

# INTRODUCTION

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



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## 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.*<sup>1</sup>

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<sup>1</sup>Edward 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.<sup>2</sup>

### **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

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<sup>2</sup>Edward 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.<sup>3</sup> While the companies started with MIT-licensed technology have great strategic importance and can be very impactful (e.g., Akamai<sup>4</sup>), 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).

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<sup>3</sup>Edward 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>.

<sup>4</sup>“Success Stories,” MIT Technology Licensing Office, [http://web.mit.edu/tlo/www/about/success\\_stories.html](http://web.mit.edu/tlo/www/about/success_stories.html).

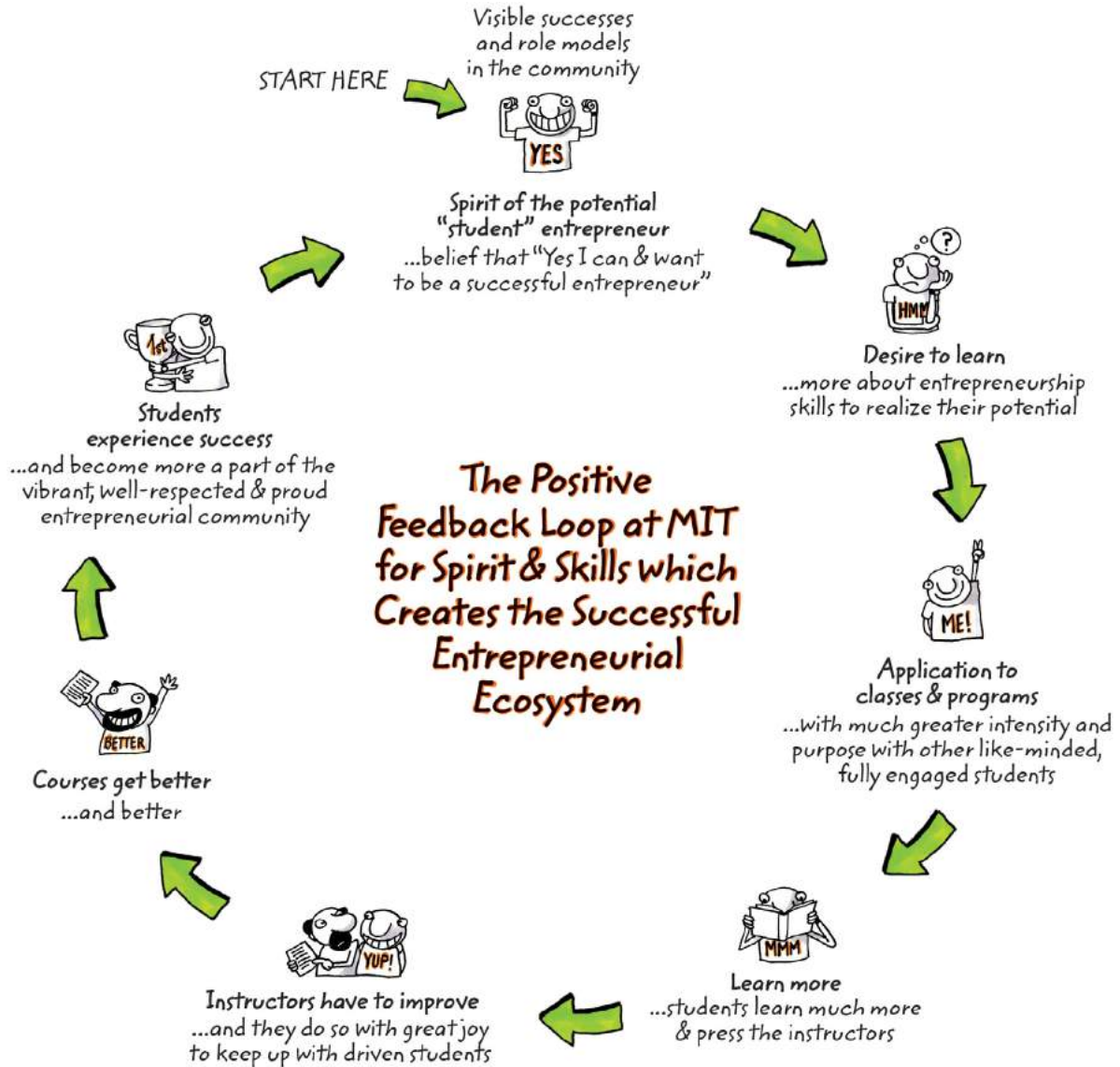


Figure I.1 Positive feedback loop.

## 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.<sup>5</sup>

**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.

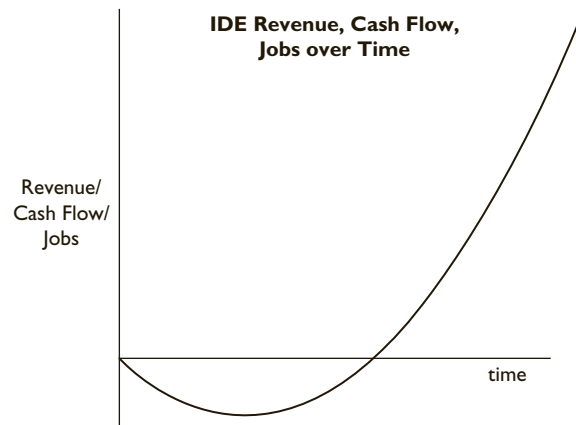
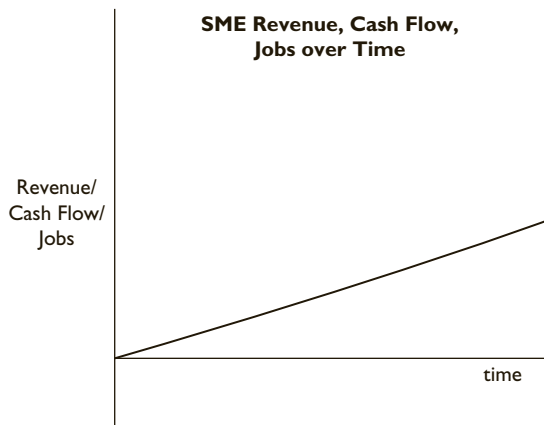
While they are often slower to start, IDE entrepreneurs tend to have more impressive exponential growth when they do get customer traction (See Table I.1). Growth is what they seek, at the

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<sup>5</sup> 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](http://www.kauffman.org/uploadedfiles/downloadableresources/a-tale-of-two-entrepreneurs.pdf).

**Table I.1** 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](http://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 Roberts<sup>6</sup>:

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

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.

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<sup>6</sup>Edward 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.

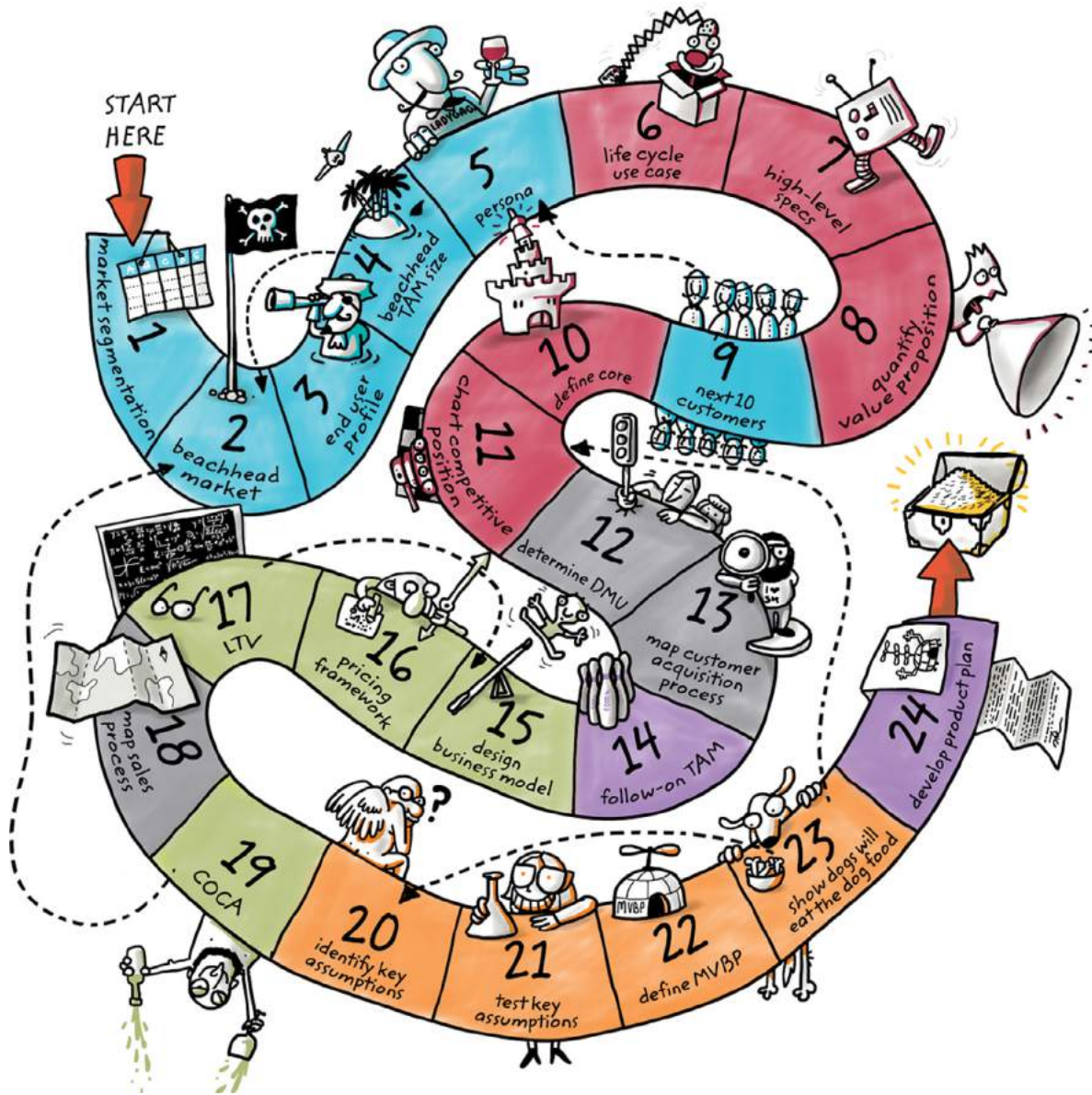


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# Six Themes of the 24 Steps

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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.



**WHO IS YOUR CUSTOMER?**

- 1 Market Segmentation
- 2 Select a Beachhead Market
- 3 Build an End User Profile
- 4 Calculate the TAM Size for the Beachhead Market
- 5 Profile the Persona for the Beachhead Market
- 9 Identify Your Next 10 Customers

**WHAT CAN YOU DO FOR YOUR CUSTOMER?**

- 6 Full Life Cycle Use Case
- 7 High-Level Product Specification
- 8 Quantify the Value Proposition
- 10 Define Your Core
- 11 Chart Your Competitive Position

**HOW DOES YOUR CUSTOMER ACQUIRE YOUR PRODUCT?**

- 12 Determine the Customer's Decision-Making Unit (DMU)
- 13 Map The Process to Acquire a Paying Customer
- 18 Map the Sales Process to Acquire a Customer

**HOW DO YOU MAKE MONEY OFF YOUR PRODUCT?**

- 15 Design a Business Model
- 16 Set Your Pricing Framework
- 17 Calculate the Lifetime Value (LTV) of an Acquired Customer
- 19 Calculate the Cost of Customer Acquisition (COCA)

**HOW DO YOU DESIGN & BUILD YOUR PRODUCT?**

- 20 Identify Key Assumptions
- 21 Test Key Assumptions
- 22 Define the Minimum Viable Business Product (MVBP)
- 23 Show That "The Dogs Will Eat the Dog Food"

**HOW DO YOU SCALE YOUR BUSINESS?**

- 14 Calculate the TAM Size for Follow-on Markets
- 24 Develop a Product Plan

