



## LIST OF CHANGES

# Strategic Management of Technological Innovation

7th Edition

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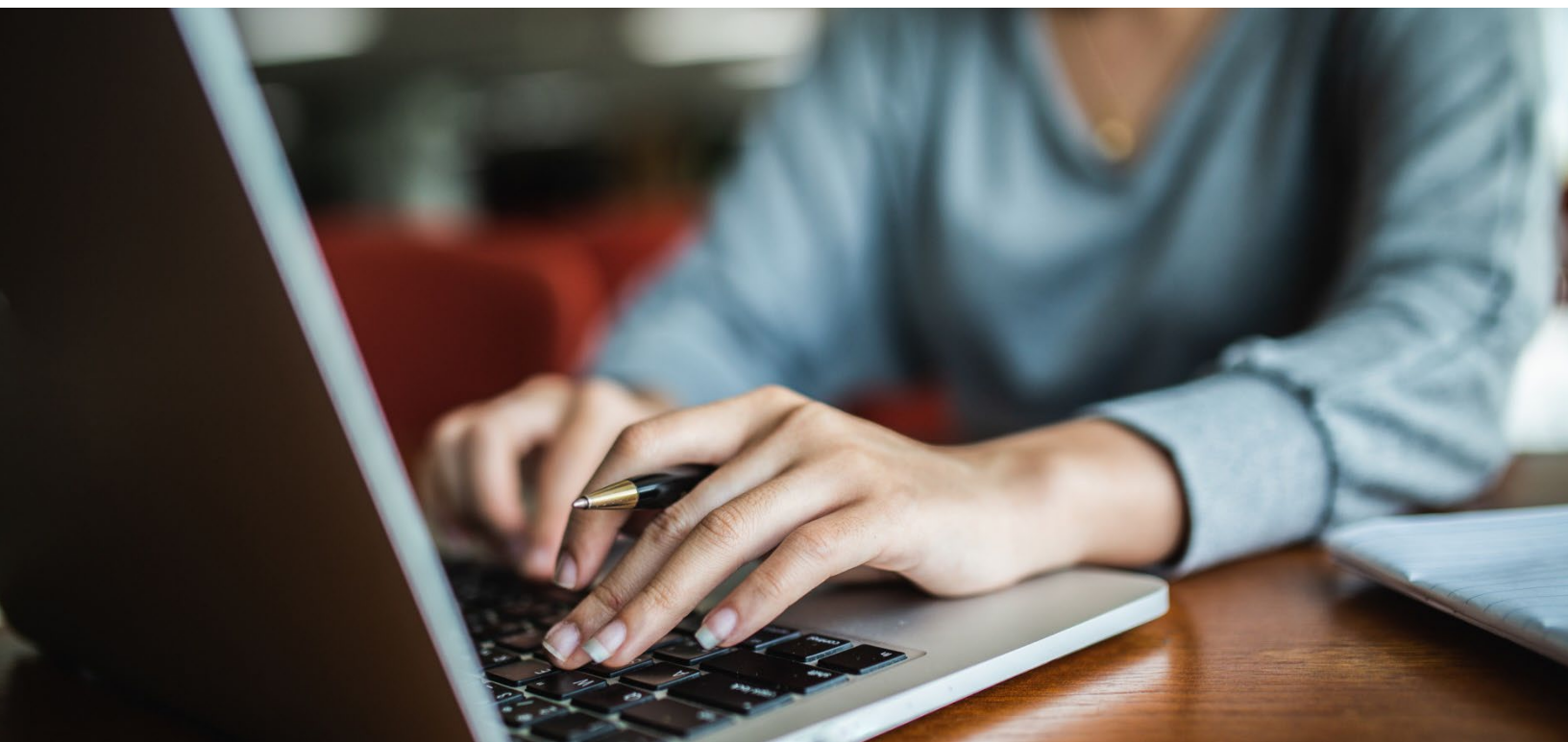
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*Strategic Management of Technological Innovation* is the #1 innovation strategy text in the world. It approaches the subject of innovation management as a strategic process and is organized to mirror the strategic management process used in most strategy textbooks, progressing from assessing the competitive dynamics of a situation to strategy formulation to strategy implementation. While the book emphasizes practical applications and examples, it also provides systemic coverage of the existing research and footnotes to guide further reading. It is designed to be a primary text for courses in strategic management and innovation and new product development. It is written with the needs of both business students and engineering students.

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## Chapter-by-Chapter Changes

### Six New Short Cases

*Netflix and the Battle of the Streaming Services.* The new opening case for Chapter 4 is about battle unfolding for dominance in movie and television streaming. Though the case focuses on Netflix, it also details the moves made by competitors such as Amazon Prime Video, Disney, Hulu, and HBO. The case reveals the very interesting synergies Netflix has reaped in being both a content developer and a distributor and highlights the tradeoffs content developers make in choosing to have their content exclusive to a particular streaming service.

*Failure to Launch at Uber Elevate.* The opening case for chapter 5 in the sixth edition was about UberAIR, Uber's plan for launching an air taxi service; the opening case for chapter 5 for the 7<sup>th</sup> edition is about Uber's withdrawal of plans to launch its own air taxi service and the other companies that are still moving forward. This case highlights the range of challenges in launching something as new as air taxi service. While battery life and flight time are still considered areas that need improvement, the primary challenges to this market are now regulatory and infrastructure oriented: Where will the eVTOLs land? Who will regulate air traffic and how? Will the eVTOLs be too noisy? Will the eVTOLs be manned by pilots or autonomous? It is pretty easy to conclude from the case that Uber probably tried to enter this market too early, but it remains unclear whether the remaining players (who are almost all manufacturing startups dedicated wholly to producing eVTOLs) will fare better.

*Zeta Energy and the "Holy Grail" of Batteries.* Chapter 8 now opens with a case about Zeta Energy, a young battery technology start-up that is in the process of developing a lithium metal sulfur battery. The technology is impressive, and the potential markets are huge and diverse (e.g., electric vehicles, grid storage, consumer devices, drones), but Zeta faces a dilemma of how to reach the stage of commercialization. Battery development is expensive and risky; Zeta has had problems raising enough funding to build the kind of facility it needs to produce the batteries at scale. The case highlights the various partnering strategies Zeta is considering, setting up a nice opportunity for students to analyze the pros and cons of types of collaboration agreements and types of partners.

*The Patent Battler over CRISPR Cas-9 gene editing.* The new opening case for Chapter 9 is on what has been described as one of the most important patent battles in the last fifty years. CRISPR Cas-9 is a breakthrough technology that enables live animals (including humans) to be gene edited – potentially enabling us to eliminate and/or treat a wide range of diseases. Even more exciting is the fact that the technology itself is relatively inexpensive and simple, prompting a flood of students, researchers, and manufacturers to enthusiastically begin using it. The ownership of the intellectual property rights, however, is contested between a group at Berkeley and a group at MIT. The way each group's patents were filed, concomitant with the change of patent law, collectively created one of the most interesting – and high stakes – battles patent lawyers have seen in decades.

*Organizing for Innovation at Apple.* Chapter 10 now opens with a case that describes how Apple is organized. The case tells the story of when Steve Jobs returned to Apple and dramatically reorganized the firm, yielding a big firm that has a structure that is much more commonly seen in small firms. The case provides detail on why Jobs felt the structure was appropriate, what its tradeoffs are, notably highlighting how much power the structure gives to its top leader. While this was probably a very desirable feature for Jobs, the case raises the question of whether or not the same structure makes sense for Apple under Tim Cook, and whether it would make sense for different kinds of firms.

*Magna International's Carbon Fiber "Lightweighting" Project.* The opening case for Chapter 12 describes in detail how Magna International, a Tier 1 automotive supplier, developed a scalable

manufacturing method for carbon fiber auto parts in response to BMW's announcement of its intentions to build cars with the new material. With details and quotes from Tom Pilette, the VP of Product and Process Development of Magna, who led the project, we learn about how the team was assembled and managed, how the team culture evolved, how team members were compensated, and more. BMW ends up deciding to make carbon fiber composites in-house rather than buying from a supplier, but Magna's efforts transform it into an award-winning world leader in carbon fiber composite manufacturing.

All cases that were not replaced were updated to incorporate recent data into the text.

### **New Sections to Address Review Suggestions and to Modernize the Text:**

*What Breakthrough Innovators Have in Common (Ch 2)*. This section summarizes some of the key findings of my book, "Quirky: The remarkable story of the traits, foibles, and genius of breakthrough innovators who changed the world." The section highlights the personal characteristics and experiences that can help catalyze a creative person into a breakthrough innovator.

*Do Grand Innovation Prizes Work? (Ch 2)* This section highlights some of the strengths and weaknesses of using grand innovation prizes (like the Ansari XPRIZE or Elon Musk's announced carbon recapture prize) to foster innovation and offers implications for what kinds of innovations they are useful for.

*Using Big Data to Guide Innovation (Ch 6)*. This section talks about the opportunities and challenges of harnessing "Big Data" and machine learning to improve the organization's innovation efforts. The section ends with a list of recommendations for how to ensure that "Big Data" is used effectively.

*Using Culture to Foster Innovation (Ch 10)*. This section is a big enhancement to the chapter on organization structure, which should have had a section on culture all along. Now the section details how culture shapes the innovation behavior of employees and offers recommendations for how managers can shape and use culture to their advantage.

*FMEA Detailed Example (Ch 11)*. In response to a reviewer request, Chapter 11 now has a very detailed example of how to use Failure Modes Effects Analysis (FMEA). The section is designed to make it clear how students could set up a FMEA spreadsheet of their own and analyze an innovation opportunity.

Updated Figures:

1.1, 1.2, 2.2, 2.4, 3.3, 3.4, 6.1, 6.3, 7.1, 7.2, 7.5, 9.1

### **Sections omitted to preserve conciseness:**

Theory in Action: Dean Kamen (Chapter 2)

Research Brief: Knowledge Brokers (Chapter 2)

Theory in Action: Obstacles to the Hydrogen Economy (Chapter 5)

Research Brief: Boundary-Spanning Activities in New Product Development Teams (Chapter 12)

### **Other Updates**

Throughout the text, updates were made to any text referring to dates (replacing with current information).

The suggested readings lists were updated in every chapter.