

24 STEPS TO A **SUCCESSFUL** STARTUP



DISCIPLINED ENTREPRENEURSHIP

BILL AULET

MANAGING DIRECTOR, MARTIN TRUST CENTER FOR MIT ENTREPRENEURSHIP

WILEY

Praise for *Disciplined Entrepreneurship*

“Entrepreneurship is not only a mind-set but a skill set. The 24 Steps present a practical step-by-step process to channel the creative spirit to maximize the chances of success and ultimate impact.”

—*Mitch Kapor, Founder, Lotus Development Corporation*

“While I am not a big fan of business plans, I am a big fan of the business planning process. This book provides an invaluable comprehensive framework for innovation-driven entrepreneurs to execute the business planning process.”

—*Brad Feld, Managing Director of the Foundry Group,
Co-Founder of TechStars, and Creator of the Startup Revolution book series*

“We have had Bill working with entrepreneurs in Scotland for the past three years using the 24 Steps, and we have been delighted with the results. Not only is the framework an extremely helpful road map, it has also given entrepreneurs the confidence to go on the journey and take their businesses to the next level. This is a very valuable approach that works across borders.”

—*Alex Paterson, Chief Executive, Highlands and Islands Enterprise Scotland*

“This is the book I wish I’d had when I was starting out—concise, great examples, in plain English, combining classic entrepreneurship theory with what’s happening in today’s startup world. If you’re a serious entrepreneur, read it carefully and keep it close at hand for the journey ahead.”

—*Frederic Kerrest, Co-Founder, Okta, and
MIT Patrick J. McGovern, Jr. Entrepreneurship Award recipient*

“According to conventional wisdom, entrepreneurship is solely an innate trait. Nothing could be further from the truth. Entrepreneurship is a learned skill which can be honed through crisp execution. This book can help every entrepreneur dramatically increase the likelihood of success by providing step-by-step guidance on how to approach starting a new business. I recommend it to all ambitious entrepreneurs.”

—Doug Leone, *Managing Partner, Sequoia Capital*

“Invaluable. This book superbly summarizes the lessons taught to us at MIT. It is the book I wish I had when we were launching HubSpot six years ago.”

—Brian Halligan, *Co-Founder and CEO, Hubspot, and author of Inbound Marketing*

“Bill and I have had many discussions about entrepreneurship, and I really respect his perspective on the topic. While the spirit of entrepreneurship is often about serendipity, the execution is not. This book takes you through a systematic approach to significantly increase your odds of succeeding in making a world-changing and sustainable company. I loved the content and the simple nature of the book.”

—Joi Ito, *Director, MIT Media Lab*

“Ideas are a dime a dozen but great entrepreneurs are what create value. They have to be passionate and skilled. Maybe passion can’t be taught, but execution skills can, and this book does a wonderful job providing a structure and wisdom with each step to help entrepreneurs be more successful. I highly recommend it.”

—Paul Maeder, *Founding Partner of Highland Capital and
2012 Chair of the National Venture Capital Association*

“Bill’s concept of a team creating an entrepreneur is intriguing but also validated by research and experience. This list of disciplined steps to creating a venture can not only help entrepreneurs increase their likelihood of success, but also identify the skills and people he/she will need on the team in the crucial early steps in a company’s life, and to create a common language the team can share in talking about the tasks before them. I might have suggested that he call his book *The Holistic Entrepreneur*.”

—Thomas A. McDonnell, *President and CEO, Ewing Marion Kauffman Foundation*

“Social entrepreneurs must develop business models which balance social impact with business sustainability. Soko focuses on building a successful and scalable business model, which will lead to scaled social impact in the communities where we work. The 24 Step process outlined by Bill Aulet is a very useful framework for any type of business to get from an idea to full realization.”

—*Ella Peinovich and Gwen Floyd, Founders of ShopSoko.com,
Africa’s first mobile marketplace*

“I had the great pleasure to work with Bill and see how his methodical mind breaks down complex problems to their essence and then logically solves them to build a great company. This book will be a great help to entrepreneurs worldwide, which is very important because the world needs more entrepreneurs like Bill.”

—*Thomas Massie, current member of Congress, and Founder,
SensAble Devices and SensAble Technologies*

“Entrepreneurship is becoming increasingly scientific each day as the body of knowledge and research grows. This book is a valuable addition in that it provides an end-to-end guide to the product marketing process across multiple industries. It is what you would expect from MIT.”

—*David Skok, Partner, Matrix Partners*

“Training our young engineers to be entrepreneurs is an imperative for the future and this book will help in that regard. It provides a road map for getting the product-market fit as tight as possible. There are many considerations in this process and this book captures them well and provides practical guidance on how to resolve them.”

—*Tom Byers, Entrepreneurship Professorship Endowed Chair in the
Stanford School of Engineering; Faculty Director, Stanford Technology Ventures Program*

“This is an excellent practical guide for entrepreneurs so they can see the whole process and not miss critical steps as they bring products to market. Growing out of the actual experience of teaching MIT students, it adds to the growing body of thoughtful literature in the field that bodes well for the consistent development of young entrepreneurs.”

—*Joe Lassiter, Faculty Chair of the Harvard Innovation Lab,
and Heinz Professor of Management Practice at the Harvard Business School*

“I am just so excited to see now that entrepreneurs everywhere are going to get what I got at MIT to help hone my entrepreneurial skills. It is years of knowledge and wisdom in a box that every entrepreneur should read, even if you already have a business.”

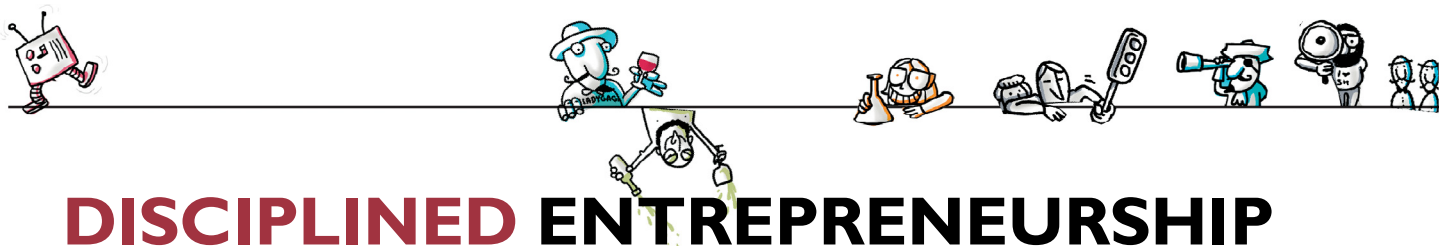
—*Sal Lupoli, Founder of Sal's Pizza and Lupoli Companies*

“As an intuitive entrepreneur, I prefer less structure. That being said, after having worked through the steps in this book to launch Lark, I realize that some structure is very valuable. This book provides enough guidance to help you succeed but not too much to stifle creativity. It is a must-have for entrepreneurs to read the first time but also as a reference.”

—*Julia Hu, Founder and CEO of Lark Technologies*

“*Disciplined Entrepreneurship* is highly relevant and is on my recommended reading list for entrepreneurship students and entrepreneurs. It moves the reader forward through practical and important steps that they might otherwise miss, in their innovation-driven start-up journey.”

—*Professor Gregory B. Vit, Director, the Dobson Centre for Entrepreneurial Studies, McGill University*



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BILL AULET

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Marius Ursache

WILEY

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THROUGHOUT MY ENTREPRENEURIAL CAREER, MY FAMILY HAS BEEN A ROCK OF GIBRALTAR THAT I COULD ALWAYS COUNT ON WITH UNCONDITIONAL SUPPORT AND LOVE, AND I DEDICATE THIS BOOK TO THEM. FIRST, I HAD THE BEST PARENTS A SON COULD EVER HAVE IN THE NOW-DECEASED BECKY AND HERB AULET. I WAS BLESSED WITH FOUR WONDERFUL SONS, KENNY, TOMMY, KYLE, AND CHRIS, WHO WONDERED WHY THEIR FATHER COULDN'T BE LIKE OTHERS BUT PUT UP WITH IT . . . AND HAVE EXCELLED IN SPITE OF THIS.

MOST OF ALL, I DEDICATE THIS BOOK TO MY WONDERFUL AND PATIENT WIFE OF 30 YEARS, LISA, WHO MARRIED A YOUNG CORPORATE SOLDIER SO MANY YEARS AGO AND ENDED UP WITH A CRAZY OLD ENTREPRENEUR AND STUCK WITH ME THE WHOLE TIME.

THIS BOOK IS FOR YOU.

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PREFACE

THIS BOOK IS DESIGNED as an integrated toolbox for first-time and repeat entrepreneurs so that they can build great enterprises based on new innovative products. Serial entrepreneurs with deep experience in a particular field or industry will also find this 24-step guide useful to more efficiently bring products to market.

As an entrepreneur, I have found many sources to be helpful, from books to mentors, and most of all, my own experiences. However, I have not found a single source that pulls everything together and does it well.

Many of the books I have found are excellent and have great material, including: Geoffrey Moore's *Crossing the Chasm*, W. Chan Kim and Renée Mauborgne's *Blue Ocean Strategy*, Brian Halligan and Dharmesh Shah's *Inbound Marketing*, Steve Blank's *Four Steps to the Epiphany*, Eric Ries's *The Lean Startup*, Ash Maurya's *Running Lean*, and Alex Osterwalder and Yves Pigneur's *Business Model Generation*. These are valuable books and I will reference many of them in this book. However, they are focused in depth on a few key points without providing the more fulsome roadmap that I have felt appropriate when teaching my students at the Massachusetts Institute of Technology (MIT) and in my other workshops. I believe that each is an important tool at the right time during product conception, development, and launch, but what was needed was a toolbox that contained these and more.

Using the analogy of a toolbox, a screwdriver is a great tool for certain situations, but it does not function as well as a hammer in other situations. Likewise, to choose one example, the ideas and techniques in *Inbound Marketing* are extremely valuable, but they are even more helpful as part of a broader context used at the right time.

The goal of this book, then, is to provide guidance in a messy and sometimes confusing process where you, the entrepreneur, are attempting to do something that has never been done before. What a terribly difficult task to take on, but what an incredibly important one. This book comes out of my

workshops around the world and MIT courses where I built and refined this approach over years with hundreds of great entrepreneurs.

Certainly, there are other elements to consider when working toward a successful new venture, from culture and team to sales, financing, and leadership. But the foundation of an innovation-driven enterprise is the product that is created, and so that is the focus of this book.

This process will not necessarily be sequential in nature. I tried to make a logical linear process of 24 steps to get you started, but you should realize that when you gain knowledge in one step, you may need to reevaluate previous steps, and refine or even redo your previous work. This iterative process of “spiraling” toward the optimal answer is important because you do not have unlimited time to perfect your work on a particular step. You will need to make first-pass estimates based on research, and they will often need revision.

Each of these steps has rigorously evaluated whether a customer would benefit from your product, regardless of whether an analyst, potential investor, or technology writer standing on the sidelines can see the value. As someone once said to me, “In concept, concept and reality are the same, but in reality, concept and reality are not the same at all.”

This book also provides a common language to discuss key aspects of venture creation so that you can more effectively discuss your new venture with advisors, mentors, and fellow entrepreneurs. I have carefully defined each step to refer to a discrete part of the process. I recall my father getting very frustrated when he would ask for a pair of pliers and I would give him a wrench. Now I feel the same way he did when I ask my students what their “business model” is and they talk about their Total Addressable Market or Pricing.

The result of this integrated toolbox with a common language is what we at MIT like to call “disciplined entrepreneurship.” Some people tell me that entrepreneurship should not be disciplined, but chaotic and unpredictable—and it is. But that is precisely why a framework to attack problems in a systematic manner is extremely valuable. You already have enough risk with factors that are beyond your control, so the framework provided by disciplined entrepreneurship helps you succeed by reducing your risk in factors that you can have control over. The process can help you succeed, or it can help you fail faster if failure was inevitable for the path you were on. Either way, this process will help you.

This is the book I wish I had 20 years ago when I first became an entrepreneur.

Note on examples in this book: Throughout the book, I include a number of examples from MIT student teams who took the 15.390 New Enterprises course while in their degree programs. These examples are not always fully fleshed out because of the students’ time limitations. I provide them in this book as examples that illustrate the basic concepts of the steps. I have altered some of them to better illustrate best practices and pitfalls for various steps, but kept the essence of the situations. The examples are all consistent with my experiences in founding companies. The projects described in the examples might not have turned into full-fledged companies, depending on the decisions the student teams made after completing their coursework, but their examples are educational nonetheless.

ACKNOWLEDGMENTS

A HUGE THANK YOU to my editor-in-chief Chris Snyder and editorial advisor Nancy Nichols, without whom this book would still be in my head and maybe on my computer. A very special thanks to my Romanian entrepreneur and friend Marius Ursache who did the illustrations for this book in such a delightful way that I was always like a kid on Christmas morning when I saw his e-mails come in with new drawings because I was so excited to see them and he never let me down. And thanks to the team at John Wiley & Sons, led by Shannon Vargo, that brought this book to production in record time and with utmost professionalism.

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This book came about because I have been able to work at MIT for the past six years and interact with the best entrepreneurship faculty in the world. I have been honored to work with them. Of the many who have made enormous intellectual contributions, special acknowledgement must go to Fiona Murray (who co-authored the paper on innovation-driven entrepreneurship that I reference and paraphrase in the introduction and has provided hours of feedback on this book), Ed Roberts, Scott Stern, Charlie Cooney, Matt Marx, Catherine Tucker, Eric von Hippel, Jim Dougherty, Katie

Rae, Reed Sturtevant, Elaine Chen, Peter Levine, and Brian Halligan, and of course my colleague in teaching this material for so many years, the legendary Howard Anderson. Also thanks to David Skok, Thomas Massie, Tom Ellery, Andrew Hally, Bernard Bailey, Marc Dulude, Jim Baum, Bill Warner, Dan Schwinn, Bob Coleman, Ken Morse, Jon Hirshtick, Chuck Kane, Brad Feld, Marty Trust, Sal Lupoli, Joi Ito, Sanjay Sarma, and the many mentors and collaborators I have been so fortunate to have had over the years. They all contributed heavily to the intellectual content of the book, but I take responsibility for the interpretations on how to apply and integrate it for practical implementation, which is the goal herein. Any errors made in this document are mine and no one else's.

The Kauffman Foundation for Entrepreneurship, specifically Wendy Torrance, Lesa Mitchell, and Dane Stangler, have been very helpful in this process and have pushed me to do this book for some time. I finally heard you and got it done. Thank you for your encouragement.

A key enabler of this book as well has been the fabulous team of pirates we have at the Martin Trust Center for MIT Entrepreneurship including Colin Kennedy, Christina Chase, Ben Israelite, Adam Cragg, Vanessa Marcoux, Allison Munichello, Pat Fuligni, Justin Adelson, and Liz DeWolf. They provided encouragement, perspective, and a sanity check every day I was in the center.

Lastly I want to acknowledge the thousands of students and entrepreneurs who I have had the privilege to work with; you all give us such energy and hope every day. We all want to help you so much, as you are our hope for the future.

INTRODUCTION

We know it is in there,
but we just can't seem to find
that entrepreneurship gene...



NEWS FLASH—ENTREPRENEURSHIP CAN BE TAUGHT!

One of the first questions I often ask when I begin a workshop or a class is, “Do you think entrepreneurship can be taught?” Invariably a silence comes over the group. They wiggle uncomfortably in their seats. Some politely answer in the affirmative, telling me that is why they came to class in the first place. After a polite back-and-forth someone will invariably say what is on the mind of many in the room: “No, either you are an entrepreneur or you are not.” That person, once empowered, begins to passionately argue the case.

I have to say that I tend to like this person, in large part because that person would have been me 15 years ago. But now I know that entrepreneurship can be taught. I experience it almost every week in the courses I teach at the Massachusetts Institute of Technology (MIT) and around the world.

When we look at Richard Branson, Steve Jobs, Bill Gates, Larry Ellison, and all the other highly visible entrepreneurs, they seem to be different from us. They seem extraordinary. But each of their successes is a result of great products that made them successful, not some special gene.

To be a successful entrepreneur, you must have great and innovative products. Products can be physical goods, but also services or the delivery of information. All the other factors that influence success are nothing without a product. And the process of making a great product can be taught. This book will teach you how to systematically improve your odds of making a great product.

In this book I present a disciplined step-by-step approach to creating a new venture. This framework is useful both for a classroom setting and for those who want to create a new company that serves a new market. Before we begin, though, we must tackle three common myths about the entrepreneur that often hamper those wishing to start new companies or teach students how to do so.

Three Common Myths That Must Go

There are many misconceptions about what entrepreneurship is and what is required to be an entrepreneur. The first myth is that individuals start companies. While the entrepreneur as a lone hero is a common narrative, a close reading of the research tells a different story. Teams start companies. Importantly, a bigger team actually adds to the odds of success. *More founders = better odds of success.*¹

¹Edward B. Roberts, *Entrepreneurs in High Technology: Lessons from MIT and Beyond* (New York: Oxford University Press, 1991), 258.

The second myth is that all entrepreneurs are charismatic and that their charisma is a key factor in success. In fact, while charisma may be effective for a short period, it is difficult to sustain. Instead, research shows that more important than being charismatic, entrepreneurs need to be effective communicators, recruiters, and salespeople.

The third myth is that there is an entrepreneurship gene, that certain people are genetically predisposed for success in starting companies. As the cartoon at the beginning of this chapter suggests, such a physical gene has not and will not be found. Some believe personality traits like flamboyance or boldness are correlated with successful entrepreneurship, but that line of thought is misguided. Instead, there are real skills that increase the odds of success, such as people management, sales skills, and the topic of this book, product conception and delivery. These skills can be taught. They are not genetically gifted to a few lucky souls. People can adapt and learn new behaviors, and entrepreneurship therefore can be broken down into discrete behaviors and processes that can be taught.

For evidence, we need look no further than the one magical square mile that is MIT. Students who attend MIT start companies at an absolutely prolific rate. In fact, as of 2006, over 25,000 existed, and 900 new ones are started each year. These companies employ over 3 million people with aggregate annual revenues of approximately \$2 trillion. To put that in perspective, the total annual revenue from MIT alumni–founded companies taken together would make them the eleventh-largest economy in the world.²

What Explains MIT's Success in Entrepreneurship?

Why is MIT so successful at turning out entrepreneurs? The first response people often have is that the students at MIT are extremely intelligent. MIT's students are no smarter than those at other top-flight institutions of higher learning throughout the world (Caltech, Harvard, and the like), but none of them, other than Stanford, come close to producing entrepreneurial alumni like MIT. So MIT's success must be attributable to something else.

The second response is that this success comes about because MIT students have access to leading-edge technologies in the laboratories, and thus it is easy for them to start companies. Again, this is a measurable hypothesis. Because of the outstanding Technology Licensing Office (TLO) at

²Edward B. Roberts and Charles E. Eesley, "Entrepreneurial Impact: The Role of MIT—An Updated Report," *Foundations and Trends® in Entrepreneurship* 7, nos. 1–2 (2011): 1–149. <http://dx.doi.org/10.1561/03000000030>.

MIT, there are numbers on how many companies are started each year with technology out of the labs because they have to be licensed through this office. This number is 20 to 30 companies per year, which is very impressive when compared to the stats at other universities. Yet this number seems small when we consider that MIT alumni as a whole start 900 companies per year.³ While the companies started with MIT-licensed technology have great strategic importance and can be very impactful (e.g., Akamai⁴), they are only a small part of why MIT is so successful at entrepreneurship. Well over 90 percent of the companies started by MIT alumni are started without MIT laboratory-produced technology.

The real reason why MIT is so successful at creating new companies is a combination of spirit and skills. At MIT there is a culture that encourages people to start companies all the time and everywhere, much like in Silicon Valley, Israel, Tech City in London, and Berlin today. Role models are everywhere, and they are not abstract icons, but rather very real people no different from you. An aura of possibility and collaboration so pervades the very air at MIT that students quickly adopt the mindset that “yes, I can start a company too.” They become infected with the “entrepreneurial virus,” believing in the benefits of launching a new venture.

Students are galvanized by the atmosphere of ambition and collaboration. The work of developing entrepreneurial skills comes from classes, competitions, extracurricular events, and networking programs, and the teachings available both in the classroom and outside are extremely relevant and immediately valuable to the students so that in this environment they attack the subjects with a greater level of interest and commitment. This is also amplified because every student in the class is fully engaged. A class taught in such an engaging environment is far more productive for students and instructors.

A major contributor to this virtuous cycle is the social herding mentality. As the students are learning and working on entrepreneurship, they are also collaborating with fellow students. They talk about their work when they are in social situations, and they naturally start to push one another with subtle or not-so-subtle competitiveness. Not only do they learn from one another, but that learning becomes part of their individual and group identity.

These are the factors that create the environment where entrepreneurship is so successfully “taught” at MIT. It is a positive feedback loop (see Figure I.1).

³Edward B. Roberts and Charles E. Eesley, “Entrepreneurial Impact: The Role of MIT—An Updated Report,” *Foundations and Trends® in Entrepreneurship* 7, nos. 1–2 (2011): 1–149. <http://dx.doi.org/10.1561/03000000030>.

⁴“Success Stories,” MIT Technology Licensing Office, http://web.mit.edu/tlo/www/about/success_stories.html.

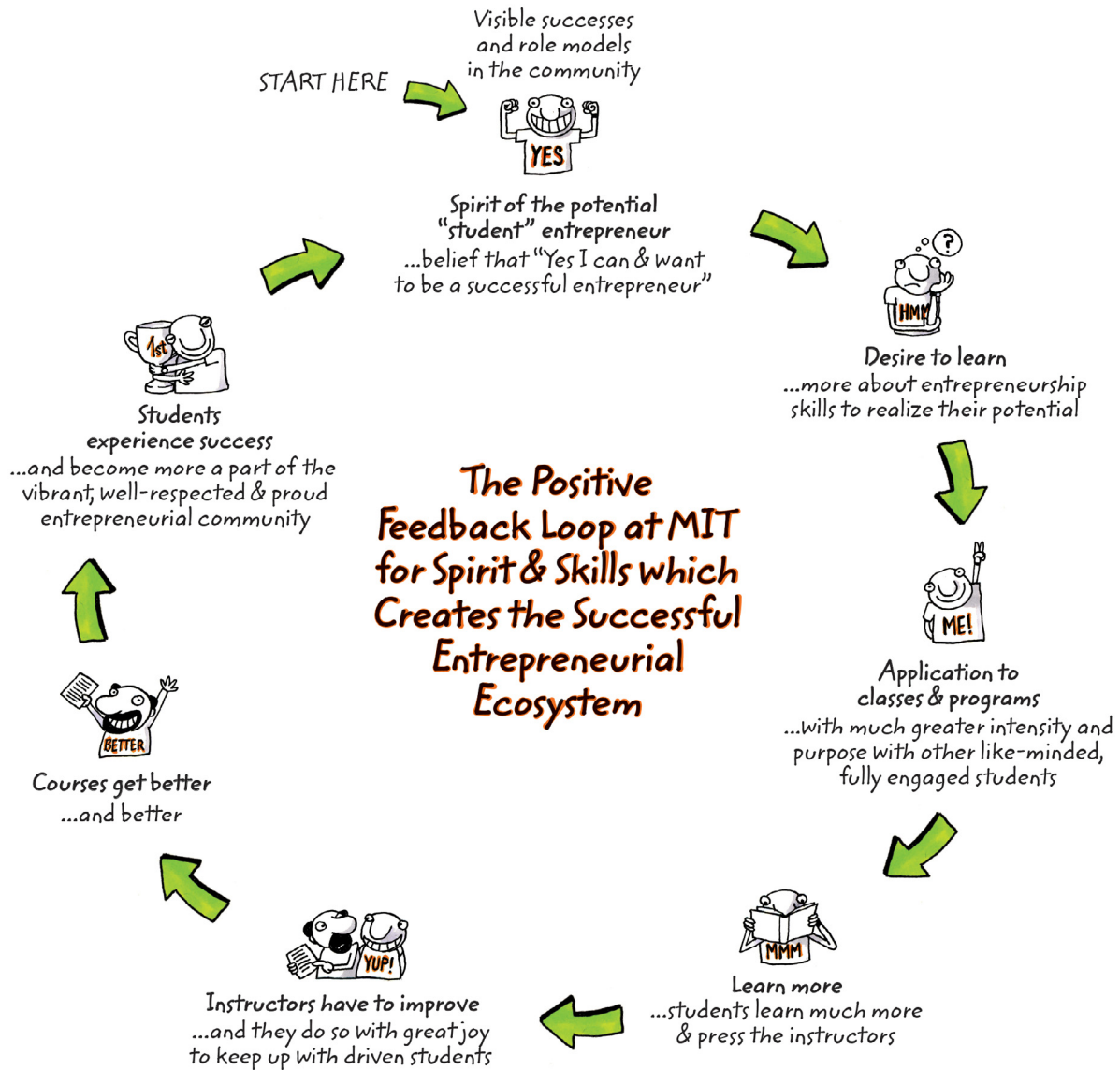


Figure I.1 Positive feedback loop.

Distinguishing Two Distinct Types of Entrepreneurship

Entrepreneurship is about creating a new business where one did not exist before. That definition seemed clear until my colleagues Professors Fiona Murray and Scott Stern and I spent a good deal of time talking to various organizations about how to promote entrepreneurship in different regions of the world. We found that when we said “entrepreneurship” to people, it could mean at least two extremely different things—a discrepancy that had important ramifications, because each type of entrepreneurship has dramatically different objectives and needs.⁵

Small and Medium Enterprise (SME) Entrepreneurship The first type of entrepreneurship is small and medium enterprise entrepreneurship (SME). This is the type of business that is likely started by one person to serve a local market and grows to be a small or medium-size business that serves this local market. It is most often closely held, likely a family business, where close control of a small business is important. The business “rewards” for these founders are primarily in the form of personal independence and cash flow from the business.

These businesses generally do not need to raise as much money, so when money is injected into these businesses, the resultant increase in revenue and jobs created is relatively rapid. Such enterprises can be geographically dispersed and the jobs they create are for the most part “non-tradable” in that they cannot be outsourced to someplace else to reduce costs. Frequently these businesses are service businesses or retailers of other companies’ products. The key distinguishing factor is their focus on local markets.

Innovation-Driven Enterprise (IDE) Entrepreneurship Innovation-driven enterprise (IDE) entrepreneurship is the more risky and more ambitious of the two. IDE entrepreneurs are aspiring to serve markets that go well beyond the local market. They are looking to sell their offering at a global or at least at a regional level.

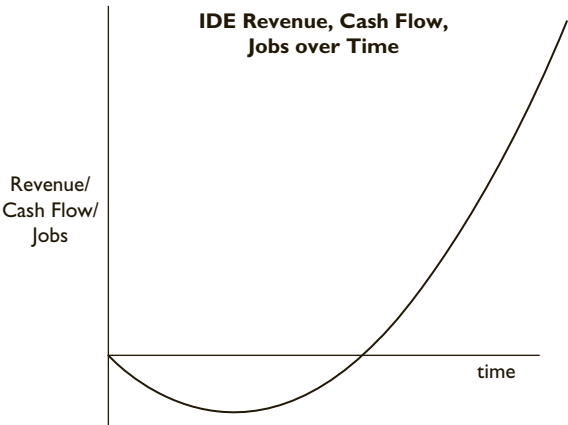
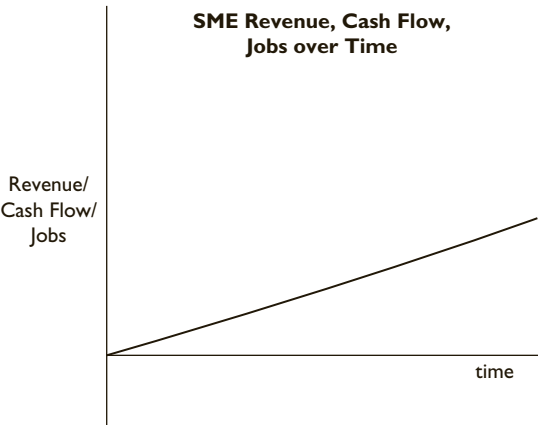
These entrepreneurs usually work in teams where they build their business off some technology, process, business model, or other innovation that will give them a significant competitive advantage as compared to existing companies. They are interested in creating wealth more than they are interested in control, and they often have to sell equity in their company to support their ambitious growth plans.

While they are often slower to start, IDE entrepreneurs tend to have more impressive exponential growth when they do get customer traction (See Table I.1). Growth is what they seek, at the

⁵ Bill Aulet and Fiona Murray, “A Tale of Two Entrepreneurs: Understanding Differences in the Types of Entrepreneurship in the Economy,” Ewing Marion Kauffman Foundation, May 2013, www.kauffman.org/uploadedfiles/downloadableresources/a-tale-of-two-entrepreneurs.pdf.

Table I.I SME vs. IDE Entrepreneurship Table

SME Entrepreneurship	IDE Entrepreneurship
Focus on addressing local and regional markets only.	Focus on global/regional markets.
Innovation is not necessary to SME establishment and growth, nor is competitive advantage.	The company is based on some sort of innovation (tech, business process, model) and potential competitive advantage.
“Non-tradable jobs”—jobs generally performed locally (e.g., restaurants, dry cleaners, and service industry).	“Tradable jobs”—jobs that do not have to be performed locally.
Most often family businesses or businesses with very little external capital.	More diverse ownership base including a wide array of external capital providers.
The company typically grows at a linear rate. When you put money into the company, the system (revenue, cash flow, jobs, etc.) will respond quickly in a positive manner.	The company starts by losing money, but if successful will have exponential growth. Requires investment. When you put money into the company, the revenue/cash flow/jobs numbers do not respond quickly.



Source: Bill Aulet and Fiona Murray, “A Tale of Two Entrepreneurs: Understanding Differences in the Types of Entrepreneurship in the Economy,” Ewing Marion Kauffman Foundation, May 2013, www.kauffman.org/uploadedfiles/downloadableresources/a-tale-of-two-entrepreneurs.pdf.

risk of losing control of their company and having multiple owners. While SME companies tend to grow up and stay relatively small (but not always), IDE companies are more interested in “going big or going home.” To achieve their ambitions, they have to become big and fast-growing to serve global markets.

IDE entrepreneurship creates companies that have “tradable” jobs that may well be outsourced if it makes the overall business more competitive. These companies are much less likely to be geographically diverse and instead are concentrated around clusters of innovation. It is also generally the case that any injection of investment or money requires a much longer time to show results in terms of new revenues or jobs.

In the short run, the SME model will be more responsive; but with patience, the IDE ventures have the capacity to produce profound results as we have seen with companies like Apple, Google, Hewlett-Packard, and other publicly traded companies.

Our Focus Is Innovation-Driven Enterprise

A healthy economy consists of both types of entrepreneurship and both have their strengths and weaknesses. Neither is better than the other. But they are substantively different enough that they require different mindsets and different sets of skills to be successful. Therefore, in this book, rather than teach “entrepreneurship,” I will teach IDE entrepreneurship, because this is what I know best, having co-founded two companies (Cambridge Decision Dynamics and SensAble Technologies) based on an innovation.

What Is Innovation?

Innovation has become an increasingly clichéd term, but it has a simple definition, which I have adapted from MIT professor Ed Roberts⁶:

$$\text{Innovation} = \text{Invention} * \text{Commercialization}$$

I modify Roberts’s definition, which involved addition, because innovation is not a sum of invention and commercialization, but a product. If there is commercialization but no invention (invention = 0), or invention but no commercialization (commercialization = 0), then there is no innovation.

⁶Edward B. Roberts, “Managing Invention and Innovation,” *Research Technology Management* 31, no. 1 (January/February 1988): 13, ABI/INFORM Complete.

The invention (an idea, a technology, or some sort of intellectual property) is important, but the entrepreneur does not need to create the invention. In fact, the inventions that lead to innovation-driven companies often come from elsewhere. Such was the case with Steve Jobs, who identified others' inventions (the computer mouse created by Xerox PARC is the most famous example) and commercialized them effectively through Apple. Likewise at Google, which has made most of its money through AdWords, the text-based, keyword-driven advertisements on their search results pages. A different company, Overture, had invented such advertisements, but Google was successful through its commercialization of Overture's invention.

These examples show that the capability to commercialize an invention is necessary for real innovation. An entrepreneur, then, serves primarily as the commercialization agent.

I very consciously do not use the term "technology-driven" entrepreneurship because innovation is not limited to technology. Innovation can come in many varieties including technology, process, business model, positioning, and more.

Some of the most exciting innovations of our time, such as Google, iTunes, Salesforce.com, Netflix, Zipcar, and many more are, at their core, business model innovations. They are enabled by technology, yes—Zipcar would find it difficult to maintain its large network of cars without keyless-entry technology for its members. But at its core, Zipcar's innovation is treating a rental car as a substitute for owning a car, rather than as temporary transportation for car owners and business travelers visiting far-flung areas. Zipcar doesn't have to understand the intricacies of its technology to be successful, but it has to understand what it means for its customers to "collaboratively consume."

As technology becomes more and more commoditized, you will see more business model innovations that leverage technology. There will still be many opportunities for technology-driven innovation in areas like energy storage, power electronics, wireless communications, and much more, but this is not the sole definition of innovation.

Six Themes of the 24 Steps

The 24 Steps are discrete and can be grouped into six themes. Each step should be done in numerical order with the understanding that in each step, you will learn things that will prompt you to revise the work you have done in earlier steps. These themes present a general outline of how the 24 Steps will help you create a sustainable, innovation-based business.