Competing Via Structure: Technology, Partnership and Value Creation

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40 Years of IT

Worldwide IT Spending

$ Billions

Source: IDC Directions 2004 Conference
A Vision of the Company of the Future

In our global, interconnected world, the corporation of the future will source talent, production capacity and business processes globally. We have taken early steps toward the real-time enterprises of the future -- highly agile and flexible information-intensive structures that sense, anticipate and respond rapidly to signals from the business environment.

Agenda

- New modes of competition in a networked economy
- Migrating to value networks
- The empirical evidence
- IT management and service delivery in a value network
Consider...

- Citigroup brings together banking, insurance, and investments under one umbrella
- Nike coordinates a loosely coupled supply chain comprising specialists and logistics providers
- Cisco orchestrates thousands of specialized product and service partners to offer value-added services to its customers
- Major airlines have created Orbitz, a shared web-based reservation system
- GM, DaimlerChrysler and Ford partnered with CommerceOne and Oracle to create Covisint, an online marketplace in the automobile industry (that was ultimately sold to Compuware)

Business Model Innovation: New Pathways to Value Creation

- Some companies have diversified into related products or services
- Some companies have grown horizontally into different geographies
- Some companies have developed centers of excellence that service multiple divisions in the enterprise
- Some companies have developed networked partnerships with suppliers and complementors, reducing their own scale and scope
- Some companies have partnered in consortia to facilitate trade within their industry
Competing with IT: Strategy AND Structure

• Competing via strategy
  – Product leadership (Charles Schwab)
  – Operational excellence (Federal Express)
  – Customer intimacy (Land’s End)

• Competing via structure
  – Horizontal alliances (Star Alliance)
  – Value added partnerships (Amazon.com)
  – Networked organization (Cisco)

Competing via Structure: the Role of Electronic Integration

• Wal-Mart optimizes supply chain performance by providing suppliers with access to its internal databases
• Dell Computer virtually integrates its entire value chain
• In the insurance industry, ACORD has developed standards to facilitate data sharing through the value chain
• Boeing, Lockheed Martin, Raytheon, BAE Systems and Rolls Royce have created Exostar, an electronic exchange in the aerospace and defense industry

The Internet dramatically reduces transaction costs, facilitating the creation and utilization of electronic markets and value networks.
Example: Computer Industry

- 1960s and 1970s, the industry was dominated by large vertically integrated companies like IBM and DEC
  - Designed and manufactured semiconductors, produced complete computer systems including peripherals, developed systems and applications software
- Today, the industry consists of a series of specialists, with different companies specializing in semiconductors, peripherals, computers, systems software, applications.
- Computer manufacturing companies source many component products and services from specialist firms
- Role of computer manufacturers is organizing and coordinating the value network, understanding customer needs, designing solutions, creating a brand and the implied quality and service levels.

Is This a Broad Trend?

- In industry after industry, vertically integrated companies have evolved into value networks
  - Computers, aerospace, automobiles, pharmaceuticals, to name a few
- Unbundling used to occur mainly at product interfaces
  - Outsourcing was often about external sourcing of components
- Today, it is also occurring at information interfaces
  - IT and IT-enabled services are increasingly sourced externally and from shared services organizations
What is a Value Network?

Value Network: An integrative collaboration of specialist companies each providing complementary intermediate goods and services, linked by sophisticated business-to-business information systems, that creates and markets end products or services to customers.

Why this Focus on Structure?

- Successful organizations are efficient information processing structures, and evolve to reflect new business and economic conditions.
- Information technologies are now not only a set of processing technologies but also include communication and coordination technologies.
- The improving price-performance of information technologies has dramatically changed the costs of information processing, which in turn affect the economics of organization.
- The net result is that optimal organization structure should evolve in response to the new economics of organization affording dramatic improvements in efficiency and effectiveness.
### The New Economics of Organization

- Economies in Production
  - Scale
  - Scope
  - Specialization
- Economies in Coordination
  - Internal Coordination
  - External Coordination
- Informational Economies of Scale
- Network Effects

### Impact of Information Technology on Organizations

- Information systems can reduce the costs of coordination
  - between companies in the marketplace
  - within a single company
- Lower external coordination costs can result in a move to markets and external suppliers
- But information systems also reduce internal coordination costs, favoring larger firms
- Informational economies of scale also favor larger firms
### So What Should a Firm Focus On?

- A firm can be viewed as a bundle of capabilities
- Each firm has particular capabilities or competencies that it has developed through its unique history
  - A firm's knowledge-base is the source of capabilities
- Clearly, firms must focus on their core competencies
- Firms should also incorporate synergistic capabilities that result from:
  - Economies of scope
  - Economies of scale
  - Information
  - Production
  - Network effects

### Do Value Networks Offer Superior Performance?

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<tr>
<th>VERTICALLY INTEGRATED FIRM</th>
<th>VALUE NETWORK APPROACH</th>
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<tr>
<td>• Rely on captive suppliers</td>
<td>• Rely on best of breed approach</td>
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<tr>
<td>– Fewer economies of scale/specialization</td>
<td>– Exploit partners’ economies of scale/specialization</td>
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<tr>
<td>– Lower coordination costs</td>
<td>– Optimize system performance</td>
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<tr>
<td>• Coordinate with internal divisions</td>
<td>• Coordinate with external partners</td>
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<tr>
<td>– Consistent profit motives</td>
<td>– Independent profit motives</td>
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<td>– Shared investment easier</td>
<td>– Shared investment harder</td>
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<tr>
<td>– Coordinating technology strategy is easier</td>
<td>– Coordinating technology strategy is harder</td>
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<tr>
<td>– Fewer know-how and IP issues</td>
<td>– Significant know-how/IP issues</td>
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<td>– Hierarchical resolution of disputes</td>
<td>– Legal resolution of disputes</td>
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From Value Chains to Value Networks

- Successful enterprises will increasingly structure as value-added partnerships among specialists
- These enterprises must retain the agility of small companies, while also accruing the benefits of scale
- These enterprises must be flexible to facilitate the entry of new partners that bring new value, and the exit of current partners who no longer create value

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Does your company have the skills and capabilities to manage the extended enterprise?
Strategies for Value Network Participation

- Value networks are fundamentally customer-intimate, designed to meet unique customer needs
  - Tightly versus loosely-coupled

- Sharing tacit and explicit knowledge in the network will result in value creation

- Lead and/or join high-value networks

- Develop capabilities that support your claim for a high share of the economic value flowing to the network
  - Both technological and business

- Your position in the network is a determinant of value received

Migrating to a Value Network

- What is your value discipline?
  - Product leadership, operational excellence, customer intimacy
  - What are the most serious near and long-term competitive challenges to your company?
  - What capabilities are essential to success in your business?

- Determine scale and scope of your organization
  - Critical “organizational economics” analysis of core competencies
  - Benchmark against your competitors
The Path to a Value Network Model

Source: iGate Corporation

Current Enterprise Structure
a. Sub-optimal allocation of business process versus business goals and the environment
b. Rigid and not easily adaptable to changes in business environment

Networked Enterprise
a. Retains and focuses on processes that are a source of competitive advantage
b. Leverages Centers of Excellence (external/internal) to deliver processes to the
   business

c. Structure can be reconfigured as per changes in business environment

GE Capital International Services (India): Internal Centers of Excellence

- World class remote processing operation servicing clients through IT-enabled services
- 11,500 employees, 450 processes, servicing 30 different businesses
- Nine Centers of Excellence – Finance and Accounting, Insurance, Collections, Customer Fulfillment, Industrial and Equipment Businesses, Analytics, Learning, IT Services, Software
- Largest Shared Services environment in India
- Largest private user of international bandwidth in India
Quintiles Transnational: Contract Research Organization in the Pharmaceutical Industry

- Leading provider of information, technology and services to bring new medicines to patients faster and improve healthcare
- Saw India’s powerful combination of expanding medical and IT expertise as driving the country’s growth as a center for global pharmaceutical R&D
- Has been building infrastructure and knowledge base to support the research-based pharmaceutical industry since 1997
- Now offers full range of drug development sources in India, including protocol development, Phase II through IV drug trials, data management, cardiac services and bio-statistical analysis

"We believe Internet-based research services will be a paradigm shift for the pharmaceutical industry, bringing tremendous benefits to develop drugs faster and more efficiently. Quintiles is developing Web-based tools for drug research and other services via the Internet."

- Dennis Gillings, CEO

Quintiles’ Value to the Network: External Center of Excellence

- Name of the game is time to market
  - Highly complex business
  - Clinical trials involve thousands of patients, hundreds of specialists, millions of pages of clinical data
  - Patent life (usually 17 years) is a critical factor
- Strategic focus on new drug development drives organization structure, processes and technology investments
- Leverages global presence
- Relationships with physicians, site research organizations
IBM’s New Focus

“Never mind computers and tech services. IBM’s radical new focus is on revamping customers’ operations — and even running them.”

Beyond Blue

BusinessWeek
April 18, 2005

Economics of Networked Business Models

• Who pays?
• Who captures value?
• How should value be allocated between players?
An Emerging Role: Value Network Leadership

- Decisions are made individually by self-interested firms
- Actions need to be taken collectively in the value network
- Value network success requires joint optimization of the decision making process
- Value network leadership:
  - A network-centric role
  - Facilitates creation and exploitation of network-held knowledge
  - Enabled by IT, embedded in processes and practices
  - Relationship management is key

Boeing Company: Moving to Net-Centric Operations
Boeing Company and Exostar: Optimizing Supply Chain Partnerships with an E-Hub

• E-Sourcing Solutions
• E-Procurement
• E-Collaboration

Boeing Company: Enhancing Customer Value with a Portal

• Available to airplane owners, operators, Maintenance, Repair, and Overhaul operators (MROs), and other third parties

• Direct and personalized access to information essential to the operation of Boeing delivered aircraft
Boeing Company: Selling and Leasing Aircraft

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The New Economy (circa 2000)

“Despite differences in methodology and data sources, a consensus is building that the remarkable behavior of IT prices provides the key to the surge in economic growth”

- Dale Jorgenson, Harvard economist

Dimensions of Productivity Payoff

- Labor Productivity
  - Output per unit of labor
  - Role of capital deepening

- Multifactor Productivity
  - Output per unit of combined inputs (capital, labor, energy, materials)
  - Importance of improved operations
Impacts of Information Technology

- Automation effects
- Information effects
- Transformation effects

Firm Level Productivity Payoff from IT Investment

- IT investment is a major contributor to labor productivity via capital deepening
- IT-enabled innovation contributes to multifactor productivity through automation, information and structural improvement in processes, production and management techniques
  - This effect occurs in some, but not all, industries
  - Degree of competition, regulation, unionization affect payoff
  - IT intensive industries see a much higher return
- Returns vary widely among firms!
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The Information Technology Management Puzzle

• How do we coordinate our technology investments with that of our suppliers, customers and partners?
• Who is responsible for enterprise IT architecture?
• How can we operate an integrated technology infrastructure if we outsource IT functions to one or more providers, and IT-enabled business processes to yet other service providers?
• How do we manage this multi-sourced technology environment?
• Will we still be able to deploy and leverage an adaptive information-based strategy?
The IT Services Market is Evolving

- On-demand services
- Utility computing
- Business process outsourcing
- Off-shore solution providers
- Focus on domain expertise (process, industry)

The IT outsourcing value proposition is becoming more compelling and diverse; companies are seeking a service delivery model that maximizes the value they derive.

Essentials of IT Sourcing Decision-Making in a Value Network

- Retain IT capabilities that have to do with strategy, architecture, provider relationship management, technology assessment
- Retain control of end user relationships
- Strategically outsource technology functions and IT-intensive processes consistent with the architecture
- Buy a service, not a process (when possible)
- Exploiting economies of scale and specialization requires a shift to standard offerings
- Vendor selection criteria must include ability to integrate with your architecture
Key Roles of the CIO in a Networked Enterprise

- Champion and enabler of business transformation
- Orchestrator of IT service delivery
  - Internal and External Centers of Excellence
- Relationship manager
  - With the business and with network partners
- Activist in industry consortia

The Next Few Years: A Call to Action

- **Advocacy**: Champion the importance of value networks within your firm and in your industry
- **Structure**: Lead the examination of opportunities for redesigning your organization to meet intensifying customer demands using process optimization and internal and external centers of excellence
- **Information Technology**: Invest in inter-organizational systems, standards and process architectures, and domain-specific tools to enable partnership
- **Information Systems Services Delivery**: Focus on synchronizing the business and IT, leveraging internal and external sourcing strategies