Preface

Entrepreneurship is a vital source of change in all facets of society, empowering individuals to seek opportunity where others see insurmountable problems. For much of the past century, entrepreneurs have created many great enterprises that subsequently led to job creation, improved productivity, increased prosperity, and a higher quality of life. With one-third of the world's population lacking access to basic energy needs and two-thirds with annual incomes of less than $2,000, entrepreneurship can play an important role in finding solutions to these challenges facing civilization.

Many books have been written to help educate others about entrepreneurship. Our textbook is the first to thoroughly examine a global phenomenon known as "technology entrepreneurship." Technology entrepreneurship is a style of business leadership that involves identifying high-potential, technology-intensive commercial opportunities, gathering resources such as talent and capital, and managing rapid growth and significant risks using principled decision-making skills. Technology ventures exploit breakthrough advancements in science and engineering to develop better products and services for customers. The leaders of technology ventures demonstrate focus, passion, and an unrelenting will to succeed.

Why is technology so important? The technology sector represents a significant portion of the economy of every industrialized nation. In the United States, more than one third of the gross national product and about half of private-sector spending on capital goods are related to technology. It is clear that economic growth depends on the health and contributions of technology businesses.

Technology has also become ubiquitous in modern society. Note the proliferation of cell phones, personal computers, and the Internet in the past decade and their subsequent integration into everyday commerce and our personal lives. When we refer to "high technology," we include information technology and electronics companies, life science and biotechnology businesses, and those service firms where technology is critical to their missions (e.g., Fidelity Investments and Schwab in the financial industry). At the dawn of the 21st century, many technologies show tremendous promise, including photonics and Internet advancements, medical devices and drug discovery, nanotechnology, and materials technologies related to energy and the environment.

The drive to understand technology venturing has frequently been associated with boom times. Certainly, the often-dramatic fluctuations of economic cycles can foster periods of extreme optimism as well as fear with respect to entrepreneurship. However, some of the most important technology companies have been founded during recessions, including Intel, Cisco, and Amgen. This book's principles endure regardless of the state of the economy.

APPROACH

Just as entrepreneurs combine things to create innovations, we integrate the most valuable entrepreneurship and technology management theories from some of the world's leading scholars, educators, and authors. We also provide an action-oriented approach to the subject through the use of examples, exercises, and lists. By striking a balance between theory and practice, we hope our readers will benefit from both perspectives.

Our comprehensive collection of concepts and applications provides the tools necessary for success in starting and growing a technology enterprise. We show the critical differences between scientific ideas and true business opportunities. Readers will benefit from the book's integrated set of cases, examples, business plans, and recommended sources for more information.

To illustrate the book's concepts, our examples and exercises include a blend of traditional high-technology firms (e.g., Microsoft, eBay, and Genentech) and other companies that use technology strategically (e.g., Starbucks, Southwest Airlines, and Wal-Mart). How do they develop enterprises that have such positive impact, sustainable performance, and realistic potential for longevity? In fact, the book's major principles are applicable to any high-growth, high-potential venture. This includes non-profit (often called "social") enterprises such as Conservation International and the Kauffman Foundation.

AUDIENCE

This book is designed for students in colleges and universities, as well as others in industry and government, who seek to learn the essentials of technology entrepreneurship. No prerequisite knowledge is necessary, although an understanding of basic accounting and finance principles will prove useful.

Colleges and universities have traditionally taught entrepreneurship exclusively to business majors. Because entrepreneurship education opportunities now span the entire campus, we wrote this book to be approachable for students of all majors. Our primary focus is on science and engineering majors enrolled in entrepreneurship and innovation courses, but the book is also valuable to business and other students with a particular interest in technology ventures.

For example, the courses at Stanford University and the University of California, Davis based on this textbook regularly attract students from majors as diverse as computer science, product design, political science, economics, pre-med, electrical engineering, history, biology, and management. Although the focus is on technology entrepreneurship, these students find this material applicable to the pursuit of a wide variety of endeavors. Entrepreneurship education is a wonderful way to teach universal leadership skills, which include being comfortable with constant change, contributing to an innovative team, and always demonstrating passion in their effort. We particularly encourage instructors to design courses where the students form study teams early in the term and learn to work together effectively on group assignments.

FEATURES

The book is organized in a modular format to allow for both systematic learning and random access of the material to suit the needs of any reader. It is a reference and companion tool to keep on hand for future use. We deploy the following wide variety of methods and features to achieve this goal, and we welcome feedback and comments to our e-mail addresses provided below.

Preview—Each chapter opens with a preview that outlines its content and objectives.

Principles—A set of twenty fundamental principles are developed and defined throughout the book.

Examples—Examples of the concepts are provided in a shaded box format.

Sequential Case—A case about an actual biotechnology firm, AgraQuest, runs from one chapter to the next.

Exercises—Exercises are offered at the end of each chapter to test comprehension of the concepts.

Business Plans and Cases—Two full business plans and seven complete cases are included in the back of the book.

References—References are indicated in a box format [Smith, 2001] and may be found as a complete set in the back of the book, along with valuable sources for additional information.

Chapter Sequence—The chapter sequence represents our best effort to organize the material in a format that can be used in various entrepreneurship courses. The chapters follow the four-section layout shown in Figure P1.

Website—Search for this book at http://www.mhhe.com/dorfbyers1e for additional information applicable to educators, students and professionals. For example, a complete syllabus for an introductory course on high-technology entrepreneurship is provided to assist instructors.

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