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Dynamics Capabilities

ETM 526/626

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Objective

To “specify the nature and microfoundations of the capabilities necessary to sustain superior enterprise performance in an open economy with rapid innovation and globally dispersed sources of invention, innovation, and manufacturing capability.” Teece
Dynamic Capabilities

Enables business enterprises to *create, deploy, and protect* the intangible assets that *support* superior long-run business performance.
Resource selection vs. Resource deployment

- Resource based view is more about resource selection (Makadok, 2001)
- Resources are the foundation of a firm and the basis for firm capabilities (Wang & Ahmed, 2007)
- Dynamic capability builds on the resource based view by addressing how a firm utilizes its resources to
  - Sense and shape seize opportunities and threats
  - Seize opportunities and address threats
  - Maintain competitiveness
- Dynamic Capabilities go beyond resource selection and more into strategic resource deployment. (Makadok, 2001).
Embeddedness of DC

- Building a Portfolio of resources versus embedded capability that enables strategic resource deployment
- Non-transferable except by acquisition of the firm
- Primary purpose of a capability is to enhance the productivity of the other resources the firm has - systemic vs. discrete resources (Makadok, 2001)

**Resource Based View**

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  R1   R2
  R3   R4
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**Dynamic Capability**

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  R1   R2
  R3   R4
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In which environment?

1. Open to international commerce
   - fully exposed to the opportunities and threats
   - Associated with rapid technological changes

2. Systematic technical change
   - Multiple inventions must be combined to create product and/or services that address customer needs
In which environment?

3. Well-developed global markets
   - For the exchange of (component) goods and services

4. Business environment characterized by poorly developed markets

These characteristics can be found in large sectors of global economy and especially in high-technology sectors.
Foundations of dynamic capabilities
1- Sense and shape opportunities and Threats

2- Seize opportunities

3- Maintain competitiveness
   (Managing threats and reconfiguration)
Nature of the capability

- Some emerging marketplace trajectories are easily recognized.
  - microelectronics
  - miniaturization
  - greater chip density
  - compression and digitization in information
  - communication technology

- However, most emerging trajectories are hard to discern.
Microfoundations

- Cognitive and creative skills are need to:
  - Accumulate and filter information
  - Interpreting available information
    - Chart
    - Picture
    - Conversation at a trade show
    - News of scientific and technological breakthroughs
    - Angst expressed by a frustrated costumer
  - Create a conjecture or a hypothesis about the likely evolution of technologies, customer needs, and marketplace responses
Microfoundations

- Organizational processes can be established within enterprise to:
  1. Garner new technical information
  2. Tap developments in exogenous science
  3. Monitor customer needs
  4. Monitor competitor activities
  5. Shape new product and processes
Microfoundations

- Hypothesis development, hypothesis “testing”, and synthesis about the meaning of information must be performed by the top management team.

- Recurrent synthesis and updating in businesses designed by middle management and/or planning unit.
Elements for “Sensing”

- Processes to Direct Internal R&D and Select New Technologies
- Processes to Tap Supplier and Complementor Innovation
- Analytical Systems (and Individual Capabilities) to Learn and to Sense, Filter, Shape, and Calibrate Opportunities
- Processes to Tap Development in Exogenous Science and Technology
- Processes to Identify Target Market Segments, Changing Customers Needs, and Customers Innovation
1- Sense and shape opportunities and Threats

2- Seize opportunities

3- Maintain competitiveness
   (Managing threats and reconfiguration)
Nature of the Capability

- **New opportunity**

  - new product, processes, or service

  - Maintaining and improving competencies and complimentary assets

  - Investment and commercialization

  - Selecting or creating a particular business model

  - Commercialization strategy
  - Investment priorities

Decision making **under uncertainty and risk**

Traditional decision making
Microfoundations

• Selecting product architecture and business models
  1. Which technologies and features are to be embedded in the product and service
  2. How the revenue and cost structure of a business is to be “designed” or “redesigned” to meet customer needs
  3. The way in which technologies are to be assembled
  4. The identity of market segments to be targeted
  5. The mechanisms and manner by which value is to be captured

• Business model

Success Factors in Business Modeling:
  1. Analyze multiple alternatives
  2. Deep understanding of user needs
  3. Analyzing value chain
  4. Outsourcing decisions

- Value proposition
- Appropriate technologies and features
- Target market segments
- Structure of value chain
- Estimate cost and revenue
Microfoundations

- Selecting enterprise boundaries
  - An element of business modeling
  - To make sure that innovation is more likely to benefit the sponsor of the innovation rather than imitators and emulators
  - Key elements:
    - The appropriability regime (natural and legal protection)
    - The nature of complementary assets
    - The relative positioning of innovator and potential imitator with respect to complementary assets
    - The phase of industry development (pre or post the emergence of dominate design)
  - Critical strategic element: able to identify and control “the bottlenecks” in the value chain from invention through the market.
Microfoundations

- Managing Complements and Platforms
  - High tech products are often systems containing independent components resting on “platforms”
  - End user demand is for the system, not for the platform.
  - The platform owner needs complementary products to be provided by others.

- What kind of decisions?
  - Platform needs to be open or proprietary?
  - Tools and other incentives should be provided to stimulate investment by the complementors?
  - Distribution (development) capabilities between the platform and the complementors
Microfoundations

- Proclivities toward decision errors are not uncommon in managerial decision making particularly in large organizations.
  - Investment decision errors:
    - Excessive optimism
    - Loss aversion
    - Isolation errors
    - Strategic deception
    - Program persistence

- These errors can be especially damaging in fast-paced environments.
- Biases can be recognized ahead of time by applying a cognitively sophisticated and disciplined approach to decision making.
Strategic decision skills/execution

- Delineating the customer Solution and the Business Model
- Selecting Decision Making Protocols
- Enterprise structures, procedures, designs, and incentives for seizing opportunities
- Selecting Enterprise Boundaries to Manage Complements and “Control” Platforms
- Building Loyalty and Commitment
1. Sense and shape opportunities and threats

2. Seize opportunities &

3. Managing Threats and Reconfiguration
Nature

- A key to **sustained growth** is the ability to recombine and to reconfigure assets and organizational structures as
  - the enterprise grows
  - Markets and technologies change

- Over time successful enterprises will develop hierarchy and rules and **procedures(routines)** that constrain certain interactions and behaviors unnecessarily. Such rules and procedures are likely to require constant **revamping**.
To sustain dynamic capabilities, decentralization must be favored because it brings top managers closer to new technologies, the customer, and the market.

In order to minimize internal conflict and to maximize complementarities and productive exchange inside the enterprise, top management leadership skill are required to achieve asset alignment, coalignment, realignment, and redeployment.
Microfoundations

- **Decentralization** must be pursued as the enterprise expands, otherwise flexibility and responsiveness will erode.

  - Modern HRM involves more delayering, decentralization of decision rights, teamwork, flexible task responsibility and performance, performance-based rewards,…

  - Open innovation model endorses a distributed model of innovation
Microfoundations

- Managing cospecialization
  - Cospecialization can be of one asset to another, or of strategy to structure, or of strategy to process.
  - Cospecialized involves “lock-in” and is a particular form of complementary that exits when technologies and other assets need to be part of a tightly integrated system to achieve the performance.
  - Management’s ability to identify, develop, and utilize in combination specialized and cospecialized assets built or bought is an important dynamic capability, but it’s not always present in enterprise settings.
Microfoundations

- Learning, knowledge management, and corporate governance
  - Integrating know-how from outside as well as within the enterprise is especially important to success when “systems” and “networks” are present.

  - The outsource of production and the proliferation of joint development activities create requirements that enterprises develop governance procedures to monitor the transfer of technology and intellectual property.
    - Incentives alignment
    - Controlling board performance
    - Preventing the dissipation of rents by interest groups
Knowledge Management

- Knowledge management can be broken down into eight activities (Nielsen 2006):
  - Creation
  - Acquisition
  - Capture
  - Assembly
  - Sharing
  - Integration
  - Leverage
  - Exploitation
Knowledge Management

- The eight knowledge management activities are then assembled into:
  - Knowledge development
  - Knowledge (re)combination
  - Knowledge use (Nielsen 2006)
Strategic decision skills/execution

- Decentralization and Near Decomposability
- Cospecialization
- Governance
- Knowledge Management

Continuous Alignment and Realignment of Specific Tangible and Intangible Assets
Conceptual Debates of Dynamic Capabilities

http://econintersect.com/wordpress/?p=17035
Definition

- Dynamic capabilities are the ultimate organizational capabilities that are conducive to long-term performance, rather than a subset of the capabilities as Teece et al suggest.
- Dynamic capabilities are not the processes but what is embedded in the processes; processes are more easily transferable across firms. (Wang & Ahmed, 2007).
  - Quality control is a process easily transferable whereas TQM is not just a process but also requires the firm's capability to develop an organization-wide vision, empowering employees and building a customer-orientation culture.
More Debates

- **Fuzzy Origins**
  - Knowledge accumulation, asset articulation, routine reshaping \(\text{(Zollo & Winter, 1999)}\)
    - What avenues might DC be created within a firm?
    - Is it simply an accumulation of know-how or does it involve reshaping what’s already established?
  - Evolution, Co-evolution or Revolution \(\text{(Macpherson, et al. 2004)}\)
    - Would new firms more capable than established firms?
    - Would older firms need drastic shifts to utilize DC? On what scale? How drastic?
    - Is DC something inherent or can it be created?
More Debates

- Fuzzy Implementation
  - No agreed method or recipe for carrying out the DC model
    - Social Capital and participator Buy-In (Blyler & Coff, 2003)
    - Venture Capitalist Involvement (Arthurs & Busenitz, 2006)
    - Learning through experimentation (Pablo, et al. 2007)

- Reinvention or Reconstruction?
- Where, When and How to implement
  - What environments require it?
  - What environments benefit from it?
  - Even then Success is not guaranteed
Link Between Firm Performance and DC

• Measured by the firms key indicators; market and financial relative to its main competitors

• Path to building capability is not universal across firms and therefore the outcome of capability development is different across firms (Wang & Ahmed, 2007)

• Making market oriented decisions and the timing of those decisions are key in improving firm performance (Barreto, 2010).
Link Between Firm Performance and DC

- Linking Performance and DC
  - Doing the right things or doing things right (Jantunen, et al. 2005)

- Interrelations of DC and firm abilities
  - **Substantive Capabilities** (Zahra, et al. 2006)
    - Foundations of DC: Can the ability to dynamically problem solve in shifting environments be considered DC?
    - Changing the way a firm solves problems in dynamic environments to best suit each case.
  - **Reconfiguration or Entrepreneurship**
    - Ability to Reconfigure (Jantunen, et al. 2005)
    - Entrepreneurial ability – is entrepreneurship a reliable measure of a firm’s DC? (Macpherson, et al. 2004)
    - Sustainable Entrepreneurship or reconfiguring assets
So which way is the best way?

It DEPENDS!

Dynamic capabilities are themselves as uncertain and dynamic as the environments practitioners seek to adapt to; one method does not necessarily apply to every case and one case is not necessarily handled best by one method alone.
Reexamining of Dynamic Capabilities
Summary

• Dynamic capabilities must be embedded
• It’s the value added to resource selection through strategic resource deployment
• One size does not fit all
• Little commonality in definition and approach
• Knowledge management is critical
• Non-transferable except through total acquisition (Makadok, 2001)
• Not a mature concept
References


Resources


Resources

Resources