Organizational Capital

*Results from an MIT Study of Internet Organization, Culture and Productivity*

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Firm-level Data

Sample Coverage

» 1987-2000 Sample: 1167 large firms (10,473 observations)
» 41 industries (2-digit SICs) represented
  • 54% manufacturing, 43% services, 3% mining & construction
  • Not a random sample of US firms

» Four Principal Types of Data
  • Revenues and Market Value from S&P’s Compustat II
  • Computer Capital from Computer Intelligence
  • Ordinary Capital, other Assets, R&D from S&P’s Compustat
  • Organizational practices from surveys we conducted 1995-1996, and 2002

» Part of 5 year, $5 million project at MIT
  • Support from the National Science Foundation and grant from Cisco Systems to the Center for eBusiness
IT and Productivity: The Data Speak

IT is associated with greater productivity...

...But what explains the substantial variation across firms?
Finding: IT is significantly more productive when combined with Organizational Capital

1. A distinct corporate culture and organizational practices are common at heavy users of computers and the Internet
   => The Digital Organization

2. Firms that adopt the Digital Organization are more productive than firms which do not
   => They also have higher market valuations

3. Firms that adopt the Digital Organization and also invest more than the industry average in IT are disproportionately more productive and more valuable than firms which do one but not the other.
   => IT and Digital Organization are Complements
Effect of IT and Digital Organization on Productivity and on Market Value

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Interactions between IT and Digital Organization

Market value

Digital Org.

IT Capital
Interactions between IT and Digital Organization

High IT and Digital Org.
Seven Practices of the Digital Organization

1. Foster open information access
2. Distribute decision-rights
3. Link incentives to performance
4. Invest in corporate culture
5. Communicate strategic goals
6. Hire the best people
7. Invest in human capital
Open information access and communication

- Throughout the organization, encourage free access to internal and external information
- Use technology to foster lateral communication and coordinate among employees
- Use technology to foster vertical communication between employees and their managers
- Do not put restrictions on Internet access for employees
Information Consumes Attention

“The scarce resource is not information, it is the processing capacity to attend to information”

- Herbert Simon
Traditional Organization
Information Overload
Information-based organization
Distributed decision rights and empowerment of line workers

• More decentralization and delegation when:
  ➢ choosing which tasks to do
  ➢ the methods to do them
  ➢ the pace of work and
  ➢ the allocation of tasks

• Convert analog processes to digital processes.
  ➢ Embedding standard procedures in technology allows employees (and customers!) to work with less supervision
Computers to the Rescue?

- Judgment
- Pattern-recognition
- Exception processing
- Insight
- Creativity

= Human vs. Machine Decision-makers
Strong performance-linked incentives

- More incentive pay, linked to individual performance
- Somewhat more likely to use stock options for a broader set of employees
Active investment in corporate culture

• Actively invest in promoting culture
Corporate focus and communication of strategic goals

• Weed out marginal or non-core products and services, maintaining their corporate focus
• Communicate strategic and financial goals throughout organization regularly
Recruiting and hiring top-quality employees

- Executives more involved in recruiting
- More likely to new employees on a variety of criteria including: education, analytical skills, computer skills
- Somewhat more likely to screen for interpersonal skills and for fit with the corporate culture
Investment in “human capital”

- Provide training for a larger percentage of employees once they are hired
- Do more online training
Finding: Employees Benefit, Too

• Firms which adopt Digital Organization have significantly higher pay for their employees
  ➢ From the top to the bottom of the pay scale
  ➢ Recall that the productivity and market value performance of these firms was also higher

• The more the firms adopted the practices of the digital organization, the less likely they were to have voluntary employee turnover.
  ➢ The reduced level of employee quits could be an indicator of greater employee satisfaction.
If these practices increase productivity, why haven’t all firms adopted them?

- Not all firms understand which practices matter most
- Practices need to be adopted together, as part of a complementary system
  - Adopting any single practice in isolation may actually hurt productivity!
A Coherent System
Managing Change

Target Practices: Alternative 1

Digital Organization

Existing Practices

- Silos of Information
- Command and Control
- Seniority based incentives

Open Access
Empowerment
Performance-based Incentives
Invest in Culture
Communicate Goals
Hire the Best People
Invest in Human Capital
Managing Change
Managing the Digital Organization

Managers Role
- Understand Information Technology, Business Strategy, Organization, People and Interactions
- Seize opportunities, while maintaining balance

What was the #1 facilitator reported by successful adopters?
Strong Senior Management Support
The Internet and the Dynamo
To Learn More about this research, please visit:

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