In magazines and newspapers, in blockbuster movies and on countless blogs, we hear the mantra of 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 rationalisation. In fact, having worked with hundreds of entrepreneurs, I have seen at first hand 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?
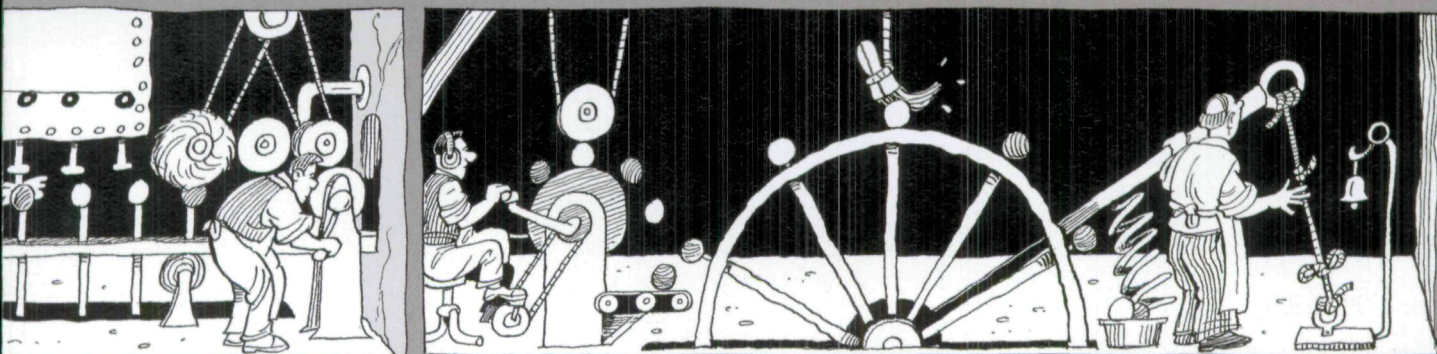
ENTREPRENEURIAL MANAGEMENT

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 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 10 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 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

SUCCESS FACTORY

winners can be manufactured, argues ERIC RIES, the author of *The Lean Startup*
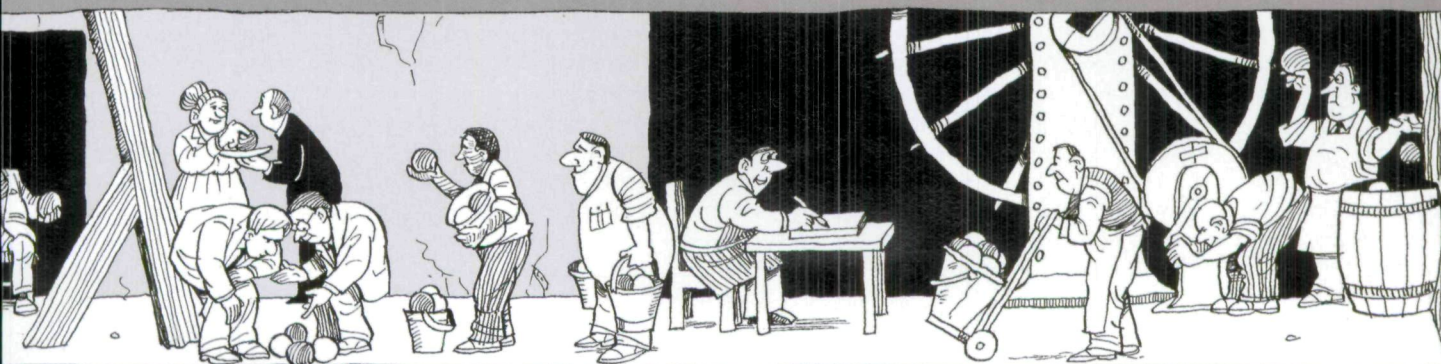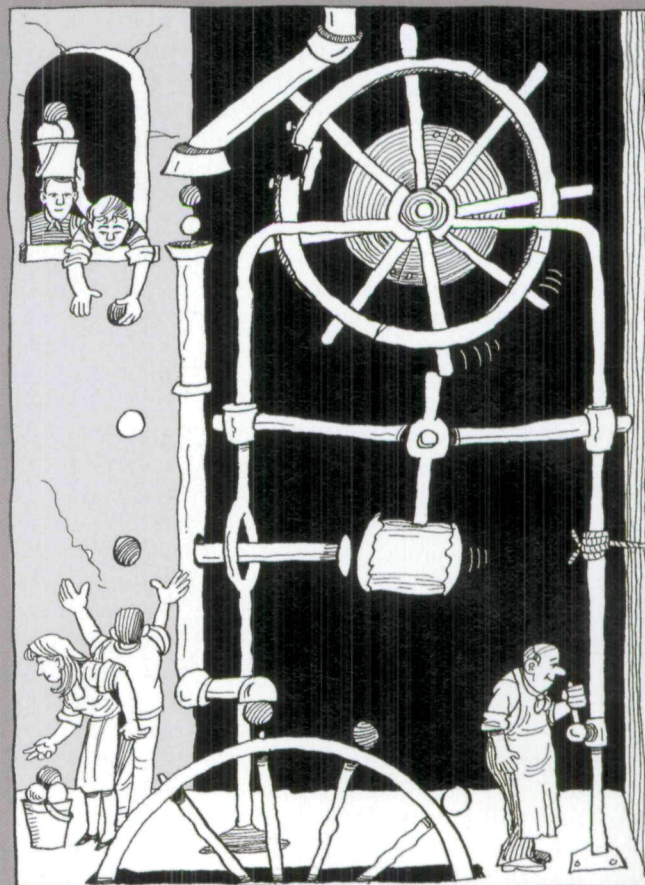

Dave Eastbury

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. These two words have wildly divergent associations. 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.

A STARTUP TURNED ON ITS HEAD

Let me tell you a startup story. It's 2004, and a group of founders have just started a new company. Their previous one had failed very publicly. Their credibility is at an all-time low. They have a vision: to change the way people communicate by using a new technology called avatars. The engineering challenge is immense: creating virtual worlds, user-generated content, an online commerce engine, micropayments, and – last but not least – 3D avatar technology that can run on anyone's PC.

I'm a cofounder and chief technology officer of this company, 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 (MVP) that is terrible, full of bugs and crash-your-computer stability problems.

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 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 to cater to their whims. Traditional business
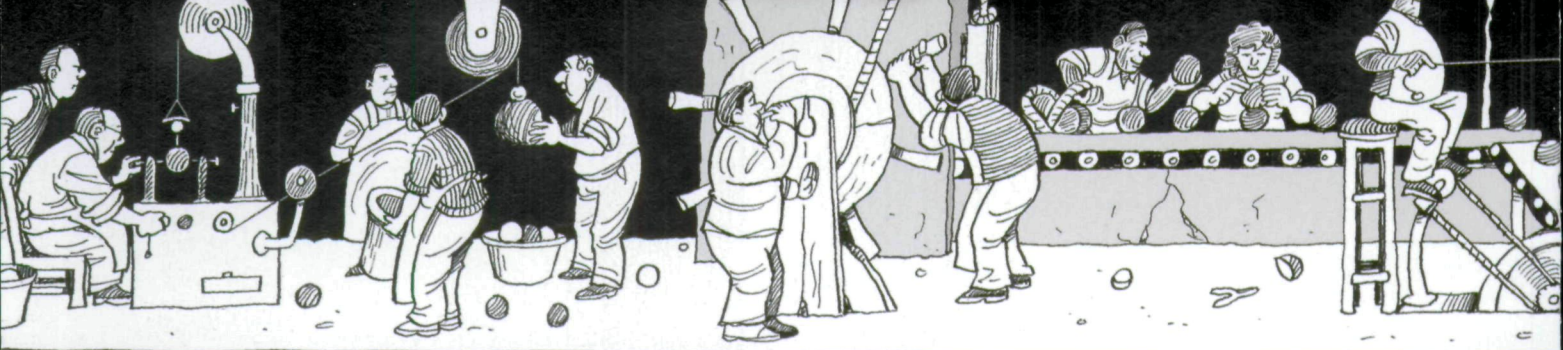
thinking says that this approach shouldn't work, but it does, and you don't have to take my word for it.

THE LEAN THEORY

The approach we pioneered at IMVU has become the basis for a new movement of entrepreneurs around the world. It builds on many management and product development ideas, such as lean manufacturing, design thinking, customer development and agile development. It is 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 the ways to identify the next big thing, innovators still struggle to bring their ideas to life. This frustration led us to try a radical approach at IMVU, characterised by an extremely fast cycle time and scientific decision-making.

Measured against the traditional theories of product development I'd been trained on, these methods did not make sense; yet I could see that they were working. I struggled to explain the practices to new employees, investors and the founders of other firms. We lacked a common language for describing them and concrete principles for understanding them.

I began to search outside entrepreneurship for ideas that might help me make sense of my experience. I studied other industries, especially manufacturing, from which most 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 manufacturing 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.

FIVE PRINCIPLES OF THE LEAN STARTUP

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, and 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 in order to grow.

3. *Validated learning.* Startups exist not just to make stuff, make money, or even serve customers. They exist as a source of learning about 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, set up milestones and prioritise work. This requires a new kind of accounting designed for startups – and the people who hold them accountable.

WHY NEW BUSINESSES 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 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 issue 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' approach. This school believes that if management is the problem, chaos is the answer. Unfortunately, as I can attest, 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 *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.

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 analyse our new products to death. These are new problems, born of the success of management in the 20th century. 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. They 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 the 'just do it' attitude, avoiding all forms of management, process and discipline. Unfortunately, this leads to chaos more often than it does to success. I should
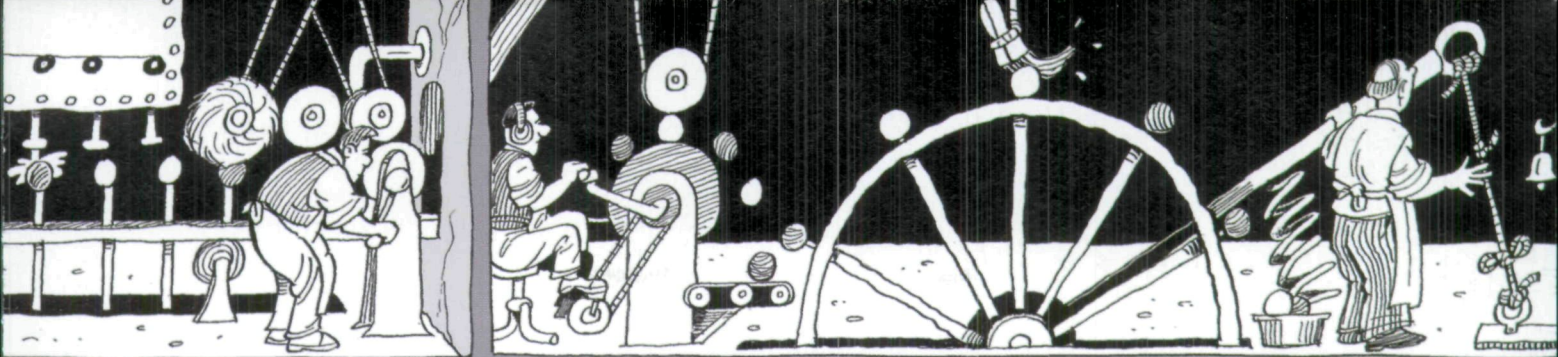
know: my first startup failures were all of this kind. The tremendous success of general management over the past century has provided unprecedented material abundance, but those management principles are ill suited to handle the chaos and uncertainty that startups must face. I believe that entrepreneurship requires a managerial discipline to harness the entrepreneurial opportunity we have been given – the Lean Startup.

ORIGINS 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 radically altered the way supply chains and production systems were 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. 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 plague entrepreneurship.

MEASURE AND EXPERIMENT

At the beginning, a startup is little more than a model on a piece of paper. The financials in the business plan include projections of how many customers the company expects to attract, how much it will spend, and how much revenue and profit that will lead to. It's an ideal that's usually far from where the startup is in its early days.

A startup's job is to (1) rigorously measure where it is right now, confronting the hard truths that assessment reveals, and then (2) devise experiments to learn how to move the real numbers closer to the ideal reflected in the business plan.

Most products – even those that fail – do not have zero traction. They have some customers, some growth, and some positive results. Employees and entrepreneurs tend to be optimistic. We want to keep believing in our ideas even when the writing is on the wall. This is why the myth of perseverance is so dangerous. We all know stories of epic entrepreneurs who managed to pull off a victory when things seemed bleak. But we don't hear stories about the countless others who persevered too long, leading their companies to failure. One of the most dangerous outcomes for a startup is to bumble along in the land of the living dead.

ACCOUNTING WILL SAVE YOU

Unbelievably, it is something as seemingly boring as accounting that can prevent this. People are accustomed to thinking of accounting as a necessary evil used primarily to prepare financial reports and survive audits, but that is because accounting has been taken for granted.

Under the leadership of people such as Alfred Sloan at General Motors, accounting became an essential part of the method of exerting centralised control over far-flung divisions. Accounting allowed GM to set clear milestones for each of its divisions and hold each manager accountable for his or her division's success in reaching those goals. All modern corporations use a variation of that approach. Accounting is key to their success.

Unfortunately, standard accounting is not helpful in evaluating entrepreneurs. Startups are too unpredictable for forecasts and milestones to be accurate.

I recently met a phenomenal startup team. They are well financed, have significant customer traction and are growing rapidly. Their product is a leader in an emerging category of enterprise software that uses consumer marketing techniques to sell into large companies. For example, they rely on employee-to-employee viral adoption rather than a traditional sales process, which might target the chief information officer or the head of information technology (IT). As a result, they have the opportunity to use cutting-edge experimental techniques as they constantly revise their product.

I asked the team the simple questions that I always ask startups: are you making your product better? They always say yes. Then I ask: how do you know? I invariably get this answer: well, we are in engineering and we made a number of changes last month, and our customers seem to like them, and our overall numbers are higher this month. We must be on the right track.

This kind of storytelling takes place at most startup board meetings. Most milestones are built the same way: hit a certain product target, maybe talk to a few customers and see if the numbers go up. Unfortunately, this is not a good indicator of whether a startup is making progress. How do we know that the changes we've made relate to the results we're seeing? More important, how do we know that we are drawing the right lessons from those changes?

To answer these questions, startups have a strong need for a new kind of accounting geared specifically to disruptive innovation.

INNOVATION ACCOUNTING

Innovation accounting enables startups to prove objectively that they are learning how to grow a sustainable business. It begins by turning the leap-of-faith assumptions into a quantitative financial model. Every business plan has some kind of model associated with it, even if it's written on the back of a napkin. That model provides assumptions about what the business will look like at a successful point in the future.

For example, the business plan for an established manufacturing company would show it growing in proportion to its sales volume. As the profits from the sales of goods are reinvested in marketing and promotions, the company gains new customers. The rate of growth depends primarily on three things: the profitability of each customer, the cost of acquiring new customers, and the repeat purchase rate of existing customers. The higher
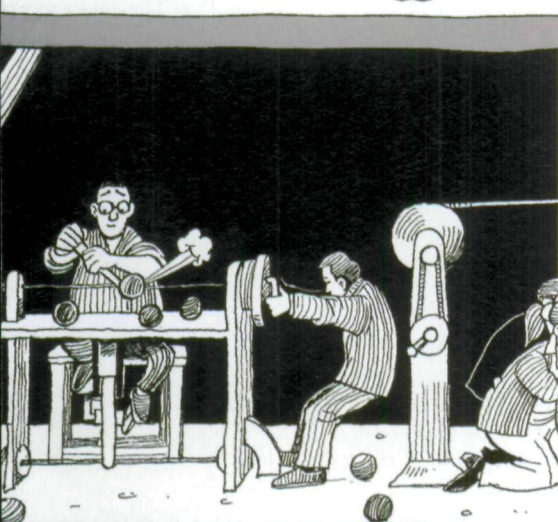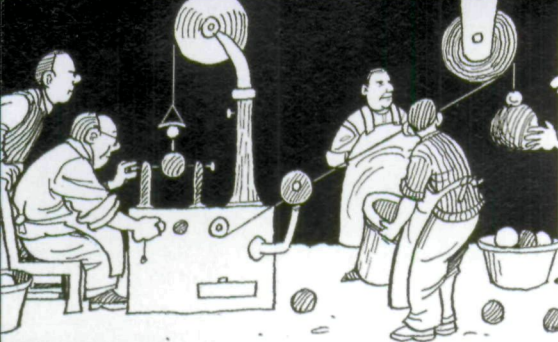
these values are, the faster the company will grow and the more profitable it will be. These are the drivers of the company's growth model.

Innovation accounting works in three steps: first, use a minimum viable product to establish real data on where the company is right now. Without a clear picture of your current status – no matter how far from the goal you may be – you cannot begin to track your progress.

Second, startups must try to tune the engine from the baseline toward the ideal. This may take many attempts. After the startup has made all the micro-changes and product optimisations it can to move its baseline towards the ideal, the company reaches a decision point. That is the third step: pivot or persevere?

If the company is making good progress towards the ideal, that means it's learning appropriately and using that learning effectively, in which case it makes sense to continue. If not, the management team must eventually conclude that its current product strategy is flawed and needs a serious change. When a company pivots, it starts the process all over again, re-establishing a new baseline and then tuning the engine from there. The sign of a successful pivot is that these engine-tuning activities are more productive after the pivot than before.

A LEARNING MILESTONE

For example, a startup might create a complete prototype of its product and offer to sell it to real customers through its main marketing channel. This single MVP would test most of the startup's assumptions and establish baseline metrics for each assumption simultaneously.

Alternatively, a startup might prefer to build separate MVPs that are aimed at getting feedback on one assumption at a time. Before building the prototype, the company might perform a smoke test with its marketing materials. This is an old direct marketing technique in which customers are given the opportunity to preorder a product that has not yet been built. A smoke test measures only one thing: whether customers are interested in trying a product.

By itself, this is insufficient to validate an entire growth model. Nonetheless, it can be very useful to get feedback on this assumption before committing more money and other resources to the product.

These MVPs provide the first example of a learning milestone. An MVP allows a startup to fill in real baseline data in its growth model – conversion rates, sign-up and trial rates, customer lifetime value, and so on – and this is valuable as the foundation for learning about customers and their reactions to a product, even if that foundation begins with extremely bad news.

TESTING ASSUMPTIONS

When choosing between the many assumptions in a business plan, test the riskiest assumptions first. If you can't find a way to mitigate these risks towards the ideal required for a sustainable business, there is no point in testing the others. Once the baseline has been established, the startup can work towards the second learning milestone: tuning the engine.

Every product development, marketing or other initiative that a startup undertakes should be targeted at improving one of the drivers of its growth model. For example, a firm might spend time improving the design of its product to make it easier for new customers to use. This presupposes that the activation rate of new customers is a driver of growth and that its baseline is lower than the company would like.

To demonstrate validated learning, the design changes must improve the activation rate of new customers. If they don't, the new design should be judged a failure. This is an important rule: a good design is one that changes customer behaviour for the better.

Compare two startups. The first company sets out with a clear baseline metric, a hypothesis about what will improve that metric, and a set of experiments designed to test that hypothesis. The second sits around debating what would improve the product, implements several of those changes at once, and celebrates if there is a positive increase in any of the numbers. Which startup is more likely to be doing effective work and achieving lasting results?

Over time, a team that is learning its way towards a sustainable business will see the numbers in its model rise from the horrible baseline established by the MVP and converge to something like the ideal one established in the business plan. A startup that fails to do so will see that ideal recede into the distance. When this is done right, even the most powerful reality distortion field won't be able to hide this simple fact: if we're not moving the drivers of our business model, we're not making progress. A sure sign that it's time to pivot. **mt**

Eric Ries is the founder of the Lean Startup Movement, entrepreneur-in-residence at Harvard Business School and author of *The Lean Startup* (Portfolio Penguin)

'The "just do it" attitude, avoiding all forms of management, leads to chaos more often than to success'