Chapter 18. Stage Four: Revenue

At some point, you have to make money. As you move beyond stickiness and virality, your metrics change. You'll track new data and find a new OMTM as you funnel some of the money you collect back into acquiring new users. Customer lifetime value and customer acquisition cost drive your growth, and you'll run experiments to try to capture more loyal users for less, tweaking how you charge, when you charge, and what you charge for. Welcome to the Revenue stage of Lean Analytics.

The goal in the Revenue stage is to turn your focus from *proving your idea is right* to *proving you can make money* in a scalable, consistent, self-sustaining way. Think of this as the piñata phase, where you beat on your business model in different ways until candy pours out.

Some startup advocates recommend charging for the product at the outset. This depends on several factors, from churn to cost of acquisition to the kind of application you're building. But there's a difference between *charging up front* and *focusing on revenue and margins*. In the earlier stages, it's OK to run the business at a loss, or to give away accounts, or to issue refunds, or to let highly paid developers field support calls. Now, that has to change. Now, you're not just building a product—you're building a business.

Metrics for the Revenue Stage

Measuring revenue is easy enough, but remember that while raw revenue might be going "up and to the right," revenue per customer is a better indicator of actual health. It's a ratio, after all, and there's a lot more you can learn from it. For example, if revenue is going up but revenue per customer is going down, it tells you that you're going to need a lot more customers to continue growing at the same pace. Is that doable? Does that make sense? The ratio helps you focus on making real decisions for your startup.

As a result, you'll be looking at click-through rates and ad revenue, or conversion rate and shopping cart size, or subscriptions and customer lifetime value—or whatever brings in money. You'll be comparing this to the cost of acquiring new users faster than they churn—because the net addition of visitors, users, and customers you can monetize is your growth rate.

You'll also work hard at getting pricing right, balancing the highest price with the most paying customers. And you'll be experimenting with bundles, subscription tiers, discounts, and other mechanisms to determine the best price.

The Penny Machine

An entrepreneur walks into a maple-paneled boardroom just off the 280, glances around the table at the well-groomed investors gathered there, and reaches into a large leather bag. She pulls out a strange machine, roughly two feet high by one foot wide, sets it carefully on the table, and plugs it in.

The room is expectantly quiet.

"Does anyone have a penny on them?" she asks. The general partner raises an eyebrow as one of the junior staff members hands over a faded copper piece.

"Now watch."

The entrepreneur inserts the coin into the top of the machine and pulls a small lever. There is a low-pitched whirring, followed by a pause, and then a shiny new nickel tumbles into the small shelf at the bottom of the machine.

The only sound in the room is the ventilation system, cooling the warm Palo Alto air.

"That's a neat trick," says the silver-haired general partner, straightening up in his seat and grinding his brown Mephistos into the hypoallergenic rug beneath him. "Do it again."

The staffer hands her another coin. She slides the second penny into the top of the machine, and again pulls the lever. Out slides another nickel.

"You've got a bag of nickels in there," accuses a slightly disheveled technical analyst, somewhat defensively. "Open it up."

Wordlessly, the entrepreneur releases a small clasp on the side of the machine and swings it open. Within are a series of tubes and wires, but nowhere is big
enough to conceal nickels. The analyst looks mildly offended, but the general

enough to conceal nickels. The analyst looks mildly offended, but the general partner is on the edge of his seat as she closes the machine back up.

“How many pennies can I put in there per hour?” he asks.

“It takes five seconds to cool down, so you can insert 720 pennies an hour. That’s $36 in nickels for a profit of $28.80 an hour, with a margin of 80%.”

The general partner leans back in his Aeron chair and gazes out across the highway, into the Woodside hills. He pauses for a minute. “Can I put nickels into it?” he inquires.

“I’ve tried it with dimes. It works. Produces neatly folded dollar bills. I haven’t tried anything more than that yet, but I’m hoping it will handle fives,” replies the entrepreneur.

“How many can you make and run at once?” asks the partner, oblivious to the rest of the room.

“I think we can have 500 machines running around the clock. They cost $30,000 apiece and take two months to make.”

“One more question,” says the partner, “and I think we have a deal. Why can’t someone else build one?”

“I have intellectual property protection on the core mechanism, and I’ve signed an exclusive agreement with the US Mint to be the only producer of legal currency.”

Of course, this isn’t a real venture capital pitch. But it’s as close to perfect as one can get. We can learn a lot from the penny machine, and it’s a great metaphor to get startup CEOs thinking like investors.

The penny machine has an obvious money-making ability: you put in money, and more comes out. People understand what a penny is. While no business is as clear-cut as the penny machine, every CEO needs to make his business model as straightforward as possible, particularly to outsiders, so it’s painfully obvious why the venture will yield revenues.

The entrepreneur had reasonable answers to key questions: how big can the business grow, how good can the margins get, and what kinds of barriers to entry does it have?

The presenter engaged the audience, and let them help her tell the story. They were smart people who asked the questions she wanted, and she showed them were smart people who asked the questions she wanted, and she showed them that she'd anticipated their questions by providing slightly more detail than they asked for without going into too much depth.

There was no need for a detailed technical explanation at this stage. Later, the investors would certainly go over the technology carefully to ensure that it wasn't illegal, immoral, or outright trickery. But this meeting wasn't about that. Opening the machine up served as a simple proof that everyone in the room understood well enough.

The entrepreneur didn't set a valuation. She gave the investors all the details they needed to form one of their own, based on revenue potential, margin, costs, and so on. They could also calculate the working capital needed to fund the creation of the machines, based on cost and time, as well as return on investment.

Startup CEOs seeking venture capital would do well to remember the penny machine. It's a good way to ensure you're thinking like a venture capitalist. Every time your pitch strays from the simplicity of this meeting, it's a warning sign that you need to go back and tighten it up.

Penny Machines and Magic Numbers

This isn't just an entertaining metaphor for entrepreneurs preparing to pitch. Think of your company as a machine that predictably generates more money than you put into it. Measuring the ratio of inputs to outputs tells you whether you have a good machine or a broken one.

In 2008, Ominture's Josh James suggested one way to understand how a SaaS company is doing, and to decide whether it's time to step on the gas or to reconsider the business model.[69] It's pretty simple, really: look at the return on investment of your marketing dollar. In a SaaS company, you spend money on sales and marketing in the hopes that you'll sign up new customers. If all goes well, the following quarter your revenues will have increased.

To measure the health of the machine, divide how much you changed the annual recurring revenue in the past quarter by what it cost you to do so. You need three numbers to do this calculation:

- Your quarterly recurring revenue for quarter *x* (QRR[*x*])

- Your quarterly recurring revenue for the quarter before x (QRR[$x - 1$])
- Your sales and marketing expense for the quarter before x (QExpSM[$x - 1$])

If you don't have quarterly sales and marketing spending, you can take the annual spending and divide it by four. This also helps smooth out spikes in marketing spend or seasonal shifts, since not all the sales you get this quarter are a result of last quarter's sales efforts—some may have benefitted from previous quarters.

The formula looks like this:

$$\frac{(\mathrm{QRR}[x]-\mathrm{QRR}[x-1])}{\mathrm{QExpSM}[x-1]}$$

If the result is below 0.75, you have a problem. When you pump money into the machine, less money comes out. That's a bad thing for this stage of your business, because it means there's a fundamental flaw in your business model. If the result is better than 1, you're doing well—you can fund your growth with the proceeds, funneling revenue increases back into the machine to increase sales and marketing spend.

Finding Your Revenue Groove

At this stage in your startup, you've got a product that users like and tell other users about. You're trying to figure out the best way to monetize the product. Recall Sergio Zyman's definition of marketing (*more stuff to more people for more money more often more efficiently*) using. In the Revenue stage, you need to figure out which "more" increases your revenues per engaged customer the most:

- If you're dependent on physical, per-transaction costs (like direct sales, shipping products to a buyer, or signing up merchants), then *more efficiently* will figure prominently on either the supply or demand side of your business model.
- If you've found a high viral coefficient, then *more people* makes sense, because you've got a strong force multiplier added to every dollar you pour into customer acquisition.

- If you've got a loyal, returning set of customers who buy from you every time, then *more often* makes sense, and you're going to emphasize getting them to come back more frequently.

- If you've got a one-time, big-ticket transaction, then *more money* will help a lot, because you've got only one chance to extract revenue from the customer and need to leave as little money as possible on the table.

- If you're a subscription model, and you're fighting churn, then upselling customers to higher-capacity packages with broader features is your best way of growing existing revenues, so you'll spend a lot of time on *more stuff*.

Where Does the Money Come From?

For many services that charge a recurring fee, you need to decide if you're charging everyone, or just premium users. A freemium model may work, but it's not always a good thing—particularly if free users cost you money, and if you can't naturally distinguish the paid version of your service with tiers that a regular user will naturally encounter, such as number of projects or gigabytes of storage.

One variant on freemium is pay-for-privacy, where the content your users create is available to everyone unless they explicitly pay to keep it to themselves. SlideShare uses a variant of this. While the site does make money from advertising, it also charges users for a premium model where the content they upload isn't available to everyone. Now that they're part of LinkedIn, they're also subsidized by that company's business model.

If your users all pay, then you need to decide if you'll have trial periods, discounts, or other incentives. Ultimately, the best revenue strategy is to make a great product: the best startups have what Steve Jobs referred to as the "insanely great," with customers eager to give them money for what they see as true value.

If none of your users pay, then you're relying on advertising, or other behind-the-scenes subsidies, to pay the bills.

Many startups blend several of the six business models we've seen to form their own unique revenue model. They then find ways to pour that revenue into their own mix of virality and customer acquisition, investing some amount of their income into growth.

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Customer Lifetime Value > Customer Acquisition Cost

When it comes to turning revenues into additional customers, the most basic rule is simple: spend less money acquiring customers than you get from them.

That's hugely oversimplified, because you really want to spend only a fraction of your revenue on acquisition if you're going to keep the lights on, hire in anticipation of growth, spend money on research, and generate a return on investment.

The CLV-CAC math also needs to reflect the fact that there's a delay between paying to acquire customers and those customers paying you back. Any investment or loans you take aren't just paying for you to get to breakeven, they're also paying for the anticipated revenue from customers.

Balancing acquisition, revenue, and cash flow is at the core of running many business models, particularly those that rely on subscription revenue and paying to gain customers. As you play with the numbers to strike that balance, there are really four variables you work on:

- The money in the bank at the outset (i.e., your investment)
- The amount of money spent on customer acquisition each month
- The revenue you bring in from users
- The rate of churn from users

Get the math right. Take too much, and you dilute your ownership; take too little, and you run out of cash simply because your users pay you over time but you have to acquire them up front.

Parse.ly and the Pivot to Revenue

Parse.ly makes an analytics tool that helps the Web's big publishers understand what content is driving traffic. It was first launched in 2009 out of Philadelphia's

Dreamit Ventures as a reader tool for consumers to find stories they'd like. A year later, the company changed its approach: since it knew what a reader might like to read next, it could help publishers suggest content that would keep readers on the site for longer. And in 2011, it changed again, this time offering reporting tools to publishers who wanted to know what was working. The current product, Parse.ly Dash, is an analytics tool for publishers.[70]

While Dash is a successful product today, the company had to abandon its earlier work in its search for a sustainable business model. "It was very hard for us to shift away from our consumer newsreader product. That's because all the metrics were actually quite positive," says Mike Sukmanowsky, Parse.ly's Product Lead.

"We had thousands of users and the product was growing rapidly. We were written up in top technology press like TechCrunch, ReadWriteWeb, and ZDNet. The product worked and we had a million ideas for how to improve it even further. However, it was lacking one critical metric for any growing business—revenue. We ran tests and surveys, and learned that though our users loved Parse.ly Reader, they didn't love it so much that they'd be willing to pay for it."

The founders had plenty of code, but no revenue, and costs were growing. Mike attributes part of this to the focus that startup accelerators have on rapid prototyping, often at the expense of customer development. "One of the challenges of an accelerator is that they are so product-focused (ship it quick) and pressure-oriented (two months to demo) that a lot of our customer development had to happen parallel to product development. And, in fact, some of the biggest questions were answered after shipping our first version."[71]

Once the company had decided to change business models, it stopped development on the reader entirely. While the new offering was built from scratch, it leveraged much of the technology and many of the architectural lessons learned from the first product. Now a direct sales team sells its current offering, using a trial period for evaluation, and then charging a monthly fee.

As you might expect from an analytics firm, the Parse.ly team collects and analyzes a lot of data. In addition to using Dash themselves, they rely on Woopra for engagement and to arm their sales team, Graphite for tracking time-series data, and Pingdom for uptime and availability.

As the company iterated through various business models, the metrics it tracked changed accordingly.

“For Parse.ly Reader, our core metrics were new signups and user engagement. We would pay close attention to how many signups per day we were getting based on our press write-ups and how many logins per day we were getting from user accounts,” says Mike. “In the Parse.ly Publisher Platform, we focused entirely on number of recommendation impressions served, and click-through rate of our recommendations. We still pay close attention to these metrics for users of our API.”

For the current reporting product, the company tracks a broader set of metrics, including:

- New signups per day for trial accounts
- Conversion rate on the signup flow and account activation process
- Number of active users (seats) per account and account invitation activity
- User engagement (based on Woopra data)
- API calls in Graphite
- Website activity in Google Analytics
- Tracked page views and unique visitors across all the sites running within the network of monitored sites

Since its software is installed on a number of sites, it also tracks data for those sites, including the average number of posts published, average page views, and top referrers. And it tracks fundamental business metrics—head count, customer count, server count, revenue, costs, and profit.

In the end, *Parse.ly* had to make some painful decisions despite the apparent success of a consumer business. It didn’t test the monetization of its initial product, even though that was one of the riskiest aspects. But when, before its second pivot, it spent time talking to its enterprise customers about the dashboard, the answer was clear: “We’d show them proof of concepts of the analytics tool we could deliver to them, and they began to clamor for the insights we were proposing," recalls Mike. "They cared more about the prospect of this tool than the recommendations we were providing."

Summary

- Even if you have healthy growth in an important dimension (like user count or engagement), it's not worth much if you can't convert it to money and pay the bills.
- Pivoting the business changed the OMTM immediately.
- Every company lives in an ecosystem—in this case, of readers, publishers, and advertisers. It's often easier to pivot to a new market than to create an entirely new product, and, once you've done so, for the market to help you realize what product you should have made in the first place.

Analytics Lessons Learned

Recognize that being able to make money is an inherent assumption of most business models, but that to de-risk the model you need to test it early. Be prepared to radically change, or even shut down, parts of your company in your quest for revenue.

Market/Product Fit

Most people's first instinct when things aren't going incredibly well is to build more features. Hopefully we've demonstrated that this isn't the right approach, because the likelihood that any one feature is going to suddenly solve your customers' problems is very small.

Instead, try pivoting into a new market. The assumption here is that the product isn't the problem, it's the target customer. In a perfect world, you've validated the market before building anything, but mistakes happen, and in some cases you're not starting at step one of the customer development process and don't want to throw away everything you've built. It may be easier to change markets than products.

Many startup founders discover Lean Startup at a specific point in their growth: they've built a product and it has a bit of traction, but not enough to be exciting. They're facing a difficult decision. Should they continue on the current path or

They're facing a difficult decision. Should they continue on the current path or change something? They're looking for answers. They're searching for ways to build more traction and they're not ready to give up. This is common for bigger companies and intrapreneurs as well: they have something in the market, but it's not at the scale they want and they're looking for ways to increase growth rate or market share.

Instead of building new features or rebuilding from scratch, try pointing your product at a new market. We think of this as *market/product fit* instead of *product/market fit*, because you're trying to find a market that fits your existing product. This also applies to changing your business model, which is a completely reasonable approach to finding scale. Again, it's market/product fit because you're changing a market variable (the business model) and keeping the product static (or relatively so).

Here are some suggestions for taking an existing product and finding a new market.

Review Your Old Assumptions

Look back at the old assumptions you had about the markets you were going after with the product. If you didn't have any assumptions around why a particular market would work, now is the time to do a postmortem on that and use the benefit of hindsight. Why didn't it work? What's holding back traction in the market? Are the pain points you're solving genuinely painful enough to the markets you were going after?

Now look at markets related to those you tackled previously. What do you know about these markets? What makes these markets similar or different from the ones you went after?

Going out and doing problem interviews in new markets will help you figure out if your product is going to solve painful enough problems. You should be able to compare what you hear from new markets with the hindsight analysis you have of your existing customer base.

Begin a Process of Elimination

You'll be able to drop some markets and/or business models pretty quickly. For example, a freemium model requires a huge base of prospective customers.

Lincoln Murphy does a great job of laying out the math on addressable market size in a presentation entitled *The Reality of Freemium in SaaS*.[72] One of his big conclusions: without a huge potential market and a number of other factors, freemium just doesn't work.

Understanding the mechanics of various markets and business models helps you triangulate the combinations that work best.

Deep Dive

When you've identified potential new markets and a prospective business model, it's time to do a deep dive and get into the full swing of customer development. Speak with 10–15 prospects in each market to validate your assumptions around their problems. This may feel like a slow process—after all, you have a product ready to sell—but the effort will be worthwhile, because you'll avoid going into markets that aren't a good fit.

In parallel, you can also take a broader approach and look to reach customers at scale, using landing pages and advertising to gauge interest. But don't skip steps and ignore the problem interviews completely.

Find Similarities

When looking at a market at this stage, you need to narrow it down and go niche. Using "size of company" as your metric for market definition isn't good enough. We see this all the time, but SMBs (small and medium businesses) are not a market; the category's just too broad.

Look for important similarities between companies inside of a broadly defined market. Industry is a good place to start. But also consider geography, how they purchase products, what they've recently purchased, budgets, industry growth, seasonality, legislative constraints, and decision makers. All of these factors help define a true market you can go after quickly.

Pitch the product you have, but don't feel obligated to pitch it exactly as it works today. Simultaneous with your efforts to find the right market and business model, you need to envision how the product will change and be repackaged. This isn't a complete rebuild that will take huge amounts of effort, but there's no reason you can't pitch a modified version of your existing product based on what you’ve learned about your new target market.

Essentially, your existing product is the MVP, and hopefully it suffices as the MVP and doesn’t require major change. A few nips and tucks are all that’s needed—and suddenly customers are thrilled with the speed with which you’ve delivered the product.

Finding a new market for an existing product is difficult. And the reality is that there may not be a market for the product you have, and you’ll be moving into a much more substantial pivot or a complete redo. But before you get to that stage, stop, pull back, and look for a customer base that will pay you for what you already have. To succeed at this, you need to remain committed to the Lean Startup process and customer development, but you can start part-way through the process instead of going completely back to square one.

The Breakeven Lines in the Sand

Revenue is not the only financial metric that matters. You want to be *breakeven* —meaning your revenues exceed your costs on a regular basis. Driving toward profitability may not be the right thing to do—you may be focused on another metric, such as user acquisition. But it’s irresponsible not to think about breakeven, because if there’s no way you can ever get there, you’re just burning money and time.

This means looking at business metrics such as operating costs, marginal costs, and so on. You may discover that it’s a good idea to fire a segment of your customers because of the drain they represent on the business—this is particularly true in B2B startups. With that in mind, here are some possible “gates” you may want to use to decide if you’re ready to move to the Scale stage.

Breakeven on Variable Costs

As a startup, you’re probably spending more on growth than you’re making on revenue, particularly if you’ve taken funding and aren’t bootstrapping the business from your own resources. Your investors don’t want to own part of a breakeven company—they want shares that pay back multiples on a lucrative acquisition or IPO.

If the money you make from a customer exceeds the cost of acquiring that customer and delivering the service, you're doing well. You may be pouring money into new features, recruiting, and so on—but each customer isn't costing you anything.

Time to Customer Breakeven

A key measurement of successful revenue growth is whether the customer lifetime value exceeds the customer acquisition cost. But this is useful for strategic budgeting, too. Imagine a company where customers spend $27 during their 11 months of activity, and it costs $14 to acquire them, as shown in Table 18-1.

Table 18-1. Working out how long a customer takes to pay you back

$27	Customer lifetime value
11	Months from activation to departure
$2.45	Average revenue per customer per month
$14	Cost to acquire a customer
5.7	Months to customer breakeven

If you're relying on this revenue to grow, you'll need some money. This is a good time to fire up a spreadsheet and start playing with numbers: you now know you need 5.7 months' burn to keep the company running.

EBITDA Breakeven

EBITDA—earnings before income tax, depreciation, and amortization—is an accounting term that fell out of favor when the dot-com bubble burst. Many companies used this model because it let them ignore their large capital investments and crushing debt. But in today's startup world, where up-front capital expenses have been replaced by pay-as-you-go costs like cloud computing, EBITDA is an acceptable way to consider how well you're doing.

Hibernation Breakeven

A particularly conservative breakeven metric is hibernation. If you reduced the company to its minimum—keeping the lights on, servicing existing customers, but doing little else—could you survive? This is often referred to as “ramen profitability.” There’s no new marketing spend. Your only growth would come from word of mouth or virality, and customers wouldn’t get new features. But it’s a breakeven point at which you’re “master of your own destiny” because you can survive indefinitely. For some startups, particularly self-funded ones, this may be a good model to use because it gives you a much stronger negotiating position if you’re seeking financing.

Revenue Stage Summary

- The core equation for the Revenue stage is the money a customer brings in minus the cost of acquiring that customer. This is the return on acquisition investment that drives your growth.
- You’re moving from proving you have the right product to proving you have a real business. As a result, your metrics shift from usage patterns to business ratios.
- Think of a business as a machine that converts money into greater sums of money. The ratio of money in to money out, as well as the maximum amount of money you can put in, dictates the value of the business.
- You’re trying to figure out where to focus: more revenue per customer, more customers, more efficiencies, greater frequency, and so on.
- If things aren’t working, it may be easier to pivot your initial product to a new market rather than starting from scratch.
- While your goal is to grow, you should also keep an eye on breakeven, because once you can pay your own bills you can survive indefinitely.

Once revenues and margins are within the targets you’ve set out in your business model, it’s time to grow as an organization. Much of what you’ve done by hand must now be done by other people: your employees, sales channels, and third parties. It’s time for the Scale stage.

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[69] *http://larsleckie.blogspot.ca/2008/03/magic-number-for-saas-companies.html*

[70] The Parse.ly team has written a detailed explanation of these changes at *http://blog.parse.ly/post/16388310218/hello-publishers-meet-dash*.

[71] Mike is quick to point out that this is changing, with an increased emphasis on revenue generation. See *http://go.bloomberg.com/tech-deals/2012-08-22-y-combinators-young-startups-tout-revenue-over-users/*.

[72] *http://www.slideshare.net/sixteenventures/the-reality-of-freemium-in-saas*