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Most of us think of entrepreneurship as the antithesis of traditional management, especially when it comes to the stars of the digital economy, like, say, Eric Ries. But Ries, who is known for extolling the virtues of rapid-fire innovation—he coined the term *minimum viable product* to describe his methodology for getting new products (sometimes barely functioning prototypes) into the hands of customers as early as possible—views things in a different light. Entrepreneurship is not an op-posing force to "serious" management, he says, but its own distinct, and complementary, variety of it.

Ries can be as passionate about spreadsheets and accounting as he is about fast prototyping. He is as apt to advise listeners to "slow down and learn" as he is to urge them to "get out and build." In his 2011 book, *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses* (Crown Business), he urges leaders to look past the standard view of launching new ventures

(and perhaps business at large) as a tug of war between creative risk takers and pragmatic controllers. "What we really need," he says, "is a new general theory of management." Not exactly the words of an entrepreneurialism absolutist.

Ries, who is entering his third year as entrepreneur-in-residence at Harvard Business School (where his ideas have been developed into required-course materials in the MBA curriculum), has among the most diverse portfolios in Silicon Valley.

He was involved in his first startup as a college undergraduate and his second, There Inc., at the age of 24 in 2001. Although There failed, three years later he cofounded another startup, IMVU, a social entertainment arena where people communicate and play games, represented by 3D graphic avatars. The company released its first product just six months after its founding; nearly a decade later, it is still going strong. Today, Ries is a venture capitalist, a blogger, a darling of the SXSW festival, a book author, and a regular advisor to other entrepreneurs. He has inspired a group of followers so passionate that they form clubs to talk about his ideas. Ries hosts an annual Lean Startup

conference, and counts among his clients General Electric, Intuit, and, of course, a slew of ventures you've not (yet) heard of.

Along the path of his entrepreneurial adventures, Ries began to notice some "truths" about what worked in launching new businesses, what didn't, and why. He cataloged and chronicled those observations in what became a must-read blog called Startup Lessons Learned.

with the Toyota production system developed after World War II. Over the course of the 20th century, lean revolutionized traditional business in a range of industries and functions, eliminating waste and boosting efficiency in manufacturing, the back office, healthcare, marketing, and so on. Later it spread to product development.

At the core of the idea is that you can look at an enterprise

facturing—fast cycle times, boosting efficiency, eliminating waste—and apply them in situations where the traditional tools of planning and forecasting don't work because of uncertainty.

S+B: Applying the principles of a 60-year-old manufacturing process doesn't sound like a rallying cry that will get the blood pumping for aspiring entrepreneurs.
RIES: We make movies about brilliant entrepreneurial visionaries because that's what's interesting, but a startup is an organism—a human institution. It is not just the creation of a heroic individual. It is a system of individuals working together toward a common goal.

And so entrepreneurship is management. It is fundamentally about organizing people to do something. Everything else that happens is a side effect of that organization. Nothing gets me in more trouble than when I speak to audiences about this, because I'm supposed to talk about cool, hip startup stuff like minimum viable products [MVPs], and I come in and say, "We're going to talk about management, and in a minute we'll talk about accounting." In San Francisco, that's considered uncool. But that's what startups and entrepreneurship are really about. And I think we're going to have to confront that if we're going to get better at it.

S+B: So a core tenet of your approach is the need to apply rigorous management in a context that's naturally resistant to it. Is that fair?
RIES: That's definitely fair. But I wouldn't necessarily put it that way, because I want us to reclaim the word *management* and take it away from an association with bureau-

"Entrepreneurship is management. It is fundamentally about organizing people to do something."

His thoughts began to gain greater traction, first within Silicon Valley and then beyond it. His book cemented his reputation as one of the most important and influential young management thinkers. In a wide-ranging interview at Ries's home in the Ashbury Heights section of San Francisco, Ries presented a view of startup effectiveness—whether achieved by an individual or by a company—grounded in mastery of what he calls "the boring stuff: how to measure progress, how to set up milestones, how to prioritize work" (*see "The Five Principles of the Lean Startup," page 6*). Known by some for his aphorism "You don't have to work in a garage to be in a startup," Ries also makes the case that no matter the size of your organization, you need to embrace some of the spirit of the garage if you are going to survive in an unpredictable, innovation-driven economy.

S+B: First, the basics. Define lean.
RIES: *Lean* refers to a body of thought and practice that originated

through the eyes of a customer and discover which things really deliver value versus which do not. Everything that does not is wasteful and can be eliminated. Maybe the most famous lean idea focuses on the fundamental cycle time between when you receive an order from a customer and when the customer receives a high-quality product that meets his or her needs on time at a good price. You do everything possible to drive that cycle time down to increase efficiency.

S+B: And your definition of *startup*?
RIES: It's a human institution designed to create something new under conditions of extreme uncertainty. I've been using that definition for a long time, and during the last couple of years I realized that the most important aspect of that definition is what it doesn't say. It doesn't say you're in a garage. It doesn't say what industry you're in, or the size of the company. It's completely agnostic.

With the "lean startup" concept, we take ideas from lean manu-

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cracy, checklists, and rigid ways of thinking.

We need management more than ever because we are confronting more and more uncertainty. We must cease to think of it as a way to organize people. Management must be a way to predict the future, keep things orderly, and drive out variation. We've seen that in manufacturing, but it also needs to apply to the practice of innovation, even as we try to provoke variability and cause disruption.

S+B: It sounds like you're telling the wild-eyed entrepreneurs they need to rein it in, and the established company that it needs to loosen up.
RIES: I have experienced the phenomenon of being unwelcome in both camps. From the point of view of many entrepreneurs, launching something new is all about punching the universe in the face till it does what you want. It involves machismo and making things happen through sheer determination. To those people, talking about management seems really boring. But in a traditional organizational context, to some I sound crazy.

Of course, large companies are full of entrepreneurs and always

have been. Where did all those different business divisions come from? Were they handed down from God on tablets? No, they were created. They were once startups.

S+B: How does that affect the typical innovation process in a large company?
RIES: Most of these companies have some version of a stage-gate development process for new products. It's a linear, rigorous, checklist-based process with a series of go/kill decisions. All these companies have introduced successful new products. Their win rate may not be very high, but the law of large numbers says every company has at least some new product successes.

I've noticed a strange phenomenon. If I ask the senior management for an example of the stage-gate process working well, they'll tell me about a successful new product they just launched. Then, when I interview the product development team—I'm always looking for new case studies—the conversation will go something like this:

"Did you guys follow the stage-gate process?"

"Are you kidding? Of course we didn't."

"Why does senior management think you did?"

"Well, that's what we told them. You get fired if you don't check the boxes. But we actually set up a parallel process to bring out the product, working off the books, and then we retroactively applied the stage-gate process to describe what happened."

The first time I heard this, my reaction was: "You committed fraud against the corporation. You should be fired." The response was always the same: "You don't understand. Nobody in this company believes these reports. Nobody thinks the official process works."

In nearly every big company, the real work of developing new products and new businesses is happening underground, in secret. There's an incredible amount of inefficiency and waste because we go through these gyrations to pretend we're following a completely different process. We try to fit the circle into the square box.

S+B: So there is a subtle chaos at work in organizations everywhere?
RIES: Sort of, but it's not the product development process that's chaotic. It's the world. In traditional compa-

nies, people carve out this beautiful little bubble of orderliness and calm and low variation—or they think they do. But that's getting harder and harder to sustain as business becomes more and more uncertain, as things keep moving faster.

The cost of starting a new company is going down. And the distribution and scale that it's now possible for even a tiny little company to access is growing. So, in previously safe industries, where there were very few competitors and an oligopoly once controlled everything, you can now wake up one day to find that 100 startups have entered your market, and then things suddenly go to hell. We're all facing that chaos.

Part of the challenge is just to acknowledge that the reality of competition has changed, rather than trying to fit the signals from an increasingly uncertain world into forecasting-based spreadsheets that demand predictability.

S+B: How is your methodology different?
RIES: It starts with a few principles. We've talked about two of them. First, entrepreneurs are everywhere; not just two guys in the garage but anyplace uncertainty is being managed. Second, entrepreneurship is a system of management.

Next, there's the idea of validated learning. The most difficult problem in entrepreneurship is that you can't tell if you're making progress. For people who have only ever held a "regular" management job, this is a foreign idea. They try to use the same measurement tools from elsewhere in the organization and we end up with those shadow startups in large companies.

Compare that to your typical Silicon Valley startup. The business plan says that on such-and-such date the product will be launched and a certain amount of time later we'll have this many customers and that much revenue. There's always a beautiful appendix with spreadsheets and hockey-stick graphs. The hockey stick shows a few months passing after the product launch, with the curve nice and flat—and then boom, up into the black.

People forget that the defining characteristic of the hockey-stick shape is the long, flat blade, not the vertical shaft. I've been in startups where we launched our product, and six months afterward we thought we were on track. "Wow, we have almost no customers and almost no revenue; we're on plan. We're going to have a hockey stick in three, two, one…." Then I had the really painful experience of being in the flat part indefinitely. There was no meteoric rise up the handle.

What happened? We were on time. We were on budget, on schedule. We did everything that we said we were going to do. It took me a long time to understand the real fundamental issue: It is impossible in a startup situation to make an accurate forecast.

Then how do you measure your progress? How do you hold yourself and your colleagues accountable during the early stages of building a new business? This ties to my greatest fear as an entrepreneur: going to sleep at night unsure of what I accomplished. I know I spent some money. I kept a lot of people busy. We built some new features and hit some development milestones. But if I'm building something that nobody wants, why would I be proud that I did it on time and on budget?

The antidote is validated learning. You prove one step at a time that you are figuring out how to build a sustainable business. That's where the concept of minimum viable product comes in. Instead of building the whole product over many years and shipping it all at once, you try to find the smallest experimental version of the product you can launch, to begin the process of getting feedback.

S+B: What are you measuring in that feedback?
RIES: Learning is the unit of progress in entrepreneurship. It's more important than making money, getting customers, building features, or engineering technical quality. Of course, those things are important, but only insofar as they contribute to learning what creates value and what creates waste.

In the lean startup, we assume that we know nothing; we don't even know who our customer is. We have nothing but a hypothesis. We use that hypothesis to pull experiments through our "factory" as quickly as possible and get them into the hands of potential customers, with the goal of maximizing learning and eliminating waste. At the outset, waste is anything that doesn't contribute to the learning.

S+B: How might an actual product go through this process?
RIES: Our first goal is to build a minimum viable product: a working prototype we can get into the hands of prospective customers. We do this by constraining the production run—say, to 100 or even just 10. Then we move right past traditional market research; we just go ahead and sell them. We skip traditional distribution channels, which would obviously be wasteful for such a small number. We go to one store, or

maybe one customer, and try to get them to use the product. We sell it ourselves. There's no sales team. We are personally in the store persuading customers.

S+B: It's like something out of a 1935 county fair.
RIES: Right, it's extremely low-tech. The goal, remember, is to start the learning process. I don't care if you're a new company or P&G—chances are, you won't succeed the first time you try. For example, if no one's ever seen a Swiffer mop, how do you know what aisle it should be in? All sorts of questions come up with a truly new product. People walk up and say, "What is this thing, and why are you trying to sell it?" Most people won't be interested.

But guess what? That would be true if you launched on a larger scale anyway. The technology life-cycle adoption curve is New Products 101. Every product requires you to go through an early-adopter phase before it gets to the mainstream.

One counterintuitive lesson from this is the need to hold back your marketing. If you know that you'll have to sell to early adopters before you sell to the mainstream, then every bit of work that you do beyond appealing to early adopters is waste, even if you do it in the name of quality.

A lot of people won't buy a product they've never heard of from a guy in a booth at a store, but they're not your market yet. People with a real need for the benefit this product

provides are willing to overlook things that other people might not. They accept defects in packaging, design, and usability because they want the benefits so badly.

In this experiment, we learn which customers value the product and hopefully why. We also learn what the customer is willing to pay. We start to learn how to distribute it. Our assumptions no longer require a leap of faith; we now know something about them.

S+B: And if the experiments are successful and customers take to the product?
RIES: You can then proceed along your normal business plan: Increase product runs, go from 10 to 100 to 1,000, eventually do the big launch. But my prediction, based on every startup I know, is that in that early sequence somewhere you will discover that certain leap-of-faith assumptions in your business plan are wrong. You'll have to do what we call a pivot: a change in strategy without a change in vision. You may pivot several times before you get it right—if you get it right at all.

S+B: What you're espousing is more than a change to current product development approaches. There are more deep-seated issues here.
RIES: Woe to any manager who comes in one day and says, "Guys, we're doing MVP, starting today. Let's just do it." This approach is a radical change to the systems that companies use to govern themselves.

It requires thoughtful executive management and leadership.

When I first started writing about lean startup ideas, if you had told me big companies were going to make this kind of transformation, I would have said, "Impossible. They're too hard, too set in their ways, too bureaucratic." It's only because some visionary leaders came to me and said, "I want to try this out, can we do this together?" that I've seen it happen.

You have to change how people hold the startup accountable inside the established organization. In fact, the same goes for a startup with venture capitalists [VCs]. You have to be able to prove to somebody else that you're making progress, and that the progress is not just academically interesting but economically viable. VCs are every bit as demanding about their investments as corporate VPs.

S+B: How do you *measure* that progress?
RIES: This is where accounting enters the picture. But first, we need to look more closely at the problem with current forms of measurement.

At the outset of launching a new venture, the business plan is always based on this sentiment: "Listen, VC, spouse, or CFO—if you give me $1 million, or our whole life savings, or a year and this team of five people, I promise you astronomical results. We're going to have millions of customers and we're going to be on the cover of magazines. It's

The Five Principles of the Lean Startup

As the name implies, the lean startup is an efficiency-minded methodology for launching new businesses, whether they are stand-alone new ventures or ventures within existing enterprises. We are reprinting Ries's own published primer on the five principles that characterize the lean startup.

Entrepreneurs are everywhere. You don't have to work in a garage to be in a startup.

Entrepreneurship is management. A startup is an institution, not just a product, so it requires management, a new kind of management specifically geared to its context.

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

Innovation accounting. To improve entrepreneurial outcomes, and to hold entrepreneurs accountable, we need to focus on the boring stuff: how to measure progress, how to set up milestones, how to prioritize work. This requires a new kind of accounting, specific to startups.

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.

going to be great."

The political capital that you and your team have is never so high as the day after the money and the plan are authorized. It decreases steadily from that day forward. One year later, I guarantee the money has been spent on schedule. Everybody has been very busy. You probably did a good job hitting your milestones. But what are the odds that you beat the forecast results? The incentive in creating the forecast was making it as big as possible to increase your odds of getting the funding. Now that huge forecast is a major liability. Quite often, you're back in front of the VC, spouse, or CFO saying, "Remember when we projected millions of customers? Just kidding. We have hundreds. And remember when I said we'd have billions in revenue? Just kidding. We have thousands. But we have learned so much! And boy, if you just give us another year and $25 million more and a bigger team, I promise you it will work this time."

I tell this joke all the time in corporate settings, and people laugh hysterically because they know in a mature company that guy's about to get fired. *Learning* is a four-letter word in most companies; learning means you failed to do what you said you were going to do, which, in turn, means you're a bad manager.

At the same time, we love to make fun of the CFOs, accountants, and managers who cancel promising projects right before they're about to pay off. But you have to look at things from their point of view. If you come back from your great expensive adventure with almost no customers and almost no revenue, it could mean one of two things. You learned something great and you're on the brink of success, or you're Bozo the Clown and you've accomplished absolutely nothing.

If you can't tell the difference between an A-plus and an F-minus, that is a total paradigm breakdown. And clearly, we can't take it for granted that finance can sort out this mess. Traditional accounting metrics—profitability, ROI, net re-

turn on assets, IR—all show zero in the early stages, even if you are the next Twitter. That's not the accountant's fault or the CFO's fault. That's the paradigm's fault.

There's no way for the finance people and corporate management to make a good decision, because the metrics they're trained to look at are the wrong ones. They may end up killing projects on the cusp of greatness, letting others go on with no chance of succeeding, and—almost as bad—pushing the ones that show promise forward too quickly.

For some products, the process of testing and iteration takes a long time. How can you have the patience to make investments over years or decades, when your ROI during that period is guaranteed to be negative? If we measure progress differently, it is possible to sustain that kind of commitment. Lean startup is short-term action in the service of long-term vision. It's our way of quantifying validated learning, to learn objectively who's making progress and who's not.

> *"Learning* is a four-letter word in most companies; learning means you failed to do what you said you were going to do."

S+B: What are the units of progress you should monitor?

RIES: We still build spreadsheets—the finance guys insist on it—but they are built off more fundamental assumptions that we can test. This demonstrates that learning something about a customer is worth money to the company.

For example, the first assumption in the spreadsheet might be the number of customers willing to try the minimum viable product every day, beginning with the launch date. That becomes the basis of everything that follows: conversion rate of trial customers to purchasers, their repeat purchase rate, and so on.

If everything goes according to the spreadsheet, five years from now we'll make $100 million. But suppose that first input is wrong. Say we hypothesized that we could persuade 10 percent of customers to sign up for a free trial. Everything in the spreadsheet is based on that assumption. What if that input is actually 0 percent? The five-year forecast instantly goes from $100 million to zero.

So, the first thing we measure on the path to launching our great new product—our first "learning milestone"—is the accuracy of our hypothesis about customer uptake. We celebrate the successful milestone of discovering what that input is in real life, so that we're no longer in a spreadsheet fantasy.

Imagine that after you talk to 50 customers in a booth in the store, only one of them takes the product home. In traditional corporate settings, that's bad news that has to be suppressed. You don't want anyone to find out that you had a failure, because it means canceling the project. But I'm trying to train the new generation of finance leaders to say, "This is great news. We know where we are. That's a successful milestone. Check, good job."

Now the experimentation begins. Build, measure, learn—on that cadence. What do we need to do to push that 2 percent customer signup rate closer to 10 percent? Every basis point improvement in that metric is worth a defined amount of money five years from now. At 0 percent, this business is worth zero dollars. At 10 percent, it's worth $100 million. This is still a hypothesis at the far end, but we are taking the first step to test it.

With the very first learning milestone, you show quantitatively that learning is worth something to

the company if all the other assumptions check out. But right now, you are only concerned with testing the first assumption. You will gradually test all the assumptions in the spreadsheet. As you do, you build a more accurate model of what the business is really worth.

S+B: You said you can't suddenly drop this approach into a large, multibillion-dollar global organization; the shock to the system is too great. What conditions are required to make this work?

RIES: First, we need a general theory of management. It would recognize that what we used to call general management and what I've been calling entrepreneurial management are both particular cases. A general theory would encompass both forms of management, and in fact modern companies must. I think it's an existential imperative. If you are not an innovation factory, you will be replaced by someone who is.

I think modern management will look a lot like portfolio theory. You wouldn't put a guy who manages equities in charge of a bond fund and vice versa. Your high-risk, high-reward entrepreneurs need to

> **"The great thing about startups is that if they're successful, they grow. You don't have to change the whole corporate culture."**

be managed differently, to a different set of metrics and a different system than the conservative operational people who are running your existing products.

The problem is that in finance, equities never become bonds. They're separate assets. But successful entrepreneurial products grow up to become established products. Under the old system, the people who launch a product tend to migrate with it. That causes a lot of problems because the skills and attitudes that make for effective entrepreneurs don't necessarily make for effective managers of status quo operations.

I believe a general theory of management is emerging. It has to help people understand (1) how you take an idea, how you get it started, and how you manage the kind of people who do that well; (2) how you incorporate experiments into your core strategy; (3) how you graduate a new thing that's been successful into your general business operations and manage it as a mature product; and (4) how you manage a product's end-of-life, where you have to outsource and reduce costs. I think of those as the four quadrants of the portfolio.

S+B: What does this do to our traditional beliefs about corporate culture?
RIES: First, as we've discussed, you have to change the way you hold people accountable: Change the accounting systems and metrics. Then you need to allow teams to self-organize around this new way of launching ventures—around building and testing minimum viable products, managing pivots, and so on.

I guarantee you these teams will produce a more innovative culture, and that culture will allow you to attract and retain the best people in those teams.

The great thing about startups is that if they're successful, they grow. You don't have to change the whole corporate culture. You have to create a space where a new culture can be piloted and grow.

In the portfolio approach, it's not important for every part of the company to have precisely the same culture. But certain common elements will cross the full organization.

Think about GE—such a strong culture of discipline, rigorous execution, and management training. As I've watched the company adopt lean startup ideas, the com-

monalities have been great with its existing culture because lean startup is itself a rigorous methodology. We don't lose the rigor and accountability, but we put in place different metrics, milestones, and checklists.

We don't need to reinvent corporate culture, but we need to recognize that the culture will manifest itself in different ways in different parts of the portfolio. That itself is a pretty big shift. **+**

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