Introduction

Stop me if you've heard this one before. Brilliant college kids sitting in a dorm are inventing the future. Heedless of boundaries, possessed of new technology and youthful enthusiasm, they build a new company from scratch. Their early success allows them to raise money and bring an amazing new product to market. They hire their friends, assemble a superstar team, and dare the world to stop them.

Ten years and several startups ago, that was me, building my first company. I particularly remember a moment from back then: the moment I realized my company was going to fail. My cofounder and I were at our wits' end. The dot-com bubble had burst, and we had spent all our money. We tried desperately to raise more capital, and we could not. It was like a breakup scene from a Hollywood movie: it was raining, and we were arguing in the street. We couldn't even agree on where to walk next, and so we parted in anger, heading in opposite directions. As a metaphor for our company's failure, this image of the two of us, lost in the rain and drifting apart, is perfect.

It remains a painful memory. The company limped along for months afterward, but our situation was hopeless. At the time, it had seemed we were doing everything right: we had a great product, a brilliant team, amazing technology, and the right idea at the right time. And we really were on to something. We were building a way for college kids to create online profiles for the purpose of sharing … with employers. Oops. But despite a promising idea, we were nonetheless doomed from day one, because we did not know the process we would need to use to turn

our product insights into a great company.

If you've never experienced a failure like this, it is hard to describe the feeling. It's as if the world were falling out from under you. You realize you've been duped. The stories in the magazines are lies: hard work and perseverance don't lead to success. Even worse, the many, many, many promises you've made to employees, friends, and family are not going to come true. Everyone who thought you were foolish for stepping out on your own will be proven right.

It wasn't supposed to turn out that way. In magazines and newspapers, in blockbuster movies, and on countless blogs, we hear the mantra of the successful entrepreneurs: through determination, brilliance, great timing, and—above all—a great product, you too can achieve fame and fortune.

There is a mythmaking industry hard at work to sell us that story, but I have come to believe that the story is false, the product of selection bias and after-the-fact rationalization. In fact, having worked with hundreds of entrepreneurs, I have seen firsthand how often a promising start leads to failure. The grim reality is that most startups fail. Most new products are not successful. Most new ventures do not live up to their potential.

Yet the story of perseverance, creative genius, and hard work persists. Why is it so popular? I think there is something deeply appealing about this modern-day rags-to-riches story. It makes success seem inevitable if you just have the right stuff. It means that the mundane details, the boring stuff, the small individual choices don't matter. If we build it, they will come. When we fail, as so many of us do, we have a ready-made excuse: we didn't have the right stuff. We weren't visionary enough or weren't in the right place at the right time.

After more than ten years as an entrepreneur, I came to reject that line of thinking. I have learned from both my own successes and failures and those of many others that it's the boring stuff that matters the most. Startup success is not a consequence of good genes or being in the right place at the right time. Startup success can be engineered by following the right process, which means it

can be learned, which means it can be taught.

Entrepreneurship is a kind of management. No, you didn't read that wrong. We have wildly divergent associations with these two words, entrepreneurship and management. Lately, it seems that one is cool, innovative, and exciting and the other is dull, serious, and bland. It is time to look past these preconceptions.

Let me tell you a second startup story. It's 2004, and a group of founders have just started a new company. Their previous company had failed very publicly. Their credibility is at an all-time low. They have a huge vision: to change the way people communicate by using a new technology called avatars (remember, this was before James Cameron's blockbuster movie). They are following a visionary named Will Harvey, who paints a compelling picture: people connecting with their friends, hanging out online, using avatars to give them a combination of intimate connection and safe anonymity. Even better, instead of having to build all the clothing, furniture, and accessories these avatars would need to accessorize their digital lives, the customers would be enlisted to build those things and sell them to one another.

The engineering challenge before them is immense: creating virtual worlds, user-generated content, an online commerce engine, micropayments, and—last but not least—the three-dimensional avatar technology that can run on anyone's PC.

I'm in this second story, too. I'm a cofounder and chief technology officer of this company, which is called IMVU. At this point in our careers, my cofounders and I are determined to make new mistakes. We do everything wrong: instead of spending years perfecting our technology, we build a minimum viable product, an early product that is terrible, full of bugs and crash-your-computer-yes-really stability problems. Then we ship it to customers way before it's ready. And we charge money for it. After securing initial customers, we change the product constantly—much too fast by traditional standards—shipping new versions of our product dozens of times every single day.

We really did have customers in those early days—true visionary early adopters—and we often talked to them and asked for their

feedback. But we emphatically did not do what they said. We viewed their input as only one source of information about our product and overall vision. In fact, we were much more likely to run experiments on our customers than we were to cater to their whims.

Traditional business thinking says that this approach shouldn't work, but it does, and you don't have to take my word for it. As you'll see throughout this book, the approach we pioneered at IMVU has become the basis for a new movement of entrepreneurs around the world. It builds on many previous management and product development ideas, including lean manufacturing, design thinking, customer development, and agile development. It represents a new approach to creating continuous innovation. It's called the Lean Startup.

Despite the volumes written on business strategy, the key attributes of business leaders, and ways to identify the next big thing, innovators still struggle to bring their ideas to life. This was the frustration that led us to try a radical new approach at IMVU, one characterized by an extremely fast cycle time, a focus on what customers want (without asking them), and a scientific approach to making decisions.

ORIGINS OF THE LEAN STARTUP

I am one of those people who grew up programming computers, and so my journey to thinking about entrepreneurship and management has taken a circuitous path. I have always worked on the product development side of my industry; my partners and bosses were managers or marketers, and my peers worked in engineering and operations. Throughout my career, I kept having the experience of working incredibly hard on products that ultimately failed in the marketplace.

At first, largely because of my background, I viewed these as technical problems that required technical solutions: better architecture, a better engineering process, better discipline, focus, or

product vision. These supposed fixes led to still more failure. So I read everything I could get my hands on and was blessed to have had some of the top minds in Silicon Valley as my mentors. By the time I became a cofounder of IMVU, I was hungry for new ideas about how to build a company.

I was fortunate to have cofounders who were willing to experiment with new approaches. They were fed up—as I was—by the failure of traditional thinking. Also, we were lucky to have Steve Blank as an investor and adviser. Back in 2004, Steve had just begun preaching a new idea: the business and marketing functions of a startup should be considered as important as engineering and product development and therefore deserve an equally rigorous methodology to guide them. He called that methodology Customer Development, and it offered insight and guidance to my daily work as an entrepreneur.

Meanwhile, I was building IMVU's product development team, using some of the unorthodox methods I mentioned earlier. Measured against the traditional theories of product development I had been trained on in my career, these methods did not make sense, yet I could see firsthand that they were working. I struggled to explain the practices to new employees, investors, and the founders of other companies. We lacked a common language for describing them and concrete principles for understanding them.

I began to search outside entrepreneurship for ideas that could help me make sense of my experience. I began to study other industries, especially manufacturing, from which most modern theories of management derive. I studied lean manufacturing, a process that originated in Japan with the Toyota Production System, a completely new way of thinking about the manufacturing of physical goods. I found that by applying ideas from lean manufacturing to my own entrepreneurial challenges—with a few tweaks and changes—I had the beginnings of a framework for making sense of them.

This line of thought evolved into the Lean Startup: the application of lean thinking to the process of innovation.

IMVU became a tremendous success. IMVU customers have

created more than 60 million avatars. It is a profitable company with annual revenues of more than $50 million in 2011, employing more than a hundred people in our current offices in Mountain View, California. IMVU's virtual goods catalog—which seemed so risky years ago—now has more than 6 million items in it; more than 7,000 are added every day, almost all created by customers.

As a result of IMVU's success, I began to be asked for advice by other startups and venture capitalists. When I would describe my experiences at IMVU, I was often met with blank stares or extreme skepticism. The most common reply was "That could never work!" My experience so flew in the face of conventional thinking that most people, even in the innovation hub of Silicon Valley, could not wrap their minds around it.

Then I started to write, first on a blog called Startup Lessons Learned, and speak—at conferences and to companies, startups, and venture capitalists—to anyone who would listen. In the process of being called on to defend and explain my insights and with the collaboration of other writers, thinkers, and entrepreneurs, I had a chance to refine and develop the theory of the Lean Startup beyond its rudimentary beginnings. My hope all along was to find ways to eliminate the tremendous waste I saw all around me: startups that built products nobody wanted, new products pulled from the shelves, countless dreams unrealized.

Eventually, the Lean Startup idea blossomed into a global movement. Entrepreneurs began forming local in-person groups to discuss and apply Lean Startup ideas. There are now organized communities of practice in more than a hundred cities around the world.[1] My travels have taken me across countries and continents. Everywhere I have seen the signs of a new entrepreneurial renaissance. The Lean Startup movement is making entrepreneurship accessible to a whole new generation of founders who are hungry for new ideas about how to build successful companies.

Although my background is in high-tech software entrepreneurship, the movement has grown way beyond those

roots. Thousands of entrepreneurs are putting Lean Startup principles to work in every conceivable industry. I've had the chance to work with entrepreneurs in companies of all sizes, in different industries, and even in government. This journey has taken me to places I never imagined I'd see, from the world's most elite venture capitalists, to Fortune 500 boardrooms, to the Pentagon. The most nervous I have ever been in a meeting was when I was attempting to explain Lean Startup principles to the chief information officer of the U.S. Army, who is a three-star general (for the record, he was extremely open to new ideas, even from a civilian like me).

Pretty soon I realized that it was time to focus on the Lean Startup movement full time. My mission: to improve the success rate of new innovative products worldwide. The result is the book you are reading.

THE LEAN STARTUP METHOD

This is a book for entrepreneurs and the people who hold them accountable. The five principles of the Lean Startup, which inform all three parts of this book, are as follows:

1. Entrepreneurs are everywhere. You don't have to work in a garage to be in a startup. The concept of entrepreneurship includes anyone who works within my definition of a startup: a human institution designed to create new products and services under conditions of extreme uncertainty. That means entrepreneurs are everywhere and the Lean Startup approach can work in any size company, even a very large enterprise, in any sector or industry.

2. Entrepreneurship is management. A startup is an institution, not just a product, and so it requires a new kind of management specifically geared to its context of extreme uncertainty. In fact, as I will argue later, I believe "entrepreneur" should be considered a

job title in all modern companies that depend on innovation for their future growth.

3. Validated learning. Startups exist not just to make stuff, make money, or even serve customers. They exist to learn how to build a sustainable business. This learning can be validated scientifically by running frequent experiments that allow entrepreneurs to test each element of their vision.

4. Build-Measure-Learn. The fundamental activity of a startup is to turn ideas into products, measure how customers respond, and then learn whether to pivot or persevere. All successful startup processes should be geared to accelerate that feedback loop.

5. Innovation accounting. To improve entrepreneurial outcomes and hold innovators accountable, we need to focus on the boring stuff: how to measure progress, how to set up milestones, and how to prioritize work. This requires a new kind of accounting designed for startups—and the people who hold them accountable.

Why Startups Fail

Why are startups failing so badly everywhere we look?

The first problem is the allure of a good plan, a solid strategy, and thorough market research. In earlier eras, these things were indicators of likely success. The overwhelming temptation is to apply them to startups too, but this doesn't work, because startups operate with too much uncertainty. Startups do not yet know who their customer is or what their product should be. As the world becomes more uncertain, it gets harder and harder to predict the future. The old management methods are not up to the task. Planning and forecasting are only accurate when based on a long, stable operating history and a relatively static environment. Startups

have neither.

The second problem is that after seeing traditional management fail to solve this problem, some entrepreneurs and investors have thrown up their hands and adopted the "Just Do It" school of startups. This school believes that if management is the problem, chaos is the answer. Unfortunately, as I can attest firsthand, this doesn't work either.

It may seem counterintuitive to think that something as disruptive, innovative, and chaotic as a startup can be managed or, to be accurate, must be managed. Most people think of process and management as boring and dull, whereas startups are dynamic and exciting. But what is actually exciting is to see startups succeed and change the world. The passion, energy, and vision that people bring to these new ventures are resources too precious to waste. We can—and must—do better. This book is about how.

HOW THIS BOOK IS ORGANIZED

This book is divided into three parts: “Vision,” “Steer,” and “Accelerate.”

“Vision” makes the case for a new discipline of entrepreneurial management. I identify who is an entrepreneur, define a startup, and articulate a new way for startups to gauge if they are making progress, called validated learning. To achieve that learning, we’ll see that startups—in a garage or inside an enterprise—can use scientific experimentation to discover how to build a sustainable business.

“Steer” dives into the Lean Startup method in detail, showing one major turn through the core Build-Measure-Learn feedback loop. Beginning with leap-of-faith assumptions that cry out for rigorous testing, you’ll learn how to build a minimum viable product to test those assumptions, a new accounting system for evaluating whether you’re making progress, and a method for deciding whether to pivot (changing course with one foot anchored to the ground) or persevere.

In “Accelerate,” we’ll explore techniques that enable Lean Startups to speed through the Build-Measure-Learn feedback loop as quickly as possible, even as they scale. We’ll explore lean manufacturing concepts that are applicable to startups, too, such as the power of small batches. We’ll also discuss organizational design, how products grow, and how to apply Lean Startup principles beyond the proverbial garage, even inside the world’s largest companies.

MANAGEMENT’S SECOND CENTURY

As a society, we have a proven set of techniques for managing big companies and we know the best practices for building physical products. But when it comes to startups and innovation, we are still shooting in the dark. We are relying on vision, chasing the “great

men" who can make magic happen, or trying to analyze our new products to death. These are new problems, born of the success of management in the twentieth century.

This book attempts to put entrepreneurship and innovation on a rigorous footing. We are at the dawn of management's second century. It is our challenge to do something great with the opportunity we have been given. The Lean Startup movement seeks to ensure that those of us who long to build the next big thing will have the tools we need to change the world.

Part One
VISION

1
START

ENTREPRENEURIAL MANAGEMENT

Building a startup is an exercise in institution building; thus, it necessarily involves management. This often comes as a surprise to aspiring entrepreneurs, because their associations with these two words are so diametrically opposed. Entrepreneurs are rightly wary of implementing traditional management practices early on in a startup, afraid that they will invite bureaucracy or stifle creativity.

Entrepreneurs have been trying to fit the square peg of their unique problems into the round hole of general management for decades. As a result, many entrepreneurs take a "just do it" attitude, avoiding all forms of management, process, and discipline. Unfortunately, this approach leads to chaos more often than it does to success. I should know: my first startup failures were all of this kind.

The tremendous success of general management over the last century has provided unprecedented material abundance, but those management principles are ill suited to handle the chaos and uncertainty that startups must face.

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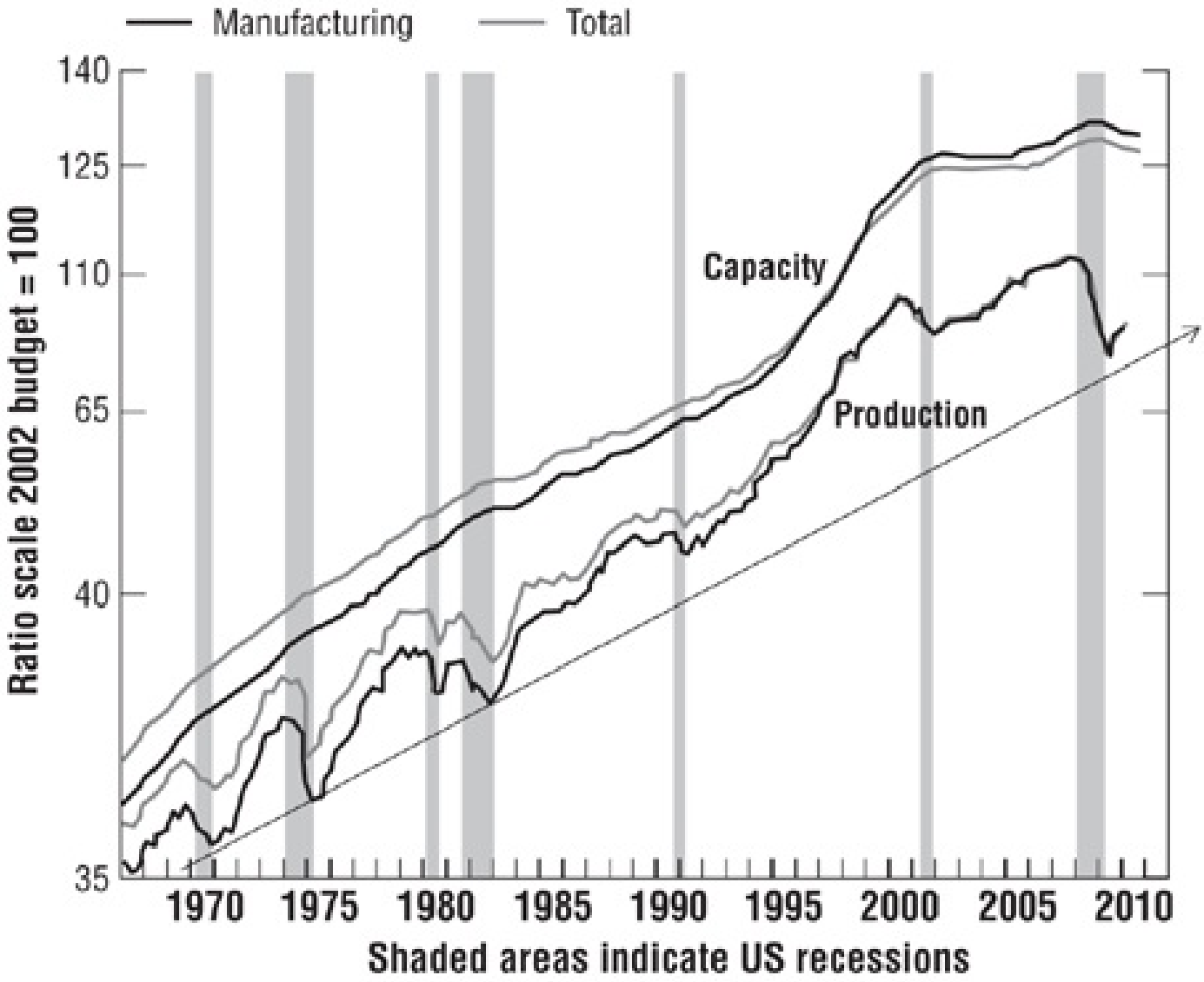
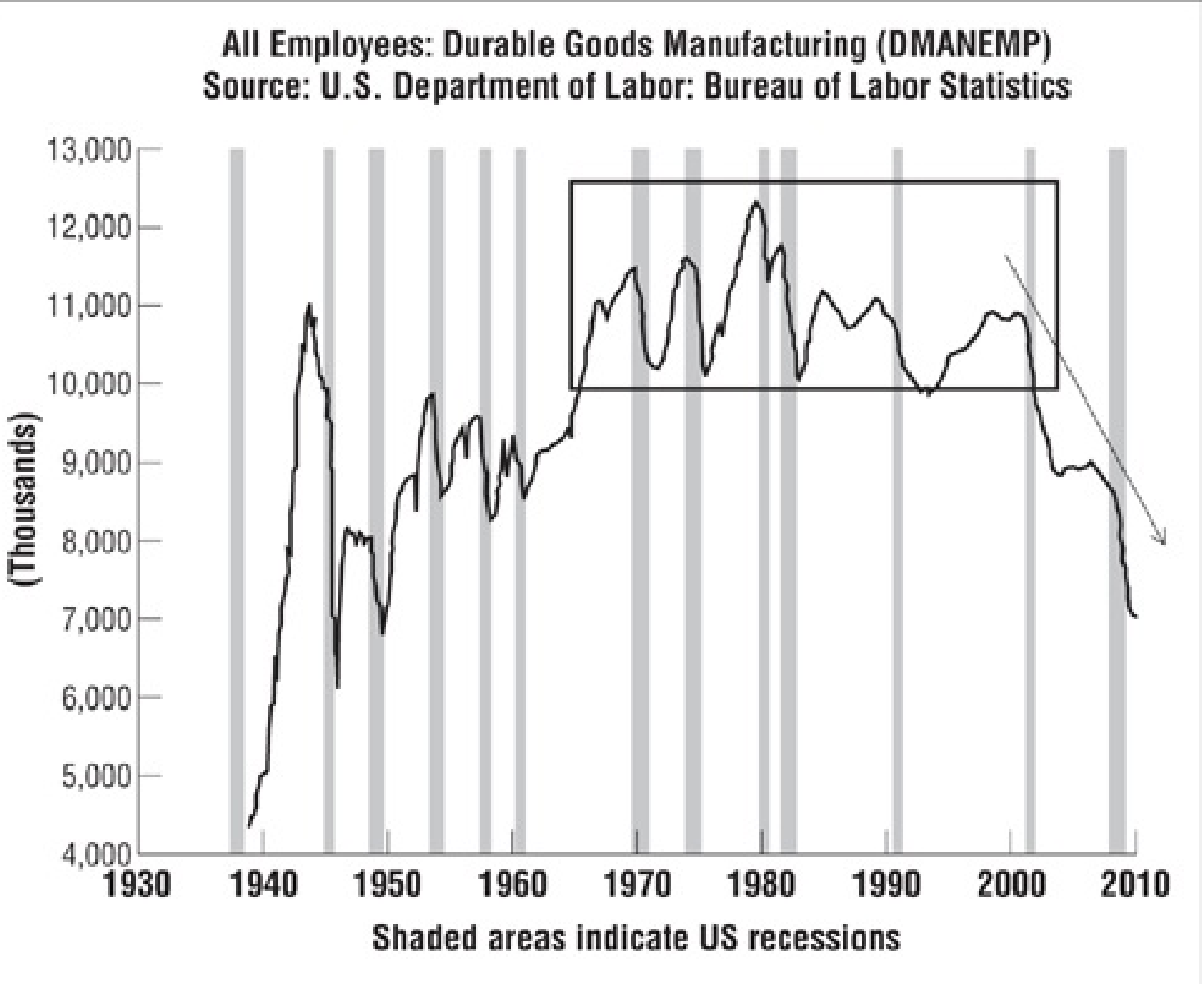
I believe that entrepreneurship requires a managerial discipline to harness the entrepreneurial opportunity we have been given.

There are more entrepreneurs operating today than at any previous time in history. This has been made possible by dramatic

changes in the global economy. To cite but one example, one often hears commentators lament the loss of manufacturing jobs in the United States over the previous two decades, but one rarely hears about a corresponding loss of manufacturing capability. That's because total manufacturing output in the United States is increasing (by 15 percent in the last decade) even as jobs continue to be lost (see the charts below). In effect, the huge productivity increases made possible by modern management and technology have created more productive capacity than firms know what to do with.[1]

We are living through an unprecedented worldwide entrepreneurial renaissance, but this opportunity is laced with peril. Because we lack a coherent management paradigm for new innovative ventures, we're throwing our excess capacity around with wild abandon. Despite this lack of rigor, we are finding some ways to make money, but for every success there are far too many failures: products pulled from shelves mere weeks after being launched, high-profile startups lauded in the press and forgotten a few months later, and new products that wind up being used by nobody. What makes these failures particularly painful is not just the economic damage done to individual employees, companies, and investors; they are also a colossal waste of our civilization's most precious resource: the time, passion, and skill of its people. The Lean Startup movement is dedicated to preventing these failures.


Manufacturing
Total
140
125
110
65
40
35
Ratio scale 2002 budget = 100
Capacity
Production
1970
1975
1980
1985
1990
1995
2000
2005
2010
Shaded areas indicate US recessions


All Employees: Durable Goods Manufacturing (DMANEMP)
Source: U.S. Department of Labor: Bureau of Labor Statistics
13,000
12,000
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1930
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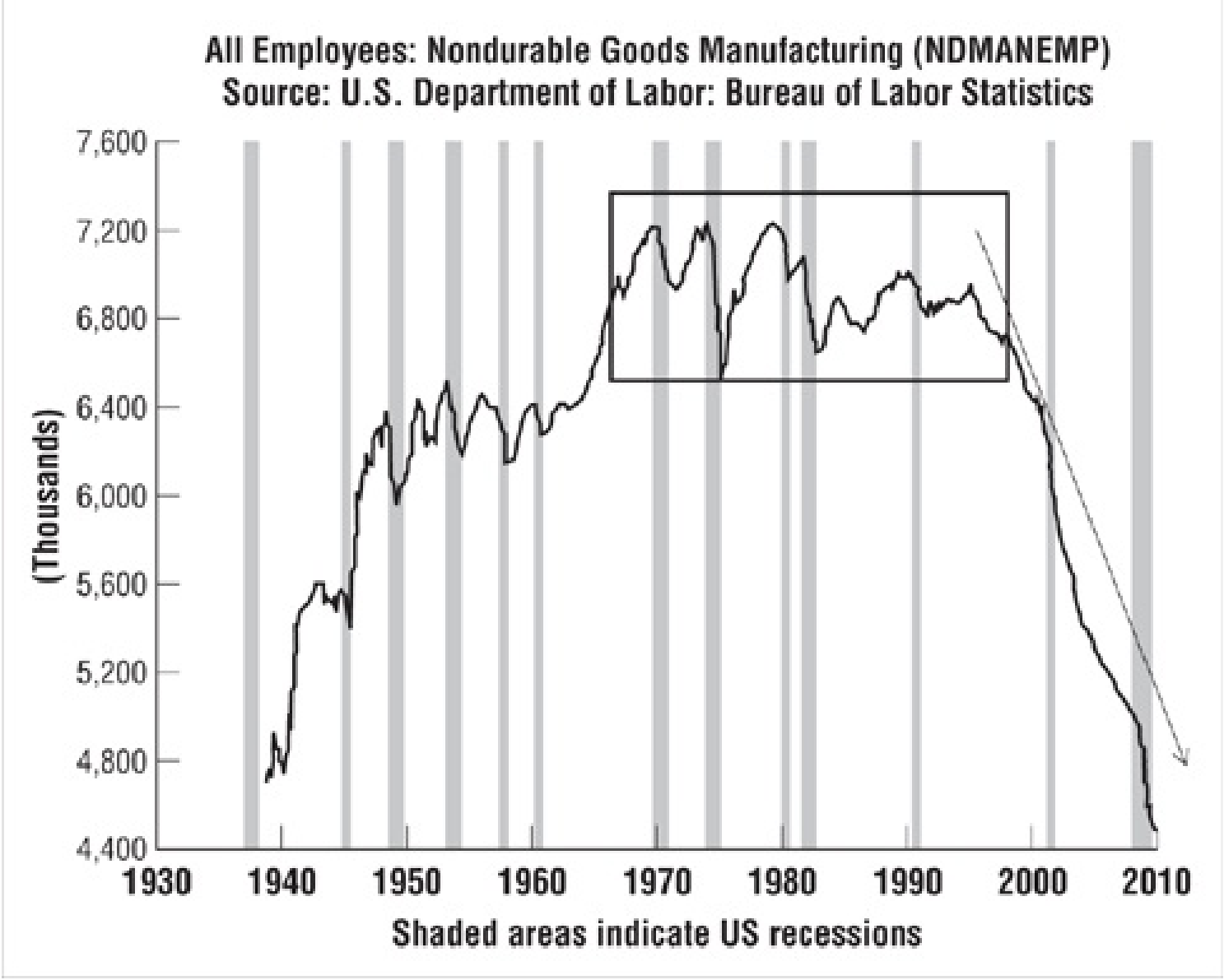
Shaded areas indicate US recessions



THE ROOTS OF THE LEAN STARTUP

The Lean Startup takes its name from the lean manufacturing revolution that Taiichi Ohno and Shigeo Shingo are credited with developing at Toyota. Lean thinking is radically altering the way supply chains and production systems are run. Among its tenets are drawing on the knowledge and creativity of individual workers, the shrinking of batch sizes, just-in-time production and inventory control, and an acceleration of cycle times. It taught the world the difference between value-creating activities and waste and showed how to build quality into products from the inside out.

The Lean Startup adapts these ideas to the context of entrepreneurship, proposing that entrepreneurs judge their progress differently from the way other kinds of ventures do. Progress in

manufacturing is measured by the production of high-quality physical goods. As we'll see in Chapter 3, the Lean Startup uses a different unit of progress, called validated learning. With scientific learning as our yardstick, we can discover and eliminate the sources of waste that are plaguing entrepreneurship.

A comprehensive theory of entrepreneurship should address all the functions of an early-stage venture: vision and concept, product development, marketing and sales, scaling up, partnerships and distribution, and structure and organizational design. It has to provide a method for measuring progress in the context of extreme uncertainty. It can give entrepreneurs clear guidance on how to make the many trade-off decisions they face: whether and when to invest in process; formulating, planning, and creating infrastructure; when to go it alone and when to partner; when to respond to feedback and when to stick with vision; and how and when to invest in scaling the business. Most of all, it must allow entrepreneurs to make testable predictions.

For example, consider the recommendation that you build cross-functional teams and hold them accountable to what we call learning milestones instead of organizing your company into strict functional departments (marketing, sales, information technology, human resources, etc.) that hold people accountable for performing well in their specialized areas (see Chapter 7). Perhaps you agree with this recommendation, or perhaps you are skeptical. Either way, if you decide to implement it, I predict that you pretty quickly will get feedback from your teams that the new process is reducing their productivity. They will ask to go back to the old way of working, in which they had the opportunity to "stay efficient" by working in larger batches and passing work between departments.

It's safe to predict this result, and not just because I have seen it many times in the companies I work with. It is a straightforward prediction of the Lean Startup theory itself. When people are used to evaluating their productivity locally, they feel that a good day is one in which they did their job well all day. When I worked as a programmer, that meant eight straight hours of programming without interruption. That was a good day. In contrast, if I was

interrupted with questions, process, or—heaven forbid—meetings, I felt bad. What did I really accomplish that day? Code and product features were tangible to me; I could see them, understand them, and show them off. Learning, by contrast, is frustratingly intangible.

The Lean Startup asks people to start measuring their productivity differently. Because startups often accidentally build something nobody wants, it doesn't matter much if they do it on time and on budget. The goal of a startup is to figure out the right thing to build—the thing customers want and will pay for—as quickly as possible. In other words, the Lean Startup is a new way of looking at the development of innovative new products that emphasizes fast iteration and customer insight, a huge vision, and great ambition, all at the same time.

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Henry Ford is one of the most successful and celebrated entrepreneurs of all time. Since the idea of management has been bound up with the history of the automobile since its first days, I believe it is fitting to use the automobile as a metaphor for a startup.

An internal combustion automobile is powered by two important and very different feedback loops. The first feedback loop is deep inside the engine. Before Henry Ford was a famous CEO, he was an engineer. He spent his days and nights tinkering in his garage with the precise mechanics of getting the engine cylinders to move. Each tiny explosion within the cylinder provides the motive force to turn the wheels but also drives the ignition of the next explosion. Unless the timing of this feedback loop is managed precisely, the engine will sputter and break down.

Startups have a similar engine that I call the engine of growth. The markets and customers for startups are diverse: a toy company, a consulting firm, and a manufacturing plant may not seem like they have much in common, but, as we'll see, they operate with the same engine of growth.

Every new version of a product, every new feature, and every

new marketing program is an attempt to improve this engine of growth. Like Henry Ford's tinkering in his garage, not all of these changes turn out to be improvements. New product development happens in fits and starts. Much of the time in a startup's life is spent tuning the engine by making improvements in product, marketing, or operations.

The second important feedback loop in an automobile is between the driver and the steering wheel. This feedback is so immediate and automatic that we often don't think about it, but it is steering that differentiates driving from most other forms of transportation. If you have a daily commute, you probably know the route so well that your hands seem to steer you there on their own accord. We can practically drive the route in our sleep. Yet if I asked you to close your eyes and write down exactly how to get to your office—not the street directions but every action you need to take, every push of hand on wheel and foot on pedals—you'd find it impossible. The choreography of driving is incredibly complex when one slows down to think about it.

By contrast, a rocket ship requires just this kind of in-advance calibration. It must be launched with the most precise instructions on what to do: every thrust, every firing of a booster, and every change in direction. The tiniest error at the point of launch could yield catastrophic results thousands of miles later.

Unfortunately, too many startup business plans look more like they are planning to launch a rocket ship than drive a car. They prescribe the steps to take and the results to expect in excruciating detail, and as in planning to launch a rocket, they are set up in such a way that even tiny errors in assumptions can lead to catastrophic outcomes.

One company I worked with had the misfortune of forecasting significant customer adoption—in the millions—for one of its new products. Powered by a splashy launch, the company successfully executed its plan. Unfortunately, customers did not flock to the product in great numbers. Even worse, the company had invested in massive infrastructure, hiring, and support to handle the influx of customers it expected. When the customers failed to materialize, the

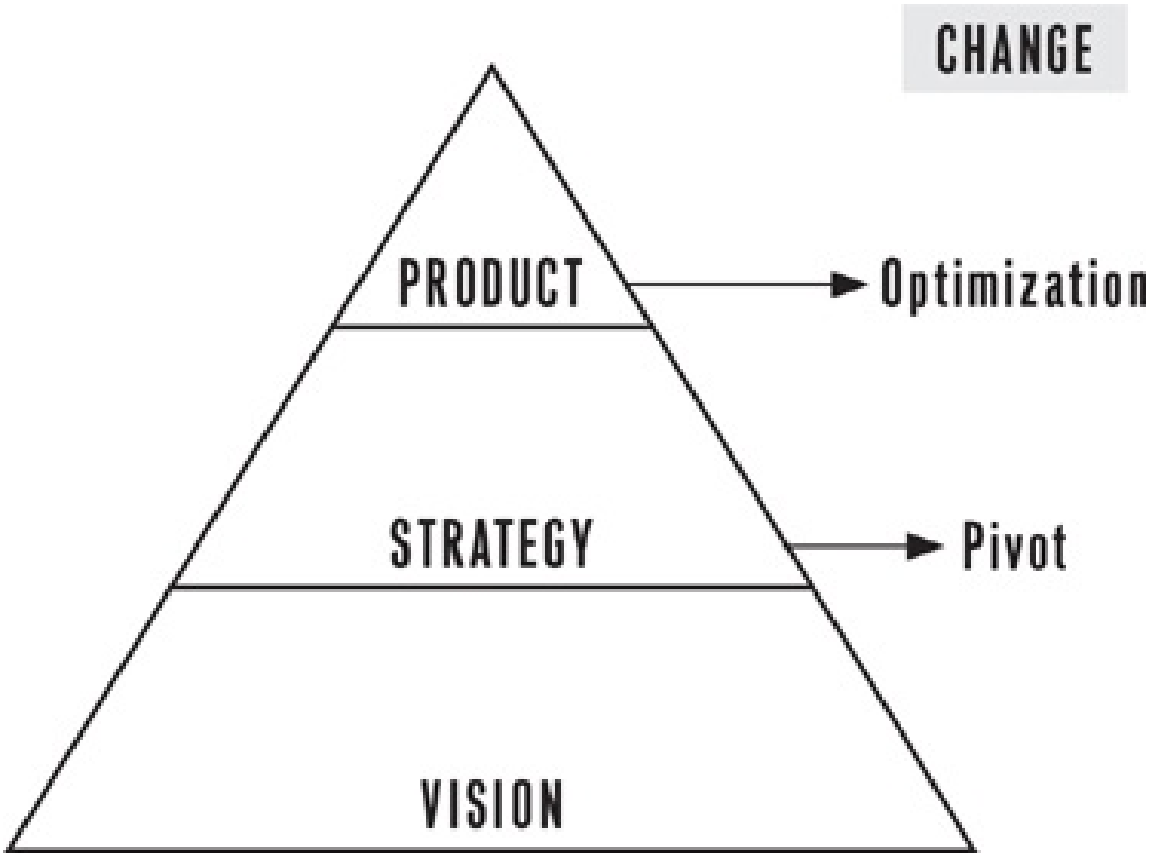
company had committed itself so completely that they could not adapt in time. They had "achieved failure"—successfully, faithfully, and rigorously executing a plan that turned out to have been utterly flawed.

The Lean Startup method, in contrast, is designed to teach you how to drive a startup. Instead of making complex plans that are based on a lot of assumptions, you can make constant adjustments with a steering wheel called the Build-Measure-Learn feedback loop. Through this process of steering, we can learn when and if it's time to make a sharp turn called a pivot or whether we should persevere along our current path. Once we have an engine that's revved up, the Lean Startup offers methods to scale and grow the business with maximum acceleration.

Throughout the process of driving, you always have a clear idea of where you're going. If you're commuting to work, you don't give up because there's a detour in the road or you made a wrong turn. You remain thoroughly focused on getting to your destination.

Startups also have a true north, a destination in mind: creating a thriving and world-changing business. I call that a startup's vision. To achieve that vision, startups employ a strategy, which includes a business model, a product road map, a point of view about partners and competitors, and ideas about who the customer will be. The product is the end result of this strategy (see the chart on this page).

Products change constantly through the process of optimization, what I call tuning the engine. Less frequently, the strategy may have to change (called a pivot). However, the overarching vision rarely changes. Entrepreneurs are committed to seeing the startup through to that destination. Every setback is an opportunity for learning how to get where they want to go (see the chart below).



In real life, a startup is a portfolio of activities. A lot is happening simultaneously: the engine is running, acquiring new customers and serving existing ones; we are tuning, trying to improve our product, marketing, and operations; and we are steering, deciding if and when to pivot. The challenge of entrepreneurship is to balance all these activities. Even the smallest startup faces the challenge of supporting existing customers while trying to innovate. Even the most established company faces the imperative to invest in innovation lest it become obsolete. As companies grow, what changes is the mix of these activities in the company's portfolio of work.

Entrepreneurship is management. And yet, imagine a modern manager who is tasked with building a new product in the context of an established company. Imagine that she goes back to her company's chief financial officer (CFO) a year later and says, "We have failed to meet the growth targets we predicted. In fact, we have almost no new customers and no new revenue. However, we have learned an incredible amount and are on the cusp of a breakthrough new line of business. All we need is another year." Most of the time, this would be the last report this intrapreneur would give her employer. The reason is that in general management, a failure to deliver results is due to either a failure to plan adequately or a failure to execute properly. Both are significant lapses, yet new product development in our modern economy routinely requires exactly this kind of failure on the way to greatness. In the Lean Startup movement, we have come to realize that these internal innovators are actually entrepreneurs, too, and that entrepreneurial management can help them succeed; this is the subject of the next chapter.