IT-Related Risk

*IT and Business Strategy*
- An IT Manifesto for Business Agility
- Business Models and IT Investment and Capabilities
- IT-Enabling Business Innovation and Transformation

*Managing Across Boundaries*
- Effective Governance of Outsourcing
- IT Engagement Models and Business Performance

**Contact Information:**
3 Cambridge Center, NE20-336
Cambridge, MA 02142
Ph. 617-253-2348, Fax 617-253-4424
E-mail cisr@mit.edu;
[http://mitsloan.mit.edu/cisr/](http://mitsloan.mit.edu/cisr/)

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Business Agility

- **Why we need agility**
  - Globalization
  - Pressure on margins
  - Faster cycle times
  - Mergers and acquisitions
  - Regulations

- **What is your firm’s business agility?**
  - The set of possible business initiatives an enterprise can readily implement leveraging predetermined competencies with managed cost and risk\(^1\)

- **What are the key measures of agility in your enterprise?**
  - Sales from new or modified products
  - Time to market for new products and services
  - Profitable growth
  - Unit cost and scalability
  - Time to absorb acquisition(s)

- **Agility paradox** — higher agility in firms with more digitized and standardized business process and platform\(^2\)

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Is Your Firm Agile or Staid?

<table>
<thead>
<tr>
<th>Performance</th>
<th>Agile</th>
<th>Staid</th>
<th>Measure¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Products</td>
<td>8.8</td>
<td>3.2</td>
<td>Percent of 2004 sales from new products introduced in previous three years. Average = 5.6%</td>
</tr>
<tr>
<td>Modified Products</td>
<td>35</td>
<td>13</td>
<td>Average percent of 2004 sales from modified products introduced in previous three years. Average = 22.5%</td>
</tr>
<tr>
<td>Growth</td>
<td>+ 7</td>
<td>- 10</td>
<td>Average annual percent growth 2002–4 (relative to industry average). Average growth = 6.8% per annum</td>
</tr>
<tr>
<td>Profit Growth</td>
<td>+ 37</td>
<td>- 13</td>
<td>Average annual percent change in ROE 2002–4 (relative to industry average). Average = 0.5%</td>
</tr>
</tbody>
</table>

¹ Source: MIT SeeIT Survey of 649 firms: Agile = Average of firms above sample mean on percent of sales from new products in 2004 (i.e., 5.6%). Staid =Average of firms below sample mean.

NSF Grant Number IIS-0085725 (Weill & Apel).
## Seven Types of Agility in Four Categories

<table>
<thead>
<tr>
<th>Type of Agility</th>
<th>Strategic Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Business Efficiency Agility</strong></td>
<td>Exploit capabilities to improve efficiency, security, reliability</td>
</tr>
<tr>
<td>- Continuous improvement</td>
<td></td>
</tr>
<tr>
<td>- Scalability</td>
<td></td>
</tr>
<tr>
<td><strong>Business Model Agility</strong></td>
<td>Exploit capabilities to enter new markets, open new channels, respond to new customer, partner, and regulatory demands</td>
</tr>
<tr>
<td>- Organizational redesign/restructuring</td>
<td></td>
</tr>
<tr>
<td>- New business processes</td>
<td></td>
</tr>
<tr>
<td><strong>New Product Agility</strong></td>
<td>Exploit capabilities to develop and launch new products</td>
</tr>
<tr>
<td><strong>Boundary Spanning Agility</strong></td>
<td>Exploit capabilities to grow profitably through acquisitions or partnerships</td>
</tr>
<tr>
<td>- Acquisitions</td>
<td></td>
</tr>
<tr>
<td>- Partnerships</td>
<td></td>
</tr>
</tbody>
</table>

Source: Jeanne Ross, MIT CISR Research Workshop May 2006
Agility Requirements and Capabilities

Source: Jeanne Ross, MIT CISR Research Workshop May 2006, mean ratings on business agility by 65 IT executives.
An IT Manifesto for Business Agility

- Agility paradox—higher agility in firms with more digitized and standardized business process and platform.\(^1\)
- More agile firms have:\(^2\)
  - Clear operating model – how will we grow?
  - IT Leadership setting vision and building capabilities
  - Simple and clear IT Governance—strong core then innovate at edge
  - IT Portfolio management and spending 11% more in infrastructure
  - Mature and modular enterprise architecture
  - More IT savvy—set of practices and competencies that drive more business value (including agility) for each IT dollar invested


\(^2\) Based on statistical analysis of over 1000 firms in several MIT CISR studies 2001–6.
### Four Operating Models — Firm-wide or by Business

<table>
<thead>
<tr>
<th>Business Process Standardization</th>
<th>Coordination</th>
<th>Unification</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Unique business units with a need to know each other’s transactions</td>
<td>Single business with global process standards and global data access</td>
</tr>
<tr>
<td></td>
<td>Examples: Merrill Lynch, Toyota Motor Marketing Europe, MetLife</td>
<td>Examples: Delta Air Lines, Dow Chemical, Pepsi Americas</td>
</tr>
<tr>
<td></td>
<td>Key IT capability: access to shared data, through standard technology interfaces</td>
<td>Key IT capability: enterprise systems reinforcing standard processes and providing global data access</td>
</tr>
<tr>
<td>Low</td>
<td>Independent business units with different customers and expertise</td>
<td>Independent but similar business units</td>
</tr>
<tr>
<td></td>
<td>Examples: Johnson &amp; Johnson, Carlson Companies, GE</td>
<td>Examples: Marriott, CEMEX, ING DIRECT</td>
</tr>
<tr>
<td></td>
<td>Key IT capability: provide economies of scale without limiting independence</td>
<td>Key IT capability: provide standard infrastructure and application components for global efficiencies</td>
</tr>
</tbody>
</table>

### Source:

<table>
<thead>
<tr>
<th>Business Process Integration</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Coordination 16% of firms</td>
<td>Unification 57% of firms</td>
</tr>
<tr>
<td>Low</td>
<td>Diversification 16% of firms</td>
<td>Replication 11% of firms</td>
</tr>
</tbody>
</table>

Data show operating models reported by IT executives at 70 companies.

## Different Standardization Requirements of the Four Operating Models

<table>
<thead>
<tr>
<th>High</th>
<th>Coordination</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Technology</td>
</tr>
<tr>
<td></td>
<td>Customer and Product Data</td>
</tr>
<tr>
<td></td>
<td>[Shared Services]</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Unification</th>
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<tr>
<td>Technology</td>
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<tr>
<td>Customer and Product Data</td>
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<td>Shared Services</td>
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<tr>
<td>Core Processes such as Operations, Customer Service, Logistics [R&amp;D, Marketing/Sales]</td>
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<table>
<thead>
<tr>
<th>Low</th>
<th>Diversification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Technology</td>
</tr>
<tr>
<td></td>
<td>(Shared Services)</td>
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<table>
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<th>Replication</th>
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<td>Technology</td>
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<td>Shared Services</td>
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<table>
<thead>
<tr>
<th>Low</th>
<th>High</th>
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<td></td>
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</table>

### Business Process Standardization

7-Eleven Japan – an IT Savvy Next Gen Retailer

- Highly evolved IT enabled business model—most profitable Japanese retailer
- 8th largest retailer in the world by market cap—11,000 stores
- 70% of all products sold are new each year in each store
- Each store makes local decisions based on centrally designed systems and processes
- Total information system of 70,000 nodes linking stores, head office, supplier, distribution centers
- Digitized processes allow stores to order and receive fresh foods three times a day
- Emphasis on training and mentoring all employees—hypothesize then test new product selections. Counselors visit each store twice weekly
- Gross margins per store have increased from 5% to over 30% from 1977 to 2005 and stock turnover has decreased from 25.5 to 9 days
- “It’s not enough to exchange information. The information has no value unless its properly integrated by the franchisees and makes them work better.” —Toshifumi Suzuki, CEO

Total Information System

Source: Seven-Eleven Japan, “Corporate Outline 2005.”
Supplementary Material
Focus on the IT Capability that is Most Important to your Firm’s Financial Goals

Most Important IT Capabilities for Business Agility (1)
- Project Delivery
- CIO/CxO Relationships

Most Important IT Capabilities for Current Performance (1)
- Governance/Alignment
- Service Delivery

Business Agility
- Revenue Growth
- Gross Margin
- ROA
- Tobin’s Q

Current Performance
- Revenue per employee
- Income per employee
- ROIC

Both
- Net Margin
- Price/Book

Financial Performance (2)

Notes:
(1) Importance based on statistically significant relation between capabilities and agility or current performance, controlling for the other performance measure.
(2) Statistically significant relationships (controlling for industry) between perceived agility and/or current performance and actual 2004 financial performance measures for 206 publicly-traded U.S. firms.
IT Portfolios of Top Performers with Different Strategies

IT Portfolio Mix of Investments

$IT compared to industry avg. as % of expenses

Business Strategy and Top Performance

<table>
<thead>
<tr>
<th>Business Strategy</th>
<th>Average Firm(^1) [n=337]</th>
<th>Cost (^2) [n=22]</th>
<th>Balance Cost &amp; Agility(^3) [n=50]</th>
<th>Agile(^4) [n=22]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average percent of expenses</td>
<td>17%</td>
<td>18%</td>
<td>17%</td>
<td>15%</td>
</tr>
<tr>
<td>15% more than industry average</td>
<td>26%</td>
<td>27%</td>
<td>24%</td>
<td>24%</td>
</tr>
<tr>
<td>Industry average</td>
<td>46%</td>
<td>44%</td>
<td>48%</td>
<td>51%</td>
</tr>
<tr>
<td>3% less than industry average</td>
<td></td>
<td></td>
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</tbody>
</table>

\(^1\) All 337 US stock exchange listed firms in the sample of 640
\(^2\) Cost Focus: top 50% on ROIC and bottom 25% on % of sales from modified product.
\(^3\) Balanced: middle 50% on % of sales from modified products and top 50% on ROIC
\(^4\) Agile: top 50% on revenue growth and top 25% on % sales from modified products.

Firms Have an IT Portfolio with Four Asset Classes

**Transactional IT**: automates processes, cuts costs or increases the volume of business a firm can conduct per unit cost, e.g., order processing, bank cash withdrawal, billing, accounting and other repetitive transaction processing functions.

**Informational IT**: provides information for managing, accounting, reporting and communicating internally and with customers, suppliers and regulators, e.g., decision support, accounting, planning, control, sales analysis, customer relationship and Sarbanes-Oxley reporting systems.

**Strategic IT**: supports entry into a new market, development of new products or capabilities, and innovative implementations of IT. Example: ATMs.

**Infrastructure IT**: provides the foundation of shared IT services (both technical and human) used by multiple applications, e.g., servers, networks, laptops, shared customer databases, help desk, application development.

A project may be any combination of all four.


1 IT budgets from 103 firms are corrected for industry differences. Application silo budget is the baseline. Budgets for other stages are represented as a percentage of the baseline budget. Only five firms in stage four reported their IT budgets.
Firm-wide IT Savvy

Six mutually reinforcing practices and competencies that drive superior value from IT*

- **IT for Internal Communication**: Intensity of electronic communication media such as email, intranets and wireless devices for internal communications and work practices.

- **IT for External Communications**: Intensity of electronic communication media such as email, intranets and wireless devices for supplier/customer communications and work practices.

- **Internet Use**: Internet based architectures (i.e., open) for key functions like sales force management, employee performance measurement, training and post-sales customer support.

- **Digital Transactions**: Percent digitization of transactions executed with both suppliers and customers.

- **Firm-wide IT Skills**: Technical and business skills of IT people, IT skills of business people and ability to hire skilled IT people.

- **Business Mgt. Involvement**: The degree of senior management commitment to IT projects and the degree of business unit involvement in IT decisions.