Technology
Entrepreneurship
Technology Entrepreneurship
Creating, Capturing, and Protecting Value

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Each author has dedicated this book to someone special. The order of dedications below reflects the order of authors on the cover.

To:
Jack (John) Ivancevich
My wife, Tina, daughters Kary, Katy, Kelly, son-in-law, Rich, and grandchildren Rachel and Andrew
Sharon L. Lechter
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Preface

This textbook has been organized around the central concept of “value.” Although, on the surface, there does not appear to be anything mysterious or ambiguous about the concept, the reality is a bit different. In fact, a special edition of the Academy of Management Review was dedicated entirely to the topic of value creation. In the lead article to that edition, the editors noted: “There is little consensus on what value creation is or on how it can be achieved.” Imagine that. While most of us believe we know what “value creation” means, there is “little consensus” on its meaning. We wrote this textbook to help faculty and students wrestle with and come to terms with the concept of value and value creation and the process of building a successful technology venture.

ORGANIZATION AND STRUCTURE

In this text, we’ve attempted to create a flow and structure that encapsulates creating, capturing, and protecting value. One of the key innovations in this text is the sequence in which the material is presented. Most entrepreneurship textbooks begin with value creation and move on to value protection and value capture. We have inverted that logic in this text based on our many years of experience in teaching entrepreneurship to technology students as well as forming new technology ventures. Our experience indicates that technical students are the least interested—at the beginning—in the material associated with value creation. The concepts of selling, marketing, customers, and distribution are not deemed important at first to most technical students. Therefore, it is not desirable to begin an introductory course in technology entrepreneurship with a focus on value creation.

Instead, our experience has shown that technical students are very interested in the techniques and strategies involved with capturing and protecting the value of what they create. It is only after they become aware of how much value can be created by observing tried and tested techniques for deal structuring, equity distribution, and intellectual property protection that they become interested in learning how to market and sell their products and services. This logical inversion of the standard sequence of topics has been tested in our classrooms at the undergraduate and graduate levels with great success. We are sure that you will find the presentation sequence to be counterintuitive at first, but far more effective in the long run. The figure below provides an overview of how this textbook has been structured.
Part I of this text is a unique feature not found in other textbooks in technology entrepreneurship. It focuses on key foundational concepts in business and global economics. The reason for this section is to ensure that technology-oriented students are made aware of the logic and rationale for business ventures and entrepreneurial ventures in particular. The global economy is now an essential part of nearly any technology venture. As such, students should develop a fundamental understanding of the playing field and the many opportunities and threats that exist as a result of global competition.

Part II begins the exploration of value by focusing on value capture. The concept of value capture applies principally to what is referred to as “enterprise value.” As a result of serving markets effectively, technology entrepreneurs build the value of the enterprise over time. Chapter 4 ranges over the topics of legal structure and equity distribution among the founders. Chapter 5 addresses the issues associated with raising capital and deal structuring. Chapter 6 focuses on exit strategies for technology ventures. Together, these chapters provide an extensive and detailed introduction to distributing equity on founding, using equity to raise necessary capital, and gaining a return on invested capital via particular exit strategies.

Part III addresses value protection. Value protection focuses in part on the protection of the intellectual property that resides within a technology venture. Chapter 7 examines in detail the techniques associated with intellectual property identification, protection, and defense. Since contracts are an important element of value protection for a technology venture, Chapter 8 covers contracts, including terms and conditions, penalties and remedies, and contract structure and duration. Finally,
contracts must be negotiated, especially complex contracts that are often associated with technology ventures and their counterparties. Chapter 9 examines the techniques and nuances associated with contract negotiations and managing complex contracts.

Part IV focuses on value creation. Value creation consists primarily of those functions of a technology venture that have to do with founding the venture and with marketing, selling, and distributing its products and services. We follow Sarasvathy and others in our understanding and application of the concept of value creation. That is, we take it as a given that entrepreneurs don’t simply serve preexisting markets. Rather, they are actively engaged in creating the markets they serve. Sarasvathy’s notion of “effectuation” is central to this view. Effectuation, if it can be summed up in a phrase, presents the entrepreneur as someone who transforms amorphous resources and nondescript markets simultaneously. The action of the entrepreneur to create value includes both the mobilization of disparate resources and the transformation of a market.

Chapter 10 examines the issues surrounding founding a venture, focusing on the aggregation of initial resources required to operate. Chapter 11 focuses on go-to-market strategies and the challenging topics—to technical students—of sales and distribution. As we are now discussing an operating venture, Chapters 12 and 13 focus on the issues inherent to an operating and growing concern. Chapter 12 focuses on financial management and control of the venture, and Chapter 13 addresses venture management and leadership.

Finally, in Part V, the topics of risk management and entrepreneurial career development are covered. Chapter 14 covers venture risk management, including the topics of financial risk, legal risk, and personal risk. Many people erroneously assume that entrepreneurs are high-risk takers. While it’s true that most entrepreneurs take risks, they are not more or less risk averse than the general population. Instead, entrepreneurs have learned to become adept “risk minimizers.” They have learned to take enough risk out of a deal to make it tolerable for them to move forward. We spend substantial time on the topic of personal risk management. That is, we cover strategies associated with the stresses and emotional strains of being an entrepreneur and operating a technology venture. Developing coping skills, including personal resilience, is essential to the success of the entrepreneur and of the venture itself.

Chapter 15 surveys the joys and challenges of an entrepreneurial career. It is difficult for most technology entrepreneurs to realize that they could be making more money and have greater security working in a large firm. In fact, most technology entrepreneurs launch their ventures primarily because they simply do not want to work for someone else, not because they want to get rich. Still, the promise of fortune lies in the back of every entrepreneur’s mind, and likely is a major source of motivation through the tough times. Finding a mentor, developing a network of supporters, and realizing that failure is often a significant part of ultimate success are important elements in the career of the technology entrepreneur. Learning how to work with a mentor and establish networks of key and trusted advisors is part of what is covered in this final chapter.
ADDITIONAL FEATURES

In addition to the unique content flow and structure of this text, we’ve embedded a number of teaching and learning objects to aid comprehension and classroom management.

- Each chapter contains several “Tech Tips.” These are encapsulations of key lessons discussed in the chapter. Students and faculty should take time to discuss the Tech Tips boxes, making sure to understand each of them.

- We have also included “Tech Micro-cases” in each chapter. These are short case studies featuring real-world examples of topics and concepts developed in the chapter. At the end of each chapter, we have provided a set of study questions to help in chapter review and learning. Also included are two exercises per chapter to get students out of their seats and actively engaging the chapter material. Some exercises are meant to be conducted in the classroom and others outside the classroom.

- Each chapter includes a set of Web resources that students and teachers can explore for more information on topics covered in the chapter.

- Key words are bolded in the chapters and defined in the “Key Terms” section at the end of each chapter.

- The middle chapters each contain an in-depth case study pertaining to the chapter material.

- A model business plan (for USuggest.com) is provided as an appendix.

- Finally, for those who are interested in exploring more deeply the research and other supporting material used in the chapters, the endnotes are provided.

TEACHING AND LEARNING SUPPORT

For faculty adopting this text for classroom use, a solutions manual, set of PowerPoint lecture slides, and additional questions/exercises are available by registering at www.textbooks.elsevier.com. Additional learning resources for students will be posted from time to time at the book web site, www.elsevierdirect.com/9780123745026.

During the development of this book, many things have occurred to reinforce our belief that it will make a significant contribution to technology entrepreneurship teaching and learning. Much has been discovered over the past decade about how entrepreneurs think and how they approach opportunities. We have tried to incorporate much of this research in the curricular flow of the material presented in the text, and in the teaching tools associated with it.
We feel certain that this textbook will be useful to the growing ranks of faculty members who teach technology entrepreneurship. We also feel that the students exposed to technology entrepreneurship for the first time through this text will ignite lifelong interest in the entrepreneurial career path. On one side, we see great challenges ahead for the nation, the global economy, and for individuals and their families. On the other side, we hope that the prepared minds of aspiring technology entrepreneurs will realize that great challenges are often signs of great venture opportunities. We need them now, more than ever. And we would regard our labors to be well spent if several of the students who study this text join the ranks of the successful technology entrepreneurs who have preceded them.

Thomas N. Duening
Robert D. Hisrich
Michael A. Lechter

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ENDNOTE

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In addition, a number of teachers and scholars participated in reviewing this text during its development. They are listed below in alphabetical order:

- Alan L. Tharp, North Carolina State University
- Aron Spencer, New Jersey Institute of Technology
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Duening launched his first technology venture while a graduate student. His international consulting firm served the electric utility industry with information products centered on the issue of health effects associated with electric and magnetic fields (EMF) from high voltage power lines. He left in 1991 to assume the assistant dean position in Houston.

After his 9-year stint as assistant dean, Duening founded several more companies. With a partner, he founded U.S. Learning Systems in 1998. The firm provided e-learning content to providers around the country. U.S. Learning Systems was acquired in 1999 by Edgia.com. Duening left Edgia in 2002 to launch the Applied Management Sciences Institute. As part of this firm, he co-wrote three business textbooks Managing Organizations, Business: Principles, Practices, and Guidelines, and Management Skills. He also wrote two popular trade books, Managing Einsteins and Always Think Big.

Duening next founded INSYTE Business Services Group to study best practices in business process outsourcing. The result of this effort was two trade books: Business Process Outsourcing: The Competitive Advantage, and The Essentials of Business Process Outsourcing. Both published by John Wiley & Sons in 2004 and 2005, respectively. As he was conducting the research for these books, Dr. Duening co-founded InfoLabs India, Pvt. Ltd., a business process outsourcing firm based in Bangalore, India. The firm provides outsourcing services to a wide range of publishing companies. It was acquired by ANSRSource, Inc., in 2008.

In 2004, Duening joined Arizona State University’s Ira A. Fulton School of Engineering as Director of its Entrepreneurial Programs Office. In this role, he taught courses in Technology Entrepreneurship to engineers at the graduate and undergraduate levels. Dr. Duening’s ongoing research is in the areas of enterprise innovation, and entrepreneurship, including entrepreneurship education. He is often a featured speaker at campus and community events, and he has consulted broadly with entrepreneurial ventures as well as multinational corporations. Duening is the author of numerous journal articles and 12 books on business and management.
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Professor Hisrich received his BA from DePauw University, his MBA and Ph.D. degrees from the University of Cincinnati, and honorary doctorate degrees from Chuvash State University (Russia) and the University of Miskolc (Hungary). Prior to joining Thunderbird, Dr. Hisrich held the A. Malachi Mixon, III Chaired Professor of Entrepreneurial Studies at the Weatherhead School of Management, Case Western Reserve University. Dr. Hisrich was a Fulbright Professor at the International Management Center in Budapest, Hungary in 1989. In 1990-91 he was again named a Fulbright Professor in Budapest at the Foundation for Small Enterprise Economic Development, where he also held the Alexander Hamilton Chair in Entrepreneurship. Dr. Hisrich has held visiting professorships at the University of Ljubljana (Slovenia), the Technical University of Vienna (Austria), the University of Limerick (Ireland), Donau University (Austria), Queensland University of Technology (Australia), the University of Puerto Rico, and the Massachusetts Institute of Technology.

He has authored or co-authored twenty-five books including: International Entrepreneurship: Starting, Developing and Managing a Global Venture, Entrepreneurship: Starting, Developing, and Managing a New Enterprise (translated into 13 languages and soon to be in its eighth edition), The 13 Biggest Mistakes that Derail Small Businesses and How to Avoid Them, and The Woman Entrepreneur. Dr. Hisrich has written over 350 articles on entrepreneurship, international business management, and venture capital, which have appeared in such journals as The Academy of Management Review, California Management Review, Columbia Journal of World Business, Journal of Business Venturing, Sloan Management Review, and Small Business Economics. He has served on the editorial boards of The Journal of Business Venturing, Entrepreneurship Theory and Practice, Journal of Small Business Management, and Journal of International Business and Entrepreneurship. Besides designing and delivering management and entrepreneurship programs to U.S. and foreign businesses and governments, particularly in transition economies, Dr. Hisrich has instituted academic and training programs such as an MBA program in Hungary, a high school teachers entrepreneurship program in Russia, an Institute of International Entrepreneurship and Management and the Zelengrad Business College in Russia, and an Entrepreneurship Center in China.
Michael A. Lechter, attorney, certified licensing professional (CLP) and entrepreneur, CEO of TechPress Inc., a publishing and literary agency company, CEO of Michael Lechter PC, and Adjunct Professor in the Entrepreneurial Program in the Ira A Fulton School of Engineering at Arizona State University, is the bestselling author of OPM: Other People’s Money: How To Attract Other People’s Money For Your Investments—The Ultimate Leverage (2005), and Protecting Your #1 Asset: Creating Fortunes from Your Ideas (2001).

An internationally known expert in the field of intellectual property, his clients have included everything from breweries to fast food companies, casinos, professional sports teams, major software companies, semiconductor and medical device manufacturers, and venture capitalists to start-ups. When asked what he does for a living, he typically replies, “I build forts and fight pirates.”

Michael has been the architect of strategies for building businesses—using both conventional and unconventional forms and sources of “Other People’s Money and Resources.” His experience in representing both venture capitalists and start up and emerging businesses, and experience as an angel investor himself, provides a unique perspective to the subject of building a business.


Michael has been an active member of the Licensing Executives Society (LES) USA/Canada, serving as a trustee (1996–2000), and as Computer and Electronics Industry Sector Chair (1992–1996). He has been a LES USA/Canada delegate to LES International since 2001, and has served as chair or vice chair of a number of LESI committees.

He has lectured extensively throughout the world on intellectual property law and entrepreneurship. Upon request of the House Judiciary Committee he has submitted testimony to the Congress of the United States, and has participated in various United Nations and foreign government proceedings on intellectual property law and technology transfer.

Michael is also the owner of Cherry Creek Lodge LLC, a resort/dude ranch in the Tonto National Forest of Northern Arizona (www.CherryCreekLodge.com), a study in rustic elegance where modern comfort meets the old West. The Cherry Creek Lodge specializes in corporate and family retreats.