

# **Syllabus: Organizational Adaptation and Technological Change**

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## **Overview**

Technological change is a social process occurring at multiple levels of analysis (technological fields, industry, organizations, individuals) and in multiple arenas (Universities, private corporations, government entities). The focus here is on organizations and in particular for-profit business firms. Organizations have been viewed both as inertial forces reinforcing existing patterns of resource commitments and general practices, as well as a context for innovative recombination of existing assets and capabilities for innovative outcomes. We will try to understand and reconcile both sorts of perspectives. While adaptive change can take place at a macro level with one organizational population displacing another, there are large social costs associated with this form of adaptation and important latent opportunities in the leveraging of established entities' existing capabilities into new contexts and new market opportunities. Arguably this is one of the most fundamental challenges of strategic management. This module will provide some of the theoretical foundations to address this question, anchoring our discussions in work on learning and adaptation, and more broadly a view of organizations as complex adaptive systems.

Students are expected to read over and reflect on each of the readings. How do these readings link with one another? What do you see as some of the puzzles (important gaps not addressed by the authors, possible inconsistencies within and across papers) and most importantly research opportunities suggested by the work? Can you link the conceptual issues being raised to your own domain of interest? In what ways does the work lend insight into your research domain? In what ways does the lack of a mapping to your own context suggests potential issues with the article(s), and in turn possible research opportunities.

**1. Firms as Interdependent Systems** (Monday August 26<sup>th</sup> 9:00 to 12:00)

Simon, H. (1962). "The architecture of complexity". *Proceedings of the American Philosophical Society*, 106: 467-482. (reprinted in *Sciences of the Artificial*)

Porter, M. (1996). "What is strategy?". *Harvard Business Review*, Nov.-Dec. 3-20.

Levinthal, D. (1997). "Adaptation on rugged landscapes". *Management Science*, 43: 934-950.

Henderson, R. and K. Clark (1990). Architectural innovation: The reconfiguration of exiting product technologies and the failure of established firms". *Administrative Science Quarterly*, 35: 9-30.

**2. Aggregation of Knowledge** (Monday August 26<sup>th</sup> 13:00 to 16:00)

Hayek, F. (1945). "The use of knowledge in society". *American Economic Review*, 35: 519-530.

Grant, R. (1996). "Toward a knowledge-based theory of the firm". *Strategic Management Journal*, 17: 109-122.

Cohen, W. and D. Levinthal (1990). "Absorptive capacity: A new perspective on learning and innovation". *Administrative Science Quarterly*, 35: 128-152.

Volberda, H., N. Foss, and M. Lyles (2010). "Absorbing the concept of absorptive capacity: How to realize its potential in the organizational field". *Organization Science*, 21: 931-951.

Sorenson, O., J. Rivkin, and L. Fleming (2006). "Complexity, networks, and knowledge flow". *Research Policy*, 35: 994-1017.

**3. Organizations as Evolvable Systems** (Tuesday August 27<sup>th</sup> 9:00 to 12:00)

March, J. (1991). "Exploration and exploitation in organizational learning". *Organization Science*, 2: 71-87.

Burgelman, R. (1991). "Intraorganizational Ecology of Strategy Making and Organizational Adaptation: Theory and Field Research". *Organization Science*, Vol: 239-262.

Chapters 1 and 2 of Helfat C., Finkelstein S, Mitchell W, Peteraf M., Singh H, Teece D., Winter S. (2007). *Dynamic Capabilities: Understanding Strategic Change in Organizations*. Blackwell Publishing: Malden, MA.

**Executive Session** (Tuesday August 27<sup>th</sup> 13:00)

Adner, R. and D. Levinthal (2004). “What is *not* a real option: Considering boundaries for the application of real options to business strategy”. *Academy of Management Review*, 29: 74-85.

**4. Problem of Goals** (Wednesday August 28<sup>th</sup> 9:00 to 12:00)

Cyert, R. and J. March (1963). Chapter 3, “Organizational goals”. *A Behavioral Theory of the Firm*. Prentice-Hall, Englewood New Jersey

Milgrom, P. and J. Roberts (1988). “An economic approach to influence activities in organizations”. *American Journal of Sociology*, Vol. 94: S154-S179.

Axelrod, R. and M. Cohen (1999). Chapter 4 “Selection”. *Harnessing Complexity*. New York, NY: Free Press.

Kaplan, S. (2008). “Framing contests: Strategy making under uncertainty”. *Organization Science*, 19: 729-752.

5. **Technological Change** (Wednesday August 28<sup>th</sup> 13:00 to 16:00)

Teece, D. (1986). "Profiting from technological innovation: Implications for integration, collaboration, licensing, and public policy". *Research Policy*, 15: 285-306.

Christensen, C. and J. Bower (1996). "Customer power, strategic investment, and the failure of leading firms". *Strategic Management Journal*, 17: 197-218.

Tripsas, M., G. Gavetti. 2000. Capabilities, cognition, and inertia: Evidence from digital imaging. *Strategic Management Journal*, 21(10/11) 1147–1161.

Levinthal, D. (1998). "The slow pace of rapid technological change: Gradualism and punctuation in technological change". *Industrial and Corporate Change*, 7: 217-242.

**Roundtable Discussion of Research Opportunities and Individual Research Projects** (Thursday August 29<sup>th</sup> )