You can simply tally up the columns and see what the average responses were—that people play 8.85 hours a week (as shown in the preceding figure). But that's only a basic analysis, and a misleading one.

More often, you want to compare responses against one another—for example, do men play more video games than women? That's what a pivot table is for. First, you tell the pivot table where to get the source data, then you specify the dimension by which to segment, and then you set what kind of computation you want (such as the average, the maximum value, or the standard deviation) as shown here:

Gender	Total
F	7.57
M	10.33
Grand Total:	**8.85**

The real power of pivot tables, however, comes when you analyze two segments against each other. For example, if we have categories for gender and age, we can gain even more insight, as shown here:

Age	F	M	Grand Total
20–30	10.00	14.00	12.00
30–40	8.00	11.50	10.33
40–50	8.00	11.00	9.00
50–60	6.33	8.00	6.75
60–70		6.00	6.00
Grand Total:	**7.57**	**10.33**	**8.85**

This analysis shows that game-playing behavior is more influenced by age than by gender, which suggests a particular target demographic. Pivot tables are a powerful tool that every analyst should be comfortable with, yet they're often overlooked.

Build It Before You Build It (or, How to Validate the Solution)

With a validated problem in hand, it's time to validate the solution.

Once again, this starts with interviewing customers (what Lean Startup describes as *solution interviews*) to get the qualitative feedback and confidence necessary to build a minimum viable product. You can also continue and expand on quantitative testing through surveys and landing pages. This provides you with a great opportunity to start testing your messaging (unique value proposition from Lean Canvas) and the initial feature set.

There are other practical ways of testing your solution prior to actually building it. By this point, you should have identified the riskiest aspects of the solution and what you need people to do with the solution (if it existed) in order to be successful. Now look for a way of testing your hypotheses through a proxy. Map the behavior you want people to do onto a similar platform or product, and experiment. Hack an adjacent system.

CASE STUDY | Localmind Hacks Twitter

Localmind is a real-time question-and-answer platform tied to locations. Whenever you have a question that's relevant to a location—whether that's a specific place or an area—you can use Localmind to get an answer. You send the question out through the mobile application, and people answer.

Before writing a line of code, Localmind was concerned that people would never answer questions. The company felt this was a huge risk; if questions went unanswered, users would have a terrible experience and stop using Localmind. But how could it prove (or disprove) that people would answer questions from strangers without building the app?

The team looked to Twitter and ran an experiment. Tracking geolocated tweets (primarily in Times Square, because there were lots of them there over several days), they sent @ messages to people who had just tweeted. The messages would be questions about the area: how busy is it, is the subway running on time, is something open, etc. These were the types of questions they believed people would ask through Localmind.

The response rate to their tweeted questions was very high. This gave the team the confidence to assume that people would answer questions about where they were, even if they didn't know who was asking. Even though Twitter wasn't the "perfect system" for this kind of test because

there were lots of variables (e.g., the team didn't know if people would get a push notification on a tweet to them or notice the tweet), it was a good enough proxy to de-risk the solution, and convince the team that it was worth building Localmind.

Summary

- Localmind identified a big risk in its plan—whether people would answer questions from strangers—and decided to quantify it.
- Rather than writing code, the team used tweets with location information.
- The results were quick and easy, and sufficient for the team to move forward with an MVP.

Analytics Lessons Learned

Your job isn't to build a product; it's to de-risk a business model. Sometimes the only way to do this is to build something, but always be on the lookout for measurable ways to quantify risk without a lot of effort.

Before You Launch the MVP

As you're building your bare-minimum product—just enough functionality to test the risks you've identified in the Empathy stage—you'll continue to gather feedback (in the form of surveys) and acquire early adopters (through a beta enrollment site, social media, and other forms of teasing). In this way, by the time you launch the MVP you'll have a critical mass of testers and early adopters eager to give you feedback. You're farming test subjects. Your OMTM at this point is enrollments, social reach, and other indicators that you'll be able to drive actual users to your MVP so you can learn and iterate quickly. This is the reverse *Field of Dreams* moment: *if they come, you will build it*.

It's hard to decide how good your minimum product should be. On the one hand, time is precious, and you need to cut things ruthlessly. On the other hand, you want users to have an "aha!" moment, that sense of having discovered something important and memorable worth solving. You need to keep the magic.

> *Clarke's Third Law: Any sufficiently advanced technology is indistinguishable from magic.*
>
> Arthur C. Clarke, *Profiles of the Future*, 1961

Gehm's Corrollary: Any technology distinguishable from magic is insufficiently advanced.

Barry Gehm, *ANALOG*, 1991

Deciding What Goes into the MVP

Take all of your solution interviews, quantitative analysis, and "hacks," and decide what feature set to launch for your MVP.

The MVP has to generate the value you've promised to users and customers. If it's too shallow, people will be disinterested and disappointed. If it's too bloated, people will be confused and frustrated. In both cases, you'll fail.

It's important to contrast an MVP with a smoke-test approach where you build a teaser site—for example, a simple page generated in LaunchRock with links to social networks. With a smoke-test page, you're testing the risk that the message isn't compelling enough to get signups. With the MVP, you're testing the risk that the product won't solve a need that people want solved in a way that will make them permanently change their behavior. The former tests the problem messaging; the latter, the solution effectiveness.

Circle back with interviewees as you're designing the MVP. Show them wireframes, prototypes, and mockups. Make sure you get the strong, positive reaction you're looking for before building anything. Cut everything out that doesn't draw an extremely straight line, from your validated problem, to the unique value proposition, to the MVP, to the metrics you'll use to validate success.

It's important to note that the MVP is a process, not a product. This is something we learned at Year One Labs working with multiple startups all at a similar stage. The knee-jerk reaction once you've decided on the feature set is to build it and gun for traction as quickly as possible, turning on all the marketing tactics possible. As much as we all understand that seeing our name in lights on a popular tech blog doesn't really make a huge difference, it's still great when it's there. But sticking with Lean Startup's core tenet—*build→measure→learn*—it's important to realize that an MVP will go through numerous iterations before you're ready to go to the next step.

Measuring the MVP

The real analytical work starts the minute you develop and launch an MVP, because every interaction between a customer and the MVP results in data you can analyze.

For starters, you need to pick the OMTM. If you don't know what it should be, and you haven't defined "success" for that metric, you shouldn't be building anything. Everything you build into the initial MVP should relate to and impact the OMTM. And the line in the sand has to be clearly drawn.

At this stage, metrics around user acquisition are irrelevant. You don't need hundreds of thousands of users to prove if something is working or not. You don't even need thousands. Even with the most complicated of businesses, you can narrow things down significantly:

- If you're building a marketplace for used goods, you might focus on one tiny geographic area, such as house listings in Miami.
- The same holds true for any location-based application where density is important—a garage sale finder that's limited to one or two neighborhoods.
- You might pick one product type for your marketplace test—say, X-Men comics from the 80s—validate the business there, and then expand.
- Maybe you want to test the core game mechanics of your game. Release a mini-game as a solo application and see what engagement is like.
- Perhaps you're building a tool for parents to connect. See if it works in a single school.

The key is to identify the riskiest parts of your business and de-risk them through a constant cycle of testing and learning. Metrics is how you measure and learn whether the risk has been overcome.

Entrepreneur, author, and investor Tim Ferriss, in an interview with Kevin Rose, said that if you focus on making 10,000 people really happy, you could reach millions later.* For the first launch of your MVP, you can think even smaller, but Ferriss's point is absolutely correct: total focus is necessary in order to make genuine progress.

The most important metrics will be around engagement. *Are people using the product? How are they using the product? Are they using all of the product or only pieces of it? Is their usage and behavior as expected or different?*

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* *http://youtu.be/ccFYnEGWoOc*

No feature should be built without a corresponding metric on usage and engagement. These sub-metrics all bubble up to the OMTM; they're pieces of data that, aggregated, tell a more complete story. If you can't instrument a feature or component of your product, be very careful about adding it in—you're introducing variables that will become harder and harder to control.

Even as you focus on a single metric, you need to be sure you're actually adding value. Let's say you launch a new SaaS product, and you assume that if someone doesn't use it in 30 days, he's churned. That means it'll be 30 days before you know your churn rate. That's much too long. Customers always churn, but if you're not writing them off quickly, you may think you have more engagement than you really do. Even if initial engagement is strong, you need to measure whether you're delivering value. You might, for example, look at the time between visits. Is it the same? Or does it gradually drop off? You might find a useful leading indicator along the way.

Don't Ignore Qualitative Analytics

You should be speaking with users and customers throughout the MVP process. Now that they have a product in their hands, you can learn a great deal from them. They'll be less inclined to lie or sugarcoat things—after all, you made a promise of some kind and now they have a high expectation that you'll deliver. Early adopters are forgiving, and they're OK with (and in fact, crave) roughly hewn products, but at the same time their feedback will become more honest and transparent as their time with the MVP increases.

Be Prepared to Kill Features

It's incredibly hard to do, but it can make a huge difference. If a feature isn't being used, or it's not creating value through its use, get rid of it and see what happens. Once you've removed a feature, continue to measure engagement and usage with existing users. *Did it make a difference?*

If nobody minds, you've cleaned things up. If the existing users protest, you may need to revisit your decision. And if a new cohort of users—who'd never seen the feature before it was removed—start asking for it, they may represent a new segment with different needs than your existing user base.

The narrowing of your focus and value proposition through the elimination of features should have an impact on how customers respond.

CASE STUDY

Static Pixels Eliminates a Step in Its Order Process

Static Pixels is an early-stage startup founded by Massimo Farina. The company allows you to order prints of your Instagram photos on recycled cardboard. When the company first launched, it had a feature called InstaOrder, which allowed you to order photos directly from Instagram. Massimo believed that InstaOrder would make it easier for customers to use his service and increase the volume of orders. "We built the feature based on pre-launch feedback, and the assumption that users would like it," Massimo said.

The company spent two weeks building the feature—a costly amount of development time for a small team—but after releasing the feature found it wasn't used much. Massimo said, "Turns out, the feature was confusing people and making the checkout process more complicated."

As Figure 15-9 shows, the first-time ordering process with InstaOrder had an extra step, and that step required going to PayPal to pre-authorize payments. The hypothesis was that the feature would be worth the first-time ordering pain, after which ordering would be much easier directly through Instagram. "Convenience was the hypothesis," noted Massimo.

But Massimo and his team were wrong. Not only were orders low, but page views started to drop on the landing page that promoted the feature, and bounce rate was high as well. It just wasn't resonating.

Two weeks after the feature was removed, the number of transactions doubled, and it continues to increase. The bounce rate on the new landing page improved while sign-in goal completions increased.

So what did the Static Pixels team learn? "For starters, I think people didn't transact through Instagram because it's a very new and foreign process," Massimo said. "Ordering products via a native social platform interface hasn't really been done before. Also, I believe that when people are posting photos to Instagram, they aren't necessarily thinking about ordering prints of that photo."

The company lost some development time, but through a focus on analytics—particularly on its key metric of prints ordered—it identified roadblocks in its process, made tough decisions on removing a feature (which it originally thought was one of its unique value propositions), and then tracked the results.

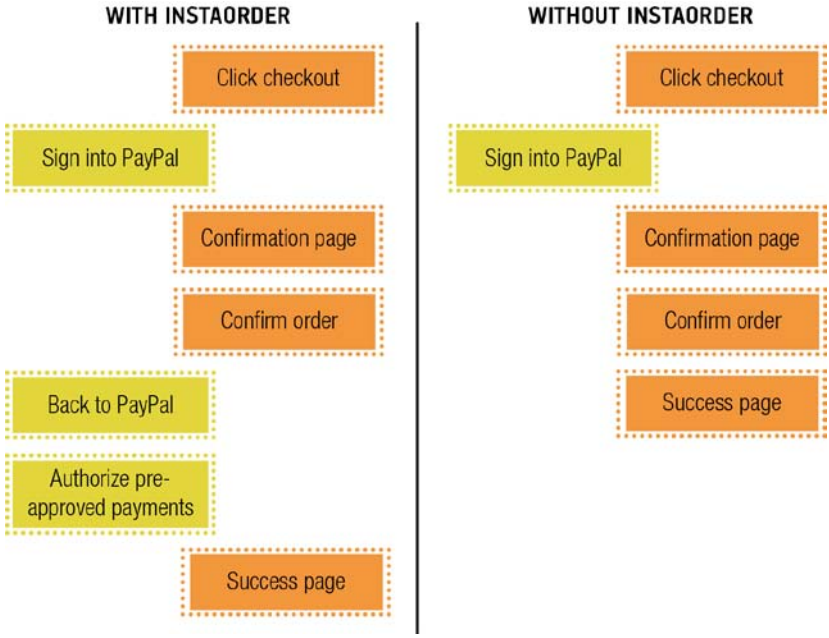

Figure 15-9. Which model worked better?

Summary

- The way Static Pixels asked users to buy had too much friction.
- A lighter-weight approach, with fewer steps, was both easier to implement and increased conversion rates.

Analytics Lessons Learned

Building a more advanced purchasing system that sacrificed first-purchase simplicity for long-term ease of repeat purchases seemed like a good idea, but it was premature. This early in the company's life, the question was "Will people buy prints?" and not "Will we have loyal buyers?" The feature the team had built was de-risking the wrong question. Always know what risk you're eliminating, and then design the minimum functionality to measure whether you've overcome it.

A Summary of the Empathy Stage

- Your goal is to identify a need you can solve in a way people will pay money for at scale. Analytics is how you measure your way from your initial idea to the realization of that goal.
- Early on, you conduct qualitative, exploratory, open-ended discussions to discover the unknown opportunities.
- Later, your discussions become more quantitative and more convergent, as you try to find the right solution for a problem.
- You can use tools to get answers at scale and build up an audience as you figure out what product to build.

Once you have a good idea of a problem you're going to solve, and you're confident that you have real interest from a sizeable market you know how to reach, it's time to build something that keeps users coming back.

It's time to get sticky.

EXERCISE | Should You Move to the Next Stage?

Answer the following questions.

Have I conducted enough quality customer interviews to feel confident that I've found a problem worth solving?	
Yes	**No**
List the reasons why you think the problem is painful enough to solve.	Conduct more interviews. Use Mechanical Turk or other resources to reach more people quickly.

Do I understand my customer well enough?	
Yes	**No**
List the reasons why you think this is the case. What have you done to understand your customer?	Try developing a "day in the life" storyboard to identify gaps in your understanding of the customer.

Do I believe my solution will meet the needs of customers?	
Yes	**No**
List the reasons why you think this is the case. What have you done to validate the solution?	Show your solution (in whatever form it's in) to more customers, collect more feedback, and dig deeper.

CHAPTER 16

Stage Two: Stickiness

Having climbed inside your market's head, it's time to build something. The big question now is whether or not what you've built is sticky, so that when you throw users at it, they'll engage. You want to be, as Rowan Atkinson's *Blackadder* put it, "in the stickiest situation since Sticky the stick insect got stuck on a sticky bun." That's how you make the business sustainable.

MVP Stickiness

The focus now is squarely on retention and engagement. You can look at daily, weekly, and/or monthly active users; how long it takes someone to become inactive; how many inactive users can be reactivated when sent an email; and which features engaged users spend time with, and which they ignore. Segment these metrics by cohort to see if your changes convince additional users to behave differently. Did users who signed up in February stick around longer than those who joined in January?

You don't just want signs of engagement. You want *proof* that your product is becoming an integral part of your users' lives, and that it'll be hard for them to switch. You're not looking for, nor should you expect, rapid growth. You're throwing things at the wall to test stickiness, not measuring how fast you can throw. And by "things," we mean users. After all, if you can't convince a hundred users to stick around today, you're unlikely to convince a million to do so later.*

Your top priority is to build a core set of features that gets used regularly and successfully, even by a small group of initial users. Without that, you don't have a solid enough foundation for growth. Your initial target market can be very small, hyper-focused on the smallest subset of users that you think will generate meaningful results.

Ultimately, you need to prove two things before you can move on to the Virality stage:

- Are people using the product as you expected? If they aren't, maybe you should switch to that new use case or market, as PayPal did when it changed from PalmPilot to web-based payment or when Autodesk stopped making desktop automation and instead focused on design tools.
- Are people getting enough value out of it? They may like it, but if they won't pay, click ads, or invite their friends, you may not have a business.

Don't drive new traffic until you know you can turn that extra attention into engagement. When you know users keep coming back, it's time to grow your user base.

Iterating the MVP

As we've said, the MVP is a process, not a product. You don't pass Go just because you put something into people's hands. Expect to go through many iterations of your MVP before it's time to shift your focus to customer acquisition.

Iterating on your MVP is difficult, tedious work. It's methodical. Sometimes it doesn't feel like innovation. Iterations are evolutionary; pivots are revolutionary. This is one of the reasons founders get frustrated and decide

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* One exception to this rule is a business that requires a critical mass of activity to be useful. If your service is engaging only when it has, say, 1,000 property listings, or 10,000 prospective mates, or cars less than three minutes away, then you'll need to artificially seed it somehow before you can focus on testing stickiness. This is a common problem for two-sided marketplaces.

instead to pivot repeatedly in the hopes that something will accidentally engage their users. Resist that temptation.

As you iterate, your goal is to improve on the core metrics that you're tracking. If a new feature doesn't significantly improve the One Metric That Matters, remove it. Don't get caught tinkering and polishing. You're not fine-tuning at this point; you're searching for the right product and market.

CASE STUDY | qidiq Changes How It Adds Users

Qidiq is a tool—for doing really simple surveys of small groups via email or a mobile application—that was launched through startup accelerator Year One Labs. In early versions of the product, a survey creator invited respondents to join a group. Once those respondents had signed up and created an account, they could answer surveys delivered by email or pushed to an iPhone client.

Only a small percentage of people who were invited actually created an account and responded. So the founders devised a test: why not act as if the recipient already had an account, send her a survey question she can respond to with a single click or tap, and see what the response rate is like? The act of responding could be treated as tacit acceptance of enrollment; later, if the recipient wanted to log into her account, she could do so through a password recovery.

The qidiq team quickly changed their application, as illustrated in Figure 16-1, and sent out more surveys to personal groups they'd created. These initial surveys were sent via email alone. The results were striking: response rates went from 10–25% with the enroll-first model to 70–90% with the vote-first model. This made the team rethink their plans to develop a mobile application, since mobile applications couldn't compete with the cross-platform ubiquity and immediacy of email. Maybe email was good enough, and they shouldn't build their mobile app any more, or port it to Android.

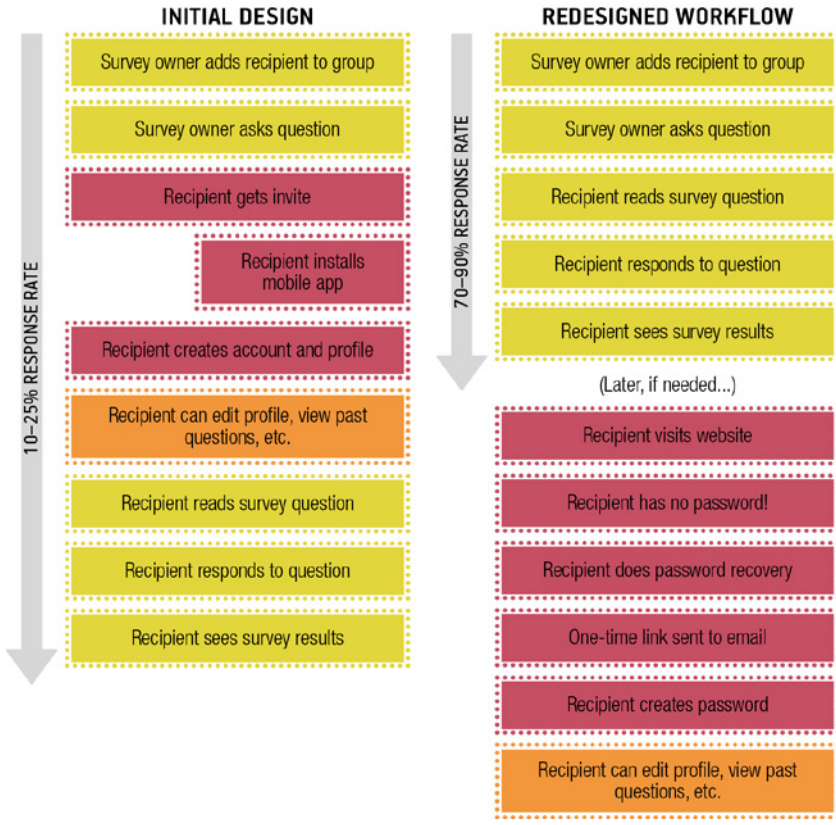

Figure 16-1. Don't let details like account creation get in the way of your core functionality

"By focusing on the key metric of response rate, we were able to avoid the temptation of wasting our energy on the sexier mobile app," says co-founder Jonathan Abrams. "Because it was the response rate that mattered, it became clear early on that email, while less sexy, was the better strategy for our startup."

The metric qidiq was tracking, which was the basis of its whole product, was the number of people who would respond to a question. That was the right metric, and when the team found a product change that moved it dramatically in the right direction, it made them rethink the design of their entire service.

Summary

- The MVP should include the simplest, least-friction path between your user and the "aha!" moment you're trying to deliver.

- Everything is on the table. While you shouldn't reinvent well-understood concepts like an enrollment process with which people are familiar, you should also feel free to ignore them for the sake of a test.
- Focusing on a single metric—in this case, survey response rate—let the team tweak every other part of the business, from sign-up to platform.

Analytics Lessons Learned

When you've got an MVP, you don't have a product. You have a tool for figuring out what product to build. By asking an unorthodox question—in this case, "What if users were already registered?"—the qidiq team not only quadrupled response rates, but also avoided a costly, distracting development rathole.

Premature Virality

Many startups—particularly in the consumer space—focus on virality first. They implement features and tactics to try to increase user acquisition as much as possible, before really understanding what those users will do. This is common for two reasons:

- First, the bar for success in a consumer application is always going up. A few years ago, hundreds of thousands of users was considered big. Today, 1 million users is the benchmark, but it's quickly going to 10 million. That's a lot of users. Certain categories of product, such as social networks and e-commerce, are ossifying, with a few gigantic players competing and leaving little room for upstarts.
- Second, many consumer applications rely on network effects. The more users, the more value created for everyone. Nobody wants to use the telephone when they're the only one with a telephone. Location-based applications typically require lots of scale, as do most marketplaces and user-generated content businesses, so that there are enough transactions and discussions to make things interesting. Without a critical mass of users, Facebook is an empty shell. Reaching this critical mass quickly is the first step in delivering the anticipated value of the product.

As a result, founders of consumer startups and multiplayer games often argue that they need to focus on virality and user acquisition because it will solve all their other problems. But having lots of users isn't traction unless those users are engaged and sticking around.

The results of premature scaling can be disastrous if startups invest all of their time and money into user acquisition, only to watch those users churn too quickly. By the time they go back and try to recover those users, they're gone. You never get a second chance to have a first enrollment.

The Goal Is Retention

The more engaged that people are with your product (and potentially other users of your product), the more likely they'll stay. By ignoring growth from virality (for now), you can simplify how you decide what to build next into your MVP. Ask yourself, "Do we believe that the feature we want to build (or the feature we want to change) will improve stickiness?" Put the feature aside if the answer is "no." But if the answer is "yes," figure out how to test that belief and start building the feature.

PATTERN

Seven Questions to Ask Yourself Before Building a Feature

You probably have a long list of feature ideas you believe will improve retention. You need to further prioritize. Here are seven questions you can ask yourself (and your team) before building a new feature.

1. Why Will It Make Things Better?

You can't build a feature without having a reason for building it. In the Stickiness stage, your focus is retention. Look at your potential feature list and ask yourself, "Why do I think this will improve retention?"

You'll be tempted to copy what others are doing—say, using gamification to drive engagement (and in turn retention)—just because it looks like it's working for the competition. Don't. Qidiq ignored common wisdom around the sign-up process and the creation of a mobile app and quadrupled engagement. It's OK to copy existing patterns, but know why you're doing so.

Asking "Why will it make it better?" forces you to write out (on paper!) a hypothesis. This naturally leads to a good experiment that will test that hypothesis. Feature experiments, if they're tied to a specific metric (such as retention) are usually easy: you believe feature X will improve retention by Y percent. The second part of that statement is as important as the first part; you need to draw that line in the sand.

2. Can You Measure the Effect of the Feature?

Feature experiments require that you measure the impact of the feature. That impact has to be quantifiable. Too often, features get added to a product without any quantifiable validation—which is a direct path toward scope creep and feature bloat.

If you're unable to quantify the impact of a new feature, you can't assess its value, and you won't really know what to do with the feature over time. If this is the case, leave it as is, iterate on it, or kill it.

3. How Long Will the Feature Take to Build?

Time is a precious resource you never get back. You have to compare the relative development time of each feature on your list. If something is going to take months to build, you need good confidence that it will have a significant impact. Can you break it into smaller parts, or test the inherent risk with a curated MVP or a prototype instead?

4. Will the Feature Overcomplicate Things?

Complexity kills products. It's most obvious in the user experience of many web applications: they become so convoluted and confusing that users leave for a simpler alternative.

"And" is the enemy of success. When discussing a feature with your team, pay attention to how it's being described. "The feature will allow you to do this, *and* it'd be great if it did this other thing, *and* this other thing, *and* this other thing too." Warning bells should be going off at this point. If you're trying to justify a feature by saying it satisfies several needs a little bit, know that it's almost always better to satisfy *one* need in an absolutely epic, remarkable way.

One mobile analytics expert for an adult-content site told us his rule for new features is simple: "If you can't do it in three taps with one hand, it's broken." Knowing your user's behavior and expectations is everything. Having feature complexity get in the way of the real testing you need to do around your market, customer acquisition, and retention is extremely painful.

5. How Much Risk Is There in This New Feature?

Building new features always comes with some amount of risk. There's technical risk related to how a feature may impact the code base. There's user risk in terms of how people might respond to the feature. There's also risk in terms of how a new feature drives future development, potentially setting you on a path you don't want to pursue.

Each feature you add creates an emotional commitment for your development team, and sometimes for your customers. Analytics helps break that bond so that you can measure things honestly and make the best decisions possible, with the most information available.

6. How Innovative Is the New Feature?

Not everything you do will be innovative. Most features aren't innovative, they're small tweaks to a product in the hope that the whole is more valuable than the individual parts.

But consider innovation when prioritizing feature development; generally, the easiest things to do rarely have a big impact. You're still in the Stickiness stage, trying to find the right product. Changing a submit button from red to blue may result in a good jump in signup conversions (a classic A/B test), but it's probably not going to turn your business from a failure into a giant success; it's also easy for others to copy.

It's better to make big bets, swing for the fences, try more radical experiments, and build more disruptive things, particularly since you have fewer user expectations to contend with than you will later on.

7. What Do Users *Say* They Want?

Your users are important. Their feedback is important. But relying on what they say is risky. Be careful about over-prioritizing based on user input alone. Users lie, and they don't like hurting your feelings.

Prioritizing feature development during an MVP isn't an exact science. User actions speak louder than words. Aim for a genuinely testable hypothesis for every feature you build, and you'll have a much better chance of quickly validating success or failure. Simply tracking how popular various features are within the application will reveal what's working and what's not. Looking at what feature a user was using before he hit "undo" or the back button will pinpoint possible problem areas.

Building features is easy if you plan them beforehand and truly understand why you're doing something. It's important to tie your high-level vision and long-term goals down to the feature level. Without that alignment, you run the risk of building features that can't be properly tested and don't drive the business forward.

CASE STUDY

How Rally Builds New Features with a Lean Approach

Rally Software makes Agile application lifecycle management software. The company was founded in 2002 and has pioneered a number of Agile best practices. We spoke with Chief Technologist Zach Nies about how the company continues to successfully build its products.

Establishing a Company Vision

Everything at Rally starts with a three- to five-year company vision that is refreshed every 18 months. The entire company aligns around the vision, which is the first waypoint in turning a big, distant goal into something more attainable. This longer-term vision becomes a key input into annual planning each year. Zach says, "When we were younger and smaller we didn't bother looking three years into the future, but it's an important part of the process for a company of our size."

Annual planning is initially done by a small group of executives. Zach calls this the first iteration. The output of the initial planning is a draft corporate strategy, which provides a clear, concise picture of Rally's performance gaps and targets, reflections, and rationale for the year. The executive team also identifies three or four high-level places where they believe the company needs to focus action to accomplish the annual vision. "This work creates a draft of ideas to bring back to Rally for reflection," Zach says. "They provide a summary of what the executive group saw as critically valuable to address in our upcoming year."

The second iteration of annual planning takes the form of departmental annual retrospectives. Rally uses an approach called ORID (Objective, Reflective, Interpretive, Decisional) from *The Art of Focused Conversation* by R. Brian Stanfield (New Society Publishers).* Zach says:

> This process invites insights from all employees, and provides a valuable narrative about the past, present, and future. From each ORID within each department, we learn about completed work, the current work in progress, planned work, specific annual metrics, the implications for the coming year, and the overall mood for the year. Kids are learning machines, but adults

* *http://www.amazon.com/Art-Focused-Conversation-Access-Workplace/dp/0865714169*

need structured reflection to learn; this process provides that structure.

Both the executive planning and the ORIDs feed into the next step of the annual planning process: gathering 60 people from the company in a highly-facilitated meeting to clearly articulate the vision for the year and align around how to accomplish it.

Developing a Product Plan

The product team is actively involved in defining the company's annual strategy. A big part of this is aligning the directions of the company and product. The product team focuses on answering the question "Why?" above everything else. "The articulation of why we're doing something, and always questioning our focus, rallies everyone around one compelling vision, company, and product, and creates a vital emotional connection with our customers," Zach says. "Only once we understand 'why' can we really look at 'what' and 'how'."

Now Rally is ready to dig into product. While this process may seem like a lot, it's very iterative and Lean. The company goes through a *build→measure→learn* cycle at several levels before getting to the point where it's actually developing features.

Deciding What to Build

Feature development begins in earnest with deciding what to build and how to build it. Rally has an open, but process-oriented, way of making feature decisions. Each quarter, employees submit short proposals for changes to the company's product direction. These proposals come from anyone in the organization, but are typically highly influenced by interactions with customers.

Zach says:

> We include almost everyone who does product-management-type work in the decision-making process, including product marketing, product owners, engineering managers, sales leadership, and executives. It may seem like this is quite a bit of process, but the benefits of everyone's input and alignment far outweigh the 10 or so hours a quarter we spend running the process. We find strong alignment enables great execution.

Rally doesn't release software, but instead "turns features on for users and customers." Most features have a toggle that allows Rally to turn them on or off for specific customers. This allows the company to roll out code to progressively larger groups of users, generating feedback

from early adopters while mitigating the risk of exposing problems to a lot of customers.

Measuring Progress

Underneath Rally's feature development process, the company is focused on measurement. "We have an internal data warehouse in which we record everything from server/database kernel-level performance measurements to high-level user gestures derived from HTTP interactions between the browser and our servers," says Zach. The goal is to make sure the team can measure feature usage and performance. "When we develop a feature our product team can form theories about how much usage warrants further development of that feature," Zach says. "As we are toggling on the feature we can compare our theories to actual data. Because the data includes both usage and performance information, we can quickly understand, in real time, the impact a feature is having on the performance and stability of our production environment."

Learning Through Experiments

Even with such a deep level of planning and an all-inclusive approach to product development, Zach still says that the company is careful not to "blindly build features based on internal or customer requests." Instead, it runs experiments to learn more.

According to Zach, every experiment starts with a series of questions:

- What do we want to learn and why?
- What's the underlying problem we are trying to solve, and who is feeling the pain? This helps everyone involved have empathy for what we are doing.
- What's our hypothesis? This is written in the form: "[Specific repeatable action] will create [expected result]." We make sure the hypothesis is written in such a way that the experiment is capable of invalidating it.
- How will we run the experiment, and what will we build to support it?
- Is the experiment safe to run?
- How will we conclude the experiment, and what steps will be taken to mitigate issues that result from the experiment's conclusion?

- What measures will we use to invalidate our hypothesis with data? We also include what measures will indicate the experiment isn't safe to continue.

In a three-month period, over 20 experiments were run to learn exactly what would satisfy users in a critical part of the user interface. Rather than guessing, this was a disciplined process of discovery. This area of the user interface was a focus because refining it was a major part of the product vision for the year , and directly supported one of Rally's corporate goals for the year.

Summary

- Data-driven product direction starts at the top, and it's an iterative, methodical process.
- Everything is an experiment, even when you have an established product and a loyal set of customers.
- It takes extra engineering effort to be able to turn on and off individual features, and to measure the resulting change in user behavior, but that investment pays off in reduced cycle time and better learning.

Analytics Lessons Learned

Rally has taken measurement to the next level. In a way, Rally is two companies—one making lifecycle management software, and one running a gigantic, continuous experiment on its users to better understand how they interact with the product itself. This requires a lot of discipline and focus, as well as considerable engineering effort to make every feature testable and measurable, but it's paid off in less waste, a better product, and a consistent alignment with what customers want.

How to Handle User Feedback

Customers have something in common with entrepreneurs—they're liars too. They don't lie intentionally, but often they forget how your product really works or what they were doing in the product.

Many of the reviews for personal banking app Mint give the product one star, saying, "Warning! This product will try to collect your banking information and connect to your bank account!" as shown in Figure 16-2. *But that's what Mint is for.*

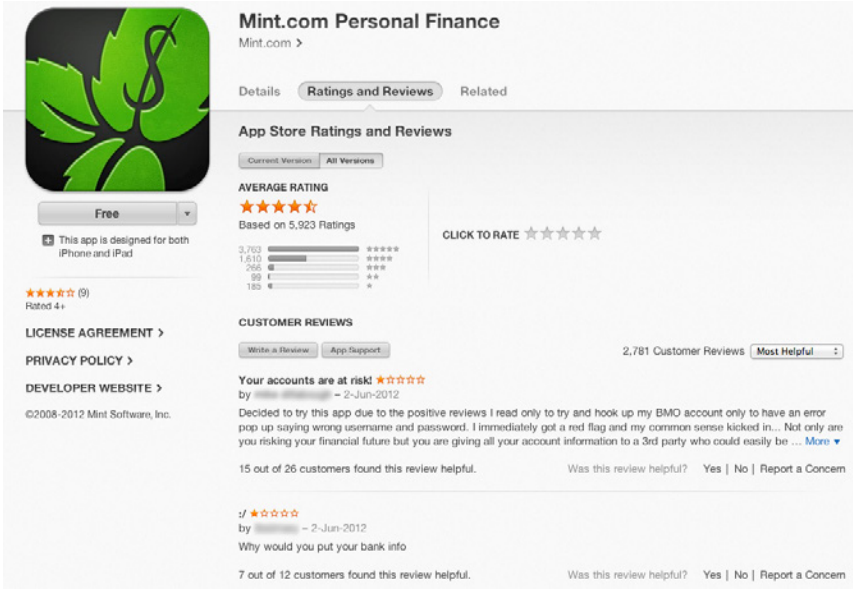

Figure 16-2. Warning—banking app may want your banking details

If you're the product manager, you might be tempted to ignore this feedback, but what it's really telling you is that your marketing and product descriptions aren't working, bringing down your product ratings and reducing your addressable market.

Customers may give you feedback you don't like. Just remember that they don't have the same mental model you do, they aren't in your target market. They often lack training to use your product properly.

We've already seen some of the cognitive biases demonstrated by interview subjects. Existing users suffer from similar biases. They have different expectations and context from you. You need to view their feedback with that in mind.

For one thing, user feedback suffers from horrible sampling bias. Few people provide feedback when they have a predictable, tepid experience. They reach out when they're ecstatic or furious. If they're feeling aggrieved, you'll hear from them.

What's more, they don't know their value to you. They may feel entitled to a free product because that's how you've positioned your SaaS offering, or to free breadsticks because that's how you've priced your buffet. You know their value to your business—they don't. To each unhappy user he or she is, they're the most important person in the world. And he or she has been wronged or celebrated.

Finally, customers aren't aware of the constraints and nuances of their problems. It's easy to complain about US television programming not being available overseas; it's unlikely that those complaining are aware of the intricacies of foreign currency exchange, censorship, and copyright licensing. They want their problem solved, but they have little insight into how to solve it the *right* way.

Laura Klein is a user experience (UX) professional and consultant, as well as the author of *UX for Lean Startups* (forthcoming from O'Reilly), part of the Lean Series along with this book. She writes a great blog called Users Know. You should read her post, "Why Your Customer Feedback is Useless," in its entirety.*

To improve how you interpret feedback, Laura has three suggestions:

- Plan tests ahead of time, and know what you want to learn before you get started. "A big reason that feedback is hard to interpret is because there's just too much of it, and it's not well organized or about a particular topic," says Laura. "If you know exactly what you're gathering feedback on, and you're disciplined about the methods you use to gather it, it becomes very simple to interpret the responses."
- Don't talk to just anybody. "You should group feedback from similar personas," says Laura. "For example, if I ask a Formula 1 driver and my mom about how they feel about their cars, I'm going to get inconsistent responses." Balancing feedback like that is very difficult because it's from such different types of people. "Figure out who your customers are and focus your research on a particular type of person."
- Review results quickly as you collect data. "Don't leave it all until the end," Laura notes. "If you talk to five people for an hour each over the course of a few days, it can be really hard to remember what the first person said." Laura recommends having someone else in each session, so that you can debrief with that person after and pull out the top takeaways from the session.

The reality is, users will always complain. That's just the way it goes. Even if people are using your product, you have good engagement metrics, and your product is sticky, they're still going to complain. Listen to their complaints, and try to get to the root of the issue as quickly as possible without overreacting.

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* *http://usersknow.blogspot.ca/2010/03/why-your-customer-feedback-is-useless.html*

The Minimum Viable Vision

The *minimum viable vision* is a term coined by entrepreneur and Year One Labs partner Raymond Luk. He says, "If you're trying to build a great company and get others involved, it's not enough to find an MVP—you need an MVV, too."

A minimum viable vision (MVV) is one that captivates. It scales. It has potential. It's audacious and compelling. As a founder, you have to hold that huge, hairy, world-changing vision in one hand, and the practical, pragmatic, seat-of-the-pants reality in the other. The MVV you need in order to get funding demands a convincing explanation of how you can become a dominant, disruptive player in your market.

Here are some signs that suggest you've got the makings of an MVV:

- ***You're building a platform.*** If you're creating an environment in which other things can be created, this is a good sign. Google Maps was just one of the many mapping tools available, alongside MapQuest and others, but Google made it easy to embed and annotate those maps, leading to thousands of mashups and clever uses. It quickly became the de facto platform for entry-level geographic information systems (GIS), and all those annotations made its maps even more useful.
- ***You have recurring ways to make money.*** It's one thing to take money from someone once, but if you can convince that person to pay every month as well, you're onto something. Just look at Blizzard's revenues from *World of Warcraft*: purchase of the paid desktop client is a fraction of the money the company makes compared to revenue from $14.95 per month subscriber fees.
- ***You've got naturally tiered pricing.*** If you can find ways for customers to self-upsell, as companies like 37Signals, Wufoo, and FreshBooks have done, then you can hook your users on basic features and tempt them with an upgrade path that adds functionality as they need it. This means you'll not only add revenue from new users, but from existing ones, too.
- ***You're tied to a disruptive change.*** If you're part of a growing trend—people sharing information, mobile devices, cloud computing—then you've got a better chance of growth. A rising tide floats all boats, and a rising tech sector floats all valuations and exits.
- ***Adopters automatically become advocates.*** Just look at the classic example of online marketing—Hotmail. A simple message appended to every email invited the recipient to switch to Hotmail. The result

was an exponential growth rate and a huge exit for the founders.* An expense management system like Expensify makes it as easy as possible to add others to the approval workflow, because this is a vector for inherent virality.

- ***You can create a bidding war.*** If you've got a solution that several industry giants will want, you're in a great place. While big companies can build anything given enough time, they'll buy you if you're stealing their sales or if your product helps them sell dramatically more easily. Beverage giants like Pepsico, Cadbury-Schweppes, and Coca-Cola regularly buy out promising incumbents, like Odwalla, Tropicana, Minute Maid, RC Cola, and others, knowing they can make back their investment easily through their existing supply chains.
- ***You're riding an environmental change.*** We don't mean the Green movement here. In strategic marketing, environmental forces include everything you're subject to in your business ecosystem, such as government-mandated privacy laws or anti-pollution regulations. If you're building something that everyone will be forced to adopt (such as a product that complies with soon-to-be-signed health or payment privacy legislation), you've got a promising exit and a chance to take over the sector.
- ***You've got a sustainable unfair advantage.*** There's nothing investors like more than unfairness. If you can maintain an unfair advantage—lower costs, better market attention, partners, proprietary formulae, and so on—then you can scale your business to a degree where it's interesting to investors. But be careful: outside of government-mandated monopolies, few advantages are truly sustainable in the long term.
- ***Your marginal costs trend to zero.*** If as you add users your incremental costs go down—so that the *n*th customer costs almost nothing to add—that's a great place to be. You're enjoying healthy economies of scale. For example, an antivirus company has fixed costs of software development and research that must be amortized across all customers, but the addition of one more client adds only a vanishingly small cost to this total. Businesses that can grow revenues while incremental costs stay still or decline have the potential to grow massively overnight.
- ***There are inherent network effects in the model.*** The phone system is the classic example of a business with a network effect: the more people who use it, the more useful it becomes. Network-effect businesses are wonderful, but they often have a two-edged sword: it's great when you

* *http://www.menlovc.com/portfolio/hotmail*

have 10 million users, but you may be deluding yourself about how easily users will adopt the product or service, and it's hard to test the basic value with a small market at first. You need a plan for getting to the point where the network effects kick in and become obvious.

- ***You have several ways to monetize.*** It's unlikely that any one payment model will work, but if you can find several ways to make money from a business—one obvious one, and several incidental ones—then you can diversify your revenue streams and iterate more easily, improving your chances of success. Quick note: AdWords and selling your analytical data probably aren't enough.
- ***You make money when your customers make money.*** Humans are, at their most basic, motivated by two things: ouch for "love." Fear means things like costs and risks, and if you reduce risks or cut costs, that's nice—but it's not compelling. Customers will often rationalize away the risk and pocket the savings. But if you make money from revenues, then the customer will likely split the winnings with you. Products that boost revenues are easier for people to believe in—just look at lotteries and get-rich-quick schemes versus savings plans and life insurance. Eventbrite and Kickstarter know this.
- ***An ecosystem will form around you.*** This is similar to the platform model. Salesforce and Photoshop are good examples of this: Salesforce's App Exchange has thousands of third-party applications that make the CRM (customer relationship management) provider more useful and customizable, and Photoshop's plug-in model added features to the application far more quickly than if Adobe had coded them all itself.

In the end, you have to be audacious. You need to understand how your company can become a Big Idea, something that's truly new, and either widely appealing to a broad market or a must-have for a well-heeled niche.

The Problem-Solution Canvas

At Year One Labs, we developed a tool called the *Problem-Solution Canvas* to help our startups maintain discipline and focus on a weekly basis. It's inspired by Ash Maurya's Lean Canvas, but focused on the day-to-day operations of a startup. We used it to home in on the key one to three problems the startups were facing. It allowed us all to agree on those problems and prioritize them.

It was fairly common for founders to incorrectly prioritize the key issues at hand. It's not surprising; startup founders are juggling a ton at once, wearing hats stacked to the sky like crazed circus performers, and as we well

know, they're a bunch of liars (but we love 'em just the same!). As mentors and advisors, we knew that a big part of our job—where we could provide significant value because of our detachment—was to guide entrepreneurs back to what was most important.

The Problem-Solution Canvas is a two-page document. Like a Lean Canvas it's divided into a few boxes. On a weekly basis we'd ask founders to prepare a Problem-Solution Canvas and present it. The canvas became the focal point for our status meetings, and it was extremely helpful for keeping those meetings productive.

Figure 16-3 shows the first page of the template.

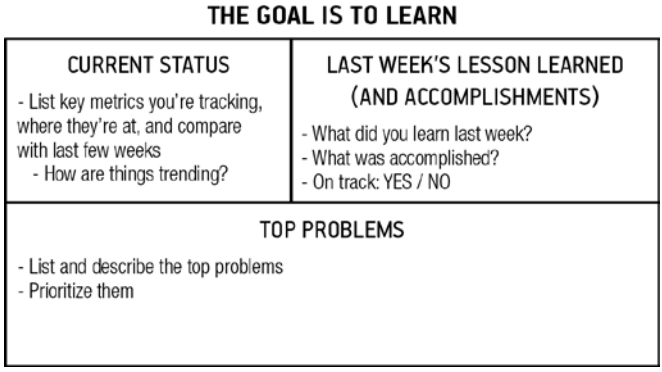

Figure 16-3. If you filled in this page every week, what would you learn?

The first thing you'll notice is the title: *The Goal Is to Learn*. This is important, because it reminded the entrepreneurs about what they were setting out to do. It wasn't about building "stuff." It wasn't about adding features. It wasn't about getting PR, or anything else. Learning was the measure of success.

Next, founders would fill in a brief update on their current status, focusing on the key metrics (qualitative and/or quantitative) that they were tracking. Notice how small this box is compared to the others.

The Lessons Learned box is a quick bulleted summary of key learning. The title says "and Accomplishments" because we wanted to give entrepreneurs a place to brag—at least a little bit. Not surprisingly, they'd include some vanity metrics in here and we wouldn't spend a lot of time on them. The "On track: Yes/No" benchmark is designed as a test of intellectual honesty. Can entrepreneurs really come clean on what's going on, good and bad? If so, we could be much more valuable.

Finally, we asked entrepreneurs to list the top problems they were facing at that moment. At most they would include three problems prioritized in order of importance. This section of the Problem-Solution Canvas often elicited the most debate, but it was always healthy and critical for resetting everyone's goals and expectations.

With the problems now well understood, along with the startup's current status, we'd move to the second page of the canvas, shown in Figure 16-4.

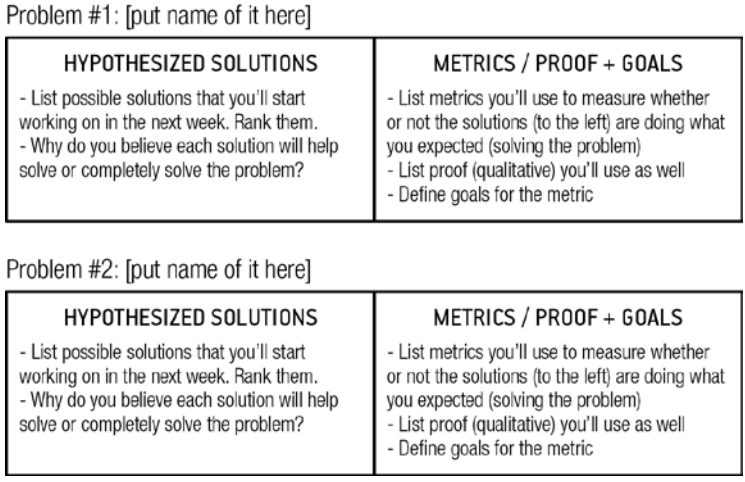

Figure 16-4. We've all got problems—but can you pick just three?

In this section, the founders re-list the problems and include hypothesized solutions. These solutions are hypothesized because we don't know if they'll work. These are experiments that the founders will run in the next week. We always asked them to define the metrics they'd use to measure success (or failure) and draw a line in the sand. If engagement was the most important problem, they had to include possible solutions they'd experiment with to increase engagement, define the metric (e.g., % daily active users), and set a target. *What's the problem, how do you propose to fix it, and how will you know if you succeeded?* That's the core of the Problem-Solution Canvas.

For us (as mentors and advisors), it was an extremely valuable exercise. The Problem-Solution Canvas is also useful for internal decision making. It sits a level below the Lean Canvas, focusing on very specific details in a very specific time period (one to two weeks).

CASE STUDY

VNN Uses the Problem-Solution Canvas to Solve Business Problems

Varsity News Network (VNN) is an early-stage startup based in Michigan. Ben met one of the founders there, Ryan Vaughn, when speaking at a conference in 2012. The company's platform makes it easy for athletic directors to manage social communication, creating hyper-local media coverage about athletics at their high schools. The goal is to leverage that awareness creation into ongoing financial and emotional support for high school sports.

Ryan was introduced to the Problem-Solution Canvas and started using it immediately with his board of directors. "We had just raised financing and had to solve a number of key business problems very quickly," said Ryan. "We used the Problem-Solution Canvas to get all our board members on the same page, focused on what we had to do in order to move forward."

VNN followed a Lean process, particularly in the beginning of the company in order to determine its value proposition and how that tied into producing content about high school sports. The company remains Lean today, testing and iterating each new feature or initiative it launches, measuring effectiveness and value creation.

Still, Ryan was concerned that his board wouldn't embrace the Problem-Solution Canvas. He said, "The Lean Startup process has not been widely adopted in the Midwest yet, but our board had been exposed to the methodology, which helped speed up our initial progress with the canvas."

VNN used the canvas for a few months, during a critical time of problem solving. The result was that everyone involved stayed focused on the major tasks at hand. Through the Problem-Solution Canvas, VNN validated a number of its core assumptions and designed a scalable growth model involving direct sales. This allowed it to prove enough of its business to start generating revenue and plan for a second round of financing.

Figures 16-5 and 16-6 show an example of one of its canvases.

MAY PROBLEM/SOLUTION DASHBOARD

METRICS	LAST MONTH'S LESSON LEARNED (AND ACCOMPLISHMENTS)

- Schools sold: 1
  - Last month: 3
  - Total: 34
- Ad sales/school: $4,750
- Ad sales/rep/mo: $6,150
- Traffic/school: 1931.9 visits
  - +200 visits over last 3 months (new theme)
	- What did you learn last month?
	  - One sales rep can sell $10k+ in one month
	  - A market exists for individual sport websites
	  - Schedules > photos > articles
	- What was accomplished?
	  - Photogs sponsored for right to submit pics
	  - Secured second test market in Indianapolis
	- On track: YES

TOP PROBLEMS

- 1. We still don't know what one full-time rep can sell
  - We believe $10k in ads and 2 schools, based on limited data
  - 1 part-time rep sold 5+ schools in multiple months
  - 1 part-time rep sold $10,000 in ads two months in a row
- 2. We don't know the market for sport-specific sites
  - Coaches will pay $20–30/month. How should we sell/support these?
- 3. We don't yet show enough value to advertisers
  - We will need a 50%+ renewal rate year-over-year, current rate = 50%

Figure 16-5. VNN spends some time on introspection

Problem #1: We still don't know what 1 full-time rep can sell in a month

HYPOTHESIZED SOLUTIONS	METRICS / PROOF + GOALS

- 1. Hire full-time rep in Ann Arbor to sell both schools and ads in East Michigan
  - Shows what average rep can do
- 2. Contract with two guys out of Indianapolis to start new market
  - Shows what elite-rep can do
	- Metrics: School and ad sales/rep
	- Ann Arbor: Will have sold $8,500 and 3 schools by end-July
	- Indianapolis: Will have sold $7,500 and 4 schools by end-July

Problem #2: We don't know the market for sport-specific websites

HYPOTHESIZED SOLUTIONS	METRICS / PROOF + GOALS

- 1. Interview coaches in/out of Michigan
  - Big questions are if there is demand, pricing, and features
- 2. If market, build and sell MVP to coaches
  - This is the ultimate test of market
  - Question is *how* best to sell it
	- Metrics: Interview responses and sales
	- 1. Interviews with coaches
	  - Stated interest and payment amount
	  Pre-purchase orders

Figure 16-6. Knowing how much you can sell, and the size of the market, matters a lot

Summary

- Having raised funding, VNN used the Problem-Solution Canvas to communicate with its board of directors in an effective manner.
- The canvas helped the company iterate to revenue and position itself for additional financing.

Analytics Lessons Learned

Never underestimate the power of getting everyone on the same page—literally. A single sheet of consistent information that forces all stakeholders to be succinct and to agree really helps clarify and define a problem, particularly in a fast-changing environment.

A Summary of the Stickiness Stage

- Your goal is to prove that you've solved a problem in a way that keeps people coming back.
- The key at this stage is engagement, which is measured by the time spent interacting with you, the rate at which people return, and so on. You might track revenue or virality, but they aren't your focus yet.
- Even though you're building the minimal product, your vision should still be big enough to inspire customers, employees, and investors—and there has to be a credible way to get from the current proof to the future vision.
- Don't step on the gas until you've proven that people will do what you want reliably. Otherwise, you're spending money and time attracting users who will leave immediately.
- Rely on cohort analysis to measure the impact of your continuous improvements as you optimize the stickiness of your product.

When your engagement numbers are healthy and churn is relatively low, it's time to focus on growing your user base. Don't run out and buy ads immediately, though. First, you need to leverage the best, most convincing campaign platform you have—your current users. It's time to go viral.

EXERCISE #1 | Should You Move to the Next Stage?

1. Are people using the product as expected?
   - If they are, move to the next step.
   - If they aren't, are they still getting enough value out of it, but using it differently? Or is the value not there?
2. Define an active user. What percentage of your users/customers is active? Write this down. Could this be higher? What can you do to improve engagement?
3. Evaluate your feature roadmap against our seven questions to ask before building more features. Does this change the priorities of feature development?
4. Evaluate the complaints you're getting from users. How does this impact feature development going forward?

EXERCISE #2 | Have You Identified Your Biggest Problems?

Create a Problem-Solution Canvas. This should take no more than 15–20 minutes. Share your canvas with others (investors, advisors, employees) and ask yourself if it really addresses the key concerns you're facing today.

CHAPTER 17

Stage Three: Virality

In 1997, venture capital firm Draper Fisher Jurvetson first used the term *viral marketing* to describe network-assisted word of mouth.* The firm had seen the power of virality firsthand with Hotmail, which included a vector for infection in every email—the now-famous link at the bottom of a message that invited recipients to get their own Hotmail account.

Decades earlier, Frank Bass, one of the founders of marketing science, described how messages propagated out in a marketplace.† His 1969 paper, "A New Product Growth Model for Consumer Durables," explained how messages trickle out into a market through word of mouth. At first, the spread starts slowly, but as more and more people start talking about it, spread accelerates. However, as the market becomes saturated with people who've heard the message, spread slows down again. This model is represented by a characteristic *S*-shape known as the Bass diffusion curve, shown in Figure 17-1.

* *http://www.dfj.com/news/article_25.shtml*

† *http://en.wikipedia.org/wiki/Bass_diffusion_model*

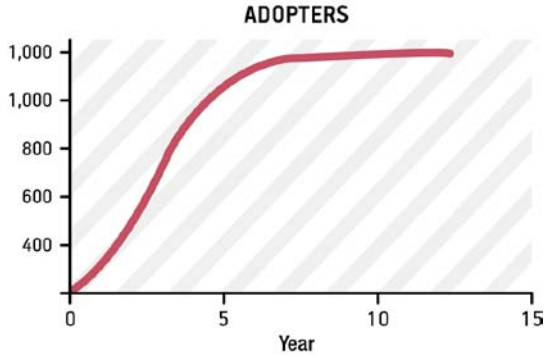

Figure 17-1. Three certainties: death, taxes, and market saturation

When researchers compared the spread of Hotmail to the predictions from Bass's model, they found an almost perfect fit.

In the Virality stage, it's time to focus on user acquisition and growth, but keep an eye on your stickiness too.

- There's a risk that you build virality and word of mouth at the expense of engagement. Perhaps you're bringing in new users who are different from your earlier adopters, and as a result they don't engage with the product. Or maybe your unique value proposition is getting lost in your marketing efforts, and your new users have different expectations from earlier ones.
- Be careful that you haven't moved on from stickiness too soon. If you're investing in adding users, but your churn is high, you may not be getting a good enough return on investment. Premature growth burns money and time, and will quickly kill your startup.

The Three Ways Things Spread

Virality is simply users sharing your product or service with others. There are three kinds of virality:

- **Inherent** virality is built into the product, and happens as a function of use.
- **Artificial** virality is forced, and often built into a reward system.
- **Word-of-mouth** virality is the conversations generated by satisfied users, independent of your product or service.

All three matter, but should be treated as distinct forms of growth and analyzed in terms of the kind of traffic they bring in. For example, you may

find that artificial virality brings in plenty of drive-by traffic, but inherent virality brings in engaged customers who actually turn into revenue.

Inherent Virality

Many products have inherent virality. When you use TripIt, you share your travel plans with colleagues, which they can view better when signed in; when you use Expensify, you forward expense reports to others for approval; when you use FreshBooks, your customers view their electronic invoices on the site.

This is the best kind of virality. It feels genuine, and the recipient is motivated to start using the product or service. It's like an epidemic. It's not voluntary. It's not something that you opt into doing or experiencing, it just happens.

Artificial Virality

While inherent virality is best, artificial virality can be bought. Parts of Dropbox are inherently viral—users share files with colleagues and friends—but the company isn't afraid to compensate its users. It offers additional storage for tweeting or liking the product, and rewards users for helping it to acquire new customers. The rapid growth of the service happened because of existing users trying to convince friends to sign up so they can grow their free online storage capacity.

Artificial virality comes from incentivizing existing users to tell their friends. Done right, it can work well—as Dropbox has shown—but it can also be awkward and feel forced if done poorly. You're essentially building self-funded marketing activities into the product itself, sometimes at the expense of legitimate functionality.

Word-of-Mouth Virality

Finally, there's natural word of mouth. Harder to track, it's also extremely effective, because it amounts to an endorsement by a trusted advisor. You can see some of this activity by simply monitoring blogs and social platforms for mentions of your startup—and when you see one it's a good idea to engage with the endorser, find out what made him share your product or service, and try to turn that into a repeatable, sustainable part of the viral growth strategy.

You may even want to use tools like Klout or PeerReach to try to score the impact that those who are discussing you can have on awareness of your product or service, since their rankings act as a proxy for a person's ability to spread a message.

Metrics for the Viral Phase

Measuring your viral growth turns out to be really important if you don't want to pay for customers. The number you're after is your viral coefficient, which venture capitalist David Skok sums up nicely as "the number of new customers that each existing customer is able to successfully convert."*

To calculate your viral coefficient:

1. First calculate the invitation rate, which is the number of invites sent divided by the number of users you have.
2. Then calculate the acceptance rate, which is the number of signups or enrollments divided by the number of invites.
3. Then multiply the two together.

Table 17-1 shows sample math for a company with 2,000 customers who send 5,000 invitations, 500 of which are accepted.

Existing customers	2,000		
Total invitations sent	5,000	Invitation rate	2.5
Number that get clicked	500	Acceptance rate	10%
		Viral coefficient	25%

Table 17-1. Sample math for a viral coefficient calculation

This might seem overly simple, because in theory, that quarter of a customer will, in turn, invite another 25% of a customer (6.25% of a customer), and so on. In reality, as David points out, it's unlikely that users will continue to invite their friends as time goes by—instead, they'll invite those friends who they think are relevant and then stop inviting, and many of those they invite will have the same groups of friends. The invitation roster will get saturated.

There's another factor to consider here: cycle time. If it takes only a day for someone to use the site and invite others, you'll see fast growth. On the other hand, if it takes someone months before she invites others, you'll see much slower growth.

Cycle time makes a huge difference—so much so, David feels it's more important than viral coefficient. Using sample data from a worksheet he

* David Skok's explanation of viral coefficient calculation includes two spreadsheets you can play with at *http://www.forentrepreneurs.com/lessons-learnt-viral-marketing/*.

created, David underscores this in one of his examples: "After 20 days with a cycle time of two days, you will have 20,470 users, but if you halved that cycle time to one day, you would have over 20 million users!"

Bass's equations took many of these factors into consideration when he was trying to explain how messages propagate out into a marketplace and how customers gradually adopt innovation.

Ultimately, what we're after is a viral coefficient above 1, because this means the product is self-sustaining. With a viral coefficient above 1, every single user is inviting at least another user, and that new user invites another user in turn. That way, after you have some initial users your product grows by itself. In the preceding example, we could do several things to push the viral coefficient toward 1:

- Focus on increasing the acceptance rate.
- Try to extend the lifetime of the customer so he has more time to invite people.
- Try to shorten the cycle time for invitations to get growth faster.
- Work on convincing customers to invite more people.

Beyond the Viral Coefficient

Treat the three kinds of viral growth differently. Each of them will have different conversion rates, and users who come from each kind of growth will have different engagement levels. That'll tell you where to focus your efforts.

The metrics that matter in the virality phase are about outreach and new user adoption. While the most fundamental of these is the viral coefficient, you can also measure the volume of invites sent by a user, or the time it takes her to invite someone.

For companies selling to an enterprise market, where click-to-invite virality isn't the norm, there are other metrics that might work better. One is the *net promoter score*, which simply asks how likely a user is to tell his friends about your product and compares the number of strong advocates to those who are unwilling to recommend it.* It's a good proxy for virality, because

* The NPS, first championed by Enterprise Rent-A-Car and written about by Frederick F. Reichfeld, considered only strongly enthusiastic respondents because those are the "customers who not only return to rent again but also recommend Enterprise to their friends"; see *http://hbr.org/2003/12/the-one-number-you-need-to-grow/ar/1*.

it suggests customers who will act as references, refer you business, or be quoted in marketing collateral.

Virality doesn't play a key role in every business. Some products are just not naturally viral, and hardly any are wildly so. Much has been made of getting a viral coefficient above 1—in other words, getting every user to invite at least one other user. This means, in theory, you can grow forever.

Unfortunately, a sustained viral coefficient above 1 is a Holy Grail for startups.

That doesn't mean you should ignore virality; rather, it means you need to treat it as a force multiplier that will make your paid marketing initiatives more successful. That's why the Virality stage comes before the Revenue and Scale stages: you want to get the biggest bang for your marketing buck, and to do so, you need to optimize your viral engines first.

CASE STUDY

Timehop Experiments with Content Sharing to Achieve Virality

Jonathan Wegener and Benny Wong started Timehop in February 2011 as a hackathon project. The original product—built in a single day and called 4SquareAnd7YearsAgo—aggregated your Foursquare check-ins and sent them to you in a daily email from one year ago. It was a fun way of looking back at where you had been each day last year. The project got a lot of attention, and after a few months of watching organic growth, the founders decided to focus on it full-time. They rebranded as Timehop and raised $1.1 million in financing from venture and angel investors.

The founders spent most of their time at the beginning focusing on engagement. Luckily for them, people were hooked on the product, and it showed in the core metrics. "We consistently saw 40–50% open rates on our emails, and still do," says Jonathan. "So we knew we had a sticky, engaging product that people cared about."

Proving that Timehop was an engaging product was essential, but so was proving that engagement led to retention. "People have been on Timehop for close to two years without ever getting bored and leaving," says Jonathan. "Originally we tracked open rates, unsubscribes, and content density [how many users get emails each day because they did something a year ago] religiously, but all of that's in very good shape." It was time to change their One Metric That Matters.

That engagement and retention gave the founders the confidence they needed to tackle the next big challenge: growth. "We saw through

pixel tracking in emails that 50% of emails were being opened on iOS devices," says Jonathan. "That led us to focus on a mobile app, which is also a better tool for encouraging growth through sharing."

While people do share Timehop emails, email itself is not truly social. People *received* emails, but they didn't share them. Since Timehop wants to build what Jonathan describes as a "social network for your past," the move to mobile helps to encourage social behaviors. In fact, mobile users share 20 times more than email-only users. But it still wasn't enough.

"All of our focus right now is on sharing," says Jonathan. "The metric we're watching is percent of daily active users that share something. We don't focus on the viral coefficient right now—we know it's below 1—and we want to track numbers that are closer to what people are doing in our app." The company is now experimenting and testing rapidly to see if it can significantly improve this number. It builds fast and focuses on learning and tracking results. And it has a line in the sand: "We'd like to have at least 20–30% of our daily active users share something on a daily basis," Jonathan says.

Timehop cares only about growth through virality (and using sharing of content as the primary mechanism for encouraging that virality). "All that matters now is virality," says Jonathan. "Everything else—be it press, publicity stunts, or something else—is like pushing a rock up a mountain: it will never scale. But being viral will."

Summary

- Timehop's founders turned a one-day hackathon project into a real company when they saw consistent, organic growth and significant engagement.
- After seeing that 50% of users opened up daily Timehop emails on an iOS device, the founders built a mobile application. They also changed their OMTM from engagement and retention to virality.
- The founders are focused almost exclusively on content sharing, and increasing the percentage of daily active users who share content, in an effort to create sustainable growth in their user base.

Analytics Lessons Learned

Understanding how people use your product can provide key insight into what direction to go and how to move from one stage to the next—for example, from stickiness to virality. Focusing on a metric like viral coefficient may be too high level; instead, look for the actions within your product that drive virality and make sure you're measuring those properly and have lines in the sand that you're targeting.

Instrumenting the Viral Pattern

Hiten Shah's ProductPlanner site was a tremendously valuable source of acquisition patterns.* From enrollment processes to viral email loops to friend invitations, the site catalogued dozens of customer acquisition workflows and would suggest metrics for each stage of the process. For example, Figure 17-2 shows the email invite loop for Tagged.

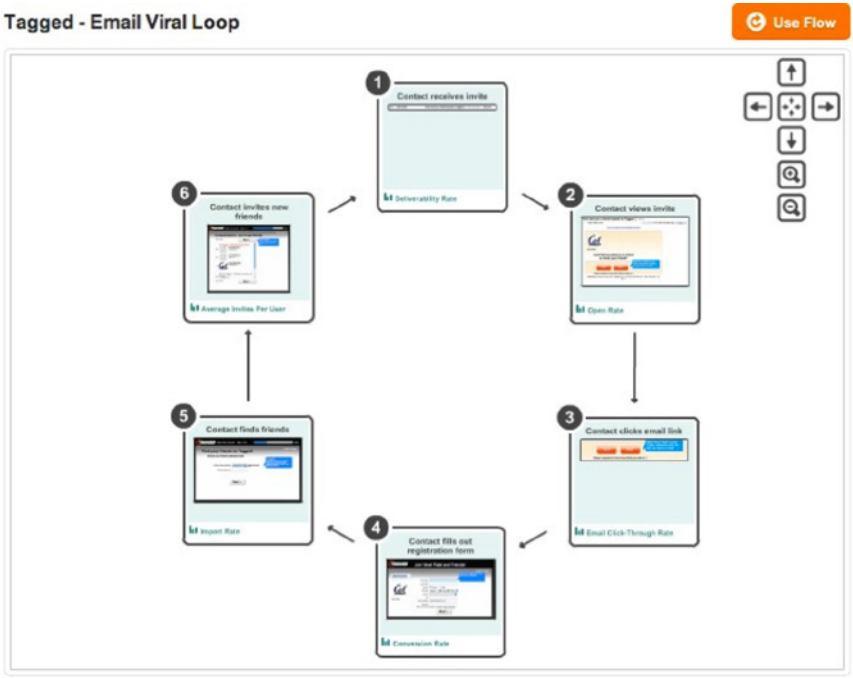

Figure 17-2. Email invite loops have a simple set of steps and metrics to track

* *ProductPlanner was recently taken down. It used to live at* http://productplanner.com.

While ProductPlanner is no longer available—its founders are focusing on KISSmetrics instead—you can design patterns of your own using this model, then quickly see what metrics you should be tracking within a process. Then you can instrument the viral loop you've built, see where it's collapsing, and tweak it, edging your way toward that elusive coefficient of 1.

Growth Hacking

Most startups won't survive on gradual growth alone. It's just too slow. If you want to grow, you need an unfair advantage. You need to tweak the future. You need a hack.

Growth hacking is an increasingly popular term for data-driven guerilla marketing. It relies on a deep understanding of how parts of the business are related, and how tweaks to one aspect of a customer's experience impact others. It involves:

- Finding a metric you can measure early in a user's lifecycle (e.g., number of friends a user invites) through experimentation , or, if you have the data, an analysis of what good users have in common
- Understanding how that metric is correlated to a critical business goal (e.g., long-term engagement)
- Building predictions of that goal (e.g., how many engaged users you'll have in 90 days) based on where the early metric is today
- Modifying the user experience today in order to improve the business goal tomorrow (e.g., suggesting people a user might know), assuming today's metric is *causing* a change in tomorrow's goal

The key to the growth hacking process is the early metric, (which is also known as a *leading indicator*—something you know today that predicts tomorrow). While this seems relatively straightforward, finding a good leading indicator, and experimenting to determine how it affects the future of the company, is hard work. It's also how many of today's break-out entrepreneurs drove their growth.

Attacking the Leading Indicator

Academia.edu founder Richard Price shared stories* from a recent Growth Hacking conference† at which several veterans of successful startups shared their leading indicators.

- Former Facebook growth-team leader Chamath Palihapitiya said a user would become "engaged" later if he reached seven friends within 10 days of creating an account. Josh Elman, who worked at Twitter, said the company had a similar metric: when a new user follows a minimum number of people—and some of those follow back—the user is likely to become engaged. In fact, Twitter has two kinds of users: "active" ones who've visited at least once in the last month, and "core" ones who've visited seven times in the last month.
- Onetime Zynga GM Nabeel Hyatt, who ran a 40-million-player game, said the company looked at first-day retention: if someone came back the day after she signed up for a game, she was likely to become an engaged user (and even one who paid for in-game purchases). Hyatt also underscored the importance of identifying One Metric That Matters, then optimizing it before moving on to the next one.
- Dropbox's ChenLi Wang said the chances that someone becomes an engaged user increase significantly when he puts at least one file in one folder on one of his devices.
- LinkedIn's Elliot Schmukler said the company tracks how many connections a user establishes in a certain number of days in order to estimate longer-term engagement.

User growth isn't everything, however. You may be trying to hack other critical goals like revenue. Josh Elman told us that early on Twitter focused its energy on increasing feed views because it knew its revenue would be tied to advertising—and that advertising could happen only when a user looked at her Twitter feed. Number of feed views was a leading indicator of revenue potential even before the company hit the Revenue stage.

What Makes a Good Leading Indicator?

Good leading indicators have a few common characteristics:

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* *http://www.richardprice.io/post/34652740246/growth-hacking-leading-indicators-of-engaged-users*

† *http://growthhackersconference.com/*

- Leading indicators tend to relate to social engagement (links to friends), content creation (posts, shares, likes), or return frequency (days since last visit, time on site, pages per visit).
- The leading indicator should be clearly tied to a part of the business model (such as users, daily traffic, viral spread, or revenue). After all, it's the business model that you're trying to improve. You're not just trying to increase number of friends per user—you're trying to increase the number of loyal users.
- The indicator should come early in the *user's* lifecycle or conversion funnel. This is a simple numbers game: if you look at something that happens on a user's first day, you'll have data points for every user, butif you wait for users to visit several times, you'll have fewer data points (since many of those users will have churned out already), which means the indicator will be less accurate.
- It should also be an early extrapolation so you get a prediction sooner. Recall from Chapter 8 that Kevin Hillstrom says the best way to understand whether an e-commerce company is a "loyalty" or an "acquisition"-focused organization is to look at how many second purchases happen in the first 90 days. Rather than wait a year to understand what mode you're in, look at the first three months and extrapolate.

You find leading indicators by segmentation and cohort analysis. Looking at one group of users who stuck around and another group who didn't, you might see something they all have in common.

Correlation Predicts Tomorrow

If you've found a leading indicator that's correlated with something, you can predict the future. That's good. In the case of Solare, the Italian restaurant we described in Chapter 6, the number of reservations at 5 p.m. is a leading indicator of the total number of customers who dine on any given night—letting the team make last-minute staffing adjustments or buy additional food.

UGC site reddit has been fairly public about its traffic and user engagement—after all, it derives revenue from advertising, and wants to convince advertisers it's a good bet.* About half of all *visits* to the site are logged-in users, but these users generate a disproportionate amount of site traffic. Reddit's engagement is good. "Almost everyone who makes an

* *http://www.reddit.com/about*

account comes back a month later," says Jeremy Edberg. "It's a couple of months before people stop coming back."

Is there a leading indicator in reddit's site traffic? Table 17-2 compares logged-in users (those with accounts) to anonymous visitors by the number of pages they view in a visit.

	Logged-in users			All users		
Days since last visit	**Visits**	**Page views**	**Pages per visit**	**Visits**	**Page views**	**Pages per visit**
0	127,797,781	1.925B	15.06	242,650,914	3.478B	14.33
1	5,816,594	87,339,766	15.02	13,021,131	187,992,129	14.44
2	1,997,585	27,970,618	14.00	4,958,931	69,268,831	13.97
3	955,029	13,257,404	13.88	2,620,037	34,047,741	13.00
4	625,976	8,905,483	14.23	1,675,476	20,644,331	12.32
5	355,643	4,256,639	11.97	1,206,731	14,162,572	11.74

Table 17-2. Reddit's page views for logged-in versus non-logged-in users

This data suggests that loyal, enrolled users—those who return each day to the site and have an account—view a higher number of pages per visit. Is that high number of page views by a first-time visitor a leading indicator of enrollment?

Causality Hacks the Future

Correlation is nice. But if you've found a leading indicator that *causes* a change later on, that's a superpower, because it means you can change the future. If a high number of page views on a first visit to reddit *causes* enrollment, what could reddit do to increase the number of page views, and therefore increase enrollment? This is how growth hackers think.

Recall from Chapter 2 what Circle of Friends founder Mike Greenfield did when he compared engaged to not-engaged users—and found out that many of the engaged users were moms. Whether or not someone was a mother was, for Mike, a market-focused leading indicator of that person's future engagement. He could decide how many servers to buy in six months' time based on how many moms signed up today. But what really mattered was this: he could target moms in his marketing, and change the engagement of his users dramatically.

Mike's hack was market-related, but growth hacks come in all shapes and sizes. Maybe it's a change in pricing, or a time-limited offer, or a form of personalization. The point is to experiment in a disciplined manner.

Product-focused growth hacks—what Chamath Palihapitiya calls "aha moments"—need to happen early in the user's lifecycle in order to have an impact on the greatest number of possible users. That's why social sites suggest friends for you almost immediately.

You can use promotions and experiments to try to identify a leading indicator, too. Music retailer Beatport ran a Cyber Monday promotion to maximize total purchases. A week before the holiday, it sent all its customers a 10% discount code. Those customers who purchased something with the code were then sent a second, personalized code for 20% off. If they used that code, they were sent a final, one-time-only, time-limited code for Cyber Monday that gave them 50% off their purchase. This approach increased purchase frequency, and encouraged customers to max out their shopping cart each time.

While we don't have data on the effectiveness of the campaign itself, it's clear that the company now has a wealth of information on who will respond best to a promotion and how discounts relate to purchase volume—and it's made its loyal customers feel loved as well.

Growth hacking combines many of the disciplines we've looked at in the book: finding a business model, identifying the most important metric for your current stage, and constantly learning and optimizing that metric to create a better future for your organization.

A Summary of the Virality Stage

- Virality refers to the spread of a message from existing, "infected" users to new users.
- If every user successfully invites more than one other user, your growth is almost assured. While this is seldom the case, any word of mouth adds to customer growth and reduces your overall customer acquisition costs.
- Inherent virality happens naturally as users interact with your product. Artificial virality is incentivized and less genuine. And word of mouth, while hard to create and track, drives a lot of early adoption. You need to segment users who come from all three kinds of virality.
- In addition to viral coefficient, you care about viral cycle time. The sooner each user invites another one, the faster you'll grow.

- As you grow in the Virality and Revenue stages, you're trying to find leading indicators of future growth: metrics that can be measured early in a user's lifecycle that predict—or, better yet, control—what the future will be.

When you're growing organically from referrals and invitations, you'll get the most out of every dollar you spend acquiring customers. It's time to focus on maximizing revenue, and pouring some of that money back into additional acquisition. It's time for the Revenue stage.

EXERCISE

Should You Move On to the Revenue Stage?

Ask yourself these questions:

- Are you using any of the three types of virality (inherent, artificial, word of mouth) for your startup? Describe how. If virality is a weak aspect of your startup, write down three to five ideas for how you could build more virality into your product.
- What's your viral coefficient? Even if it's below 1 (which it likely is), do you feel like the virality that exists is good enough to help sustain growth and lower customer acquisition costs?
- What's your viral cycle time? How could you speed it up?

What are the segments or cohorts of users who do what your business model wants them to do? What do they have in common? What can you change about your product, market, pricing, or another aspect of your business to address this as early as possible in their customer lifecycle?

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 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 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.* 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

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

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:

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

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.

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.

CASE STUDY | 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.*

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

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

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."*

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

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* 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/*.

- 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 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*.* 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.

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

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.

$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

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

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.

CHAPTER 19

Stage Five: Scale

You have a product that's sticky. You've got virality that's multiplying the effectiveness of your marketing efforts. And you have revenues coming in to fuel those user and customer acquisition efforts.

The final stage for startups is Scale, which represents not only a wider audience, but also entry into new markets, a modicum of predictability and sustainability, and deals with new partners. Your startup is becoming part of a broader ecosystem, in which you're a known and active participant. If the Revenue stage was about proving a business, the Scale stage is about proving a market.

The Hole in the Middle

Harvard professor Michael Porter describes a variety of generic strategies by which companies compete.* Firms can focus on a niche market (a segmentation strategy), they can focus on being efficient (a cost strategy), or they can try to be unique (a differentiation strategy). A local, gluten-free coffee shop focuses on a specific customer niche, Costco focuses on efficiency and low costs, and Apple focuses on branded design and uniqueness.† Some companies have different focuses for supply and demand—Amazon, for

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* *http://en.wikipedia.org/wiki/Porter_generic_strategies*

† The best companies focus on both efficiency and differentiation, which is why Coca-Cola and Red Bull pay handsomely for brand advertising, why Costco has its own Kirkland line, and why Apple designs new manufacturing systems. But most companies emphasize one over the other.

example, is ruthlessly efficient on backend infrastructure from suppliers, and brand-heavy on differentiating for demand.

Porter observed that firms with a large market share (Apple, Costco, Amazon) were often profitable, but so were those with a small market share (the coffee shop). The problem was companies that were neither small nor large. He termed this the "hole in the middle" problem—the challenge facing firms that are too big to adopt a niche strategy efficiently, but too small to compete on cost or scale. They need to differentiate themselves to survive the midsize gap, and then achieve scale and efficiency.

This is why the Scale stage is so critical. It's the last test before you've identified and quantified all of the risks in your startup. It's where you find out what you'll be when you grow up.

Metrics for the Scale Stage

This stage is where you look beyond your own company. If you focus too early on competitors, you can be blinded by what they're doing, rather than learning what your customers actually need. But by now, you have enough of a groove to look outside. You'll find that it's a crowded world, where you're competing with everyone for attention.

We've known that getting enough of the right kind of attention was going to be a problem for three decades. In 1981, cognitive scientist and economist Herbert Simon observed that we live in an information age, and that information consumes attention—in other words, attention is a precious commodity, and its value grows as we're flooded with more and more information. In this stage, you're checking whether analysts, competitors, and distributors care about you as much as your core group of initial customers does. Getting attention at scale means your product or service can stand on its own, without your constant love and feeding.

In the Scale stage, you want to compare higher-order metrics like Backupify's OMTM—customer acquisition payback—across channels, regions, and marketing campaigns. For example: is a customer you acquire through channels less valuable than one you acquire yourself? Does it take longer to pay back direct sales or telemarketing? Are international revenues hampered by taxes? These are signs that you won't be able to scale independent of your own organizational growth.

Is My Business Model Right?

In the Scale stage, many of the metrics you've used to optimize a particular part of the business now become inputs into your accounting system. Data

like sales, margins, and customer support costs now help you project cash flow and understand how much investment you'll need.

Lean tends not to touch on these things, but they're important for bigger, more established organizations that have found their product/market fit, and for intrapreneurs trying to convince more risk-averse stakeholders within their organization. Even though you may not be "Lean" in the strict sense of the word, you may still have to pivot in order to operate at scale.

Consider, for example, a product sold through direct sales. If you try to introduce the product to channels, those channels may not be equipped to sell and support the product. Your own support costs go up; returns or abandonment from channel-sold customers climbs. What should you do?

One approach is to change the market the channel serves. You could handle high-touch customers with consulting needs through direct sales, but offer a simplified version that's less customizable to the channel. Or you could try changing the markets at which your channel is aimed—focusing on government sales, or buyers in higher education, who are better able to serve themselves.

These might not seem like Lean pivots, but they're done with the same kind of discipline and experimentation that informed your earlier product and pricing decisions.

If you're in a good business, you'll soon have an ecosystem of competitors, channel partners, third-party developers, and more. To thrive, you need to claim your place in this market and establish the kinds of barriers to entry that maintain margins in the face of competition. At this point, you've moved beyond the Lean Startup model, but that doesn't mean you've stopped obsessing over iterative learning.

Scaling is good if it brings in incremental revenue, but you have to watch for a decrease in engagement, a gradual saturation of the initial market, or a rising cost of customer acquisition. Changes in churn, segmented by channels, show whether you're growing your most important asset—your customers—or hemorrhaging attention as you scale.

CASE STUDY

Buffer Goes from Stickiness to Scale (Through Revenue)

Buffer is a startup that was founded in 2010 by Tom Moor, Leo Widrich, and Joel Gascoigne. Joel kick-started Buffer because of a pain he was experiencing: the difficulty of posting great content he was finding regularly to Twitter. Solutions already existed for scheduling

tweets, but nothing as simple and easy to use as what Joel was looking for, so he joined forces with Tom and Leo, and they built Buffer.

Unlike most companies in the social software space, they decided to charge customers right off the bat. Joel had two assumptions: that the problem was painful enough for people, and that they would pay. Taking a very Lean approach, the trio built and launched the app and had their first paying customers in seven weeks.*

For Buffer, their One Metric That Matters was revenue. As Joel says, "We were constrained by our situation: track record and location [being based in New Zealand] made it a challenge to seriously consider raising funding, and I had no funds to dip into and was working full-time for other clients. This meant the most important metric was revenue, since I needed to grow the revenue in my spare time to a position where I could quit my existing work."

Joel and his team decided to go with a freemium approach (which they still have today), so along with the all-important metric of revenue, they were looking at other metrics around signups, activation, and conversion. "Early on, the most important metrics were activation, retention, and revenue," says Joel. "I think good metrics here are the signs of a solid product. Revenue mattered the most because I was literally calculating how many users we'd need based on our conversion in order for me to quit my work. As soon as we hit that amount, we grew faster, and shortly after hitting 'ramen profitability' we jumped on a plane to San Francisco, went through the AngelPad incubator, and raised our seed round."

Joel shared some numbers with us:

- 20% of visitors create an account (acquisition).
- 64% of people who sign up become "active" (which the founders define as posting one status update using Buffer).
- 60% of people who sign up come back in the first month (engagement/stickiness).
- 20% of people who sign up come back (are still active) after six months (engagement/stickiness).

Their conversion is between 1.5% and 2.5% from free to paid. Joel uses cohort analysis to measure these results, and says that Buffer sees a similar result to what Evernote has, where over time more users

* *http://blog.bufferapp.com/idea-to-paying-customers-in-7-weeks-how-we-did-it*

convert into paying customers. "For example, for the cohort of users who signed up in February 2012, 1.3% upgraded in their first month using the product," says Joel. "After six months, 1.9% of the same cohort is paying customers."

Once these numbers became clear and consistent, and revenue got to the point where Buffer was profitable, Joel felt it was time to make the switch and focus on acquisition. This was a big shift from proving the product and its stickiness at a small scale to trying to grow at a much faster pace. "For starters, we realized that personally, it would be most satisfying if we could make Buffer a very widespread service with millions of users," says Joel. "Then we checked our churn, because we know that it's vital before focusing on acquisition." Joel's target was below 5%, and in fact Buffer's churn hovers around 2%, so, the team doesn't invest a lot of time trying to improve it, which gives them the comfort to focus on acquisition.

Buffer is also profitable, which gives them the flexibility to push acquisition, try new channels, and not burn cash or be forced to raise more capital. Before finally deciding to focus on acquisition, they did look at other metrics. Joel says, "We could probably double our conversion to paying customers if we worked hard on it, but that requires focus just like anything else. And that can come later, because what we want the most is to have a huge user base."

The company is now in growth mode, trying new channels and focusing on user acquisition—but it still keeps an eye on conversion and revenue. Joel points out, "We measure the funnel of our new channels to ensure that they still convert to paying customers."

Summary

- Buffer used revenue early on as a measure of stickiness; the founders' goal wasn't to generate tons of revenue and scale, but to generate enough to prove they had a legitimate, scalable business.
- Buffer runs ongoing cohort analysis to assess changes it's making in its product as well as in its marketing initiatives.
- When it proved its product was sticky, it moved its focus to acquisition and how to acquire more users at a low cost.

Analytics Lessons Learned

Reality counts. Your choice of when to focus on revenue may be dictated by realities of your industry or your economic climate. If you prove that early users will pay for the initial offering in sufficient numbers, you not only have clear proof that you've found a good market, but you also have much more freedom to grow and evolve on your own terms. Combine revenue and engagement, and you know if your product has enough long-term value to be scalable. When you get to that point, you can start to scale acquisition.

By now, you're a bigger organization. You're worrying about more people, doing more things, in more ways. It's easy to get distracted. So we'd like to propose a simple way of focusing on metrics that gives you the ability to change while avoiding the back-and-forth whipsawing that can come from management-by-opinion. We call it the *Three-Threes Model*. It's really the organizational implementation of the Problem-Solution Canvas we saw in Chapter 16.

PATTERN | **The Three-Threes Model**

At this stage, you probably have three tiers of management. There's the board and founders, focused on strategic issues and major shifts, meeting monthly or quarterly. There's the executive team, focused on tactics and oversight, meeting weekly. And there's the rank-and-file, focused on execution, and meeting daily.

Don't get us wrong: for many startups, the same people may be at all three of these meetings. It's just that you'll have very different mindsets as a board than you will as the person who's writing code, stuffing boxes, or negotiating a sale.

We've also found that it's hard to keep more than three things in your mind at once. But if you can limit what you're working on to just three big things, then everyone in the company knows what they're doing and why they're doing it.

Three Big Assumptions

In your current business model, you have some fundamental assumptions, such as "people will answer questions," or "organizers are frustrated with how to run conferences," or "we'll make money from parents." Some of these may be platform assumptions too: "Amazon Web Services are reliable enough for our users."

Each assumption has a metric associated with it, and a line in the sand. This is your big bet. These are the cells in your spreadsheet that you obsess over as a board. They're what you look at to see if you can make payroll, or how much investment you're going to need, or whether the marketing campaigns are bringing in more than they're costing, or whether your business model is hopelessly, fatally, doomed.

Assumptions like these shouldn't change more than once a month (unless you're in an accelerator program or have an artificial time constraint). They certainly shouldn't change that often when you're at the Scale stage; that kind of thrashing dulls momentum, like pumping the tiller on a sailboat. Changing fundamental assumptions around your business model may require board approval, and will likely alienate your customers and bewilder your employees unless properly communicated. The board and your advisors should be involved in the assumptions at the Scale stage.

These three assumptions should leap off the page of your Lean Canvas if you're doing it right. Of course, if you change business models entirely, you'll have another big three assumptions because you now have another canvas.

Each month, the three assumptions should be communicated to the entire organization. The executive team is responsible for validating or repudiating them at the next meeting.

Three Actions to Take

At the executive level, you need to define the tactics that will make the big assumptions happen. The whole company should know them, and it's the executive team's job to break each of them down into three actions that can happen this week.

For each board-level assumption, what three tactical actions are you taking to get those metrics to move in the right direction? These may be product enhancements or marketing strategies that you think will make the product better. They're your feature roadmap and your marketing campaign for the week. They'll change regularly. You need to survey, test, and prototype quickly to approve or kill things. It's like a scrum in Agile.

While there's a lot of latitude for executives to try to move the needle, they have to report back to the founders and board at the end of the month. This keeps them from straying too far from the prescribed business model—striking a balance between innovation and predictability that's needed for later-stage companies.

Three Experiments to Run

On a daily basis, the company is performing individual tasks to try to complete the tactical actions. Anyone in the company can run a test—from speaking with customers to tweaking features to running a survey to conducting a pricing experiment—provided it's documented beforehand and the results contribute to the week's actions. The test is the only indicator of what you're doing right or wrong. It's done daily, and it's like a sprint in Agile.

For each of those actions, what three tasks are you performing? What three experiments are you running? How will you choose the winner? This is execution, discussed with the action owner every day. Again, this means a wide range of flexibility at the ground level, while introducing a degree of structure.

Finding Discipline as You Scale

Discipline is key to success in a larger, later-stage startup, particularly in the furious heat of execution. You can't thrash wildly in search of inspiration—you have investors, employees, and expectations. But at the same time, you need the latitude that made you agile and adaptive in the first place.

Know, clearly, what assumptions underpin your fundamental business model. Then, with the approval of stakeholders, change one of them. Hand that change to the executive team: which features do you think will improve that basic assumption? Plan out your daily activities to test those features: have conversations with customers, run surveys, create a segment that tests the new code, try mockups. This combination of agility and methodical precision is what distinguishes great startups from stalled ones.

It's almost a cliché at some tech events to ask, "What's your latest pivot?" This is horrible. Plenty of disenchanted founders say, "I'm pivoting" when they should be saying, "I'm a confused idiot with ADHD!" *Avoid the "lazy pivot."* Without a plan, it's just flapping in the wind. Discipline makes everyone accountable to one another.

A Summary of the Scale Stage

- When you're scaling, you know your product and your market. Your metrics are now focused on the health of your ecosystem, and your ability to enter new markets.
- You'll look at compensation, API traffic, channel relationships, and competitors at this stage—whereas before, these were distractions.
- You need to understand if you're focused on efficiency or differentiation. Trying to do both as a way of scaling is difficult. If you're efficiency-focused, you're trying to reduce costs; if you're differentiation-focused, you're increasing margins.
- As you grow, you'll need to have more than one metric at a time. Set up a hierarchy of metrics that keeps the strategy, the tactics, and the implementation aligned with a consistent set of goals. We call this the *three threes*.

You never really leave the Scale stage, although as your organization becomes more and more like a "big company" you may find yourself having a hard time innovating. Congratulations—you're now an intrapreneur, fighting the status quo and trying to change things from within. As we'll see in Chapter 30, innovating from within has some unique challenges. But first, let's combine your business model and stage to find the metrics that matter to you right now.

CHAPTER 20

Model + Stage Drives the Metric You Track

The core idea behind Lean Analytics is this: by knowing the kind of business you are, and the stage you're at, you can track and optimize the One Metric That Matters to your startup right now. By repeating this process, you'll overcome many of the risks inherent in early-stage companies or projects, avoid premature growth, and build atop a solid foundation of true needs, well-defined solutions, and satisfied customers.

Figure 20-1 shows these Lean Analytics stages, along with the "gates" you need to clear to move to the next phase and some of the metrics that will indicate when you're ready to move forward.

Now that you know your business model and your current stage, you're in a good position to pick a few metrics that will help you make it to the next stage of growth. Table 20-1 gives you some examples of what things matter to a particular model as it grows.

Once you've identified the metrics you should worry about, your next question is clear: *what should I be trying for, and what's normal?*

We decided to find out.

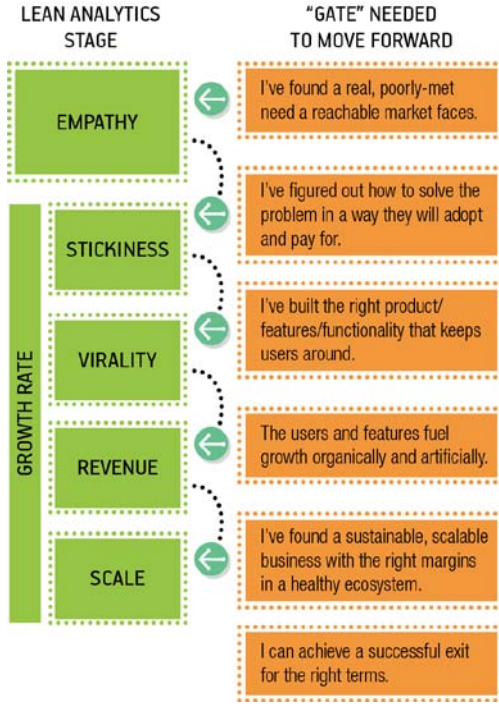

Figure 20-1. Where are you today? What will it take to move forward?

Business model						
Company stage	**E-commerce**	**Two-sided marketplace**	**Software as a Service**	**Free mobile app**	**Media**	**User-generated content**
The really big question	**Will they buy enough for enough money from you?**		**Will it solve a pain they'll pay for?**		**Will they engage with content in a repeatable manner?**	
Empathy stage: Problem validation: getting inside your market's head to discover real needs you can solve. *These tend to be qualitative discussions and open questions.*	How do buyers become aware of the need? How do they try to find a solution? What pain do they encounter as a result? What are their demographics and tech profiles?	Do buyers need a place to sell? Do sellers need a place to buy? How do they transact today? How do they find items? What prevents them from buying through those channels?	Do prospects have a known need they are pained to solve today? Can they do it with software? How do they learn about such solutions? What's the buying process?	What's your target market? What similar games and models have worked? Are there examples of similar pricing and gameplay habits?	Can you get enough attention around a subject? How do people consume information?	Does a community exist? What makes it special and unique? How do others join it? How fast is it growing?
Empathy stage: Solution validation. *This happens in both qualitative and quantitative approaches, and in some cases curated MVPs or regional tests.*	What competes with the product you're proposing? What's the price elasticity of the product or service?	Will buyers share sales revenue, or go outside the market? What added-value features entitle you to a portion of the proceeds? Will you be able to generate listings? Will they come to the marketplace?	Will the features you're offering fit their processes and solve a pain well enough for them to part with money and tell their friends?	Does the basic game structure function? Do users like a basic MVP of core gameplay, as shown by user testing?	Why will they consume your content? What tools, apps, and platforms deliver content to them today?	Will the community come to you? Where does it convene today? How does it like to interact? What are its privacy needs, and its tolerance for sharing and advertising?

Business model						
Company stage	**E-commerce**	**Two-sided marketplace**	**Software as a Service**	**Free mobile app**	**Media**	**User-generated content**
Will it grow?	**Will they find you and tell others?**		**Will they sign up, stick around, and tell others?**		**Can you grow traffic to a level that can be profitably monetized?**	
Stickiness stage: Achieving a minimum viable product that engages customers in a meaningful, valuable way.	Conversion, shopping cart size. For acquisition: cost of finding new buyers. For loyalty: percent of buyers who return in 90 days.	Rate of inventory creation, search type and frequency, price elasticity, listing quality, fraud rates.	Engagement, churn, visitor/user/customer funnel, capacity tiers, feature utilization (or neglect).	Onboarding; adoption; ease of play; time to "hooks"; day-, week-, and month-long churn; launches; abandonment; time played; regional testing.	Traffic, visits, returns; segmenting business metrics by topic, category, author; RSS, email, Twitter followers and click-throughs.	Content creation, engagement funnel, spam rates, content and word-of-mouth sharing, primary acquisition channels.
Virality stage: Growing adoption through inherent, artificial, and word-of-mouth virality; optimizing viral coefficient and cycle time.	Acquisition-mode: customer acquisition costs, volume of sharing. Loyalty model: ability to reactivate, volume of buyers who return.	Acquisition of sellers, acquisition of buyers, inherent and word-of-mouth sharing. Account creation and configuration.	Inherent virality, customer acquisition cost.	App store ratings, sharing, invites, rankings.	Content, virality, search engine marketing and optimization; promoting long time on page.	Content invites, user invites, in-site messaging, off-site sharing.

Business model						
Company stage	**E-commerce**	**Two-sided marketplace**	**Software as a Service**	**Free mobile app**	**Media**	**User-generated content**
Primary source of money	**Transactions**		**Active users**		**Ad revenue**	
Revenue stage: Convincing users to pay with optimal pricing, then pouring some of that money back into customer acquisition.	Transaction value, revenue per customer, ratio of acquisition cost to lifetime value, direct sales metrics.	Transactions, commissions, per-listing pricing, value-added services such as promotion, photography.	Upselling, customer acquisition cost, customer lifetime value, upselling path and roadmap.	Download volumes, average revenue per player, average revenue per *paying* player, acquisition costs.	Cost per engagement, affiliate revenues, click-through percentages, number of impressions.	Ads (same as media), donations, user data licensing.
Scale stage: Growing the organization through customer acquisition, channel relationships, finding efficiencies, and participating in a market ecosystem.	Affiliates, channels, white-label, product ratings, reviews, support costs, returns, RMAs and refunds, channel conflict.	Other verticals, related products; bundling third-party offers (e.g., car rental in a vacation rental site , shipping in a craft marketplace , etc.)	Application programming interface (API) traffic, Magic Number, app ecosystem, channels, resellers, support costs, compliance, on-premise/private versions.	Spinoffs, publisher and distribution deals, international versions.	Syndication, licenses, media and event partnerships.	Analytics, user data, private and third-party ad models, APIs.

Table 20-1. What metrics matters depending on your business model and stage

PART THREE:

LINES IN THE SAND

You know your model, your stage, and even what metric matters most to you right now. But what's normal? Unless you have a line in the sand, you don't know if you're crushing it or being crushed. We've collected data from startups, analysts, and vendors to try to paint a picture of what's typical. Your mileage will vary—but at least you'll know what mileage looks like.

Success is not final, failure is not fatal: it is the courage to continue that counts.

Sir Winston Churchill

CHAPTER 21

Am I Good Enough?

One of the biggest questions we wanted to tackle with *Lean Analytics* is "what's normal?" It's something we get asked all the time: "How do I know what's a normal or ideal value for the metrics I'm tracking? How do I know if it's going well or not? Should I keep optimizing this metric, or move on to something else?"

At the outset, many people cautioned us against trying to find a typical value for a particular metric. After all, startups are, by definition, trying to break the rules, which means the rules are being rewritten all the time. But we think it's important to try to define "normal" for two big reasons.

First, you need to know if you're in the ballpark. If your current behavior is outrageously far from that of everyone else, you should be aware of it. If, on the other hand, you're already as good as you're going to get—move on. You've already optimized a key metric, and you'll get diminishing returns trying to improve it further.

Second, you need to know what sport you're playing. Online metrics are in flux, which makes it hard to find a realistic baseline. Only a few years ago, for example, typical e-commerce conversion rates were in the 1–3% range. The best-in-class online retailers got a 7–15% conversion rate, because they had offline mindshare or had worked hard to become the "default" tool for purchase. These numbers have changed in recent years, though, because people now consider the Web the "default" storefront for many purchases. Today, pizza delivery companies have *extremely* high conversion rates because, well, that's how you buy pizza.

In other words: there is a normal or ideal for most metrics, and that normal will change significantly as a particular business model goes from being novel to being mainstream.

CASE STUDY

WP Engine Discovers the 2% Cancellation Rate

WP Engine is a fast-growing hosting company specializing exclusively in hosting WordPress sites.* Successful entrepreneur and popular blogger Jason Cohen founded the company in July 2010. In November 2011, WP Engine raised $1.2M in financing to accelerate growth and handle the ongoing challenges of scaling the business.

WP Engine is a service company. Its customers rely on WP Engine to provide fast, quality hosting with constant uptime. WP Engine is doing a great job, but customers still cancel. All companies have cancellations (or churn), and it's one of the most critical metrics to track and understand—not only is it essential for calculating metrics like customer lifetime value, but it's also an early warning signal that something is going wrong or that a competing solution has emerged.

Having a cancellation number isn't enough; you need to understand *why* people are abandoning your product or service. Jason did just that by calling customers who cancelled. "Not everyone wanted to speak with me; some people never responded to my calls," he recalls. "But enough people were willing to talk, even after they had left WP Engine, that I learned a lot about why they were leaving." According to Jason, most people leave WP Engine because of factors outside of the company's control (such as the project ending where hosting was needed), but Jason wanted to dig further.

Having a metric and an understanding of the reasons people were leaving wasn't enough. Jason went out and found a benchmark for cancellation rate. This is one of the most challenging things for a startup to do: find a relevant number (or line in the sand) against which to compare yourself. Jason researched the hosting space using his investors and advisors. One of WP Engine's investors is Automattic, the company behind WordPress, which also has a sizeable hosting business.

* For full disclosure, it also hosts the companion website to this book.

Jason found that for established hosting companies, there's a "best case scenario" benchmark for cancellation rate per month, which is 2%. That means every month—for even the best and biggest hosting companies around—you can expect 2% of your customers to leave.

On the surface, that looks like a huge number. "When I first saw our churn, which was around 2%, I was very concerned," Jason says. "But when I found out that 2% is pretty much the lowest churn you'll get in the hosting business, it changed my perspective a great deal." Had Jason not known that this is simply a fact of life in the hosting industry, WP Engine might have invested time and money trying to move a metric that wouldn't budge—money that would have been far better spent elsewhere.

Instead, with a benchmark in hand, Jason was able to focus on other issues and key performance indicators (KPIs), all the while keeping his eye on any fluctuation in cancellation rate. He doesn't rule out the possibility of trying to break through the 2% cancellation rate at some point (after all, there can be significant value in reducing that churn), but he's able to prioritize according to what's going on in his business today, and where the biggest trouble spots lie, all while keeping an eye on the future success of the company.

Summary

- WP Engine built a healthy WordPress hosting business, but losing 24% of customers every year concerned its founders.
- By asking around, the founder discovered that a 2% per month churn rate was normal—even good—for that industry.
- Knowing a good line in the sand allowed him to focus on other, more important business objectives instead of trying to over-optimize churn.

Analytics Lessons Learned

It's easy to get stuck on one specific metric that looks bad and invest considerable time and money trying to improve it. Until you know where you stand against competitors and industry averages, you're blind. Having benchmarks helps you decide whether to keep working on a specific metric or move on to the next challenge.

Average Isn't Good Enough

The Startup Genome project has collected key metrics from thousands of startups through its Startup Compass site.* Co-founder Bjoern Lasse Herrmann shared some of the metrics he's gathered about an "average" startup. They serve as a sobering reminder that being average simply isn't good enough. There's a line in the sand, a point where you know you're ready to move to the next KPI—and most companies aren't anywhere near it.

Consider this: if you get your churn rate below 5%—ideally as low as 2%—each month, you have a reasonably sticky product. Bjoern's average is between 12% (for indirectly monetized sites) and 19% (for those that monetize directly from users)—nowhere near good enough to move to the next stage.

Furthermore, consumer applications have a nearly 1:1 CAC to CLV ratio. That means they're spending all the money they make acquiring new users. As we've seen, you're doing well when you spend less than a third of your customer revenue acquiring new customers. For bigger-ticket applications (with a CLV of over $50K) things are less bleak, with most companies spending between 0.2% and 2% of CLV on acquisition.

Startup Compass has some great comparative insight, and we encourage you to use it to measure yourself against other companies. But realize that there's a reason most startups fail: *average is nowhere near good enough.*

What Is Good Enough?

There are a few metrics—like growth rate, visitor engagement, pricing targets, customer acquisition, virality, mailing list effectiveness, uptime, and time on site—that apply to most (if not all) business models. We'll look at these next. Then, in the following chapters, we'll dig into metrics specific to the six business models we've covered earlier. Remember, though, that while you might turn immediately to the chapter for your business model, there's always some overlap and relevant metrics in other business models that should be helpful to you. So we encourage you to look at what's normal for other business models, too.

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* *http://www.startupcompass.co*

Growth Rate

Investor Paul Graham makes a good case* that above all else, a startup is a company designed to grow fast. In fact, it's this growth that distinguishes a startup from other new ventures like a cobbler or a restaurant. Startups, Paul says, go through three distinct growth phases: slow, where the organization is searching for a product and market to tackle; fast, where it has figured out how to make and sell it at scale; and slow again, as it becomes a big company and encounters internal constraints or market saturation, and tries to overcome Porter's "hole in the middle."

At Paul's startup accelerator, Y Combinator, teams track growth rate weekly because of the short timeframe. "A good growth rate during YC is 5–7% a week," he says. "If you can hit 10% a week you're doing exceptionally well. If you can only manage 1%, it's a sign you haven't yet figured out what you're doing." If the company is at the Revenue stage, then growth is measured in revenue; if it's not charging money yet, growth is measured in active users.

Is Growth at All Costs a Good Thing?

There's no question that growth is important. But focusing on growth too soon is bad. We've seen how inherent virality—that's built into your product's use—is better than artificial virality you've added as an afterthought. A flood of new visitors might grow your user base, but might also be detrimental to your business. Similarly, while some kinds of growth are good, other kinds aren't sustainable. Premature scaling, such as firing up the paid engine before you're sticky, can exacerbate issues with product quality, cash flow, and user satisfaction. It kills you just as you're getting started.

Sean Ellis notes that growth hackers are constantly testing and tweaking new ways of achieving growth, but that "during this process it is easy to lose sight of the big picture. When this happens, growth eventually falls off a cliff." †

He goes on to say, "Sustainable growth programs are built on a core understanding of the value of your solution in the minds of your most passionate customers." As we saw in Chapter 5, Sean's Startup Growth Pyramid illustrates that scaling your business comes only after you've found

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* *http://paulgraham.com/growth.html*

† *http://startup-marketing.com/authentic-growth-hacks/*

product/market fit and your unfair advantage. In other words: stickiness comes before virality, and virality comes before scale.

Most Y Combinator startups (and most startups, for that matter) focus on growth before they hit product/market fit. In some cases this is a necessity, particularly if the value of the startup depends on a network effect—after all, Skype's no good if nobody else is using it. But while rapid growth can accelerate the discovery of product/market fit, it can just as easily destroy the startup if the timing isn't right.

Paul's growth strategy is also a very B2C-biased way to look at the world. B2B organizations have a different flow, from a few early customers for whom they look like consultants, to later-stage customers who tolerate a more generic, standardized product or service. Growing a B2B organization prematurely can alienate your core of loyal customers who are helping to build your business, stalling revenue and eliminating the referrals, case studies, and testimonials needed to grow your sales.

This is a universal problem, best described by the *technology lifecycle adoption* model, first proposed by George Beal, Everett Rogers, and Joe Bohlen,* and expanded by Geoffrey Moore:† it takes a lot of work to move from early adopters to laggards as the product becomes more mainstream and the barriers to adoption fall.

Bottom Line

As you're validating your problem and solution, ask yourself whether there are enough people who really care enough to sustain a 5% growth rate—but don't strive for that rate of growth at the expense of really understanding your customers and building a meaningful solution. When you're a pre-revenue startup at or near product/market fit, your line in the sand should be 5% growth for active users each week, and once you're generating revenues, they should grow at 5% a week.

Number of Engaged Visitors

Fred Wilson says that across Union Square Ventures' portfolio companies, there's a consistent ratio for engagement and concurrent users.‡ He says that for a web service or mobile application:

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* *http://en.wikipedia.org/wiki/Technology_adoption_lifecycle*

† *http://www.chasminstitute.com/METHODOLOGY/TechnologyAdoptionLifeCycle/tabid/89/Default.aspx*

‡ *http://www.avc.com/a_vc/2011/07/301010.html/*

- 30% of registered users will use a web-based service at least once a month. For mobile applications, 30% of the people who download the app use it each month.
- 10% of registered users will use the service or mobile app every day.
- The maximum number of concurrent users will be 10% of the number of daily users.

While it's a huge generalization, Fred says this 30/10/10 ratio is consistent across a wide variety of applications, from social to music to games. Getting to this stage of regular use and engagement is a sign that you're ready to start growing, and to move into the Virality, Revenue, and Scale stages of your business.

Bottom Line

Aim for 30% of your registered users to visit once a month, and 10% of them to come daily. Figure out your reliable leading indicators of growth, and measure them against your business model predictions.

Pricing Metrics

It's hard to know what to charge. Every startup makes money from different things, so there's no easy way to compare pricing across companies. But you can learn some lessons from different pricing approaches.

A fundamental element of any pricing strategy is elasticity: when you charge more, you sell less; when you charge less, you sell more. Back in 1890, Alfred Marshall defined the *price elasticity of demand* as follows:

> The elasticity (or responsiveness) of demand in a market is great or small according as the amount demanded increases much or little for a given fall in price, and diminishes much or little for a given rise in price.*

Unlike Marshall, you have the world's greatest pricing laboratory at your disposal: the Internet. You can test out discount codes, promotions, and even varied pricing on your customers and see what happens.

Let's say you've run a series of tests on the price of your product. You know that when you change the price, you sell a certain number of items (see Table 21-1).

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* *http://en.wikipedia.org/wiki/Price_elasticity_of_demand*

Price	$5	$6	$7	$8	$9	$10	$11	$12	$13	$14	$15
Buyers per month	100	90	80	75	70	65	60	55	50	45	40
Revenue	$500	$540	$560	$600	$630	$650	$660	$660	$650	$630	$600

Table 21-1. How changing price affects sales

When we chart the resulting revenues, we get a characteristic curve (Figure 21-1). The best pricing is somewhere between $11 and $12, since this maximizes revenues.

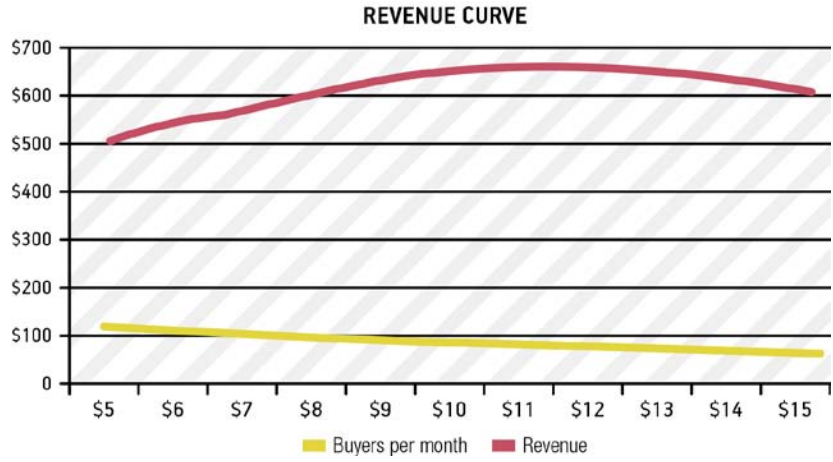

Figure 21-1. Aim for the top of the curve

If all we're hoping for is revenue optimization, this is the optimal price point. But revenue isn't everything:

- Price yourself too high, and you may lose the war. Apple's FireWire was a better communications technology, but Apple wanted to charge to license its patents, so USB won.* Sometimes charging too much can stall a market.
- If you experiment with your users and word gets out, it can backfire, as it did for Orbitz when the company recommended more expensive products to visitors using Macs.
- If you charge too little, you'll arouse suspicion from buyers, who may wonder if you're up to no good or you're a scam. You may end up devaluing your offering in customers' eyes.

* *http://www.guardian.co.uk/technology/2012/oct/22/smartphone-patent-wars-explained*

- If you charge too much, you may slow down the much-needed viral growth or take too long to achieve network effects that improve your product's functionality.
- Some things—like healthcare—you can sell at nearly any price; others, like bottled water, sell more when a price boost increases perceived quality, as Pellegrino and Perrier will happily tell you.
- If you make your pricing tiers simple, you'll see better conversions. Patrick Campbell, co-founder and CEO of pricing service Price Intelligently, says that based on his data, companies with easy-to-understand tiers and a clear path up differentiated pricing plans convert customers at a much higher rate than companies with complicated tiers, features that aren't always applicable, and hard-to-follow pricing paths.
- Products that "fly under the radar" and don't need a boss's approval convert at a much higher rate, because expensing something is easier.

Neil Davidson, joint CEO at Red Gate Software Ltd and author of *Don't Just Roll the Dice* (Red Gate Books), says, "One of the biggest misconceptions around pricing is that what you charge for your product or service is directly related to how much it costs you to build or run it. That's not the case. Price is related to what your customers are prepared to pay."

CASE STUDY

Socialight Discovers the Underlying Metrics of Pricing

Socialight was founded in 2005 by Dan Melinger and Michael Sharon, and sold to Group Commerce in 2011. The idea came from work Dan was doing in 2004 with a team at NYU focused on how digital media was changing how people communicated.

This was in the early days of social networking: Friendster was the dominant social platform. Socialight's first incarnation was as a destination social network for Java-enabled mobile phones, which were considered the pinnacle of mobile app technology at the time. People could place "sticky notes" around the world, and then collaborate, organize, and share them with friends or the community as a whole.

Back then, Dan wasn't focused on pricing, but shortly after launching Socialight, the founders realized that power users were looking for different feature sets based on how they were using the product. "The mobile software market was starting to mature, along with location-based services and devices like iPhones," said Dan. "We also started getting approached by companies that wanted to pay for us to build and host mobile and social apps for them."

This started the company's pivot from B2C to B2B. It built an API to let others build their own applications, and then built a more advanced mobile app-maker product. This achieved good traction, with over 1,000 communities built atop it.

As Socialight moved into the B2B space, it launched a three-tiered freemium business model. The two paying tiers were called Premium and Pro, and cost $250 and $1,000–$5,500 per month, respectively. The main difference between the Premium and Pro offerings was the amount of involvement Socialight had with those customers—at $1,000–$5,500 per month, Socialight was very involved with lots of hours invested per month to work with customers.

Four months into its freemium launch, the company realized there was a problem. While the Pro customers were great for top-line revenue, they were costing Socialight a *lot* of money. "We realized that the margins we were getting from Pro customers were nowhere near as good as those from Premium, even though the revenue from Pro customers was great. Moreover, Pro customers took a lot longer to close, which is not something we understood well enough early on," says Dan.

This is where a greater understanding and sophistication around price-related metrics becomes so important. Tracking revenue by pricing tier, which Socialight did from the outset, is a good place to start. But the other fundamental business metrics are perhaps even more important. For example, Socialight could have focused on customer acquisition cost versus customer lifetime value to identify its revenue and cost problems. Or it could have focused on margins earlier in the process, which would have helped identify its revenue issues. Eventually, the company increased the Pro tier to $5,500/month exclusively, a reflection of the increased support required by customers.

Socialight never got around to experimenting with different pricing strategies (it was acquired, after all!), but Dan would have liked to. "I think we could have reduced the Pro feature set a small amount and reduced its pricing significantly," he says.

This underscores the tricky balance in a freemium or tiered pricing model: how do you make sure that the features/services being offered fit into the right packages at the right price? Instead of looking at pricing, Dan was able to experiment with other metrics. He looked for ways to encourage customers using the free service to convert to the Premium tier (and focused a lot less on the Pro tier). The focus on conversion (from free to paid) helped Socialight grow its business and get the bulk of its paid users into the profitable tier.

Summary

- Socialight switched from a consumer to business market, which required a change in pricing.
- The founders analyzed not only revenue, but also the cost of service delivery, and realized that high-revenue customers weren't as profitable.
- They intentionally priced one of their tiers unreasonably high to discourage customers from buying it while still being able to claim it publicly.

Analytics Lessons Learned

Consider the impact that pricing has on customer behavior, both in terms of attracting and discouraging them. Price is an important tool for getting your customers to do what you want, and it should always be compared not only to cost of sales, but also to cost of goods sold and marginal cost.

Research on price elasticity suggests that it applies most in young, growing markets. Think about getting a walk-in haircut, for example. You may not check how much the haircut is; you know it'll be within a certain price range. If the stylist presented you with a bill for $500, you'd be outraged. There's a well-defined expectation of pricing. While startups often live in young, growing markets where prices are less established, bigger, more stable markets are often subject to commodity pricing, regulation, bulk discounts, long-term contracts, and other externalities that complicate the simplicity of the elasticity just described.

Your business model will affect the role pricing plays for you. If you're a media site, someone is already optimizing revenue for you in the form of ad auctions. If you're a two-sided marketplace, you may need to help your sellers price their offerings correctly in order to maximize your own profits. And if you're a UGC site, you may not care about pricing—or may want to apply similar approaches to determine the most effective rewards or incentives for your users.

In a study of 133 companies, Patrick Campbell found that most respondents compared themselves to the competition when setting pricing, as shown in Figure 21-2. Some simply guessed, or based their price on the cost plus a profit margin. Only 21% of respondents said they used customer development.

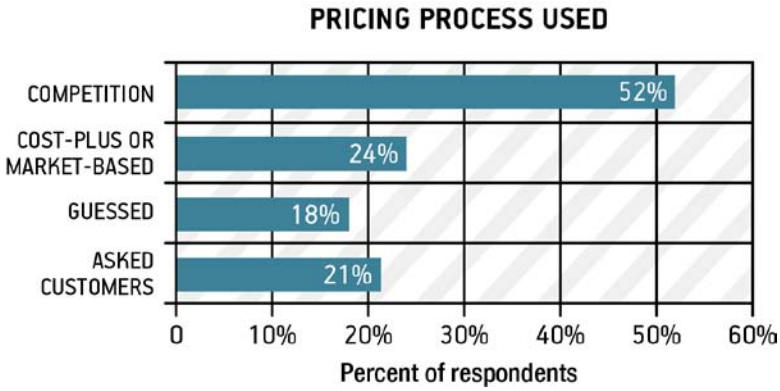

Figure 21-2. Very few companies take pricing seriously enough

While it might seem like getting pricing right is a team effort, the reality across these respondents was that the founder ultimately decided final pricing, as shown in Figure 21-3.

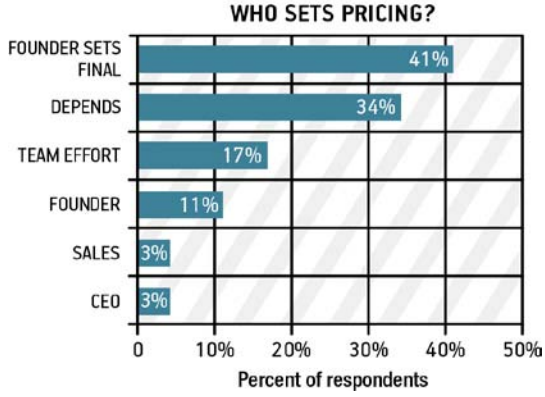

Figure 21-3. Ultimately, pricing comes from opinions at the top

Despite the number of testing tools available to organizations that want to get serious about pricing, few companies did much more than check out the competition. As Figure 21-4 shows, only 18% did any kind of customer price sensitivity testing.

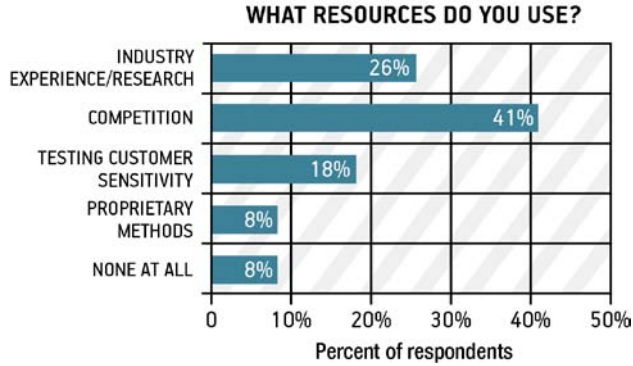

Figure 21-4. Most of us just follow our competitors blindly

Ultimately, what Patrick's research shows is that despite the considerable rewards for getting pricing right, most startups aren't looking at real data—they're shooting from the hip.

Bottom Line

There's no clear rule on what to charge. But whatever your choice of pricing models, testing is key. Understanding the right tiers of pricing and the price elasticity of your market is vital if you're going to balance revenues with adoption. Once you find your revenue "sweet spot," aim about 10% lower to encourage growth of your user base.

Cost of Customer Acquisition

While it's impossible to say what it'll cost to get a new customer, we can define it as a percentage of your customers' lifetime value. This is the total revenue a customer brings to you in the life of her relationship with you. This varies by business model, so we'll tackle it in subsequent, model-specific chapters, but a good rule of thumb is that your acquisition cost should be less than a third of the total value a customer brings you over her lifetime. This isn't a hard-and-fast rule, but it's widely cited. Here's some of the reasoning behind it.

- The CLV you've calculated is probably wrong. There's uncertainty in any business model. You're guessing how much you'll make from a customer in her lifetime. If you're off, you may have spent too much to acquire her, and it'll take a long time to find out whether you've underestimated churn or overestimated customer spend. "In my experience, churn has the biggest impact on CLV, and unfortunately, churn is a lagging indicator," says Zach Nies. He suggests offering only

month-to-month subscription plans initially in order to get a better picture of true churn early on.

- The acquisition cost is probably wrong, too. You're paying the costs of acquiring customers up front. New customers incur up-front cost—onboarding, adding more infrastructure, etc.
- Between the time that you spend money to acquire someone and the time you recoup that investment, you're basically "lending" the customer money. The longer it takes you to recoup the money, the more you'll need. And because money comes from either a bank loan or an equity investor, you'll either wind up paying interest, or diluting yourself by taking on investors. This is a complex balance to strike. Bad cash-flow management kills startups.
- Limiting yourself to a customer acquisition cost (CAC) of only a third of your CLV will force you to verify your acquisition costs sooner, which will make you more honest—so you'll recognize a mistake before it's too late. If your product or service costs a lot to deliver and operate, you may not have the operating margins to support even a third, and you may have to lower your CAC to an even smaller percentage of CLV to make your financial model work.

What *really* drives your acquisition costs is your underlying business model. While there may not be an industry standard for acquisition, you should have some target margins that you need to achieve, and the percentage of your revenue that you spend on acquisition drives those margins. So when you're deciding what to spend on customer acquisition, start with your business model.

Bottom Line

Unless you have a good reason to do otherwise, don't spend more than a third of the money you expect to gain from a customer (and the customers she invites downstream) on acquiring that customer.

Virality

Recall that virality is actually two metrics: how many new users each existing user successfully invites (your viral coefficient) and the time it takes her to do so (your viral cycle time). There's no "normal" for virality. Both metrics depend on the nature of your product, as well as market saturation.

A sustained viral coefficient of greater than 1 is an extremely strong indicator of growth, and suggests that you should be focusing on stickiness so you can retain those new users as you add them. But even a lower viral coefficient is useful, because it effectively reduces your customer acquisition

cost. Imagine that it costs you $1,000 to acquire 100 new users. Your CAC is therefore $10. But if you have a viral coefficient of 0.4, then those 100 users will invite 40 more, who will in turn invite an additional 16, and so on. In the end, those 100 users are really 165 users. So your CAC is actually $6.06. Put another way, virality is a force multiplier for your attention-generating efforts. Done right, it's one of your unfair advantages.

It's also critical to distinguish between *artificial* virality and *inherent* virality. If your service is inherently viral—meaning that use of the product naturally involves inviting outsiders, as it does with products like Skype or Uberconf—the newly invited users have a legitimate reason to use the product. A Skype user you invite will join in order to get on a call with you. Users who join in this way will be more engaged than those invited in other, less intrinsic ways (for example, through a word-of-mouth mention).

On the other hand, if your virality is forced—for example, if you let people into a beta once they invite five friends, or reward people with extra features for tweeting something—you won't see as much stickiness from the invited users. Dropbox found a clever way around this, by *looking* inherent and giving away something of value (cloud storage) when it was in fact largely artificial. People invited others because they wanted more space for themselves, not because they needed to share content. Only later did the company add more advanced sharing features that made the virality more inherent.

Don't overlook sharing by email, which, as mentioned in Chapter 12, can represent nearly 80% of all online sharing, particularly for media sites and older customers.

Bottom Line

There's no "typical" virality for startups. If virality is below 1, it's helping lower your customer acquisition cost. If it's above 1, you'll grow. And if you're over 0.75, things are pretty good. Try to build inherent virality into the product, and track it against your business model. Treat artificial virality the same way you would customer acquisition, and segment it by the value of the new users it brings in.

Mailing List Effectiveness

Mailing list provider MailChimp shares a considerable amount of data on how well mailing lists work.* Mailing list open rates vary widely by

* *http://mailchimp.com/resources/research/*

industry.* A 2010 study showed that construction, home and garden, and photo emails achieve nearly 30% open rate, but emails related to medicine, politics, and music get as little as 14%. And these are legitimate messages for which recipients have ostensibly signed up—not spam.

There's plenty you can do to improve your email open rate. Targeting your mailings by tailoring messages to different segments of your subscriber base improves clicks and opens by nearly 15%. Email open rates change significantly based on the time of day—3 p.m., as it turns out, is when people are most likely to open something. Few people open emails on the weekend. More links in an email means more clicks. And newer subscribers are more likely to click on a message.

Jason Billingsley recommends testing an individualized send schedule equal to the signup time of the unique user. So, if a user signs up at 9 a.m., schedule to send her updates at 9 a.m. "Most email tools aren't set up for such a tactic, but it's a highly valuable test that could yield significant results," he says.

But by far the biggest factor in mailing list effectiveness is simple: write a decent subject line. A good one gets an open rate of 60–87%, and a bad one suffers a paltry 1–14%.† It turns out that simple, self-explanatory messages that include something about the recipient get opened. Sometimes it's just one word: Experian reported that the word "exclusive" in email promotional campaigns increased unique open rates by 14%.‡

François Lane, CEO of mailing platform CakeMail, has a few additional cautions that underscore how email delivery metrics are interrelated:

- The more frequently you email users, the lower your bounce and human-flagged spam rates (because those addresses quickly get removed from the list), but frequent emailing also tends to reduce engagement metrics like open rate and click-through rate, because recipients get email fatigue.
- A higher rate of machine-flagged spam leads to a lower rate of human-flagged spam, because humans don't complain about mail they don't receive.
- Open rate is a fundamentally flawed metric, because it relies on the mail client to load a hidden pixel—which most modern mail applications

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* *http://mailchimp.com/resources/research/email-marketing-benchmarks-by-industry/*

† *http://mailchimp.com/resources/research/email-marketing-subject-line-comparison/*

‡ *The 2012 Digital Marketer: Benchmark and Trend Report*, Experian Marketing Services (*http://go.experian.com/forms/experian-digital-marketer-2012*).

don't do by default. This is one of the main reasons newsletter designers focus on imageless layout. Open rates are mainly useful for testing subject lines or different contact lists for a single campaign, but they provide only a sample, and at best a skewed one.

Bottom Line

Open and click-through rates will vary significantly, but a well-run campaign should hit a 20–30% open rate and over 5% click-through.

Uptime and Reliability

The Web isn't perfect. A 2012 study of static websites running on 10 different cloud providers showed that nearly 3% of tests to those clouds resulted in an error.* So even if your site is working all the time, the Internet and the underlying infrastructure will cause problems.

Achieving an uptime of better than 99.95% is costly, too, allowing you to be down only 4.4 hours a year. If your users are loyal and engaged, then they'll tolerate a small amount of downtime—particularly if you're transparent about it on social networks and keep them informed.

Bottom Line

For a paid service that users rely on (such as an email application or a hosted project management application), you should have at least 99.5% uptime, and keep users updated about outages. Other kinds of applications can survive a lower level of service.

Site Engagement

Everyone cares about site engagement (unless you're exclusively mobile, but even then you likely have a web presence driving mobile downloads). In some cases (such as a transaction-focused e-commerce site), you want site visitors to come onto your site and engage quickly, whereas in other cases (such as a media site that monetizes via ads), you want visitors spending as much time as possible.

Analytics firm Chartbeat measures page engagement across a multitude of sites. It defines an "engaged" user as someone who has a page open and has scrolled, typed, or interacted with the page in the last few seconds. "We generally see a separation between how much engagement sites get

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* From a study of cloud providers conducted by Bitcurrent/CloudOps Research from December 15, 2011, to January 15, 2012, in conjunction with Webmetrics.

on landing pages—which typically get high traffic and low engagement—and other pages," says Joshua Schwartz, a data scientist with the company. "Across my sample of sites, average engaged time on landing pages was 61 seconds and on non-landing pages it was 76 seconds. Of course, this varies widely between pages and between sites, but it's a reasonable benchmark."

Bottom Line

An average engaged time on a page of one minute is normal, but there's wide variance between sites and between pages on a site.

Web Performance

Study after study has proven that fast sites do better across nearly every metric that matters, from time on site to conversion to shopping cart size.* Yet many web startups treat page-load time as an afterthought. Chartbeat measures this data across several hundred of its customers who let the company analyze their statistics in an anonymized, aggregate way.† Looking at the smaller, lower-traffic sites in its data set, the company found that these took 7–12 seconds to load. It also found that pages with very slow load times have very few concurrent users, as shown in Figure 21-5.

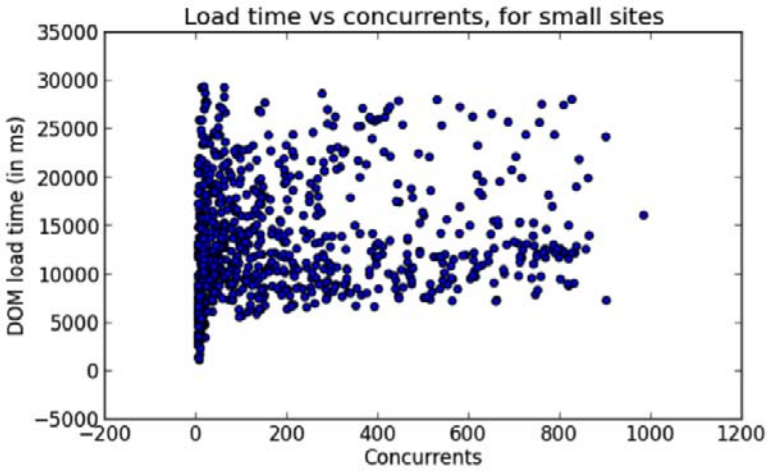

Figure 21-5. After about 10 seconds of load time, people don't stick around

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* *http://www.watchingwebsites.com/archives/proof-that-speeding-up-websites-improves-online-business/*

† Chartbeat did not include data from customers who opted out of this aggregate analysis; it also excluded some periods of unusually high traffic, which was related to the US election period.

"There seems to be a hard threshold at about 15–18 seconds, where after that users simply won't wait, and traffic falls off dramatically," says Joshua. "It's also notable that the largest sites in our sample set, those with thousands of concurrents, had some of the fastest page load times—often under five seconds."

Bottom Line

Site speed is something you can control, and it can give you a real advantage. Get your pages to load for a first-time visitor in less than 5 seconds; after 10, and you'll start to suffer.

> **EXERCISE | Make Your Own Lines in the Sand**
>
> In this chapter and the next six chapters, we share lines in the sand, or baselines, for which you can aim. You should already have a list of key metrics that you're tracking (or would like to track). Now compare those metrics with the lines in the sand provided in the following chapters. How do you compare? Which metric is worst off? Is that metric your One Metric That Matters?

CHAPTER 22

E-commerce: Lines in the Sand

Before we get into specific e-commerce metrics, we want to reinforce an important dimension of storefront segmentation.

There's a tendency to think of all mobile use as the same. That's wrong. "One of my pet peeves these days is how 'mobile' traffic is defined," says investor and entrepreneur Derek Szeto. "It's often defined as tablet plus smartphone, and especially from a commerce perspective, they're *very* different things. If I were managing a marketplace or storefront, I'd segment my analysis into three groups: desktop, tablet, and smartphone."

Part of the difference comes from the fact that users engage with the online world in three postures: creation (often on a computer with a keyboard), interaction (usually with a smartphone), and consumption (with a tablet). Mixing tablets and mobile phones into a single category is a dangerous mistake. And people buy more media on a tablet than they do on a PC because that's where they consume content.

In other words: *your mileage will vary*. It'll depend on whether you're an acquisition- or a loyalty-focused e-commerce site; on whether your buyers are buying from a tablet, a phone, or a desktop; and on a variety of other important dimensions. The only way you can deal with this is to measure, learn, and segment properly.

Conversion Rate

In March 2010, Nielsen Online reported the best conversion rates for online retailers, as shown in Table 22-1.*

Company	Conversion rate
Schwan's	40.6%
Woman Within	25.3%
Blair.com	20.4%
1800petmeds.com	17.8%
vitacost.com	16.4%
QVC	16.0%
ProFlowers	15.8%
Office Depot	15.4%

Table 22-1. Top e-commerce conversion rates

Other big e-commerce sites such as Amazon, Tickets.com, and eBay saw lower conversion rates (9.6%, 11.2%, and 11.5%, respectively).†

These companies fall into three big categories: catalog sites (which have a considerable number of offline, printed catalogs driving traffic), retail giants like eBay and Amazon, and gift sites tightly linked to intention, such as an online flower shop (people don't browse flowers casually; they go to a flower site with one thing in mind).

Many of Nielsen's highly-ranked companies fall into the loyalty category of online retailers, where you'd expect conversion to be high. Schwan's is an online grocery store; it's not the type of site that many people will browse and comparison shop with. Others, like Amazon and eBay, have incredibly strong brands that exist in the customer's consciousness on and off the Web. "In my experience, most e-commerce startups selling either their own product or retailing others' products can expect conversion rates of 1–3% maximum," says Bill D'Alessandro. "Startups shouldn't plug 8–10% conversion into their models when deciding on the viability of their business—that's never going to happen. The three things that propel you from 2% to 10% are seriously loyal users, lots of SKUs, and repeat customers. And even then it's a big accomplishment."

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* *http://www.marketingcharts.com/direct/top-10-online-retailers-by-conversion-rate-march-2010-12774/*

† *http://www.conversionblogger.com/is-amazons-96-conversion-rate-low-heres-why-i-think-so/*

More typical conversion rates still vary significantly by industry. A 2007 Invesp post cited FireClick survey data that shows just how different the rates can be (see Table 22-2).*

Type of site	Conversion rate
Catalog	5.8%
Software	3.9%
Fashion and apparel	2.3%
Specialty	1.7%
Electronics	0.50%
Outdoor and sports	0.40%

Table 22-2. Conversion rates by vertical

Outside of these categories, there seems to be a widely held notion that a conversion rate of 2–3% is typical for normal websites. Bestselling author, speaker, and digital marketing expert Bryan Eisenberg has an explanation for where this number may have come from: in 2008, Shop.org claimed that its affiliated members had an average within this range, and the FireClick index said the global conversion rate was 2.4%.† Bryan argues that leading sites do better because they focus on visitor intent—when you're going to buy flowers, you've already made up your mind; you're just deciding which ones. A more recent 2012 study estimated the average conversion rate across the whole Web at 2.13%.‡

Bottom Line

If you're an online retailer, you'll get initial conversion rates of around 2%, which will vary by vertical, but if you can achieve 10%, you're doing incredibly well. If your visitors arrive with a strong intent to buy, you'll do better—but, of course, you'll have to invest elsewhere to get them into that mindset.

Kevin Hillstrom at Mine That Data cautions that averages are dangerous here. Many electronics retailers, which have a lot of "drive-by" visitors doing research, have conversion rates as low as 0.5%. On the other hand, there's a correlation between average order size and conversion rate.

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* *http://www.invesp.com/blog/sales-marketing/compare-your-site-conversion-rate-to-ecommerce-site-averages.html*

† *http://www.clickz.com/clickz/column/1718099/the-average-conversion-rate-is-it-myth*

‡ *http://www.ritholtz.com/blog/2012/05/shopping-cart-abandonment/*

Shopping Cart Abandonment

A 2012 study estimated that just over 65% of buyers abandon their shopping cart.* Of those who abandon, 44% do so because of high shipping costs, 41% decide they aren't ready to purchase, and 25% find the price is too high. A February 2012 study estimated abandonment at an even higher 77%.† Improving on abandonment beyond 65% seems to be a challenge, but that doesn't stop companies from trying:

- *Fab.com*, a curated catalog site, puts its shopping cart on a timer as a pressure tactic to convince buyers to complete their transaction: buy soon, or someone else may steal your purchase from you. The site's brand of exclusivity and its limited, register-first approach to offers are actually reinforced by the expiry timer.
- If you start to buy Facebook ads, then abandon the process, the company sends you a credit toward your first ads to get you restarted.

Price does seem to be a factor. Listrak might estimate a 77% abandonment rate, but that rate dropped to 67.66% on December 14, 2011—a day that many online retailers declared "free shipping day."‡

KP Elements, which sells skin care products to combat keratosis pilaris (a common cosmetic skin condition), ran a pricing test where it compared a $30 price point plus $5 shipping on the buy page, versus a $35 price point for the same product, with free shipping. Conversion went from 5% to 10% with that simple change. The prices were identical—$35—but the free shipping offer was twice as compelling to customers.

In 2012, the Baymard Institute looked at 15 different studies of abandonment and concluded that an abandonment rate of roughly 66% is average, as shown in Figure 22-1.§

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* *http://www.ritholtz.com/blog/2012/05/shopping-cart-abandonment/*

† *http://www.bizreport.com/2012/02/listrak-77-of-shopping-carts-abandoned-in-last-six-months.html#*

‡ *http://www.internetretailer.com/2012/02/02/e-retailers-now-can-track-shopping-cart-abandonment-daily*

§ *http://baymard.com/lists/cart-abandonment-rate*

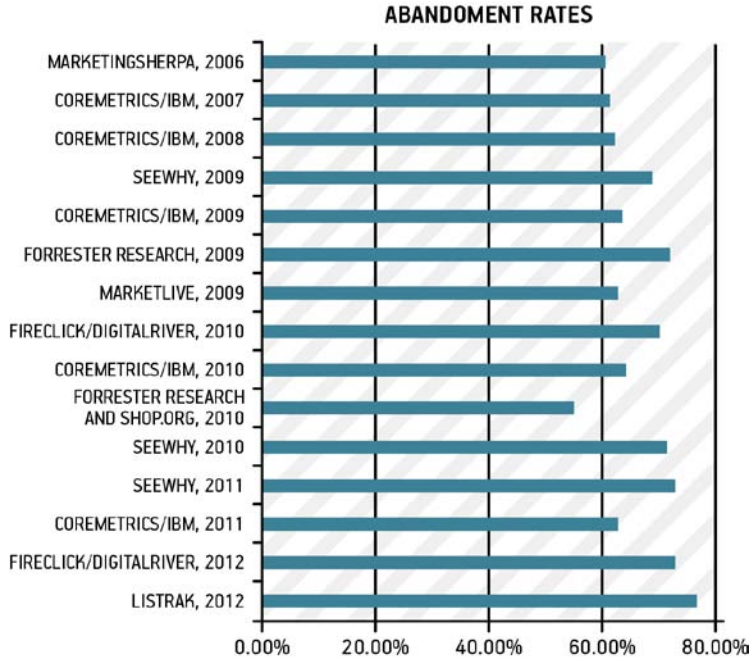

Figure 22-1. Meta-studies are so meta

Price isn't the only cause for abandonment. Jason Billingsley says that most abandonment studies ignore key variables, such as expected delivery date. "As more time-sensitive purchases move online, this becomes critical data," he says. "Retailers must expose estimated arrive dates and not just shipping and fulfillment dates."

Bottom Line

Sixty-five percent of people who start down your purchase funnel will abandon their purchase before paying for it.

Search Effectiveness

Search is now the default way for consumers to research and find products, from their initial investigation of vendors to their navigation within a site. While this is true in e-commerce, it's also relevant for media, user-generated content (UGC), and two-sided marketplaces.

In e-commerce specifically, 79% of online shoppers spend at least 50% of their shopping time researching products. Forty-four percent of online shoppers begin by using a search engine.*

Mobile search traffic is particularly focused on purchasing. Fifty-four percent of iOS web traffic is devoted to search, compared to 36% for the Internet as a whole—and 9 out of 10 mobile searches lead to action, with over half of them leading to a purchase.

Bottom Line

Don't just think "mobile first." Think "search first," and invest in instrumenting search metrics on your website and within your product to see what users are looking for and what they're not able to find.

* See *http://blog.hubspot.com/Portals/249/docs/ebooks/120-marketing-stats-charts-and-graphs.pdf* for this and many other statistics on search usage. Chikita provided the iOS search number, and Search Engine Land provided the mobile purchase number.

CHAPTER 23

SaaS: Lines in the Sand

Paid Enrollment

Churn, engagement, and upselling metrics are similar across many SaaS companies. But there's one factor that produces a huge difference across many metrics: asking for payment up front during a trial.

Totango, a provider of SaaS customer intelligence and engagement software, has data across more than 100 SaaS companies, measuring trial, conversion, and churn rates. It has found that asking for a credit card during signup means 0.5% to 2% of visitors sign up for a trial, while *not* asking for a credit card means 5% to 10% of visitors will enroll.

Enrollment isn't the only goal, of course. You want users who enroll in a trial to become paying customers. Roughly 15% of trial users who did *not* provide a credit card will sign up for a paid subscription. On the other hand, 40–50% of trial users who *did* provide one will convert to a paid subscription.

Asking for a credit card up front can also mean more churn after the first payment period if users' expectations aren't clearly set. Up to 40% of paid users may cancel their subscriptions—they forgot that they agreed to billing after the trial expired, and when they see a charge on their credit card, they cancel. Once this initial hurdle is over, however, most users stick

around each month. A 2009 Pacific Crest study found that best-in-class SaaS companies manage to get their annual churn rates below 15%.*

Table 23-1 shows a quick summary of the differences in metrics with and without an upfront credit card.

	Credit card	No credit card
Try it	2%	10%
Become subscribers	50%	15%
Churn on first pay period	Up to 40%	Up to 20%
End to end	0.6%	1.2%

Table 23-1. Impact of requiring a credit card to try a SaaS product

Credit cards aren't the only indicator of conversion rates. Some people who try a SaaS product are just curious; others are seriously evaluating the tool. They show different behaviors, and can be treated as separate segments based on their activities and how much time they invest in exploring the product.

Let's look at two basic funnels to see how both models work, focusing on Totango's analysis of these "serious evaluators," and using the higher values from Table 23-1; see Table 23-2.

5,000 serious evaluators visit the site	
Credit cart up front	**No credit card up front**
100 try it (2%)	500 try it (10%)
50 become subscribers (50%)	75 become subscribers (15%)
20 churn fast (40%)	15 churn fast (20%)
30 customers remain (0.6%)	60 customers remain (1.2%)

Table 23-2. Two engagement and churn funnels

In this simple example, we see that asking for a credit card up front results in a total of 30 paying customers (from 5,000 visitors), whereas not doing so yields double the paying customers (60 in all). A paywall turns away evaluators who aren't serious—but it also turns away people who are on the fence. Totango's data shows that for most SaaS providers, 20% of

* *http://www.pacificcrest-news.com/saas/Pacific%20Crest%202011%20SaaS%20Workshop.pdf*

visitors are serious evaluators, 20% are casual evaluators, and 60% are simply curious.

The best approach is to tailor marketing to users based on their activity. You need to convince serious evaluators that you're the right choice, and convince the casual evaluators that they should become more serious. Identify serious prospects by usage analytics and focus sales resources on those users. Combining usage analytics (finding out who's serious) with an open door (no paywall) yields the best results.

Let's add a third funnel to the previous two—one where the SaaS provider is actively identifying and courting serious evaluators with tailored marketing. In this case, while everyone can try the tool, fewer subscribe, but those who do are more likely to remain (see Table 23-3).

Credit cart up front	No credit card up front	No credit card, focus on serious users
100 try it (2%)	500 try it (10%)	500 try it (10%)
50 become subscribers (50%)	75 become subscribers (15%)	125 become subscribers (25%)
20 churn fast (40%)	15 churn fast (20%)	25 churn fast (20%)
30 customers remain (0.6%)	60 customers remain (1.2%)	100 customers remain (2%)

Table 23-3. Totango's data on a third funnel for serious evaluators

According to Totango's research, the best approach is to not put up a credit card paywall to try the service, but to segment users into three groups—then market to the active ones, nurture the casual ones, and don't waste time on those who are just curious bystanders (or at best, get them to tell friends who might be real prospects about you).

Bottom Line

If you ask for a credit card up front, expect just 2% of visitors to try your service, and 50% of them to use it. If you don't ask for a credit card, expect 10% to try, and up to 25% to buy—but if they're surprised by a payment, you'll lose them quickly. In our preceding example, not having a credit card up front gives you a 40% increase in conversions, provided you can tailor your selling efforts to each segment of your evaluators based on their activity.

Freemium Versus Paid

One of the biggest pricing debates in startups, particularly those based on software, is that of freemium versus paid models.

Proponents of a free model point out that adoption and attention are the most precious of currencies. Twitter waited until it had millions of active users before introducing advertising, and despite the outcry over promoted tweets, growth has continued. Chris Anderson, former editor-in-chief of *Wired* and author of *The Long Tail* (Hyperion), observes that King Gillette pioneered the idea of giving something away (handles) to make money on something else (razor blades).* But in many ways, online users have strong expectations that the Internet should be free, which means it's hard to charge even for valuable things.

Detractors of freemium models observe that for every success like Dropbox or LinkedIn, there's a deadpool of others who went out of business giving things away. In one example cited by the *Wall Street Journal*, billing-management software firm Chargify was on the brink of failure in 2010—but then it switched to a paid model, and in July 2012, became profitable with 900 paying customers.†

Neil Davidson is concerned with the popularity of freemium, particularly among startups. "I think that for most people the freemium model is unsustainable," he says. "It's very hard to create something good enough that people will want to use, but with enough of a feature gap to the paid version so that people will upgrade." Neil believes that too many startups charge too little, and undervalue themselves. "If you're creating something that your customers value, then you shouldn't shy away from asking them to pay for it. If you don't, you haven't got a business."

Even when freemium works, users sometimes take a long time to start paying. Evernote's Phil Libin talks about a "smile graph," shown in Figure 23-1, that illustrates how customers who once abandoned the product eventually return.‡

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* *http://www.wired.com/techbiz/it/magazine/16-03/ff_free*

† Sarah E. Needleman and Angus Loten, "When Freemium Fails," *Wall Street Journal*, August 22, 2012; *http://online.wsj.com/article/SB10000872396390443713704577603782317318996.html.*

‡ *http://www.inc.com/magazine/201112/evernote-2011-company-of-the-year.html*

Figure 23-1. Evernote calls this a smile graph, and not just because of the shape

Phil estimates that while less than 1% of users upgrade to a paid model after their first month, the number grows to 12% after two years. In fact, having been around long enough to collect a backlog of users who will eventually upgrade, the company experiences what David Skok calls *negative* churn—which happens when product expansions, upselling, and cross-sells to your current customer base exceed the revenue that you are losing because of churn.* But many analysts consider Evernote an anomaly: unless you're really good at the freemium approach, your free users can bankrupt you.

Jules Maltz and Daniel Barney of IVP, a late-stage venture capital and growth equity firm, suggest that freemium models work for products that have:†

- A low cost of delivering service to an additional user (i.e., low marginal cost).
- Cheap, or even free, marketing that happens as people use the product.
- A relatively simple tool that doesn't require long evaluations or training.

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* *http://www.forentrepreneurs.com/why-churn-is-critical-in-saas/*

† *http://www.ivp.com/assets/pdf/ivp_freemium_paper.pdf*

- An offering that "feels right" if it's free. Some products (like homeowner's insurance) might make prospects wary if they're offered for free.
- An increase in value the longer someone uses the product. Flickr gets more valuable the more images you store in it, for example.
- A good viral coefficient, so your free users become marketers for you.

What if you *are* charging? Christopher O'Donnell of Price Intelligently points out that startups are trying to balance revenue optimization (making the most money possible) with unit sales maximization (encouraging wide adoption as the business grows) and value perception (not pricing so low you make buyers suspicious).* Sellers also have to understand how to bundle several features or services into a package, and how to sell these bundles as tiers in order to reach several markets with different price points.

Even if you're charging every customer, you can still experiment with pricing in the form of promotions, discounts, and time-limited offers. Each of these is a hypothesis suitable for testing across cohorts (if you use time-limited offers) or A/B comparisons (if you offer different pricing to different visitors).

Alex Mehr, the founder of online dating site Zoosk, understands the "optimal revenue" curve. But he argues that startups should err on the side of charging a bit too little.† "I prefer to make 10% less money but have 20% more customers. You want to stay a little bit to the left side of the peak. It is around 90% of the revenue maximization point." Alex overlooks the issues of elasticity, value perception, and strategic discounting in his model, however.

Upselling and Growing Revenue

Best-in-class SaaS providers are able to grow revenues per *customer* by 20% from year to year. This comes through additional users added to the subscription, as the application spreads through the organization, as well as a series of tiered offerings and an easy upselling path. Done correctly, the increased revenues from upselling should nearly offset the 2% monthly losses from churn. But these are the best of the best, and they offer a clear path for extracting more money from customers as each customer's use grows.

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* Christopher O'Donnell, *Developing Your Pricing Strategy*; *price.intelligent.ly/downloads/Developing_Your_Pricing_Strategy.pdf*.

† Tarang Shah and Sheetal Shah, *Venture Capitalists at Work: How VCs Identify and Build Billion-Dollar Successes* (Apress), as quoted by Sean Ellis at *http://www.startup-marketing.com/great-guidance-on-pricing-from-zoosk-ceo/*.

Patrick Campbell analyzed aggregate, anonymous data to measure how many of a company's subscribers moved up a tier. He found that across his sample, 0.6% of free users moved up to a paying tier in a given month, and that 2.3% of a company's subscribers moved from a lower-priced tier to a higher-priced one in a given month.

Bottom Line

Try to get to 20% increase in *customer* revenue—which may include additional seat licenses—each year. And try to get 2% of your paying subscribers to increase what they pay each month.

Churn

(Churn is also important in mobile gaming, two-sided marketplaces, and UGC sites)

The best SaaS sites or applications usually have churn ranging from 1.5% to 3% a month. For other sites, it'll vary depending on how you define "disengaged." Mark MacLeod, Partner at Real Ventures, says that you need to get below a 5% monthly churn rate before you know you've got a business that's ready to scale. Remember, though, if you're surprising your subscribers in a bad way (e.g., billing them for something they didn't know they'd ordered), then churn will spike during your first billing period, sometimes to 50%, so you should factor this into your calculations.

David Skok agrees with the 5% churn threshold, but only for early-stage companies, and says that you have to see a clear path to getting churn below 2% if you want to scale significantly:

> In the early days of a SaaS business, churn really doesn't matter that much. Let's say you lose 3% of your customers every month. When you only have a hundred customers, losing three of them is not that terrible. You can easily go and find another three to replace them. However, as your business grows in size, the problem becomes different. Imagine that you have become really big, and now have a million customers. Three percent churn means that you are losing 30,000 customers every month. That turns out to be a much harder number to replace.

CASE STUDY | OfficeDrop's Key Metric: Paid Churn

OfficeDrop helps small businesses manage paper and digital files in the cloud. Its service provides searchable cloud storage coupled with downloadable apps that allow businesses to sync, scan, search, and share files anywhere at any time. Currently, over 180,000 users store data in the service, and its subscribers access and upload millions of files each month.

The company offers its solution as a freemium model with one free plan and three paid plans. We spoke with Healy Jones, Vice President of Marketing, to learn more about the company's key metrics and lessons learned.

"Our most important number is paid churn," says Healy. OfficeDrop defines paid churn as the number of paying users who downgrade to free or cancel divided by the total number of paying users available to churn at the beginning of the month.

For OfficeDrop, paid churn is a key indicator of the business's overall health. "For example, we can tell how our marketing messaging is doing based on paid user churn—if a lot of new customers churn out, then we know our messaging doesn't match what the customers are actually finding when they start using the product," explains Healy. "We can also tell if our feature development is progressing in the direction that older users want: if they stick around for a long time then we are doing a good job, but if they churn out fast then we are not developing the product in the direction that they want. We can also tell if any bugs are causing people to be upset—if a lot of users cancel on a particular day, then we have to look and see if there was a technical problem that ticked people off."

The company aims for a monthly churn rate below 4%. "Three percent is good," Healy says. "Anything over 5% and we really don't have a business that will generate gross margin positive growth." Most recently, Healy says the company has been hitting a churn rate of 2% and hopes to maintain that.

As is often the case, churn is the inverse of engagement, and this is the second key metric for OfficeDrop. It defines an active user as someone who used the product in the previous month. When OfficeDrop launched, the founders assumed that people would not want to install programs on their computers or devices, that they would want a rich browser experience instead. "We did everything by our gut, and almost everything was wrong," says Healy. "We hypothesized that the browser experience—which is the easiest to get started with and has the lowest

barriers to entry for new customers—would be more likely to create engagement, but we didn't start seeing real engagement, and in turn real customer growth and lower churn, until we built downloadable applications."

Figure 23-2 shows a classic hockey stick around June 2011. This measures the increased customer base (which is a result of increased engagement and reduced churn).

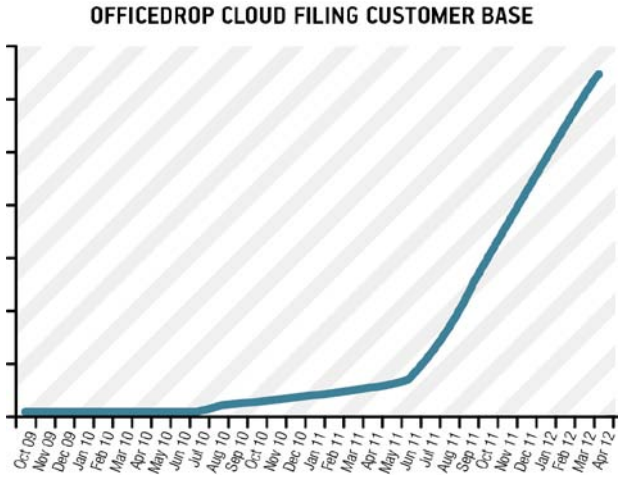

Figure 23-2. Can you tell where OfficeDrop added a mobile client app?

"In mid-2011, we went mobile and first started offering OfficeDrop as a mobile app, and that had a huge impact," says Healy. "A little harder to see—but equally important—was when we released our Mac desktop scanner application in January 2011. That was our first major downloadable app, and it got great press and drove even better engagement."

After seeing that initial uptick in engagement, OfficeDrop made the commitment to develop mobile offerings. The company launched an Android app in May 2011, followed by an iPhone app in June 2011. "Going against our assumptions, we built a desktop application that proved successful. I think of that like a pivot for us, and it gave us the confidence to change our product offering. The results are clear: improved engagement and lower churn," says Healy.

Summary

- OfficeDrop watches paid churn—paying customers who switch to a free model or leave—as its One Metric That Matters.

- The initial product was heavily browser-focused, and assumed users wouldn't want desktop or mobile clients, based on the founders' gut instincts.
- The introduction of a scanner application, followed by mobile client software, dramatically increased the growth of the company.

Analytics Lessons Learned

Always question your assumptions, even when you're seeing traction. Customers want to use certain applications in certain ways—mapping on their mobile phone, for example. Doing a day-in-the-life analysis, or testing a major pivot with the introduction of a simple application, can often prove or invalidate a big assumption quickly, and change your fortunes forever.

Certain products or services are very sticky, in part because of the lock-in users experience. Photo upload sites and online backup services, for example, are hard to leave, because there's a lot of data in place, so churn for those product categories may be lower. On the other hand, in an industry with relatively low switching costs, churn will be substantially higher.

Social sites may have some tricks at their disposal, too. If users try to leave Facebook, they're reminded that some of their close friends will miss them—and they'll lose pictures of those friends. This is an example of how an emotional tweak was later supported by the data: once implemented, this last-ditch guilt trip reduced deactivations by 7%, which at the time meant millions of users stayed on Facebook.*

If you're going to offer users an incentive to stick around—such as a free month or an upgrade to a new phone—you'll have to weigh the cost of doing so against the cost of acquiring another customer. Of course, if word gets out that you're incentivizing disgruntled users to stick around, then many customers may threaten to leave just to receive the discount, and getting the word out is what the Internet is for.

Bottom Line

Try to get down to 5% churn a month before looking at other things to optimize. If churn is higher than that, chances are you're not sticky enough. If you can get churn to around 2%, you're doing exceptionally well.

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* *http://blog.kissmetrics.com/analytics-that-matter-to-facebook/*

CHAPTER 24

Free Mobile App: Lines in the Sand

Mobile Downloads

The mobile application business suffers from a "long tail" of popularity: a few apps do very well, but most of them flounder. According to Ken Seto, founder and CEO of mobile game company Massive Damage, "Some indie game developers get as few as a couple of downloads a day. This number is entirely dependent on your marketing, virality, and ranking in the app store."

All businesses have competitors. But for mobile apps, the app store ecosystem puts that competition front and center. You can't ignore your standings, and you can't relax. "The tricky part," he says, "is that it's hard to stick at a certain ranking because everyone around you is trying to surpass you. So if your game doesn't have natural hype—or isn't promoted by Apple or paid marketing—you will slip in rankings. There's no 'typical' here."

Bottom Line

Expect yourself to be at the mercy of promotions, marketing, and the whims of the app store environment. The app store battle can be demoralizing, but smart mobile developers use the abundance of information about competitors to see what's working, emulate their successes, and avoid their mistakes.

Mobile Download Size

As mobile applications get more complex, their file sizes increase. This poses a risk for developers, though; consumers on slower connections may abandon a download if it takes too long. Alexandre Pelletier-Normand, co-founder of Execution Labs, a game development accelerator, says, "If you want your app to be easily downloadable by anyone anywhere, it has to be under 50 megabytes, 'on the portal'."

An app that's bigger than 50 MB for iOS devices will require a Wi-Fi connection. If a user doesn't have a Wi-Fi connection, she won't be able to download your app, and it's unlikely she'll bother trying again.

You can download apps that are larger than 50 MB on Android devices, but the process is greatly impacted by a warning from Google Play, which interrupts users and results in significant drop-off in the download process.

Alexandre makes a point of using the phrase "on the portal" to refer to the initial download from Apple's App Store or Android app stores. He says, "Some developers will work around the limitation by having a small app on the Google or Apple portals, and this app will then download additional content 'transparently' from the developer's servers while you play."

Bottom Line

Keep your initial downloads small, and aim for less than 50 MB to minimize download churn.

Mobile Customer Acquisition Cost

Some application developers use third-party marketing services to pay for installations. This is an ethical gray area for mobile developers: you're using mercenaries to artificially inflate your download numbers and juice your ratings, in the hopes that the resulting improvement in rankings will convince real users to download the app. There are legitimate marketing services out there for mobile application and game developers, but be careful who you work with. While few of the people we've talked with will go on record about pricing, such services cost from $0.10 to $0.70 per install at the low end.

Because few of these installations become engaged players, it's critical that you segment out mercenary installers to avoid polluting your other metrics. The metric you really care about is how many *legitimate* users your mercenaries bring in, and how many of those become engaged, paying users.

A more legitimate form of acquisition is banners or ads within other applications. Typically, these cost $1.50 to $4.00 per installation; these installations are more likely to become legitimate users because they found out about the application and chose to install it themselves. "The trick is to get your average cost per installation (across both mercenary and legitimate installations) to somewhere between $0.50 and $0.75," says Ken Seto. "These numbers are all based on free games [with in-game monetization], however. I don't think it's cash-efficient to do paid installs for paid games."

Keith Katz also warns against spending up to your CLV, which he sees a lot of app developers doing:

> Too many mobile game developers seem to think the math works when you spend dollar for dollar against your customer lifetime value. But they tend to forget that you pay tax on your revenue to the government and then there's the "platform tax" incurred by Apple's App Store or Google Play, which is 30%. If you're spending $1 to generate $1 in revenue, you're really spending closer to $1 to generate $0.60.

Bottom Line

Pay around $0.50 for a paid (mercenary) install, and around $2.50 for a legitimate, organic one, but make sure that your overall acquisition cost is less than $0.75 per user (and, of course, less than the lifetime value of a user). These costs are increasing, in part because large studios and publishers are getting more heavily into mobile and driving costs higher, and in part because of the crackdown on some marketing service tactics for delivering paid installs.

CASE STUDY

Sincerely Learns the Challenges of Mobile Customer Acquisition

Sincerely Inc. is the maker of the Sincerely gifting network and a number of mobile applications including Postagram, Ink Cards, and Sesame Gifts. The company's first application, Postagram, lets people create and send a custom postcard from anywhere in the world. Ink Cards, its second app, allows you to send personalized greeting cards. And Sesame Gifts allows you to send themed gift sets in a beautiful box. The company has evolved from the simplest shippable item—a postcard—to $30–$50 gifts with Sesame.

When the company first started in 2010, co-founders Matt Brezina and Bryan Kennedy assumed that mobile ads would be like Google AdWords in 2000—early movers (to using mobile advertising) would

have a huge advantage in a giant, not-yet-efficient user acquisition channel. "We figured by selling the simplest gift on the planet, a 99-cent postcard, we could easily buy users, get credit cards, and begin to make our gifting network profitable," says Matt. "This strategy was gut instinct and some small experiments we ran on an off-branded app (i.e., one that wasn't obviously affiliated with the Sincerely brand)."

It turns out Sincerely was able to buy users through mobile advertising for Postagram, but not cheaply enough. "Our metric for success was buying a Postagram user cheaply enough that they'd become profitable in under one year," says Matt. "And if not, could we cross-promote them to another, more expensive gifting app to get them profitable within one year, and eventually three months."

Matt and Bryan found that not only were mobile adds too expensive, but also that they were hard to track and the conversion rate from initial acquisition to mobile installation and launch was abysmal. So they launched Ink Cards six months after Postagram and set a price point starting at $1.99 per card. "Through cross-promotion, we increased the lifetime value of an initial Postagram user by around 30%," says Matt. "But the payback time *still* wasn't what we wanted it to be."

Now Sincerely has launched Sesame, which offers gifts at a higher price point. "We now hope to get into the zone of sustainably growing the business through ads," says Matt. But as a result of the cost and challenges with mobile advertising, Sincerely spends a significant amount of time focused on virality. "Through necessity—because the mobile ad equation just doesn't work well enough—we've learned a lot about driving growth by enabling our users to share their great experience with new friends," Matt says. "We do this by giving users free cards for people they've never sent any to." This focus on viral growth reduces the reliance on advertising alone for user acquisition in a mobile industry where acquisition tools aren't yet mature or efficient.

Summary

- Sincerely launched Postagram to allow users to send 99-cent custom postcards, and assumed that mobile advertising would be inexpensive and efficient enough for the company to grow successfully.
- The company was able to acquire users, but it was too expensive (because mobile advertising was hard to measure, and drop-off rates were high) and not rewarding enough (because the lifetime value of the customer was too low).

- The company launched Ink Cards, personalized greeting cards with a higher price point. This improved lifetime value by around 30%, but the payback time was still too slow, and it wasn't enough for mobile advertising to be profitable.
- Now Sincerely has launched Sesame Gifts, curated gifts you can send to people for $30–$50. The founders hope that this new price point will allow them to grow profitably through mobile advertising, while they also focus more on growing virally to reduce their dependency on advertising channels.

Analytics Lessons Learned

Mobile advertising is more complicated and more expensive than you may initially realize, and you need to track the customer acquisition cost carefully. You also need to track how quickly users pay back the cost of acquiring them, as well as their lifetime value. Test different channels and track user behavior, and use virality as a means of lowering your acquisition costs.

Application Launch Rate

Simply downloading an application isn't enough. Users have to launch it, and some wait a long time to do so. In addition to the size constraints outlined previously, multiple tablets and phones connected to a single account may download the application at different times, skewing your launch analytics. In other words: it's complicated.

For free applications, many downloaders are just browsing applications casually and haven't committed to a particular game or application and the related in-game purchases, so a higher percentage of downloads are never launched. For example, Massive Damage sees roughly 83% of downloads for its flagship game, *Please Stay Calm*, lead to an application launch.

Bottom Line

Expect a significant number of downloads to never launch your application, particularly if it's a free app.

Percent Active Mobile Users/Players

When it comes to inactivity, the first day is always the worst. There's a gradual decline in active users over time, but the first day decline can be as high as 80%. Following that, there's a gradual drop-off each day: for a cohort of users, as few as 5% of them may be around after a month.

An October 2012 study by mobile analytics firm Flurry showed that across more than 200,000 applications, only 54% of users were still around at the end of the first month, only 43% were around at the end of the second, and only 35% were using the application by the end of the third.* On average, users interacted with the application 3.7 times a day, though these metrics varied highly with the kind of application being used.

It's important to note that overall engagement has increased in the numbers shared by Flurry (from 25% to 35% in the third month), but that frequency of use has dropped (from 6.7 uses a week to 3.7 a week). Flurry also notes that device affects engagement: smartphone users interact with an app 12.9 times a week, on average, but do so for only 4.1 minutes; tablet users interact with an app 9.5 times a week, but do so for 8.2 minutes.†

Bottom Line

Assume that a big chunk of the people who try your app once will never do so again—but after that initial cliff drop, you'll see a more gradual decline in engaged users. While the shape of this curve will vary by app, industry, and demographic, the curve always exists, so once you have a few data points you may be able to predict churn and disengagement ahead of time.

Percentage of Mobile Users Who Pay

If your application is paid-only, then this will naturally be "all of them," but if you're running a freemium model where users pay for enhanced functionality, then a good rule of thumb is that 2% of your users will actually sign up for the full offering.

For a free-to-play mobile game with in-app purchases, Ken Seto says that across the industry roughly 1.5% of players will buy something within the game during their use of it.

In-game purchases follow a typical power law, with a few "whales" spending significantly more on in-game activity and the majority spending little or nothing. A key factor in mobile application success is being able to strike a balance between gameplay quality (which increases good ratings and the number of players) and in-app purchases (which drives revenue). In a multiplayer game, maintaining game balance between paid and free players is a constant challenge.

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* *http://blog.flurry.com/bid/90743/App-Engagement-The-Matrix-Reloaded*

† *http://blog.flurry.com/bid/90987/The-Truth-About-Cats-and-Dogs-Smartphone-vs-Tablet-Usage-Differences*

Bottom Line

For a freemium model, aim for a conversion from free to paid of 2%. For a mobile application or game with in-app purchases, assume that roughly 1.5% of users will buy something.

Average Revenue Per Daily Active User

The average revenue per daily active user (ARPDAU) is a very granular way of measuring traction and revenue. Most mobile game developers focus on daily active users, and in turn on the revenue those users create.

SuperData Research has published ARPDAU benchmarks for different gaming genres:*

- $0.01–$0.05 USD for puzzle, caretaking, and simulation games
- $0.03–$0.07 USD for hidden object, tournament, and adventure games
- $0.05–$0.10 USD for RPGs, gambling, and poker games

GAMESbrief.com collected additional information from three game companies, DeNA, A Thinking Ape, and WGT:

> DeNA† and A Thinking Ape‡ have both claimed that for most mobile games, expected ARPDAU is less than $0.10. However, YuChiang Cheng [CEO] of WGT said at Login Conference 2012 that an ARPDAU of less than $0.05 is a sign of poor performance, and that a good benchmark for ARPDAU is $0.12–015. Cheng also said that ARPDAUs on tablets are 15–25% higher than on smartphones.

Bottom Line

A good metric here is highly dependent on the type of game, but aim for an ARPDAU above $0.05 as a minimum.

Monthly Average Revenue Per Mobile User

There's no good way to generalize this, as it depends entirely on your business model. You should analyze competitors to see what prices and tiers they're charging, but don't be afraid to shake things up with new pricing in the early stages of your launch, provided you can measure the

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* *http://www.gamesbrief.com/2012/09/arpdau/*

† *http://techcrunch.com/2012/06/13/the-1-grossing-game-on-android-and-ios-denas-rage-of-bahamut-has-almost-even-revenues-from-both/*

‡ *http://www.insidemobileapps.com/2011/11/16/a-thinking-ape-interview-kenshi-arasaki/*

effect. Several industry insiders have told us that for mobile games, a decent average is $3 per month per daily active player—or $0.10 per day.

Bottom Line

Like customer acquisition costs, customer revenue comes from your business model and the margin targets you've set. Every vertical has its own value. But in the mobile app world, if you know your ARPDAU, the number of days a user sticks around, and your cost per install, you can do the math fairly quickly and decide if you have a viable business model.

Average Revenue Per Paying User

Figuring out a good benchmark for average revenue per paying user (ARPPU) is hard. It's highly dependent on the type of app (and we're focused primarily on games here) as well as the operating system.

Nicholas Lovell of GAMESBrief.com splits paying users into three categories: minnows, dolphins, and whales:

> Real whales can spend an enormous amount of money. Social Gold reckons the highest group of spenders has a lifetime value of over $1,000, with some spending over $20,000 on a single game.* Flurry, meanwhile, says that on iOS and Android in the US, the average transaction value for an in-app purchase is $14, and 51% of revenue is generated from in-app purchase transactions of over $20.†

Nicholas recommends looking at ARPPU for whales, dolphins, and minnows separately:

- Whales: 10% of payers, ARPPU of $20
- Dolphins: 40% of payers, ARPPU of $5
- Minnows: 50% of payers, ARPPU of $1

"These [averages] are dependent on your game," says Nicholas. "Not just which platform or genre, but how you design. For your whales to reach an ARPPU of $20, some of them must be spending over $100. Is this possible? Your dolphins need to have a good reason to keep spending a little bit of money each month. Have you created one? Your minnows need to be converted from freeloaders to buyers. What will make them jump?"

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* *http://www.gamesbrief.com/2010/06/whats-the-lifetime-value-of-a-social-game-player/*

† *http://blog.flurry.com/bid/67748/Consumers-Spend-Average-of-14-per-Transaction-in-iOS-and-Android-Freemium-Games*

Bottom Line

Recognize that in a free-to-play multiplayer game, most users are just "fodder" for paying users. Early on in the user's lifecycle, identify a leading indicator in her behavior—like time played per day, number of battles, or areas explored—that suggests whether she's a non-payer, minnow, dolphin, or whale. Then provide different kinds of in-game monetization for these four segments—adapting your marketing, pricing, and promotions according to that behavior—selling bling to minnows, content to dolphins, and upgrades to whales (for example).

Mobile App Ratings Click-Through

Good ratings and reviews have a significant impact on downloads, but encouraging users to rate an app can be tough. After a few uses of the application, most developers pop up a message asking for a review; some developers even vary the message to try to encourage ratings. For example, one mobile developer asks questions like "Do you like this application?" or "Would you like to see more features and free content?" in the pop up; clicking "yes" takes the user to the ratings page.

Alexandre Pelletier-Normand warns that any message that offers something in exchange for a rating and isn't neutral could get you blocked from an app store. But he also says, "You must proactively offer users the ability to rate your app at a strategic moment—ideally early in the game, since you want many ratings quickly—after a memorable gameplay sequence. Ratings are the most important factor considered in the ranking of the app."

Review rates vary by app price and type. In one Quora response, a developer said expensive paid apps had a 1.6% review rate; cheap paid apps had a 0.5% review rate; and free trial apps had only a 0.07% review rate.* As that poster observed, sites like *xyologic.com* have detailed data on download and ratings counts, so you can compare yourself to your particular segment. For free games, Massive Damage sees a 0.73% ratio of downloads to ratings.

Bottom Line

Expect less than 1.5% review rate for paid apps, and significantly less than 1% for free apps.

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* *http://www.quora.com/iOS-App-Store/What-percentage-of-users-rate-apps-on-iTunes*

Mobile Customer Lifetime Value

There's no good way to generalize the lifetime value of a customer, because it's a function of spending, churn, engagement, and application design. But it's a fundamental part of any business model, and it anchors other factors such as customer acquisition cost and cash flow.

GigaOm's Ryan Kim observed* that according to recent data,† freemium apps (in which users pay for something within the application) have eclipsed premium apps (where the developer offers a second, paid version) in terms of revenue, as shown in Figure 24-1.

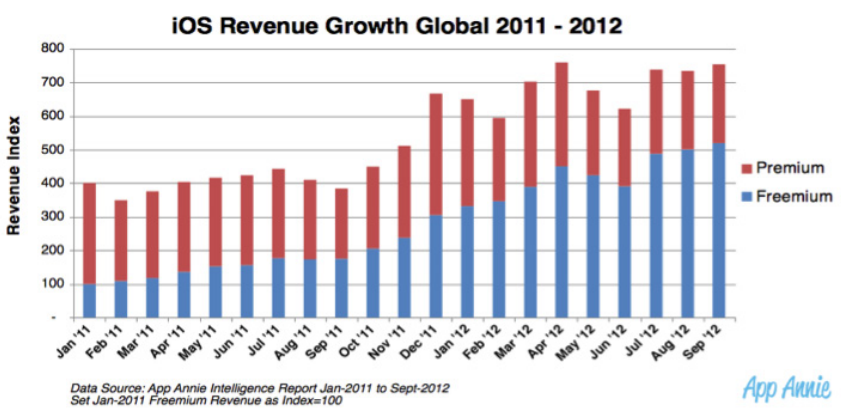

Figure 24-1. Premium is so 2010

Customer loyalty is also linked to lifetime value, and loyalty depends heavily on the kind of application. Flurry has done extensive research, as seen in Figure 24-2, across mobile applications that use its analytical tools.

* *http://gigaom.com/mobile/freemium-app-revenue-growth-leaves-premium-in-the-dust/*

† *http://www.appannie.com/blog/freemium-apps-ios-google-play-japan-china-leaders/*

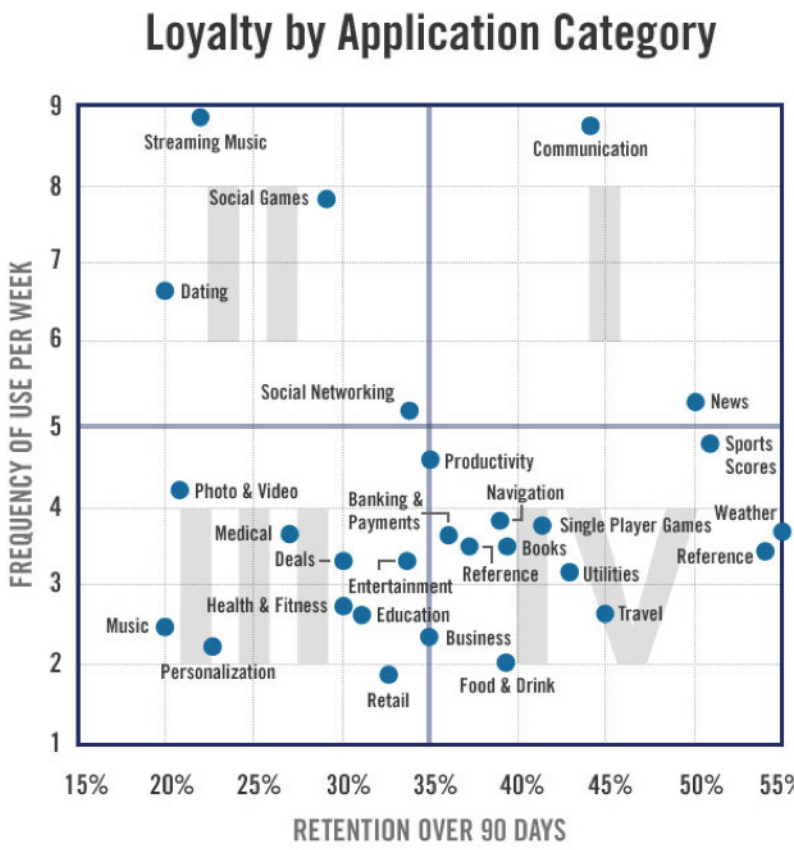

Figure 24-2. Maybe it's not just you: engagement varies by app category

As TechCrunch's Sarah Perez points out, splitting application types into two dimensions—how frequently an application is used, and what kind of user retention the application sees in a 90-day period—suggests different loyalty patterns.* These can in turn inform pricing strategies to maximize user revenue:

- Frequently used apps that retain loyal customers may be a better vehicle for advertising, recurring fees, or well-designed in-app content.
- Frequently used apps that lose users after a while may satisfy a need (such as buying a house, or completing the game) and then go away. A

* *http://techcrunch.com/2012/10/22/flurry-examines-app-loyalty-news-communication-apps-top-charts-personalization-apps-see-high-churn/*

per-transaction fee on completion, as well as the right to reach out to the user when the need occurs again, will matter more than long-term engagement.

- Infrequent, low-loyalty applications need to "grab money" early on, so they may be better as a sold application or using a one-time fee.
- Infrequent, highly loyal applications need to make the most of those infrequent interactions by upselling, encouraging the user to invite others, and making sure they stay in the user's "utility belt" of useful tools.

CHAPTER 25

Media Site: Lines in the Sand

Click-Through Rates

(Click-through rates also apply to UGC sites)

A well-placed, relevant ad will get clicked more, but no matter what, ads are a numbers game: even the best ads seldom get as much as 5% click-through rates.

A May 2012 study by CPC Strategy listed the top 10 comparative shopping sites, along with their click-through rates where applicable (Bing and TheFind don't charge for clicks).* See Table 25-1.

Comparison shopping engine	Conversion rate	Cost-per-click rate
Google	2.78%	Too early to know**
Nextag	2.06%	$0.43
Pronto	1.97%	$0.45
PriceGrabber	1.75%	$0.27
Shopping.com	1.71%	$0.34
Amazon Product Ads	1.60%	$0.35

* *http://www.internetretailer.com/2012/05/03/why-google-converts-best-among-comparison-shopping-sites*

** *http://mashable.com/2012/09/11/google-shopping-to-switch-to-paid-model-in-october/*

Comparison shopping engine	Conversion rate	Cost-per-click rate
Become	1.57%	$0.45
Shopzilla	1.43%	$0.35
Bing	1.35%	N/A
TheFind	0.71%	N/A

Table 25-1. Top 10 comparative shopping sites

Global search marketing agency Covario reported in 2010 that the average click-through rate for paid search, worldwide, was 2% (see Table 25-2).

Bing	2.8%
Google	2.5%
Yahoo!	1.4%
Yandex	1.3%

Table 25-2. Average click-through rate for paid search

Affiliate marketer Titus Hoskins says that 5–10% of the visitors he sends to Amazon ultimately buy something, and that this is significantly higher than revenues from competing affiliate platforms.* Amazon and other general-purpose retailers also reward affiliate partners more handsomely than some more narrowly focused companies, because an affiliate referrer gets a percentage of the entire shopping cart. So if an author sends a visitor to Amazon to buy a book, and that buyer also purchases groceries, the author gets a percentage of the buyer's grocery purchase as well. This encourages affiliate advertisers to give Amazon's ads more prominence, since they're more lucrative.

Derek Szeto feels that because Amazon's conversion rates are high, affiliates are more likely to drive traffic to towards it sites. Amazon balances the richness of its affiliate program with a relatively short cookie lifetime—so an affiliate makes money from an Amazon buyer only if that person buys something within 24 hours of clicking the affiliate link.

Recall that blank ads showed a click-through rate of 0.08% in the Advertising Research Foundation's tests, so if you're seeing a click-through rate below that, you're definitely doing something wrong.

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* *http://www.sitepronews.com/2011/12/30/what-amazon-shows-us-about-achieving-higher-conversion-rates/*

Bottom Line

Your ads will get 0.5 to 2% click-through rate for most kinds of on-page advertising. Below 0.08%, you're doing something horribly wrong.

Sessions-to-Clicks Ratio

(Sessions-to-clicks ratio also applies to UGC, e-commerce, and two-sided marketplaces)

Expect 4–6% of the clicks that come from search engines or ads to never show up on your site. You can improve this by tweaking the performance and uptime of your website, but doing so requires constant vigilance and tuning that may come at the expense of adding new features or running experiments. Until you've found product/market fit, you probably shouldn't spend a lot of time trying to improve this metric.

Bottom Line

You'll lose around 5% of clicks before the visitor ever gets to your site. Deal with it. If you're sticky enough, the visitor will try again.

Referrers

Media sites rely on referrers from other sites to drive traffic. But not all referrers are created equal. Chartbeat ran some analysis for us comparing a group of sites broadly categorized as tech- and politics-based, versus social referrers including Facebook and Twitter.* An average pickup from any of the sites analyzed resulted in a peak of 70 concurrent users, and in a two-week period users from the referrer spent a total of 9,510 minutes engaged.

Traffic from social referrers was much less engaged. Facebook referrals resulted in an average peak of 51 concurrent users, and 2,670 minutes of engaged time. Twitter referrals resulted in an average peak of 28 concurrent users, and 917 total minutes of engaged time. Chartbeat's Joshua Schwartz says, "the lower total engaged time numbers for social sites, versus those for standard referrers, speaks to the fleeting nature of social pickups; while a referrer pickup may result in a sustained flow of traffic across days, social spikes are more likely to be short-lived."

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* These sites included TechCrunch.com, Wired.com, HotAir.com, Drudge.com, RealClearPolitics.com, TheDailyBeast.com, HuffingtonPost.com, Engadget.com, TheNextWeb.com, AllThingsD.com, PandoDaily.com, Verge.com, VentureBeat.com, Gawker.com, Jezebel.com, Mashable.com, Cracked.com, and Buzzfeed.com.

Bottom Line

Learn where your most beneficial traffic comes from, and what topics it's after, and spend time cultivating a following around those sources and topics. When you run experiments, segment them by platform: Facebook fans want a different kind of content from Twitter followers.

Engaged Time

Measuring visits or page views tells you how much traffic you had—but it doesn't tell you how much time your visitors spent actually looking at your content (also known as *time on page*). Browsers can capture this data, using a script on the page to report back as long as the visitor is engaged.

We asked Chartbeat to segment its measurement of this "engaged time" metric by the type of site. Sure enough, there's a significant difference between media, e-commerce, and SaaS sites that reflects each site's different usage patterns. Chartbeat's research, aggregated from customers who've agreed to have their data analyzed anonymously, is shown in Figure 25-1.

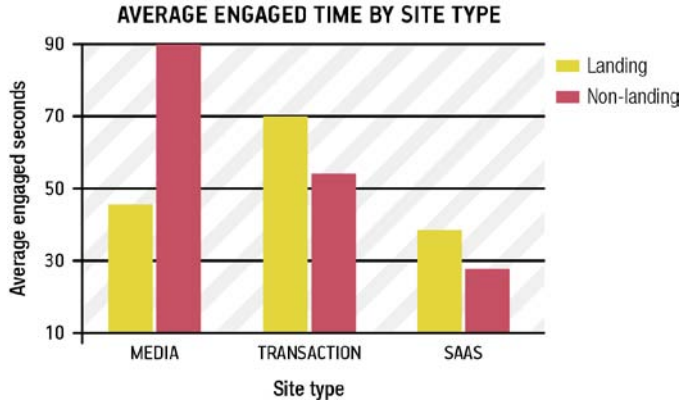

Figure 25-1. You're supposed to stick around for media; SaaS wants you to move on fast

Chartbeat found that the average engaged time on a media site's landing page is only 47 seconds, but the engaged time on a non-landing page is 90 seconds. These numbers are considerably different from the averages previously discussed (61 seconds for landing pages and 76 seconds for non-landing pages). In particular, SaaS sites have a low time on page, which is as it should be if the purpose of the site is to make users complete a task and be productive.

Joshua says, "The more analysis we do, the more we're seeing that engaged time is especially crucial for media sites. While getting lots of eyeballs is important, if the traffic immediately bounces, it doesn't do much good. So

engaged time as a metric is essentially measuring the quality of a media site's content."

Bottom Line

Media sites should aim for 90 seconds or more of engaged time on their content pages. Don't expect (or aim for) a high engaged time on landing pages, though; you want people to find the content they want quickly and dig in further.

PATTERN

What Onsite Engagement Can Tell You About Goals and Behaviors

On average, people spend about a minute on a page when they're engaged with it. This varies widely by type of site, but also by pages within a site. So how can you use this information?

- **Look at the outliers.** "If a page has a large number of visitors and a low engaged time, think about why people are leaving quickly. Did they come expecting something else? Is the layout working? Or is it simply a page that isn't designed to keep users for long?" asks Joshua.
- **Show off your good stuff.** If a page has a high engaged time but few visitors, consider promoting it to a wider audience.
- **Ensure that the purpose of the page matches the engagement.** "If you're an e-commerce site, you might want your landing page to have little engagement time," says Joshua. "But if you're producing editorial content, you should aim for high engaged time on article pages."

Sharing with Others

(Sharing with others also applies to UGC sites)

Sharing is the word-of-mouth form of virality. A March 2012 Adage article by Buzzfeed's Jon Steinberg and StumbleUpon's Jack Krawczyk looked at how much popular stories had been shared.* As with many other metrics, there was a strong power law. The vast majority of stories were shared with

* Buzzfeed president Jon Steinberg and StumbleUpon's Jack Krawczyk looked at sharing behavior across social platforms; see *http://adage.com/article/digitalnext/content-shared-close-friends-influencers/233147/*.

a small group, and only a tiny fraction was shared widely. On Facebook, the top 50 shared stories in the last five years had received hundreds of thousands—even millions—of views.

But despite these outliers, the median ratio of views to shares is just nine. That means that, typically, for every time a story is shared only nine people visited it. In other words, most sharing is intimate, among close-knit groups of peers. On Twitter, the median was 5 to 1; on reddit, which promotes popular links on its home page, it was 36 to 1.

StumbleUpon looked at 5.5 million sharing actions in a 45-day period. It concluded that users shared "intimately" (to another StumbleUpon user, or via email) twice as often as they broadcasted a message to a wider audience using the site.

Bottom Line

With a few notable exceptions, Steinberg and Krawczyk conclude that sharing happens from a groundswell of small interactions among colleagues and friends, rather than through massive actions between one person and an army of minions.

> **CASE STUDY | JFL Gags Cracks Up YouTube**
>
> Since 1983, comedians from around the world have been descending on Montreal every summer for the Just For Laughs festival. Today, it's the world's largest international comedy festival.
>
> In 2000, Just For Laughs Gags, a silent "hidden camera prank" show, began airing on television. You've probably seen these brief sketches; their short format and lack of spoken words makes them great for airplanes and other public places, as well as for global markets.
>
> We talked with Carlos Pacheco, Digital Director at Just For Laughs, about his job monetizing Gags TV, the show's YouTube channel.
>
> #### The Decline of Existing Channels
>
> "Until recently, the Gags TV series was primarily funded (and profitable) in the old-fashioned TV way," Carlos explains. "With every new season, the TV and digital rights would be sold to local and international TV networks, which has kept the series going since its start 12 years ago." But recently, producers saw a decline in licensing prices—basically, TV networks were no longer willing to pay the prices they had in the past.

The show has had a YouTube channel since 2007, but it didn't have much content and wasn't being regularly maintained. The original plan was to create a dedicated website, relying heavily on Adobe Flash, that featured Just For Laughs content including stand-up and Gags. "Once that fell through, the team at Gags decided to concentrate on YouTube," says Carlos. "Even though the channel had been a YouTube partner since 2009, it was only in early 2011 that the producers started to notice some revenue coming from the few videos that were there." With the hypothesis that more videos would lead to more revenue, the team uploaded over 2,000 prank clips to the site.

Since its creation, Gags was formatted for television, which meant a half-hour show (with commercial breaks) featuring 12 to 14 pranks. On YouTube, the half-hour constraints were gone. In many ways, the short format of a single prank was more suited to the Web than television. "The mass upload wasn't done very strategically," says Carlos, "but out of the 2,000 videos, a few got noticed and went viral, helping the channel grow, and ad revenue became significant in early 2012."

Getting the Ad Balance Right

On YouTube, content owners can run ads in several ways. They can create overlays atop the video with clickable links, and they can screen ads before, during, or after the content. The content provider can also decide whether ads can be skipped or not. The right ad strategy is critical; more impressions and more ads means more revenue (measured in *cost per engagement*, or CPE—the revenue earned from an ad impression), but those ads can turn viewers away.

Initially the only metrics the team looked at were daily views and revenue. Now they're getting much more sophisticated, looking at metrics such as time watched per video, traffic sources, playback locations, demographics, annotations, and audience retention. A key goal is to analyze where people drop off from watching, which helps guide Carlos on the right formats for videos.

"For example, a few months ago we started producing web exclusive 'best of Gags' videos," says Carlos. "The first videos featured a 10- to 15-second intro animation, but looking at the audience retention we saw a 30% drop-off within the first 15 seconds. After that, we modified the initial uploads and all future uploads to remove the intros, which gave our audience the content they really wanted as soon as they pressed play."

Early on, Gags used only overlay ads on its content. Later, the team added a kind of skippable YouTube ad called TrueView pre-roll

advertising, which increased overall CPE but didn't slow down growth. "We didn't want to start with anything other than TrueView, since our content is short. We knew our fans weren't interested in sitting through a minute-long pre-roll ad just to watch a one- to two-minute prank video," says Carlos. The team has also experimented with YouTube TV channels like Revision3, with good results.

In early 2012, YouTube announced that longer-form content would be prioritized in recommendations it made to viewers. Since the Gags team had seen other content producers uploading full TV episodes onto the site, they thought this would be a good way to experiment with uncut episodes that had forced pre-roll, mid-roll, and post-roll ads.

The results showed that even though the long form worked, shorter clips were still better:

- In the first 24 hours after a long-form video was uploaded, the number of views was nearly the same as those of a two-minute video clip, averaging 30,000–40,000 views.
- Ad revenue per long-form video was five times higher than that from a two-minute clip. That might seem like a good thing, but a long-form video has around 12 individual clips, so it's actually less lucrative.
- Long-form video episodes have a longer tail of viewing—they keep a higher average number of daily views for a longer period than the short clips.
- Audience retention is very different. Because the long-form episodes have introductions and are longer, there's a 40% audience drop-off halfway into an episode, versus a 15% drop-off halfway into a single short video.

Merchandising on the Channel

Until now, there has been no attempt to sell products via the channel. The Gags team gets requests to buy video, and even the music that accompanies each video. "This is a huge wasted opportunity for us, considering we generate over 4 million impressions a day," says Carlos. "We have 4 to 5 million people walking into our store every day, but there's nothing to buy. I've made it my personal mission to change this using YouTube-approved retailers (which allow us to link out from annotations) for our merchandise, as well as by partnering with digital distributors."

To Take Down or Not?

Gags owns all the rights to the content it uploads. With its viral, broadly appealing content, copying and repurposing material happens a lot, but the team doesn't do any Digital Millennium Copyright Act (DMCA) takedowns. Part of this is simply getting the word out to new markets. "Most of the time, fan-made compilations and uploads to a personal YouTube account go viral in the uploader's specific market," says Carlos. "This has helped us expand our brand and audience to markets we never even thought of."

But there's another, more lucrative, reason for not having these videos taken down. "Every time a fan 'repurposes' our content on his or her personal YouTube channel, we see it in our content management system, and we're given a choice: either take it down, release our claim, or reinstate our claim and monetize the uploaded content," says Pacheco. "In almost every case, we reinstate the content and monetize these user-generated videos."

Since deciding to focus on YouTube, the channel has grown dramatically, "In the last year, on average, there are 100,000 user-generated Gags videos that generate 40–50% of our total monthly views," says Carlos. "I've seen two-hour mash-up videos of our content that have generated millions of views, which is something we would never have thought of doing."

Although fan-made videos bring in less revenue per engagement than Gags' original content, the sheer volume of views represents a significant amount of total ad revenue. Carlos says, "I also pay attention to how fans are compiling these videos to see if we can learn from and mimic their success, since we often see UGC videos generate more views than ours."

A Fundamentally New Opportunity

Carlos points out that Gags' growth on YouTube has happened completely independently from any marketing web support from the Just For Laughs festival or social media channels. Before February 2012, Gags had no official Facebook page, Twitter account, or web presence. "Of course, a key success factor that helped Gags grow is the fact that it's been on the air for over 10 years in over 100 countries. But until recently, our online presence was almost nonexistent," says Carlos.

Originally producers thought that uploading their full catalog to the Web would cannibalize TV sales. That didn't happen. Television sales actually *improved* as a result of Gags being discovered by new, untapped markets, and other online content providers are regularly reaching out to Gags with new monetization opportunities.

"The success of the YouTube channel over the last 12 months has turned things around for Gags," says Carlos. "Producers are no longer at the mercy of television or cable networks. On top of that, with funding opportunities like YouTube original channels, there's space for creators like us to build brand new online properties, which is something we're seriously looking at."

The nature of the Gags content, being mostly silent, helps it transcend borders, cultures, and languages. Carlos feels this has helped the brand expand dramatically: "Although our main channel will hit a billion views within the next few months, behind the scenes our total channel and UGC views are already past 2.1 billion."

Summary

- Just For Laughs Gags produces short, popular comedy reels well suited for the Web.
- Gags' YouTube channel brings in revenue from both its own content and content created by end users.
- Short-form video, without long pre-roll introductions, has proven more lucrative than longer content.

Analytics Lessons Learned

Sometimes it's better to build atop someone else's platform than to build something from scratch, and sometimes user-generated content can be a lucrative revenue model for media sites, particularly when you learn from what users are doing and emulate it yourself. The key is to measure engagement and optimize your content for the medium.

CHAPTER 26

User-Generated Content: Lines in the Sand

Content Upload Success

(Content upload success also applies to two-sided marketplaces)

If there's an action on your site that you want users to take because it's key to success, it has a funnel you can track and optimize. On Facebook, for example, sharing photos is one of the most common things users do. In 2010, Facebook's Adam Mosseri revealed some data on how Facebook's photo upload funnel worked:*

- 57% of users successfully find and select their photo files.
- 52% of users find the upload button.
- 42% successfully upload a picture.

Success can be a complicated thing to define. For example, 85% of users chose only one picture for an album, which wasn't good for the way Facebook organized pictures. So the developers added another step that allowed users to select more than one picture more easily. After the change, the number of single-picture albums dropped to 40%.

* *http://blog.kissmetrics.com/analytics-that-matter-to-facebook/*

Bottom Line

There's no clear number, but if a content generation function (such as uploading photos) is core to the use of your application, optimize it until all your users can do it, and track error conditions carefully to find out what's causing the problem.

Time on Site Per Day

(Time on site per day also applies to media sites)

There's a surprisingly consistent rule of thumb for social networks and UGC websites. Across many companies we polled, the average time on site per day seemed to be 17 minutes. This number was mentioned several times by companies participating in the TechStars accelerator program at a recent demo day; it's also what reddit sees for an average user. One study showed that Pinterest users spend 14 minutes on the site each day, Tumblr users spend 21 minutes a day, and Facebook users spend an hour a day on the site.*

Bottom Line

You'll have a very good indicator of stickiness when site visitors are spending 17 minutes a day on your site.

CASE STUDY

Reddit Part 1—From Links to a Community

From humble beginnings as a startup in the first cohort of Paul Graham's Y Combinator accelerator, reddit has grown to be one of the highest-traffic destinations on the Web.

Reddit began as a simple link-sharing site, but over the years it's changed significantly. "A lot of features were just us sitting down and thinking, 'what would be cool to have?'" says Jeremy Edberg, who was reddit's first employee and ran infrastructure operations. "When the site first launched, it was just for sharing and voting on links. The idea to add comments was pretty much because [reddit co-founder] Steve Huffman decided he wanted to comment on some links."

Even after commenting was enabled, there was no way to start a discussion within reddit itself. So users found ways to do this themselves. The comment threads became discussions in their own right. Seeing

* *http://tellemgrodypr.com/2012/04/04/how-popular-is-pinterest/*

this, the team added a feature, called *self-posts*, that let someone start a conversation without linking elsewhere on the Web. "When we first did [self-posts], it was pretty much just a response to things users were already doing using hacks, so we decided to make it easier," says Jeremy. This is a great example of what Marc Andreesen says: "In a great market—a market with lots of real potential customers—the market *pulls* product out of the startup."* Self-posts have since become a cornerstone of the site, creating a community of users who interact with one another. "Today, more submissions are self-posts than not."

Reddit has an engaged, passionate community, and it's perfectly designed to collect feedback. "The entire site is set up for giving feedback, which makes it very easy for the users to give direct feedback and for the company to know which feedback is important," says Jeremy. But he cautions that it's not enough to listen to users—you have to watch what they do. "Direct feedback, even on reddit, is usually not an accurate depiction of how users actually feel. The phrase 'actions speak louder than words' applies just as much to business as anything else. Your users' *actions* should drive your business."

Summary

- Reddit pivoted from simple link sharing to commenting to a platform for moderated, on-site discussions by watching how users were using what it had built.
- Despite copious feedback from vocal users, the real test was what users were actually doing.

Analytics Lessons Learned

While it's important not to overbuild beyond your initial feature set or core function—in reddit's case, link sharing—a thriving community will pull features out of you if you know how to listen. Reddit included only basic functionality, but made it easy for users to extend the site, then learned from what was working best and incorporated it into the platform.

* *http://www.stanford.edu/class/ee204/ProductMarketFit.html*

Engagement Funnel Changes

Leading web usability consultant Jakob Nielsen once observed that in an online population, 90% of people lurk, 9% contribute intermittently, and 1% are heavy contributors.* His numbers suggest that there are power laws at work in engagement funnels. These patterns predate the Web—they occurred in online forums like CompuServe, AOL, and Usenet. Table 26-1 shows some of his estimates.

Platform	Lurkers	Occasional	Frequent
Usenet	?	580,000	19,000
Blogs	95%	5%	0.1%
Wikipedia	99.8%	0.2%	0.003%
Amazon reviews	99%	1%	Tiny
Facebook donation app	99.3%	0.7%	?

Table 26-1. Jakob Nielsen's engagement estimates

Nielsen has a number of approaches for moving lurkers toward participation, including making it easier to participate and making participation an automatic side-effect of usage. For example, if you have a link-sharing site, you might time how long it takes a user to return from viewing a link and use that as a measurement of the link's quality—the user wouldn't have to rate the link. Any attempt to optimize contribution and engagement would then become a hypothesis for testing.

Nielsen's ratio is changing as web use becomes part of our daily lives. A 2012 BBC study of online engagement showed that 77% of the UK's online population is participating online, partly due to the ubiquity of the Internet as a social platform and how easy it is to participate lazily, by uploading a picture or updating a status.†

The Altimeter Group's Charlene Li has done a lot of research into engagement. Her engagement pyramid details several kinds of user engagement. In her book *Open Leadership* (Jossey-Bass), she cites the 2010 Global Web Index Source, which surveyed web users from various countries about the kinds of activities in which they engaged online.‡ Roughly 80% of respondents

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* See *http://www.useit.com/alertbox/participation_inequality.html*, which has a number of excellent tips for improving participation inequality.

† *http://www.bbc.co.uk/blogs/bbcinternet/2012/05/bbc_online_briefing_spring_201_1.html*

‡ Global Web Index Wave 2 (January 2010), *trendstream.net*.

consumed content passively, 62% shared content, 43% commented, and 36% produced content. (See Table 26-2.)

	China	France	Japan	UK	USA
Watchers: Watch video, listen to a podcast, read a blog, visit a consumer review site or forum.	86.0%	75.4%	70.4%	78.9%	78.1%
Sharers: Share videos or photos, update social network or blog.	74.2%	48.9%	29.2%	61.8%	63.0%
Commenters: Comment on a news story, blog, or retail site.	62.1%	35.6%	21.7%	31.9%	34.4%
Producers: Write a blog or news story, upload a video.	59.1%	20.2%	28.0%	21.1%	26.1%

Table 26-2. Engagement by country

The difference between countries is notable—more than half of Chinese web users produced their own content, but only 20% of French and English respondents did. Clearly, "normal" engagement is dependent on user culture.

Participation, then, is tied to cultural expectations and the purpose of the platform. Facebook has a high engagement rate from its users because their interactions are highly personal, and users upload to Flickr because, well, that's where their pictures live. But highly directed participation (like writing a Wikipedia entry, or posting a product review) that isn't the central reason for the platform to exist remains elusive for many startups.

The BBC's model breaks users down into four groups:

- 23% of Internet users are passive, choosing only to consume
- 16% of users will react to something (voting, commenting, or flagging it)
- 44% will initiate something (posting content, starting a thread, etc.)
- 17% of users are contributing intensely, doing something even when it's difficult or not core to the platform, such as reviewing a book on an e-commerce site

A thread on reddit that discussed user engagement on the site had some interesting numbers.* One user posted that he'd submitted a picture that received 75,000 views in 24 hours on Imgur. The topic itself had 1,347 up-votes, 640 down-votes, and 108 comments. That suggests a 2.5% "easy" engagement and a 0.14% "difficult" engagement.

Jeremy Edberg says that in 2009 reddit's user contribution followed the 80/20 rule seen on many UGC sites; that is, 20% of users were logged in and voting, and 20% of *those* were commenting. While the site's behavior has shifted significantly as it has become more social and community-oriented, the percentage of visitors who comment is still small.

Even lurking, disengaged visitors may be doing something. A 2011 study from MIT's Sloane School of Management suggests that many of them share passively, via channels you don't see, such as email or conversations elsewhere.† Yammer says that over 60% of its users subscribe to a regular digest of activity, which means the company has permission to reach them.‡

Bottom Line

By our estimates, expect 25% of your visitors to lurk, 60–70% of your visitors to do things that are easy and central to the purpose of your product or service, and 5–15% of your users to engage and create content for you. Among those engaged users, expect 80% of your content to come from a small, hyperactive group of users, and expect 2.5% of users to interact casually with content and less than 1% to put some effort into interaction.

CASE STUDY

Reddit Part 2—There's Gold in Those Users

Once reddit had pivoted from link sharing to a community, it had engaged users, but it still wasn't making money, sometimes struggling to pay for enough infrastructure to handle its growing traffic load. While advertising was a possible source of revenue, it came at the expense of user satisfaction. Enough of reddit's users employed ad-blocking software on their browsers that reddit even ran the occasional ad thanking people for not using it.

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* *http://www.reddit.com/r/AskReddit/comments/bg7b8/what_percentage_of_redditors_are_lurkers/*

† *http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1041261*

‡ *http://blog.yammer.com/blog/2011/07/your-community-hidden-treasure-lurking.html*

Then the company found an alternate source of revenue: donations. "Users would constantly joke that such-and-such a feature is only available via reddit gold," says Jeremy Edberg. "At some point, our parent company came to us and asked us to think of ways to increase our revenue (which, to their credit, was something that took three years for them to ask). We thought, 'Hey, let's make this reddit gold thing real.'"

The team added the ability to buy "gold," which didn't really have any effect beyond bragging rights. "When it launched, the only benefit you got was access to a secret forum and an (electronic) trophy. We didn't even have a price—we asked people to pay what they thought it was worth. One person paid $1,000 for a month of reddit gold, some paid a penny," says Jeremy. "But the average was right around $4, which is how we set the price."

Over time, reddit gold users got early access to new features. As dedicated users, they were more likely to provide useful feedback—and the limited number of people using the new feature shielded servers from heavy load.

Eventually, reddit added the ability to gift gold to others, and reward good posts with a donation of gold. While the company hasn't disclosed the revenue it makes from gold, it's a significant part of its income, and it's taken steps to build it into the site. "We also realized people were buying gold for others as a way of 'tipping' for great content, so we made that easier to do," says Jeremy.

Summary

- Despite healthy user growth, reddit wasn't paying its bills and was constantly skimping on new infrastructure.
- Building on considerable goodwill and user feedback, the team tried a donation model that fit the tone and culture of the community.
- They analyzed the results of a "pay what you will" campaign to set pricing.
- Once they saw some success, they found ways to make donation easier and expand how it was used.

Analytics Lessons Learned

Remember the business model flipbook: just because you're a UGC business doesn't mean your revenue must come from ads. Wikipedia and reddit both generate revenue from their community, and it helps them stay true to their culture and retain their users.

Spam and Bad Content

UGC sites thrive because they have good content. For many of the UGC companies we spoke with—such as Community Connect and reddit—fraudulent content is a very real problem that requires constant analysis and a significant engineering investment. In addition to algorithms and machine heuristics, companies like Google and Facebook pay people full-time to screen content for criminal or objectionable material, which can be a grueling job.* Jeremy Edberg estimates that 50% of reddit's development time focused on stopping spam and vote cheating—although for the first 18 months of the site's life, user voting was enough to block all spam, and there was no spam protection in place.

Spammers often create one-time accounts, which are easy to spot. Hijacked accounts are harder to pinpoint, but most UGC sites allow users to flag spammy content, which makes it easier to review. But despite the promise of a self-policing community, users aren't a good way to find bad content. Many of the posts flagged on reddit were actually spammers flagging everyone *else* in the hopes of boosting their own content. At reddit, "we had to build a system to analyze the quality of the reports per user (how many reports ultimately turned into verified spam)," says Jeremy.

At reddit, automated filters, along with moderators, catch most of the spam—which, in 2011, represented about half of all submitted content. "That 50% comes from far less than 50% of the users," says Jeremy. "Pretty much the way all the anti-cheating was developed was by finding a case of a cheater who was successful, analyzing why they were successful, finding other examples in the corpus, and then developing a model to find that type of cheating."

Ultimately, spam suggested the site's advertising revenue model, too. "We figured spammers were trying to get their links seen though cheating; why not just let them pay and then make it obvious they paid?" recalls Jeremy. "If you look at the sponsored link today, you'll see that the styling and execution is almost identical to how Google highlighted sponsored links around 2008."

Bottom Line

Expect to spend a significant amount of time and money fighting spam as you become more popular. Start measuring what's good and bad, and which users are good at flagging bad content, early on—the key to effective

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* *http://www.buzzfeed.com/reyhan/tech-confessional-the-googler-who-looks-at-the-wo*

algorithms is a body of data to train them. Content quality is a leading indicator of user satisfaction, so watch for a decline in quality and deal with it before it alienates your community.

CHAPTER 27

Two-Sided Marketplaces: Lines in the Sand

Two-sided marketplaces are really a blend of two other models: e-commerce (because they're built around transactions between buyers and sellers) and user-generated content (because they rely on sellers to create and manage listings whose quality affects the revenue and health of the marketplace). This means there's a combination of analytics you need to care about.

There is another reason analytics matter to marketplaces. Sellers seldom have the sophistication to analyze pricing, the effectiveness of their pictures, or what copy sells best. As the marketplace owner, you can help them with this analysis. In fact, you can do it better than they can, because you have access to the aggregate data from all sellers on the site.

An individual merchant might not know what price to charge. Even if he could do the analysis, he wouldn't have enough data points. But since you have access to *all* transactions, you may be able to help him optimize pricing (and improve your revenues along the way). Airbnb did this kind of experimental optimization on behalf of its vendors when it tested the impact of paid photography services on rental rates—then rolled the service out to property owners.

We've looked at both the e-commerce and UGC models in other chapters, but here we'll briefly consider some of the unique challenges faced by two-sided marketplaces.

Transaction Size

Some marketplaces are for infrequent, big-ticket items (like houses), while others are for frequent, smaller items (like those listed on eBay). This means that the number of listings per seller, and the transaction price, vary widely, and a useful baseline is impossible.

There are often correlations between purchase size and conversion rate, however. The bigger a purchase, the more consideration and comparison go into it. Smaller purchases carry less risk, and may be more impulsive or whimsical than big ones.

Bottom Line

We can't tell you what your typical transaction size will be, but we can tell you that you should measure it, along with conversion rates, to understand your buyers' behavior—then pass this information along to sellers.

CASE STUDY | What Etsy Watches

Etsy is an online store for creative types to share and sell their work. Founded in 2005 by a painter, a photographer, and a carpenter who had nowhere to sell their work online, the company now sells over half a billion dollars a year through its shared marketplace.

The company looks at a lot of metrics. It tracks revenue metrics such as shopping carts (individual sales), number of items sold, gross monthly sales, and total fees collected from those sales. It also looks at the growth of buyers and sellers by counting the number of new accounts, new sellers, and total confirmed accounts. Over time, the company has started tracking year-on-year increase in these core metrics.

Beyond these fundamentals, Etsy tracks the growth of individual product categories, time to first sale by a user, average order value, percentage of visits that convert to a sale, percentage of return buyers, and distinct sellers within a product category. It also breaks down time-to-first-sale and average order value by product category.

Recently, the company has started looking more closely at values like the total gross margin sold and percent of converting visits by mobile versus desktop, as well as the number of active sellers in a region. It's also calculating smoothed historical averages that act as a baseline against which to identify any anomalies in the data.

Etsy VP of Engineering Kellan Elliott-McCrae says that for any given product, Etsy calculates a number of metrics, particularly within site search. The company runs its search system like any other ad network,

and "constantly measures demand (searches) and supply (items) for all the keywords passing through the system, making them available for purchase and pricing them when there is both demand and supply."

When Etsy adopted a continuous deployment approach to engineering, its initial business dashboards included registrations per second, logins per second (against login errors), checkouts per second (against checkout errors), new and renewed listings, and "screwed users" (distinct users seeing an error message). "Importantly, these are all rate-based metrics designed to quickly highlight that we might have broken something," says Kellan. "Later we added metrics like average and 95th percentile page-load times, and monitored for performance regressions."

Most recently, Etsy has been trying to make it clear how various features contribute to a sale. "For example, we can attribute the percentage of sales that come directly from search, but we've found that visitors who first browse, and *then* search, have a higher conversion rate," says Kellan. "Of course, on the flip side, conversion rate is a very difficult metric to get statistical significance on, as purchases happen rarely enough that when analyzing them against the site-wide clickstream, you get anomalous results."

Kellan points out that Etsy's help pages have the best conversion rate for purchases anywhere on the site (because people go there when they're trying to accomplish something), but jokes that the company hasn't followed through on the logical product decision of making help pages the core site experience. "To get meaningful data, you really have to scope your experiments."

Even with the site's huge sales volume, the company hasn't gone after rapid growth. "We play with a very narrow margin and so we've historically been very cautious about stepping on the gas rather than closely monitoring health metrics and growing sustainably," he explains.

Because anticipating demand helps drive sales, the company sends out a monthly newsletter to sellers, which discusses analytical data, market research, and historical trends. The company also has a market research tool for sellers. "If a seller were to search for 'desk'," explains Kellan, "they could check out the market research tool to see that 'desk calendars' generally sell in the $20–$24 range, a downloadable desk calendar PDF sells in the $4 range, desk lamps sell in roughly the $50 range, and only a handful of actual desks are sold each day."

Etsy is a shared marketplace, but it overcame the chicken-and-egg issues that two-sided markets face through serendipity. "Initially our buyers and sellers were the same people. We made this explicit in the

beginning by encouraging the sale of both crafts and craft supplies," says Kellan. "Etsy was deeply embedded in a community of makers who supported each other, and initially we were helping them find one another."

Summary

- Etsy is metrics-driven, but those metrics have become increasingly business-focused as it's moved past product/market fit.
- The company sidestepped the chicken-and-egg problem most marketplaces face because initially, its buyers were also sellers.
- Analytics are also shared with vendors, in order to help them sell more successfully—which in turn helps Etsy.

Analytics Lessons Learned

The buyer/seller model in a shared marketplace is a lot like inventory in an advertising network. Knowing what buyers want, and how well you're meeting that demand, is an early indicator of what your revenues will be like. And because you want to help your sellers, you should selectively share analytical data with them that will make them better at selling.

Top 10 Lists

Top 10 lists are a good way to start understanding how your marketplace is working. Run some queries of KPIs like revenue and number of transactions according to product segments:

- Who are your top 10 buyers?
- Who are your top 10 sellers?
- What products or categories generate the majority of your revenues?
- What price ranges, times of day, and days of week experience peak sales?

It might seem simple, but making lists of the top 10 segments or categories, and looking at what's changing, will give you qualitative insights into the health of your marketplace that you can later turn into quantitative tests, and then innovations.

Bottom Line

Unlike a traditional e-commerce company, you don't have a lot of control over inventory and listings. But what you *do* have is insight into what is selling well, so you can go and get more like it. If you find that a particular product category, geographic region, house size, or color is selling well, you can encourage those sellers—and find more like them.

CHAPTER 28

What to Do When You Don't Have a Baseline

We've tried to describe some useful baselines. But if you've read through the past seven chapters, you'll know that these numbers are rudimentary at best: you want churn below 2.5%; you want users to spend 17 minutes on your site if you're in media or UGC; fewer than 2.5% of people will interact with content; 65% of your users will stop using your mobile app within 90 days. *For many metrics, there's simply no "normal."*

The reality is you'll quickly adjust the line in the sand to your particular market or product. That's fine. Just remember that you shouldn't move the line to your ability; rather, you need to move your ability to the line.

Nearly any optimization effort has diminishing returns. Making a website load in 1 second instead of 10 is fairly easy; making it load in 100 milliseconds instead of 1 second is much harder. Ten milliseconds is nearly impossible. Eventually, it's not worth the effort, and that's true of many attempts to improve something.

That shouldn't be discouraging. It's actually useful, because it means that as you approach a local maximum, you can plot your results over time and see an asymptote. In other words, the rate at which your efforts are producing diminishing results can suggest a baseline, and tell you it's time to move to a different metric that matters.

Consider the 30-day optimization effort for a site that's trying to convince visitors to enroll, shown in Figure 28-1. At first, out of over 1,200 visitors, only 4 sign up—an abysmal 0.3% conversion rate. But each day, the

company tweaks and tests enrollment even as site traffic grows modestly. By the end of the month, the site is converting 8.2% of its 1,462 visitors.

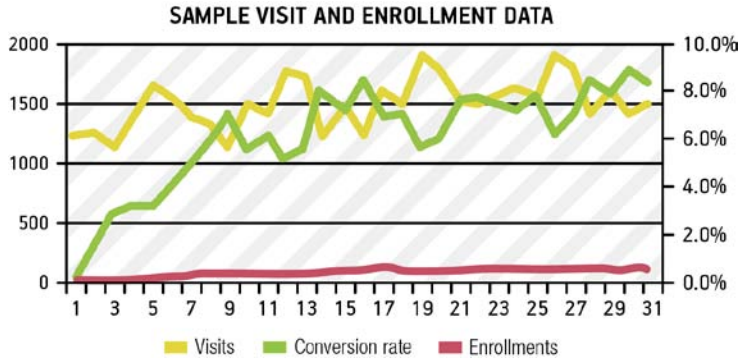

Figure 28-1. Can you see the gradual improvement in this chart?

The question is: should this company keep working on enrollment, or has it hit diminishing returns? By applying a trend line to the conversion rate, we can quickly see the diminishing returns (Figure 28-2).

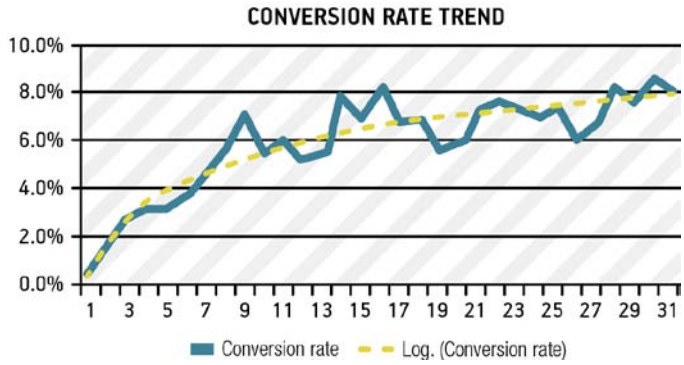

Figure 28-2: Maybe 9% is as good as this will get without a radical change

Ultimately, the best the company will be able to do with *all else being equal* is achieve a conversion rate of around 9%. So on the one hand, that's a good baseline, and gives a sense of the universe it's in. On the other hand, all else is seldom equal. A new strategy for user acquisition could change things significantly.

This recalls our earlier discussion of local maxima. Iterating and improving the current situation will deliver diminishing returns, but that may be good enough to satisfy part of your business model and move forward. In this example, if the company's business model assumes that 7% of visitors will subscribe, then it's time to move on to something else, such as increasing the number of visitors.

If you don't have a good sense of what's normal for the world, use this kind of approach. At least you'll know what's normal—and achievable—for your current business.

At this point, you've got an idea of your business model, the stage you're at, and some of the baselines against which you should be comparing yourself. Now let's move beyond startups into other areas where Lean Analytics still plays an important role: selling to the enterprise and intrapreneurs.

PART FOUR:

PUTTING LEAN ANALYTICS TO WORK

You now know a lot about data. It's time to roll up your sleeves and get to work. In this part of the book, we'll look at how Lean Analytics is different for enterprise-focused startups, as well as for intrapreneurs trying to change things from within. We'll also talk about how to change your organization's culture so the entire team makes smarter, faster, more iterative decisions.

He who rejects change is the architect of decay. The only human institution which rejects progress is the cemetery.

Harold Wilson

CHAPTER 29

Selling into Enterprise Markets

Think Lean Analytics only applies to consumer-focused businesses? Think again.

Sure, it's easier to experiment on consumers—there are so many of them out there, and they make decisions irrationally, so you can toy with their emotions. There's no doubt that cloud computing and social media have made it easy to launch something and spread the word without significant upfront investment, and consumer startups are media icons, even fodder for Hollywood.* Even business-to-business startups, such as SaaS providers, often target small and medium companies.

But a data-informed approach to business is good for any kind of organization. Plenty of great founders went after big business problems, and got rich doing so. As TechCrunch reporter Alex Williams put it, "While the enterprise can be as boring as hell, the whole goddamn thing is paved with gold."† Enterprise-focused startups do have to deal with some unique challenges along the way, which changes the metrics they watch and how they collect them, but it's worth it.

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* In February 2012, The Next Web's Allen Gannett listed the rise of the cloud, the consumerization of technology, and the broad adoption of SaaS delivery models as three catalysts for the rapid expansion of acquisitions in enterprise software.

† Williams's reaction after attending a demo day by Acceleprise, an accelerator focused on startups that target enterprise customers; see *http://techcrunch.com/2012/11/09/notes-from-a-startup-night-the-enterprise-can-be-as-boring-as-hell-but-the-whole-goddamn-thing-is-paved-with-gold/*.

Why Are Enterprise Customers Different?

Let's start with the good news: it's easier to find enterprises to talk to. They're in the phone book. They might have time for coffee. They have budgets. And for many of the people in these organizations, it's part of their *job* to evaluate new solutions, meet with vendors, and share their needs to see if someone can solve them more explicitly. Armed with a decent caffeine allowance, you can talk to actual prospects fairly quickly.

That said, there are plenty of important ways that enterprise sales are different and more difficult than selling to a large, unwashed audience. Venture capitalist Ben Horowitz was one of the first to burst this bubble:

> Every day I hear from entrepreneurs, angel investors, and venture capitalists about an exciting new movement called "the consumerization of the enterprise." They tell me how the old, expensive, Rolex-wearing sales forces are a thing of the past and, in the future, companies will "consume" enterprise products proactively like consumers pick up Twitter.
>
> But when I talk to the most successful new enterprise companies like WorkDay, Apptio, Jive, Zuora, and Cloudera, they all employ serious and large enterprise sales efforts that usually include expensive people, some of whom indeed wear Rolex watches.*

Big Ticket, High Touch

The one thing that makes enterprise-focused startups different is this: B2C customer development is polling, B2B customer development is a census.

In most cases, enterprise sales involve bigger-ticket items, sold to fewer customers. That means more money from fewer sources. If you're selling a big-ticket item, this changes the game dramatically. For starters, you can afford to talk to every customer. The high sale price offsets the cost of a direct sales approach, particularly in the early stages of the sale.

The small number of initial users makes an even bigger difference. You aren't talking to a sample of 30 people as a proxy for the market at large. Instead, you're talking to 30 companies who may well become your first 30 customers.

Much of analytics is about trying to understand large amounts of information so you can get a better grasp of underlying patterns and act on

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* *http://bhorowitz.com/2010/11/15/meet-the-new-enterprise-customer-he%E2%80%99s-a-lot-like-the-old-enterprise-customer/*

them. But in the early stages of a B2B startup, there aren't patterns—there are just customers.

- You can pick up the phone and call them right away.
- They'll call you and tell you what they want.
- You can get in a room with them.
- You can't test something on a statistically significant sample of the population and write it off if the test fails—you'll lose customers.

Formality

Enterprise buyers tend to be more regulated. They can't make decisions on gut or emotion—or rather, they can, but it has to be justified with a business case. Big companies are often public companies with checks and balances. The person who pays for the product (finance) isn't the person who uses it (the line of business). Understanding this dichotomy is critical for product development and sales. Initially, you may target early adopters, where the buyer is much closer to the user (they may be the same person at this point), but as you move past early adopters, the buyer and user diverge.

Companies have formal structure for good reasons. It helps prevent corruption, and makes auditing possible. But that structure gets in the way of understanding things. Your contact at a company may be a proponent, but someone else in the organization may be a detractor, or have a concern of which you're not aware. This is one of the reasons direct sales is common in early stages: it lets you navigate the bureaucracy and understand the part of the sales process that's hidden to outsiders.

Legacy Products

Consumers can ditch their old product on a whim. Small businesses can migrate fairly easily, as the recent exodus to cloud-based software demonstrates. Large companies, on the other hand, have a significant capital investment in the past which must be properly depreciated. They also have a significant political investment in past decisions, and often this is the strongest opposition to change.

Most organizations of any real size have developed their own software and processes, and they expect you to adapt to them. They won't change how they work: change is hard, and retraining is a cost. This can increase your deployment costs, because you have to integrate with what's already in place. It also means your products must be more configurable and adaptable, which translates into more complexity and less ease of use.

Incumbents

Those legacy issues are part of another problem—incumbents. If you're trying to disrupt or replace something, you'll have to convince the organization that you're better, despite the efforts of an existing solution. Organizations are averse to change, and love the status quo. If you're trying to sell to them, and your product is still in the early stages of the technology adoption cycle, you're penalized simply for being new. *Consumers love novelty; businesses just call it risk*.

This also means incumbent vendors can stall your sale significantly if they get wind of what you're planning to do just by claiming that they're going to do it too. They can step on your oxygen hose by promising something—then rescind the promise once you're dead.

Of course, big, slow incumbents have plenty of weaknesses. New entrants can disrupt their market simply by being easier to adopt, because they require no training. A decade ago, the only people who knew what a "feed" was were stock traders connecting to Bloomberg terminals; today, everyone who's used Facebook or Twitter is familiar with feeds. They don't need to be trained.

Simplicity isn't just an attribute of enterprise disruption—it's the price of entry. DJ Patil, data scientist in residence at Greylock and former head of product at LinkedIn, calls this the Zero Overhead Principle:

> A central theme to this new wave of innovation is the application of core product tenets from the consumer space to the enterprise. In particular, a universal lesson that I keep sharing with all entrepreneurs building for the enterprise is the Zero Overhead Principle: no feature may add training costs to the user.*

Slower Cycle Time

Lean Startup models work because they empower you to learn quickly and iteratively. It's hard to achieve speed when your customer moves sluggishly and carefully, so the slower cycle time of your target market makes it tough to iterate quickly. This is a key reason why many of the early Lean Startup success stories have come from consumer-focused businesses.

The rise of the SaaS market changes this, because it's relatively easy to alter functionality without the market's permission. But if you're selling traditional enterprise software, or delivery trucks, or shredders, you're not going to learn and iterate as quickly as you would from consumers. Of

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* *http://techcrunch.com/2012/10/05/building-for-the-enterprise-the-zero-overhead-principle-2/*

course, your competitors aren't either. You don't need to be fast—just faster than everyone else.

Rationality (and Lack of Imagination)

Not all companies fit the stereotype of the big, slow, late-adopter customer, but risk aversion is real. Because enterprise buyers can't take the risks consumers can, they limit their own thinking. They demand proof that something will work before they try it out, which means great ideas can often become mired in business cases, return-on-investment analyses, and total-cost-of-ownership spreadsheets.

This rationality is warranted. In 2005, IEEE (Institute of Electrical and Electronics Engineers) committee chair Robert N. Charette estimated that of the $1 trillion spent on software each year, 5–15% would be abandoned before or shortly after delivery, and much of the rest would be late or suffer huge budget overruns.* A similar study by PM Solutions estimates that 37% of IT projects are at risk.†

Because companies are full of people—for many of whom their job is just a job—their priority is to minimize the chance of them making a mistake even if the organization as a whole might suffer in the long term. It's hard to inspire an organization if its employees are busy wondering whether the changes you promise will cost them their jobs.

This is an unnecessarily bleak view of the world.

For all these reasons, most B2B-focused startups consist of two people: a domain expert and a disruption expert.

- The domain expert knows the industry and the problem domain. He has a Rolodex and can act as a proxy for customers in the early stages of product definition. Often this person is from the line of business, and has a marketing, sales, or business development role.
- The disruption expert knows the technology that will produce a change on which the startup can capitalize. She can see beyond the current model and understand what an industry will look like after the shift, and brings the novel approach to the existing market. This is usually the technologist.

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* *http://spectrum.ieee.org/computing/software/why-software-fails/0*

† *http://www.zdnet.com/blog/projectfailures/cio-analysis-why-37-percent-of-projects-fail/12565*

The Enterprise Startup Lifecycle

Startups begin in many ways. Over the years, however, we've seen a recurring pattern in how B2B startups grow. It usually happens in one of three ways:

The enterprise pivot

In this pattern, the company creates a popular consumer product, then pivots to tackle the enterprise. This is what Dropbox did, and to some extent it's the way BlackBerry circumvented enterprise IT by targeting mercenary salespeople. It's not trivial, though: enterprises have very different expectations and concerns from consumers.

Copy and rebuild

Another approach is to take a consumer idea and make it enterprise-ready. Yammer did this when it rebuilt Facebook's status update model and copied Facebook's feed interface.

Disrupt an existing problem

There are plenty of disruptions that happen to an industry, from the advent of mobile data, to the Internet of Things,* to the adoption of the fax machine, to location-aware applications. Any of them can offer a big enough advantage to make it worth discarding the old way of doing things. Taleo did this to the traditional business of human resources management.

Inspiration

Many of the enterprise startups we've talked to began with a basic idea, often hatched within the ecosystem they wanted to disrupt. That's because domain knowledge is essential. Important elements of how a business works—particularly back-office operations—are hidden from the outside world. It's only by being an insider that the bottlenecks become painfully obvious.

Take the founders of Taleo. They left enterprise requirements planning (ERP) heavyweight BAAN to bring talent management tools to the enterprise. They had seen that the big challenges of ERP were integration and deployment, and they'd realized that the Web was how many organizations connect with candidates. They also saw that talent management, both before and after hires were made, was increasingly data-driven.

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* *http://en.wikipedia.org/wiki/Internet_of_Things*

Many of their realizations came from seeing technology trends. But the founders' fundamental knowledge of the HR industry came from their time at BAAN. Clearly, it worked out well: in February 2012, Oracle acquired Taleo for $1.9 billion.

That doesn't mean the founding team *must* include an insider—but it helps. Remember, though, insiders still need to "get out of the building" and validate their assumptions; not doing so because of existing domain expertise can be disastrous.

Let's look at how the five stages of the Lean Analytics framework apply to a B2B-focused company. Figure 29-1 shows what a B2B company needs to do at each stage, as well as what risks it should fear.

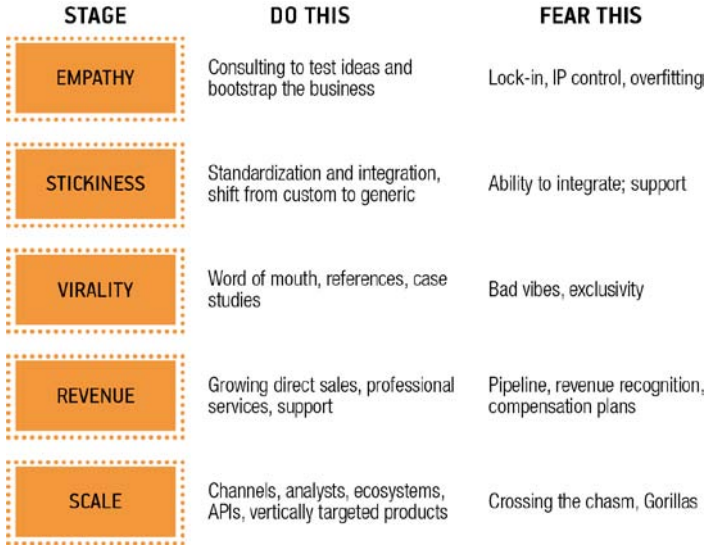

Figure 29-1. The Lean Analytics stages when you're selling to enterprises

Empathy: Consulting and Segmentation

Many bootstrapped startups begin their lives as consulting organizations. Consulting is a good way to discover customer needs, and it helps pay the bills. It also gives you a way to test out your early ideas, because while every customer has needs, the only needs you can build a business on are those that are consistent across a reasonably large, addressable market.

Having said that, consulting companies struggle a great deal to transition from service providers to product companies because they need to, at some point, abandon service revenues and focus on the product. That transition

can be extremely painful—from a cash flow perspective—and most service providers don't make the jump.

It's also necessary to "burn the boats" of the services business to ensure that you commit to the product. After all, you're going to neglect some of your most-loved customers in order to deliver a product the general market wants instead, and it'll be tempting to do custom work to keep them happy. You can't run a product and a services business concurrently. Even IBM had to split itself in two; what makes you think you can do it as a fledgling startup?

CASE STUDY | How Coradiant Found a Market

Coradiant, a maker of web performance equipment, started in 1997 as Networkshop, and was acquired by BMC Software in April 2011.* Initially it was an IT infrastructure consulting firm that wrote studies on performance, availability, and web technologies like SSL.† Soon, however, enterprises and startups approached the company seeking help with their deployments. These customers needed several pieces of costly network infrastructure—a pair of load balancers, firewalls, crypto accelerators, switches, routers, and related monitoring tools that, together, cost up to $500,000 and handled 100 megabits per second (Mbps) of traffic. But these companies needed only a fraction of that capacity.

Networkshop built a virtualized front-end infrastructure that customers could buy one Mbps at a time. It deployed this in a single data center in one city, and offered fractional capacity to customers in that data center. The economics were good: once the infrastructure had exceeded 35% utilization by customers, every additional dollar went straight to the bottom line.

Armed with this example, Networkshop changed its name to Coradiant and closed Series A funding, using the proceeds to deploy similar "pods" of infrastructure in data centers throughout North America. Wrapping this in support services, the company joined firms like LoudCloud and SiteSmith in the growing managed service provider (MSP) business.

Within a few years, however, the data center owners with whom Coradiant had colocated realized that they needed to make more

* Full disclosure: Coradiant was co-founded by Alistair Croll and Eric Packman in 1997 as Networkshop; the name was changed to Coradiant in mid-2000.

† *http://www.infosecnews.org/hypermail/9905/1667.html*

money from their facilities. To increase their revenue per square foot, they started offering competing services. The Coradiant founders had a decision to make: either compete head-to-head with the very same data centers in which their customers were hosted—a bad idea—or pivot to a new model that didn't need the data center owners' permission.

Coradiant had built a monitoring service (called OutSight) to help manage customers' infrastructure and measure performance. In the summer of 2003, the company scaled back dramatically, laying off most operational staff and hiring developers and architects who focused on building an appliance version of this technology. The new product, dubbed TrueSight, launched in 2004, and this time, Coradiant didn't need the data center owners' permission to be deployed.

Some of Coradiant's MSP customers became TrueSight users, quickly building a stable of reference-worthy household names. The initial version of TrueSight contained only basic features—most reporting, for example, was done by exporting information into Excel. But Coradiant had an extremely hands-on pre- and post-sales engineering team that worked closely with early customers. Once the company saw what kinds of reports customers made, and how they used the appliance, it incorporated those into later versions.

Coradiant didn't use channel sales until the product was relatively mature. The direct contact helped provide frequent feedback from the field. The company also held user conferences twice a year to hear how people were using the product, which led it into new directions such as real-time visualization and data export for vulnerability detection.

Ultimately, the consulting heritage gave Coradiant insight into the needs of a target market. The initial product offering was based on the sharing of IT infrastructure, amortizing the cost of networking components across many customers. That service, in turn, helped the firm learn what features customers needed from a monitoring product, and ultimately led it to build the product for which it was acquired.

Summary

- Coradiant started selling managed services, but a major market shift changed the dynamics of the market significantly.
- The company found that its unique value was a subset of the managed services offered that looked at users' experience on a website.
- Customers wanted this functionality as an appliance rather than a service.

Analytics Lessons Learned

Sometimes, environmental changes such as legislation or competition mean that validated business assumptions are no longer true. When that happens, look at what your core value proposition is and see if you can sell it to a different market or in a different way that overcomes those changes—in this case, keeping only a subset of a service and delivering it as an appliance.

Launching a startup as a consultancy has its risks. It's easy to get trapped in consulting. As the business grows, you'll want to keep customers happy, and won't have the cycles to dedicate to building the product or service you want. Many startups have lost sight of their initial plan and are now consulting firms—some of them happily. But they don't meet Paul Graham's test for scalable, repeatable, rapid growth. They're not startups.

What's more, in order to make the shift from consultancy to startup, you first need to test whether your existing customers' demands are applicable to a broader audience. Doing so may violate privacy agreements you have with your customers, so you need to finesse customer development. Your existing clients may feel that a standardized product you plan to offer will be less tailored to their needs; you need to convince them that a standard product is in fact better for them, because the cost of building future versions will be shared among many buyers.

Once you've found the problem you're going to fix, and have verified that the solution will work with your prospects and clients, you need to segment them. Not all clients are identical, so it's smart to pick a geographic region, a particular vertical, or customers who belong to just one of your sales teams. That way, you can give those early adopters better attention and limit the impact of failure.

Imagine, for example, that you're building a hiring management tool. The way that a legal firm finds and retains candidates is very different from the way a fast-food restaurant does it. Trying to build a single tool for them—particularly at the outset—is a bad idea. Everything from the number of interviews, to the qualifications needed, to the number of years someone stays with the company will be different. Differences mean customization and parameters, which increase complexity, and violates DJ Patil's Zero Overhead Principle.

Stickiness: Standardization and Integration

Once you know the need and have identified your initial segments, you have to standardize the product. With some products, it's possible to sell

before building. Instead of an MVP, you may have a prototype, or a set of specifications for which the prospect will commit to paying on delivery. This pipeline of conditional purchases reduces the cost of fundraising, because it increases the chances of success.

In the B2C world, startups worry less about "Can I build it?" and more about "Will anyone care?" In the enterprise market, the risk is more, "Will it integrate?" Integration with existing tools, processes, and environments is the most likely source of problems, and you'll wind up customizing for clients—which undermines the standardization you fought so hard to achieve earlier.

Managing this tension between customization and standardization is one of the biggest challenges of an early-stage enterprise startup. If you can't get the client's users to try the product, you're doomed. And while your technology might work, if it doesn't properly integrate with legacy systems, it'll be seen as your fault, not theirs.

Virality: Word of Mouth, Referrals, and References

Assuming you've successfully sold the standardized product to an initial market segment, you'll need to grow. Because enterprises don't trust newcomers, you'll rely heavily on referrals and word-of-mouth marketing. You'll make case studies from early successes, and ask satisfied users to handle phone calls from new prospects.

Referrals and references are critical to this stage of growth. A couple of household names as customers are priceless. Enterprise-focused vendors will often provide discounts in exchange for case studies.

Revenue: Direct Sales and Support

With the pipeline growing and revenue coming in, you'll worry about cash flow and commission structures for your direct sales team. To know if you have a sustainable business, you'll also look at support costs, churn, trouble tickets, and other indicators of ongoing business costs to learn just how much a particular customer contributes to the bottom line. If the operating margin is bad, it will have a significant drag on profitability.

Feedback from the sales team and the support group is critical at this point, because it indicates whether your initial success is genuine, or simply a case of prospects buying into the story you're telling (which won't be sustainable in the longer term). Zach Nies, Chief Technologist at Rally Software says, "This is absolutely critical for startups, because they have a huge advantage here. In most incumbents, the product development team is so far removed from the field and customers that they have no sense of trends in the market.

Often startups will know a lot more about an incumbent's customers than the incumbent does."

Scale: Channel Sales, Efficiencies, and Ecosystems

In the final stages of an enterprise-focused startup, you'll emphasize scaling. You may have channel sales through value-added resellers and distributors. You'll also have an ecosystem of analysts, developers, APIs (application programming interfaces) and platforms, partners, and competitors that will define and refine the market. These are all good indicators that companies will keep using you, because they're investing in processes, vendor relationships, and technology that will make it harder for them to leave you. Scaling an enterprise software company takes years to accomplish. Zach estimates that it can be as long as 5 to 10 years before a company selling into the enterprise has established and validated channels, and mastered its sales processes.

So What Metrics Matter?

Just as there are plenty of parallels between the way B2C and B2B startups grow, so many of the metrics we've seen for consumer-focused companies apply equally well to enterprise-focused ones. But there are a few metrics that you'll want to consider that apply more to enterprise startups.

Ease of Customer Engagement and Feedback

As you're talking to customers, how easy is it to get meetings with them? If you plan to use a direct sales organization later on, this is an early indicator of what it'll be like to sell the product.

Pipeline for Initial Releases, Betas, and Proof-of-Concept Trials

As you start to sign up prospects, you'll track the usual sales metrics. Unlike B2C platforms where you're looking at subscription and engagement, if you're selling a big-ticket, long-term item, you're looking at contracts. While you may not have recognizable revenue, you'll have lead volume and bookings to analyze, and these should give you an understanding of the cost of sales once the product has launched.

It's important—right from the very beginning—that you articulate the stages of your sales funnel and the conversion rates at each point along the way. The sales cycle needs to be well documented, measured, and understood after the first few sales, to see if you can build a repeatable approach. At that point, you can bring in additional salespeople to increase volume.

Stickiness and Usability

As we've seen, the usability of a disruptive solution is "table stakes" for a new entrant in today's market. Companies expect ease of use, because they didn't have to get trained on Google or Facebook, and thus shouldn't have to get training from you, either. DJ Patil suggests using data to find where the friction is hiding in your usage and adoption. "If you can't measure it, you can't fix it," he says. "Instrument the product to monitor user flows and be able to test new ideas in how to iteratively improve your product."

Integration Costs

In the heat of the moment, it's hard to take notes, but integration plays such a big role in enterprise sales that you have to be disciplined about measuring it. What's the true cost of pre- and post-sales support? How much customization is required? How much training, explaining, and troubleshooting are you doing in order to successfully deliver a product to a customer?

You need to capture this data early on, because later it's an indicator of whether you've built a startup or just created a highly standardized consulting practice. If you prematurely accelerate the latter, thinking it's the former, supporting an expanded market and a sales channel will crush you. This data can also be used against incumbents in a total-cost-of-ownership analysis.

User Engagement

No matter what you're building, the most important metric is whether people are using it. In an enterprise, however, the buyer is less likely to be the user. That means your contact may be an IT project manager, someone in purchasing, or an executive, but your actual users may be rank-and-file employees with whom you have no contact.

You may also have to refrain from talking to users: it's easy to pop up a survey on a consumer website, but employers may frown upon you using up their employees' precious time to answer your questions.

Simply measuring metrics like "time since last use" will be misleading, too, because users are *paid* to use your tool. They may log in every day because it's their job to do so; that doesn't mean they enjoy it. The real questions are whether they *like* logging in, and whether it makes them more productive. Users have a task they want to accomplish, and your product will thrive if it is the perfect tool for that task. Some marketers advocate analyzing

customer needs by the job the customer is trying to get done (known as the "jobs-be-done" approach) rather than by segments.*

Get baselines from your clients that apply to their real-world businesses before you deploy. How many orders do they enter a day? How long does it take an employee to get payroll information? How many truck deliveries a day can their warehouse handle? What is the usual call hold time? Once you've deployed, use this information to measure progress, helping your advocates to prove the ROI—and turning it into case studies you can share with other customers.

Disentanglement

As you transition from a high-touch consulting business to a standardized one with less customer interaction, you need to focus on disentanglement. Your goal is to not have "anchor" customers that represent a disproportionate amount of your revenue or your support calls, because you need to scale.

Put your high-touch customers that you acquired early on into a segment and compare them to the rest of your customers. How do they differ? Do they consume a fair proportion of your support resources? Do their feature requests match those of all your customers and prospects? Don't ignore the companies that made you who you are—but do realize they're not in a monogamous relationship with you anymore.

Zach Nies suggests going even further, segmenting customers into three groups. "'A customers' are your really big customers who negotiated a big discount and expect the world from you. 'B customers' are customers who are fairly low maintenance, didn't get a big discount, see themselves as partners with you, and provide useful insights. 'C customers' cause trouble, are a pain to deal with, and demand things from you that you feel will damage your business," he explains. "Don't spend too much time on the A's—they sound good but aren't the best for your business. Bring as many Bs on as customers as possible. And try to get your 'C customers' to be customers of your competitors."

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* *http://hbswk.hbs.edu/item/6496.html*

Support Costs

Zach's advice is based on some fundamental truths. In many B2B-focused companies, the top 20% of customers generate 150–300% of profits, while the middle 70% of customers break even, and the lowest 10% of customers reduce 50–200% of profits.*

You'll track support metrics like top-requested features, number of outstanding trouble tickets, post-sales support, call center hold time, and so on. This will indicate where you're losing money, and whether the product is standardized and stable enough to move into growth and scaling.

Segment this data, too. Figure out who's costing the most money. Then consider firing them.† Once, it was hard to break out individual customer costs, but electronic systems make it possible to assign activities—such as support calls, emails, additional storage, or a truck roll—to individual customers.

You don't actually have to fire customers, of course. You can simply change their pricing enough to make them profitable or encourage them to leave. This is part of getting your pricing right before you grow the business to a point where unprofitable clients can do real damage at scale.

User Groups and Feedback

If your business involves big-ticket sales, you may have few enough customers that you can get many of them in the same room. Informal interaction with existing customers can be a boon to enterprise-focused startups, and resembles the problem and solution validation stages of the Lean Startup process—only rather than validating a solution, you're validating a roadmap. Even with a large number of customers, Zach says, "Identify the real advocates and bring them in for a big hug." He also suggests helping advocates network among themselves, which Rally does on its website.‡

Successful user-group meetings require considerable preparation. Users will be eager to please—or quick to complain—so results will be polarized. They'll also agree to every feature you suggest. Force them to choose; they

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* Robert S. Kaplan and V.G. Naranyanan "Measuring and Managing Customer Profitability," *Journal of Cost Management* (2001), 15, 5–15, cited in Shin, Sudhir, and Yoon, "When to 'Fire' Customers."

† Jiwoong Shin, K. Sudhir, and Dae-Hee Yoon, "When to 'Fire' Customers: Customer Cost-Based Pricing," *Management Science*, December 2012 (*http://faculty.som.yale.edu/ksudhir/papers/Customer%20Cost%20Based%20Pricing.pdf*).

‡ *http://www.rallydev.com/community*

can't have everything, and you need to present them with hard alternatives (also known as *discrete choices*).

A lot of work has gone into understanding how people make choices. "A 'discrete' choice," says Berkeley professor Dan McFadden, "is a 'yes/no' decision, or a selection of one alternative from a set of possibilities." His application of discrete choice modeling to estimate the adoption of San Francisco's Bay Area Rapid Transit system—which was under construction at the time of his research—earned him the 2000 Nobel Prize in Economics.* One important conclusion from this work is that people find it easier to discard something they don't want than to choose something they do (which feels like commitment), so a series of questions in which they are asked to discard one of two options works well.

The math of choice modeling is complex. There are entire conferences devoted to the subject, and it's widely used in new product development for everything from laundry detergent to cars. But some of the methodologies are instructive. For example, you can get better answers by repeatedly asking your customers to compare two possible feature enhancements and choosing the one they can do without, rather than by simply asking them to rate the possible features on a scale of 1 to 10. You'll do even better if you mix up several attributes in each comparison, regardless of whether a particular combination of attributes makes sense.

Imagine you're trying to find a new diet food to introduce. You know the attributes that might affect buyers include taste, calories, gluten content, and sustainable ingredients. Simply asking prospects whether taste is more important to them than caloric content is informative. But asking them to make a choice between two discrete offerings—even if those offerings are theoretically impossible—is even better. Would you prefer:

- A delicious, gluten-free, high-calorie candy made with artificial ingredients;
- Or a bland, high-gluten, low-calorie candy of organic origin?

Asking customers to trade off variations of combinations, over and over, dramatically improves prediction accuracy. In fact, this is equivalent to the multivariate testing we've discussed before, applied to surveys and interviews.

As you're designing user events, know what you're hoping to learn and invest in the conversations and experimental design needed to get real answers that you can turn into the right product roadmap.

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* *http://elsa.berkeley.edu/~mcfadden/charterday01/charterday_final.pdf*

Pitch Success

You've measured your effectiveness at setting up meetings in the early phases of your startup. It matters later on, when you're about to bring on channels. Your channel partners aren't as clever as you, and you'll need to arm them with collateral and messaging that they can use to close deals without your assistance. If they try to push your product or service and encounter resistance, they'll sell something else. With channels, you seldom get a second chance to make a first impression.

Create marketing tools for your channel and then test them yourselves. Make cold calls with their scripts. Pitch them to new customers. Send out email form letters and test response rates.

This does two things: first, it shows you which script, pitch, or form letter to use (because, after all, everything's an experiment, right?, and second, it gives you a baseline against which to compare channel effectiveness. If a channel partner isn't meeting your baseline, something else is wrong, and you can work to fix it before that partner sours on your product.

If you make channel collateral, tag each piece of collateral with something that identifies the channel. You might use shortened URLs that include a code identifying the partner in PDFs you create, which would let you see which partners' efforts are driving traffic to your site.

Barriers to Exit

As you bring customers on at scale, you want to make them stick around. A vibrant developer ecosystem and a healthy API allow customers to integrate themselves with you, making *you* the incumbent vendor and helping you to counter threats from competitors and new entrants.

Simon Wardley, who studies organizational warfare and evolution for the Leading Edge Forum, points out that companies must prioritize the long list of features customers need. Build too many, and they won't all be profitable; build too few, and you leave the door open to competitors. APIs, he says, offer a solution.*

> All innovations… are a gamble and whilst we can reduce costs we can never eliminate it. The future value of something is inversely proportional to the certainty we have over it; we cannot avoid this information barrier any more than we can reliably predict the future. However, there is a means to maximize our advantage.

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* *http://blog.gardeviance.org/2011/03/ecosystem-wars.html*

> By making these utility services accessible through APIs, we not only benefit ourselves but we can open up these components to a wider ecosystem. If we can encourage innovation in that wider ecosystem then we do not incur the cost of gambling [and] failure for those new activities. Unfortunately, we do not enjoy the rewards of their success either.
>
> Fortunately, the ecosystem provides an early warning mechanism of success (i.e., adoption)…by creating a large enough ecosystem, we can not only encourage a rapid rate of innovation but also leverage that ecosystem to identify success and then either copy (a weak ecosystem approach) or acquire (a strong ecosystem approach) that activity. This is how we maximize our advantage.

If you have an API, track its usage by clients. Those clients who have a lot of API activity are investing more in extending their relationship with you; those who are inactive could switch vendors more easily. If you have a developer program, examine searches and feature requests to discover what tools your customers want, then find developers to build features you aren't going to create yourself.

The Bottom Line: Startups Are Startups

While enterprise-focused startups must contend with some significant differences, the fundamental Lean Startup model remains: determine the riskiest part of the business, and find a way of quantifying and mitigating that risk quickly by creating something, measuring the result, and learning from it.

CHAPTER 30

Lean from Within: Intrapreneurs

As World War II exploded across Europe, the United States realized it needed a way to counteract German advances in aviation—specifically, jet aircraft. The US military asked Lockheed Martin (then the Lockheed Aircraft Corporation) to build a jet fighter. Desperate times called for desperate measures: in a month, the engineering team had a proposal. Less than six months later, working in a closely guarded circus tent, they built the first plane.*

This group became known as the Skunk Works, a title that's synonymous with an independent, autonomous group charged with innovation inside a bigger, slower-moving organization. Such groups are often immune to the restrictions and budget oversight that guides the rest of the company, and have the specific goal of working "out of the box" to mitigate the inertia of large businesses. Companies like Google and Apple adopt this same approach, creating their own advanced research groups such as the Google X Lab.†

Making things change quickly is hard, and if you're going to do it, you need authority commensurate with responsibility. If you're trying to disrupt from within, you have a lot of work to do. Many of the lessons learned

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* *http://en.wikipedia.org/wiki/Skunkworks_project*

† *http://www.nytimes.com/2011/11/14/technology/at-google-x-a-top-secret-lab-dreaming-up-the-future.html?_r=2*

from the startup world apply, but they need to be tweaked to survive in a corporate setting.

Span of Control and the Railroads

If you work in a company of any significant size, you owe your organizational chart to an enterprising general superintendent of the railroad era named Daniel C. McCallum.* In the 1850s, railroads were a booming business. Unfortunately for investors, they didn't scale well. Small railroads turned a profit; big ones didn't.

McCallum noticed this, and divided his railroad into smaller sections, each run by subordinates who reported back a standard set of information he defined. McCallum's line—as well as other lines that copied this approach—thrived. McCallum's model, inspired by his time as a soldier and the regimented hierarchies he had learned in the military, was then applied to other industries.

McCallum was the first management scientist, introducing controls, structure, and regulations in order to reduce risk and increase predictability at scale. Unfortunately, intrapreneurs aren't trying to solve for safety and predictability. Their job is to *take* risks, and to uncover the non-obvious and the unpredictable. If you're trying to provoke change and disrupt the status quo, then the organizations McCallum introduced are your kryptonite. You need to shield yourself, just as the engineers within the Skunk Works did decades ago. But you also need to coexist with the organization, because unlike an independent startup, the fruits of your labors must integrate with your host company.

- What you make may **cannibalize the existing business**, or threaten employees' jobs. People will behave irrationally. Marc Andreesen famously said, "software eats everything," and one of its favorite foods is jobs.† When a software company introduces a SaaS version of its application, salespeople who make a living selling enterprise licenses get angry.
- **Inertia is real.** If you're asking people to change how they work, you'll need to give them reason to do so. Consider an Apple store: there's no central cash register, and you're emailed a receipt. It takes a fraction of the time to purchase something, and makes better use of floor space—

* *http://en.wikipedia.org/wiki/Daniel_McCallum*

† *http://beforeitsnews.com/banksters/2012/08/the-stanford-lectures-so-is-software-really-eating-the-world-2431478.html*

but convincing an existing retailer to change to this model will require retraining and modifying store layout.

- If you do your job well, you'll **disrupt the ecosystem**. A traditional music label has relationships with distributors and stores. That made it hard for it to move into online music distribution, leaving the opportunity open for online retailers as soon as disruptive technologies like MP3s and fast broadband emerged.
- Your innovation will **live or die in the hands of others**. While it's easy to be myopic about your work—and disdainful of what the rest of the company is doing—you're all in the same boat. "When problems crop up it is easy to see things from your own point of view," says Richard Templar, tongue firmly in cheek, in *The Rules of Work* (Pearson Education), "[but] once you make the leap to corporate speak it gets easier to stop doing this and start seeing problems from the company's point of view."*

In their book *Confronting Reality* (Crown Business), Larry Bossidy and Ram Charan list the six habits of highly unrealistic leaders: filtered information, selective hearing, wishful thinking, fear, emotional over-investment, and unrealistic expectations from capital markets.†

Intrapreneurs need the opposite attributes to thrive—and many of those attributes are driven by data and iteration. You need access to the real information, and you need to go where the data takes you, avoiding confirmation bias. You need to set aside your own assumptions and preconceived notions, and you need to combine high standards with low expectations.

PATTERN | Skunk Works for Intrapreneurs

The Skunk Works needed results and permission to move quickly. It set down 14 guidelines (known as *Kelly's 14 Rules & Practices*, named after engineering team lead Clarence "Kelly" Johnson) that can be adapted to anyone who's trying to change a company from within.‡ With apologies to Johnson, we'd like to share our 14 rules for Lean Intrapreneurs.

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* Richard Templar, *The Rules of Work* (Upper Saddle River, New Jersey: Pearson Education, 2003), 142.

† Larry Bossidy and Ram Charan, *Confronting Reality* (New York: Crown Business, 2004), 22–24.

‡ *http://www.lockheedmartin.com/us/aeronautics/skunkworks/14rules.html*

1. If you're setting out to break rules, you need the responsibility for making changes happen—and the authority that can come only from high-level buy-in. Get an executive sponsor, and make sure everyone else knows that you've got one.
2. Insist on access both to resources within the host company and to real customers. You'll probably need the permission of the support and sales teams to do this. They won't like the changes and uncertainties you may introduce by talking to customers—but insist on it anyway.
3. Build a small, agile team of high performers who aren't risk-averse, and who lean toward action. If you can't put together such a team it's a sign you don't *really* have the executive buy-in you thought you did.
4. Use tools that can handle rapid change. Rent instead of buying. Favor on-demand technologies like cloud computing, and opex over capex.*
5. Don't get bogged down in meetings, keep the reporting you do simple and consistent, but be disciplined about recording progress in a way that can be analyzed later on.
6. Keep the data current, and don't try to hide things from the organization. Consider the total cost of the innovation you're working on, not just the short-term costs.
7. Don't be afraid to choose new suppliers if they're better, but also leverage the scale and existing contracts of the host organization when it makes sense.
8. Streamline the testing process, and make sure the components of your new product are themselves reliable. Don't reinvent the wheel. Build on building blocks that already exist, particularly in early versions.
9. Eat your own dog food, and get face-time with end users, rather than delegating testing and market research to others.
10. Agree on goals and success criteria before starting the project. This is essential for buy-in from executives, but also reduces confusion and avoids both feature creep and shifting goals.

* *http://www.diffen.com/difference/Capex_vs_Opex*

11. Make sure you have access to funds and working capital without a lot of paperwork and the need to "resell" people midway through the project.
12. Get day-to-day interaction with customers, or at the very least, a close proxy to the customer such as someone in support or post-sales, to avoid miscommunication and confusion.
13. Limit access to the team by outsiders as much as possible. Don't poison the team with naysayers, and don't leak half-finished ideas to the company before they're properly tested.
14. Reward performance based on results, and get ready to break the normal compensation models. After all, you're trying to keep entrepreneurs within a company, and if they're talented, they could leave to do their own thing.

Changing—or Innovating to Resist Change?

It takes a dire threat or a top-down leader to force a company to change. If you have both, even a huge company can move quickly. In the late 90s, as the web browser grew in importance, analysts were predicting the downfall of Microsoft, but they underestimated Bill Gates's ability to turn his company quickly. Within a few months, the company had created Internet Explorer and insinuated it throughout its Windows operating system: you'd type a URL, and it would convert it to a hyperlink. You'd save something, and it would have an HTML version. Even the much-maligned paperclip knew about the Web.

While Microsoft did have to contend with antitrust accusations, its quick response staved off irrelevance and kneecapped ascendant Netscape. Jim Clark, Netscape's CEO, called Gates's response ruthless, but noted that his ruthlessness came from the company's dominance in the desktop space. "In order to be ruthless you have to have some kind of power, and in most cases I've been going up against Microsoft, so I never had that power."*

Since that time, the company has had to do the same with its Office suite. In 2005, Gates and Ray Ozzie announced the shift from a licensed software package to a hosted, SaaS-based offering.† This time, the threat was from Google's nascent office offering, which would be subsidized by Google's money-making ad machine. While Google's product was just a gleam in its

* *http://www.cnn.com/books/news/9906/18/netscape/*

† *http://ross.typepad.com/blog/2005/10/turn_on_a_dime.html*

founders' eyes, services like Write.ly made it plain that desktop productivity suites were under siege.*

Critics of Microsoft's reactions complain that the company isn't changing; rather, it's managing to stay the same and exert its dominance, avoiding or delaying market change. "I realized that Microsoft had not turned at all," said Dave Winer in 1999. "What's actually been happening is that Microsoft is exerting tremendous energy to stay right where it is."†

As an intrapreneur, you might find that this "innovate to stay still" notion does not sit well with you. You're a disruptor, right? However, when you're working for an incumbent with large market share, sometimes innovation is about maintaining a company's dominance and suppressing change to continue making money in the traditional ways. If you don't like that, you should probably leave the company and start something of your own.

Stars, Dogs, Cows, and Question Marks

Why might you not want to disrupt things? To understand this, you need to look at how large organizations plan their product and market strategy.

The Boston Consulting Group (BCG) box, shown in Figure 30-1, is a simple way to think about a company's product portfolio. It classifies products or subsidiaries according to two dimensions: how quickly the market is growing, and how big a market share the company has in that market.

Products with high market share but slow growth are "cash cows." They generate revenue, but they aren't worthy of heavy investment. By contrast, products with high growth but small market share are "question marks," candidates for investment and development. Those with both growth and market share are the rising "stars." Those with neither—called "dogs"—are to be sold off or shut down.

The BCG box offers a thumbnail of a company's product portfolio. It's also a good way to think about innovation. If you're trying to change a company, you're either trying to create a new product (hopefully in a growing market) or you're trying to innovate to revitalize an existing product with the addition of new features, markets, or services.

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* *http://anders.com/cms/108*

† *http://scripting.com/1999/06/19.html*

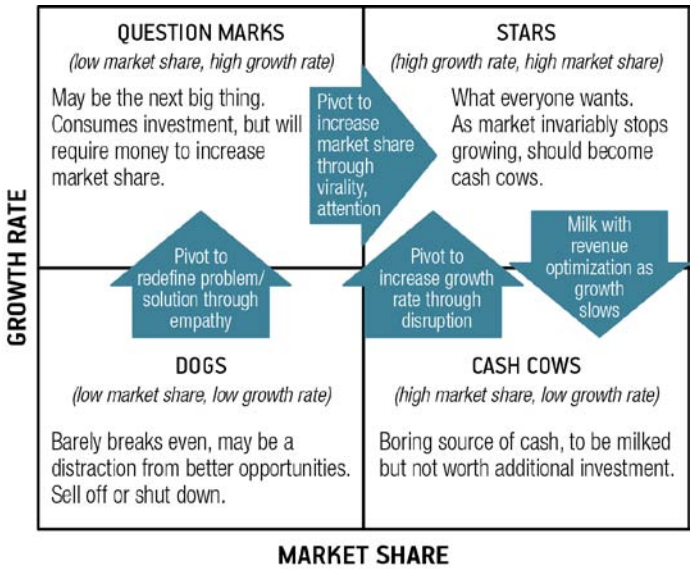

Figure 30-1. The BCG box: ever wonder where "cash cows" came from?

Seen from a Lean Startup perspective, the BCG box shows us what stage we're working on and what metrics should apply. If you're creating new products or companies (question marks), then you need to focus on empathy. If you're trying to rescue a dog, you still need empathy, and you have access to existing customers. You're either going to change the product (to enter an area of increased growth) or the market (to gain market share).

If you have a question mark (high growth but nascent market share), you'll be focusing on growing market share through organic (virality) or inorganic (customer acquisition) means.

If you have a star, and the market's growth is stalling, you need to optimize revenues and reduce costs so your marginal cost of product delivery is healthy. That way you can survive the coming commoditization and price wars. On the other hand, if there's a disruption in the industry that might expand the market—such as the rise of mobile technology, or the emergence of international demand—you'll be focusing on increasing growth rate to return a cash cow to star status.

Companies tend to try to improve what they have, which is one of the reasons that incumbents get disrupted. In his book *Imagine* (Canongate

Books), author Jonah Lehrer talks about the creation of the Swiffer mop.* It's a perfect example of how companies look for a local maximum rather than trying to solve a problem.

CASE STUDY | Swiffer Gives Up on Chemistry

Proctor & Gamble (P&G) makes lots of cleaning products. It's constantly trying to improve and revitalize its cash-cow products, but despite the hard work of many highly paid experts, it was stalled in its efforts to invent a better cleaning fluid.

The company's executives knew it was time to disrupt the industry, and they couldn't do it from within. So they brought in Continuum, an outside agency, to help out.† Rather than mixing up another batch of chemicals, Continuum's team decided to watch people as they mopped. They focused on recording, testing, and rapid iteration during their investigation phase.‡

At one point, they watched a test subject clean up spilled coffee grounds. Rather than breaking out a mop, the subject swept up the dry grounds with a broom, and then wiped the remaining fine dust with a damp cloth.

No mop.

That was an eye-opener for the design team, and they looked at the problem from a different angle. They discovered that the mop—not the liquids—was the key. They looked at the makeup of floor dirt (which is part dust, and thus better picked up without water)§ and innovated on the cleaning tool itself, giving P&G a $500-million-dollar innovation—the Swiffer, a more user-friendly style of mop—in an otherwise stagnant cleaning industry.

The ability to step outside the frame of reference within which the existing organization works and see the actual need rather than the current solution, is a fundamental ability of any intrapreneur.

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* *http://www.npr.org/2012/03/21/148607182/fostering-creativity-and-imagination-in-the-workplace*

† *http://www.kinesisinc.com/business/how-spilt-coffee-created-a-billion-dollar-mop/*

‡ *http://www.dcontinuum.com/seoul/portfolio/11/89/*

§ *http://www.fastcodesign.com/1671033/why-focus-groups-kill-innovation-from-the-designer-behind-swiffer*

Summary

- By using basic customer development approaches, P&G was able to create an entirely new product category.
- Pretending you're a startup, and focusing on disruption in the Empathy stage, is a good way to rediscover what's possible and take off enterprise blinders.
- Resist the temptation to use surveys and quantitative research; the insights from one-on-one observation can unlock an entire market segment.

Analytics Lessons Learned

For intrapreneurs, sometimes starting back at the beginning, with a reconsideration of the fundamental problem you're trying to solve, is the best way to move a cash-cow product—lucrative but not growing—back to a high-growth industry. After all, if you don't see your customers through naïve eyes, someone else will.

You may be able to innovate and simultaneously involve the customer in the innovation itself, even turning testing and analytics into a marketing campaign. That's what Frito-Lay did when it decided to find a new flavor of chips.

CASE STUDY | Doritos Chooses a Flavor

If you're a big company, it's hard to incorporate customer feedback in real time. Typically, you rely on focus groups and product testing before spending big money on a new product launch. Frito-Lay found a way to mitigate this, and in the process took customer development to new heights. It also generated interesting advertising campaigns.

In 2009, Dachis Group helped Doritos introduce an unnamed flavor, then asked customers to name it.* In later years, the company asked customers to choose which flavor it should add to its product line, literally labeling two new flavors A and B, and then testing them.† It also asked customers to help write the end of a TV ad that would be

* *http://www.dachisgroup.com/case-studies/become-the-doritos-guru/*

† *http://www.packagingdigest.com/article/517188-Doritos_black_and_white_bags_invite_consumers_to_vote_for_new_flavor.php*

broadcast during the Superbowl, giving them access to creative teams at its advertising agency.*

This work required changes to distribution channels, from retail shelf space to the inclusion of temporary inventory. But the campaign worked—the company dominated social media. It had 1.5M visitors to its YouTube channel, and over 500,000 votes were cast by customers. It also found a way to iterate at scale, and do market development alongside brand building.

Summary

- An established distribution system in the consumer packaged-goods industry might seem like a boat anchor that makes it hard to innovate, but Frito-Lay found a way to do so.
- Leveraging social media and the prominence of in-store displays, the company turned its YouTube channel into a giant focus group and increased engagement with its customers.

Analytics Lessons Learned

Another way to revitalize a product is to use a disruptive technology—in this case, ubiquitous social media and two-way interaction—to reconsider how product testing is done in the first place.

Working with an Executive Sponsor

As an intrapreneur, you and your executive sponsor need to be absolutely clear what kind of change you're trying to produce, how you'll measure progress toward that change, what resources you'll have access to, and what rules you'll be subject to. This might seem overly "corporate" for a mercenary looking to blow up the status quo, but in a big organization it's simple reality.

If you don't like it, go start your own company. If you want to work within the system, the change you're after has to dovetail with the change the organization is ready for. This is why executive sponsorship is so important: it's the difference between a "rogue agent" and a "special operative."

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* *http://thenextweb.com/ca/2011/02/05/online-campaign-asks-canadians-to-write-the-end-of-a-commercial/*

Existing businesses are different largely because they already exist. Innovators can go rogue asking for forgiveness rather than permission—but the immune system of the host company may reject them. Ultimately, companies need to restructure themselves for a continuous cycle of innovation, but the way to get them to do so may involve baby steps—smaller, more controlled attempts at analytics. That's the approach David Boyle used at EMI Music as he worked to introduce a data-driven culture.

CASE STUDY

EMI Embraces Data to Understand Its Customers

David Boyle is the Senior Vice President of Insight at EMI Music, one of the major labels in the recording industry. His job is to help EMI make decisions based on data, and to help the company navigate the choppy waters of an industry in transition.

To get the company more focused on data and analytics, and less concerned with anecdotes and opinions, Boyle first had to choose which decisions needed to be made, then find ways to get the right evidence in front of the decision makers.

"The decisions we ultimately focused on were, 'Which types of consumers should I try to connect an artist's music to in which countries?' and 'What kinds of marketing should I do to try to reach those consumers?' Most of that data came from consumer research."

Boyle wasn't short on data. EMI has billions of transaction records from digital services, as well as usage logs from artist websites and applications. "But each of these data sources is very limited in scope and very skewed concerning the types of person that is represented in that data set," Boyle explained. So EMI built its own survey tool. "We found that building our own data set based on asking people questions and playing them music was the way to go." The result was over 1 million detailed interviews, and hundreds of millions of data points.

"Bad data is a pain to sell to people. And even good data is a pain to sell to someone if it doesn't actually help someone, whether that's because it's not in a form that helps them work out what to do or because it doesn't actually answer the questions they are asking," he says. "But when the data's good and it really does help someone, then nobody can refuse it."

Many intrapreneurs talk about the friction they face when trying to create a data-driven culture in their organizations, but Boyle is quick to caution against calling it resistance. "One of the key things we realized early on was that it's not helpful to think of it as resistance. When you

realize that the 'resistance' is actually good people who deeply care about the artists and music they are working with, trying to protect them from bad data or bad recommendations, then you see the whole thing differently."

"If you really believe in the data and the recommendations that the data makes, then you focus on why the person doesn't understand the data and you help them to understand it," he explained. "When they understand, then their eyes light up, and they become a bigger fan of the data than I am!"

Despite his success with EMI, Boyle admits there are real differences between a startup and a big company. "In a startup, you have the benefits of starting off as you mean to go on: you can shape the way of thinking and behaving to, for example, incorporate data in decision making right from the start. That's a great advantage over working in a business where the culture is already set." But the startup world isn't perfect, he says. "A startup has another big problem: intense pressure to deliver quickly. I've actually noticed that this can get in the way of things like building the right culture if you're not careful."

To build support and report progress within EMI, Boyle used case studies.

"We got lots of people who'd successfully used our data to help their artists tell their story. They were better and more creative than anything we could have organized centrally to spread the word." EMI's new data helped align particular artists with demographics to whom they'd appeal, allowing the music to reach the most receptive audiences.

Boyle didn't tie the results of research to hard numbers. "We simply said: 'Asking thousands of people what they think about something is better than not asking them, right?' and we showed that we could do so at high quality and low cost, and we went for it. After the first set of data came back, people fell in love with it: it helped them and they loved that."

Initially, the newly acquired research data helped EMI to understand the market and the ecosystem in which artists, music, and digital services exist. But now that the company has that context, it can revisit the billions of transactional records it collected in the past. "If we'd looked at that without first understanding the context in which it sits, we would have taken our artists in the wrong direction," Boyle said.

The project has grown beyond the initial insight team, and now it's owned by the overall business at EMI. In the end, because everyone had access to data, the entire organization bought into the change. But what surprised Boyle the most was how valuable the (relatively small) consumer research continued to be, even though the organization could use the Big Data hoard from billions of transactions. "Good data beats big data," he concludes. "I am constantly surprised at how good it can be when done properly."

Summary

- EMI had a huge amount of data, and little idea of how to use it.
- Rather than mining existing data sets, the company conducted surveys, building a simpler, more specific set of information that executives could get comfortable with.
- Once the value of this smaller interview data was proven, it was easier to sell the value of a broader data-driven culture.

Analytics Lessons Learned

Just because you have a lot of data doesn't mean you're data-driven. Sometimes, starting from scratch with a small set of data collected to solve a specific issue can help make the case for using data elsewhere in the organization. It's also more likely to get executive sponsorship because the problem is bounded and constrained, whereas nobody knows what controversies are lurking in the larger amounts of "data exhaust" the organization has collected over the years.

The Stages of Intrapreneur Lean Analytics

If you're a pioneering intrapreneur, you'll go through a series of stages that maps closely to the stages we've seen in other startup models. But you have a few important steps to consider, as Figure 30-2 illustrates. Note that we've also included a "step zero" for intrapreneurs: get executive buy-in.

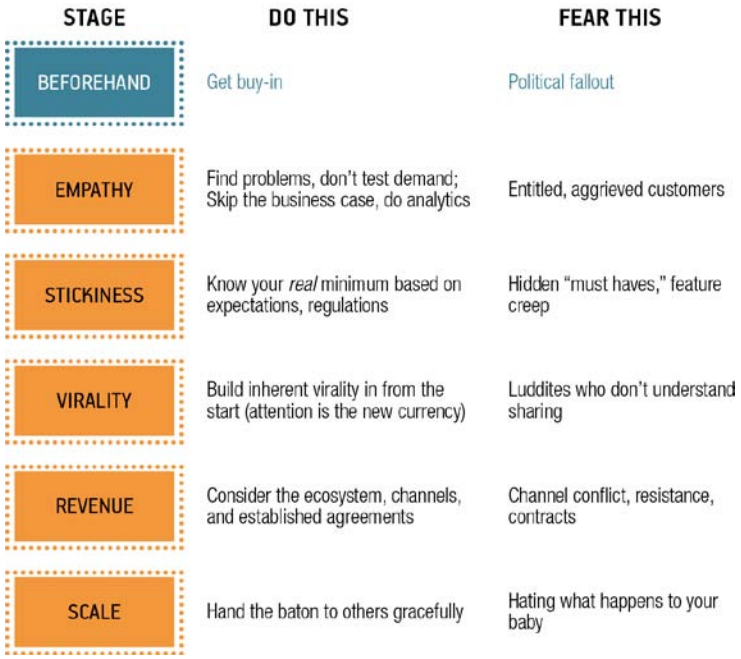

Figure 30-2. Intrapreneurs need an extra step: get an executive sponsor first

Beforehand: Get Buy-in

Before you start doing customer development, you need executive buy-in. This may be implicit if it's your job to try to find new opportunities, but even then, once you think you've found an opportunity, you need explicit approval from an executive. You want to know where you are on the BCG box, and where you're trying to go, and you need to know what metrics your progress will be judged by. You need to know what resources you have, and what rules apply to you. This is like a prenuptial agreement: it's better signed before the wedding.

At this stage, you're defining your analytical strategy, and the lines in the sand against which you'll be judged. These may be goals for the whole company, such as margins, or they may be a growth rate that's considered success. You'll also need to define how you will adjust these metrics based on what you learn.

Empathy: Find Problems, Don't Test Demand

Once you start doing customer development, remember that you're testing problems and solutions—not existing demand. If you're truly disruptive, customers won't tell you what they want, but they *will* tell you why they

want it. In 2008, Swiffer creator Gianfranco Zaccai explained, "Successful business innovation isn't about giving consumers what they need now, but about giving them something they'll desire in the future."*

Customers weren't telling Netflix they wanted to stream videos, but their patterns of usage, computer adoption, broadband deployment, and browsing told the company a need existed.

This is a place for qualitative interviews. You should talk to existing users and customers, of course. But if you're trying to grow market share, you'll also want to talk to your competitors' customers, to distributors, and to everyone involved in purchasing the product. If you're trying to improve growth rate, you'll talk to adjacent customers. That's what Bombardier did when it expanded from snowmobiles to personal watercraft (despite an initial, failed 1960s foray into the industry that was plagued by mechanical issues).†

Skip the Business Case, Do the Analytics

At some point, when it comes time to go beyond interviewing people, you'll need to build a business case. Traditional product managers build profit-and-loss analyses to try to justify their plans: they create a convincing business case, and once someone believes it, they get funding to proceed. But a Lean mindset reverses this: you sell the business model—not the plan—without a lot of prediction, and then rely heavily on analytics to decide whether to kill the product or double-down on it.

This analyze-after rather than predict-before model is possible because many of the costs of innovation can be pushed later in the product development cycle. Just-in-time manufacturing, on-demand printing, services that replace upfront investment with pay-by-the-drink capacity, CAD/CAM design, and mercenary contractors all mean that you don't have to invest heavily up front (and therefore don't have to argue a business case at the outset). Rather, you can ask for a modest budget, build analytics into the product, and launch sooner for less money. You can then use the data and customer feedback you get, which is vanishingly cheap to collect given today's technology, to plead your case based on actual evidence.

Stickiness: Know Your Real Minimum

If you've identified a problem worth solving and a solution that customers will want, it's time to make an MVP. But you need to know the *real* minimum

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* *http://www.beloblog.com/ProJo_Blogs/newsblog/archives/2008/02/swiffer_invento.html*

† *http://www.oldseadoos.com/*

that you can build. As a big organization, you may have restrictions on data sharing, reliability, or compliance to which smaller organizations (that have less to lose) aren't subject. You also need to identify your unfair advantages.

Consider, for example, the many meal pre-ordering tools on the market today. These mobile applications let you place an order from a food court restaurant, pay, and pick up at an agreed-upon time without waiting. The restaurants like them because they save precious time in the lunchtime rush, and the diners like them because they're simple and buyers can browse the menu at their leisure. It's like Uber for lunch.

Now consider what would happen if McDonalds were to decide to compete by introducing an application. It might have franchise constraints, or regulations for restaurants located in airports, or state laws about disclosing caloric content. All of these would have to be part of the MVP.

Offsetting this, however, is the huge amount of market control the company has. It could promote the app by giving away three hamburgers for free to everyone who installed it. The company would make back the money quickly in saved time at the cash register, and have access to a new marketing channel and untapped analytical insight into its customers.

Intrapreneurs need to factor these kinds of constraints and advantages into their MVP far more than independent startups do.

What's more, as people start using your MVP, you have to manage the beta process carefully. You may be interfering with existing deals in the sales pipeline, or creating more work for customer support. If so, you need to have approval for the rollout and the buy-in of stakeholders. If you're launching an entirely new product line, you may even have to camouflage it so you don't cannibalize existing markets until you know it's successful. This, of course, undermines your ability to use unfair advantages like an existing customer base.

Viral from the Start

If you're trying to move upward in the BCG box, your product should include viral and word-of-mouth elements. In a world where everyone has access to a mobile device, every product needs to have an interactive strategy. There's simply no excuse not to find a viral angle to act as a force multiplier for growth. In fact, adding a viral component is one of the keys to moving dogs and cash cows up into question marks and stars.

Revenue Within the Ecosystem

You'll have less flexibility to set pricing and reinvest revenues in product marketing, because as you grow you'll have to coexist with other marketing efforts by your host company. When Microsoft wanted to test its SaaS-based Office suite, it could do so in a relatively controlled way. But as soon as it wanted to monetize the product, it had to contend with cannibalization and pushback from a channel that depended on license revenue.

Your pricing may have to take into account channels, distributors, and other factors that restrict your freedom to experiment, because changes you make will have an impact on other products in the marketplace. Had Blockbuster entered the streaming video market, it would have had to deal with labor and real estate issues at existing stores.

Scale and the Handoff

In the final stages of intrapreneur innovation, the new product has proven its viability. It's either stolen by a more mainstream part of the organization—which can help it cross the chasm and broaden its appeal—or the team that created it must itself transition to a more traditional, structured model of business and take its place among the other products and divisions of the host organization.

Most of the time, the DNA of a disruptive organization isn't well suited to "boring" management and growth, so you'll need to hand off the product to the rest of the organization and find the next thing to disrupt. That means you really have two customers: the external one buying the product, and the internal one that has to make, sell, and support it.

Ultimately, the intrapreneur must manage the relationship with the host organization as well as the relationship with the target market. Initially, this can be intentionally distant, but as the disruptive product becomes part of the host, the handoff must be graceful.

CHAPTER 31

Conclusion: Beyond Startups

If all goes well, you eventually stop being a startup. You've found product/market fit, and you're scaling even as your growth slows to that of a big company. But hopefully you're still analytical. Hopefully you're still thinking in terms of learning, and continuous improvement, and demanding that data back up your opinions.

Your startup has succeeded when it's a sustainable, repeatable business that can generate a return to its founders and investors. It might take on additional funding at this point, but the purpose of the funding is no longer to identify and mitigate uncertainties, it's to execute on a proven business model. Data becomes less about optimization and more about accounting. If there are "lean analytics" going on, they're probably in new product or feature discovery, and look more like intrapreneur innovation.

We started by saying that if you can't measure something, you can't manage it. But there's a contrary, perhaps more philosophical, observation we need to consider. It's a line by Lloyd S. Nelson, who worked at Nashua Corporation. "The most important figures that one needs for management are unknown or unknowable, but successful management must nevertheless take account of them." This smacks of Donald Rumsfeld's "unknown unknowns," and as your company grows and achieves a degree of operational consistency, figuring out what you *don't* know becomes a key task of management.

Nelson's point was that we often do things without knowing they'll work. That's called experimentation. But experimentation—for companies of any size—succeeds only if it's part of a process of continuous learning, one we hope to have instilled in you whatever the size or stage of your business.

How to Instill a Culture of Data in Your Company

If you're a leader—the founder of a startup, or a C-level executive in a large enterprise—you can turn analytics into a competitive advantage simply by asking good questions. Earlier in the book we said that a good metric is one that drives decision making. As a leader within your organization, demand proof through data before making decisions.

Data doesn't just lead to better decisions. It also improves organizational efficiency. You can create a flatter, more autonomous organization once everyone buys in to a data-informed approach, because rather than needing to propagate an opinion across the organization, you can let the facts speak for themselves. You can empower employees to make more decisions and take on more responsibility once they've got the data in place to support them. Create a culture of accountability, and then reward those who step up and deliver.

Whether you're in a leadership position or not, you can make your organization more data-centric. Here's how.

Start Small, Pick One Thing, and Show Value

There will always be naysayers in an organization who believe instinct, gut, and "the way we've always done business" are good enough. The best thing you can do is pick a small but significant problem your company faces (take any single metric of importance, be it churn, percent daily active users, website conversions, etc.) and work to improve it through analytics.

Don't go after the most crucial issue your company is facing—that's likely got too many cooks in the kitchen already (or worse, it's mired in politics you don't want to wade into). Instead, pick an ancillary issue, something that can add demonstrable business value but is being overlooked.

This approach, if taken too far, can lead to silos within the company, and that's a bad thing. Once you've demonstrated the benefits with one issue, roll out the process across all departments and product areas.

Make Sure Goals Are Clearly Understood

To prove the value of an analytics-focused company, any project you take on needs to have clear goals. If you don't have a goal in mind (including a line in the sand that you've drawn), you'll fail. Everyone involved in the project needs to be aligned around the goals.

Get Executive Buy-in

Unless you're the CEO and pushing this approach top-down, you'll need executive buy-in. For example, if you want to improve the conversion of website visitors signing up for your free trial software application, make sure the person in charge of marketing is on board. This person's buy-in will be critical in aligning goals, but also in driving the culture up and down the corporate ladder.

Make Things Simple to Digest

A good metric is one that's easy to understand at a glance. Don't overwhelm people with a firehose of numbers. They'll get frustrated, and they're also very likely to start looking at the wrong things, focusing on the wrong numbers, and making decisions without understanding what they're looking at. Metrics can be extremely valuable, but used incorrectly they'll lead down the wrong path.

Remember the One Metric That Matters. Use that principle as a way of easing people into analytics and number crunching.

Ensure Transparency

If you're going to use data to make decisions, it's important that you share the data and the methodologies used to acquire and process it. Decision-making frameworks are needed so that your company can find repeatable strategies for the use of analytics (and lessen the "flying by the seat of our pants" approach that companies often take). Transparency (in both success and failure) is important for breaking down the data silos and people's preconceived notions about analytics.

Don't Eliminate Your Gut

As we've said before, Lean Analytics isn't about eliminating your gut, it's about proving your gut right or wrong. Accenture Chief Scientist Kishore Swaminathan says, "Science is purely empirical and dispassionate, but scientists are not. Science is objective and mechanical, but it also values scientists who are creative, intuitive, and who can take a leap of faith."*

You can help push your company's culture by making sure you balance people's notion that instinct and gut are enough with small, data-driven experiments, proving the value of analytics while not completely eliminating the benefits of instinct.

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* *http://www.accenture.com/us-en/outlook/Pages/outlook-journal-2011-edge-csuite-analytics.aspx*

Instilling change in any size organization takes time. You can't expect a company to change the way it does business and makes decisions overnight. Start small, and find experiments you can box in easily and which generate measurable results quickly. Prove the value of analytics in moving your company's KPIs (even a little bit), and you'll be able to make the case for an analytics-focused shift. Use concepts like the One Metric That Matters and tools like the Problem-Solution Canvas to make analytics approachable and understandable for everyone, not just the data scientists. Get people focused on lines in the sand—measurable targets that everyone (including executives) agrees to—so that you can demonstrate results.

Ask Good Questions

There's never been a better time to know your market. Your customers leave a trail of digital breadcrumbs with every click, tweet, vote, like, share, check-in, and purchase, from the first time they hear about you until the day they leave you forever, whether they're online or off. If you know how to collect those breadcrumbs, you have unprecedented insight into their needs, their quirks, and their lives.

This insight is forever changing what it means to be a business leader. Once, a leader convinced others to act in the absence of information. Today, there's simply too much information available. We don't need to guess—we need to know where to focus. We need a disciplined approach to growth that identifies, quantifies, and overcomes risk every step of the way. Today's leader doesn't have all the answers. Instead, today's leader knows what questions to ask.

Go forth and *ask good questions*.

References and Further Reading

The following books were instrumental to us in writing this text, and have informed much of our thinking about startups in general.

The Innovator's Solution, Clayton M. Christensen and Michael E. Raynor

The Rules of Work, Richard Templar

Next, Michael Lewis

Start-up Nation, Dan Senor and Saul Singer

Confronting Reality, Larry Bossidy and Ram Charan

Business Model Generation, Alexander Osterwalder and Yves Pigneur

Growing Pains, Eric G. Flamholtz and Yvonne Randle

High-Tech Ventures, C. Gordon Bell with John E. McNamara

Running Lean, Ash Maurya

The Lean Startup, Eric Ries

Four Steps to the Epiphany, Steven Blank

Don't Just Roll the Dice, Neil Davidson

11 Rules for Creating Value in the Social Era, Nilofer Merchant

Measuring the Networked Nonprofit: Using Data to Change the World, Beth Kanter and Katie Delahaye Paine

The Righteous Mind, Jonathan Haidt

Made to Stick, Dan and Chip Heath

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About the Authors

Alistair Croll has been an entrepreneur, author, and public speaker for nearly 20 years. In that time, he's worked on web performance, big data, cloud computing, and startups. Alistair is the chair of O'Reilly's Strata conference, TechWeb's Cloud Connect, and Interop's Enterprise Cloud Summit. In 2001, he co-founded web performance startup Coradiant, and since that time has also helped launch Rednod, CloudOps, Bitcurrent, Year One Labs, the Bitnorth Conference, the International Startup Festival, and several early-stage companies.

This is Alistair's fourth book on analytics, technology, and entrepreneurship. Alistair lives in Montreal, Canada, and tries to mitigate chronic attention deficit disorder by writing about far too many things at *Solve for Interesting* (*http://www.solveforinteresting.com*). You can find him on Twitter as @acroll, or email him at *alistair@solveforinteresting.com*.

Ben Yoskovitz is an entrepreneur with more than 15 years of experience in web businesses. He started his first company in 1996 while completing university. In 2011, he joined GoInstant as VP Product. The company was acquired in September 2012 by Salesforce.com, and he continues in his role with GoInstant and Salesforce.com.

Ben has been blogging since 2006. His *Instigator Blog* (*http://instigatorblog.com*) is recognized as one of the top blogs on startups and entrepreneurship. Ben is also an active mentor to numerous startups and accelerator programs. He regularly speaks at startup conferences and events, including the Michigan Lean Startup Conference, the Internet Marketing Conference,

and the Lean Startup Conference. You can reach him on Twitter as @byosko, or email him at *byosko@gmail.com*.

In 2010, Alistair, Ben, and two other partners co-founded Year One Labs, an early-stage accelerator that provided funding and up to one year of hands-on mentorship to five startups. Year One Labs followed a Lean Startup program, making it the first accelerator to formalize such a structure. Four of those five companies graduated from Year One Labs, and three went on to raise follow-on financing. One of those companies, Localmind, was acquired by Airbnb. A great deal of Alistair and Ben's experience and thinking around Lean Startup and analytics emerged during this time.