Mastering the Key Metrics for Startup Growth

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CONTENTS

Introduction: Another Book About Startup Growth? 1

PART 1
DEFINING PROGRESS

CHAPTER 1 21
Traction Is the Goal

CHAPTER 2 49
The Back-of-the-Envelope Business Model Test

CHAPTER 3 73
Build a Traction Model
PART 2
PRIORITIZING WASTE

CHAPTER 4
The Customer Factory Blueprint

CHAPTER 5
Benchmark Your Customer Factory

CHAPTER 6
Finding Constraints

PART 3
ACHIEVING BREAKTHROUGH

CHAPTER 7
The Art of the Scientist

CHAPTER 8
Seven Habits for Highly Effective Experiments

CHAPTER 9
Dealing with Failure

CHAPTER 10
Avoid the Curse of Specialization
THE FIRST MISTAKE WE MAKE WHEN WE PITCH OUR “GREAT IDEA” TO stakeholders is that we lead with our solution. We spend a disproportionate amount of time talking about the uniqueness of our product’s features or its underlying technology breakthroughs. We can’t help it—we have the innovator’s bias for the solution.
The solution is what we most clearly see and what gets us most excited. But our stakeholders don’t necessarily see what we see. More important, their goals are different. They don’t care about our solution but rather about a business model story that promises them a return on their investment within a set time frame.

This is what they really want to know:

1. How big is the market opportunity? They don’t care who your customers are, but how many—your market size.
2. How will you make money? They want to understand the intersection of your cost structure and revenue streams—your margins.
3. And finally, they want to know how you will defend against copycats and competition that will inevitably enter the market if you are successful—your unfair advantage.

Let’s look at an example. Say you have invented a method for reliably capturing an eye-tracking signature. So what? Instead of leading your pitch with a description of your invention, lead with your business model. If this eye-tracking signature can be used as an early diagnostic system for autism in children (big market) at a fraction of the cost of existing alternatives (potential margins), and you have a patent pending on the method (unfair advantage)—that is a big deal.

But what gets an investor’s attention above everything else is traction. If you walk into an investor’s office with the beginnings of a hockey-stick curve, they’ll sit you down and try to understand your business model. The hockey-stick curve starts out flat, but has a sharp inflection point when it starts quickly trending up and to the right—indicating that good things are happening.

This inflection point, or evidence of traction, signals that people other than yourself, your team, and possibly your mom care about your idea. The problem is that traction means different things to different people. And it too can be gamed.

It’s not enough to simply pick any convenient metric for the y-axis of your
hockey-stick curve, one that conveniently happens to be going up and to the right, and pass it off as traction. For instance, plotting the cumulative number of users over time has nowhere to go but up and to the right.

A more sophisticated investor will see right through this façade of vanity metrics. You have to instead pick a metric that serves as a reliable indicator for business model growth. In this chapter, I’m going to share such a metric with you.

**What Is Traction?**

Because traction is a measure of the output of a working business model, let’s first turn our attention to the definition of a business model.

“A business model is a story about how an organization creates, delivers, and captures value.”

—SAUL KAPLAN, *THE BUSINESS MODEL INNOVATION FACTORY*
This business model story can be effectively described using the one-page Lean Canvas tool.

You create value for your customers through your **Unique Value Proposition**, which is the intersection of your customers’ problems and your solution. The cost of delivering this value is described by your **Cost Structure**. Some of this value is then captured back through your **Revenue Streams**.

The first insight is that value in the business model is always defined with respect to customers. It follows that the right traction metric must also track a customer action or behavior. Neither the amount of stuff you build, the size of your team, nor your funding qualifies as traction.

The y-axis of your hockey-stick curve needs to measure a customer action.
Next, in order to establish a business model that works, the following two conditions must be met:

1. **Created Value > Captured Value**

   This is the **value equation** that drives your business model’s unique value proposition (UVP). You need to create more value for your customers than you capture back. If your customers don’t get back more value (even perceived) than they pay for your product or service, they will not have enough incentive to use your product and your business model will be a nonstarter.

   It is equally important that you run tests early in the business model validation process to ensure that you can also capture back some of this value as **monetizable** value that can be converted into revenue. I’m a big proponent of testing this as early in the business model validation process as possible. Otherwise, you delay testing one of the riskiest assumptions in your business model, which can be a costly assumption to get wrong.

   Even “free” users in services like Facebook and Twitter aren’t truly using these services for free. They pay for their usage through a derivative currency that I’ll describe shortly.

2. **Captured Value ≥ Cost (Value Delivery)**

   This is the **monetization equation** that drives sustainability and profits in your business model: you need to capture back at least as much value as it costs you to deliver this value or your business model also falls apart.

   A for-profit business model aims to maximize the difference between value captured and the cost of delivering value, while a not-for-profit business model aims to keep this difference as close to zero as possible.

   There is no business in your business model without revenue.
While every business needs to eventually satisfy both of these equations, it doesn’t need to do so from the outset. In the “lean” approach, we tackle them one at a time from left to right. After all, creating value for users is a prerequisite to being able to capture value from them, and capturing value from users is a prerequisite to optimizing your cost structure.

In other words, the value created for customers is an investment in your business model system that is returned when some of that value is converted into revenue.

Capturing value is the common factor in both the value equation and the monetization equation, and key to the definition of traction:

<table>
<thead>
<tr>
<th>Created Value</th>
<th>Captured Value</th>
<th>Cost (Value Delivery)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VALUE EQUATION</td>
<td>MONETIZATION EQUATION</td>
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Traction is the rate at which a business model captures monetizable value from its users.

**HOW IS TRACTION DIFFERENT FROM REVENUE?**

While booked revenue can be manufactured in many different ways, traction is revenue that needs to be attributable to key user actions in the past. These past user actions serve as leading indicators for extrapolating future business model growth.

I will show you how to deconstruct traction into a set of leading indicators later in the book, but I’ll leave you with a simple example for now.
Using customer behavior trends and sales data,* Starbucks realized that time spent in their coffee shops correlated with more money being spent in their stores. In other words, time spent in a coffee shop was a leading indicator of traction. This was a key insight in Starbucks’s differentiated positioning of “creating a third space between work and home.” While other coffee shops drove you out once you made a purchase, Starbucks welcomed you in, and it paid off very well for them.

**The Customer Factory Metaphor**

We can make this definition of traction even more tangible by visualizing the output of a working business model as a factory. In this factory metaphor, the job of the factory is to make customers.

* Starbucks case study on calculating customer lifetime value: https://blog.kissmetrics.com/how-to-calculate-lifetime-value.
It works by

- taking in unaware visitors as the input on the left,
- creating, delivering, and capturing value from these visitors inside the black box, which we’ll deconstruct later, and
- creating happy customers on the right.

Why “happy customers”? Why not “satisfied customers,” or just “customers”? The reason I describe the output of this customer factory as “happy customers” is that emotion plays a major role. As you’ll see later in the book, the customer factory is not simply a mechanical process for cranking out paying customers but rather a well-designed system for making happy customers.

You might also be wondering whether the goal of every business is to create happiness. What about hospitals, insurance companies, and divorce attorneys? I don’t believe every business needs to always create smiling customers. But every business does need to create customer value and leave its customers better off than where they started—in other words, to create progress in their customers’ journey. So by that definition, even alleviating pain or providing security qualifies as happiness.

Finally, I want to make a subtle but important distinction between making happy customers and making customers happy. Making customers happy is easy. Just give them lots of stuff for free. But that doesn’t lead to a working business model. Making happy customers, on the other hand, is not just about making customers feel good but about what they do with your solution. It’s about the results.

Kathy Sierra calls this making your customers “badass,” a term she landed on after years of experimentation. Other contenders were “passionate” and “awesome.” But she settled on “badass” because the other labels implied a goal of making customers feel better, as opposed to making them be better.

Let’s refine our stated business goal of capturing value from users:
Making happy or badass customers gets you paid. Doing this repeatedly and sustainably is the universal goal of every business.

This is true whether you are building a hardware or software business, a high-tech or no-tech business, or even a for-profit or not-for-profit business. The good news is that we can measure the rate at which we create happy customers using a well-established metric: throughput.

**Throughput Is Traction**

The customer factory isn’t just a cute metaphor. Its reference to manufacturing is intentional. Metaphors are quite powerful when they enable us to transplant and adapt ideas from one domain to another, which is what we are going to do in this book. We can immediately apply one of the key concepts from systems thinking*—the concept of throughput—to further simplify the definition of traction.

Throughput is typically defined as the rate of production or the rate at which items flowing through a system can be processed. In a traditional factory, throughput would measure the rate at which raw materials are turned into finished goods in a specified time interval—for example, 70 units/day.

Measuring throughput this way helps us to see that items in progress (unfinished goods or inventory) are a form of waste because they consume resources but don’t directly add value. Eliyahu Goldratt has an even stricter definition of throughput. He defines throughput as the rate at which a system generates revenue through

* *“Systems thinking is the process of understanding how those things which may be regarded as systems influence one another within a complete entity, or larger system” (Wikipedia).*
sales. This emphasis on revenue is important because even finished goods sitting in a warehouse take up resources (like storage and electricity) without adding value.

In the customer factory, visitors enter the factory as raw materials, flow through the system as users, and are then processed or converted into customers. Because making customers already implies monetization, we can define traction for a given business model as customer throughput:

**Customer throughput is the rate at which nonpaying users are processed into paying customers.**

Under this definition, unless users can be converted into monetizable value (customers), they too are a form of waste. Think of nonpaying users as inventory or investment tied up in your business model that you intend to get back when you turn them into customers.

This definition of customer throughput meets all our earlier criteria for measuring traction: it is customer-centric and it measures the rate at which a business model captures monetizable value from its customers. Because all businesses also have customers, it is universal. Let’s put this last statement to the test.

### Business Model Archetypes

When people bring up business models, they often use a whole bunch of terms such as software as a service (SaaS), enterprise, retail, e-commerce, ad-based, freemium, viral, social, not-for-profit, marketplace, et cetera.

The reason we end up with dozens of business model descriptors is that we attempt to label the myriad ways that a business model creates, delivers, and captures value. For instance, the difference between SaaS, enterprise, and open-source business models is in how they deliver and capture value. Even within a SaaS busi-
ness model, one could implement a freemium or trial-based pricing model. Trying to create a list of business model types gets complex pretty fast.

Instead I’m going to take a different approach. We are going to categorize business model types by the number of actors (or customer segments) in the model. Using this approach, we’ll define just three basic business model archetypes: direct, multisided, and marketplaces. In the next few sections, I’ll show you how to start with these archetypes to describe any type of business.

**MODELING DIRECT BUSINESS MODELS**

Direct business models are the most basic and widespread type of business model. They are one-actor models where your users become your customers. It’s easy to apply the concept of customer throughput to direct business models. A coffee shop is a simple example.

The coffee shop attracts visitors to its storefront by its ambiance and promise of great drinks. When a visitor, now a user of the coffee shop, purchases a drink, she becomes a customer, and some of this value is captured back as money.

As long as the coffee shop creates more value (even perceived) for its customers than it captures back, the coffee shop creates a happy customer and has a compelling...
WHAT ABOUT THE B2B2C MODEL?

The B2B2C model is one where business A sells its product or service to business B, which is then delivered to the end consumer. This too can be modeled as a direct business model. The key question is determining which customer segment represents the riskier segment, and then modeling every intermediate provider as a channel to reach them.

For example, car companies (with the exception of Tesla Motors) don’t sell their vehicles directly to drivers. They use dealers as intermediaries. But because the risk of building the “right car” lies with the drivers, car companies have to model their end customers’ needs when designing their vehicles. The dealerships here represent a channel partner that should be listed in the Channel box in the Lean Canvas.

Consider another example: Amazon Web Services. Amazon rents out its datacenters as

value proposition. And as long as the coffee shop can capture back more value than it costs to deliver this value, it has a sustainable business model.

In a direct business model, monetizable value is extracted directly from your users, who become your paying customers, which is simply the net revenue realized over the life of the customer.

Other examples of one-actor direct business models are:

- Retail
- Software as a service (SaaS)
- Mobile apps
- Physical goods
- Hardware
- Services

Traction in a direct business model is the rate at which you turn nonpaying users into paying customers.
cloud services that developers buy using a metered usage model. Developers use these services to build all kinds of applications such as games, travel websites, e-commerce sites, et cetera. As long as these developers adhere to Amazon’s terms of service, Amazon does not need to understand the details of the end user’s needs. Here the developer is the customer.

**MODELING MULTISIDED BUSINESSES**

The next business model archetype is the multisided business model. Unlike a direct business model where your users become your customers, a multisided business is a multiactor model where your users and customers are different actors (or segments).

In a multisided model, the goal is still to create, deliver, and capture value from users, but that value is monetized through different customers. Users typically don’t pay for usage of your product with a monetary currency but with a derivative currency. This derivative currency, when compounded across enough users, represents a derivative asset that your customers pay to acquire.

Let’s look at some examples that will make this more concrete:

**Ad-Based Business Models**

Products like Facebook, Google, Twitter, and YouTube fall under this group of business models. We’ll use Facebook as an example. Facebook creates and delivers value to its users through its social network—but doesn’t charge its users directly. That said, it still captures some of this value back, albeit through a derivative currency (user attention, in this case).

Facebook then trades this derivative currency on a secondary market of advertisers (its customers), who pay to reach these users.
We can describe the same business model with Google’s search engine business, substituting its search engine for Facebook’s social network. In both these examples, the derivative currency is attention, which is monetized by converting attention (from users) into impressions and/or clicks for advertisers (their customers). This conversion of the key monetizable user activity into actual revenue is the derivative currency exchange rate. For ad-based businesses, this is typically described as CPM (cost per thousand impressions), CPC (cost per click), or CPA (cost per acquisition).

Monetizable value, then, is a function of the derivative currency exchange rate,
which we can use to calculate the effective monetizable value of users (or an average revenue per user—ARPU) even though they aren’t directly paying us. As of Q1 2015, Facebook’s annualized advertising ARPU was $9.36.*

**Big Data Business Models**

Attention isn’t the only kind of derivative currency. Another example is data. You might give away a free mobile fitness app to your users and aggregate their usage data into something more valuable that an insurance company, for instance, may want to purchase.

Now for a few not-so-obvious multisided models.

**Enterprise**

The traditional enterprise product can also be described using the multisided model. Organizations (our customers) are made up of people who play different roles in the business model. There are usually at least two (and sometimes more) roles in the business model.

Users here are the employees who use the product to help the organization realize the value proposition of the product. The customers here are the decision makers who purchase the product for the employees. Some other key roles worth modeling might be the influencers in the organization—for example, the IT department—that have a say in the buy decision.

The basic value flow, however, remains the same. Users of the product create a derivative asset, which, in this case, can be measured as a productivity gain or an improved business process that helps the organization capture more value from its own customers. As long as this asset creates more value to the organization than what the decision makers paid to acquire it, it represents a net positive ROI and a compelling value proposition.

Not-for-Profits

Not-for-profits can also be modeled as multisided models. Let’s take the Red Cross as an example. The users of the Red Cross are the people in need that the organization serves. And donors are the customers. Because these models are usually impact driven, the number of people helped represents the derivative asset that donors fund. If the Red Cross stopped serving these people, the donations would dry up accordingly.

The common theme across all these business models is that there is a user side and a customer side. The user side is often the riskier of the two sides because that’s where monetizable value is created in the form of a derivative asset.

There are two challenges with derivative assets. The first is that this asset needs to be aggregated over a tipping point of users to make it valuable for customers. For instance, a social network with ten users is not all that interesting to advertisers. The second challenge is that the derivative currency exchange rate (how much an advertiser would pay in this example), like any derivative asset, is not a given, and fluctuates over time. For these reasons, an effective validation strategy is to first tackle the user side of the model until a sufficient tipping point is achieved.

The key in multisided models is establishing the derivative currency exchange rate early. This helps demonstrate the business model story, which drives valuation of the business. The more liquid this conversion, the higher the valuation. This is exactly why Facebook commands a higher valuation per active users than Twitter, which commands a higher valuation than Snapchat.

The next business model archetype is a special case of the multisided model.

MODELING MARKETPLACES

Marketplace models are a more complex variant of the multisided model that warrant their own category. Like multisided models, marketplaces are multiactor mod-
els made up of two different segments: buyers and sellers. eBay, AngelList, and Airbnb are all examples of marketplace business models. But unlike the multisided model where users are the riskier side and can be tackled serially before customers, in a marketplace model both the buyer and seller sides need to be tackled simultaneously.
Sure, some marketplaces will naturally be buyer-led while others will be seller-led, allowing you to start building out one side before the other. But ultimately you need to bring both sides together *simultaneously* to conduct a transaction. The transaction is the key activity that creates happy customers.

Monetizable value in these models is typically captured as a percentage of the value of the transaction created between buyer and seller as a commission, listing fee, et cetera.

The reason this is the most complex business model archetype is that you have two customer factories that need to be firing together. A key pattern for success with this model is first identifying a preexisting marketplace with lots of transactional friction. If you can remove some of this friction for your early-adopter buyers and sellers, you represent a compelling value proposition that draws buyers and sellers from their existing alternative(s) to your marketplace.

- eBay did this for the collectibles marketplace, where the existing alternatives were garage sales and antique shops.
- AngelList did this for the startup funding marketplace, where the existing alternative was hitting the pitching circuit.
- Airbnb did this for the rooms marketplace, where the existing alternatives were hotel rooms and couch surfing.

**Not All Customers Are Created Equal**

Even though making customers automatically implies monetization, not all customers are created equal. Would you rather create 100 customers/year or 1,000 customers/year? What if you kept both customer segments for a year and the first...
customer segment generated an average lifetime value of $100 while the second customer segment generated an average lifetime value of $5?

<table>
<thead>
<tr>
<th>CUSTOMER SEGMENT</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Customers</td>
<td>100</td>
<td>1,000</td>
</tr>
<tr>
<td>LTV per Customer</td>
<td>$100</td>
<td>$5</td>
</tr>
<tr>
<td>Total LTV</td>
<td>$10,000</td>
<td>$5,000</td>
</tr>
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Before you rush to declare customer segment A the more valuable group, don’t forget to factor in the cost of raw materials or the Cost of Customer Acquisition (COCA). If the first group was acquired through an expensive paid channel or sales process, while the second group was acquired through a cheaper organic channel, the right answer could be reversed.

Throughput, then, is NOT simply the rate at which you create customers (measured as customer throughput), but the net monetizable value captured from them in a given period.

That said, measuring customer throughput (people) is more tangible and actionable than measuring throughput (revenue). For this reason, we will often convert throughput into customer throughput in this book.

Let’s consider a final scenario: assuming similar cost of customer acquisition and customer lifetimes, what if the first customer segment of 100 customers generated a $100 LTV while the second customer segment of 1,000 customers generated a $10 LTV? Which is the more valuable group of customers? Warning: this is also a trick question.

Lifetime Value (LTV) is the projected revenue that a customer will generate during his lifetime.

Cost of Customer Acquisition (COCA) is the cost of getting a potential customer to buy your product.
<table>
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</tr>
</tbody>
</table>

Even though both customer segments appear to generate the same throughput, throughput is *not* profit. Once we factor in operating expenses to service these customers, the net profit across both groups may no longer be the same. It may work out better to have fewer high-margin customers than lots of low-margin customers. But the opposite may also be true, depending on the relative costs to service each of these customer segments.

The point of these exercises is to highlight that you’ll often have a choice of what type of customer to make or what customer segment to pursue. Each potential customer segment will have a different customer acquisition (raw material) cost and will use up a different amount of operating expenses for converting users into customers. These differences should be weighed against one another carefully when considering your business model variants.

### A Brief Primer on Throughput Accounting

Goldratt uses three metrics—throughput, inventory, and operating expenses—as the basis for a new accounting paradigm he described as “throughput accounting.” In contrast to the more traditional cost-based accounting paradigm, throughput accounting prioritizes value creation over cost cutting.
Let’s first more formally define each metric as it maps to the customer factory:

1. **Throughput**
   
   Throughput is the rate at which monetizable value is generated from your customers over their lifetime minus any totally variable costs such as the cost of raw materials—typically the cost of customer acquisition.

2. **Inventory**
   
   Inventory represents all the money invested in the customer factory toward things it intends to sell. This includes things you expect, like your product, but also unfinished goods (users), finished goods (customers), equipment, and other infrastructure that goes into the manufacturing of these goods (e.g., servers, software, etc.). The term “inventory” is interchangeable with “investment” in your system.

3. **Operating Expenses**
   
   Operating expenses are the costs expended turning inventory into throughput. They include things like salaries and other costs incurred in the running of the system. The distinction between inventory and operating expenses may appear fuzzy. It helps to think of inventory as assets that contribute to the valuation of a company and everything else as an operating expense.

The picture on the next page summarizes the relationship between these three metrics:

We can use these three metrics to calculate profit as:

\[ P = T - OE \]

where

- **P** = Profit
- **T** = Total Throughput
- **OE** = Operating Expenses
Cost-based accounting places more emphasis on the right-hand side of the profit equation—decrease operating expenses. It focuses on scalable efficiency and squeezing out costs—especially labor costs. This typically manifests itself as policies requiring detailed weekly time sheets broken down by task, as well as downsizing, outsourcing, and other cost-reducing measures.

Throughput = LTV – COCA

- Cost of raw materials
- Cost of customer acquisition

(INVENTORY)

- Net revenue
- Lifetime value

(OPTERATING EXPENSES)

Money spent turning inventory into throughput

Happy Customers

Unaware Visitors

Money tied in the system

Assets that could be sold
It is much more powerful to try to affect the left-hand side of the profit equation—increase throughput—because cost cutting has a theoretical limit of zero. Increasing throughput has no theoretical upper limit. You can find ways to add more value to an existing product, build more add-on products, or expand the market—provided, of course, that these efforts lead to a positive return on investment:

\[
ROI = \frac{T - OE}{I}
\]

where

- \(ROI\) = Return on Investment
- \(T\) = Total Throughput
- \(OE\) = Operating Expenses
- \(I\) = Inventory

You can see that a decrease in inventory (or the investment in the system) increases ROI. While decreasing inventory ranks higher than decreasing operating expenses, it still takes a backseat to increasing throughput because decreasing inventory also has a theoretical limit of zero.

Increasing throughput is the only macro that matters.

This interrelationship between throughput, inventory, and operating expenses is what Goldratt describes as the goal:

**The universal goal of every business is to increase throughput while minimizing inventory and operating expenses provided doing that doesn’t degrade throughput.**

This is a more nuanced goal than simply aiming for “increasing traction.” You might for instance be able to increase throughput (traction) by selling to a
new customer segment. But before deciding to move forward, you should take both the increase in inventory and possible increase in operating expenses into account. Simply focusing on one metric in isolation does not guarantee the desired outcome.

The picture below depicts the universal goal along with some typical line items you’d find under each category.

Before moving forward, trying ad-libbing the goal using each of these items and see if it makes sense to you.

**Examples:**

1. The goal is to increase *monetizable value* while minimizing the number of *users* and *customer service* costs.
2. The goal is to increase *monetizable value* while minimizing the number of *features* and *product development* costs.
3. The goal is to increase *monetizable value* while minimizing the number of *servers* and *hosting costs*.

Increasing throughput while minimizing inventory and operating expenses is the ideal, but of course, not always possible. Growth requires an investment in inventory (e.g., adding more users and features), which will often also result in an increase in operating expenses (e.g., hiring more people). But as long as your decision results in a net positive ROI over time, you move closer to the goal.

**Exercise: Describe Your Business Model Story**

Now it’s your turn.

1. Go to http://LeanStack.com and create a free account.
2. Describe your business model(s) using the Lean Canvas tool.
3. Categorize your business model into one of the three business model archetypes: direct, multisided, or marketplace. While it’s tempting to simultaneously layer more than one business model type with your idea, it’s better to keep your starting models simple. Remember that every complex system first starts out as a simple system. If your idea can be potentially realized using multiple business model types, create a separate Lean Canvas for each variant.
4. Then identify the key monetizable activity in your business model. A revenue story is the key differentiator between a business model and a hobby.
5. Next place a value (either a direct or derivative value) on this key activity.
Business Model Search Versus Execution

With your first business model created, it’s time to consider variants. Just as rushing to build a solution can lead to waste, so can limiting yourself to a single business model. Prematurely narrowing down may lead to a suboptimal business model because, at the outset, your business model possibilities are numerous and you don’t yet know what you don’t know. For these reasons I describe the entrepreneurial journey in *Running Lean* as a search-versus-execution problem—best visualized using the hill climbing (or local maximum) problem from computer science.

Here’s the scenario: Imagine you were parachuted blindfolded onto the land-
scape opposite and tasked with finding the highest point. Fumbling around, you might be able to make your way to the top of the hill (the local maximum) but miss the neighboring mountain right next to you because your field of vision was limited. You are prone to this same local maximum trap when searching for a business model.

While there is no foolproof way of completely avoiding this trap, you raise your odds of avoiding a local maximum when you initially open yourself to exploring and even testing multiple business models in parallel.

<table>
<thead>
<tr>
<th>Document your Plan A</th>
<th>Identify riskiest parts of your plan</th>
<th>Systematically test your plan</th>
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TIME
Exercise: Create Business Model Variants

Revisit your business model and create a few variants. Here are some possible variables to tweak:

- Customer segments: Are there other types of customers who share similar problems and thus represent a different business model?
- Problem positioning: Does leading with a different set of problems result in a different business model?
- Pricing model: Does changing how you capture back monetizable value change your business model?

Key Takeaways

- Traction is the one metric that matters above everything else.
- Traction is the rate at which a business model captures monetizable value from its users.
- For a given business model, the rate at which you create customers (customer throughput) is traction.
- There are three business model archetypes: direct, multisided, and marketplace models.
  - A direct business model is a one-actor model where users become your customers.
  - A multisided model is made up of users who generate a derivative asset that customers buy.
  - A marketplace model is made up of buyers and sellers who come together to conduct a transaction.
CHAPTER 2

The Back-of-the-Envelope Business Model Test

Now that we have a universal metric for describing the output of a business model, let’s turn our attention back to an even earlier problem: demonstrating the “potential of an idea.” You’ll have to justify your new venture to a VC, CFO, spouse, or even yourself as a prerequisite to securing runway. In this chapter, you’ll learn to quickly estimate the viability of a new business model without needing to create an overly elaborate financial forecast.

The mistake we make with financial projections at the business planning phase is that we spend a disproportionate amount of time focusing on the output of our models when it’s the inputs that really matter. In this chapter, I’ll show you how to quickly ballpark a business model and test its viability using a simple back-of-the-envelope calculation.

Meet Enrico Fermi

Enrico Fermi was an Italian physicist who was famous for making rapid order-of-magnitude estimations with seemingly little available data.

Fermi worked on the Manhattan Project, developing the atomic bomb. When it was tested at the Trinity site in 1945, Fermi wanted a rough estimate of the blast’s
power before the actual data came in. He dropped a few pieces of paper during the blast and used the distance they traveled as they fell to estimate the strength of the explosion. His estimate of 10 kilotons of TNT was remarkably close to the actual value of 18.6 kilotons of TNT given the data he had.

If you’ve ever tried to estimate how many pieces of candy there are in a jar, you’ve been exposed to a Fermi problem. Fermi estimates, or back-of-the-envelope calculations, work by making justified guesses to a problem’s input assumptions that are accurate within an order of magnitude (the nearest power of ten). This is often the best we can do with little data, but it’s surprising how useful this kind of ballpark estimate can be in making a decision.

To illustrate this, let me demonstrate the process using another classic example of a Fermi problem.

**How Many Piano Tuners Are There in Chicago?**

When confronted with a question like this, most people shy away from giving any answer because the level of uncertainty is paralyzing. But let’s break this down into a set of input assumptions.

1. How many people live in Chicago?
   
   We aren’t aiming for a precise answer here, but rather a ballpark estimate that needs to be accurate only within an order of magnitude (power of ten).
   
   Would you say the population of Chicago is 100,000, 1,000,000, or 10,000,000? We know Chicago is a big city, but not enormous. So it can’t be 10 million. We’ll go with 1 million people.

   *Note: It is okay to look up easily accessible input values like this one. But for this exercise we’ll stick with power-of-ten estimates.*
2. How many pianos are in Chicago?

Now that we have an estimate for the population, let’s estimate how many pianos there are. Which do you think is a reasonable estimate:

1 out of every 10 people has a piano.
1 out of every 100 people has a piano.
1 out of every 1000 people has a piano.

This is our second power-of-ten estimation step. Remember, we need to account for families and children. We’ll go with the middle answer: 1 out of every 100 people in Chicago has a piano. So that would put the number of pianos in Chicago at \((1,000,000 \times 0.01) = 10,000\) pianos.

3. How many pianos can a piano tuner tune in a year?

We’re now going to tie the number of pianos to piano tuners with our third (and final) estimation step.

This is a harder estimation than the previous ones. You can formulate a bunch of additional input assumptions, such as how long it might take a piano tuner to tune one piano and how long it might take him to travel between pianos, to come up with an estimate of how many pianos he can tune in a day. You could then multiply this number by the number of working days in a year to get the number of pianos a piano tuner tunes in a year.

That is a reasonable approach, but we don’t even need to go through all that work to make a quick estimate. We can again ballpark this using a power-of-ten estimate. Would you say a piano tuner typically tunes 10, 100, or 1,000 pianos a year? To be able to tune 1,000 pianos a year, he would have to tune close to 4 pianos every day (not counting weekends)—which seems unrealistic. So let’s go with 100 pianos a year.
How Many Piano Tuners Are There in Chicago?

Coming up with an answer to our original question is now simple math:

\[
\frac{\text{Number of Piano Tuners}}{\text{100 Pianos Tuned in a Year}} = \frac{10,000 \text{ Pianos}}{100 \text{ Pianos Tuned in a Year}} = 100 \text{ Piano Tuners}
\]

How do we feel about this number? We can check our answer against the Chicago Yellow Pages (phone book), which reveals 81 piano tuners!

No, this wasn’t a magic trick. The reason Fermi estimates work is that the over-estimates and underestimates balance each other out and produce an estimation that is usually within one order of magnitude of the actual answer.

Estimating business models is no different. In the next section, we’ll put our newly acquired traction metric of throughput and the Fermi estimation method to use.

How to Test Whether a Business Model Is Worth Pursuing

Before you can test whether a specific business model is worth pursuing, you first need to ballpark the finished story benefit—or desired outcome—which is orthogonal to your business model.

I know this sounds a lot like the “exit number” question investors ask, and I can already sense your uneasiness. Most people hate this question because it feels like
arbitrarily picking yet another large number out of thin air (like a $100M exit goal) and then working Excel magic to rationalize the number.

But this number isn’t quite pulled out of thin air. Even a $100M exit number has a rationale behind it. VC firms take active board member positions in the companies they invest in, which immediately limits their portfolio size to about ten companies. Given that nine out of ten startups fail, this constraint forces them to seek only companies that are aiming big enough in order to make their own business model work. Hence the need for the $100M exit story.

This number doesn’t have to be $100M, of course. The “right” number is a function of your business model incubation environment.

If instead of a high-growth startup you were exploring a new business model in an enterprise setting, there would similarly need to be some discussion of an expected return (one with a lot of zeros too) to justify the effort expended.

Even as a solo bootstrapper, you probably have (and if not, should have) some ballpark number to justify your return on effort per project. This could very well be a $100M exit, but could just as well also be generating an extra $1,000/month of passive income.

There is no right or wrong answer, but you should have an answer. We need this number to justify our business model story—first to ourselves and then to our internal and external stakeholders (team, investors, budget gatekeepers, etc.). I’ll warn you that this can be a deep (and often uncomfortable) thought exercise that gets to your personal “why,” but the constraints it exposes allow for a more actionable strategy.

**USERcycle Case Study**

The backstory of this product was that I stumbled into a potential opportunity for productizing a homegrown solution I had originally built for myself. While running workshops, I related my challenge of making sense of

“Business is a means to an end. Do a life plan before you make your business plans.”

—NORM BRODSKY AND BO BURLINGHAM, THE KNACK
Your business model, NOT your solution, is the product.

quantitative metrics and offered some solutions that resonated
with people in the room who approached me afterward. A few
years ago, I would have taken this anecdotal "customer pull" for a
solution as enough to justify going down the productization path, but having done
this one too many times before, I decided to first test whether I could describe an
underlying business model with a problem worth solving.

My next step was sketching a one-page business model using a Lean Canvas
worksheet:

Lean Canvas is adapted from The Business Model Canvas (www.businessmodelgeneration.com) and is licensed under the Creative Commons Attribution-Share Alike 3.0 Un-ported License.
Here is what my business model story sounded like:

When software companies first launch a product, lots of things can and do go wrong. The common tendency is to want to collect as much data as possible, but instead of getting clarity, they end up drowning in a sea of data. Metrics were supposed to be the answer, but they tell you only what’s going wrong—not why or how to fix it.

Our solution is to provide a companywide dashboard made up of just five macro metrics that help software teams measure progress without drowning in a sea of data. More important, they can get to the users behind the numbers and automate life-cycle e-mail messages to their users based on the actions they take or don’t take in the product. This allows software teams to close their learning loop and get to the reasons for the good or bad metrics. The high-level concept of this idea is: KISSmetrics meets MailChimp.

While this problem/solution combo can be applied in a wide array of software companies, we have identified our early adopters as a subset of software companies that offer their software as a recurring service. Our team has the most firsthand experience with these types of products, and our unique value proposition can be demonstrated quickly there.

We stumbled into this business model through workshops which represent a good starting channel that also plays into our unfair advantage. We would scale our channels by investing more heavily in content marketing—possibly offering an Actionable Metrics workshop and other related content.

Most software founders typically spend $0 (Google Analytics) to ~$100/month (other third-party analytics products). Based on this, we will offer a starting price of $50/month.

What do you think? Given this business model story, does it represent a business model worth pursuing? While the Lean Canvas tool allows you to quickly capture
your business model story, it’s hard to answer this question without digging into some more numbers.

The traditional top-down approach for doing this is attaching your business model to a “large enough” customer segment. Then the logic goes that if you can capture “just 1 percent” of this large market, you’ll be all set. After all, 1 percent of a billion-dollar market is still a lot of zeros…

The problems with this approach are that:

■ it gives you a false sense of comfort,
■ it doesn’t address how to get to this 1 percent market share with your specific product, and, finally,
■ 1 percent market share might not even be the right success criteria for you.

There is a much better bottom-up approach. Here are the steps:

1. **Determine Your Minimum Success Criteria**

Instead of thinking in terms of your business model’s maximum upside potential (like the 1 percent market share goal), it’s more helpful to think in terms of time-boxed minimum success criteria.

If, for instance, you had asked the Google or Facebook founders when they were first starting out whether they thought they would go on to build billion-dollar companies, they would probably have laughed at you.

This is what Mark Zuckerberg said in an interview about the early days of Facebook:
That said, after Facebook’s first year of operations it was offered a $50M acquisition by Myspace. Zuckerberg countered with $75M, which Myspace turned down. While Mark Zuckerberg might still not have been able to predict building a billion-dollar business at that time, he did have a number in mind at the one-year point.

In the case of Google, we know that despite building a very successful search engine, Larry Page and Sergey Brin struggled for years to find a sustainable business model. Out of desperation, they even tried to get themselves acquired by Yahoo for $1M, which got turned down. So at that point in time, we could say that their minimum success criteria morphed from whatever they started at to $1M. That didn’t keep the Google founders from going on to build a billion-dollar company.

And that’s the point. No one ever penalizes you for revising your goal upward. But if you don’t have a reasonable minimum goal, it’s hard to define what success will look like. Not only are the minimum success criteria easier to estimate than your maximum upside potential, they also help you model your progress along the way.

Here are some guidelines for defining your minimum success criteria:

1. Keep your time box under three years.
   Anything longer becomes too far to see. The key is picking a date just far enough into the future that it allows you to demonstrate a working version of your business model.

“We built it and we didn’t expect it to be a company, we were just building this because we thought it was awesome.”
—MARK ZUCKERBERG
2. Frame the outcome in terms of a revenue (or throughput) goal.

A yearly revenue goal more directly maps to the revenue streams listed on your Lean Canvas and keeps the model simple. Profit and valuation are derivations of revenue anyway, and here’s how to incorporate them.

If you’d like to target a profit goal, use a gross margin assumption to convert your profit goal into a revenue goal. For instance, healthy SaaS products typically target a gross margin above 80 percent.

If you’d like to target a valuation goal instead, use a valuation multiple like a price/sales ratio to convert your valuation target to a revenue target. As these valuations are highly dependent on market conditions, your best bet is researching valuation multiples of recent companies that have raised funding or been acquired.

3. Remember that the goal is a rough ballpark.

You are not looking for three-digit precision here, but an initial estimate that is accurate only within an order of magnitude. In other words, first ask yourself whether you are aiming to build a $100K/year, $1M/year, $10M/year, or $100M/year business. You can then narrow a bit further from there.

My minimum success criteria for the SaaS product I was considering were $10M/year in revenue within three years. While this throughput number makes my goal more concrete, it is still just a fuzzy revenue number and still decoupled from the actual specifics in my business model. The next step is converting this throughput number into a customer throughput number.
2. Convert Your Minimum Success Criteria to Customer Throughput

In order to calculate the customer throughput needed, the first critical input we need is a pricing model. I review lots of Lean Canvases where this isn’t specified. Even at the early ideation stage, you need to get specific on pricing. The biggest objection I often hear is: “How can I price a product when my solution is still uncertain?”

Price against their problems (using value-based pricing) and not what it’s going to cost you to build and deliver your solution (that’s a cost structure concern). You do this by anchoring against their existing alternatives, which should ideally provide evidence of monetizable pain.

Customers care about their problems, not your solution.

What is this rate?

GOAL: $10M/year

Unaware Visitors

Pricing Model: $50/mo

Happy Customers
Again, precision here is not the goal but an estimate. First estimate to an order of magnitude. Is your solution potentially worth $1/month, $10/month, $100/month, $1,000/month, $10,000/month? Then use your knowledge of your customers’ existing alternatives to get more specific. That is how I estimated my $50/month starting price point.

At this point, it’s simple to figure out the number of active customers I would need to sustain my business model objective:

\[
\text{Number of Active Customers} = \frac{\text{Yearly Revenue Target}}{\text{Yearly Customer Revenue}}
\]

\[
= \frac{\$10M}{($50/\text{month} \times 12 \text{ months})}
\]

\[
= 16,000+ \text{ Active Customers}
\]

This is already a better number than the fuzzy $10M revenue goal because it makes the number more tangible. You can immediately test this number against your customer segment to ensure that it’s big enough.

While a number of active users is better than just a revenue goal, it still reveals only a part of the story. The danger of relying only on this number is that it’s easy to believe that all we need to do is reach this number of active customers one time and we’re set. But it does not factor in customer attrition or churn. Customers leave as a natural part of every business.

Another way of stating this is that the number of active customers represents the steady state number of customers that you need to maintain to sustain your throughput goal, but it’s not a measure of the rate at which you need to create new customers to replace those who leave.

The best evidence of monetizable pain is a check being written.
To get this rate, we need to first estimate a customer’s potential lifetime, from which we can calculate their lifetime value.

**ESTIMATING LTV**

Here are some ways to tackle estimating a typical customer lifetime:

1. Does your value proposition have recurring utility?

   One way to guess at the customer lifetime is through the nature of the problem you are solving. Is it a single-occurrence problem or something recurring? If recurring, how frequently would users need to solve the problem and for how long? From there you might be able to guess when they might outgrow your solution.
2. Think in terms of jobs.

Clayton Christensen first popularized the jobs-to-be-done concept in his book *The Innovator’s Solution*. The basic premise is that customers hire your product or service to get a certain job done.

Once this job is done, your customers move on—not because they hate your product, but quite the opposite. If you hire a painter to paint your house, you expect him to be done in a few days. If he is still there two months later, that’s probably a bad sign. Once you can clearly articulate the job your customers hire your product to do, it becomes easier to estimate the average time it might take to accomplish the job.

In my example, my target early adopters are early-stage software companies. Statistically, about half of new products fail within their first three years. This gives me a ballpark customer lifetime to use.

3. Study other analogs.

Studying other analogs in your vertical, or domain, can also be an effective way of estimating your average customer lifetime. In the SaaS world, for instance, Salesforce (the largest company in this space) reports a four-year customer lifetime. It doesn’t mean you can’t do better, but it helps to ground your own estimates.

These numbers can usually be found online with just a little research. Successful companies frequently report their numbers publicly on analyst calls, to reporters, or even on their own blogs and other PR channels.

4. If you’re still stuck . . .

If all else fails, pick a conservative estimate for now. For this exercise, you need smaller gradations than powers of ten. If you’re aiming for more than ten years, you’re either in a business with lots of customer lock-in or off by a lot. A more conservative estimate for most business models is somewhere between
less than a year (a one-time-use product) and five years. In my example, I decided to use a two-year customer lifetime as a conservative estimate.*

Once you have a projected customer lifetime and pricing model, go ahead and calculate your projected LTV. For this business model, we can then calculate the required customer throughput rate as:

\[
\text{Customer Throughput Rate} = \frac{\text{Yearly Revenue Target}}{\text{Customer Lifetime Value (LTV)}}
\]

\[
\begin{align*}
\text{Yearly Revenue Target} &= \$10M/year revenue \\
\text{Customer Lifetime Value (LTV)} &= \$50/month for 2 years life term \\
&= \$1,200 LTV \\
\text{Customer Throughput Rate} &= \frac{\text{Yearly Revenue Target}}{\text{Customer Lifetime Value}} \\
&= \frac{\$10M}{\$1,200 LTV} \\
&= 8,333 \text{ new customers/year}
\end{align*}
\]

Make sure you work the numbers out for yourself before moving on. People usually have no problem calculating the number of active customers needed for $10M/year revenue, which we previously calculated as 16,000-plus active customers. But the 8,000-plus new customers/year isn’t the number of active customers, but rather the number of new customers you need to make every year after you hit your minimum success criteria—just to sustain your desired throughput.

* This was based on the statistic that most startups (my early adopter target) fail within three years (source: Startup Genome)
The point of this exercise is getting a first dose of reality on the viability of your business model. What do you think about the viability of this business model now? Creating 16,000 active customers one time is very different from having to create 8,000 new customers every year just to maintain your desired revenue goal!

3. Test/Refine Your Business Model Against Your Minimum Success Criteria

The purpose of this simple back-of-the-envelope calculation is to turn a big fuzzy revenue number into something real and tangible—like creating customers.
It’s much easier to do a gut test with people than with just numbers: “How does having to add 8,000-plus new SaaS customers every year make you feel?” I aim to achieve my minimum success criteria goal using just my early adopter segment (which is a smaller segment of the overall customer segment) to give myself room for further growth. A quick lookup reveals that there are about 10,000 active SaaS products today, which signals a red flag on the viability of this business model.

It gets worse. Most SaaS products average a 1 percent conversion rate from visitors to customers. So in order to generate 8,000-plus new customers, I would need to drive 800,000-plus new visitors per year. That’s 2,000-plus new visitors per day!

Once you have these customer throughput rates, you can then revisit your Lean Canvas and put your customer segment and channel assumptions to the test.

All metrics are people first.
- Is your customer segment big enough?
- Do you have any scalable channels identified already for building a reliable path to customers?

In my case, while the overall software market might be large enough to sustain these numbers, I wasn’t confident I could do this with just my SaaS early adopter segment. So I decided to refine my business model further. The levers for driving down the customer production rate are obvious from the formula:

\[
\text{Customer Production Rate} = \frac{\text{Yearly Revenue Target}}{\text{Customer Lifetime Value}}
\]

\[
\text{Customer Lifetime \times Monthly Recurring Revenue}
\]

1. **Lower Yearly Revenue Target**
   
   You can always lower your yearly revenue target, but because that requires us to lower our desired outcome, we’ll leave this option as a last resort.

2. **Increase Customer Lifetime Value**
   
   The only other option is increasing your customer lifetime value. In this example, customer lifetime value is a function of the customer lifetime and the monthly recurring revenue (MRR). Let’s look at each in turn:

   a. Increase your customer life term
   
   Doubling our customer life term from two years to four years would halve our customer production rate requirement. That said, increasing customer lifetime is nontrivial because it potentially requires a revamp to the existing value proposition, and possibly the scope of the solution, which drives up product delivery costs (or operating expenses).
b. Raise pricing

This is by far the most powerful (and underutilized) lever you have in your business model. Doubling pricing from $50/month to $100/month also cuts the required customer production rate in half. But unlike increasing the utility of your value proposition, a price change may take only a few minutes to implement on your checkout page.

Sure, there is always the danger that increasing pricing will result in fewer customers, but what if it doesn't? Consider Joe’s story. I met Joe six months after he had launched his product. He was charging $30/month at the time and making a few thousand dollars a month. While he was happy he was making some money, he felt stuck because he wasn’t making enough money to invest in growth. I immediately challenged his pricing assumptions. Like many entrepreneurs, Joe had made the mistake of using a cost-based pricing approach.

Cost-based pricing is where you estimate what it costs you to deliver your product and then slap a modest margin on top of that. This approach usually leaves uncaptured value (money) on the table. I asked Joe to think about raising prices this way:

If you could double your pricing, and not lose more than half your customers, you would still come out ahead.

You come out ahead because you keep the same throughput but now have fewer customers. Fewer customers (less inventory) mean fewer customer support requests and lower operating costs to service them.

I managed to convince him by pointing out that he could limit the new pricing test just to new customers and run the test for only two weeks. I met with him two weeks later and he was ecstatic. He had signed up the same number of customers as he had the previous two weeks—only at twice the price! I asked him what he was going to do next. He shot back: “I’m going to double my pricing again!”
He doubled his pricing again and while he measured a slight dip, he was still far away from the threshold, so he decided to double his pricing another time. This time he did measure a significant dip and settled on a price that was four times higher than where he had started.

Joe’s story is not atypical. Most entrepreneurs price their products like artists. They struggle to place a fair value on their product and fall back on a cost-based pricing approach like Joe did. A more effective approach is thinking in terms of value-based pricing in which you anchor your pricing not against your cost structure but against the potential value your customers stand to derive from your product. Remember that as long as your customers derive more value from your product than it costs them, it’s still a fair transaction.

Like Joe, I didn’t choose to simply double my pricing, I chose to quadruple it to $200/month. Here’s how the rest of the numbers worked out:

\[
\begin{align*}
\text{Yearly Revenue Target} &= \$10M/\text{year revenue} \\
\text{Customer Lifetime Value (LTV)} &= \$200/\text{month for 2 years life term} \\
&= \$4,800 \text{ LTV} \\
\text{Customer Throughput Rate} &= \frac{\text{Yearly Revenue Target}}{\text{Customer Lifetime Value}} \\
&= \frac{\$10M}{\$4,800 \text{ LTV}} \\
&= 2,083 \text{ new customers/year}
\end{align*}
\]
Isn’t This All Just Funny Math?

At this point, you might be wondering whether all this is even worth the trouble. After all, you can easily double or quadruple the pricing model on paper to make the model work. So what?

We started with a big fuzzy revenue goal (the destination) and first converted it into a customer throughput rate. We then further deconstructed this number into a set of input parameters (starting assumptions). Some of these starting assumptions can actually be validated on day one.

While quadrupling your price (like I did) is easy on paper, if you can’t follow that up by getting outside the building and finding ten people who will accept your higher price (your first milestone), then you have a problem! You don’t need three years to figure this out. That is the power of this kind of estimation. You can quickly convert fuzzy revenue and profitability goals into more actionable innovation metrics that you can start validating immediately.

As you might have suspected, my quadrupled pricing model was met with some initial resistance. My target early adopters were typically software startup founders and they were used to spending $0–$100/month on third-party tools. A $200/month product was immediately perceived as outside the norm and expensive. In order to make my business model work, I needed a way to justify my higher pricing. Here’s how I did this.

I noticed that my prospects were comparing my product to other third-party products in general (like their customer support software), which was an apples to oranges comparison. I realized that customers are not always good at determining the fair value of a product on their own and that you have to explicitly anchor your product against your customer’s existing alternatives.*

* For a great illustration of price anchoring at work, watch this video on how Steve Jobs unveiled the introductory price of the iPad: https://www.youtube.com/watch?v=QUuFbrjvTGw.

While we all need a ballpark destination to justify the journey, it’s not the destination itself but the starting assumptions that inform whether we are even on the right path.
While my customers were not spending hundreds of dollars a month on other analytics software, they were spending close to twenty hours/week on building out their own homegrown dashboards. Assuming a conservative $50/hour developer rate, $200/month represents just four developer hours/month. This is what I needed to effectively anchor my product. After grabbing the attention and interest of my prospects with a compelling demo, I shared my pricing model and followed with:

“I know that $200/month might be higher than most other services you are using, but given what you have seen (the demo), if you feel you can build something similar working just half a day a month, then you come out ahead and shouldn’t buy our product.”

This explicit anchoring technique was one of the key tactics that led to an 800 percent increase in conversion, from 10 percent when I first started presenting the higher pricing prospects to 80 percent a few weeks later.

What about testing customer lifetime values? Getting actual customer lifetime value numbers requires more time. But here also, you can begin to extrapolate customer lifetime value using secondary approximations (like your monthly churn rate) without having to wait the full customer lifetime:

\[
\text{Projected customer lifetime} = \frac{1}{\text{monthly churn rate}}
\]

So, for example, a product that measures a monthly churn rate of 2 percent represents 1/0.02 = 50 months, or roughly four years of a customer lifetime. You don’t have to wait four years to figure this out.

What About Ballparking More Complex Models?

I used a direct business model example, which is the simplest of the three types. Estimating the other two types of business models requires a few additional input assumptions but follows the same exact process:

1. Start with your minimum success criteria or desired throughput goal.
2. Convert this number to customer throughput.
3. Then refine and adjust the model.

**MULTISIDED MODELS**

Because users pay you with a derivative currency, the key difference here is calculating the value or exchange rate of this derivative currency.

In the case of a product like Facebook, for instance, we calculate this derivative currency exchange rate as the average revenue per user (ARPU). You can get to this number by estimating the average cost per thousand impressions (CPM) advertisers will pay and the average monthly page views per user. Both these numbers are easily searchable online.

**MARKETPLACE MODELS**

With marketplace models, value is captured when a transaction is made. So the key difference is using the commission or transaction fee in your revenue stream to calculate the number of transactions per year you’ll need to generate to sustain your minimum success criteria. You then estimate the number of buyers and sellers you will need in the system to sustain this transaction rate.
Exercise: Ballpark Your Business Model

Using your business model(s) from chapter 1, ballpark each one using the Fermi estimation method.

- Start with your minimum success criteria, which should be independent of your business model.
- Then, for each business model:
  - Estimate your customer lifetime value.
  - Convert your minimum success criteria into customer throughput.
  - Refine and adjust the model.
  - Eliminate any models that don’t work.

Key Takeaways

- If your business model doesn’t work on paper, you’ll be hard-pressed to make it work in the real world.
- Understanding the inputs versus the outputs to the model is what’s actionable.
- You can ballpark the viability of a business model using a simple back-of-the-envelope estimation. Here are the steps:
  - Estimate your customer lifetime value.
  - Convert your minimum success criteria into a customer throughput rate.
  - Refine and adjust the model.
  - A time-boxed traction goal is much more tangible than a revenue goal.
CHAPTER 3

Build a Traction Model

While a customer throughput goal, like the one we calculated in the last chapter, is a lot more concrete than a fuzzy revenue number, your minimum success criteria time box is still several years out into the future. We need a way to break this goal into smaller milestones. In *Running Lean* I offered a three-stage plan for doing this:

![Diagram of three stages: Problem/Solution Fit, Product/Market Fit, Scale.]

Each stage is driven by a high-level goal and a strategy for achieving it.
Stage 1—Problem/Solution Fit

While ideas are cheap, acting on them is quite expensive.

The high-level goal of this stage is testing whether your idea represents a significant enough problem worth solving.

Earlier we saw some of the pitfalls of applying a build-first and/or a funding-first strategy at this stage. *Running Lean* instead advocated a traction-first strategy. You demonstrate traction not by building out a solution, but through the use of a proxy for your solution—something I call an “offer.”

An offer is made up of three things: your unique value proposition, a demo, and pricing.
1. A Unique Value Proposition

This represents the finished story benefit or promise that you make to your customers to get their attention. If you were building a job-hunting site, for example, rather than rattling off your unique features, focus on what job seekers want: “Get a dream job in sixty days.”

2. A Demo

Your demo isn’t intended to be just a collection of pretty screenshots or a working prototype, but rather a carefully scripted narrative that helps your prospects visualize your unique value proposition. It should walk them from their current reality (riddled with existing problems) to your envisioned future reality for them (one where these problems are solved with your solution).

3. A Pricing Model

And finally, your offer should include an appropriate call to action. Depending on your business model type and the readiness of your solution, this may be an actual money exchange or some sort of derivative currency exchange.

Solution interviews, teaser landing pages, smoke tests, and crowd-funding pages are all examples of offer types you can use at this stage. You use your offer both to test for customer pull (a prerequisite for traction) and to refine your initial product specification (or minimum viable product), which prepares you for entering stage 2.

Note: Unlike other literature on minimum viable product (MVP), I draw a clear distinction between an offer and an MVP.

An MVP is the smallest solution that creates and captures monetizable value from users.

It is not enough to measure what your prospects say—you have to measure what they do.
Stage 2—Product/Market Fit

The high-level goal of this stage is demonstrating your business model working at small scale. You need to demonstrate that you can both create value for your customers (through your solution) and capture some of this value back (through your revenue streams). The key insight here is that:

- You don’t need lots of users, just a few good customers.

The strategy for doing this outlined in Running Lean employs fast and continuous feedback loops with customers for the purpose of iterating your MVP into a product that works.

Stage 3—Scale

Perfect is the enemy of good.
—VOLTAIRE

There is a marked shift in strategy at this stage from product to growth. This stage is less about driving your solution to perfection and more about finding the right engines of growth to realize the full potential of your business model.

While this high-level road map from Running Lean provided some guidance for navigating the highly uncertain terrain of innovation, it also raised additional questions such as:

- What is the measurable goal of each stage?
- How do you measure progress toward this goal?
- When do you transition from one stage to the next?
Because each stage is characterized by a different strategy and goal, it is important to constantly locate yourself on your journey from ideation to scale. That is the job of your traction model.

While your Lean Canvas describes your business model story, your traction model describes the desired output of your business model. In order to build a traction model, we are going to first visit another key property of systems: repeatability.

**Repeatability Enables Staged Rollouts**

Once a system is in place, its throughput is predictable. A traditional factory, for instance, will output a set number of units per day within some tolerance for variability. This is the principle of repeatability.

The traction model is to the financial model what the Lean Canvas is to the business plan.
The customer factory draws on this same principle. Now, you might say to yourself, a factory’s output is predictable because it’s powered by machines, and machines are largely consistent and predictable. Humans, on the other hand, are irrational and unpredictable. So how can we possibly expect predictability?

Dan Ariely is a professor of psychology and behavioral economics at Duke University. He is also the author of two best-selling books: *Predictably Irrational* and *The Upside of Irrationality*. As part of his research, he runs hundreds of experiments on how people make decisions—especially financial or purchase decisions.

Classical economics suggests that people make purchase decisions rationally after weighing all the potential upsides and downsides to the decision. Ariely’s findings suggest otherwise. Chapter 5, “The Power of a Free Cookie,” in his book covers the irrationality of free. When people are given multiple choices, including a free choice, the free option was the one most commonly exercised, even though it had an obvious downside. Getting something for free gave people such an emotional charge that they perceived what was being offered as a lot more valuable than it actually was.

In experiment after experiment, Ariely found that people will pick the same, poorer choice, which is indeed irrational. But here’s the kicker: they were predictably so.

So even though humans may act irrationally, their behavior can be described by a model. You don’t need lots of numbers to do this. In qualitative experiments, like usability tests, it has been shown that just five tests uncover 80 percent of all the issues. Similarly, after just ten customer interviews, you can often predict how the rest of your prospects will react to your offer.

Even once your product is launched, it’s uncanny how the customer life cycle
repeats itself day in and day out. Like clockwork, you start to observe predictable customer behavior in the number of people who visit your landing page, engage with your product, upgrade to become paying customers, or leave and never come back.

**The Groundhog Day Effect**

On the one hand, this kind of repeatability can be depressing. Because once steady traffic sets in, despite your best efforts, your charts flatline. No one wants to walk into a board meeting with a flatline graph.

On the other hand, repeatability in your business model can be highly empowering because it establishes the current benchmark of your customer factory. A stable benchmark gives you permission to aggressively experiment with bold new ideas with the goal of creating a spike in the flatline. If you do manage to create a spike, your next course of action is to run more of whatever you just did to make the spike stick at this higher level.

I call this the Groundhog Day effect—from the movie *Groundhog Day*, in which the protagonist played by Bill Murray is stuck in a loop where his life repeats itself every single day until he has a breakthrough insight that breaks the loop.

We entrepreneurs are similarly stuck in a daily loop of predictable customer behavior. Our job is to uncover the right breakthrough insights to move the curve up and to the right.

**Growth as a Series of Steps**

We often draw the hockey-stick curve as a smooth curve, but if you zoom in you’ll find that it isn’t so smooth after all. It is made up of a series of steps. Think of these steps as firing rockets that get you from one stable orbit to the next. Each of these firing rockets, or growth hacks, eventually burns out and needs to be constantly...
replaced with new ones. Each firing rocket represents a substrategy that got the business model from some initial customer throughput rate (point A) to a new customer throughput rate (point B).

Repeatability Before Growth

Not only is repeatability a property of systems, it is also a necessary precondition for growth. As part of my consulting practice, I advise entrepreneurs in accelerators who are usually working frantically on many things at once. I often find that they have a few paying customers, which is a great start.

My next question to them is: “Do you know how you’re going to get your next ten paying customers?” Often they don’t have a good answer.

You see, the first few customers came in from friends, others from adviser referrals, and the rest were seemingly random. The problem with random is that random is not repeatable.
My advice to them is to stop trying to go faster in every possible direction and instead slow down and try to figure out the repeatable pattern across their customers. The goal should be to identify a handful of actionable demographic and psychographic cues that triggered their purchase decision.

The reaction I often get is that we need to accelerate traction and go fast on everything. But accelerating on a plan that isn’t yet repeatable just gets you lost faster.

Mark Suster, a VC who writes the popular blog Bothsides of the Table, published a great blog post titled “Invest in Lines, Not Dots,” which captures this point perfectly. The thesis of the post is that a single data point in a product’s trajectory, no matter how good it may be, is not investable. It’s not enough to communicate progress because it isn’t a rate.

At the earliest stages, entrepreneurs need deceleration, not acceleration.
You may have managed to achieve a one-time spike, for instance, by getting TechCrunched or doing a product launch at SXSW. A lot of companies used to scramble to secure investment after such a spike, but the more savvy investors know to wait and see if the spike sticks.

On the other hand, if you can demonstrate repeatability coupled with impressive customer throughput metrics even at microscale, you can extrapolate the business model story to paint a big picture.

This was the reason Facebook was able to command much higher valuations than its closest rivals, even though it had a lot fewer users and little revenue.

**Facebook Won on Strategy**

When Mark Zuckerberg started Facebook in 2004, he wasn’t the only person building a social networking platform. There were dozens of other social networking platforms before his—many with millions of dollars in funding and millions of users. Yet he still managed to break into the market and build the largest social networking platform on the planet.

How did Facebook manage to win against bigger and better-funded competitors who had a huge head start? The answer: Facebook won on strategy—not on an original founding vision or an inherent unfair advantage.

While Facebook had a ballpark destination (set by its closest rivals), the most impressive aspect of its story was how it rolled out the product in stages. While all his competitors had opened up their platforms to the public from day one, with the goal of growing as fast as possible, Mark did the opposite. He initially launched Facebook on just a single college campus—Harvard University. By initially limiting its launch to just a single college campus, Facebook was able to focus on first getting its product right without the distraction of having to also scale to millions of users at the same time (as its competitors did).
Within the first thirty days of launch, Facebook managed to demonstrate impressive user engagement metrics. Over 75 percent of Harvard students were on Facebook and more than half of them were logging in multiple times a day.*

Facebook then methodically rolled out its platform from one Ivy League university to the next, and eventually to other colleges. Not only did a staged rollout allow Facebook to play up exclusivity and desire, which was part of its overall strategy, but it had the more important effect of demonstrating repeatability in its business model. This was key to securing the investment capital it needed to grow. Facebook managed to raise just under $13 million within its first year of launching, with a post-money valuation of more than $100M. Its two closest rivals, Myspace and Friendster, had both raised funding also at the end of their first year based on $46M and $53M, respectively.

While most of us on the outside were left scratching our heads, investors could already see the bigger picture of what Facebook had really built: a repeatable and predictable system for turning new, unaware students into happy, passionate users. It had built a customer factory.

Since Facebook’s business model was multisided, these users represented a monetizable derivative asset whose value could be easily demonstrated. Facebook did this by using Google ads on its pages.

The inner workings of its customer factory allowed Facebook to go into any college campus and repeatedly demonstrate similarly impressive user engagement metrics to the ones on the Harvard campus. It didn’t take much to extrapolate this superpower working on any college campus. Hence Facebook’s high valuation.

After conquering most of the college campuses, Facebook set its sights beyond college students. It again employed a similar methodical staged rollout—this time launching from company to company before opening up to the public.

By then it was unstoppable. It commanded another huge spike in valuation and secured enough capital to fuel its meteoric rise to the top of the social networking platforms.

Facebook achieved its goal of building the largest social network not by pursuing a land-grab strategy like its competitors but rather by following a carefully orchestrated staged rollout strategy. Even though it wasn't first and didn't start with an inherent unfair advantage, its staged strategy ultimately led Facebook to victory.

**Building Out the Customer Factory in Stages**

I used Facebook to illustrate the power of staged rollouts because everyone knows its story. And yes, Facebook is an outlier. Most startups don’t grow as fast as Facebook did. That said, the principles behind staged rollouts don’t work only at such a massive scale or only with viral products.

If you were charged with building out a real factory to manufacture a new widget, you wouldn’t blindly crank up production to its highest level. You would probably first conduct some market demand analysis to determine an initial starting batch size. Then you would step up your factory production in stages—first running a few small batches to ensure that you could reliably manufacture your product before scaling up operations to meet market demand.

Building out any customer factory is no different. The first stage (Problem/Solution Fit) is where you test for sufficient customer pull to get the factory started. The other two stages (Product/Market Fit and Scale) are simply stepped-up versions of the first stage.

It’s important to highlight that the goal of each stage isn’t simply to create some set number of customers one time—for example, your first ten customers. Rather, the goal of each stage is to build a system that outputs a repeatable customer
throughput rate, for example ten new customers a week. This, of course, begs the question: “What are the right customer throughput rates at each stage?”

**Modeling Traction**

We already have the required active number of customers needed for the scale stage. This was a number you calculated in the last chapter from your minimum success criteria.

In order to ballpark the other two stages, we are going to work backward from scale and create a time-boxed traction model for them.

**STARTUPS DON’T GROW LINEARLY**

The shortest distance between two points is a straight line, but startups don’t grow linearly. To hit 4,000 customers in three years, you’ll need to add 111 new customers every month starting from month one. This isn’t realistic.
The hockey-stick curve tells a more realistic story. The flat portion of the hockey-stick curve provides a slower ramp at the beginning. You need this time to get your business model in order. The rate of growth (or the slope of the curve) picks up quickly from there. That’s when the exponential part of the hockey-stick curve quickly outpaces a linear model. This slope is your measure of traction, or customer throughput.

**STARTUPS DON’T GROW FOREVER**

Even the hockey-stick curve is only part of the story. Business models don’t grow forever. Either markets reach saturation or the business model gets disrupted. Even Facebook’s user growth will reach saturation because there is an upper limit to the number of people on the planet (unless we start friending artificial intelligence [AI] bots).

A more accurate description of the business model trajectory is an S-curve, or
the sigmoid function. The function was named in 1845 by Pierre François Verhulst, who studied it in relation to population growth.

We can map the three stages of a business model to this S-curve:

1. The Problem/Solution Fit stage is the flat portion of the curve when you validate customer demand for your value proposition.
2. The Product/Market Fit stage is the inflection point which marks the rapid or exponential growth stage of the business model.
3. Because it is hard to predict the saturation point of a market, I don’t define the Scale stage as the top of the S-curve but rather the point when your minimum success criteria are met. You’ll remember from chapter 2 that I recommend meeting your minimum success criteria goal using your early adopters, which leaves you room for further business model growth.

WHAT IS A GOOD GROWTH RATE?

Paul Graham, cofounder of the Y Combinator startup accelerator, defines a good growth rate as 5 to 7 percent a week. Here’s a table from a blog post he published titled “STARTUP = GROWTH”:

<table>
<thead>
<tr>
<th>WEEKLY</th>
<th>YEARLY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1%</td>
<td>1.7x</td>
</tr>
<tr>
<td>2%</td>
<td>2.8x</td>
</tr>
<tr>
<td>5%</td>
<td>12.6x</td>
</tr>
<tr>
<td>7%</td>
<td>33.7x</td>
</tr>
<tr>
<td>10%</td>
<td>142.0x</td>
</tr>
</tbody>
</table>
It goes without saying that only a few outlier businesses can sustain these growth rates for a long period of time. A startup making $1,000/month and growing 5%/week will be making $25M/month in four years! Facebook’s weekly revenue growth rate was 21.5% for the first six months and close to 5%/week for the next two years before the law of large numbers caught up to it and lowered its growth rate to ~1%/week.*

That said, while most businesses don’t sustain these growth rates for long, I find that most successful businesses do start out this way. Y Combinator typically aims for hypergrowth startups that are somewhere between stage 2 and stage 3 and already generating some revenue from customers. Accounting for the earlier ramp-

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up period of stage 1, I simplified this 5- to 7-percent-a-week growth rate to a 10x rule that describes the trajectory of a startup from idea to minimum success criteria point.

The 10x rule: The distance between the Scale stage and the Product/Market Fit stage is roughly an order of magnitude.

Venture capitalists Marc Andreessen* and David Skok† both use a similar 10x rule in the growth models for their portfolio companies. Like a Fermi estimate, the 10x rule isn’t intended for significant precision but as a rough (yet good enough) ballpark. It works reasonably well for most products, but you should always check your own numbers to see if it aligns with your time line and high-level goals. Otherwise, adjust as needed.

**WHAT IS A GOOD TIME BOX FOR THESE STAGES?**

We have already established three years as the upper bound for your minimum success criteria goal, or the Scale stage. Let me cover the upper bound for the Problem/Solution Fit stage next.

Based on working with hundreds of entrepreneurs across a diverse range of products, I have found that the average time to go from idea to Problem/Solution Fit is eight weeks. Remember that at this stage, you don’t build a product, but an offer, which allows for rapid validation. That said, the single biggest contributors to how long Problem/Solution Fit will take you are your willingness to get outside the building and your access to potential customers. For this reason, I place three months as the upper bound for achieving Problem/Solution Fit.

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* Cofounder of Netscape and general partner of Silicon Valley venture capital firm Andreessen Horowitz.
† Five-time serial entrepreneur and partner at Matrix Partners in Boston.
Because the Product/Market Fit stage is one tenth of your Scale stage, following the 10x a year growth rule implies that you should reach this stage by year two.

**USERcycle Case Study**

Let’s apply this model to the SaaS product we modeled earlier. For a $10M/year revenue run rate at the Scale stage, we had calculated the active customers count at roughly 4,000-plus customers. Applying the 10x rule, we can ballpark the other two stages as:
In this example, 4,000-plus customers/year at scale represented $10M revenue/year, so Product/Market Fit would be one tenth of that number. Achieving a $1M/year revenue run rate seemed like a reasonable transition point to shift from product to growth for this product, so I stuck with the numbers.

Where some further breakdown is usually needed is at the Problem/Solution Fit stage. At this stage, you are usually not yet creating customers, but leads or users, who are in the process of being converted to customers (through trials). So we need a way to turn the desired customer production rate to a leads or trials production rate.

If you don’t have any better numbers to go on, use a power-of-ten estimation. I simply assumed that 10 percent of leads would convert to trials and 10 percent of trials would convert to customers.

So in order to achieve a customer throughput rate of 40 customers/year by year one, I would need to generate \((40/12 \times 100) = 333\) leads/month or \((40/12 \times 10) = 33\) trials/month. I rounded the last number down to 30 trials/month, which became my Problem/Solution Fit success criteria.

You can probably appreciate now why you don’t need three-digit precision in your calculations. Our goal is to take a big fuzzy number out in the future and turn...
it into something actionable and concrete in the present. Once you reduce your Scale number by a couple orders of magnitude, it becomes pretty actionable.

**Facebook’s Traction Model**

Because Facebook wasn’t first, it could rely on matching (and beating) the growth baseline set by its closest rivals. Here is what its initial traction model might have looked like given its original high-level concept of building a “Friendster for colleges”:

![Graph showing traction model with key milestones including Problem/Solution Fit, Product/Market Fit, and Scale to 10 million active users over 24 months.]
We all know that Facebook didn’t stop there. It went on to do this:

![Graph showing active user growth over time](image)

**Why This 10x Strategy Works**

Here’s why this simple 10x model works:

**YOU HAVE A SINGLE GOAL FROM IDEATION TO SCALE**

Having a single-minded goal of increasing customer throughput brings clarity in your mission to build a successful product.
IT MAKES THE EARLY IDEATION STAGE MEASURABLE

The Problem/Solution Fit stage is the most qualitative of the three stages because it relies on data from smaller numbers of prospects usually gathered through interviews. For this reason, it’s also considered the most uncertain. But using a systems approach, it doesn’t have to be.

I run into lots of entrepreneurs who pat themselves on the back for conducting dozens of customer interviews, which I’ll admit is commendable. But when I ask them “How many customers did you sign up?,” the answer is usually disappointing, followed by “but I’m learning a lot.” Then they point to their stacks of scribbled interview notes.

Unless you can turn your learning into measurable results (measured as an increase in customer throughput), you are not making progress but simply engaged in a trivial pursuit. Rather than measuring the number of interviews or quality of interviews, focus instead on the macro goal of creating a customer (or as close to one as possible).

The way you do this during the Problem/Solution Fit stage is through your offer. Your prospects either accept or reject your offer. It’s a binary decision.

While learning is a key activity, it’s the results that matter.
THE 10X MODEL IS DECEPTIVELY SIMPLE

I often pose the same starting challenge to everyone irrespective of their business model type: “Can you find ten people who will use your product?”

The rationale for this challenge is that one of them will turn into a happy customer, which is the first singularity moment in a product’s life cycle.

THE SINGULARITY MOMENT OF A PRODUCT

The singularity moment of a product is not when you write your first line of code or raise your first round of funding, but when you create your first customer. You go from nothing to creating value. Every business, whether it’s Amazon, Google, or Facebook, started this way—with one before the millions (or billions). While one might seem too simple to strive for, it’s not. In order to get one good customer, you need to get ten times as many people actively using your product. In order to get ten active users, you need to get ten times as many people interested in your product. So to get one good customer, you need to start with at least one hundred people. Not so easy after all . . .

When you are pursuing something new and innovative, people don’t see what you see, which is the first battle. If you talk to ten people and none of them are interested in your idea, that is a statistically significant outcome that you need to address before tackling the thousands or millions of customers in your business model projections.
YOU ARE DONE ONLY WHEN YOU CAN DEMONSTRATE REPEATABILITY

I often see entrepreneurs come back with ten commitments from friends, which is a good start, but not yet a repeatable production rate. The exercise isn’t about just talking to ten people once but building a system that you can repeatedly get tens of people interested in your product.

THE MODEL INCORPORATES PROGRESSIVE LEVELING UP

If you get this far, the next challenge is leveling up to getting hundreds of people interested, then thousands, and so on, until you reach your required Scale customer throughput rate.

While you might have employed customer interviews, for example, to secure tens of interested prospects, in order to get hundreds, you have to rewire your customer factory and level up your channels. In this case, you might hire additional salespeople or scale up by moving from a direct-sales model to a self-serve model through a marketing website.
You similarly have to level up on technical risk and other resources like your team.

10X EXPOSES THE RISKIEST PARTS OF YOUR BUSINESS MODEL

The 10x model automatically works to prioritize customer or market risk over technical risk.

By purposely limiting your customer throughput batch size at the earlier stages, you can focus on finding the best early adopters for your product and on delivering the best possible high-touch experience to validate your value creation hypotheses. Your perspective on what you need to build (your solution) also changes. For instance:

- If you are building a software product, instead of waiting for your product to be usable to test your product, you could become the first user of your own solution, and offer its benefits as a consultant using a concierge MVP approach.
If you are building a hardware product, instead of waiting for a fully automated manufacturing route, assemble your first 100 units by hand. This is what Pebble did.

If you are building a low-tech product like starting a restaurant, instead of opening a brick-and-mortar restaurant, you could start with a food truck.

By embracing a smaller initial batch size of customers, you leave yourself no excuse not to succeed. This is what I call going for the easy button. The corollary is also true. If you can’t deliver value to this small subset of your best possible customers, what makes you think you can deliver value to your hundreds or thousands of future mainstream customers?

**HAVING A TRACTION ROAD MAP PROVIDES A GUIDING COMPASS**

In my example above, I gave myself three months to achieve a production rate of 30 trials/month to achieve Problem/Solution Fit. If after month two, I have only 2 trials started, that indicates a red flag. If after month three, I am still off by a lot, that’s my business model feedback loop telling me that I need to pivot or reset my approach.

**THE 10X MODEL REQUIRES NONLINEAR THINKING**

If, on the other hand, I achieve my goal of starting 30 trials/month, my next challenge isn’t just maintaining this rate or even doubling it, but rather thinking of how to 10x this rate. Hypergrowth businesses don’t grow linearly but in nonlinear steps. You have to think similarly.
**HOW TO ACHIEVE 10X**

Breakout businesses don’t grow linearly but exponentially. For that you have to think in 10x steps, not just 2x. 2x is not easy but is often doable simply by adding more resources. For instance, a service business of one can try to approach 2x by hiring one to two more people. But 10x requires nonlinear thinking. It requires innovation, which is often hard to come by. That said, consider this: you can achieve close to 10x by 2xing three times. So rather than completely reinventing the business, can you instead find three 2x opportunities that you can apply in rapid succession? Let’s look at another example where a 10x rollout strategy is in play, not across a single product, but as a grand vision.

**Tesla’s 10x Strategy**

Elon Musk had a big vision of moving us from a mine-and-burn hydrocarbon economy toward a more sustainable solar electric economy. A key part of this vision is building a mainstream, affordable, 100 percent electric car. But building an affordable all-electric car is a really hard problem. Instead of tackling it all at once, he employed a staged approach by first launching a high-performance electric sports car—the Tesla Roadster.

The biggest problem to solve for an all-electric car was range anxiety—that is, getting an electric car to closely match the stamina of a regular car on a full tank, which is usually around two to three hundred miles, depending on the type of car.
To prioritize solving this problem, Tesla didn’t build a car from scratch. Instead it licensed the rights to use the body of another popular car: the Lotus Esprit. Tesla essentially took out the internals from the Lotus, fitted it with its own battery and motor, and sold it at a pretty high price tag.

The choice of body style wasn’t random. It was carefully chosen to match both Tesla’s positioning ("a performance electric car") and early adopters. By starting at the premium high end, Tesla was able to limit its scale of production and really focus only on getting the product right (i.e., to solve range anxiety by building better battery technology).

The next stage involved launching a more moderately priced (but still expensive) Model S. This car Tesla did build from the ground up. The company progressively scaled up its production capacity to do this, and this car too employed an interesting staged product rollout strategy.

Rather than changing the car configuration every year, like most car manufacturers, Tesla shipped every car packed with the same hardware and used over-the-air software updates to add new features. When the car first launched, for instance, it didn’t have memory seats. That was added as a free software update. My favorite update story was when they made the car go four tenths of a second faster with just software. Imagine that.

This continuous deployment strategy allowed Tesla to bring its product more quickly to market and then use incremental updates to improve the product from there.

Beyond the Model S, Tesla now has its sights on introducing a mainstream vehicle priced at around $35,000, which may allow the company to realize its original vision for scale and impact. By that time, a lot of the product risk would have been mitigated and the infrastructure for scaling already built.
Exercise: Define Your Significant Success Milestones

For each of your business models,

1. Use the 10x rule to build a traction model.
2. Test the model so the numbers make sense for your business model type.

Key Takeaways

- Establishing repeatability in your business model is a prerequisite to pursuing growth.
- Growth is not a continuous function but a series of steps best described as firing rockets that get you from one stable orbit to the next.
- A staged rollout strategy works to automatically prioritize the right risks in your business model.
- You can break the product life cycle into three stages: Problem/Solution Fit, Product/Market Fit, and Scale.
- At a macro level, the only difference between the three stages is the customer throughput rate.
- The distance between each stage can be modeled using a 10x rule, which works both top down and bottom up.
- You can take on 10xing your business as a series of 2x steps.
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