Transcript of SRT Files

Hey everyone. Welcome to introduction to user acquisition and growth strategy. I'm Catherine, and I'll be your instructor for this course. Here's a little bit about myself. I've been working in tech for about six years and I've been a product manager for about four years. I've worked on quite a lot of different products. I've worked on web and mobile products, consumer and enterprise-facing products, as well as at both small startups and large tech companies. I enjoy the work that I do because I care a lot about people. One of the things that I love most about being a product manager is that I get to solve business problems with a user-centric approach. When I first started my career in product management, to be honest, user acquisition and growth wasn't my favorite topic. Back then I had a stereotype. I thought growth product managers only care about growing new users and marketing and acquiring these new users, but not really caring about user retention and the actual user experience. I soon realized that I was wrong. A truly effective user acquisition strategy is actually firmly grounded in the user experience. We can't really think of a user's journey as a linear progression where we can separate the acquisition from their retention experience. It's actually a holistic and integrative experience where all parts of their experiences work together to deliver value and help the business grow. In this course, we'll dive deep into user acquisition and growth strategies by taking a user-centric, integrative, and holistic approach. Let's get going. I look forward to sharing this course with you.

Let's go through a high level overview of what we'll cover in this course. The lessons are divided under two themes. The as-is state and the to-be state. We'll start by examining the current growth landscape as-is, and then, we'll discuss how to go from where we are now to where we want to-be, by utilizing growth loops. We'll cover how to create a growth loop, validate a growth loop, and expand a growth loop. Let's zoom in and go through the learning objectives for each of these lessons. To gain a firm understanding of the growth landscape as is, we will talk about how to identify the business goal and product strategy, apply the AARRR framework to analyze growth components, distinguish between primary and secondary metrics, and synthesize key characteristics of the target persona. To work our way towards where we want to-be, we start by creating a growth loop. In this lesson, we'll cover analyzing growth opportunities, building a growth loop, and developing features that enable the loop and outlining hypotheses behind the loop. After the growth loop is created, we'll move on to the lesson on how to run experiments to validate this loop. By the end of this lesson, you'll be able to identify test goals and metrics for the loop, create a test setup and identify the right test audience, analyze potential risks and propose mitigation plans for it, and anticipate test results and propose next steps. In the final lesson, we'll expand the original loop we created by talking about how to analyze potential growth risks and find product-market expansion opportunities, and use those opportunities to expand on the original growth loop. We'll end with making sure that we're aligning the expanded loop with the original business goal.

One of the most rewarding parts of this course is that it is extremely hands-on. Throughout the lessons, you'll learn and practice a ton of growth and acquisition strategy skills in smaller chunks and bytes. At the end of this course, we'll apply all the skills you learned to an actual project. Here's a sneak peek of what this final project is about. In this project, you will assume the role of a Growth Product Manager at Craft Snacks, a hypothetical e-commerce company offering monthly subscriptions of artisan snack boxes. You will create a presentation deck to propose a user acquisition and growth plan that is anchored on the provided business context. In this presentation deck, you will demonstrate your skills to examine the current growth landscape, to create, validate, and expand a growth loop that drives sustainable user acquisition. You will submit this presentation deck as the final project on Udacity. It's also a great project for you to showcase the skills you gained through this course on your professional profile.

The stakeholders you'll work with largely depends on the size and organization structure of the company. However, in general, here's what you might expect. As a product manager, you usually have the more immediate product development team members you work with. These are the engineers who build the product features, the designers who design the user experience. In some larger organizations, depending on the product you work on, you might have dedicated user researchers who talked to an advocate for users' needs, data analysts who assess the magnitude of a problem or assess impact of the features, and product marketers who helped with launching the product and internal, external communication. As a growth product manager, specifically, the cross-functional stakeholders you'll likely work with are brand. We want to make sure that the product message is consistent with the voice of the company, the voice of the brand. There's also marketing. The product strategy and future launch needs to be consistent with the marketing strategy. We also have operations. We need to take into account how a feature might change an existing operational process, and also finance. User acquisition features may influence financial impact and forecasts. One of the most rewarding and challenging parts of being a product manager is you get to work cross-functionally with many experts of different fields and take the lead to facilitate alignment among different team members and move things forward.

You might be wondering why we have growth product management as a discipline of its own. Let's take a quick look at what makes a growth product manager all unique. Growth product management is a specific discipline within product management. Let's focus on the product management part of this role. At a high level, you are expected to do what all product managers do which is to create a focus based on the business school, facilitate alignment among different team members, and lead, manage, and launch impactful product features. What makes growth product management special is that it has an extra focus on helping potential users realize the value of the product faster. It's focused on growing the user base and specifically identifying paths to sustainable growth and profitability. With these growth-oriented goals in mind, in addition to all other product management skills, growth product

managers are often expected to be well-versed specifically in these areas, analyzing growth funnels, segmenting customers, strategizing a growth plan, and running growth experiments. These are all topics that we will be diving deeper into in this course. Also, given that growth product managers are focused specifically on profitability and growing the user base, you can expect that most companies tend to focus on growth after they have identified an initial product market fit. It wouldn't really make sense to focus on user growth or monetization before we've proven the viability of the product or business. Therefore, this is a role that you typically expect to see in startups that are already profitable or medium to large tech companies. Now that you know what this course is all about, let's get started.

Welcome to the lesson on examining the growth landscape. In this lesson, we'll talk about how to identify the business goal and product strategy, analyze growth components using the AARRR framework, identify important growth metrics and create target personas. Now, you might wonder why we're covering these topics in the first lesson and how these topics relate to user acquisition and growth. Here's why. Let's take a step back and zoom out and look at the big picture. Before coming up with a growth strategy or product idea that can drive user acquisition, it's important for our product manager to understand the business landscape as-is. Now, what do we mean by as-is? As is refers to the current state of the business. It helps you understand the existing state of things before you make any changes or improvements and once we have a good understanding of the current state, we can then move towards a to-be state with a clear purpose. What do we mean by to-be? To-be refers to a future state and this is where we hope to head towards as a business through planning and execution. To get to the future to-be, we start with as-is. In order to start with as-is, we want to understand the current landscape, which means in this lesson, we will cover topics on goals, growth components, growth metrics, and personas. Through these four lenses, we'll be able to develop a good understanding of the as-is state, which can then help set us up for success later on when we want to move towards to-be. We'll be able to create, validate, and expand on a growth loop that takes us to the future ideal state. These are the three lessons we'll cover later on in this course. For now, we'll focus on examining the current state so let's zoom back into our current lesson. Here are our objectives; identify the business goal and product strategy, apply the AARRR framework to analyze growth, identify key gross metrics, and synthesize key traits of target personas. Let's go through the lesson outline together real quick. We'll begin by covering the business goal and product strategy because these really are the anchor to the rest of the lesson. It's important to assess the landscape with a clear purpose and path in mind. Then we'll use the AARRR framework, which is a user-centric growth framework to help us establish an understanding of the landscape as-is. This framework is nice because it breaks down the concepts of growth into different components like acquisition, activation, and retention. Next, we will cover growth metrics. Growth metrics is a way to provide measurement of the existing landscape so you understand how things are going right now in quantifiable terms and we'll also talk about primary versus secondary metrics, upstream versus downstream to help you create focus on the metrics that really

matter. Finally, at the end of this lesson, we'll talk about target personas. A solid grasp of target personas is important because it'll help you understand the growth hurdles and the growth opportunities from the user's perspective. Before we start, there's one thing I'd like to share with you. One thing I wish I had known before starting my career in product management is the importance of slowing down, and gaining a full understanding of the current as is state.

In this lesson, let's talk about identifying the business goal and product strategy. First of all, what is a business goal? A business goal is what a business attempts to accomplish in a set period of time. It's important because it creates alignment in a accompany to ensure that efforts from various teams are focused on in the same direction. Now, let's take a look at the structure of a business goal. A business goal has two key components. The first component is, surprise, the goal. It illustrates the direction you want to head towards. The other component is the objective. This is the specific measurable target you intend to achieve. Now, let's take a look at some example business goals. The first example we're going to look at is related to user conversion. Here's what we got. We want to improve our checkout page conversion rate from 30 percent to 50 percent over the next six months. Pause the video for a couple seconds and think about the structure of this business goal, what's the goal and what's the objective? The goal, which illustrates the business direction, is improve our checkout page conversion, and the objective, the specific target we want to achieve for this goal is 30 percent to 50 percent over the next six months. We can say this example business goal is an effective one. It illustrates clearly what the business wants to accomplish by clearly stating the goal and the objective. Now, let's take a look at another business goal. This one is related to user retention. Our goal is to increase the percentage of users signed up with a paid subscription plan. Pause the video for a couple of seconds again and think about the structure of this goal. What is the goal and what is the objective? The goal, which is the business direction, is increase the percentage of users signed up with paid subscription. The objective, however, it's unclear in the statement. There is no numeric target specified in the statement. This actually is a goal that is less effective. We would need to further specify what the objective is by adding in a measurable target into the statement.

In this lesson, let's talk about identifying the product strategy. Now that we've talked about business goals, we can talk about the strategy. What is a product strategy? A product strategy articulates how you plan to achieve the goal. It is important because it creates alignment among teams around the path towards the business goal. When you set a business goal, there are actually multiple potential ways for us to achieve it. We need to align on a specific path. This is where product strategy comes into play. Let's actually spend some time and talk about the difference between business goal and product strategy and how they relate to each other. A business goal focuses on creating alignment around the high-level "WHAT", and based on the goal that we set, we develop products strategies focusing on the high-level "HOW". Also, it's worth noting that to govern the business goal, there usually is a

vision. A vision is what motivates the team member by painting the picture of "WHY". It sets the tone for why we do what we do and why we do things with a particular approach. However, just to contain the scope of this course, we'll keep the vision, the "WHY" in the back of our minds and focus specifically on the business goal, the "WHAT" and the product strategy, the "HOW". Now that we know that the difference between business goal and product strategy, let's walk through an example. Here's what we got, Example 1. We want to retain more of our users, increasing our user retention rate from 12 percent to 20 percent, by making our platform their one-stop shop for all things related to finance management. Now pause the video for a couple of seconds and think about what are the business goal and product strategy in this statement. Remember, a business goal illustrates the high-level "WHAT", and it's composed of a goal and objective. The business goal in this example is to retain users, and the objective we have is to increase user retention rate from 12 percent to 20 percent. The product strategy, which is the "HOW", is around making the platform, the one-stop shop for all things related to finance management. Let's go through another example, example 2. We want to attract more new customers to sign up for our product, aiming to increase our new user sign-up rate from two percent to five percent in the next quarter. We will achieve this goal by investing and creating paid and organic exposures of our service. Now, pause the video for a couple of seconds and think about what are the goal and strategy in this statement. The goal that we have here is we want to attract more new customers to sign up and the objective, the target that we hope to achieve is to increase our new user sign-up rate from two percent to five percent in the next quarter. The product strategy, the "HOW" around this goal, is investing in creating paid and organic exposures of service. Let's tie this all back into the bigger picture. We learned about business goals and product strategy so that we can have a better understanding of the as-is, the current state of the business. We will cover other topics that further explore the current landscape as-is. All of these topics will set us up for success to develop a growth plan that takes us to the ideal, To-Be state.

In this course, we'll be learning a lot of new concepts and skills. The newly learned knowledge is always best retained when we can apply them to a specific context. Throughout this course, for all the lessons, we will be using a single case study to help you apply the skills you learned. The case study is for a hypothetical software product called Next Lodge. It is a vacation house rental platform. It operates as a two-sided online marketplace with owners who rent out houses and guests who rent houses. Since this case study will be referenced throughout the rest of this course, we do have a complete case study prompt prepared for you, and you can download it from the text below. What we did is we extracted the most relevant part of the case study in a prompt. In this section, read through the prompt below and make sure you have a good understanding of the context. As you read the context, see if you can identify the business goal and the product strategy.

The business goal and product strategy for Next Lodge can be identified in the final two

paragraphs in the problem section of the prompt. Let's go through it together. In the prompt, we see that the current business goal is to grow the number of new guest users by 10 percent in the next quarter. In this statement, we see that the goal is grow the number of new guests users. The target objective we're aiming for is by 10 percent in the next quarter. We also see that the product strategy for growing the number of new users is by connecting them, these new users, with high-quality house listing information that is on the platform. This exercise here just serves as a reminder that before we start developing a growth plan, it is important for us to understand the business goal, the what we want to achieve, and the product strategy, how we want to achieve it.

In this section, we're going to use the R framework to analyze growth along the user journey. What is the R framework? What is the AARRR or R framework? The R framework is a growth framework that breaks down business growth by the user journey into different phases. There are five main phases based on this framework. Acquisition, activation, retention, revenue and referral. Each phase represents a part of a user journey, so let's walk through each phase and look at some examples. The acquisition phase refers to ways that potential users discover the product. Think of this phase as ways to expose the product to the right audience. Some examples of acquisition might be using search engine results. By ensuring that your product shows up when users search for relevant keywords you can help potential users discover the product. Another way is social media. By using social media shares you can help other users discover the product that they're social network is using. Another way is to use referral program, so that existing users can invite new users to join the platform. It is basically targeting potential users through word of mouth growth. The activation phase. This refers to efforts to help potential users to realize the product value and become a user. The idea is after a user is exposed to the product we want to be able to show the user the value and encourage them to become a user. Some examples of activation might be a very enticing and strong landing page with testimonials that convince users to sign up for an account on the website or something like a promotional effort offering extra credit or free trial when a user subscribes to a plan. The retention phase. This is the phase where we want to engage and delight users, so they become loyal active users and don't leave the product or platform. Some examples of retention efforts might include building features that encourage actions of engagement. Now, actions of engagement, it depends on what the product is. For example, let's say we have a content-based product, engagement actions would mean showing relevant content, so they come to the product to view the content, offering options for the users to post and contribute to the product or creating a powerful search function, so users are interacting with our product and finding information that they need. The referral phase, this refers to ways for existing users to share the product with others. Now, there's a bit of an overlap between referral and acquisition since referral is an acquisition activity that drive new users to the product. Some examples of referral might be a collaborative tool, might have built-in features to make it easy for you to invite coworkers to join the product. It makes the product more valuable and it drives growth at the same time. Another example could be a

shareable link that allow non users to access the product. It makes sharing easy, so it not only makes the product experience better but it also drives new users to the product which is why we say referral relates to acquisition here. Last but not least, the revenue phase. This is referring to ways that the business generates revenue. This can happen actually during the activation or retention or other phases as well. We'll take a look at some examples. It could be having users sign up for a paid account. The monetization actually happens during the activation phase in this example or it could be charging users a platform fee to unlock more features or capabilities. This is an example where monetization happens during the retention phase or you could also monetize by showing advertisements on the platform to gain revenue. The idea is that the more user traffic you get, the more ad revenue you gain. We've walked through the entire R framework and discussed acquisition, activation, retention, revenue and referral. Let's tie this all back into the bigger picture. The R framework breaks down business growth into these five stages based on the user journey to help analyze the as-is state of the business. By understanding the current landscape as-is, we're setting ourselves up for success to develop a growth plan that takes us to the ideal, to-be state.

In the case study, you're asked to read through the prompt for the hypothetical product Next Lodge, and identify activities associated with the first three phases in the AARRR Framework. Acquisition, activation, and retention. So let's go through each phase and see how Next Lodge is acquiring, activating, and retaining the users. Let's start with acquisition phase. We know from the prompt that all new visitors who come to Next Lodge is landing page. We have acquired them from one of the following channels. Can be online ads, search engine results, or social media sharing. So acquisition refers to any effort that helps the potential user better discover the product. We can identify the efforts on cultivating these three channels as the acquisition effort. Because they're all attempts to expose the product to a wider audience that might become a user. In the activation phase, we're looking for ways to help potential users realize a product value and become a user. In the case of Next Lodge, we identified signing up for an account as an activation effort because it shows that the user has generated enough interest in the product to invest in an account, and there's an opportunity now to further engage them more. In the retention phase, we're looking for efforts to engage to light and help the existing users realize the value of the product and stay on the platform. Actually, all of these activities we listed here can be categorized as retention activities. These are all features meant to retain users on the platform and create more value for them.

In this lesson, we will learn about common growth metrics and see how they map onto the AARRR framework. Let's begin with what are metrics? Metrics are measurable ways to assess how well a business is performing against the set goals. Growth metrics, these are metrics that we identify to measure the growth of the business, and it is usually pretty well aligned with the AARRR framework. In this section, we'll look at some common growth metrics along the user journey using the framework. We'll focus specifically on acquisition, activation, and retention, since that's the main focus of this course. Also, another thing to

keep in mind is that the specific metric you'll be tracking, it largely depends on the product and the business context. The ones that we'll be going over are more generic, common ones that we often see. One of the common acquisition metrics is Lead Generation Rate by Channel. Let's break that down a little bit. A lead refers to a visitor that is successfully routed to the landing page. Channel, there are different channels, like search engines or social media, who we can source these leads. Each channel will have varying effectiveness in driving the users to the product. Lead generation rate by channel, it measures how effective a particular channel is in driving awareness of the product to potential users. Another common metric in the acquisition phase is monthly visitor sessions. This shows the aggregate visitor traffic from the different channels like ads or search engine results. It's basically showing the overall effectiveness of all the channels that we have to expose the product to potential users. Let's take a look at some common activation metrics. One common metric in this phase is conversion rates. This shows the percentage of visitors that converted into a user. It's also showing how well we are helping these potential users realize the value of the product. Customer Acquisition Cost, this is another common activation metric. It helps answer how much do we need to spend to activate a customer? It's related to revenue and activation. The hope is that the amount that the customer purchases or spends over time will actually be higher than the acquisition cost that we spent on them. Let's move on to retention. One of the most common retention metrics many products and companies use is Monthly Active Users. It usually refers to the number of users who interact with the product in a meaningful way. Meaningful interaction, again depends on the product. It could mean booking a reservation, posting content, sharing content. It depends on the context of what the business is situated in. Another common metric at this phase is churn rate. Customer churn rate, it captures the users who have left the product either because they lost interest or maybe they went to a competitor. It is usually a percentage of the users who became inactive or completely opted out of the product within a specific time frame.

There are many metrics that we could look at and it's important to determine the ones that matter. Let's talk about distinguishing the primary metric from the secondary one. A primary metric directly reflects the business goal and it is what we aim to improve. Secondary metrics, on the other hand, are more of a nice to know, and they may have dependencies on or influence the primary metric. Another thing about secondary metrics is that they can be further categorized as upstream or downstream. Upstream, meaning that it is a metric that impacts the primary. A downstream one is one that can be impacted by the primary. Follow along the text below to apply the concept of primary versus secondary and upstream versus downstream in an example.

In the case study, you're asked to review the growth components, and metrics of Next Lodge, and take some time to think through these questions. Where does each metric fall on the AARRR framework? Given the business goal, what is the primary versus secondary metric? Which ones are upstream versus downstream? Similar to before, we'll be focusing

specifically on acquisition, activation, and retention metrics. In the next launch prompt, there are two acquisition metrics. The first one is acquisition channels distribution. The channel shows the different types of ways we're exposing the product to potential users. In the case of Next Lodge, we're using a combo of online ads, search engine results, and organic social media sharing to drive awareness of the product. There's also another one. The other one is monthly new visitor sessions. This shows how well we expose the Next Lodge service to potential users across the three acquisition channels. The monthly new visitor sessions are the result of each channel driving users to the Next Lodge product. In terms of activation, there's also two metrics. New visitor conversion rate, because it measures how well we are converting visitors on the platform into users, and monthly new guests users, because new guest user count directly measures the growth of new users who successfully made a booking on the platform. We also have two retention metrics in this case study, monthly active users, because users who are browsing, searching, and chatting on the platform shows evidence of engagement, and it's a good measure of how well we're keeping our existing users interested. There's also booking conversion rate because a successful booking shows that a vacation rental listing has successfully delighted the user, which resulted in a transaction. Now that we have identified the metrics for acquisition, activation, and retention, let's turn our attention to identifying the primary versus secondary ones based on the business goal. Given that the business goal is to grow the number of new guests users by 10 percent in the next quarter, we can set monthly new guest user as the primary because it directly reflects the number of new guests users. For secondary ones, we've listed the rest of the metrics mentioned in the case study prompt, because they're all somewhat related to the journey of the new guest user, explaining how a user is converted, or capturing their experience after they become a user. We'll go through each of these secondary metrics, and talk about how they relate to the user journey, and why they're relevant. First we have acquisition channels distribution, and new visitor sessions. This show how well we are helping visitors discover the next launch product. We also got new visitor conversion rate, which shows how we are able to convert the visitors into users by having them sign up for an account. Active users as well as booking conversion rate shows once they become users, how engaged they are with the product. Now that we identified the secondary metrics, let's talk about which ones are upstream, and downstream in relation to the primary. To talk about upstream versus downstream, we need to first anchor our attention on their primary metric, which is monthly new guest users. From here on, we can tell whether a metric is upstream, downstream based on whether it is impacting, or impacted by the primary. Acquisition channels distribution. This is upstream in relation to monthly new guests users because the distribution of potential new users we gained from each channel, it directly impacts new visitor sessions, which in turn impacts monthly new guests users. New visitor sessions can impact monthly new guest users since we convert users from visitors, so this is also upstream. Similarly, new visitors conversion rate can impact the primary metric, and therefore it's also upstream. Active users. This one is downstream because the more new guests users we have, the more users we can work on engaging with to become an active user. Booking

conversion rate, it uses monthly active users, which is one that we've already identified as downstream, which means booking conversion rate is also downstream.

In the exercise, you are asked to do three things. One, analyze growth using the AARRR Framework. Two, distinguish between primary and secondary metrics given a business goal, and then three, identify the metrics as upstream or downstream. In the previous exercise, we've actually already identified the growth components associated with each phase in the AARRR framework, as you can see on the slide here. In this exercise, we're going to focus specifically on identifying the growth metrics of the acquisition, activation, and retention phase. Let's start with acquisition. The acquisition metric here is weekly visitors. As we mentioned in the prompt, the business acquires new visitors and exposes the perspective platform, mainly through search engine results. The activation metrics, we have our new user conversion rate and weekly new users. The idea is, after the visitors come to the platform through search engine results, the hope is that we can activate them to sign up for an account. New user conversion rate and weekly new users, they both represent how well we're doing in converting these visitors into users. Weekly active and inactive users are the two retention metrics here. After the visitor become a user, we need to do the work to retain them, which we can measure how well we're doing that based on activity or inactivity. Now that we've identified all the key growth metrics using the AARRR framework, let's talk about which one is the primary one based on the business goal. Given that the business goal is to grow new users by 50 percent by the next half of the year, the primary that best aligns and measures this goal is weekly new users. Weekly new users serves as the best primary metric for this business goal because it directly measures how well we're doing in terms of acquiring new users. Now let's review the other ones and see whether they are upstream or downstream. The ones that we'll be reviewing are these other four metrics in relation to the primary one that we identified. Weekly visitors, it's upstream because the more weekly visitors we have on the platform, the more likely we would gain new users. New user conversion rate. This one it's also upstream because the higher the conversion rate, the more likely would gain more new users. Weekly active and inactive users. These two are both downstream because the more new users we have, the better chance we have to increase our active users. Since now there's a larger user base that we can work on retaining in the first place. Also, at the same time, just as we gain more new users, our goal is to cultivate their experience and ensure as few inactive users as possible. To sum up, given the business goal of growing the number of new users by 50 percent, we've identified weekly new users as the primary, weekly visitors and new user conversion rate as upstream, and weekly active and inactive users as downstream metrics.

In this section, we'll learn how to create target personas by synthesizing key characteristics from large amounts of data, so let's dive in. We'll start with the definition. What is a target persona? It is the description of the key characteristics, needs, and motivation of a typical user segment, and target personas are really important because they help us understand the

landscape AS-IS. The idea is that a product typically has many users of varying needs and backgrounds, and we won't be able to analyze the needs and motivation of each single user in detail. That means we actually need to find a scalable way to capture the typical user needs so that we can take the user's perspective into account when we make business decisions. Now that we understand what target personas are and why they're important, let's talk about how to create target personas. The creation of target personas starts with segmentation, so we want to first segment our users into a couple of different categories. For each category, we're going to develop what the typical user looks like. Target personas, there is many ways to segment them. It depends on the purpose of segmentation, but we'll walk through a couple of common ways of segmentation. It can be done by the user journey, for example, through the AARRR framework. We can categorize users into visitors versus new users versus active user. Another common way of segmentation is to create it based on their motivation and needs. For example, we might segment users based on their usage frequency, like casual users versus power users or based on their purpose of engaging with the product. For example, socializers versus enthusiasts. For this lesson, just as a note, we'll mainly be using predefined target personas as categories to extract high-level takeaways and understand the user perspective. Once we segmented the users, our next step is to synthesize information and form key traits for each persona segment you created. Now there is a three-step process involved here, and we can start by reviewing large diverging data based on analytics or based on user research, and take all of that data and identify common themes from what we're seeing in that data. It's based on those themes that we can converge information and create clear takeaways. Now, out of these three steps, I'd say that Step 2, distilling and extracting common themes is probably one of the most complex, so we'll take a deeper dive on the second step and look at some strategies we can practice to accomplish this. To better distill information into crisp ideas, here are some strategies that we can practice. One is look for repetitive information among the same users, so repetition is key here. Another way is to identify higher-level groups or themes that connects different pieces of ideas or categorizing the feedback based on need or fear versus motivation or purpose. For now, just keep these strategies in mind. In the following quizzes and case study, we'll actually walk through some examples to show you how we can apply these strategies. To connect this lesson of target persona back to the bigger picture, let's zoom out again, and take a look at this view. The target persona is the final piece that is essential for us to understand the current landscape AS-IS. To understand the landscape, we need to have a firm grasp of business goal, product strategy, AARRR frameworks, metrics, and last but not least, the users, and this is where target personas come in.

In the case study, you're given user research that was done for next lodge users, and we'll be using this as an example to show you how we can synthesize key characteristics for each persona. As a reminder, there are three steps to creating target personas which is, taking a look at large diverging data from their identifying common themes, and then based on the themes, we can create clear takeaways. We will focus mostly on the second step, which is

the most complex one; distilling and extracting common themes based on the data that we have. As a reminder strategies to distill these themes include; looking for a repetitive information, finding higher-level groups or themes, and categorizing the feedback and sentiment based on needs or motivation and purpose. In this case study, we already have the three personas that were pre-segmented for you. We've got lodge owners, we've got the potential users, and also the existing lodge guests. We'll be using the user research information, specifically on the lodge owners persona and synthesize the keys traits for this particular persona. We have the main user research findings for lodge owners listed on the right-hand side here which you can see. I'd encourage you to pause the video for a little bit, and see if you can identify any repetitive information, themes or common motivations and fears from the lodge owners. One of the repetitive information that consistently appear in the lodge owner sentiment is that, they all seem to enjoy connecting with the guests. We can see this based on quote saying, "I enjoy adding a personal touch and connecting with my guests, or interacting with travelers in person and showing them the local community is the best part." We can see that that sentiment is shared among a couple lodge owners. Another theme that we can gather based on looking for repetitive information is that, they all seem to highly appreciate feedback. We can observe this based on a couple of them saying, "I have a physical guestbook where my guests leave notes, and I read it all the time, and how it's extremely rewarding when I get feedback from my guests on how much they enjoy their stay." From this, we can tell positive feedback that reinforcement is really important for the lodge owners. Another sentiment that we highlighted for lodge owners, is the additional side income it brings them. We can see that illustrated in one of the users feedback where they're saying, "The extra income is always helpful." To summarize the skills that we're practicing here by looking for repetitive information, finding themes that connects different ideas, and paying attention to the motivation or fear behind a user, we can create a snapshot of what a typical lodge owners like. We can repeat the same strategies for the visitor persona. These are the potential lodge guests that we hope to convert into users. The themes that we identified here based on user research, is that these visitors seem to all find the platform user-friendly and helpful, but they feel a little uncertain about what to expect once they actually show up at one of the vacation house rentals. Another concern they have is, they may not always find next lodge the best-fit in terms of the vacation type and the budget they're looking for. For the current lodge guests who are already actively booking reservations on the platform. We did the same strategies of synthesizing and looking for repetitive information, and we know that the typical user, a typical lodge guest, they generally feel that the site is straightforward to use, and connecting with the host and the local community it's an enjoyable experience, and they find that the content on the site is fun to browse around.

You are asked to synthesize key characteristics of the target persona given a specific business context. Let's walk through an example solution to see how you might synthesize the key traits given the information. There is no right or wrong answers here, but this will give you an idea about how you might do it. In this exercise, we already have three personas that

were pretty segmented. We've got visitors, got active users and inactive users. We'll be using visitors as an example to show you how we can use user research information and synthesize key traits for this persona. You can see we've listed the row user research information we got from the visitors right here in bullets. To synthesize the key traits, we're going to watch out for repetitive information, themes, and also consider the needs and motivation behind this user group. One of the first motivation that emerged as a theme is that many visitors, they seem to express high interest in the content as you can see from these quotes. They're saying that they enjoy the content because there's always something interesting to read, and they get curious about other people's opinion, they find it fun and entertaining. Based on this information, we can list interest in content as a key motivation for visitors. Another common theme that we identified which is more of a fear or a need is that we see many of the visitors feel uncertain about the product by expressing that they're worried about what people might think about their opinion, they're worried that if they post they might get ignored. This is a common need and pain point as you can see on some of these highlighted experts here. From here we can extrapolate that for visitors, finding a sense of belonging and acceptance for them is an important need for them to be able to use this product. To sum that up for visitors, we know that the key traits of this persona is that they are motivated and they're highly interested in the content of the product and it's important for them to feel accepted as part of the community. We can repeat the same strategies for active users. As an example, your answers might be different from mine, but some of the themes that you might identify here are; they are engaged and motivated about answering questions, especially when there's positive reinforcement. Also for them to feel encouraged to respond to other people's posts, it's important for them to feel safe and trust the community. Applying the same strategies for inactive users, some of the themes that we identified here are that the reasons why they aren't using the product anymore is they tend to feel like there's a lot of friction when interacting with the content, they don't feel like they belong, the sense of community is lacking for them, which is a common concern that was shared by the visitors as well.

We've covered a lot of topics in this lesson on examining the growth landscape, so let's review the key ideas. We started by identifying the business goal and product strategy. As a reminder, business goal is composed of a goal and objective showing what the company should be focused on, and the product strategy is trying to align the team around how we plan to achieve the goal. Then we talked about using the AARRR framework to analyze the growth of the business as is. Remember, there's different components that can be broken down based on the user journey, and for this course, we focus specifically on activation, acquisition, and retention. After that, we talked about growth metrics to talk about how we can measure how well we're performing against the business goal. This is where we talked about primary versus secondary, as well as upstream versus downstream metrics. Last but not least, we cover target personas, which is a way for us to capture the key characteristics of a typical user, and that can help us really take the user perspective into account in scalable

ways. It's important to remember that everything we covered in this lesson: business goals, product strategy, AARRR framework, growth metrics, and target persona, are meant to help us gain a solid understanding of the business as is. Before we rush into creating a growth plan, we need to firmly understand the current state of the business. Now we've established a strong foundation of how to examine the business landscape as is. In the next couple of lessons, we'll build upon our foundation of as-is and discuss how to develop growth plans and strategies that move to the ideal to-be state of the business.

Welcome to the lesson on creating a growth loop. In the previous lesson, we examined the growth landscape as-is by covering topics on business goals, on the R framework, growth metrics, and target persona. Now we're ready to move towards the to-be state. In this lesson, we'll talk about creating a growth loop, and later on in this course, we'll talk about how to validate and expand this loop. But for now, let's focus on how to create it. Creating a growth loop is a fun and creative process. It involves growth opportunity analysis, building the growth loop, product features that enable the loop, and hypothesis behind this loop. These are all topics that we will cover in this lesson. By the end of this lesson, you'll be able to: analyze existing growth opportunities, build a growth loop, identify product features that enable the loop, outline hypotheses behind the loop. Let's go through some key concepts we'll cover real quick. We will begin by analyzing existing growth opportunities through the lenses of resources, values, hurdles, and goal. Then we'll go through the step-by-step process of building the loop. In this section, we'll compare the differences between growth funnels and growth loops, and talk about how growth loops offer a relatively more holistic, sustainable, and defensible framework to think about growth. After that, we'll talk about how to brainstorm and prioritize product features based on the impact as well as the effort so that we can identify the most effective product feature to enable the loop. Finally, we'll outline the primary and secondary hypotheses behind the loop in terms of the action we plan on taking and the results and the goal that we expect to achieve. Here's another thing I like to share with you before we start this lesson. One thing I wish I had known early on in my career as a product manager is the importance of failing, learning, and iterating as you go. I used to take failure with heavy self-criticism thinking it's because I haven't done my due diligence to set myself or my team up for success. The bottom line is, we can't shame ourselves into growth, so I started practicing framing failure as knowledge gained. Rather than being afraid to fail, actually consider how we might fail fast so we can learn fast and adjust our approach as we go, which increases the likelihood of something working next time. As you approach this lesson, there might be times when you're building a growth loop and get Cs by self-doubt, I'd encourage you to keep the idea of fail fast and learn fast in your mind. Be bold, pick one approach to try, and think about how you can quickly gain as much learning as possible from this approach.

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iterating, and learning as we go.

To create a growth loop that can help achieve our business goal we start with analyzing the growth opportunities. To analyze the growth opportunities, a good way is to start with this question. How might we leverage existing resources and the value it unlocks to overcome hurdles and achieve our goal? To answer this question, we can break it down into four components. The goal, hurdles, resources, and values. Now let's go through each one. The first component is the goal. What is the business goal we want to achieve? We've already covered business goals in the previous lesson. This is the North Star we want to anchor ourselves to as we develop a growth plan. For example, a business goal might be that we want to grow the number of new users. Once we know the goal, the second component we want to analyze are hurdles. Hurdles can be the frustrations or needs of the user, or weaknesses we identified in the business. We want to ask ourselves, what are the hurdles that we know are blocking us from achieving this goal? An example hurdle that is blocking us from acquiring new users might be that the login is creating too much friction. Now that we know the goal and the hurdles we need to overcome, we'll turn our attention to the resources we have. We need to examine what existing resources we have right now. They can be the users, the competitive advantage in the current market, a technology that distinguishes a product from others. An example might be highly engaged users. After taking stock of all the resources you have, the next step is then to look at values. The value is something that can potentially be further unlocked by the resource. What specific value do these resources unlock? For example, having the resource of many highly engaged users could unlock the value of high-quality user content if we leverage the resources the right way. We've talked about the goal, hurdles, resources, and values, the four key components to analyze growth opportunity. Let's tie it all back together. The idea here is that on one end, we know the goal and we know the hurdles that we need to overcome to achieve the goal. On the other hand, we know the existing resources and the values we currently have. Which brings us to this question of how we leverage our resources and values to overcome the hurdles and achieve the goal. As we brainstorm ideas we'll eventually be able to come up with a hypothesis that somewhat follows this template here. By intentionally unlocking value from existing resources to overcome hurdles, we can achieve the business goal. Let's tie this back to the lesson. We start with analyzing the growth opportunities by looking at our goal, the hurdles, resources, and value. With the key components identified, we can then start brainstorming and creating growth loops that can help us achieve our goal.

Let's continue to use the hypothetical software product, Next Lodge, as a case study to apply this framework and analyze growth opportunities. The question we hope to answer from this four-component framework is, how might we leverage existing resources and the value it unlocks to overcome hurdles and achieve our goal. Let's start with the goal. The Next Lodge business goal, as a reminder, is to grow the number of new guest users by 10 percent in the next quarter. This is the same business goal we identified early on in the previous lesson.

The hurdles, the business weakness that we need to overcome to achieve the goal for Next Lodge is the lack of new user growth. Based on the problem context and the user research in the case study, we know that potential users, these visitors have concerns and frustrations. They feel uncertain about what to expect once they show up. They can feel like Next Lodge is not a good fit in terms of their vacation style and budget. The good news for Next Lodge is that there are actually a lot of good resources that we can leverage. Based on the case study contexts and the user research, we know that in terms of the platform and product, the site is extremely easy to use and it has built a reputation on being the best place for families. We also know that the existing users are pretty engaged. The lodge owners enjoy connecting with guests and are motivated by feedback and the side income they gain from this. The current lodge guests also share that excitement of connecting with the host and the community. They also indicate that they find the content on the site fun to browse around. Values are a further extension of the resources we just identified. It's to ensure we're not just taking each resource at face value. This includes reputation. We have built trust in a very specific market segment already. In terms of platform, we know we have a easy and accessible UI. We also have a social network of owners and active guests to leverage. Within this network, we have highly motivated and engaged lodge owners and guests. Now that the growth opportunity analysis is complete, in the next section, we'll be able to create growth loops by utilizing the value and resources we identified to overcome hurdles and achieve our business goal.

In this exercise, based on the case study of a hypothetical product perspective you're asked to analyze growth opportunities by applying this framework. Your answers might be slightly different from mine, and that's totally fine. This is meant to give you just an idea of how the analysis might be done. Starting again with the goal. The business goal for perspective is to grow the number of new users by 50 percent in the next half of the year. The hurdles we need to overcome to achieve the goal can be found in the concern of the visitors and inactive users. Visitors are concerned about feeling accepted into the community and being kept in the loop on the latest topics. Inactive users, they have trouble trusting the platform. They don't see value in it and they see the sign-up process as a point of friction. Knowing that to achieve the goal of growing new users, we have these hurdles to overcome. They're resource that we can tap into on the prospective platform can be found in its users. For example; the current active users. They're a valuable resource because of their high motivation around answering questions, especially when encouraged. For the visitors, even though they haven't signed up to become a user yet. The fact that they find the content accessible and show high interest in the content is also a valuable resource that we might leverage. With these resources in mind, let's take a look at the potential value they might unlock. One value we might leverage is the social network that active users and visitors have. We might be able to drive awareness of the product to a broader audience with this existing network. Given that perspective is a knowledge sharing platform, unique content data is definitely one of the most valuable assets and the value of the data it can be found in two ways. The questions users

post suggest the topics that are currently trending. That's helpful information to have. The answers and the upvotes also offer a snapshot of the type of answers that are trusted and well-received. One other value is accessibility. Having a mobile app means flexible content consumption. It can be consumed anytime, anywhere. Now that we've analyzed the growth opportunities for perspective, we've created a really good starting point for us to brainstorm how we might leverage existing resources and the value it unlocks to overcome hurdles and achieve our goal. We'll continue building on the work we've done here in the following lessons and exercises.

In this section, we will learn how to create a growth loop that conforms to the key growth loop principle. Let's start by discussing what are Growth Loops. A growth loop is a cycle of actions that sustain each other. It creates a system where the input leads to output that can be reinvested to generate more input, and it can be applied at various scopes. It can be across a broad spectrum or focus on a specific aspect. Let's use a daily life example to explain these three concepts. For example, you can form a healthy living loop that conforms to these three growth loop principles. Right here, we're showing a cycle of actions that sustain each other. Starting from the top, the more you think positively, the more you'll feel better, which likely leads to motivation to exercise regularly and eat better, which in turn helps you think positively. So you see how the input leads to output that is reinvested in a manner that generates more input. A positive reinforcement is created as you cycle through the loop each time. Finally, the healthy living loop conforms to the principles because it can be expanded or narrowed down. We might zoom in on the action of, for example, eat better and be able to form a smaller loop within the step, like this mindful eating loop showing how the more observant we are, the more likely we can be present when eating, more likely to enjoy the food, which creates a mindset that allows us to be more observant all over again. Let's now apply the three growth loop principles to a hypothetical product. We will use a job searching software platform as an example. In this loop, you can see how it illustrates a sustainable cycle of action where after a user creates an account, they're encouraged to connect with more people, which brings them the benefit of connecting two more job opportunities, which then creates motivation for them to invite more of their connections onto the platform, which in turn creates more new users on the platform. In this case, the input is also reinvested in a constructive way that leads to even more input. This is also a growth loop that can be expanded or narrow down. A zoomed out version of this loop might look like this, where it takes not just the job seeker and their connections into account, but it takes the job posting companies into account as well. The new users added connections implies that these companies are more motivated to post on these platforms and recruit from them, which in turn motivates more new users to join the platform. Now that we have a good understanding of the key characteristics of growth loops, let's talk about why it's important. The importance and use case of growth loops is actually best explained when comparing it with the AARRR Framework, we discussed in the previous lesson. Starting with the AARRR Framework, it really is a funnel approach and it's a great tool for analyzing the business landscape as is, to

understand the current state better. Some questions that are best answered with the AARRR Framework are targeted questions like, where are the new customers dropping off? Or questions that assume a linear user journey like, how can we capture or retain more users along each face? Or more short-term temporal questions like, why has there been a decrease in revenue in the past two weeks? Or are we losing a lot of active users? Is there a drop in your user conversion? All of these questions are more centered around the AS-IS state to understand the problem space. Growth loops, on the other hand, are helpful to think about the business growth in its TO-BE state. By framing the growth plan in a cycle of actions, it answers what we want to achieve and how we might get there in a more holistic, sustainable, and defensible manner. For example, it's answering more holistic questions like, how might we engage our current users to drive new users? It's not assuming that the user journey is linear. It also takes into account that the current user behavior might impact new user acquisition. It also takes a more sustainable mindset, since one of the key defining purposes of growth loops, is to figure out how we can re-invest what we have to create more value. Last but not least, it's a defensible growth strategy because the loop is designed so that each time we cycle through the loop, the loop is strengthened and we gain even more momentum. This positive reinforcement makes it more likely for businesses to develop their competitive edge and gain customer loyalty so that they can maintain or even expand market share. Now that we understand what growth loops are and why they're important. In the next section, we'll use next large case study as an example again to talk about how to build growth loops.

Let's walk through the steps of creating a loop, will continue using Next Lodge here as an example. As mentioned before, we will be building on top of the growth opportunity analysis we completed in the previous section. Here's a quick refresher on the goal, the hurdles, resources, and value we identified. There are four basic steps to creating a loop. The steps here actually built on top of the opportunity analysis we did. The four steps are start with a goal and then select one of the more impactful hurdles to overcome. Utilize an existing resource or value to overcome that hurdle. Then finally, link the removal of the hurdle back to the original goal. Let's go through each step one at a time. A good initial mapping point is to start with the business goal, which we've already identified. We know the business goal for Next Lodge is for more visitors to sign up for an account. Next, let's examine the hurdles we identified. As a reminder, the hurdles we identified is that Next Lodge is lacking growth in new users because these visitors are one, uncertain about what to expect and two, they don't really find Next Lodge a good fit in terms of their vacation style and budget. In this case, we identified the first hurdle for visitors often feel uncertain about what to expect once they show up as a more impactful problem to solve since, if we can alleviate their uncertainty, we can potentially gain more new users with the existing product. Whereas if the vacation style is not a good fit, we actually need to develop a brand new offering to attract new users. With this specific hurdle in mind, let's examine the resources and values we have here. Feel free to pause the video for a couple of seconds and think through which of these resources or

values might be leveraged to help alleviate the uncertainty for visitors. Here are some ways we might leverage the resources and values. We understand that the visitors feel uncertain about what to expect. But at the same time, we have very highly motivated and hospitable Lodge owners who are motivated by feedback and we have highly engaged Lodge guests who enjoy connecting with the owners and the community. We can list the people, the existing Lodge owners, and guests we have on the platform as potential resources to help us overcome the hurdle. The final step of building the growth loop is to link the resource hurdle and the goal. In the example of Next Lodge, we can leverage the high engagement of Lodge guests users as a resource and prompt them to share their experiences. This sharing can create a sense of community and trust to help overcome the hurdles new visitors have around not being sure and feeling uncertain about what to expect. When we can reassure these visitors of their uncertainty, we can then encourage them to sign up, which links us back to our original goal of having more new users. With this final step complete, we can then start mapping out our growth loop. When building out a growth loop, again, start with a goal and map out how we can use the identified resource to overcome hurdles and contribute to the business goal. Let's start with the business goal, which is to have more visitors sign up for our Next Lodge account. To reassure these visitors of their uncertainty around what to expect during booking, we can leverage our highly engaged users by asking them to share their experience. These shared experiences hopefully remove visitors uncertainty and encourage them to book a listing and to ensure that we're building up a positive reinforcement. After a user booked and stayed we can encourage them to share their experiences as well, which in turn then creates trust and increased certainty on the platform. We can use these as testimonials to reassure more visitors to sign up to become a user. This is how we create a growth loop. As a refresher on the principle of growth loop, you can see that this loop shows a cycle of actions that sustain each other. It's input, which is user's shared experiences, leads to output, a sense of community and trust that can be reinvested to generate more input, which is more users. We also see that it is holistic because it's taking both new and existing users into account. It's also sustainable because the continued accumulation of these shared experiences continues to generate platform trust which in turns creates defensibility. We've covered a lot of content so far. Let's do a quick summary. We build on top of the growth opportunity analysis we completed earlier and talked about how to build a growth loop. We focused on what growth loops are, why they're important, and how they differ from our framework. In the following lessons, we'll continue to dig into this loop by brainstorming product features that can enable the loop and articulate hypotheses we're forming behind the loop.

You were asked to create a growth loop that conforms to the key principles. Now, let's walk through an example solution. A good initial mapping point is to start with a business goal, which in the case of Perspektive, we know is to increase new users. Now, let's examine the hurdles. Which one of these is the biggest blocker on the path to increasing new users? We identified visitors fear of not being accepted into the community as the biggest hurdle,

because we believe that for a new user to join, they need to feel safe and trust the platform. Based on this selected hurdle, we can now examined the resource and value that might help overcome this hurdle. To help overcome visitors fear of not being accepted, one resource we can leverage is the high motivation and engagement of existing users to facilitate a more welcoming environment. The final step in creating a loop is to link the resource hurdle and the goal together, and this will take a couple of tries in iterations. Let's walk through how we create a growth loop based on the resources, the hurdles, and the goal we identified. Starting with a goal, our goal is to have more new users sign up for accounts with Perspektive. We recognize and remove the hurdle. When new users do engage in the community, we remove their fear of being ignored by notifying an active user to respond to the question the new user asked. We expect that or we hope that with this hurdle being removed, it would result in new users being more reassured and engaged on the platform. Which means they are more likely to share this platform with their friends and invite more new users, which brings us back to the original goal. Now, your growth loop might look different from this, and that's totally fine. But in general, it should show a cycle of action that sustains each other, and demonstrates that the input leads to an output that is reinvested in a way that generates more input.

In this section, you will learn how to identify a key product feature that enables and drives the momentum of the growth loop. When we create a growth loop, we need to put supporting efforts in place along each step of the way to ensure that one step in the loop leads to another. This effort, it could be marketing or operational efforts. For example, commercials or in-person events might drive awareness and reassure visitors of what to expect. However, since this is specifically a product management course, we'll focus on brainstorming specific software features that can enable and drive momentum in the loop. To create a focus for generating product ideas, where along the loop do you feel like the causation needs extra reinforcement? If you think about it, there's actually a couple of points of uncertainty around the loop. After a visitor signs up for an account, how can we ensure that users know what to expect, book with confidence, share their experience, and help contribute to their trust and content on the platform that alleviates visitors' concern? The general theme here is that we need a way to ensure the user's experience with Next Lodge is shared effectively, that results in more trust along each step of the way. Knowing this is the theme, we can then start brainstorming and prioritizing product ideas that can enable and strengthen this loop. A couple quick things to keep in mind for a product feature brainstorming and prioritization. Why do we brainstorm? There are many potential product features to strengthen the links and drive the momentum of the growth loop. However, instead of jumping to a particular solution, it's a good practice to generate as many ideas as possible first. The goal is to cast a wide net. Then once we have all the ideas, you can then prioritize them by assessing each idea's impact and effort against one another. The key for you is to be able to explain why we are working on this feature as opposed to other features. Here are two dimensions for you to help make the case. One is impact. Which product idea do we believe has the biggest impact on the business goal and why? The other one is effort and this is where we work with the

development team to assess the effort, and complexity of each idea and have a conversation around the timeline. In the following case study, we'll use Next Lodge again as an example to brainstorm and prioritize product features.

We've talked about how we can use product features to support each step along the way in the growth loop, especially steps where we feel like the linkage is weak. Now, let's walk through an actual product brainstorm and prioritization exercise. As a reminder, to enable the loop, we need to ensure a user's experience with Next Lodge is shared in an effective manner that results in more trust along each step of the way. How can we ensure users know what to expect, book with confidence, and share their experience to create content and trust for visitors? Let's start with brainstorming. We want to brainstorm potential features to help users know what to expect, book with confidence, and share their experience with other visitors. Here are some potential ideas. We can capture ratings and reviews, and surface them to visitors on the site, so visitors can know what to expect based on what other users experience. Or we can create a share function, so that users can easily post their Next Lodge experience on social media. This can leverage the user's social network, so it can help drive awareness of the Next Lodge brand. Another idea is that we can send email surveys to capture user feedback after their stay. It's another channel for users to share about their experience. Among these three ideas, which one should we prioritize? Among these ideas brainstormed, we've decided to prioritize capturing ratings and reviews, and surface them to visitors on the site. Why? Let's go through the exercise of impact assessment. We suspect it would be most impactful because it creates transparency and trust. Users are more likely to trust other users who have the experience. We also know creating trust. It's one of the biggest hurdles we need to overcome. Whereas, if we go with sharing on a third party social media site, while it is leveraging user's social network, their network may not be an audience that is less likely to convert as the visitors who are already on the platform. The other idea, email surveys, it's an effective way to gather feedback to improve the product, but it's probably not the most effective way to create a sense of community. Let's tie what we've covered in this lesson back to the bigger picture. In the previous lessons, we analyzed growth opportunities and to use the opportunities we identified to build a loop. In this lesson, we focus specifically on product features that enable the loop by identifying weak links, and brainstorming, and prioritizing product features that can enable the loop. We can ensure that each action leads to the next. In the next lesson, we will articulate hypothesis we're forming behind the loop. Also a reminder, we're covering all these topics, so that we can create a growth loop that drives the business towards the goal.

Let's walk through an example solution to see how this exercise might be tackled. You were asked to come up with a key product feature that enables and drives the momentum of the growth loop for a prospective. Let's review the perspective loop together real quick before we dive into brainstorming. The loop starts with the goal of having more new users sign up for an account. We aim to ensure these users are not ignored when they ask your first question. By

having an active user respond to the new users question, we expect the user who receive the response to feel encouraged and then hopefully develop the motivation to invite more users to join the platform, which then leads back to the goal of attracting more new users onto the platform. Now, your loop might look different from this one and that's totally fine. We will be using this loop as an example to brainstorm and prioritize features, just to show you how to think about and approach these problems. What are some product features that might enable or drive momentum in this loop? We'll start by casting a wide net and jot down as many ideas as possible. For example, we might create a more active onboarding user experience for new users, encouraging them to ask a question on the platform. Or we can do something like show a positive encouragement banner after they post their first question and that would reassure them that they would receive a response. Or we could route the question to an active user to prompt a response and that would encourage a higher response rate for new user's questions specifically. Or we can reward users when they invite friends or experts they know of to join the platform. As we brainstorm, you can see that there are many possible ideas, and each idea addresses a slightly different part of the loop. We'll now need to prioritize which idea to pursue based on the impact. The key question is, which one of these ideas would move the needle the most for this loop? The feature we prioritized is when a new user asks the question, route it to an active user and notify them to respond. Here's our rationale. By ensuring new users would likely be responded to when they asked their first question, it ensures that they feel a sense of inclusion right away. We also know that users are more likely to give back when others answer their questions, which means we're creating a positive reinforcement of like, "Oh, okay, so other people answering my questions. So I'd like to pay it forward." The reason why we didn't think the other features would have as much impact is, while a banner or an onboarding experience might encourage new users to post a question, it doesn't really offer a concrete reward like having their questions responded to. While rewarding users for inviting others to join the platform, it might temporarily drive some new users. It's not really a sustainable investment, since ideally, we want the users to feel intrinsically motivated to invite others due to some value that they gain on the product. Based on the impact, we've prioritized the feature of routing and notifying a user to respond to a new user's question. You can see that the specific link this feature is reinforcing is right here, between Step 2 and 3 on the loop.

In this lesson, we will learn how to outline the primary and secondary hypothesis behind the growth loop. One important concept to keep in mind about growth loops is that all proposed growth loops before validation happens are hypothesis. Even though the loop is created based on the growth opportunity analysis, which is aligned with the business goal and takes the current state of the business into account, it is still a proposal, an educated guess, that needs to be validated and learned from. And when we say the loop is a hypothesis, we are actually referring to two different levels. The first level is the primary hypothesis. The entire growth loop is a plan that we devised, but before we validate it, it should be treated as a hypothesis. On another level, we also have secondary hypothesis, and this is referring to

each specific link in the loop. Not only is the entire growth loop a hypothesis, but we also treat the causation link between each step in the growth loop as a hypothesis as well. Let's talk about how we can articulate the primary and secondary hypothesis based on the loop. To create a primary hypothesis, let's break down the three components of a growth loop. There's the action, which is the product effort that we expect to enable and drive momentum in the loop. There's also the result, which is the assumed outcome of the product feature. And we have the goal. The goal for the growth loop is the business goal that we attempt to achieve. Once we identify these three components, the primary hypothesis can then be formed following a template like this. In this growth loop, we are assuming this action leads to this result, which contributes to the goal. So for now, keep these three components and this template in mind. And in the following case study, we'll walk through an actual example of how to create a primary hypothesis. Secondary hypothesis describe the assumption we're making between each step. So in other words, each secondary hypothesis describes what needs to be true for step A to lead to step B. And similarly, what needs to be true for step B to lead to step C? And as I said before, in the next section, we'll be using the next logic growth loop as an example to walk through how to create primary and secondary hypothesis.

All right. Let's outline the primary and secondary hypotheses behind the growth loop up Next Lodge. For a quick refresher of the specific steps in Next Lodge, you can refer to the image below. To create a primary hypothesis, take some time and consider; what is the action result and goal in this growth loop. As a reminder, action is the product effort that we expect to enable and drive momentum in the loop. Results, is the assumed outcome of the product feature. The goal is the business goal we attempt to achieve. Feel free to pause the video for a bit to analyze these three components. In the Next Lodge growth loop, the action is capturing and surfacing user ratings and reviews to visitors. The result, the assumed outcome of this effort, is more transparent and trustworthy platform that can help remove the sense of uncertainty and anxiety. The goal that we hope to achieve with this growth loop is to attract more visitors to sign up and become a user on Next Lodge. Based on these three components, let's use the template to articulate their primary hypothesis. Quick reminder on the template for the primary hypothesis, it is an action that leads to a result which contributes to the goal. The primary hypothesis for Next Lodge is, by capturing and surfacing user ratings and reviews after their stay. We can create a more transparent and trustworthy platform that can help remove the sense of uncertainty and anxiety of visitors, and attract more of them to sign up to become new users on the Next Lodge platform. A primary hypothesis is meant to show the assumption behind the entire loop, so you can see how it incorporates the business goal we identified in the beginning, the hurdle we want to remove to achieve the goal, and the product effort we prioritized. Now, let's talk about how we can articulate secondary hypotheses using this growth loop as an example. A reminder, secondary hypotheses are the ones that describe the assumption we're making between each step. Let's start by looking at the link from step 1 to step 2. The hypothesis here is that after visitors sign up for an account, they would be motivated to browse Lodge listings and know what to expect. The link between

step 1 and step 2 is a hypothesis because only if the users take the action of browsing listings, do we have a chance to show them what to expect? Going from step 2 to step 3, the hypothesis here is that the reviews and ratings from other users would remove concerns and uncertainty, and convert more users to book a listing. It's worth noting that only when a booking action happened, can we say that the visitors concern is effectively removed, and that step 2 leads to step 3. Moving on to step 3, to step 4. First I make the case that step 3 leads to step 4. Users need to actually have a good experience and be willing to leave a review after their stay. Moving on to step 4, to step 5. The hypothesis between these two steps is that seeing reviews and ratings from other users would create trust and lead to more visitors signing up for an account with Next Lodge. Again, only when we see more visitors signing up as a result of seeing the reviews and ratings, can we prove that there is a causation here. To summarize, you can see the primary and secondary hypotheses we articulated for this growth loop here. The primary one addresses the hypothesis behind the entire loop, while the secondary one addresses the hypothesis between each step of the loop. Let's zoom back and take a look at how this lesson relates to the bigger picture. We started off this lesson by analyzing growth opportunities and using the opportunities we identified to build a loop, and prioritizing a product feature that we believe can drive momentum in this loop. In this section, we took a step back to look at the loop and the links between each step and took a more critical assessment of them. We build this loop to the best of our knowledge, but before validating it, the loop and each step within it is a hypothesis. We learned how to articulate the hypotheses behind the loop just so that we are aware of the causations we expect to happen. In the next lesson, we'll talk about how to use the hypotheses we create to validate this loop.

Let's walk through some potential hypotheses you might form for the entire loop and between each step of the loop for Perspektive. Again, the answers here largely depend on the growth loop you created. There is no one-size-fits-all answer here. As a reminder, this is the Perspektive growth loop that we will use to articulate the primary and secondary hypotheses. Feel free to pause the video here for a bit and identify the action, results, and goal in this loop, and use the three components you identified to create a primary hypothesis. Here's what an example primary hypothesis might look like. Routing and notifying an existing active user to respond to a first-time new user's question would help drive organic word of mouth growth, which helps drive new users onto the platform. Now, let's break down the key components in this primary hypothesis. Routing and notifying an existing active user to respond. This is the action, this part focuses on the effort that we expect to drive momentum and enable the loop. Drive organic word of mouth growth. This is the result. This outlines the assumed outcome of the product feature of the effort of routing and notifying active users to respond. Drive new users onto the platform. This is the goal. The ultimate business goal is to grow the number of new users by 50 percent in the next half of the year. The primary hypothesis must bring this statement back to the original goal. Let's turn our attention to the secondary hypotheses. As mentioned in the exercise guiding steps, for secondary

hypotheses, we need to look at what needs to be true for one step to lead to another. Take another look at this growth loop again. Feel free to pause the video for a bit and think about, what is the hypothesis between each step? Let's start from step 1 to step 2. The hypothesis between these two steps is that new users would be willing to give the first try and ask questions. Moving on to step 2 and step 3. The hypothesis here is that active users, when we invite them to respond, would be willing to respond and resulting in a short turnaround time in their response. From step 3 to step 4, for this causation to be true, the hypothesis is that new users would develop a sense of trust and positive associations with the Perspektive platform when their first question is being answered. From step 4 to step 5, our hypothesis here is that new users who had these positive associations would be more likely to invite others to join their platform. To sum up, you can see the primary and secondary hypotheses we outlined for this growth loop all on this slide.

Welcome to the lesson on validating a growth loop. We're going to take a look at the big picture to see where we were and where we're going next. In the first lesson, we examined the growth landscape as is. After that, we moved on to the to-be state and talked about how to create a growth loop. In this lesson, we'll focus on validating the loop and later on talk about how to expand it. Validating a growth loop involves four main topics: Test goals and metrics, test audience and setup, risk and mitigation, and results and analysis. By the end of this lesson, you'll be able to identify test goals and metrics, identify test audience and create a test setup, identify test risks and form mitigation plans around it, and also anticipate results and propose follow-up analysis as well. Some key concepts we'll cover in this lesson include the test goals and the metrics. These are actually reframed from the hypotheses we formed based on the growth loop. Setting up a test with clear goals and metrics helps us answer, are we able to achieve the goal with this proposed loop? Based on the test goals, we can decide that test audience and actually set up an AB test that helps us validate our growth hypothesis. We will cover how to set up control and variant groups to form our test. With any test setup and goal, there are always things that might go wrong. Thinking through the potential risks and how we might mitigate them can ensure that we are setting things up holistically. The test results inform whether the growth loop we proposed is a validated statement or is a hypothesis that is yet to be proven. Based on these results, we will devise different analyses and next steps.

One more thing before we start. One thing I wish I had known when approaching tests and validation exercises, in general, is the importance of balancing rigor with open-mindedness. As we validate our growth hypothesis, it's important for us to stay focused on the goal, apply rigor to the test setup, and be as scientific as our resources allow. However, once the test is setup, it's important for us to keep an open mind and observe the results. We might have personal preferences or subjective opinions about what the test results would be, or what we hope it would be. But it's important to remember that we are running the test because we want to validate our intuitions. Which means that we need to be mentally prepared, that we

might be proven right or wrong.

In this section, you'll learn how to re-frame the growth hypothesis as testing goals and identify metrics associated with each goal. We ended our previous lesson emphasizing that a growth loop before it's been validated is at best a hypothesis. We need to create a test that answers this question. Are we able to achieve the business goal with this proposed loop? That's why the main focus of this lesson is on, how do we create a test that effectively assesses the validity of the growth loop? Similar to how we have primary and secondary hypotheses based on the growth loop, when aiming to validate the loop, we also have primary and secondary test goals. The primary test goal is re-framed from the primary hypothesis and it ensures alignment with the growth loop and the business goal. How do we create our primary test goal? The primary metric is the indicator that we look at to answer the question we set in the test goal. Given that the growth loop is developed with the business goal in mind, the primary metric is usually aligned with the business goal.

Similar to the primary test goal, the secondary test goals are also reframed from the secondary hypotheses to ensure alignment with the growth loop. The main difference is that while the primary test goal aims to validate the entire loop, the secondary hypotheses aim to validate the link between two specific steps in the loop. The most critical components we need to identify here are the action and results between each step. A secondary test goal can then be formed based on this question; does the action lead to the result? It's important to be really selective about the secondary hypotheses to focus on because there are multiple links in the loop, so we want to make sure that we're focusing our efforts on where we have the biggest uncertainty and see how the test can help us learn. For secondary test goals, we also have test metrics, which are measurable units to assess whether the secondary hypotheses are true.

Let's create primary and secondary task goals and metrics using the Next Lodge case study again. Here's a quick refresh of the Next Lodge growth loop. We want more visitors to sign up for a Next Lodge account and when they sign up, we'll let these users know what they can expect. Hopefully, they book with confidence and then have an enjoyable stay, which leads them to leaving reviews and ratings that in turn attracts more visitors to sign up to become users. As a refresher this is the primary hypothesis we formed based on these components. We know that we can break down the hypothesis into three components. There's the action which is: allow lodge guest users to leave ratings and reviews after their stay. We've got the result: more transparent and trustworthy platform that can help remove the sense of uncertainty and anxiety. We have the goal: attract more new users onto the Next Lodge platform. From these components, we can form our primary task goal by asking, does the action lead to this result, which contributes to the goal? The primary test goal which we have for Next Lodge is as follows. Does capturing ratings and reviews and surfacing them to visitors removes uncertainty for visitors, which leads to more users on the platform? This is

the key question we need to validate for this growth loop. The primary metric, which is the unit of measurement that we'll be using to monitor and answer this test goal, it needs to be aligned with the business goal. We have monitoring the monthly new guest users, which is the number of guests users that sign up for an account on Next Lodge. Based on this number, we will be able to validate whether the review and rating feature had the impact we expected. Let's turn our attention to secondary test goals and metrics, which we derive from the secondary hypothesis. As a refresher, here are all the secondary hypothesis. Now, remember, we want to focus on setting secondary test goals focusing on specifically places where we are most uncertain about. Let's go through each one to assess our confidence level. For hypothesis A, we decided that the uncertainty is low. We already know from many other software products that reviews and ratings are highly sought-after content. The assumption here seems more like a common practice that I personally wouldn't really prioritize as a risky hypothesis. For hypothesis B, we also label this one as low uncertainty. This also seems like a standard and proven successful practice to use reviews and ratings to gain trust from users. Now, for hypothesis C, we actually labeled this one as high uncertainty. Asking users to produce a review proactively is actually quite a tall ask because it takes a lot of effort to produce high-quality review content. We also labeled hypothesis D as high uncertainty as well. This is also a more risky assumption. While seeing reviews and ratings might lead to more trust, it doesn't necessarily translate to conversion on account sign-ups. Knowing hypotheses C and D are where we feel the need to focus on validating more, we can formulate secondary test goals by asking, does the action lead to the result and identify secondary metrics to assess whether these secondary hypotheses are true? Let's reframe hypothesis C. Our first secondary test goal based on this hypothesis is, does allowing users to leave a rating after they completed their stay lead to an actual review and or rating? The corresponding metric we identify to help answer this question is the percentage of reviews and ratings. Once we allow users to leave reviews and ratings, tracking this metric will help us know how likely it is helping out with our goal. Now let's reframe hypothesis D. Are secondary test goals based on these hypotheses? Does collecting reviews and ratings as part of house listing information lead to more visitors signing up for an account with Next Lodge and place a booking? A secondary metric that can help us answer this question is the percentage of visitors that converted with and without seeing reviews. By comparing the number of successful user conversions based on whether they are able to see the reviews, we can gauge how big of a factor surfacing reviews played a part in converting visitors to sign up.

You are asked to reframe hypothesis as test goals and identify metrics associated with each goal. As a reminder, your solution might look very different from what I'm sharing here and that's again, totally fine. This walk through is meant to give you an example solution to see how this exercise might be tackled. The primary test goal is based on the primary hypothesis formed around the entire loop. Let's use this primary hypothesis as an example. Notifying an existing active user to respond to a first time new user's question would drive organic word of

mouth growth which drives new users onto the platform. We can break down this hypothesis into three components. Again, there's the action; notifying an existing active user to respond to a first time new user's question. There's the result; drive organic word of mouth growth and we have the goal; drive new users onto the platform. By following the test goal template, does the action lead to this result which contributes to the goal? Our primary test goal is; does notifying active users to respond to a new user's question help drive more new users onto the platform? With this test goal in mind the primary metric is number of weekly new users. The idea is that with the business goal in mind we want to increase the number of new users. The primary metric we're monitoring is whether our effort of notifying active users ultimately lead to the goal of more weekly new users on the platform. When deciding secondary task goals which is refrained from secondary hypothesis it's important to examine the links on the loop, be selective and prioritize your efforts on the links with the biggest uncertainty. Feel free to pause the video here for a couple of seconds and consider which of these links on this growth loop you might prioritize based on your uncertainty. Using the same growth loop example, here are the four secondary hypotheses we walked through in the previous solution. Take a moment and reflect which of these hypothesis would you focus on as your secondary test goals and why? As an example, the link that I'd like to focus on as our secondary task goals are C and D; new user's sense of trust and positive associations with the Perspective platform would increase after their first question is being answered and new users who had these positive associations of their questions being answered would be more likely to invite others to join the platform. The reason is that whether or not new users having experienced a response would lead them to having a more positive experience feels like a large unknown. It might be a positive experience or even a negative experience depending on the response they get. I'm also not so certain if new users having experienced a response would necessarily lead them to proactively invite others to join. Having a good experience doesn't mean it prompts the action to invite others. Having identified the hypothesis we'd like to focus on, let's articulate our secondary task goal and metric. In hypothesis C, we can identify the action and the result and form the test goal by asking if the action leads to the result. Here is what we got. Do new users who experienced having their first question answered promptly, develop a more positive association with the perspective platform? To measure whether this is true or not we can set the percentage of weekly active users as a metric. The reason why we're looking at active users is because we defined positive associations based on user's actions on the platform. If they are taking meaningful actions on the platform like interacting with posts, uploading them or creating new posts themselves we'd actually see an increase in weekly active users and would assume a positive association has taken place. For hypothesis D we also start by identifying the action and the result from which we can form our other secondary task goal. Are users more likely to invite others to join the perspective platform if they had the experience of having their first question answered promptly? We can measure and answer this question by looking at the number of invites per user based on whether or not they had that experience. The idea here is that if users who had a positive experience are inviting more people on the platform, we can then determine that there might

be a correlation between positive first-time experiences and inviting others.

Based on the test goals, we need to identify the proper test audience and setup a plan so we can execute the test in a way that effectively validates whether the growth loop achieves the business goal. There are many different types of test setup strategies. But for this course, we'll focus on how we can use A/B testing to validate our primary hypothesis. What is A/B testing and how do we use it? A/B test is an experiment we run between two user experience variants, or sometimes even more variants to see which one performs the best based on the primary metric we set. It is a common practice to set up test groups A and B as control versus variant groups. Control refers to the original experience that users encounter. Variant refers to the new experience that we want to test out and measure the impact on. When do we use A/B tests? A/B test is a good way to measure the impact of a specific change when there's only a single difference between the control and variant group. It's also worth noting that even though there might be multiple elements involved in a product feature, in an A/B test we can only compare the difference as a whole between control group A and variant group B. It cannot test the individual elements that consist of the change. Let's walk through an example. We might want to A/B test the impact of a ratings and review feature. Control group A would be the original experience without the rating and review feature. Control group B is the new experience where we add on the rating and review future. In this test, we will only be able to tell how ratings and reviews together impact the user experience or business. We won't be able to isolate ratings on its own, for example, and tell how ratings specifically impacted their experience. The test audience selection is important because the user you include in the test needs to effectively answer the test goals. The selected audience also impacts how long it might take to test, which influences how quickly you can gain learnings and iterate on the growth loop. For the sake of this exercise, let's focus on selecting a test audience that most effectively answers the test goal and not worry about the testing timeline for now. Here are some things to consider when deciding on the test audience. Who are the users that we are looking to gain learnings from? What type of experience change are we looking to learn and validate from these users? Does the test audience needs to be further expanded or narrowed down and how would that impact the test? In the next section, we'll use the case study of [inaudible] again to create a test setup and select a test audience.

Let's set up the test and identify the test audience, based on the next lodge growth loop. As a reminder, here are the primary task goals and metrics we set to validate the loop. The main question we want to figure out from the test is, does capturing ratings and reviews and surfacing them to visitors, remove uncertainty for visitors, which lead to more of them signing up as users on the platform? The primary metric we're aiming to improve is monthly new guest users. Given the primary test goal and metric, we know that the main test audience we should focus on is, visitors. We want to know if surfacing reviews and ratings, reassures these visitors in a way that leads to more of them converting to become new users. We didn't focus on existing users because the primary goal and metrics are focused on how well we

can convert visitors into users. There might be other specific benefits we can gain from an existing user's perspective. But that would deviate away from the main purpose of our test goal. Now let's take a look at test setup. In terms of the AB test setup, we would divide all the unique visitors that come to the platform into these two groups. There's the control group, which would be 50 percent of the visitors and they would have the current experience. They cannot view the reviews and ratings of the lodge listings. Also the variant group. This would be the other 50 percent of visitors that can view the reviews and ratings of the lodge listings. This setup enables us to answer their primary test goal. If the variant group has more new users that converted from visitors to new users, we wouldn't know that our hypothesis is true.

You are asked to design a test setup that includes the appropriate test set audience and a test plan that validates the hypotheses. Let's walk through an example solution. We'll continue to build upon the primary test goal we set for the perspective growth loop, which is, does notifying active users to respond to a new user's question help drive more new users onto the platform? We will answer this question by monitoring the number of weekly new users. Given the test goal, the test audience we identified is all new users who signed up within a week for a perspective account. The rationale here is that all new users who signed up in the past week, they're still relatively fresh and we can test their response to see if they behave as expected. When their initial question got a response, do they respond by being more likely to invite their friends? For test setup, we're setting up the AB test with a control group, which means there's no changes to this new user's experience. Their first question may or may not have a response from an active user. For the variant group, we would turn on the feature to encourage active users to respond to these new users' first question and ensure they get a response. This allows us to validate the impact this feature has on the users, compared to when the feature is not present.

In this section, you'll learn how to analyze the potential faulty assumptions and propose risk mitigation plans for the test. With any test setup and goal, there are always things that might go wrong. It's a good practice for us to think about the potential risks and how we might mitigate them. Here are some questions to help get you started. In what ways might the users behave in an unanticipated manner? For example, a feature that improves the relevance of the ads based on the user's behavior, it might generate a feeling of uneasiness. The users might be uncomfortable with how well the product knows about them. How might the product feature do harm to the user experience? For example, we might develop a review or comment feature with the good intent of facilitating a sense of community. But with this feature, it might invite both positive as well as negative posts, which may be detrimental to the user's experience. What might go wrong based on the selected tests audience and setup? One example is that we're looking to improve specifically a brand new users experience and we might not have enough new users to gain learnings quickly. When brainstorming mitigation plans, consider the following approaches. They can be based on how you're designing the product feature. For example, if we're worried that a feature might

make users uneasy, we might design a feature with an additional disclaimer text or an opt-out function, gaining user testing feedback upfront. If we're concerned about how users might react to a feature, we can always put the design mocks in front of a smaller user group, engage their reaction before developing and testing it. Additional metrics to monitor while running the test. For example, to demystify how a feature might impact the user or the business, we may identify secondary metrics to monitor or use surveys to ask for user input. Potential follow-up actions you might take after you gain learnings from the test. After the first test, based on the learnings we gained, we can adjust the feature and run another test to see if we see any different results. When testing the validity of the growth loop, it's important to consider risks and develop mitigation plans against it. In the next section, we'll use the case study on next Lodge to identify potential risks and develop plans.

In the test that we created for the Next Lodge growth loop, there are some potential risks to consider. Here are some examples. Lodge guests leaving negative reviews and ratings, further driving visitors away. We were thinking of just the happy path scenario, where positive reviews and ratings can help reassure visitors but the opposite could happen too. Lodge guests refusing to leave reviews or finding it a frictional experience to leave reviews or ratings. This is also a potential risk. In trying to reassure visitors, will we be making the existing users experience worse, and Lodge owners getting upset or seeing it as unfair when they get negative reviews? This is a potential risk that we get by making the platform more transparent. For each potential risk that we listed, here's what a mitigation plan might look like. We're trying to make the platform more transparent, which means both negative and positive reviews would be present. It probably doesn't make sense to suppress negative reviews in this first experiment, but we can plan to monitor it and audit the reviews so we understand the general sentiments and their impact. Then based on the impact, we can then assess next steps. We might want to give Lodge owners a chance to offer their perspective, or when possible, we can highlight positive reviews over negative ones. To ensure that we're not creating a frictional experience, we can make sure to user-test the review and rating user experience with users ahead of time when designing the feature. That way, if something is confusing, we can catch it early on. To help mitigate the potential of Lodge owners being surprised or upset about this new feature, we can proactively communicate with Lodge owners and let them know we're running an experiment to learn about its impact and allow them to choose to opt in or opt out of it. That way, they have some choice involved in the process.

You are asked to analyze the potential faulty assumptions and propose a risk mitigation plan for the perspective growth loop test. Let's walk through an example solution to see how this exercise might be tackled. Again, the risk and mitigation plan you have largely depends on your test goal and setup which means it would differ from the solution here. However, this example solution can give you an idea on different aspects of what might go wrong and how we might prevent it or mitigate it. One potential risk is new users may not take the initiative to

ask the first question making it so that the loop has weak momentum from the very beginning. This means we won't have a chance to assure them that the community is friendly and that they are accepted. To mitigate this risk we can plan on building product features and the onboarding process, prompting new users to ask their first question. This can be a separate experience that we test and optimize. We called out a risk here but have determined that it is a risk that we can address as a follow-up separate product feature. This test would help us learn whether or not our worry here is actually valid. Another potential risk is active users might not respond positively. Their response time might be slow. Their response content might not be as helpful and they even might find it annoying. This is a valid concern and a tough one to handle, so as a mitigation plan, when building the feature to invite active users to respond we can account for the quality of this response by taking into account these concerns. To ensure a timely response we can plan on inviting multiple active users to respond to help mitigate the turnaround time. To ensure that the response is relevant and has actually good content quality we can match new users question with the active users that have already received tons of upvotes in a specific area. This can help ensure that it's from an expert or a trusted response. The final mitigation effort is that we can pay attention to the tone of the language we use. We can set a positive tone when inviting active users to respond. For example, saying things like, we've identified you as an expert and would love your input. This is a risk that actually relates to the product feature we plan on building which means we can help mitigate the risk by considering how we want to design the product feature.

In this section, you'll learn how to evaluate anticipated test results and propose actionable next steps. The test results are what informs whether the growth loop we proposed is a validated statement, or a hypothesis that is yet to be proven, which then informs whether we can continue to proceed on with a growth loop, or if we need to go back and tweak our plan. In a real life test, you would have actual test results and data to analyze and gain learnings. Since we are using a hypothetical business case study, we can anticipate test results and use that to practice the skills of evaluating tests results and next steps. Being able to anticipate different tests results is an important step, even when we do run an actual test, because it provides an opportunity for you to clearly articulate what you hope to see in terms of user behavior changes and impact on the primary metric, compare your subjective perspective to the actual test data, which helps gut check your intuitive decision-making. The post-test analysis is just as important as the test setup because it ensures you are learning from the test to validate the hypothesis, better understand user behavior, which sets you up for a successful next step. Depending on the test results, some follow-up next steps might be; additional analysis or metrics to look at, product features that might be promising to explore, follow-up test to run. We will use next slide as an example to walk through how to anticipate test results and propose next steps in the next section.

Let's use the next launch test we created to walk through a happy path test results scenario.

Let's say the test succeeds in the sense that the primary hypothesis is proven true and the primary metric is trending in the right direction. What that might mean in terms of validating the growth loop is, we've proven that by allowing logic guests users to leave ratings and reviews after their stay. We can create a more transparent and trustworthy platform that can help remove the sense of uncertainty and anxiety and attract more new users onto next Lodge. That would also mean that we have observed a meaningful increase in our primary metric monthly and new guest users. In this section, we'll anticipate user behaviors we might observe along each step in the loop. If the test turns out successful, what I anticipate is that user behaviors would reflect the high and low risk steps that we've identified before, in the risk and mitigation section. As a reminder, the two steps that we identified as low uncertainty are, visitors would be motivated to browse listings after sign-up, and the reviews and ratings would remove concerns and convert more visitors to sign up. The [inaudible] steps seem like common user behaviors of many digital products. Thus, we anticipate users to behave accordingly. We've also identified another two steps where we feel like the user behavior there is more uncertain, meaning, we're not sure if users would actually behave in this way. We might anticipate these following behaviors. Users who completed their stay at one of the lodges might not be willing to leave a review or a rating. Seeing reviews and ratings from other users might not be creating enough trust to lead to more visitors signing up for an account. Assuming a final results of this test reflect the user behavior, we anticipate it here, what are some follow-up next steps that can leverage this learning and move the project forward. One follow-up analysis that would be helpful is, to understand the distribution of one star ratings versus four or five star ratings. We better understand whether we're generating positive or negative sediment on the platform. If we can associate specific listing attributes or experiences with lower and high star ratings from there, we can discover opportunities to create better experiences for users and hopefully attract more users onto the platform. In terms of the more negative user behavior results we're anticipating. We have two product ideas to help address that. One idea is to experiment with a different review or rating user experience. Given that we're concerned that users might not be willing to leave a review and a rating, a different and more optimized user experience might encourage more reviews. Another idea is to highlight listings with positive reviews and ratings. Since we're anticipating as a test result, that these reviews might not create enough trust and lead to more visitors signing up for an account, highlighting specifically positive reviews might give us a better chance of converting visitors to users. With these two product ideas in mind, a follow up test we might consider is, surfacing only reviews with high ratings and assess the impact it has on increasing visitors signing up for a user account.

You were asked to anticipate test results and propose actionable next steps. So let's walk through an example and see how this exercise might be tackled. We continue to expect not a one size fits all answer here. We'll focus on some general principles and thought process for analyzing test results and proposing next steps. In terms of anticipating the test results, we're assuming that the experiment succeeds. In this scenario, if the test succeeds, we expect to

see a meaningful increase in visitors sign-up driven by the invites sent. Our hypothesis of does notify active users to respond to new users question help drive more new users onto the platform would be proven true. In terms of what we expect in user behavior, we expect to see strong conversion in these steps in the growth loop. Active users responding to invites to answer question. Given the already high motivation of the active users, we feel confident that the active users who received the invite to respond to a question would respond to the message. Another user behavior we anticipate is that the invite sent to the visitors would successfully convert them into users. The recipient of the email is likely to sign up, given that it's an invite from a person that they know, which creates a stronger motivation to take action. We also anticipate weaker conversion in these steps in the growth loop, new users might not ask their first question after sign-up. Right now we're purely relying on the new users self-initiative to ask the first question, which is a pretty intimidating task. Another weak link in the loop we're anticipating is that new users might not invite their friends onto the platform. Now, this is an action that doesn't have an explicit reward tied to it yet. We're solely relying on the motivation of these users without explicitly cultivating experiences that encourage them to take action. Given that we anticipate two specific steps in a loop where there might be weaker conversions, there are some product features that might be good to follow up on after this test. One idea is to make the onboarding process more robust and encourage these new users to make their first post. For example, we might gamify it by asking them to complete five steps so that they can plug into the community. We can test to see if a more engaging onboarding flow can increase the likelihood of new users posting their first question. Another product idea is to prompt sharing at a better timing. We can prompt users to invite their friends when they receive a response to their question or actively followed or upvoted a post. We might show something like, "Curious about your friends take on this?" Invite them onto the platform.

We've covered a lot of topics in this lesson: Validating a Growth Loop. We started by identifying test goals and metrics. The primary test goals and metrics are reframed from the hypothesis we formed from the growth loop. All growth loops before they're validated are just hypotheses, so we need to set up an experiment to test whether or not the action in the loop would lead to the result that contributes to the business goal. Then, we talked about how to identify the test audience and create a test setup. The test audience depends on the goal, and we can assess the impact of specific user experiences with AB testing, where we set up a control group that has the original default experience and a variant group that has the new experience and compare the two. After that, we practiced identifying tests risks and form mitigation plans. There are many potential things that might go wrong in a test. The key is to be proactive and consider what might go wrong for the users as well as for the business. Then consider how we might mitigate the risk. The mitigation might be actions we can take now, or we can monitor for it and plan it as follow-up actions. To wrap up this lesson, we anticipated the test results and proposed follow-up analysis. Anticipating test result is a good practice to articulate what we subjectively believe would happen. Then gut-check our

anticipation with the actual test results. Based on the test results, the follow-up next steps could be additional data and analysis to do, product features to build, or it can be more tests to run as well. We continue to head towards the To-Be State. So far, we've built a growth loop that we believe can help achieve the business goal. Now we've set up a test to validate this loop. In the next lesson, we'll talk about how we can continue on this growth journey in a sustainable way by expanding the loop.

Welcome to the lesson on expanding a growth loop. We'll take a look at the big picture again to see what we have covered so far and how it relates to this final lesson. To move from the as-is state to the future-to-be state. We started by examining the growth landscape and based on what we learned from the existing state, we created a growth loop to help achieve the goal and then we talked about how we can validate the loop by running experiments. Now we will turn our attention to the expansion of the growth loop. How do we make sure we are not confining ourselves and expand our plan to create sustainable growth. Expanding growth involves these topics: Growth Risk Assessment, product and market expansion, growth loop expansion, and business goal realignment. By the end of this lesson, you'll be able to analyze potential growth risks, analyze product market expansion opportunities, proposed an expansion of a growth loop, and realign the expanded growth loop with the original business goal. Let's go through some of the key concepts we will cover. After creating and validating a growth loop, we need to be aware of the potential near-term and long-term growth risks we might run into, such as customer retention, market saturation, having only a single product or a single market, we need to continue to defend and solidify our growth strategy. After identifying the risks, we can mitigate and plan to examine how we might solidify our growth plan through product and market expansion opportunities. The product market expansion matrix, also known as the Ansoff Matrix, provides a framework to identify opportunities such as market penetration, product development, market expansion, as well as diversification. With the growth opportunities identified based on the product market expansion matrix. We can build upon the original growth loop and then expand it, which then continues to increase the defensibility of the loop. As we continue to expand and tweak the loop, we need to ensure we keep the business goals in mind to stay coherent and aligned with our efforts.

I have one last thing that I like to share with you before we start this lesson, and that is learn the rules before you break the rules. Throughout this course, we've given you a lot of "rules" in the sense that we offered you a lot of frameworks and guiding steps, such as step 1, do this, and step 2, do that. However, it is important to remember that we learn the rules so that we can break the rules when the situation calls for it. We become familiar with these frameworks and these guiding steps so that when we are faced with different contexts and scenarios, we can use the rules as a starting point, but ultimately make the right decision depending on what the context calls for. My advice for you is to learn the rules to the best of your ability, but remember that adaptability is a key skill for any product manager.

In this section, you will learn how to analyze the potential growth risks based on common bottleneck categories. After creating and validating a growth loop, we need to think about potential near and long-term growth risks we might run into, so we can continue to defend and solidify our growth strategy. There are three common growth bottlenecks that businesses can run into. There's customer retention, market saturation, and having only a single product or market. Why is customer retention a potential risk? While acquiring new users is important for the growth of a company, engaging and delighting the users to retain them after they sign up is important. User growth and acquisition cannot be planned in silos without consideration of long-term retention. Otherwise, the user journey we planned out runs the risk of becoming a leaky pipe, where we continue to drive more new users of the platform, but we aren't able to keep them, and therefore cannot grow as a business. The other common growth risk we run into is market saturation. Each market has a saturation point, which happens when the demand for an existing product or service has reached its maximum limit, which means stagnant growth. To continue to grow, businesses need to expand their presence in other markets or create new product lines to create more demand. In a competitive market space, this might even happen sooner, since multiple players are aiming to meet user's demand. Finally, why is having only a single product or market a potential growth risk? When a business only runs on a single product or targets a single market, it is more vulnerable to changes. If the current product line fails or experiences stagnation, there is no backup plan to continue to maintain the business. It is essentially placing all your eggs in the same basket without any diversification efforts.

Let's examine the potential growth risks using the growth loop that we created for Next Lodge. As a refresher, this is the Next Lodge growth loop. Pause the video for a couple seconds and consider, what are the potential growth risks? Consider the three common bottlenecks we talked about: customer retention, market saturation, and having only a single product or market. One customer retention risk we see in the Next Lodge growth loop is that if we aren't able to retain the Next Lodge guests users we acquired, the retained users soon will become inactive and thus are not adding value in creating growth in the loop. To help prevent or mitigate this risk, we need to work on continuously delighting existing users to serve their needs and create engagement opportunities. The market saturation risk we see is that in addition to the traditional hotel industry, the digital vacation house rental space is also competitive with many options for users. Even though Next Lodge has already established itself as the best platform for family related vacation stays, once this market reaches saturation, we need to consider other ways to expand the market or target new types of customers. The single product market risk is that Next Lodge focuses on a specific market and the vacation house rental space, family vacations stays, which is offering a single product in a single market. There is a lack of diversification here. We're putting all our eggs in the same basket. To help mitigate against this growth risk, we might consider extending our product line to the entire experience of the vacation, not just the lodging space, or we can find other market segment opportunities in the space that Next Lodge can expand into. The

idea is that we don't want to limit ourselves to just a family vacation space.

You likely have your own analysis and interpretation of the growth risks and mitigation for the perspective growth loop. The answer here again is not a one size fits all. We'll look at a potential solution as an example. Customer retention is a potential growth risk for perspective. If we aren't able to retain the new users we acquired by continuing, engaging, and delighting them on the platform, we won't be able to sustain the loop. This means that we need to work on resurrecting inactive users and preventing users from becoming inactive by creating platform trust and surfacing relevant and interesting content to the first place. A quick reminder, we can't think about user growth and acquisition in silos. Paying attention only to grow new users, but not thinking holistically about how we might retain them. Perspective also has the risk of market saturation. The knowledge sharing space is competitive. There are many other platforms users can go to to share or gain knowledge. Perspective needs to continue to differentiate themselves from the competitors. To stand out from the crowd, we might focus on being the most trustworthy or community oriented platform. The main highlight here is that each market has a saturation point. This is common, especially in competitive market spaces where multiple products are attempting to win over users. Perspective has only a single product and market, which is also a growth risk. If the current product line fails or hits a growth ceiling, we need to ensure we have other products that can still grow. Having a single product and targeting a rather general market in this case, in knowledge-sharing, we need to continue to diversify our offerings and create our edge. For example, we might develop a product line that creates a more formal knowledge sharing platform and offer education opportunities from experts. Remember, diversification is an important growth strategy as it prevents the risk of putting all your eggs in one basket.

After identifying the growth risks, we need to mitigate these risks by examining how we might solidify our growth plan through product and market expansion opportunities. In this section, you will learn how to apply the product market expansion matrix to identify opportunities. First off, what is the product market expansion matrix? The product market expansion grid is a framework also known as the Ansoff Matrix. It was first shown in an article published in the Harvard Business Review in 1957. It's mainly to give business leaders a framework to assess and plan for growth risks. Now, this framework outlines four quadrants. It outlines opportunities based on the existing or new product offerings and existing or new market you're expanding into. This two-by-two matrix is created based on whether we're expanding with an existing offering in an existing market, an existing offering in a new market, a new offering in an existing market or a new offering in a new market. Now, let's walk through each of these quadrants. The first quadrant is market penetration. The main focus in this quadrant is to continue solidifying the existing product in the existing market. This is not really an expansion yet. It's still working with the current business model. The risk level and uncertainty here is lower in the sense that it's relatively more predictable since it's working with what we currently have. However, it also implies you're not expanding and diversifying efforts very

much. The second quadrant is the product development one. The main focus in this quadrant is to expand growth by introducing a new product in the existing market. Things like considering new target audiences that might be interested in the current offerings. The uncertainty here is slightly higher because we don't know how consumers might react to this new service. The third quadrant is market development. The main focus in this one is to expand growth by placing an existing product into a new market often by reframing the value or redefining the use of that existing product. Uncertainty here is also little higher than the first quadrant since we need to prove our product market fit in the new market. Last but not least, the final quadrant here is diversification. Main focus here is to grow new users by selling a new product in a new market. You might imagine the uncertainty here is the highest of all given that we're introducing a brand new product into a market where we don't have much understanding yet. The risk is higher but if it does succeed the reward is likely higher too. We'll apply this framework and ideate product market expansion opportunities for next lodge in the following case study.

Let's walk through each quadrant in the matrix and use Next Lodge as an example to assess the type of opportunities that fall into each quadrant. Let's start with market penetration. One idea for this quadrant could be an in-app referral feature, allowing users to share the product with their network and reward them for the effort. The idea is that this feature encourages word of mouth growth to attract new users and is a feature of the existing product. Given that it's in the same market, it falls in the market penetration category. Moving on to a product development opportunity, one idea could be to offer lodge guests to book activities, sightseeing tours, and local restaurants in addition to booking their lodging on the platform. This may help grow users on the platform because this new product offering spreads a wider net by meeting more potential needs of the users in the existing market. A market expansion opportunity could be reframing the value of the offer to a corporate audience. Right now, Next Lodge features family-friendly vacations. But that also means that each lodge probably can't accommodate quite a large number of people. We can reframe this value and focus on selling to a corporate audience for perhaps team building events and vacations. With this same product offering, we can expand our reach and grow more users on the platform. Last but not least, diversification opportunity could be in addition to being a transactional platform that connects lodge owners and lodge guests. Next Lodge might even become an event host to host summer camps, workshops, or retreats. To diversify Next Lodge's offering, this offers actually a brand new product line that targets a completely different market, which then helps expand the reach of new users.

You're asked to analyze product and market expansion opportunities for perspective. Again, you will have your own product ideas and rationale. The solution of walk-through here gives you an idea of how you might think about the opportunities in each quadrant. Let's start with market penetration. One opportunity that falls in this quadrant is we might want to optimize the relevance of topics that we show to users. This involves creating a news feed like page,

understanding each user's preference, and surfacing more relevant topics for them. This can help ensure that we retain existing users and prevent them from being inactive by addressing one of the biggest complaints from the inactive users, which is irrelevant content. A product development idea might be to more proactively manage the community interaction. In addition to knowledge sharing, we can facilitate the discussion of trending topics, host fun and interactive games, and offer gamification rewards like badges online. This new product offering is meant to retain our existing users by motivating and actively engaging them to interact and share information. A market expansion idea might be to target a specific user segment on the platform. For example, we might target college students who are about to enter the job market and have questions around different lines of work, and based on that need, we can highlight the relevant posts and form online communities for these college students who are about to graduate. To expand the market, it's common to start with markets that are adjacent to the existing market that you operate in. In this example, the new market we identified starts with a more granular segmentation of the existing market where we see an opportunity to develop further. A diversification idea might be to create a new channel where we formalize information sharing. In addition to the general knowledge, identifying expert users and create live Q&A sessions or more formal curriculum and lectures, the new offerings allows us to target a new market, which in this case would be like a corporate audience. This is typically an audience looking for a more systematic approach to gaining new information. In this example, we created a new product based on the expertise of the original product and now target a new market.

In this section, you will learn how to expand an existing growth loop. We will be building on top of the opportunities we identified in the product market expansion matrix to develop a sustainable defensible growth plan. Overall, there are four steps you can take to expand an existing loop. Let's walk through each step to explain how we can create this expansion. The first step is to start with the original growth loop. It's helpful to remind yourself of the business goals, hurdles, and resource and values you're leveraging and that will help you clarify the structure of the original growth loop. In particular, keep the goal in mind. Even as we expand the loop, we need to know our north star. Then, select the product market expansion opportunity and you'll do this by evaluating which opportunity makes most sense based on the business current state. Think about these questions, is there still opportunity to grow in the existing market and product line? If so, we might continue to defend our market share and the existing market, and if not, how might we expand and reach more users? After that, we will map out the expanded loop. After selecting the product market expansion opportunity, you can consider these two questions. What growth risks are we aiming to overcome? Is it customer retention or is it market saturation? And what is the final goal of overcoming this risk? Going back to thinking about, what is the business goal we are trying to achieve? The final step is then to create the expanded loop. What you'll do here is you'll start with the original loop and identify the step in there that reflects the goal. Starting from there, you will create an additional 2-3 steps that overcomes the growth risk. From there, you will link the

additional steps back to the original growth loop. The start and end of the expanded loop need to be connected to the first loop. It might start from the same first step, diverge and then for example, converge back into the third step. We will apply these steps to create an expanded loop on the next logic growth loop in the next section.

Let's walk through how we might expand Next Lodge's growth loop step by step. As a refresher one more time, this is the Next Lodge growth loop that we currently have. Now we'll go through the four-step process to expand this loop. We begin by clarifying the structure of the original growth loop. We know the business goal is to attract more new users onto the Next Lodge platform. The hurdle that we want to overcome is, creating a more transparent and trustworthy platform, that can help remove the sense of uncertainty and anxiety these visitors have. The resource that we're leveraging is to allow Lodge guest users to leave ratings and reviews after their stay. Next, we move on to select the product market expansion opportunity. We've identified many opportunities using this matrix. In this example, the opportunity we're selecting is product development, the idea of offering large guests the opportunity to book activities, sightseeing tours, and local restaurants, in addition to booking their logic on the platform. We've selected this opportunity because Next Lodge has already established itself as the go-to platform, for arranging family-friendly vacations. But it has reached a growth stagnation on the guest side. One way to overcome this bottleneck is to diversify offerings, to reach more needs and users in the existing market. Now we've completed the second step of expanding the loop. We've selected the opportunity of offering Lodge guests to book vacation activities on the platform. Our next step is to map out the general route of the expanded loop. This is where we want to clarify, one, what is the goal we want to achieve? Two, what is the growth risk that is standing in the way of this goal? The goal of the original growth loop and of the business is to, still increase the new users on the platform. The only difference here is we're thinking about how to achieve this goal by expanding our market reach or our product offering. The growth risk we want to overcome is market saturation. We know based on the case study prompt that vacation bookings, catered specifically to families, have reached growth stagnation for these guests. The final step is to create the expanded loop. You can see we have the original growth loop here. Now, let's build the expanded loop. First step of the expanded loop is to start with the goal we want to achieve, which is the same goal as this original growth loop. The goal here is we want more users to sign up for a Next Lodge account. The next step is to incorporate the product development opportunity we identified, which is to surface vacation experience bookings to users, things like water sports, water skiing, fishing, or wakeboarding. This means we're catering to a wider audience with this new offering. Ideally, users with activity planning needs can then book that experience. This step then links back to the original loop, where once the picking experience completes, we would encourage users to leave reviews. Even though this new loop that we created can be described in isolation, you can see that the expanded loop's starting and ending point is connected to the original loop. This is how we create defensibility and sustainability in our growth plan.

In this section, you'll learn how to justify the rationale behind unexpanded growth loop by aligning it with the business goal. As we continue to expand the loop, we need to ensure we stay coherent and aligned with the business goal. The business goal needs to act as a north star to align all the efforts in one concentrated direction. That's why it's helpful to explicitly articulate how the original and expanded loop contributes to the growth plan of the business. To ensure business alignment, consider this set of questions for the original loop and the expanded loop. How does the growth loop contribute to the business goal? If the goal is to grow the user base, how does the loop reflect that goal? Which product market expansion quadrant does the growth loop fall into? Is it a loop that's focusing on market penetration, product development, market expansion, or diversification? The last question I have here is, why are we prioritizing this particular quadrant in this growth loop? What is the hurdle or risk we're trying to overcome? Are we having trouble retaining users or are we experiencing a saturated market? So we need to look elsewhere to expand our reach.

Let's use the next lodge case study as an example to examine how the original loop and the expanded loop align with the business goal. Let's start with the original growth loop. How does the original growth loop contribute to the business goal? We know that the business goal is to grow the number of new users on the platform. By allowing users to review and rate lodge listings, we can remove the sense of uncertainty that new users have about the platform and increase the number of new users. Now, which product market expansion quadrant does this original growth loop fall into? It actually falls into the market penetration quadrant because it's focusing on making the existing product more appealing for the existing market audience. Why are we prioritizing this particular quadrant in this loop? The idea here is that we want to prevent the growth risk of market saturation by directly addressing the new users fear that we know of in the existing market. This effort will help us to continue to grow and expand our reach in the existing market, which is aligned with the business goal. Now let's turn our attention to the expanded loop. Again, how does this expanded loop contribute to the business goal? Offering bookings of tours or restaurant experiences either by itself or as an add-on to lodge listings is aligned with the business goal because it increases new users by expanding the reach of the services that we offer. The expanded loop falls onto the product development quadrant on the product market expansion matrix. It is a new offering but it is still targeted at the same market and we are prioritizing this particular quadrant in the expanded growth loop because it avoids the single product market growth risk by offering a brand new product line. Meanwhile, this initiative continues to contribute to the business goal of increasing the number of users on the platform. By offering a new product line, we expand the reach of our services to more new users. You can see how the original and expanded loop of next lodge. While each charting their own path, align well with the business goal.

You are asked to justify the rationale behind the expanded growth loop of perspective by aligning it with the business goal. Let's walk through an example solution. Let's start with the

original growth loop, which is the one that we highlighted here on the slide. How does the original growth loop contribute to the business goal? The business goal is to grow the number of new users on the platform and we know that this goal is the same for both the original and expanded loop. Which product market expansion quadrant does the original growth loop fall into? It actually falls into the market penetration quadrant because it's driving new users to platform by focusing on optimizing the existing offering within the existing market. The reason why we're prioritizing this particular quadrant in the growth loop is that perspective, as mentioned in the case study prompt, is a startup that is still looking to solidify their product-market fit which implies that there's still tons of opportunity to focus on with the existing product in the existing market. Now let's turn our attention to the expanded loop, which is the one highlighted here on the side. The business goal is, again, to grow the number of new users on the platform. In terms of the product market expansion quadrant that this expanded loop falls into, it still falls into the market penetration quadrant. It is optimizing an existing offering within the existing market and the reason why we're prioritizing this particular quadrant, the same quadrant really in the expanded growth loop. The rationale here is, again, that we still believe there is a lot of growth potential in the existing market. We can continue to drive new users onto the platform by optimizing relevant content to the user and help them form a sense of belonging to the community. In this exercise solution, you can see how the original and expanded loop both align well with the business goal of growing new users.

We've covered a lot of topics in this lesson, expanding a growth loop. Now, let's review the key ideas. We started by covering three growth risks; the lack of customer retention, the risk of market saturation, and the vulnerability of having a single product or market. Then, we discussed how we might overcome these common growth risks by imagining opportunities through the product market expansion framework. The opportunities can be categorized into four quadrants; market penetration, product development, market expansion, and diversification. With the identified growth risks and the selected product market opportunity, we can then expand the original growth loop. One thing to keep in mind here is that while the original and expand loop are self-sufficient on their own, the fact that the loops are connected means we're creating a more defensible and sustainable cycle. Finally, we type the course back to the business goal, which is the very first topic we covered in this course. The original growth loop and the expanded loop, though different in their approaches, are both meant to contribute to the North Star business goal. Let's zoom out and look at the bigger picture again. We actually completed all the lessons in this course. We started by examining the existing landscape to get a good grasp of the current state of the business. We then moved on to efforts that could take us to the future to be state, starting by creating growth loops to help achieve the business goal. After that, each growth loop is a hypothesis. We did the work to set up experiments to validate the loop. Finally, since gross is an ongoing journey, we discussed how we can continue to expand the growth loop to set the business up for sustainability and defensibility. We've now completed all four lessons of this course, introduction to acquisition and growth.

We've now completed all the lessons of this course, introduction to acquisition and growth. Congratulations. You are now ready to work on the final project where you'll get to apply all the skills and strategies that you learned here as a Growth Product Manager.

Hi, I'm Shiv, your instructor for the second course in the Growth Product Manager course. We're about to embark on a journey to explore one of the fastest and hottest scoring rules in tech, Growth Product Manager. In this growth product manager nanodegree, will focus primarily on activation and retention. But before digging in, I want to take a moment to introduce myself. Who went to school to be a product manager anyways? That's the question I would have asked myself before my whirlwind career started. I studied mechanical engineering in college and started my career in hardware project management. I didn't really love it so I left that world to be an entrepreneur. I started a T-shirt printing business, PrintVersity. In two years, we grew out of her own T-shirts, pun intended, and extended into a smart wearable company called Chargd. Unfortunately though, Chargd shutdown, as many start-ups do. Fortunately,however, Chargd had an office space located inside of WeWork, the co-working space, and something really attracted me to WeWork early on. So I joined them as an early employee to help them grow into the new European markets and expand outside the US. This is where I first learned about quick experimentation. I left WeWork and Europe to move to San Francisco and iterated my career again from the project management and hardware into product management and software. I became a growth manager at Autopilot, a marketing automation tool to help folks on activation and optimization in their free trial workflows. I now serve as a growth product manager at productboard and FunnelGuard, helping them to focus on ways to improve activation and reduce churn. Throughout this journey, you might spot one common, common theme, which is just growth. With all the iterations and career experiments that I had from engineering, operations, marketing, and then finally in product, I have now found the perfect intersection for me at growth product management.

So who's a Growth Product Manager? anyways, let's find out together. Shall we? Similarly to PMs, growth PMs work cross collaboratively with different departments such as marketing, data, engineering, operations, success, sales, and design. They both are aligned with putting the customers first, and they make progress through influence and ownership, as they often don't directly manage anyone. They however, are two different people with two different focuses. Let's explore the difference between a PM and a growth PM. The difference is that PMs focus on creating new features and functionality for prospects and customers. If we keep building new features that don't get adopted, there will eventually be a direct correlation to churn. Growth product managers help avoid the urge to only and always keep building. We focus on engagement and adoption of growth among existing features and functionality. You can spot a growth PM if they say, let's put this to a quick test, when you offer them two options to tackle one solution. They not only run experiments at work, but you'll find them

running experiments in their own life. You know you're growth PM, if your scientific, adaptable and curious. Growth product managers like to answer any question with a hypothesis and an experiment to back it up. They believe that each process can be improved, and they don't plan to fix the whole problem at once. They understand that there's no silver bullet or correct recipe, so they solve business problems iteratively. Growth product managers are adaptable to different scenarios as there is no right answer to for every problem. They understand that combined with understanding their users using data and applying an experimental process, they can solve a problem. They excel best as tinkerers rather than craftspeople. Growth product managers are curious to tackle new challenges and often tackle many business challenges at once. They may be tackling sign-up acquisition, problem with marketing, trials to paid conversion with sales, automating common concerns with support, and determining how to engage users at scale with success. This group of people, the modern growth product manager, is a fairly small and tight-knit group. It is the new group of PMs in the product lead growth era that evolved from other roles as needs within companies changed.

So where did the group product manager role come from? To understand the origins of the group product manager role, let's first discuss what matters in a modern business. The user's life cycle is defined as acquisition, activation, revenue, retention, and referral. These are the AARRR metrics first coined by Dave McClure, the founder of 500 Startups. Traditionally, all these steps were owned by different departments. The origin of a growth PM really started as individuals in product and marketing work together to bridge the gap between go-to-marketing teams and the research and development R&D teams. In the historical business models, teams were siloed into their own metrics. The marketing team owned the top of the funnel with acquisition. Sales owned guiding the lead from the top to the bottom of the funnel by owning activation and revenue. Finally, account management and success owned the bottom of the funnel with retention and referral. As companies evolved, the roles and responsibilities changed with them. As businesses led to a product-led approach of running companies, product teams begin playing a bigger role in helping guide users through their life cycle. Modern product managers started to influence how the product can help the go-to-market teams optimize this funnel. Rather than only focusing on building the product or service, they became more involved in the ownership of the customer life cycle. Product-led companies decided to carve a role at the intersection of marketing and product, defined as a growth product manager, to focus on the entire customer life cycle alongside marketing, product, sales, and success teams. Traditionally, marketing managers grew more analytical. They started to be referred as growth managers or growth hackers. The data analysts started to be more qualitative by adopting user research in their analysis. Product managers grew in to focus more about how their features and functions were being adopted. Finally, the rest of the go-to-market teams started determining ways to scale without much human intervention. From all this was born the growth product manager.

If you want to start as a growth product manager now, you need to ensure you're setting

yourself up in the right environment. The best recipe for a growth PM is to join a product-led company, a company with a large enough database, that has and collects a lot of data on these users and has access to an engineering and design team dedicated to growth. As a growth PM, you likely want to work with the product-led company. A product-led company is a company that is away from the traditional sales first [inaudible] , but instead a platform that provides a free trial model or a try before you buy type model. These models drive activation with the low touch sales model where the product is the emphasis for sales. In these organizations, a growth PM can shine. The recipe is a mix of an ideal company with an ideal team. A growth PM will likely be in a pod. Pod will consist of an engineer, a designer, and an analyst. You will cross collaborate with these individuals, and if you're in a mature organization, you'll have access to your own pod. However, at early stage startups, you might not have such dedicated resources, but that's okay. You simply have to be more careful of your resources in these environments. However, the ability to run experiments is all that a growth PM needs. In this course, we'll try to emulate this environment so you can walk away with a project that has a growth PM would conduct in their day-to-day job. Next, let's discuss the focus in this course.

In this course, we will be very focused on two topics of product growth, activation and retention, the middle of the funnel. The focus of this course is to determine how to analyze and improve activation and increase retention. These are the two primary metrics you may help co-own in your own companies. We will use best practices and theories to help understand each metric and how it impacts business. Through analysis, we will determine how we're doing on these business fronts and then we'll learn how to create experiments to improve these metrics. It is good to note that we will not worry about acquisition, revenue, or referral in this course. For that, there's a Course 1 and Course 3 in this nano degree. So let's discuss the focus of activation and retention. Activation and retention can be further broken down into subtopics. First we'll cover signup flow, then activation, we'll go into retention and then finally churn. For signups, we'll walk away with theories, methods and examples on how to qualitatively and quantitatively analyze the signup flow. From this analysis, we will propose experiments to reduce our drop-offs. For the activation lesson, we'll scientifically determine the aha-moment that leads our users to activation. Since we can't group all of our users into one bucket, we'll run a segmentation analysis through the activation flow. For our retention lesson, we'll explore different engagement tactics to keep our users retained. We'll create a user retention cohort analysis to understand how our users are retaining overtime. After retention, we tackle churn. In this lesson, we'll measure LTV, your lifetime value and churn rate to determine how healthy is our business. From this analysis, we'll propose experiments to avoid users from falling into the churn trap. If what I just said does not make any sense to you, no worries. Don't be put away. We'll walk through all of the topics that we discussed together. You can go at your own pace, and we'll apply all of the learnings by practicing different quizzes and exercises together.

Before digging into the course, let's ensure you're set up for success by discussing if you need access to any tools or prerequisites. Let's discuss if you need any prerequisites for this course. The answer is, not really. You only need to know the intermediate understanding of spreadsheets. For this exercise and the final project, you'll be conducting all of your analysis in spreadsheets. All formulas will be presented to you. But understanding the basic calculations such as averages and additions, is the only prerequisite skill you'll need. We will together learn how to do all the analysis manually. However, the growth PM uses many tools in his or her day to day, including analytics and visualization tools like Looker, Amplitude, and Tableau. Experiment and optimization tools such as Optimize, LaunchDarkly, engagement and messaging tools such as Hubspot and Intercom, and management and communication tools like Productboard and Jira. If you're not comfortable with these, no worries. Search them up, they might have some demos and tutorials online and you can get from there with them.

Watching videos is not all that you'll do. You'll have the opportunity to apply all that we learned with quizzes and exercises as you take on each concept. To top it off, you'll even have an access to a large course project at the end of the course as well. I built this course by emulating exactly what I do day-to-day as a Growth PM. Here's a process and workflow for most projects I work on. First, all projects we work on should always align with the business objective that the company has set forth. That could be for the month, the quarter, or the year. We then look to validate the metrics we're looking to improve as part of the business objectives. Then we dig into the problem and determine potentially the root cause of the problem. Before proposing anything, we do some qualitative research by conducting internal or external interviews. Once we understand the problem, we then go into the solution space by listing potential ideas that we have. We turn these ideas into experiment briefs and try to validate at a small scale some of these experiments. After a few test, we use data to make a decision on the ideal potential solution and then we launch, implement, and iterate. The project for this course is broken down into two parts, the activation analysis and the retention analysis. We'll use Productboard and Slack to solve for part one, the activation analysis. You will serve as a Growth Product Manager focused on getting users from sign-up to activated. You will determine how to reduce drop-offs in the sign-up flow, so we're getting more users in the product. Once users are in the product, you'll determine the activation tactics to guide a user to engage more and more with the product. Overall, we'll build the full activation funnel. For retention, you will serve as the Growth Product Manager focused on retaining active users, resurrecting inactive users, and avoiding churn. You'll determine the engagement states of the existing customers that we have and analyze active and inactive cohort analysis to determine retention over time. You'll put all of this together to create the life cycle chart to determine life cycle over the user's journey with us and when users do leave, we'll calculate the churn rate, the retention rate, and the overall lifetime value of our business to determine the health of what we're doing. Throughout all these sections, sign-up, activation, retention, and churn. You'll be proposing experiments on how to improve this funnel. Exactly what I do

in my day-to-day life.

Your project will be, Let It Grow. Let it grow, let it grow, the next words, I don't know. We're going to take everything that we've applied in all four of our lessons, all the exercises, all the quizzes, into a full-blown project. You'll take everything that we've learned, all the formulas, all the theories, and all the exercises, and apply them and analyze them even further. I hope you're ready, because if not, you'll have to do it anyways.

Before starting our lessons, I want to establish some guidelines that will help you in your journey. The topic of growth is very subjective. There is no silver-bullets and there is no right or wrong. There's only let's test it and see. Honestly, that's why I love it. I can prove my boss wrong many times. So don't rush through this course, and do not measure yourself by the time you're putting into the course or how long it's taking you to complete the project, the exercises, or understanding the content, go slow. When something interests you, pause the class, go do some research on the topic. Quite often, some links are provided to help you begin your research. Growth product managers are very open about their methods and processes. Remember when I said it's a very tight knit community. For this reason, not every detail of activation, retention, sign-up, or churn are covered in this course. My goal with the course here is to spark an interest in growth for you. If you already have that spark, awesome. Then you'll certainly get your feet wet in the world of product growth. However, you'll only have your own aha moment for this course once you apply everything that we learned in your own projects.

That was quite a lot. Let's summarize what we just discussed. Here are the concepts we've covered in this lesson. Who's Shiv Patel? As a reminder, that's me, your instructor. The difference between a growth PM and a PM. Some history behind the origins of the growth PM. We explored some resources that a growth PM needs. We discussed the structure of this course, looked at relevant tools and prerequisites that you would need for the course. We got a sneak peek into the class project. And finally, we went over guidelines that'll help you as you continue with the course.I wish you the best of luck.

Welcome to our first lesson in the growth product manager course. Lesson 1, we'll focus on the first touch point between our company's product and our users, the signup. Remember, we'll be breaking down our funnel into signup, activation, retention, and churn. We're doing this so you can understand the users flow from one part of the funnel into another. For Lesson 1, we'll focus on the signup flow. Together, we'll determine how to create and spot a signup and then optimize the signup flow, so we're capturing more leads. Who doesn't want more leads anyways? There's always a lot that goes into signup flow. So let's see what our agenda is. Together, we'll determine how to create and optimize a signup flow so we're capturing more leads. We do that first by identifying existing signup flows that we commonly interact with. When we find them, we'll determine the call to actions, or CTAs, that start these

flows. In these signup forms, we'll analyze which fields to request, the core fields that are needed or the custom fields that are more nice to haves, then we'll measure the conversion through the flows. We'll measure by calculating the click-through rate, CTR, or drop off rate at each point or step in the flow. If users are not going through it, we'll identify with the friction is that's likely causing them to leave and churn. Finally, in classic growth PM style, we'll propose experiments to optimize the signup flow. To accomplish this, we'll be creating an hypothesis for all of our experiments, determine which metrics we should track to determine it our experiments are successful or if they fail, and lastly, we'll prioritize all of our experiments using the ice framework. There's a lot to cover, but remember our guidelines. Take it slow. Pause after each one of these concepts and be curious to explore more on your own. Ask yourself, how can you apply all the learnings in your own projects or companies? Shall we begin?

I'm sure we've all signed up for something in our life. But let's formally understand how to identify a signup flow, and the CTAs that start them. Let's first look at what a call-to-action a CTA is, and how and why they are triggers for the signup flows. First, what are these triggers? Triggers are an element on the page that start the signup flow. Catching attention on digital products is not an easy task. Users are distracted from everywhere. So we want to minimize distractions within our own product or service. For B2B products, signup flows can trigger a user to sign up for their product by starting a trial, getting premium access, a direct Purchase now button, or in the enterprise case, they might have a demo request option. For B2C products and services, signup flows can trigger a user to sign up for their product or service by registering for the blog, a newsletter, by registering for the product directly, or it might be an Add to Cart button. These triggers an elements on a page that start a signup flow are actually CTAs, call-to-action elements. Now, that we know about these CTAs, why should we care? No, seriously, why should we care about CTAs? CTAs are triggers that guide a user to take an action. That is our goal after all, get our users to take an action. Clicking on these CTAs converts our user by taking them from one page to another or one step to another. Let's just say without CTAs, our website is practically meaningless. We wouldn't be encouraging our users to do anything. They'll simply be window shoppers that are browsing our website without taking any action. Most common CTAs for B2B signups are, to start a free trial, to try the product or service for free, to request a demo directly with a salesperson, or to learn more about the product or the service. Common call-to-actions, CTAs for B2C signups are to sign up directly for a newsletter or blog to just join now, for our e-commerce friends to add a product directly to their cart, or to get somebody to purchase directly, and of course, there's a classic buy now button. Here's how you should look at CTAs. They do have a few characteristics and let's see and discuss them together. We'll go to a page on Udacity, the AI Product Manager Nanodegree class, and let's discuss the five characteristics of CTAs. The first is what type of UI elements should CTAs be? Primary call-to-actions should be buttons. As you can see where they get started or Enroll Now buttons. However, secondary CTAs can be clickable icons or links, or images. You can see an example of a clickable link

right here, Hide Details. Second is the copy of call-to-actions. The copy of the text on the button should be an action verb. We are trying to get our users to take an action after all. Those examples could be enrolled now, or verb Get Started. Use creativity and always keep A/B testing this to figure out what copy converts best. Third is the location of where you put your CTAs. The location of CTAs should be where it will be seen. I'm sure you're like, "Wow, chef genius where it can be seen? What I mean is location should flow with how the user looks at the website or product. Study shows that users eyes take paths and some patterns, they don't just jump around. Think about how we read a book. There is some pattern to this. Same with the website, we can look at the Get Started button, Enroll Now and you can see as I continually keep scrolling, they'll have options to either get started and enroll now in specific courses, or go directly into those courses. But imagine, if they put the enroll now button at the end of every single section, probably not ideal. Fourth characteristic, onto color. Use contrasting colors to make your CTAs pop from the rest of the page. It should be obvious that this element on the page is a CTA. For an example, you can see that Enroll Now button directly pops from the rest of their CTA. But some of the other secondary buttons on there or images on there, you can see that they blend in fairly quickly. Finally, how many CTAs we should have. Place them where value added text is related, so after reading, users can take an action. Don't go overboard and include CTAs that'll overwhelm your customers. As I said before, imagine, if every time we scroll, we saw an action for enroll now on this page, probably not ideal.

Your first big quiz. I hope it was challenging, but not frustrating. Let's go through it together. Question 1 was, how many unique CTAs are there on Udacity's homepage? Personally I don't know. I've assumed just a few on how to get started with the course, but let's go see ourselves. Now your experience may differ a bit because Udacity is constantly A/B testing their own website. But for the moment as we're recording, on this page they have 19 different calls to actions that you can see throughout their homepage. For most companies it doesn't make sense to have 19 call to actions. Why? Well, because most companies don't have 19 unique products unless you're on B2C, which well, Udacity actually is. It sells directly to consumers. So Udacity has so many nanodegrees, it's important for them to show them on the homepage to cast a wide net for all the different types of visitors they receive on their homepage. So here getting started is a call to action, as are all these buttons as they're going down for each one of their nanodegrees and each single program that they do have. Question 2, what triggers start the sign-up flow on Udacity? Let's go look at their website again. Directly, there's only one CTA that starts an actual sign-up flow, which is this Get Started button on the top right of the page. We call this area "The header" However, there's no benefit to sign up for Udacity without signing up for a nanodegree. Not many would sign up first and then choose a nanodegree. So any of the other 19 call to actions on this page also trigger a sign up flow. Thus, Udacity places these call to actions to primary get their viewers on their website to go through workflows by clicking on a nanodegree and then asking them to enroll. So you can see, I would go to a specific nanodegree. Then I can enroll

on the specific class to get started with my sign up flow.

Let's start our journey at the beginning of our user's journey with us at the sign-up flow itself. Although every company makes their users sign up, not all sign-up flows are created the same. Before digging in to these different types, let's explore what friction is. Friction is the psychological or digital resistance that our visitors experience when trying to complete an action. We should care about friction because it is a conversion killer. You can optimize your value proposition or call to actions all you want, but if your sign-up flows contain too much friction, you're leaving money on the table. Let's explore an example of friction in general together by taking Udacity as an example. Here you can see Udacity's website. Now this is the version of their website I am seeing. Udacity is constantly A/B testing their website, their platform, and everything on it just like you and I should. So you might be experiencing something different however, the concept still apply the same. Let's think of the users that come to Udacity. I might be a visitor with one specific intent that I'm looking for. I might be looking for a digital marketing manager course however, when I land on Udacity, there is no way for me to search their catalog to find a specific course that I'm looking for. If I come into your Udacity's website, I browse around and I'm not able to see something for digital marketing managers or even marketing, I might just bounce. If I bounce, even if Udacity has a digital marketing management course, it doesn't matter. That can be easily fixed by removing this friction and perhaps, adding a search button here. With using a search button, users will be able to share their intent of why they came to your website and you, as a growth product manager at Udacity, would be able to collect the intent of why users are visiting. Even if the user doesn't purchase the nanodegree, you'd be able to re-target them later. You'd create a win-win situation when you can remove the friction. Let's first understand friction based sign-up flows. You may be asking yourself, we just discussed that friction decreases conversions, then how can friction be good? You're right. Let me explain. A friction based sign-up flow makes it more challenging to complete the sign up. By doing so in return, the users are getting additional value in the future. Let's look an example of friction based sign-up flows to experience it together. For example, let's have a look at Stitch Fix. This company provides personalized styling and clothing for men and female. First of all, I don't even see a single sign up button. There's only a sign-in so I'm not sure where actually to get started to sign-up for Stitch Fix. I certainly don't want to take a quiz, I'm ready to purchase, I just want to go in and purchase. I assume there may be a hidden sign-up button inside of the sign in, so I'm going to click through. As I imagined, they do have a way to sign up, but it's certainly not clear. Right off the bat, I'm not comfortable with this experience because I would expect much more personalized questions be later in my sign-up flow, whereas in the beginning, they might ask me for an email address, my name, or my intent. Let's keep going. I will say I feel okay about shopping, and I don't like to put a lot of time into this so far, and I occasionally look up for trends. Perfect. Now, I have reached the actual point of where a user can place their email address. This is their first step in their sign-up flow. By now, we've already completed through three steps, so let's keep going on what could be next. Another fourth

step, and it keeps going and going. So there's more fields to fill out. You could see the frustration that I have and this frustration is friction. I've no idea how long I'm going to keep going, there is no status bar, and there is no progress bar. This is an example of friction. As in life, there are positives and negatives to everything. We can introduce friction based sign-up flows, but we do have to take a few things into consideration. The positives for friction based sign-up flows include, if the user makes it through the sign-up, they're likely going to be more invested and activated. The aha moment is much more clear as the user has explicitly been shown the value before they enter the UI, and we can remove spammers as competitors and others just can't get into the product to have a sneak peek. That same example with Stitch Fix, if I went through that entire experience, I would be a much more invested trial user. I would have known the aha moment because I knew that Stitch Fix was going to personalize that experience for me. Now, there's negatives to that sign-up flow as well. There likely might be fewer sign-ups just like us who bounced. There will likely be a higher drop-off as we introduced manual friction of booking a time to speak with a salesperson in a B2B case or in a B2C case by asking for these additional fields. Users can't experience the product on their own, so it might not be self-served. In a B2B example, they might need to chat with the salesperson to continue with their trial or have a sneak peek, certainly not a product-lead growth strategy. Now that we understand what friction based sign-up flows are, are frictionless based sign-up flows any better? Let's find out.

Frictionless sign-up flow is exactly the opposite. It is more simple for the user to continue with all the steps. Such flows are considered self-serve, where the UI guides a user into the product and can demonstrate the value of the platform on its own. After being frustrated in that last example, I get to certainly use something very simple, and let's look at an example that's exactly that simple. Let's take Intercom for example, they have one of the simplest sign-up flows in the industry. Let's go look at an example together. This is the homepage for Intercom, and to sign up, it's very obvious no interactions, no gimmicks are needed, all they do is request for your e-mail address. Very simple. Now they have captured my e-mail address. Now they can simply continue, bring me into their product and customize the rest of the experience directly for me. How wonderful is that? All I had to do was give my e-mail address, in return I got to see the value of the tool within my first 10 seconds. That's an example of frictionless sign-up flows. Just like before, frictionless sign-up flows also have some negatives and positives however. Positives of frictionless- based sign-up flows are that will certainly have a high sign-up rate, and a low drop-off rate. More people will convert to the sign-up because the give is less than the take. The give it Intercom was simply my e-mail address, something that already expect to do and might take was much, much more. As a result, there's a low drop-off rates compared to friction-based sign-up flows. The platform is also likely self-serve which allows the users to experience the product on their own. The user can walk through on their own without anybody needing to show them around. The product can demonstrate the aha moment on its own without the need to chat with any salesperson or anybody at the company, in fact. There are too are negatives with frictionless sign-up

flows. A higher spam rate as anyone can really sign-up and get into the product without roadblocks, and this means your competitors as well. Another negative could be that users may not see the value on their own. If they don't, then they might just leave or bounce like we did at Stitch Fix. There's a lower amount of information collected. Since frictionless flows have a low quantity of give and take, we don't request many fields when the user signs up. Since sales team won't chat with them, we'd likely won't collect much information. As you saw in our example at Intercom, all they have access for me is simply my e-mail address. Now that we know both sides, which one makes sense for us? Deciding on your sign-up flow depends on your goals. The answer to this question is unique for each company. It matters what you want. In this specific example, remember, our goal is to convert as many leads as possible. But for you, it may be unique. These terms: leads, users, customers, and prospects are used interchangeably based on where they are in their lifecycle. Leads and prospects are referred to individuals before they purchase. However, customers and users are referred to individuals after they purchase. For this example, let's take leads before they purchase, and let's determine which sign-up flow makes sense. For more leads, let's go with the frictionless option as more individuals will convert through that sign-up flow. If our goal is quality leads, let's go with the friction-based option as the individuals that do make it through the flow are likely much more invested. If our goal is to get more data on our leads, let's certainly go with the friction-based sign-up flow so our sales team can get much more data out of our leads. If we want to engage our leads further, well, this matters. How easy is your platform to use? If it's easy, then go with the frictionless sign-up flows with the user can experience the aha on themselves, and if it's not, that's okay. Build this friction-based sign-up flows, so your sales team can help assist the user. Remember, there's no right or wrong with sign-up flows, because not all sign-up flows have to be the same.

In this quiz, we're asked to discover the sign-up flow for Udacity. So let's see how we did. I start with the first question. What type of flow is Udacity's sign-up flow and why? Let's go to udacity.com itself. Udacity actually has two sign up flows. The first is to sign up without registering a course defined by this gets started on the top right on the header, and the second one is by signing up to purchase a course itself. For the sign-up without registering for a course form, you can only trigger the sign-up flow by clicking the Get Started button on the homepage. Let's do that. Here, it asks you to simply register the form with your personal information to have access to Udacity as a platform, but not as a course. With the small barrier of inputting a few fields to get access to the platform, this is an example of a friction-less sign-up flow. Udacity is only asking for a few fields, first name, last name, email, password, and confirmation. What is even better is that you Udacity allows users to avoid inputting all these fields manually on their own by using Google and Facebook OAuth options indicated by the two options above, with Google and with Facebook. OAuth allows the users to sign up directly with your Google and Facebook credentials information. Doing so, we can avoid inserting this information manually on selves if we wanted to share that access. Google and Facebook Oauth is a great way to reduce the amount of steps our users have to go

through. Although everything looks good here, we are a growth Product Managers after all so let's figure out a way to optimize this friction-less sign-up flow even further. Next, let's think about ways we can turn this flow more friction-less. Let's go back to your Udacity.com and go to the Get Started form. One of the ways I think we can make this product even more friction-less is to remove the double confirmation of the password. It's certainly nice to have and has become an industry standards that many are actually challenging. This can easily be replaced with a small icon on the court password field here that allows the users to display the characters as they're being typed. That is the goal after all for a confirmation password is did I type this password incorrectly. For the second one, we need to come back to the objective of this gets started sign-up form again. What are we looking to do here we want to get our users to sign up. Yes, I know this is obvious, so we need to go little bit deeper doing so, users can have access to the platform and we get access to market to them. For our own selfish purpose what do we need from the users to reach out to them and market to them. Actually, we only need one field, email everything else is nice to have. We can create a win-win for the user and ourselves by converting this to a multi-step form. The first step simply ask for an email. Submitting the email starts the sign-up flow and if the user bounces at any points or drops off, we can always re-target them via email or social media to get them to return and finish the flow. If the user does continue, we can take them to the second part of their flow where it asks for the other fields such as a name, last name, and password. Think of this from a customers perspective. Do you want more options or less? Of course, we want less options. Even though we're not taking away options here, we're delaying the, so initial interaction after signing up for Udacity feels much more simple. Keep in mind that with this form, we're only getting our visitors to turn into users they do not purchase or subscribe yet. We actually have another form for that. Udacity has a second sign-up flow that allows the users to enroll for nano degree. Let's think of our objective here. We want our visitors to purchase a class and in return we want the payment and access to their details. Do we think that every visitor that comes onto this page will be ready to convert? likely no, and why not? Well, because of many reasons, maybe the price that scares them away, they might not just be ready yet, they might be window shopping, they want to do further research. Remember, sign-up is a give and take. What if we want to give more and collect something in return? and maybe not the payment itself. Udacity wants to convert their sign-up flow to be much more friction-less, we can delay this payment information until step two of the sign-up flow and convert this entire experience into two steps. Right now, the first step is to collect payment details and then their personal information to create an account. Let's flip them around. We delay the collection of their payment information and as the first step, we collect their email address, their phone number, so if the user bounces after step 1, we can re-target them. So now that we know about the second flow that Udacity has to purchase an actual course and the friction that we found within it, actually Udacity has done exactly that. They've optimized their sign-up flow. If we go to you Udacity, and we go to a specific course and we click on Enroll Now and we go into enrolling that course itself, you can see Udacity has switched around the two steps. They have delayed the collection of the payment information and

optimized for collecting their sign-up information. Now, a user can come in, simply sign up with the similar details as a gets started form, sign up and then purchase the specific course itself. By doing so, if the user drops off at step 1 will still have access to all their information and they may have already created an account so we can re-target them later.

After our users identify our sign-up flows, we certainly want to get them to the product as fast as possible. As a good growth product manager, we want to learn everything there is to know about our users, their entire life story, but we have to minimize that into a certain a few fields. Each form, regardless of its type, has a few fields we can ask. Fields are the elements on a form where we can ask our visitors to complete something in return for something. These fields are divided into core and custom fields. It is very simple to differentiate the two. Core fields are what every sign-up may need to convert a visitor into a leader. Custom fields are additional information that each respective company wants to collect about their leads to either personalize or enhance the user experience. There are also different types of sign-up forms as well and each with its own use case. There are four main types of forms. First type of form is the email sign-up form. In email sign-up forms, we simply ask for an email in return to let the website visitors sign up for our blog, newsletter, or download a white paper. Let's look at an example together. This is Price Intelligently blog page. We can go through any of these blogs, click on one, and we'll likely receive a form where we can simply enter our email address and sign up for the newsletter. Pretty simple. In email sign-up forms, we simply ask for an email in return to let the website visitors sign up for the blog, newsletter, or download the white paper. You can then further nurture these leads later to turn into customers. Email sign-up forms likely only have one field, the email. Email is a core input of what we'll need. Let's say here for Price Intelligently, they might want to segment out and send different types of newsletters based on different topics like pricing, retentions, subscriptions, and reporting. They may want to create a second category in their field to ask for a drop-down based on specific interest. So now the visitor can enter their email address and place a specific interest on what type of newsletter they want to sign up for and they only receive newsletters with those specific topics. This will create categories for your newsletter subscribers and you could segment them into what type of blog content they want to receive. The second type of sign-up form is the purchase form. I'm sure you've purchase something online at some point. You can find these forms on e-commerce websites where you can order a product. Let's look at an example together at Molekule, an air purifier for your home. We can go to buy now to see what our potential purchase form looks like. In purchase forms, you either have a core field for email, name, or custom information such as the credit card information, and you see they do exactly that. In step 1, they simply collect the email and then they go into step 2 and 3 collecting the shipping, payment methods. The third type of sign-up form is the subscription sign-up form. This is where you can register for a trial or get access to a specific software. Let's look at an example with Salesforce. For Salesforce, we can go to their free trial page and you can see here simply that it's asking us for all of the core inputs, such as email address and password, but it also asks us for custom inputs such as the number of

employees, the country, and perhaps even a phone number to customize our experience even further. The fourth and last type of sign-up is this service base sign-up form. This is where a visitor can register or request a specific service. Let's go to an example for Handy Cleaning Services in San Francisco. A service based sign-up form has a core input which would simply be an email address or a name, and then you can add on any custom inputs. In Handy's case, they ask for specific hours, bedrooms, cleaning, zip code, and the time for the service itself. To summarize, there are four different types of sign-up flows, email sign-up flow, purchase sign-up flow, subscription, and service sign-up flows. There are some companies that may use all of them, for example, Udacity may use email sign-up flow for their blog pages, purchase sign-up flow when buying access to a nanodegree, a subscription sign-up flow when creating an account for Udacity, and perhaps a service sign-up flow when reaching out via contact us or the support page.

Even though there's no one size fits all, there's often an ideal order of operations of what you should ask and when in your forms. Even though we want to ask every piece of data and the entire life story for all of our visitors, we need to choose wisely. Not only wisely, but we also need to decide the proper order of operation that resonates with our users and what fields we should ask. Regardless of the type of sign-up, core fields always go first. No questions asked, that is a hard rule. These two core fields which requests personal information such as name and email. Email is used to mark a unique record in the marketing system, and name is used to add personalization variables in emails and messages. Once we ask for the core fields, then we go to the custom fields that we need to request from our users. This is the rest of the things that we possibly want to ask for. Regardless of the type of flow, we can always break down our order of operations by using a multi-step form. Turn forms into a multi-step form to capture the main core input and break down the order of operations. Let's look at an example from HubSpot. Other marketing site we can say, get started for free, and they do have many product lines. So let's say we want to start off with the CRM. Here, you can see the first step in their form, one out of five steps. If I start, you can see it takes me to step 2, 3, 4 and 5. It'll continue on and on, and even if there's a drop off at any one of these steps, well, they have access to my email address and they can certainly retarget me anytime.

We made it to understanding the sign-up flows. We're done with part one of three. Now that you can identify any sign-up flows, I wonder all of the things you'll think about the next time you sign up for something. Next, let's measure the click-through it in the drop off rate at each point and each step of the sign-up flow. To submit these flows, our visitors have to click on the call to actions. The number of visitors that click or don't click the CTA is measured with the Click-Through Rate. Click-Through Rate or CTR is the percent of people that click into a call to action and go through the next step or next stage. CTR is typically used to measure the success of our marketing efforts. It is a metric to analyze our emails, web-pages, forms, or any online advertising. Only when our prospects are clicking through can they progress through the rest of their marketing funnel. What you're thinking is probably correct. Click-

Through Rate is a good thing. We need more of this. You're also correct, we have not defined how to calculate this, so let's do it. CTR or Click-Through Rate has a very easy formula. The formula for CTR is the number of people that clicked on the button divided by the number of visitors on that page itself, take the output and turn it into a percentage by multiplying by 100. Let's do an example together. If we had a CTA that had been clicked 500 times, but 700 people visited the page itself. So the CTR is simple, 500 divided by 700, take that output multiplied by another 100 to get the percentage itself. That percentage is 71.5 percent. This means that 71.5 percent of people that went to the page also clicked on the button and continued through our user flow. The 71.5 percent, do we know if that's a good thing or a bad thing? Your Click-Through Rate tells you the success of each step in your flow. It's the measure of your health of your flow. An excellent CTR would be roughly around 95-100 percent. An average one, you can see, is roughly 80-95 percent. However, anything lower than 80 percent has a low CTR. This is where growth product managers like us can shine to help fix this. Low Click-Through Rates indicate that something's just not right. Some reasons for low CTR could be that the messaging might not be relevant to our users. You might have been asking for too many fields like we've seen or the order of operations may not be correct.

If click-through rates are the people that clicked on the CTA and made it through the funnel, you can easily guess what drop-off rate is going to be. You're right. Drop-offs are people who did not make it to the next step in the funnel. They're users who exited or bounced, which resulted in them not continuing to the next step in the funnel. The calculation for drop-off is one minus the percent of your click-through rates. Drop-offs can happen because maybe your users are confused or you might be asking them for too much information, like we discussed. Your drop-off rate through each step tells you the health of your sign-up flow. If you have a high drop-off rate, let's say above 10 percent, you have some areas of improvement. A fair drop-off rate is likely below five percent. Let's take an example. If your click-through rate is 92 percent, what is your drop-off rate? Remember the drop-off formula, we'll apply it and that'll be one minus 92 percent, so 0.92, that equals 0.08 or eight percent. This means that 92 percent of the user's click-through, but eight percent of them bounced, left, or were not interested, aka dropped off. This is a fairly good drop-off rate.

If you own the sign-up for your company, your goal is to reduce the amount of inputs from your users while gaining the same amount of output the value. Let's learn what decreasing user input does to our sign-up flow. Every click and every field between the beginning of your sign-up to submitting it decreases our chances of conversion. Let's first understand the number of clicks through this flow. The number of clicks is the amount of clicks you have to take. A click can be determining by selecting a field to begin typing, clicking a button, or selecting an option. We can reduce the clicks, but reducing the fields must also follow. This includes reducing the amount of fields that we collect in our flows, and if field is represented by an individual request from the user using an open textbox multiple choice. Select an option drop down or each section of your form itself is a specific field. As we agreed, every field has

an impact on conversion. But to what depth? I found that there's a very little decrease in conversion rate as the number of single line text fields increases. Increasing multiple text fields have a powerful depressing effect on conversion rates. I found that the presence of multiple drop down fields on the landing page tends to be associated with low conversion rates. Users view form fields as you can on your landing pages and be especially cautious with more sophisticated text areas and selected boxes. By creating user journeys, we're able to determine how many clicks and fields our users take to get to the finish line. A user journey can be mapped by conducting the steps exactly how the user interacts with your sign-up. Every click and field results in a decrease in click-through rate. So our goal is to limit these inputs. A click can be determined by selecting a field to begin typing, clicking a button, or selecting an option. A field is represented by an individual request from the user using an open textbox multiple choice selecting option, drop down to name a few. To see an actual analysis that fields have on our conversions, let's take a look at the analysis Heap Analytics did. They ask the question, how does sign-up form conversions rates change based on how the form is structured? They determine a few positive changes we can do to improve our conversions, such as offering a third-party OAuth, increases our conversions by almost 8.2 percent by allowing our users to sign in via Google or Facebook OAuth Second is offering multi-step forms increases our convergence by almost five percent by allowing to split the core inputs and the custom inputs. However, they also analyze some negative impacts of our conversions. Asking for a company name could reduce our conversions by three percent, asking for a job title or their function reduces it even further by five percent, and requiring a phone number can decrease our conversions by almost seven percent. These are all the things that we've been discussing now validated. Now, don't think this means that you can't ask for a company name, role, or phone number. To offset these decreases in conversions, we need to understand how we would use this data if we were to collect it. If used properly, although it would decrease our conversions of sign-ups, perhaps we might gain more customers or by asking for a phone number our sales team can connect with more of our customers so their contract sizes might be bigger. There's certainly some trade-offs.

I hope you've got to apply the skills we learned to real-life example here. We're asked to look at grammarly sign-up flow. To determine the type of sign-up load is, identify the core and custom inputs that were being asked, determine if the order of operations flows correctly and calculate the number of fields and clicks we're going to do. Let's see how you did. The first question we're asked is, what type of sign-up form does grammarly have. Let's go to the page itself and look at the form itself. When I'm on their homepage to trigger their call to action, it's the Add to Chrome it's free button. This call to action actually has two flows, that it's ignites one, it takes the user directly to the Chrome directory where the user can download the Chrome extension. However, if you go back into the original tab, it actually starts the sign-up flow. Now that we can start their sign-up flow, you can see clearly we're simply asking for an e-mail here, and you can see that there is going to be a multi-step form. So this will be a subscription based sign-up flow. Grammarly uses a multi-step form in their sign-up flow. In

the first step, the ask for their core fields and then their custom fields. Let's experience that together. First, the ask for simply their core field, which is e-mail address. Once collected, you can continue with the rest of their core fields, password and name. Once you sign up, comes the second part, their custom fields. In this second step, grammarly asks you for two custom fields directly from the user, which is the type of writing the user often wants to use grammarly for, and the level of their writing skills. If we go back into the sign-up, you can see that the second step of this multi-step form is to determine the purpose and the use case of grammarly, and then our writing skills. Once you click "Continue", then we can go into the product itself by selecting a specific plan. In terms of operations grammarly asks for core inputs first and then custom inputs. What further helps conversions is that they segment the core and custom inputs into a two-step multi-step form. The order of operations that they have is requesting an e-mail, password, the name as a core, and then on the second step, the type of writing and the level of their writing. The order of operation does flow correctly. Be aware of every click and every field as each step counts, even if we have a click in the box field to start typing. That is a click itself. The number of clicks that grammarly request from the user is 10 clicks. The total number of fields to address is five fields. You're starting to be a growth pm, so can you think of any other ways that we can improve conversions even further. I'm sure if you go back in, you might be able to find a few.

When we think of friction, we think of something negative. So how can friction be good? Nowadays, people have no patience for products and services that don't give instant gratification. Expectations have changed, and for the better, some would say. However, this comes at a cost to developers, designers, and product managers as they have to think of constant ways to remove friction. Users get frustrated when products make them do too much for the outcome. The expectation of input and output is constantly changing. Products and services that are not user-friendly, aka they have friction, are often replaced with more easy, self-serve, easier to understand and get started tools. Let's discuss friction first. Friction is at the point which the user has to pause, think more, or slowed down their flow to get to their goal. Friction is always considered negative, but it has positive benefits as well. There is good and bad friction. Bad friction is what we referenced before, but good friction adds value to the experience that users can appreciate. Example of such a good friction is when our Mac OS tries to delete something from our trash bin. You know the pop-up you get? The pop-up itself is a good friction as it appears when you are trying to delete something, often referred to as a dual confirmation. Imagine if you're looking to delete four photos from your trash bin, but you accidentally selected the wrong photos. Without this good friction, Apple would have just automatically deleted all your photos. This good friction creates a moment that the user has to double confirm before the photos are actually deleted. When it comes to sign-ups, a good friction is asking your users their use case as Clearbit does really well. This is certainly an additional step in the sign-up flow that can potentially decrease conversions. However, sharing what you want to do when you get started on Clearbit is not much cognitive load for the user, and in fact, they would want to share that with you, so they can get a personalized

experience. In return Clearbit does exactly that. They personalize the experience for each lead, rather than generic, one-size-fits-all approach.

So bad friction must be the opposite. We've all faced bad friction before, and this is when we become frustrated because user experience does not align with our expectation. This leads to higher drop-off rates and lower conversions. There's five ways to eliminate this type of friction. One, don't overwhelm our users. Too many choices results in anxiety. To fix this, reduce the amount of choices. If it's not absolutely needed, remove it or delay it. For example, here's a sign-up form by Amplitude. You don't need to ask for the country field here because we can simply find that with our engineering team by using reverse IP and updating our database. This reverse IP method is likely 90 percent or so accurate, but what is the opportunity crossing the trade-off by asking for it on your form and have it in decreasing your conversions. If we don't absolutely need it, we can remove it. Second way is trim the fat. A user simply needs to know the value they receive, not what you as a company receive. From the Clearbit example, when you're collecting the info from these users' use cases, you can simply mention we're going to personalize this experience for you based on your feedback. This is the value to the user. However, some companies may go overboard and say, "We ask this information so we know what you want to do, and based on this, you'll see different screens in the product and the messages you'll receive will be personalized." All this is unnecessary information, and any additional text on the screen may lose the customer. Give bite-sized pieces. In sign-up forms, if you're asking for custom inputs in addition to core inputs, it is best to use multi-step forms. Multi-step forms will provide a bite-size piece for the users to swallow, and this provides the user with the small expectations and reduces complexity. Take a look at HubSpot's example here. They break their sign-up into five steps and clearly tell you the progress on each one of those steps. Remove guesses. You want your users to know explicitly what you want them to do. Don't make them think. For sign-ups, this can be best done with placeholders in your text fields. For example, when asking for an email address, a user might pause to think, "Should I provide my company email or personal email?" If you want the company email, make sure your user knows that by adding in a placeholder. The final step, as we've already discussed, is to reduce steps. Ask yourselves, do you really need to ask for every field in the sign-up? Every field in the sign-up, every field you ask for, every step can and does reduce conversions, and it does contribute to friction. A user's expectation is to test your product or service, not to fill out a bunch of information. To help them achieve this goal, only ask for the required information, at least initially, so in step 1. Avoid the temptation of asking for a bunch of custom inputs, and if you need to collect custom inputs, do that later down in the process, such as in step 2. Airbnb is a great example of this. You can go on their website and browse for homes without creating an account. If you do need to create an account, they only ask for core inputs such as email and name when you do need to go reserve. Let's say we found a specific stay, and we want to click "Reserve". When we do reserve, they simply ask for the core inputs, such as their country, region, and then an OAuth for Facebook and Google to sign on. It is only when you're actually looking to

book a stay itself do they ask you for custom inputs as next steps, such as payment information and other contact information. This is the give-and-take we've been speaking of. At the moment of booking, the user won't find giving more a negative to get that desired action. However, if you ask the user to do this when they first signed up, many will hesitate as they've not seen the value of Airbnb yet.

Welcome back onto our second exercise. I was thinking we start with a few jumping jacks. Ready, go. We're referring to these exercises. No worries, let's replace jumping jack with friction. Friction can be applied anywhere. I'm excited to see how we can expand beyond just friction in sign-ups, to have friction applies overall to a business. Today, we're going to take an example for MealPal. MealPal is a service where you can order lunch online, and it has a very unique business model. We're asked to explore the business model to determine three bad frictions that MealPal removes from the industry, and three good frictions that they introduce. Let's look at the friction it creates and the friction it removes. MealPal removed a few types of frictions from the user experience that other businesses in the food space have not been able to address. First is the cost for the restaurants. With MealPal, restaurants can anticipate the orders, they can order in bulk, the ingredients, and increase worker utilization and throughput. Second is for the user which is for the time waiting in line, or deliberating where to go, or deciding what to order is removed as MealPal only provides a few limited options for you to choose from. Last, the cost to the customer is reduced which is a friction that most people, when ordering meals online, care about the most. MealPal meals always have a significant discount compared to the retail price of that meal, plus there's no delivery fee. Consumers accept narrower options and selections, and plan ahead for their meals in exchange for jaw dropping prices and convenience for the point of sale. Also, it just creates a good shareable moment offline because of the communal ritual of going out to grab lunch with your teammates or bringing lunch back to the office. However, it also introduced good frictions in the model to help their business. For example, paying and selecting your meals upfront introduces a friction where the consumer has to decide on a meal ahead of time which is just very uncommon in the food space. MealPal's model allows you to browse from dozens of restaurants in your area, but the menu is only limited to one option per restaurant. Finally, every food start-up is looking to solve the food delivery problem but here, MealPal has designed for you to pick up the food yourself, then wait for delivery.

Just like that, we're on to the last topic of this lesson, proposing experiments to optimize activation. This is my favorite part and the part that most growth PMs probably enjoy the most. Don't get me wrong, the previous two topics were very important that led us to this point. This provides us a basis of where we should run our experiments. Just like any wild experiments, where do we start? With a plan and a hypothesis. Now, we've completed all the analysis for sign-up flow. Let's explore how to create experiments. There will never be one or two things you can do to improve the sign-up by 50 percent. You'll need to work at it over time to make small gains that add up, and the best way to know that you're doing things the right

way is to establish a solid process. Here are five steps by working backwards. Define your goals. We can't always be addressing every problem. We have to choose our battles and the way to choose is by aligning our initiatives with business rules. What questions do we want answered? We need to ask very narrowed drill down questions. After all, how can we improve what we don't know? So we need to ask the questions to understand the why. What did we hypothesize will happen? Turn questions into experiments. Ask yourself, what do you think will happen? Creating a hypothesis will force your team to think of the impact of the experiment will have on your metrics. Then we prioritize for low effort and high impact. Without unlimited resources, we need to be conscious of which experiments we want to run, and we'll test and iterate. One of the beauties of being a growth PM is that you're allowed to be wrong. Even the best people in growth and product likely fail 50-75 percent of the time. If you take one item from this lesson, it is that you cannot control the quality of your experiments, but you can certainly control the quantity of them. So always be running experiments. We propose our experiments using experiment briefs. These experiments are similar to what you conducted in your chemistry class as a young student. You were provided a goal. You created a few hypothesis, and then you ran an experiment to see if you are able to achieve your goal in different ways. Here, using experiment briefs, we create a hypothesis-based experiments using the action so that the outcome, and because the theory framework. Action represents what we want to test. This is where you can state you want to change something, you want to add something, or you want to remove something. Outcome represents what we expect will happen. This is where we can state the metric that we think will move up or down, and the impact this action will have on our metrics. Theory represents why we think the action will lead to the outcome. This is where you can share what sparked this idea. If there's any resources or previous experiments that are guiding you to this assumption. Let's take an example to see an experiment brief in action. Say our business objective is to help the sales team connect with more leads. We've noticed with an analysis that leads with accurate phone numbers, convert more because our sales team can give them a call, make simple sense. As a result, we want to propose an experiment to collect more accurate phone numbers. Here's an experiment brief we can propose. The action. We want to capture the user's IP address to determine the country of origin. Based on this, we want to auto-complete the country code, like plus 1, plus 32 in the phone number field on the sign-up form. So that, the outcome, we can increase the number of accurate phone numbers collected in the sign-up flow from 12 percent to 18 percent. Theory, it's because we have noticed a trend among our users that eight percent of phone numbers we've collected are simply incorrect. Five percent of these phone numbers have the correct core phone number, but incorrect country code as they leave the default, auto-selected, plus 1 USA country code that we currently have.

Now that we've suggested an experiment, let's learn how to build a hypothesis. When running an experiment, we want to know the implications of our experiments. How will the experiment impact the user experience, the metrics or internal teams? We want to ensure that we're not

narrow minded but understand the larger picture. For example, if the business objective is to increase sign-ups, then remove that phone number field you have on your sign-up form, and I'm quite confidence you'll increase the number of sign-ups. Remember the heap analytics analysis that also confirmed that removing phone numbers from sign-up forms can improve conversions by 6.8 percent. However, if we implement this, we didn't take this into account larger implications. For example, sales might use these phone numbers to make calls to prospects to welcome them, and when they don't respond to emails, they might call them to connect with them. They may even SMS their leads. We don't know. Phone numbers are perhaps also another way for lead routing that your sales or your operation teams uses to prioritize leads. People with phone numbers may be routed to a specific group of people and leads without a phone number might be routed to another group or another team. Therefore, we should always qualitatively and quantitatively think of the impact of our experiment. Let's do another example. In the previous example, we had an experiment for pre-populating the country code for the phone number field by using reverse IP. For this experiment, qualitatively, the user will have a better experience as it'll show that we understand who the user is and where they come from. It may also help build trust that our company has worked with others from their country if we pre-populate that field. Quantitatively, we can measure how long it is taking our sales reps to search on LinkedIn for the country of origin for their leads. We can document how much time saved. This will help on the sales team by removing this research.

Being a growth pm is not a solo role. Just because we thought of an experiment does not mean that we can launch it without some checks and balances. You're constantly collaborating with other individuals to get the job done. For this reason, the experiments that you run and the projects you're working on, likely need to get buy-in from other departments and leads within the company. You also do not execute the project on your own. You may need to partner with other individuals to release that experiment. Let's do another example of a stakeholder buy-in. Using the previous example of pre-populating the country code for the phone number field by using reverse IP. To conduct this experiment, which individuals do you think we need to loop in the project? I can think of a few. Engineering can easy populate that country code using reverse IP. If we can do it, can we convert that country that we're tracking to a country code? Can we place it on the placeholder for the phone number field? Let's say if we're wrong, will we allow our users to change the country code? All things we can discuss with our engineering team. The design team. We may want to inform the design team of the changes and get their input on how this will impact the user experience. Operations. They can decide if there are any implications on the business systems. If we auto select the user's country of origin, and what happens when this country of origin code is correct or incorrect? Finally, sales. What can they expect on the leads that they work with? Will the quantity of our leads go up or down? What will happen to the quality? How many leads will this impact? Getting buy-in ensures that the company is aligned and that you've thought of all the wild cases, and the impacts of experiments on the business and other teams. It may not be obvious to determine the stakeholders. So ask yourself one thing. Who would be impacted or

who would just care if I make this change? Based on this, you have your answer.

We may not know the answer to every single question, as a result, along the way, we may need to make some assumptions. We're all familiar with making assumptions. There may be bias in your experiments, but when you align with others on the team, they may give you a new perspective and share insights about the changes in an experiment that we may not have thought of. You can't validate an impact or outcome, just make an assumption. This is the benefit of involving others as they will validate your assumptions and provide you clarifying questions that should be addressed before we run our experiments. Let's apply making assumptions to our previous experiment. Remember, pre-populating the country code for the phone number using reverse IP. The sales team is likely doing something to solve that problem at the moment. Let's assume that sales is taking three minutes to validate the country code on LinkedIn per lead. The engineering team said that this is feasible to do, but what about the accuracy? The country code may not always be correct. So let's just assume that 90 percent of the time it will work. Well, what about the other 10 percent? We can think of a project from the design perspective. What happens with trust when we auto select the wrong country code?

After running an experiment, how do we determine if the experiment succeeded or failed? For our sign-up flow, we want to improve convergence in the flow. We've already defined our hypothesis for the experiment and next we define our metrics. As a growth PMs always say, we cannot improve what we cannot measure. These famous quotes by Peter Drucker is something all growth PMs live by. If we run an experiment, but cannot one measure the outcome or don't set a benchmark on success or fail, then how do we know how the product is going to do. When proposing an experiment it's good to document the metrics and events that we need to track for us to determine the results of the experiment. Let's take the same experiment of pre-populating the country code field. Imagine, what actions, internally or externally should we track to help us decide the outcome of this experiment? Some obvious ones could be the number of people who submitted the phone number or the number deals closed from leads with phone numbers. However, we can get much more granular. On the user side, what about the percent of times that the country code was incorrect and the user changed it, or the number of days between the sign-up date and the connection with the salesperson as a consequence of phone number. Finally, how much time we're reducing the sales rep from confirming the country code of origin from the lead by searching on LinkedIn. From this analysis, we can determine if we're increasing the number of phone numbers and if they're relating to faster sales cycles and reducing the amount spent per lead doing research. This would quantify as a successful experiment. See how this detail analysis helps us. If we don't do this, on the surface level, we would have determined that a successful test is determined if we just receive an increase in phone numbers. However, if they were incorrect phone numbers, that may have caused a negative impact on our metrics, this would have been an unsuccessful experiment. Time is back to our business objective, did this experiment

help our sales team connect with more leads? From measuring the metrics over the experiment, we can help determine exactly this.

Let's apply what we've learned to suggest an experiment to improve the conversion rates for Udacity. Let's create an experiment brief for this challenge using our action, outcome, and theory framework. For action. For my example, I want to suggest that we should break our core inputs during the sign-up flow into a multi-step sign-up flow, with the first step only asking for an e-mail. The outcome I predict so that we can increase our initial sign-up conversions by three percent. The theory behind this is that we'll reduce the amount of steps to capture the e-mail address, which is the main data we want to collect. Even if people fill out the first step and don't convert, we can always re-target them or add them to our newsletter to come back and purchase a Nano degree. I hypothesize that will increase sign-up conversions by three percent because we'll reduce the barrier to get started. I assume that we can auto-retarget these leads who finished the first step but not complete the sign-up flow, and I assumed that we have their permission to add them to our newsletter campaign. To measure the success or fail of this experiment, we should track the number of sign-up conversions, the percent of these conversions, and the percent of drop-off after that first step.

Next, time to talk about ICE. No, not that ICE, a different ICE. Now that we've created experiment briefs, we can run all of our experiments, but we need to prioritize them. To do so, we use this ICE framework. ICE stands for impact, confidence and ease. Impact is the score of what you think will happen with the metrics, and if they'll go the way you planned up or down. Confidence is the score of how sure you are of this impact. Ease is how easy it is for this test to be ran with minimal resources. Each criteria of ICE is then graded from 1-10. The fourth field, the growth score, is created by looking at the averages of the ICE. The goal here is to look for high impact, high confidence, and high ease of implementation, AKA the largest growth score. Prioritizing these high growth scores addresses the common product question, what to do with impact and effort. A high-growth score means low effort and high impact. These reflect our quick wins. The valuation should not only be done by you, but all stakeholders involved with the experiment. Or else it's just the accumulation of one person's opinion. The ICE framework is not a perfect system by any means, but it creates a relative prioritization of comparing all of the experiments to each other. Traditionally, experiments were run by the highest paid person in the room. But ICE, every idea can rise from anywhere and evenly get a shot to make it into an experiment. With ICE, you don't have to be too narrow focused on perfecting each year experiment. Simply, just released the first one. Let's practice the ICE score framework together. Let's take the same experiment of pre-populating the country code for the phone number. Remember, these ICE scores are very subjective. That is why it's beneficial to get as many people's opinions and understand that different people will offer different scores. That's okay. After collecting the initial calculations, you can either take the average of the ICE scores or get everybody to be aligned on the same exact ICE score. In the world, it's common to simply take the average. For this experiment, I would

assign an ICE score for an impact of seven, because I think not all leads will be impressed that we can auto-fill their country. But it'll build trust for some people and they may even be more inclined to submit their phone number. A confidence I would give an eight, because the logic makes sense that if we reduce the amount of fields and clicks that a user has to input, we would increase the sign-up rate and the phone number field submission along with them. The ease would get a high nine. Because engineering is likely tracking this data already and simply has to write a few scripts to convert the country that we're collecting from reverse IP, to a country code for that phone number field. Based on this, my average growth ICE score would be an eight. As we would have many experiments in our backlog, this experiment would get prioritized accordingly based on this ICE score.

That's a wrap. Just like that, we're done understanding how to optimize a sign-up flow. Let's go back and look at what we covered in this lesson. Together, we determined how to create and then optimize a sign-up flow so we're capturing more leads. We did that first by identifying existing sign-up flows that we commonly interacted with. When we found them, we determined the call to actions that started these sign-up flows. In such flows, we determined how many fields we should be requesting and if those fields should be core, that are needed or custom, more nice to haves. After we identified the flows, we measured the conversion through these flows, by calculating the click-through rate and the drop off rate at each point or stub. If users were not going through the flow, that was likely due to friction. So we discussed what is good friction that we should leave in and bad friction we should remove. Finally, in classic growth PM style, we proposed experiments to optimize the sign-up flow. To accomplish this, we created in a hypothesis for all of our experiments, and determined what metrics we should track to identify if the experiment was a success or a fail. At last, we use the ICE framework to prioritize all of our experiment. CTAs, measurements, experiments, oh, my. You made it all the way through the lesson 1. There was a lot we covered here, but don't hesitate to go back and review any of it. Now, you're ready to sign-up for a bunch of random products, and find their CTAs and analyze their sign-up flows, or you can just think about that when you sign-up for the next great app. You might be thinking what's next? Well, we need to go activation and beyond.

Hi friends, welcome back. In the last lesson, we determined our conversion rate per sign-up. So that we can convert as many users that sign up as possible. Even though our users are in the product, our job is not done. We need to activate these users so they do not leave. This will be the topic of lesson 2, activation. Remember, we'll be breaking down all of our funnels into signup flow, activation, retention, and churn. We're doing this so you can understand how users flow from one part of the funnel to another. For this lesson number 2, we'll focus on how to activate our users after they sign up. Together, we'll find an aha moment of a product or service and suggest experiments to reduce the time to value so users can experience and see that value faster. Who's ready? Let's get activated. Here, you can see the entire outline for lesson number 1. We'll discuss an intro to activation, where we'll analyze the setup, aha,

and the habit moments that lead to activation. Then we'll look at the percent overlap to determine the arbitrary moment when our users get activated. Once we do this analysis, we'll have our activation funnel. Simply defining it is not enough. We want to see how our users are flowing through it. It's not ideal to group all of our users into one bucket. So we need to segment them down. Finally, we do what we do best, run experiments to increase conversion.

So let's get right into it. Activation is our next goal after we convert a user through a sign up. Let's discuss what activation is and why it matters. Let's look at this table again. To break it down, we start with an introduction to activation. Let's first define what is activation. Activation occurs when a user passes a set of actions in product after which they receive the value of the tool. They may not directly received the value yet, so it may be perceived value that this tool will help them achieve in their goals. We can calculate activation by defining a set of actions that a user needs to take to complete in the product to reach this point. After reaching activation, the user will return and can move onto retention, the next metric in the user life cycle. Wait, but hold up, let's now get ahead of ourselves. This retention part we just spoke of, we'll definitely address in Lesson 3, but for now, back to activation. Paying tons to acquire a customer does not mean anything. If they stop using the product after signing up or worse, they don't even use or test your product in the first place. Anyone can simply turn up Facebook ads or Google ads to increase acquisition. But activation is the real test to see if your product works for your users. The goal of activation is to get your users to the Aha moment as fast as possible. To achieve this goal, we do that by reducing the time-to-value or our Aha metric. This Aha moment is different for every service or product, and to determine it, we need to study our users, ask them their roadblocks, look at our product usage data, the drop-off rates, and even map our entire journeys that the user flow would go through. It is best to start with a few examples. So let's see how few products that we likely use defined activation steps for us when we were onboarding. The classic Facebook example. Facebook defines activation when a user has 7 friends in 10 days after signing up for their product. Similarly, Twitter defines it as if the user can follow 30 people, they'll reach the Aha moment. Dropbox, on the other hand, has it very simple. The activation moment is reached when the user first uploads one file onto the system, that's it. Activation can and does differ for every industry as they all have their own unique products or services. Not even two competitors likely have the same activation. Let's take the mobile industry first. In mobile, you acquire customer through the means of downloading the application on your phone, but you activate them when they reach a number of logins or sessions that you drive users to take. For e-commerce, acquisition is capturing the user's email via a blog post or a news form, and activation could be the amount of content that engage with you. In SaaS, software as a service, acquisition is signing up for a trial or a product, and activation is a set of actions the user takes after acquiring. You can see here that activation is different among different types of businesses that provides products or services. Aha is just a portion of activation. Think of all the steps you as a user take to get to the Aha moment of products and services that we

use. Take that earlier example of Facebook's Aha moment, which is 7 friends in 10 days. It's not as easy as just signing up for Facebook logging in and searching for that Aha moment. A Facebook user likely has to set up their profile, add a few pictures before they can start searching and adding for friends. This should make sense. Is likely none of us would accept an invite from somebody on Facebook without a profile image. In the activation funnel there are stages, and Aha is simply just one of them. An activation funnel consists of stages in order from setup moment and metrics, Aha moment and metrics, and habit moments and metrics. This logically supports the user experience that our customers likely go through. They first need to set up their account, then they likely test the used cases, and upon testing, they should hit that moment when the product and its value is very clear. This is the light bulb moment, the Aha moment. Then once they understand that value and use the product or service, they need to adapt it into their workflow to create a habit around using your product.

Let's kick it off by understanding the first stage, setup. To go a level deeper into activation, we first start with understanding what the setup moment and metrics are. In this setup stage, we have our setup moment. Setup moment is when our new user, customer or trial user, has finished configuring parts of their product that will lead them to actually test or start using our products or service. Software products are often designed with a plug and play. The plug is the setup moment that gets your users to play to get to activation. In most products that you sign up for, there's often a setup that is involved to start seeing some value. The exception, however, is for e-commerce products, where quite often you can see the Aha moment before doing any setup, you can view a product that you want to buy online at an e-commerce website, the Aha moment, before you actually set up an account add your payment details, the setup moment. Setup moment has a complementary value called the setup metric. The setup metric is how long does it need to take to get the user to complete the setup moment, or how often does it need to be completed? This process of how long and how often stays consistent for setup metric, Aha metric, and habit metric. Let's apply the setup stage to an example. First, with determining the setup moment, FunnelGuard, For example. FunnelGuard is a tool for marketers to stop leaky marketing funnels and eliminate wasted outspent. To see or test the product, you can create a trial. However, creating a trial doesn't mean much if you don't connect your Google ads or Facebook ads account from which they map their user journey and monitor your broken funnels. This connecting of Google ads or Facebook ads is the setup moment. This moment needs to be completed for you to test or see any value. Now let's apply the setup metric to the same example. Again, the setup moment is to connect the integration. Let's ask ourselves, how many and how long. The setup metric can be, how many integrations does it take to get to the Aha moment? Do we just need to connect to Google ads or Facebook ads? Or do we need to ask our users to connect to both Facebook and Google to get to activation. How long does it take to get the user to either do one or many integrations? Do we need to guide the user to connect on day 1 when they sign up, or when the user come in, explore the product, and then connect the integrations one week later to reach activation.

Okay. What comes after the setup? Aha, it's the Aha moment. Get what I did there. Once your user completes the set-up stage, we want to guide the user to the Aha moment as fast as possible. So let's explore what the Aha stage means together. Let's start off first by discussing what is an Aha moment and how to find it. An Aha moment is a set of actions that a customer needs to take in your product to see initial value. Once users make it to the Aha moment, build return to see more value. Since this moment is very important, it's ideal to get our users to the Aha moment in the first visit session or login. Just like the sign-up, a recession has a drop-off. So if a user can see the value in their first session, they'll likely return for the second. Opposite, if they don't see any value on the first session, they might think this product or service is not from them and you'll lose them right from the beginning. To determine the Aha, ask yourself, what do users need to do initially in your product that'll hook them to return again and find more value. Let's apply Aha moment to an example. If you play games on your phone, you've probably heard of Zynga, social game development platform. They ran experiments early in their product life cycle to determine the Aha moment. This analysis determined that even though their actions across each one of their games that they developed that drive a user to Aha, it is simply getting a user to return more than one time back into that app that gets them to activate. Let's apply Aha metric to the example. The Aha moment for Zynga's game again, is to get the user to return back into the game more than one time. They discovered that getting users back into the game one day after signing up results in high activation. So what do they do? Zynga does everything they can to get a user to return at least two times over the first two days of signing up. Next time you play one of their games, keep that in mind. Aha is such an important step in activation that it is worth it to discuss further how it differs between B2B, business to business and B2C, business to consumer users. For B2B companies, it is ideal to get your users to the Aha moment in the first session or first login after the user signs up. As soon as you sign up for most B2B softwares, you'll notice they'll use product tours tutorials to guide you through that flow and experience of seeing the Aha moment. By doing so, they're taking you through exactly step-by-step to that Aha moment. If not the Aha moment, it is ideal to get your users to the point of desired value in their first session or login, so that the user will return to the platform later to derive more value, and that's your goal. Activation has a give-and-take relationship. If you take more by increasing the length to get from setup to Aha moment, or if you ask for a lot of inputs to get the account setup, you'll likely lose a customer. If you give more by letting the user explore directly in the platform without any guidance or personalization, the user may feel overwhelmed and likely may not know where they are and how to get started. What happens? They may bounce. For this reason, there needs to be a balance of give and take. Aha is different for B2C companies however. For B2C companies, it's ideal to get your users to the Aha moment before the setup moment. As soon as your user arrives to your website or app, you want the ability for users to see value before they commit. Here, it makes sense to give first before you take. For e-commerce tools, you can browse the full catalog, check pricing, and often see shipping options before you need to create an account or add any

credit card details. B2B products are even going towards a similar model, which we define as freemium. In freemium, you can sign up for a free version of the platform to see and experienced minimal value before you upgrade to a paid account.

I hope this quiz allowed you to take a chance to take what we've already learned and applied it to a real-world example. I took the quiz with you, so let's see how I address this. Here, we were asked to look at a product and think of the aha moment and how long it took us to get there. First, I thought of a product I use often, it's called 1 Second a Day. I started using this app called 1 Second a Day recently, and in it, it allows us to record one image or one second of a video a day and remember it by. I can even add comments like a mini journal. You can see an example of it here. I really enjoy using it because it lets me go back into my history and look at what I've done in the past. So for 1 Second a Day, let's first discuss how we got to our aha moment. For me, I received a notification from the app every night to go and complete the task. The task was to upload one image or one second of a video a day. I used it for the first few days and then I dropped it like we do with most other products. After the first day of going inactive, they showed me a notification to see a collage of all of my videos. Now, I haven't been using 1 Second a Day for too long, so my video was very short. They ended my video with showing me an example video of somebody with a longer collage of what that experience looks like when you can go back and see a much bigger view of what you've been doing. This allowed me to come back into the product and encouraged me to keep going. Now, the second thing we're asked to do is what was the aha moment itself for you? For me, a few weeks later after using it and being engaged, I received another notification from 1 Second a Day, and this time, with my updated collage. When I saw it, I recalled all of the little moments of my day from weeks ago that I had forgotten. For me, that was that aha moment. Finally, we're asked to determine how long it took us to get to that aha moment. It took me personally a few weeks to get to this moment because for aha moment for 1 Second a Day is to recall your memory in the past. Now, most people have a good short-term memory, perhaps the last seven days. As a result, it likely takes a user on 1 Second a Day 1-2 weeks of active usage to get to that aha moment. The challenging part for them is I'm not sure how many users continually use it for a week or two to get to that stage.

So our customers have reached their first aha. Now what? Our job is not done. We cannot pack this up. This is just the beginning. We need to get our users to create a habit around using our product. Getting our users to reach the aha state is certainly a milestone we should celebrate. But even after reaching the aha, know that our users can still drop. We need to get our users to build a habit around using our product, and that's what the habit stage is. While the aha moment is when the user sees initial value of using your product, a habit moment is when the user continually repeats a set of actions to increase their engagement and the use of the product. Creating a habit moment leads a customer to be more retained. Even an activated user can become inactive if they don't form a habit to continue using the product. Let's apply what we've been learning about habit moments to a real example. I'm sure you've

heard of Audible, the audiobook subscription arm for Amazon. Audible would define an aha moment when you first purchase your book, an audiobook to be specific. Although you may not be activated, if you never return to browse more books, you would not turn into an active customer. For this reason, Audible often sends you notifications of new books they added to their catalog, tell you to finish existing books that you may have been reading, or they send you email about new credits that you can use. All of these actions get you back into their product, listening to, browsing, or purchasing more books. Therefore, the habit moment of Audible is likely to get the user to purchase one book every month.

Now that we understand these stages, let's see if we can determine the stages and the activation funnel with it ourselves by applying it to an example for Udacity. First we're asked to determine two setup moments for Udacity. After a user signs up for you Udacity, we want the user to complete their setup moment as fast as possible. Remember the definition of setup moment. Setup moment is when a user has finished configuring parts of their product that will allow them to test your product or service. Let's think, what type of configurations do we need to complete an Udacity to start any of our classes? Perhaps just purchasing a nanodegree would be a great start time. Then to keep ourselves organized and committed, we should create a learning schedule to determine how much time we'll commit and what steps do we need to complete the class. Next we're asked to determine two Aha moments for Udacity. I hope you've hit your Aha moment this far. For me, after user completes their setup moment, we want to reduce the time to value so the user can experience the Aha moment as quickly as possible. Remember, the aha moment is a set of actions that a customer needs to take in your product to see initial value they'll receive from you using your product. Let's think of what value do we provide and what steps lead our users seeing that value of Udacity? Think about it. As a student, when did you have that spark or that magic moment where you felt like Udacity's meeting your needs? A few of them that I can think of. One is booking at time with the mentor. This allows the students to see that they have access to somebody that will help them find a job after the course or an expert, they can talk to you about all things, product growth. Perhaps just taking the first lesson. Lesson 0. Taking the first lesson itself will allow the students to see the value of taking the online course and reaching the aha moment of being able to learn on your own time, in your own location, and in your own way. Another way to reach the aha moment is to engage with the student community. Engaging with other students will emulate the real life classroom feeling and scenario of working with others and completing that first quiz or that exercise. Doing so, students will feel the value of Udacity, which is to learn by doing. Now we're asked to determine two habit moments for Udacity. After user reaches the aha moment, we want to keep engaging the user so they can build a habit around using Udacity. Remember, the definition of habit moment is when the user continuously repeats a set of actions to increase engagement and use of the product. Let's take a second and think, what do we want our users to constantly be doing at Udacity? Some are clear, some can be creative. One, is just weekly active users. We want our students to be logging in every week to make progress on their classes. Every day is fantastic, every month

is probably not ideal. We want our students to be checking in quite often with their mentors. We want our students to schedule these frequent check-ins with their mentors, so the mentors can know where their students are in their progress and the students have access to somebody they can connect with. Creating habit would also be asking questions in the student community. We want the students to be engaged by asking questions and helping others by answering their questions. As they say, the best way to learn is really by teaching. Another way to create a habit is to ensure that the students are just under track in their schedule. If the student formerly builds a schedule, we can keep that student accountable by keeping them on track with that schedule is when they fall off is when they'll also fall off and drop off from the platform.

Now that we've taken a few guesses on what we think our setup, Aha, and habit moments are, we need to confirm which one of these moments actually lead to activation. To do so, we look at the percent overlap. There's never really one exact moment all of our users get activated on. There can even be many different Aha moments, it could take some a long time and some not so long. For example, for the Facebook example, it is not that once a user has exactly six friends in 10 days they'll become activated. It's more of a metric to get everybody aligned by, called a North Star metric. We determine this one moment of activation when we calculate the percent overlap. Let's apply what we've learned before to an example. For Instacart, a grocery delivery service that has a subscription model, we are asked as a growth pm to determine their primary moments of how many orders per month does it take for a user to get activated. First, let's look at the percent of people who took the action that also retained. This will help us determine the first half of our percent overlap definition. Here we're looking at the number of actions completed, number of orders per month from 1-5 for example. We'll take the number of users that retained and completed these actions, and just the actions that were completed by all users. We'll calculate the percent of users that retained and took the action by taking the number of retained users that completed the action and dividing that by the actions completed, 38 percent. What this is telling us is that for users that placed one order, there was 472 individuals that retained and also took the action of placing one order. In column C, there was 1,242 users that just placed one order. What we're doing in column D, is calculating the percent of those users that were retained and took the action from the users that just took the action. So that's 38 percent of users that retained and took the actions also completed an action. Here we can see the number of actions for the orders completed and the percent of users that retained and took the action. It's much better to visualize it so we can take the number of actions and the percent, and we could insert a chart. To visualize it better, we can take the column and turn it into a bar chart. What this is telling us is that the largest percent of users that retained and took the action completed, was five orders. But is that really correct? What this would be doing is a percent overlap diagram. Again, A is the retained users that did not take an action. B is the users that retained and at least took x actions, and C, the users that took the actions. If we only relied on this percentage of retained users and took the action, we will be only focusing on the amount of

users who retained, not so heavily on the amount of actions that were totally completed, and we don't have the largest overlap of the two. Here you can see if we're choosing five orders as the metric that lead to activation, of course, it has the highest percent of users that also took the action. But there's so many other orders that were placed, so many other users that took other actions and even retained users, we had more retained users who took one action than five action. That's why the second definition, the overlap, is very important. Next, let's only look at the number of users who took the action. We can use the same table as our first step and only look at the number of actions and the number of users who took the actions. We'll go to Step 2, and here we'll just take the number of actions and the number of users who just took the action. Let's chart them out to see them much more visually. If we were to only take this analysis, the second part of the percent overlap, we would say that it's one order that takes us to the point of activation. Because you can see so many more users place the action of one order. However, not everybody who placed one order retained. That's why we need to take it one step further. Here you can see the same diagram of before, however, rather than the focus being on the retention, the focus is now on actions. You can see here, regardless of the actions, which we determined as one action, there's so many other users that were retained that we didn't capture. So it's not the largest overlap between these two circles. That's what we'll determine in the next step. Next, let's look at the number of users who retained but did not take the action to help us determine the second half of percent overlap. Here we're going to take the same columns as before, but we're going to add the number of retained users who did not complete the action. Let's chart all three of them. Here you can see in blue, the retained users that did not complete action, the retained users who did complete action, and just the users that completed action in general for each single order. This does not visually tell us the largest overlap between the two. So we need to convert this to a rate and a percentage. That percentage is our percent overlap. So now we take the actions, the retained users who did not take the action, the retained users who took the action, and all the users that took action. We calculate total user. We calculate total user by taking A plus C. Then we calculate the percent overlap. The percent overlap will be taken by the number of users that retained and took the action divided by our total users. Let's visualize this overtime. So we'll say we'll take the actions and the percent overlap, and let's chart this. We'll say we want to turn this into a bar chart. Now you can see here the percent overlap and the number of orders. If you only went with the first part of the percent overlap definition, we said it would take five orders for users to get activated. However, not every user placed five orders. The second half of the definition if we went with that, we said we would have to place one order. However, many more users placed much more than one order to get to the users to be activated. The percent overlap tells us the highest percent overlap between the two, would be at three orders. Looking at the same diagram again, we can take A, the users that retained who did not take the actions, C, the users who just took the actions, and we found the largest overlap between the two, which is the retained users who at least took the action, here being three orders per month to get a user to be activated on Instacart.

Let's apply what we learned before to another example. This time around, let's take Instacart, a grocery delivery service. You're the growth PM. You're asked to determine their primary moments on how many orders per month lead to activation. First, we'll look at the percent of people who took the action that also retained. This will help us determine the first half of our percent overlap definition. Here, our data teams that are going to provide us the actions. So here, number of orders, the percent, and the number of users who retained and also took the action. The number of users who just took the action in total, and we'll calculate the percent of users that retained and took the actions. So we'll take the number of orders, the number of users who retained and took the action, and the number of actions in general. We'll determine the percent of users by taking the number of users who retained and took the action, dividing it by the number of users that just took the action. This means that 38 percent of people who ordered one order retained and took the action. Let's do that calculation for order 2, or two orders. We'll take the number of users who retained and took the action, divided by all the users that took an action of placing two orders, 44 percent. For three, there'll be 279 users that retain and took the action divided by 401, the number of users that took the action in general. For four orders, and we'll do that again for five orders, which is 193 divided by 215. Now this might not be the most visual way to see it. So let's chart this out. We'll take the column for number of actions and the percentage of users that retained and took the actions. We'll click "Insert" and we'll add in a chart. We'll say under setup that we want this chart to be a bar chart, so we can visualize this. This again is telling us the percent of users that retained and took the action, and the number of orders. Here you can see that phenomenon that we charted about earlier, which is the higher number of ordered goes the most users retained. So of course, users who plays five orders will retain more than one order. This is why we just can't rely on that first part of the percent overlap definition. Recall from my earlier example that just the higher amount of actions doesn't lead to the best overlap, even though they have the most amount of retained users. As you can see in this diagram here, the percentage overlap for the actions taken by the most people will certainly have the highest amount of retained users, but it might not have all the other users that took the action. For step 2, let's look at only the number of users who took the action. We can use the same table as our first step and only look at the number of actions, and the total number of users that took the actions. So in our table for our step 2, we'll take the number of actions and just look at the number of total users that took the actions. We'll go to Insert a chart. Just like before, we'll convert this over to a bar chart. Here you can see the total number of users that took an action and then the actions themselves. As it makes sense, Instacart users likely placed one order more times than they would have placed five orders. But this does not mean that everybody who placed an order retained. This is defined by the right side of our diagram. Even though we had so many users take the action of placing one order, not all of those users retained. Next, we only look at the number of users who retained but did not take the action. This helps us determine the second half of the percent overlap. Here, we can take the same table as our last step, but also add the number of users who retained but did not take the actions. Let's do that example together. In step 3, we'll have all of the actions, we'll

have the number of users who retained and took the action, like we did in analysis 1. We'll have the number of total users who took the action. But this time around, we're also going to ask our data team to provide us the number of users who retained and continue to use us, but they did not do the number of actions. This means that 710 users are retained, but they did not take five orders, anything less than five. Let's say we graph that out and see what it looks like. We'll take all four of these values, we'll click Insert and Chart. We'll want to convert this chart not to a bar chart, but this time a stacked bar chart. You can see here, it might not be so visual to see the exact percent overlap of the number of users who retained and did not take the action in blue, the number of users are retained and took the action, and the total number of users who took the action. So let's go back and actually turn this into a percentage by looking at step 4. Finally, we combine these groups to determine our percent overlap. We can use the same table as our third step, but we do need to create a new column to determine the number of users that retained and did not take the action, add that to the number of users that took the action. Let's do an example together. We'll go into step 4 of our analysis with the same table as before. We're going to create a new column for the total number of users that placed the order, and add that with the number of users that retained but did not place the order. For users that placed one order, that would be 150 plus 1,242 to give us 1,392. We can also calculate the percent overlap by dividing the number of users that retained and place that, the amount orders, and we divide that by our new column to get 34 percent. What this means is that 150 users that retained did not even place one order. They probably purchased before even ordering the first order. This means that 472 users place that first-order retained. The total amount of users that placed order one was 1,242. This means that 34 percent of users that placed one order retained. Let's continue on and do that for step 2, two number of orders. We'll take 212 plus 800, we'll take 381 plus 401. For order 4, 580 plus 242, 710 plus 215. Now this is where you'll see the magic of percent overlap. We'll take our number of retained users that placed the order and divide that by our new column. We'll do that for step 3. We'll do that for step 4, and we'll do that for five amount of orders. We'll convert these to percentages. Now here you can see our percent overlap. It might be best seen with a visualization. We'll insert a chart and we'll turn that into a bar chart. You can see now our percent overlap and number of orders. If we only took the first part of that definition, as we saw earlier, we would have determined that five orders gets our users to retain. If we took the second part of that definition, we might have said that one order is all that we need users to retain. But you can see with percent overlap that actually users who placed at least three orders in that first month, activate and retained the most. That's why it's very important to take a combination of both of these to determine the highest number of users that would meet in the middle. The aha moment.

I hope this quiz do allow you to take a moment to reassess what we learned. Looking at the highest number of users who retained and took the action to determine which primary moment, is a misguided principle. To determine the moment that led to long-term activation, we have to look at the actions that most retained users take and the actions that most lost

users and churned users do not take. Well, why is it incorrect to only look at the number of users that retained and took the action? This is incorrect process, it does not give us the best overlap between the two metrics we're looking to analyze. For the Instacart example, if we only looked at the number of users that retained and took the action, we would have chosen five orders per month as a primary moment of activation. What this does not take into consideration is not everybody retained, placed five orders, and everybody who placed five orders did not retain.

How was the exercise? My goal is to let you experience determining how to create these primary moments yourself. Let's solve this together. Here we're asked to determine udacity's activation moments. To do that, we provided a few habit, aha, and setup moments to you, such as the setup moment to create a learning schedule, and the metric, the days it takes to create that schedule. The aha moment, to complete that first exercise, and the metric, the days it took to complete that first exercise. The habit is to answer questions in the student community, and the number of questions answered. A data team was so glad enough to provide us with the metric and moment. We provided the actions that were completed, the amount of users that retained that did not take the amount of actions, and the retain users that did the actions. Just like before, we added up the two metrics to create our total users. Now our job is to determine the percent overlap. As before, our definition of percent overlap will be, taking the number of users that took the action and retained and dividing that by our total users. We'll do that for all of the metrics that were provided here. Now it's always best to visualize this. So let's create a chart as well for the metric of the questions answered and the overlap. We'll go to Insert, Chart, and we'll convert this to a bar chart. Here, you can see that the ideal optimum is to address three questions to get our users to create a habit in the student community portal by addressing specific questions. Let's go backwards to determine the aha that helps get our users to the setup moment. We'll do the same exact analysis to determine the percent overlap for the amount of days it takes to create the first exercise and complete it, we'll take the retained users that completed our actions and then divide that by our total users. Let's visualize this. We'll convert this again to a bar chart, and here we'll determine that simply the first exercise and completing it, gets our users to retain and get to the aha moment. Getting our users to complete the exercise in Day 1, will get our users to reach the aha moment. Now we take the percent overlap for our setup moment of creating a learning schedule, and the days it takes to get there. We'll take the percent overlap by taking the retained users that completed the action and dividing that by our total users. We'll do that for each one of the metrics for setup, defined as days here. To visualize it, we'll take a chart of the two columns. We'll convert that column into a bar chart, and now you can visualize and see that the students that create a learning schedule in day one activate much faster than users that keep going down. If it takes users two, three, four five, six, seven days, the less likelihood that users retained, and that's how you determine the percent overlap.

So let's put all of these moments into a funnel, not just any funnel, the activation funnel. Ta-

da. What's next? We want to make sure our users are performing through this funnel. So we want to measure before we fix, remember. There are two ways to improve the activation funnel. First way to improve the percent of conversions through the funnel is by improving each setup aha and habit moment in the funnel, and the Delta in-between to get from setup to aha, or aha, to habit moment. The second way to do that is we can be better at acquiring ideal customer profiles ICPs that go through that funnel, and we can bring the aha moment forward. To improve the activation funnel, we can improve the percent of setup aha, and habit moments across the funnel. We can start by focusing on conversions. We can track the Delta between each setup to aha moment and aha to habit moment conversions. We can calculate the Delta between each step, increase the Delta between each step, calculate the number of users activated and calculate the percent of users activated. We can improve Delta between each funnel, but how? We can generalize everybody, we need to put everybody into buckets. The second way to improve the funnel is by bringing the aha moment forward. Let's choose an example to do that together. We'll take autopilot, a marketing automation platform, and how they build their user journey. First, a user comes to their websites and creates a trial, this is where we capture the sign-up flow. The user goes through different tutorials and product workthroughs, they may add the tracking code to unlock a few of the products functionality and features, upload contacts and add users to complete the setup moment. After the setup moment they may integrate a few more systems, they may add some e-mail content and templates, eventually getting to the aha moment. Autopilot is a marketing automation tool. So their aha is building the automation workflows and campaigns. Once you visually build campaigns on autopilot, you'll see that it's much more superior hitting your aha moment. After the aha building more and more campaigns, you may run and test more campaigns to build a habit around using the product. The building of the automation workflow is the aha moment for the system because this is where the user can see how easy it is to set up complex workflows through a simple drag-and-drop workflow editor. But to get to this point, the user has to go through six different steps. To improve our activation funnel, what if we brought this aha moment forward? Autopilot knew that its users aha moment was seeing how to build these workflows as we defined it. They determined that most of their users, their ideal customer profiles ICPs, come from a few common industries and a few common use cases. So as a result, it templatized some of the most common use cases of the workflows and launched a feature called templates. They even made the feature public-facing on their website, so anyone can interact with and see how easy it is to build the workflows and campaigns before creating account. Now, the aha moment is brought up so far that it's the first step in the funnel. A user can experience the aha before the setup, that's your ideal goal. Let's look at this through the example itself. We can go to autopilothq.com, we can click other templates feature. These are all the different templates autopilot may have. As you can see, this's segmented by different industries and different use cases, capturing their ideal customer profile. Let's say if we're B2B marketing company, and let's say we want to use this for lead nurturing. You can see all of the different templates here for tracking website, e-mail engagement, capturing a lead, calling a follow-up, a simple 30-day nurture journey. We can

click on that template and you can see an example of how the journey's already built. Not to go deep into it, but you would have a form show a pop-up, re-target that person on Facebook, send an e-mail and a bunch of follow-up e-mails. This is the beauty of creating a journey and a campaign on autopilot. If you like what you see and you hit the aha moment, you can simply use the template and start your sign-up flow. By doing this, autopilot was likely able to reduce the time to value. It takes a user to get to that aha moment by bringing it before the setup moment.

We can group all of our users in one bucket. After all, we need to segment them. In addition to optimizing the funnel itself we just spoke of, we can also optimize what goes in the funnel. By conducting an activation segment analysis, we can determine which segment of our customers are performing well and optimize on finding more of those customers. ICPs, ideal customer profiles. We can bucket our leads into different segments. These segments can be based of demographics, such as role allocation, firmographic such as account size or payment plan, or by product uses such as what they have done in the product already. We can break down the activation funnel from generalizing it for all of our customers to segmenting groups of customers and seeing how they perform through the funnel. Let's analyze how each segment flows through the funnel. First, we determine the delta across each moment, meaning we can determine the delta between setup to aha moment. That would be dividing the aha moment percentage by setup moment percentage. It's just the rate of switch. We can also do that for the delta of aha to habit moment, calculating the habit moment percentage, dividing that by the aha moment percentage. That's the rate of switch from aha to habit. Then we can calculate the number of users that convert at the end of that funnel by multiplying the total number of users in the segment by the setup moment, the aha moment, and the habit moment. Taking all the users that come into that segment, seeing who they go through the funnel will determine the total number of users that activated. We can also calculate the percent of users activated, this will tell us how well the overall funnel per segment is performing. To do this, we take the number of users activated and divide that by the total number of users per segment.

Once we see how different segments are performing through our activation funnel, we can then optimize which segments of users we should be focusing our acquisition efforts on. Marketing team who's in charge of acquisition is certainly not looking to bring in leads that do not convert. From the previous analysis, you can send the data of which segments convert to activation best, and which ones do not back to marketing so they can adapt our marketing channels and our sources. We certainly don't want to be paying high customer acquisition cost, CAC, on leads that are worth less and are converting less. So to do that, we need to determine which segments are lost cause by looking at the segments with the lowest performing number of users activated. We also need to determine the lowest performing percent of users activated by each segment. Now, keep in mind that there are few assumptions we're making here. Because we don't really know the average selling price and

the customer acquisition cost, ASP, average selling price. What's the average price per each account that we sell? Customer acquisition costs, CAC, what's the price to acquire the user? What I mean by this? If a segment would be performing low, but what if it was free to acquire them? What if they're paying as 20x more than other customers? This detailed analysis will do later on in our lessons, in lesson number 4, when we look at the lifetime value.

I hope you now got the experience firsthand how to segment students at Udacity and determine which ones perform the best through the activation funnel. Let's look at this analysis together. In this exercise, we segmented our users by country to see which users performed well through the activation funnel. Here's the data that was provided by our data team. We said we want to look at segmentations by country, you could have taken segmentations by age, what they've done in the product, where they come from, where the lead came from, any of those examples. We said for the month, these are all the new users per country that we have coming in, and from our previous analysis, now we know how to calculate our setup aha and habit moments, and we did just that. To determine how to improve this funnel, we're going to first take the delta between each of our moments, such as delta from setup to aha, delta from aha to habit moments, and then we're going to determine who converts at the bottom of the funnel by determining the number of users activated with that funnel and the percent of users activated. For delta of setup to aha moment, we're simply going to take the aha moment and divide it by the setup moment, and we're going to do that for each country. At the end, we also want to take average of how all of our countries are performing with each one of these metrics. We do the same exact analysis for delta of aha to habit moment, how many of our users that have reached aha moment are actually reaching the habit moment? We do that with the same calculation, taking our habit moment percentage and dividing that by our aha moment. Remember to take a percentage as well. Now we've determined our entire funnel setup to aha to habit moment, and how our users are going through each one of those steps with these deltas. We also want to determine the end state. Of the users that came through for each one of the countries, how many have been activated? First, we do that by determining the calculation of number of users activated. To take that calculation, we'll take the number of users for that country, multiply the setup moment to determine how many users reached the setup moment, we multiply by the aha moment to reach how many of those individuals that reach setup, reach aha, and then we multiply that habit moment to determine how many of the users that came from the segment go through the entire funnel. Remember to do that for our averages as well. Then, we also want to determine the percent of the users that actually converted, and remember to take the percent, we're going to take the number of users activated and divide that by the total number of users. We'll do that for each country. This will tell us how our users are performing through the entire funnel, every country, their entire funnel from setup to habit moment, and the number and percent of users that convert.

Now, we can look at this analysis to propose experiments to help improve our activation

funnel. To the sweet stuff, the experimenting. Our goal here is to increase conversions through this activation funnel. There are two ways to improve these conversions. The first way is by improving the Delta or percent of convergence through each of the moments in the activation funnel. To improve the stages, let's first look at a few values. Here, we're going to look at the Delta of each one of the setup to aha, and aha to have moments for each one of these countries and see any areas of improvement. Let's look at a few values. Let's look at how every segment is performing to the average. The average Delta of setup to aha moment is 93 percent, meaning 93 percent of individuals that reach the setup moment get to the aha moment, and 91 percent for Delta from aha moment to habit moment. That means other users that reached the aha moment, 91 percent also continue to reach the habit moment. Let's take a look at a few countries. For example, right off the bat, we can see that Argentina's performing one of the worst in the setup moments. Average of 73, they're performing at 64. What's different is that you can also see that of all the different countries, Argentina is getting the most amount of leads. France, it looks like has one of the highest Deltas from setup to aha, but has one of the lowest amount of users at the top of that funnel. However, France also has a below average setup to aha moment as well of 83 percent compared to the average of 91. It looks like Canada is performing really well with the 99 percent and a Delta of aha to habit moment, that means almost every user that gets to an aha is also reaching the habit moment. But they also have the number of leads on the top of the funnel, they're quite low compared to the rest of them. China is topping them all. China has an average amount of new users, has an above the average Delta from setup to aha and in above the average from Delta of aha to habit moment.. So what can we do to perform users better through this funnel? One of the things we can do is Argentina looks like it has some potential because the Delta of setup to aha moment and aha to habit moment are performing almost close to average of all the different countries. It's performing it at 92 percent of setup to aha moment compared to the average of 93, and 86 percent of aha to habit moment compared to 91. So also the conversions are making sense, but the row setup, aha moment and habit moments are quite low. It would be good to look into an analysis of what the students from Argentina are doing that are not able to convert as well as some of the other countries. France, it looks like it has a high Delta from setup to habit moment, but a low Delta of aha to habit moment. Let's determine why these users are not able to adapt our courses into their habits and run the experiments although they are reaching the setup. The Deltas are one way to improve conversions, but we can certainly look to improve the performance of the whole funnel by looking at the ICP's, the ideal customer profiles. The second way to improve the conversion is to optimize the ideal customer profiles that convert most through that funnel. The name of the game here is, which countries are doing well and which ones are not? This can be determined by looking at the number and percentage of users activated on the top of that funnel and bottom of that funnel. Let's have a look. For all of our countries, we can look at the number of users activated. We can see primarily the percent of users activated. You can see Argentina has one of the lowest number of users activated, where we did see that they have the lowest setup, aha and habit moments or vice-

versa, China has the highest percent of users activated. We saw that because they're Deltas and each one of the setups is higher than average. Everything else falls in between. China and Germany, the ones in-between also performed well. However, you'll notice that three of these countries had immediate account of users at the top of that funnel. It looks like Spain is performing average, but also had a medium amount of users at the top of that funnel. From this, we can propose an experiment. We can explore looking into, or creating, or converting some of our courses into different languages. For example, Spanish or Portuguese would cover our Spain countries, Argentina, and Brazil where a majority of our new users are coming from. Perhaps, that would help us improve their percentages from 19, 32, and 25 percent, the averages into leading to the top medium tier.

This is the end of lesson 2 activation. Getting our users to this point means that we have a chance of actually turning them into long-time customers, getting them to actually retain. Next, we'll focus on how to ensure we keep these users and retain them, and engage them. But first, let's recap on what we learned. Remember, we broke down our funnel from signup flow, activation, retention, and churn. Here, we did an analysis of which moments that lead to activation, what our activation funnel is, the segmentation through it, and which ICPs performed the best. Now that we have our users activated, make sense to retaining them and engaging them so they can continue to be a long-term customer. Here you can see the entire outline for lesson 1. We discussed an introduction to activation, where we analyzed the setup, aha, and habit moments that lead to activation. Then we looked at the percent overlap to determine the arbitrary moment itself of activation. Once we did this analysis, we had our activation funnel. Simply defining it was not enough so we want to see how our users are actually flowing through it. It wasn't ideal to group everybody into one bucket so we did a segmentation analysis. Finally, we did what we do best by running experiments that improved our conversions. Fifty percent, that's how far you've come in this course. Growth PMs come in all different flavors, and the one you have is a glass half-full kind of guy. So I'm really excited to go the other 50 percent with you if you're still with me. Now that we've activated our users, it's time to make sure they stick around by engaging them and retaining them.

Welcome to our third lesson in this course on retention. In the last lesson, we analyze our activation funnel and determined how to get our user from sign-up to an activation state. Getting a user to activation is just the beginning. Now, our goals to ensure these users are retained. This lesson will focus on how to engage our users, and how to conduct a cohort analysis, and determine which segment of our users are retaining longer, or which activities are guiding users to retain longer. We then make our users do more of those actions so that they reach long-term retention. Retention is not a small task by any means, so let's look at our agenda. Remember the course outline, we're breaking our entire funnel into sign-up flow, activation, retention, and churn. Retention is a very strong piece, they even say retention is king, and we'll soon find out why. This lesson will focus on how to ensure our activated users stay, engaged, and retained. Our agenda reflects this. First, we'll address engagement. We'll

learn about the four different types of engagement such as use cases, frequency, features, and intensity. We then will determine the three different engagement states themselves; how to get our users from the casual state to the core state, and then the power state. Next, we'll address retention. We can determine our retention using cohort analysis and determine them to visualize the retention curves. Then, we'll measure different retention rates and we'll improve the retention curves by running experiments, first doing a cohort analysis on all the different segments that we're putting through, and compare which one leads to a correlation versus causation. It's a lot, but remember, let's take this at your own pace. Let's get started.

Before we begin, let's discuss retention. What is it? Let's align on what retention means and then we'll explore all the different paths together. Retention is the measurement of the percent of users that keep returning to your product over a set period of time. This is a very important metric because it reflects both how your organization is acquiring customers and how it's satisfying them to continue using the product or service. We understand retention is important, but how important and why? Actually, it's very important. So important that retention's always referred to as the king. We'll prove this ourselves. But we're not paving new path to discover something new, simply do a quick search of retention and you'll find such learnings. The Harvard Business Review found that it's 5-25 percent less expensive to retain a customer than to acquire a new one. They also found that you can increase revenue by 25 and sometimes even 95 percent by a simple five percent lift in your retention rates. American Express did a study to validate that customers who are retained buy again and they renew their agreements. The same customers will be the voice for your product to help you acquire more users. These referrals and customers are the best voice for your product. Just like activation, retention also is affected by different industries. For mobile, retention is if the user keeps returning to your product to take an action or use the product. For e-commerce, retention is when the user returns to your website to purchase another item or purchase the same item. For Software as a Service and SaaS, retention is if the user stay subscribed and engaged to your product. Retention is so important because retention is the output from all of your inputs. To maintain this output, we need to control all the inputs. Acquisition, activation, engagement, revenue churn, and everything in between. Retention has an effect down the entire funnel. Let's say acquisition. The longer the user retains, the higher chance of us helping uncover the costed it took to acquire the customer, customer acquisition cost, CAC, and increase the lifetime value, LTV. In reverse, if we control our ideal customer profile, the ICPs, to ensure that we get qualified leads, we'll likely retain those users longer. If we're taking our power users and finding more users like them, we'll retain them longer and the longer we retain them, the faster we can endure the costs it took to acquire the customer. Activation; the longer the user retains the possibility of making the user more activated and engaged, which helps create a much more locked-in user. This locked-in would prevent a customer from leaving in the future. In reverse, the more users we activate after sign-up, we can ensure the create a habit around using the product and they retain longer. Revenue; the longer the user retains, the possibility of increasing the account size and plans through

different add-ons, services, and expansions. Overall, the longer they retain, the more money we collect. Referral; longer the user retains the higher chance of them helping close the loop to assist acquiring a new customer and that's what we call a retention loop. All these variables in our funnel have a direct impact on retention. To maintain retention, we'll focus on engagement and churn. Engagement helps users adopt more use cases, increasing frequency, increasing intensity, and adopting more features. While churn, we can spot a dormant user ahead of time, so we can resurrect them to come back into an active state.

First, let's focus on the engagement types. As we said in the last concept, to increase engagement, which means that a user will be retained for a longer period of time. In this section, we'll cover engagement and all of the different types. To retain a customer, we need to ensure users are engaged, not just activated. Retention is binary. It tells us if the users are active or not and engagement tells us the depth of their activity or inactivity. It's simple, we increase the engagement and the users will retain for a longer period of time. After users activated and subscribed, our goal is to keep these users engaged. Engaged is a user that is using the product or specific use case of the product in the determined frequency that we set for it. For example, we can do this by asking, is the user using the product for the intended use case we set for it? How often are they supposed to use that use case? There are four ways we can increase engagement for our users; we can add more use cases so our users adopt more uses of the product, we can increase frequency of the use cases so users use the product or the service more, we can increase intensity, so how long are they using the product or service, and we can increase features adoption within the product. To measure improvement, we can look at the total engagement across all of our users in the database, the engagement per active user. But more commonly, segmenting engagement down into different buckets of engagement states.

First, let's determine how to increase the use-cases. We'll turn our activation moments from the activation funnel and we build a use-case around it. Let's determine the first way we can increase engagement by increasing the use-cases. You can see retention is tied with engagement. The more you engage, the longer you retain and the first way you can increase engagement is by helping your users adopt more use-cases. First, we derive the core use-case from the activation funnel we've already previously determined. We can use this setup, aha, inhabit moments and metrics in the activation funnel to determine our initial use-case. As you build your product in your organization, you can predict very well what your core use-cases are. For early startups, they're likely only one or very few use-cases. But for developed companies, they may have expanded their use-cases to meet different engagement requirements. For example, let's take Airbnb. Airbnb's first use-case was stays, the short-term renting rooms and home solution. Then they expanded to long-term rentals. Eventually introduced local experiences to book restaurants and then even adventure bookings. Airbnb's primary goal is to get our users to be a guest and book a stay. Once these guests turn into active users, they guide these users into adopting another use-case, which is being a host or

booking an experience or adventure. Let's take a look at Lyft. At its inception, the core use-case was premium taxi service for one-off events where the driver picks you up in a suit and a hat, a pure luxury chauffeur service. Then both riders and drivers evolved. Riders started increasing frequency of their use of Lyft, and wanted more cost-effective options. While drivers started to ease off providing luxury service thus rather than luxury use-cases, Lyft adopted a casual use-case such as going to the airport or going out at night. Riders and drivers started demanding more. Riders wanted to use Lyft for most frequent transportations like going to work. Lyft adopted another use-case to provide shared rides or communal rides for scheduling rides ahead of time. Finally, the business evolved again, and Lyft users wanted to use Lyft for short distance transportations such as going to cafes, shopping, and grocery store. So Lyft adopted their most recent use-case of offering scooters and bikes to allow users to travel a short distance without waiting for a driver to come pick them up. Lyft's primary goal is to get the user to be a guest and book a ride, then they try to convert you to be a driver.

The next engagement types we can increase is frequency of our product. We've already determined the first engagement type, use-case, so let's take all the use cases our consumers use our product for, and let's see if we can increase the frequency that they use it. Adding more use-case is one way to increase engagement, but we also want our customers to be using our use-case based on the frequency we set for them. For this reason, use-case and frequency go hand in hand and we may introduce use-cases simply to increase frequency. An ideal frequency is measured in time, an ideal frequency could be daily or weekly, referred to as daily active users or weekly active users. A monthly frequency of monthly active users can pass for some B2C companies, but it's very challenging to scale for B2B companies. However, if the frequency of your product is yearly or anything longer than monthly, it is challenging to get your users past the aha state into an engaged user. The use-case is completely so infrequent in a yearly frequency, that it's challenging to create a habit around using that case. An example could be tax solutions. Many companies are built upon longer use-case frequencies, as these use-cases require the least amount of investment and likely have less competition. But these companies quickly find that they need to create use-cases with the frequencies towards weekly or daily. Airbnb, for example, first introduced stays, booking a room or a home with a bi-annual frequency, because how often do we take vacations? Probably a few times a year. However, it was hard to create a habit as most people traveled only few times a year. You can consider this as a B2C use-case. Second, they introduced use-cases for business travelers to convert their existing B2C customers into B2B customers, thus bringing their frequency to monthly. Then, they understood that their core use case of travelers only performs in action of travel maybe once a month. To bring that frequency even shorter, they needed to focus on creating a use-case that can be used every few weeks by both their B2C and B2B users. So they introduced experiences and bookings. So not only travelers, but their B2B or B2C users in their own home city without traveling can book events, experiences directly from Airbnb. Thus the use-case and their frequency was

brought down to bi-weekly or every few weeks. Let's take another example, Lyft. Lyft first introduced Lyft regular, where you can book a private car for the use-case of going to the airport or going out at night. However, it was hard to create a habit as most people often only went out to the airport or went out a few times a month. So they introduced Lyft Shared, where you can share ride with other passengers to introduce a new use-case of users who wanted to grab groceries, go for an event, or meet their friends. But in return, they didn't mind sharing the ride with others to reduce the cost. This brought their frequency from monthly to perhaps weekly. Next, they understood that many other users only commute a few blocks, but they don't want to wait for a ride. So Lyft introduced Lyft scooters, and bikes, to create the use-case for users that wanted to go use Lyft to get groceries or commute to work, essentially daily tasks. So this brought their frequency from weekly down to even daily, for some users.

I hope you got to apply what we learn in this lesson and this quiz on frequency. Let's tackle it together. Here, we're asked to take a product or service that we use often and address these three questions. First, is think of the frequency you use, the use-case for this product for? I thought of the true products as an example. First, Spotify. I often use Spotify, but I wouldn't consider it as a daily user. However, when I do use it, I use it for an extended period of time, the minimum of at least one hour. Although not daily, I would certainly say I use it every other weekday and certainly on weekends. For Pipedrive, a CRM tool, I often use Pipedrive every few weekdays, but certainly not every day. What would that platform track their users frequency by? Spotify, likely uses both weekly active users and daily active users as their frequency. For Pipedrive, Pipedrive likely only uses weekly active users as their frequency, as you don't need to use a CRM tool every single day. What would the company do to increase your frequency? Spotify, for example, based on my music preferences, Spotify likely knows the music that I play during the daytime on weekdays, and it's often related to focus time. They could create a playlist for me focused on study and work music, and send me notifications around the time when I focus on dedicated work, likely between 1:00 PM to 4:00 PM. Spotify can research if their users will allow them access to their calendar so they can know different times when we focus just on work and there are no meetings on our calendar. Doing so, Spotify would convert me to a daily active user. They can also research if their users will allow them location access, so they can determine my morning rituals and patterns and suggest me podcasts to listen to on my way to work. Doing so, Spotify would also convert me from a weekly to a daily active user. Pipedrive, likely uses weekly active users as their frequency. They could encourage their users to always have a task, a follow-up on all of the leads that they store in the CRM. Based on the date of this task, Pipedrive can send us a notification to return to the product and complete that task. The more tasks we set, the hard chances we're returned into the product.

I hope you were able to complete this exercise after going through the last few concepts. Let's determine your Udacity use cases and frequency. First, let's determine Udacity use

case. Let's start with the activation funnel we've already conducted for Udacity. Remember, the setup moment was to create a learning schedule within four days. The aha moment was to book a time with a mentor within two weeks. The habit for Udacity is to answer three questions in the student community. From all of these, the setup aha and the habit moment; we can derive the initial use case for you Udacity. To take an online course, it's pretty simple for Udacity, but other businesses it could be much more complex. Quite often however, once you are a growth PM within an organization, you likely know the primary use case your users use your product for. Now let's take our primary use case of taking an online course, and let's determine the idea of frequency for this use case. To set expectations, Udacity markets most of their courses from the range of two months to six months. Without looking at data itself, we can qualitatively make an assumptions that daily active users and monthly active users would not be an ideal frequency for Udacity, and why? Well, because we cannot expect our students to login every day. Can we? This of course would be a very nice to have. But ask yourselves here, how many of you login every day to Udacity to continue progress on your course? What about monthly? Well, an average course at Udacity is roughly around 20 hours. If you only logged in once a month, then this might take you a year to complete. This would not be ideal for the student or for Udacity, as there's a very high chance that the student would likely drop off at some point on month 2, 3, 4, 5, 6, 7 because they're is simply not retaining the knowledge, and there is just not much progress on it. So what's the sweet spot? We as a growth product manager should design Udacity for the sweet spot. Encouraging our students to login weekly to make progress on their class is likely the correct frequency for Udacity, thus we would measure students engagement as weekly active users or WAUs. To summarize, the primary use case for Udacity is to take an online course. It sounds obvious. I know. The frequency that we want to measure this applies weekly active users, WAUs.

Now onto features that unlock different use-cases. We already learned that engagement can be driven by increasing use-cases and frequency. We also discussed that you can increase use case by adopting and increasing more frequency. Well, now we'll determine how increasing feature adoption can introduce new use-cases, which in turn increases engagement. Lets discuss how to increase feature adoption. There are many features that unlock a use-case. A user often starts with one use-case, the primary use-case. But as we expand, we want our users to start using multiple features within the product. We use the feature process of increasing engagement when our use-case can be adopted further by using many more features. The first step is to create a list of features for your product. You'll notice that most of these features compliment each other and if used together help adopt a use-case even further. Now that we've defined our features, how do we get users to actually use them? Some companies would just do a mass blast, sending an email to all of the users that do or do not take the features. But I highly don't recommend that, as how often does not work? We want to personalize every notification and message up to the point that our data can or that we can. To increase feature adoption, we analyze this different steps. The who.

Here, we want to find out who these users are. The who can be segmented by demographics, firmer graphics, or product usage as we learned before. What about where? There are six different locations we can educate our customers on adopting new features, such as new channels like sending email notifications or push notifications on your marketing website itself through different integrations you may have, through empty state pages. This one is commonly not looked upon, such as when the user logs in and they have no data, what do they see? What about UIQ's like badges, checklists, countdowns, highlights, blackouts, or the product itself can create any page within the product to show which features to adopt. Then finally is what should be said. Once we know who and where, we simply need to determine what the message will be. This will be the hook that gets them to engage. The best way to determine this hook is to tie the message back to why current customers use that feature. What value do they get in return for using that feature?

Increasing engagement by these four methods can be a bit confusing to be honest. Par values at Udacity, let's apply learning two examples. To understand the concept of increasing engagement via feature adoption better, let's discuss a theoretical use case by taking autopilot, for example, the marketing automation tool we previously talked about. To give you a slight perspective, autopilot is a marketing automation tool that allows you to send e-mails, SMS, and pop-ups for marketing purposes. For our first step, let's try down a total list of all the features available at autopilot. There could be lists of people, you can segment that list of people, you can upload e-mail templates, see your reporting. As I said, there is multi-channel, so there's SMS and pop-ups. You could even re-target your users via social, and then there's the core piece which is building the campaigns called journeys. Now on to the analysis. Since it is a marketing automation tool, its core use case is of sending e-mail campaigns. To do so, you can use many features above. However, most likely start by using lists, journeys, and reports. Those will help with the core use case of sending e-mails or campaigns. You have a list of people, you send them an email using journeys, and you look at the reports. Most users initially upload a list, extend the journey or campaign, and they check on reports to see the performance of their campaigns. To increase engagement, autopilot likely wants their users to create more journeys by adopting a few more features such as creating more personalized segments. So not your static list, but let's create a dynamic list based on if this then statements. Second is to leverage their multi-channel messaging features such as pop-ups, SMS, and social, so you can capture the audience in multiple different channels. All these features compliment each other and if used, help adopt the use case of autopilot even further. Second, we were asked to look at who the users we want to introduce these features to. Let's say we want to also segment our users, we don't want to message all of them. We might want to segment users that might be considered mid-size companies that actually can segment their contexts. So maybe we'll look for accounts that have at least 5,000 contacts within them. Let's say autopilot can be used by operations team, support team, but are core use cases for marketers. Let's say we only want to market to individuals that are in the marketing team, not designed, not operations, not their roles. To be able to segment users,

they likely need to have custom fields. Custom fields could be beyond your static fields like your core fields, such as name or email. They could be custom fields like how many orders have they taken? When is the last time they logged in? What's their purchase price? Etc. We can only target users that have custom fields, and to be able to adopt another use case or feature, they likely need to send at least one journey or campaign to hit the aha moment. Finally, maybe we want to use condition logic in our journeys to be able to target these users with those if then statements. The second step is to determine where to show users these new features. A few of those channels could be push. Maybe we want to send them a notification after the user launches their first campaign or journey to show them how their performance is doing, which is their reports. Notifying them that their users who use multiple channel marketing, such as with pop-ups, SMS, and social retargeting, their campaigns perform an X percent better than using just one channel, which is e-mail. We can provide a call to action, a CTA, to learn more about how users use these other features such as SMS, social, and other retargeting. Perhaps we want to send them notifications, it's always a best practice not to send dedicated e-mails just for feature adoption, but instead, use real straight and existing e-mails being sent. So let's say for example, autopilot sends daily e-mails that show a glimpse into your marketing automation world such as your open daily rates, click-through rates, and campaigns that are live. Such is called a rolled-up. Let's say if we create a real estate within this roll-up e-mail introducing users to go adopt a new feature or any transaction e-mails, we can send a follow-up on. We could include in these daily e-mail sections to educate the users on the features that compliment what they already use. For example, if you're using list, let's say we want to get the users to use segments so they can create a dynamic list that's much more personalized. Let's say if they're using just e-mail, we want to target them and show them what the benefits of using a multi-channel marketing, such as social, SMS, and pop-ups. In the product itself, we can use UI cues. We can include badges, checklists, countdowns, highlights, blackouts, creating a tooltip next to or on the social, the SMS, or the pop-up feature icons to educate our users on what using these features will allow them to do. We can even use the product itself. We can create areas on any pages within the product to introduce a new feature. Remember that example that we showed earlier about using templates, pre-templated journeys for common use cases and industries? Well, when a user logs in to create a campaign rather than starting from scratch, that would be a blank state and we don't want to take our users to a blank state. We can select a specific industry and a use case and user templates, so you don't have to start from scratch. Now, what do we actually tell them to convince them to try these features? For the feature adoption of segments, let's say autopilots existing customers use segments versus list because segment allows the user to create a dynamic list based on if then multiple criterias. They do this so their journeys are more segmented and personalized, not a mass blast, this results in higher conversions. We can determine from our existing database of users their performance on their journeys and campaigns and if they're static lists or using dynamic list. We can then determine how much the performance likely increases if they use dynamic segments. We use this exact percent when we try to get our users to adopt this

feature. For feature adoption of multiple channels, autopilots existing customers use e-mail because e-mail is the most common form of marketing automation. However, savvy marketers may want to engage their leads using multiple different ways. It's hard to get a new user to conceptualize how SMS, pop-ups, social, and other can create an advanced e-mail strategy. In our where, we need to include examples how other customers leverage a multi-channel marketing approach over only e-mail, so our new users can receive a spark on how to apply this approach to their process.

How was this exercise? One of my goals is for you to take the learnings here and apply them to actual products, applications, and services that we may use, whether that's your own job, your past job, a future job you're looking to apply for, or just products that you like to use. I took this exercise myself as well to understand which features guide use case adoption and then to increase engagement. I personally chose Google Photos. So I took Google Photos for an example, and let's list all their features first. There are many things you can do on Google Photos such as creating photos. You can store all your photos on there, even store your videos. You can group your photos and videos into different albums and print them into canvases, photo prints, or photo books. You can edit your photos and videos together to create movies and create collages by editing your videos and photos. Animations. You can edit any of your videos and photos and put animations in their. Memories. You can group your photos and videos based on specific locations or timestamps. Finally, tag. Photos and videos can be tagged by location, even the people within them so you can search by these filters. The primary use case for Google Photos is for users to download the app and store photos as you would imagine. They have a very typical land and expand model. It is a freemium product. The land is where you can use the product for free to store low-quality photos. Then you can use a freemium model to expand your users. Once the users want better quality photos, you can upgrade them into monthly payments to store better quality photos or the original size photos. The features that unlock these use cases are photos and videos. This is actually the use case I started using Google Photos for, is to store my videos and photos. Now, let's see how they increased my use cases of Google Photos. At some point, via notification, Google asked me to enable location to enrich my photos. I thought it was a good idea so I did it. Google then took location data and created geospecific albums for me based on locations I've visited and my trips. Before, I only stored photos with Google Photos. But these new features: memories, albums, and tags, marked a new use case for me, which is to organize my photos and videos now. Once I adopted the two use cases, which is storing photos and organizing photos, Google tried to increase the frequency at which I did these two use cases. Google would send me a notification to save photos from my phone to Google Photos to clean up my memory. Cleaning up memory would make my phone faster so I did it. When I logged in, Google use their own product to introduce me to memories. They included memories in my home screen. These memories were segmented by time and location. Upon clicking into memories, it also asked me to enrich photos by tagging people, which I did for the first few photos. Now, think about it. Why would you ever want to go back to look at

photos? Likely, to search something or search someone. They did exactly that. When I want to search now, it was easy for me to search by people, location, or time. Remember, you can increase intensity by three different ways: action, time, and spend. For Google, this means they can increase the amount of actions such as editing and organizing photos. For time, they can ask their users to spend more time looking at photos and actions. For actual dollar spent, you can purchase prints, books, and postcards directly via Google Photos. For me, Google increase intensity via time spent in the product. Google created movies for me based on all my trips. It used the product to show me these using the For You page, which is my homepage. Google gathered a group of photos from one location and turn them into a movie with even a background song involved. This made me see a glimpse of my trip all in one location and made it very easy for me to share it. Google introduced me to new features along this journey. They pre-edited my photos for me and send me notifications of these edits. When I ignored them, they later came back with a group of photos from one location and asked me if I wanted to print a photo book of a random group of photos from a trip. This emotional hook got to me. I then ordered a book. These features, movies and prints, unlock a new use case for me, sharing my photos and videos. They're still trying to get me to adopt the collages and animations. However, I'm not engaged yet. So I started with the primary use case of storing photos and videos, then I started organizing my photos and videos, and now, I even share my photos and videos.

Another way to increase engagement is to increase the intensity of each use defined by session or login. So let's determine what intensity is. Intensity can be increased in Actions. Actions is the number of events, clicks, fields, or just actions you take during everyday use. Time is the amount of time you spent per use. Money to spend is the amount of dollars spent per use or purchase. The goal is not always to increase intensity, however, some products are created to actually decrease intensity. For example, Acorns an investment platform. They want to automatically invest your money for you after you initially login, and set up your account, so you never have to log in, they do it for you. So there goes actually to decrease intensity and not track logins and sessions. Second example, Gusto, an HR platform. They want to automatically send you your paycheck after you initially login and set up, you never really have to log back into Gusto. These tools pride themselves in reducing the number of sessions you have with their product, AKA their intensity. However, it's much more common for products to actually increase intensity. For example, Instagram, they want to increase the number of likes and comments per use. That's an action. Netflix, they want you to watch more shows per use, so their intensity is time. Robinhood, another investment platform. They want you to trade more every session you'd have with their product. They want you to increase the spent or the money. Intensity is closely related to frequency, and we measure intensity of product by multiplying the frequency with the intensity metric. Let's take a few examples. For Netflix, the frequency would be sessions per week. We multiply that by the intensity metric, which is time watched per session. Together multiplied will give us our intensity of total time watched. Let's do another one for Instagram. The frequency for

Instagram would be sessions per day and the intensity metric would be likes per session or comments per session. To give us the total intensity of multiplying the two values would give us the total likes. For Robinhood, the frequency would be sessions per week as well and trades per procession is the intensity metric giving us total trades. Now that we've found out or intensity, how do we improve it? To get our users to do more of something that they're already doing, you need to first get our users to see value of the use case you wanted them to drive intensity for. So let's again take a few examples. For Netflix, the more they watch, the less bored they get. For Instagram, the more they like and comment, the more they feel social with their network. For Robinhood, the more they trade, the more they can potentially earn and make. You need to get users to these moments of feeling that Netflix is making them less bored, making sure Instagram is making them feel that they're more connected, and Robinhood, where they're making more money. That's the way you'll increase intensity. This is where the AHA to habit moment comes into play. Once a habit is created, we need to eliminate all paths a user can take to finish their session. A common way is to eliminate all end-state pages and exit paths. These are the empty state pages we spoke about earlier. Let's take a few examples again. For Netflix, once an episode is finished, they automatically start the new one. For Instagram, it's an infinite scroll, so you can always keep continuing to like and comment more. There's never a moment where you need to leave, or you're encouraged to get away. For Robinhood, they're always providing you recommendations on what to trade and updates on prices of the stocks, so you're never encouraged to leave.

Let's apply all that we have learned about engagement types to Udacity. Let's recall our primary use-case and frequency that we determined earlier. The primary use-case for Udacity, you probably guessed it, is to take online classes, and the frequency we measure our users by is weekly active users, WAUs. Now, let's determine the features that unlock this use-case. Some of those could be: using the classroom portal itself to take the online class, watching videos to understand the content, taking quizzes, and completing exercises to practice your learnings. The intensity metric at Udacity is very similar to Netflix. They're both video-based, so it's time-watched. To determine the time-watched per session, let's look at how lessons are actually broken down at Udacity. They're broken down into different concepts, and many concepts have quizzes. Again, the value of Udacity is to learn by doing. On average, every three concepts, there is an exercise where the learning of the previous concept is applied. Each concept takes about five minutes to watch and about a few more minutes to complete the quiz. Let's say the total time of the concept is 10 minutes, for every three concepts, that would be around 30 minutes, and that's exactly when exercises are introduced, every two to three concepts, and every exercise takes about 20 to 30 minutes. So for one exercise, three concepts, 30 plus 30 minutes, that's about one hour, and that's what we'll define as the intensity metric for Udacity, hour per session. We'll define it as an hour so we can group together one specific group of learning, a few concepts to get to a lesson, and then the user can jump off. Remember, after the users activated and subscribed, our goal is to keep them engaged. Engaged is a user that is using the product or service with the use

cases of the product that determines their frequency. For example, is a user using the product for the intended use-case for how often it was meant to be used? Let's put all of the different engagement types together for Udacity then. For use-case, their primary use-case is to take an online course. We'll measure that frequency by weekly active users, WAUs, and the intensity, what want to drive our users, is hours per session. We'll aim at one hour per session. To increase features, we look at videos, quizzes, and exercises.

Now that we know how to engage our users, let's determine on a spectrum how engaged our users are at the moment, defined as engagement states. Now we've learned how to increase engagement from our users, but how do we know the relative engagement from one to the other? We do this via engagement states. Being engaged is not a binary yes or no. As mentioned before, to improve engagement, we need to segment users down into buckets of engagement states. Here are those states. The first is a casual user, where most of our new customers will start off. Then, they're turned into a core user, where they are using the product as intended. Then we have our power users. These are the users that are using the platform beyond their intended use case and sometimes they even create the new use cases themselves. Most users will start at the casual after being activated. Our goal is to guide their users all the way to a power state, likely understanding that most of our users will actually sit at a core state. Let's first start with the core state. The core state is your middle state, the state your product or service is designed to be used for. Thus, we want to use engagement types, such as use-case, frequency, intensity, and features to create this middle core state. Let's determine a few examples. For Netflix, that core state could be two hours of time watched per week. For Instagram, that could be 10 likes this per day. For Robin Hood, that could be three trades per week. Initially, we can make a fair guess on those core states based on how the product team created the product to be used. I want to mention here, do not create this based on the current usage of how your users are using it, because we would then be normalizing the engagement states based on the current use, not the intended use. Once determined the core state, we simply extrapolate down to determine the casual engagement state, and extrapolate up from the core straight to determine the power users. Let's take a few examples again, based on the previous ones we've discussed: Netflix, Instagram, and Robin Hood. Let's discuss the casual states. For Netflix, that could perhaps be a low amount of 30 minutes of time watched per week as there're new users that are coming in and onboarding. For Instagram, that could be two likes or comments per day, and Robin Hood, that could be a minimum of one trade per week. Again, casual users are your new users that are coming on, core users is what you've intended the use case to be, and then when we extrapolate up, that's your power users. For Netflix, that could be five hours watched per week. For Instagram that could be 25 likes per day. For Robin Hood, that's 10 trades per week that users are doing to get to that level.

Let's apply what we learned about engagement states back to Udacity. Per our steps, first, let's start by looking at Udacity's engagement types. The use case of taking an online course,

frequency of weekly active users, features to be watched are videos, quizzes, and exercises, the intensity being one hour per session. Remember, we then take the engagement types and convert that into our core engagement state, which is to complete one hour session of the online course by watching videos, completing quizzes, and doing the exercises, and logging in three times per week to be a weekly active user. Now, let's determine the casual and power states. The first, the core state again. Completing one hour session of the online course by watching videos, completing quizzes, and doing the exercises. To become a weekly active user, let's count that as three times per week. Let's extrapolate down to determine the casual state. That would be completing roughly 30 minutes per session of the online course by watching videos, completing quizzes, and doing the exercises, and logging in once per week. Scaling up to a power state; those are your power users, completing two hours per session of the online course by watching videos, completing quizzes, and doing the exercises, and logging in five times per week. Not many users reach that power state, but when they do, those are the users you definitely want to maintain. Now, let's provide suggestions on how to take our casual users on Udacity and turn them into core users. Let's take all the different ways that we can increase engagement types. For use case, let's provide them a help button that routes them to the student hub directly in the classroom page. So when they're stuck on a concept, let's say at minute 15 and 32 seconds, they can route themselves to the student hub directly with this help button. The second way we can increase engagement is by frequency. Let's track their number of visits and the time stamp of visits that our new students log into Udacity. Over time, we'll notice that the number of visits and the distance between the visits will likely drop. That is completely natural. Rather than using negative reinforcement, let's use positive reinforcement to get the students to return. An example is gamifying the messages. When the student comes in, they might be watching two to three videos per week. As the time goes by, they might turn that down into one to two. Rather than setting negative reinforcements that they've dropped the amount of videos that they watched, let's use positive reinforcement to say, you started off at the level, let's try to get you to stay at that level. The third way of increasing engagement is through feature adoption. Thus far, the student has been on the classroom page to start watching the videos. They've likely engaged with the student hub. Third, we want them to connect with their mentor. So perhaps when Lesson 0 is done, we can provide a notification for the user to book time with their mentor. The fourth way is by increasing intensity. Upon finishing the final exercise or quiz on a page, we can route the student automatically to the next concept so they don't have to click the next button, very similar to Netflix. Just when they land on that new page, we can automatically turn on the next video or concept for them.

Let's apply the three main cohorts of retention to Udacity. The first way we can segment our cohort is by acquisition. There's a few different ways we can do that. Perhaps by way does not make sense because day by day can have a large effect on the number of users we acquire. By week makes more sense as week over week we can run experiments to see how our acquisition has been affecting. By month can also make sense as we can see month over

month how the Delta in our acquisition is being affected. Next, let's determine what ways we can segment our users based on behavior. Some of the things we can track in product include, have they watched two hours of lessons per week, which is what we want to guard them to doing. Have they completed the first exercise or have they completed exercises per week? Have they booked a call? Or do they contribute to the student community per week? Third way we can segment our users is by properties. Examples of those could be we can segment by the country, we can segment if it's their first time with the Udacity, or have they taken a Udacity course before, and we can segment by age.

Now that you know what a cohort is, we'll want to analyze and visualize our retention overtime by building a retention curve. To understand retention, we do need to work with some data. In this section, we'll learn about how to measure and visualize retention. To understand retention, we need to create a cohort analysis table. However, it's hard to read a table, so we need to create a retention chart to visualize our average retention curve of our cohorts. To visualize retention, we'll create a line chart with the average retention overtime. Doing so, it'll be easy to visualize when our users are leaving the product or are going inactive. There's one common thing about every retention curve, that is, that there's going to be a large drop-off on day one. As many as 50 percent of our users don't return after they initially sign up. Early retention is a significant issue for most companies. How to solve this? Well, bring your aha moment to the first session or login, like we did with that example at auto-pilot. There's one thing different for every retention curve as well, the length of time after which the curve stabilizes. After day one or week one, there's still another few drop-off points till this curve stabilizes. Where this curve becomes stable is your retention rate. This is an example of your retention curve. Doing an activation based retention analysis groups all of our users into one bucket where they signed up and when they signed up. Understanding that a historical user can have an increasing or decreasing retention curve is not helpful because you can't revert back your product historically. So with acquisition cohort, you don't have the information on what to fix to retain your users better. To do that, you need to isolate user properties or user behaviors and do those retention analysis. So what we can focus on either early retention, your largest drop-off, you're middle retention, where the curve stabilizes or late retention. So when should we be using these different types of cohorts? Acquisition cohorts are good to show when the users have become inactive, it's based on time. When did we acquire those users? The user behavior and user property cohorts are good to show the when and the why people become inactive.

Let's apply all that we've learned about cohort analysis and retention curves to a sample data for Udacity. Here, our data team has provided us some sample data for the number of weekly active users over time. We can do our retention cohort analysis with this data. They've provided us the sign-up date for 12 different weeks, so we have 12 different cohorts, the number of total users we acquired for these 12 weeks, and then we determine the number of weekly active users over time, AKA, our cohort analysis. For example, you can see here for

week 1, we acquired 720 users. After one week, we had a huge drop-off to 237 users. On week 2, there was 179. Finally, at week 11, there was 140 users left that are still weekly active users. You could see, we have that for all 12 cohorts. This is absolute data, we however want to see the percentages over time and how we're performing. So our job will be to convert the absolute number of weekly active users into percent of weekly active users. To do that, we'll do that per each cohort. We'll do a few examples together. So for week 1, again, we had 720 users. To determine the percentages, we'll simply take the number of weekly active users at week 1, and divide that by the total users to get 33 percent. For the second week of our first cohort, we'll take how many weekly active users retained and divide that also by the number of total users that week. For the third week of our first cohort, we'll do the same thing. Let's see how that scales out to week 2. For our second week of cohort, we'll look at the second cohort, 307, and we'll divide that by the total amount of users. You can see here a full analysis of all of our cohorts over the 12 weeks, and then we also create an average of all these cohorts by simply taking an average formula per week of the cohorts. Now, we can determine our average retention curve over time for our weeks, and the average percent of active users over time. After you've finished all the analysis, we want to visualize the retention curve. To do that, we want to look at the average retention over time of all of our cohorts. Let's first take our timeline of weeks, let's also take our average retention per cohort. We'll insert a chart, we'll take this chart and we'll combine the rages vertically. Then, we'll turn that column chart into a line chart, we'll switch the rows and columns, and we'll use our time rows as our label. Here, you can see our retention curve over time. Now, use your Excel magic and your Excel skills to make it look better. With legend and axis, we can see that over time, our retention curve bounces right around 20, 21 percent, and that will be our retention rate. If you can go back to the graph in the chart, you'll see that we balance around 21, 20, and 19 percent right around 8-9 weeks. So your retention rate would be 20 percent at eight weeks.

Just like we can group all of our users into one bucket for activation or engagement, we also need to segment our users for retention. For retention analysis and measuring the retention, we'll suggest experiments by first segmenting our users and determining which one of those actions, behaviors or properties leads to retention and understanding if that's a correlation or a causation. After running an activation cohort analysis and determining when your user retention curve drops, to determine what to do next, we'll conduct a properties or user behavior based cohort analysis. Activation cohorts will show you the difference between how your users signed up last week, day, or month, different from those who signed up today. But a user behavior and a user property-based cohort analysis will show you how your users who joined from a different referral, or those who signed up via paid ads versus those who came organically from your blog page will all retain differently. For user properties, we can look at account size, company size, location to the sign-up, country of origin, the role or title lead source. If they are signed up via a phone, desktop, laptop, tablet, or which browser they're using our product on, and different types of email, such as if they signed up with the work or

personal email. These are a few examples to determine properties of a user. Similarly for user behaviors, we can look at hundreds of actions that users take upon signing up for our products, such as adding a photo, configure an account, adding any integrations, doing some setup work, taking any actions that relate to configuring a feature, engaging with the specific notification that we send them, clicking on that email or adding a teammate to name a few. Use activation cohorts as your baseline to ask yourself if the activation from the user cohorts of the user properties is performing better than your base. Like each activation cohort, each user behavior and user property cohorts will have different retention curves. However, these curves will give you the potential actions to take next based on this analysis. Let's apply that to an example, by looking at this retention cohorts on the left. The cohort curve on the left in red is your activation cohort or your baseline. The retention curve is blue, is the users that are being referred into our product from existing customers. The retention curve in yellow, is the users that are coming in from our blog pages. If the retention curve abusers signing up via our referrals is performing better than our base, the activation cohort, such as the blue is performing better than our red, but the users that sign up via our blog pages in yellow, is performing worse than our base in red. We can then set up experiments to get our power users to refer us more customers, than what we'd be spending on resources to write more blog post. If doing such experiments improve our activation cohorts, then you've found your why. The process of conducting user cohorts and user behavior cohorts are the same process of conducting activation cohorts. We create the table of number of users that meet that criteria, like we did in the previous examples with number of weekly active users. Then we convert the number of users into a percent of users we bucketed over time, we then create a line chart to visualize the active percents over time to determine our retention rate.

Next, let's determine how we can improve the retention curve by looking at causation versus correlation. After running activation, user properties and user behavior based cohorts, let's say we determine the specific property or behavior, such as in the previous example, individuals that were referred to us compared to ones from blog page. Let's say we determined that correlation to result to higher retention curve, higher than our activation cohort. Remember, this correlation does not imply causation. Now that we've determined a correlation, which sits relationship to causation. To determine that relationship, remember, correlation does not have a direct relationship between the actions. For example, action 1 does not actually have to cause action 2 to happen. For example, let's take that Facebook example. On Facebook, we assume that sending more messages might get a user to retain. However, we'll only know that if we test it. A test could be on Facebook's homepage. They've a huge call to action button saying, Message Your Friends. Once we put that on there, we can see if users are messaging more friends and if that's actually resulting in a higher retention. Causation, however, has a direct relationship. Action 1 explicitly causes action 2 to happen. In that experiment that we just ran with putting a call to action button on Facebook's homepage to message individuals, well, what we actually determined is it's not the message itself that's causing that relationship. By clicking that button, they're choosing the friend that

they want to message, they go into their profile, they can browse some news feed before they go to that messenger. The browsing of the news feed is actually the one that's causing retention to increase, not the message itself. Remember, to determine if that action is a correlation or a causation, you have to run an experiment. An experiment could be something like this. Let's say we determine that adding a photo in the account resulted in higher day one retention for acquisition cohorts. Fantastic. But driving all of our users to complete this action will not magically get our users to stay with our product forever. Blocking actually a user to access the product without adding a photo likely may not be a good idea they want to drive right into. This is because adding a photo could simply be correlated with higher engagement but may not be directly causing it. Remember, to analyze if this is causation, first run an experiment. Create an experiment to drive users to add a photo as part of their onboarding and look at the percent of users that retain over time by taking this action. If the retention curve increases, you've found a causation. If it simply stays the same, then it's a correlation.

We're at the end of lesson 3 retention. Let's recap what we learned today. As a recap, we analyzed how to ensure our activated users stayed engaged through the means of engagement. We took our activation funnel and turned that into our primary use case. We determined the frequency we want to drive out of these use cases, and we chose the right features that would unlock new use cases. Then we determined the intensity metrics that we want to drive our users to. From the engagement types, we also determined the engagement states, so we can drive a user from being a casual user to a core, to a power user. Then we determined the retention analysis by measuring retention cohorts, and graphing, and measuring that retention curve. Then we analyzed the retention cohort by determined a segment analysis, of which segments by behavior, properties or activation led to retention. We didn't make an assumption that these actions led to retention. We determined a correlation or a causation analysis to prove our experiments. Just like that, we're onto our last lesson. We started together and hopefully you were retained. You're with me now in our mid to retention, so don't churn on me as we get to late retention.

Welcome back to our growth PM course. We've come very far in our journey to understand growth. We started by making sure we can convert as many users as possible by increasing that sign-up flow that we discussed in lesson 1. Then we got it, our users through the activation funnel and lesson 2 of these users. The users who did pass the aha moment. We tried relentlessly to increase their engagement and retain them for a long time in less than three. Now, let's face the reality. Not every single user will return. Some of our customers will leave. This we call churn in the product growth world. Rather than looking away, let's tackle churn head-on in lesson 4. As always, let's first get aligned on our agenda for lesson number 4. In this lesson, we'll analyze our users life cycle and create experiments to reduce churn. First, we'll learn what a leaky funnel is, by understanding what is churned and then we'll establish our user life cycle states by mapping the entire user journey. Then once we understand what a leaky funnel is, we'll determine how leaky it is by measuring churn rate

and lifetime value, abbreviated as LTV. Measuring is certainly the first step, but we also will discuss how to improve our LTV and churn rate over time to decrease the size of that leaky funnel. Finally, in the essence of a true growth PM, we'll fix that leaky funnel by designing experiments to reduce our churn.

Before fixing something, we must truly determine how big and what that leaky funnel is. So let's determine and define churn. Churn is the opposite of retention. Anyone who does not retain likely is inactive or they churned. Churn is the amount of people that subscribe to your product or service, but then unsubscribed. This percent of churn can tell you how well your product market fit is. It is much more, 10-20 percent more expensive to acquire a new customer than to retain an existing customer. It's easier to engage in inactive or even a former customer than as total stranger. Let's apply this to a simple example. Many young kids do small tasks like cut the grass around the neighborhood to make some pocket change. Let's say you cut the grass for Bob and Jack last year, and this year when summer comes around, what do you think? Will it be easier to approach Bob and Jack? Or the new neighbors down the block? You, Bob, and Jack already have some relationship. So they would be more open to hearing you out and continuing their services with you, then the resources you would spend on finding two replacement customers for Bob and Jack. This is the relationship between churn and retention. As you recall, the one mantra growth PMs live by is, we can't fix what we can't measure. So we must first learn how to measure churn. Churn is measured in many ways. Put your growth hat on for a moment and think of all the ways we would want to know how a customer churning will impact our business. Hint, there are three. Ready? Let's discuss a few of them. The first way is by the number of customers lost churn. We want to know the count of how many accounts and users in the account are leaving the product every day, every week, likely though every month or year. It's certainly good to know this absolute number, but how large is the pool of customers in the first place? So second, we want to determine the percent of customers lost churn. Now that we know how many accounts and users left, of how many total group of users and accounts did they leave from? The percent of customers lost churn will help us determine the percent of users that are leaving every month or year. But, now that we know the number and the percentage, which is great. But how does this really impact my bottom line? Finally, we'll determine the dollar value of recurring lost churn, which helps us understand how valuable were those customers who are leaving us and how does that impact our revenue? Keeping track of a user is a sign of the business health. It'll represent how we're retaining customers. Churn can happen due to many reasons. Here are a few examples. A user can unsubscribe from our subscription plan or just dropped down to a free tier. The user can terminate a membership and stop the recurring payment. They can just close or delete their entire account or they may not renew their contract. In the e-commerce world, they could stop purchasing from you again. Churn is the last step in a user's journey with us. Certainly a step we want to avoid. In order to see how that entire funnel is doing, let's build out this user life cycle journey together.

First, we need to map the user journey from where they became a customer to when they left. Each state in between is our life cycle state. So in our trend analysis, to determine that leaky funnel, define what is churn, now we must see the entire user life cycle to see how the user flows through our product. For churn, our goal is to determine who these users are over time so we can save them from leaving. The best way to predict users who will churn is to look at dormant users. Dormant users are those who were active at one point but now have become inactive. That's certainly none of you because you're still with me here. If these users were using the product at some point, we want to bring them back and get them to be active again. Successfully bringing a dormant user back to being active is called a resurrected user. A resurrected user is somebody who used to be inactive, but now, they've returned back to your product. Dormant users and resurrected users play a huge part in the user life cycle framework. A user can churn at any point after purchasing and subscribing. Similarly, we can retain a dormant user by activating them again with the right type of engagement. We can focus on resurrected users because it takes much less resources to retain a dormant user than to activate a new one. This can sometimes be as simple as sending well-timed notification. Again, well-timed, not just mass blast everybody who's a dormant user with the, "Oh, hey, it;s been a while. Read this article and log back and type e-mail." Remember, there is no one size fits all approach. If you want more conversions, personalize your message. The user life cycle framework consists of a few metrics. Think of the user life cycle journey yourself. Think about when you have purchased or used a product and apply the steps that we've learned, those exact steps will be the life cycle journey. Let's recall some of these steps together. First, we tracked the number of users that joined us. All the users that signed up, we measured the number of active users that reached our aha moment. Then we tried to retain all the active users by tracking the number of retained users that continually used our product or service. As mentioned above, we may not retain all of our users, so we measure the number of dormant users that go inactive. Our goal as a growth product manager is to convert these dormant users, so we track the number of resurrected users that can convert from being inactive back to active. We already know how to determine the number of users and the number of retained users with all the previous analysis we've done. But to calculate the number of resurrected and retained users, we measure this metric over time. If doing a weekly analysis, let's say for Week 1, the calculation is a bit simple. The number of resurrected and retained users is simply the number of users in that week in that cohort. For Week 2, it can be a bit more complex so stay with me. The number of resurrected and retained users equals the number of active user in that first cohort plus the number of users in Cohort 1 that are on their second week of using our product. It could be a bit confusing. No worries, let's do an example together. Let's do an example together on how to calculate the number of resurrected and retained users from the number of active user cohort data table that our data team provides us. This will be an example of the data table that our data team provides us. Very similar, actually, the same that we have for our retention cohorts. The number of active users over time, but this time around, we're also going to ask for our number of inactive users over time. Here's our life cycle stage table. We'll take the subscription date,

same subscription date as in the table, we'll take the number of users over that time, the number of new users, and we'll calculate our life cycle states, retained and resurrected users, dormant users, weekly active users, retained users, and resurrected users. Let's start off with resurrected and retained users. For resurrected and retained users, for Week 1, we'll simply take the number of active users for that week. For number of resurrected and retained users for Week 2, we'll take the number of active users that week plus the number of users in the first cohort on their second week as such. For Week 3, we'll scale that even further; for the number of active users for Week 3, plus the users who are on their second cohort on their second week, and for our first cohort and the third week. There, we have the number of retained and resurrected users. I want to explain something, why we're calculating the retained users over time. So we're determining our retained and our resurrected users. Our retained users will be the amount of users that week and what we're resurrecting is the week's overtime. So that's why we're calculating both of those states. Then we determine only the amount of resurrected users. To calculate the number of resurrected users, we'll take the amount of resurrected and retained users that we just calculated, and we'll subtract the number of retained users that we've done from our retention analysis before. Let's do an example of that together again. The number of resurrected users will be the number of retained and resurrected users that we just calculated, and the number of retained users from our previous analysis. There, we have the number of resurrected users. After knowing our new users, our retained users, and our resurrected users will determine the dormant users. To calculate the dormant users, we measure this metric over time. The calculation is very simple to calculating the number of resurrected and retained users, we discussed a few slides ago. The only exception is that before, we were using the number of active users to define the number of retained users. But for dormant users, we'll be looking at the table of inactive users. Let's say if we're performing a weekly analysis for Week 1, that would be the number of dormant users that week. For Week 2, it'll be the number of inactive and dormant users that week plus the inactive and dormant users for that first cohort that are on their second week. Let's use the inactive user cohort table this time to calculate the number of dormant users. We'll go into our table to calculate the number of dormant users. As Week 1, it'll simply be the number of inactive users that week, so 70. For Week 2, we'll say it's the number of inactive users that week plus the individuals in the first cohort who are on their second week. There, we have the number of dormant users over time. Finally, we work it all backwards to determine the number of weekly active users. To calculate the number of weekly active users, we take the number of new users, plus the number of resurrected users, plus retained users, but we subtract our dormant inactive users. Let's take an example of how to do this. Here, we'll calculate the weekly active users over time. To do so, we'll take the number of new users, add the number of resurrected and retained users, and subtract the dormant users. For Week 2, that'll be the number of new users for Week 2, plus retained and resurrected users, but we'll subtract our dormant users. Now, we have our full life cycle state.

To visualize the user life cycle states, we create a bar graph. This bar graph consists of the

number of new users, the number of activated users, the number of retained users, the number of dormant users, and the number of resurrected users. So entire life cycle. Let's take the same life cycle stage table we created in the previous concept, and let's visualize what the trends are of our life cycle stages over time. We'll take this subscription date and the number of new users, the number of dormant users, the weekly active users, retained and resurrected users. We'll click on insert and chart that. Sheets automatically creates a chart for you, but here we'll select the stacked column chart. You can see that our trends are increasing over time, and that makes sense. But let's understand what the graph is showing us. Ideally, your values will be in this order from large to small. Number of retained users will be the largest group size, followed up with a number of new users. Then we want to convert the resurrected users from dormant users into active users. Then finally, of course, we can't resurrect everybody, so we'll still have some dormant users leftover. Now that's the ideal case. Realistically, your values will be more from this order from large to small. We'll still have the retained users on top followed by the new users. However, we'll likely have more dormant users than resurrected users. Let's take a look at our life cycle stage chart and understand what the trends are showing us. Here we look at that curve. In this bar graph, we want to see that the number of new users defined in blue, the number of active users defined in yellow, and the number of retained users defined in green are increasing exponentially over time. This is what we want. We want more new users. We want more net new users, and we certainly want weekly active users to be growing exponentially. In the world of software, this is often called the hockey stick. However, the number of dormant users in red and the number of resurrected users in orange, you can see they're increasing, but not that heavily, and this is realistically the case. We're not able to convert all of our dormant users into resurrected users, so we'll still have a large amount of them.

Off to our first exercise. We're asked to calculate and graph Udacity's lifecycle states. I know this exercise was a bit challenging, but challenge is what we're here for. Let's calculate all the states together to see how you did. Here from our data team we're provided a cohort analysis of the number of active users and the number of inactive users, we were asked to determine the lifecycle states. First, let's start with the number of retained and resurrected users. For January, that will simply be the number of active users of first month. For February, that'll be the number of active users for February, plus the users from the first cohort in January and how they're performing in month two. Similarly for March, that'll be the number of active users in March plus for the February cohort, how they're performing one month later and in the January cohort, how they're performing three months later. From there we have the number of retained and resurrected users. Next, we're asked to determine the number of retained users. For retained users, we're simply going to take the number of resurrected and retained users, and subtract the retained users. So for March, that would be 880 subtracted by 854 to get 26, and there we have the number of resurrected users. Now, off to our dormant users. The number of dormant users for January will simply be the number of inactive users in January. For February, that'll be the number of inactive users in February plus the users from

January that are on the second month of their cohort. For March, that'll be the number of users inactive in March plus the number of users in February, two months later of their cohort, and three months for January. There we have our dormant users over time. Finally, we're asked to calculate the weekly active users. This will be taken by taking the number of new users plus the number of retained users,and resurrected users, and subtracting our dormant users. For February, that will be the number of new users plus resurrected and retained users, then we'll subtract our dormant users. Then we want to understand how that trend is doing over time. We're going to take our subscription date, our number of new users, dormant users, weekly active, retained and resurrected users. We're going to insert in a chart and we're going to say this is a stacked column chart. Here, now let's look at the trends. You can see the green, retained users, the yellow, the weekly active users, and the blue, number of net new users are increasing over time and fairly exponentially. However, the number of resurrected users are very low and they do look like they're increasing, but not at a significant pace, and you know what that means? That means we have a decent amount of dormant users and you could see them rising as well. However, the thing to notice here is that the number of dormant users and the number of new users by the end of the year, are becoming almost the same. This might not be the sound of a healthy business.

Now we have determined the user's lifecycle through a product from where the user started a journey with us and where they stopped. Just like when we determined conversion rates for signor flows to determine how many users are entering our funnel, we must also determine the churn rate to determine how many users are leaving our funnel. Here you can see the entire outline for lesson 4. Our churn we measured what a leaky funnel is. Now we're going to measure how leaky that funnel is by determining the churn rate and calculating LTV, your lifetime value. Let's calculate our churn rate. Churn is measured by the number of users who unsubscribe or stop using our service divided by the number of users you had at the beginning of that time period. The time period can be monthly, quarterly or yearly. Let's take the most common type. The churn rate for number of customers lost. For example 6, let's say you have 760 customers now, but at the start of that month, we had 800. To determine the churn rate for number of customers lost. First, let's determine the numerator. The number of users who unsubscribed or stopped using our service over time. So we had 800 customers, now we have 600. So 800 minus 760 which equals to 40. So we've lost 40 customers. We then divide 40 by 800, the number of users we had at the beginning of that time period which in this case is a month. This equals 0.05. We convert this to a percentage to get a churn rate for the number of customers lost to be five percent per month. After calculating churn rate, let's understand churn better. In an ideal world, we want to retain all of our customers. So a zero percent churn however, that is not realistic. Five percent churn from the previous example may not sound like a lot, but let's see its long-term effect. Take a look at the table on the left side. Over the period of 12 months, if our customers keep churning at the rate of five percent per month, we'll lose about 50 percent of our customers that we acquire every year. This is a very, very leaky funnel. Our previous analysis groups all of the users into one churn

rate however. Just like we segment our new users by activation stages, setup a high-end habit, and customers by engagement types, casual corn power, we must also segment our churn by plan size, demographics, lead source, and thermographic to name a few. For example, let's take plant sizes if you have multiple plans. Your self-service customers on your lower plan versus your enterprise customers who have access to a successor account manager are likely going to churn at a different pace. So grouping them together would not make sense. Churn rate is often associated with subscription based businesses. For subscription companies, this is easy as it is defined by when the subscription stops. However, for e-commerce is recently also adding this metric. Calculating churn for e-commerce is a bit more challenging. The challenge is to define what counts as a churn event for an e-commerce company. To do this, we have to go back to our engagement states, specifically frequency. If we know an e-commerce users should be purchasing an item from us every quarter, let's say 90 days, then we can determine that when a customer does not purchase the item again in 90 days, they've churned. Let's take an example of detergent. You purchase tide pods from Amazon. Amazon knows that you purchase 30-tide pod box. They estimate that an average user runs out of the 30-tide pod box in six months. So close to your six month mark, Amazon will try to get you to return and repurchase that 30-tide pod box. If you don't purchase, then Amazon would consider you as a churned user in that one specific category. Keeping a consistent process of calculating churn is important as this metric impacts all values relating to monetization. Acquisition first. If you spend more to acquire a customer than you make from them before they churn, your business model is incorrect and there is a deficit. Churn increases your average customer acquisition cost, CAC. As you're unable to spread that CAC throughout a longer period of time. Revenue itself, growth is directly proportional to revenue. When customers leave, they also take their money with them thus decreasing revenue and lifetime value. This value determines the health of our business. A high churn equals low lifetime value. This is because when the user churns, the potential revenue that we could be earning from them is decreased.

Off to Exercise 2. Let's see how well you did in this exercise. Here, we're asked to calculate the retention rate, churn rate, and LTV, and the customer expected lifetime for Udacity user's life cycle. Together, we'll analyze this. Here, over the period of a year, we're provided from our data team the number of new users, the number of churned users, the number of users at the start of the month and the end of the month, the average revenue per user, and we're asked to determine the churn rate, the retention rate, the LTV, and the expected customer lifetime. If you recall our calculations for churn rate, we'll take the number of new users now and the number of new users at the start of that month. For retention, will be just one minus our churn rate. For LTV, we're going to take our average revenue per account and divide that by our churn rate. Then finally, for expected lifetime, we're going to take our LTV and divide that by average revenue per user. So for February, we'll take the number of users that month, 70, and divide that by the number of users at the start that month. For retention, we'll take one minus our churn rate. For LTV, we'll take our average revenue per count and divide that by

our churn rate, and our customer expected lifetime, we'll take the LTV, divide that by average revenue per account. Although we have these values, what is it telling us? It's telling us that the churn rate at the beginning of this year was nine percent. However, when we're increasing, it's going to almost 25 percent in December. That's something to be concerned about. Retention, starting at 90 percent, which is pretty fair. Then it's dropping down to 77 percent. That's not a sign of a good business. Lifetime value; about 900 bucks for our lifetime in January, and that's increasing over time. That's a good sign. So we're probably going up market into enterprise. However, you can see the customer expected lifetime is about one year in January. Whereas the customers we're acquiring now, they'll be churning in about four months. This is not the sign of a good business and I want to show you an example of it. I just want to remind you that all the data from all of our exercises is mock data. This is not real data for Udacity.

We already determined the churn rate so we know how many and how often our customers are churning, but we didn't really discuss why this happens. Let's dig into that why. This is our entire lesson outline for lesson 4. We determined what a leaky funnel is, then determined how leaky it is by measuring our churn rate and LTV. But now we need to determine how to improve that LTV and decrease that churn. Just like all other metrics we determined here, there are no silver bullets to decreasing churn. Since LTV is directly proportional to churn rate, the core way to increase LTV is to focus on decreasing churn. The churn rate tells us the rate at which we're losing our customers, but it doesn't really tell us the why. To do that, you have to first really understand our users. There are a few common causes to why customers churn. For example, the user does not value the product anymore compared to when they did when they purchased initially. The compelling event for the need of the product is gone compared to when they initially purchased. The user may be frustrated with that user experience after onboarding and they may have passed your solution and now need a more advanced and complex product. Maybe the ROI just cannot justify your product anymore, or something in the market or something that your company did has brought the product reputation down, and last is more common which is a competitor just sweeps them away.

Now that we know why customers churn and how fast, let's determine how to stop that leaky funnel. Calling a plumber is not how we do that, we fix this ourselves. Every customer has their own reason to leave, so there's no one-size-fits-all. Just like we segment our users into different buckets of activation and engagement to tackle churn, we must do the same. Since users can churn anytime after sign-up, we segment our users based on where they are in their retention curve. Process of using life cycle customer churn stages is broken down into three different stages. The early stage is week 1. As you can see from a retention curve, the largest churn is often at the start. This is where the curve is super steep. Mid stage churn is week 2 to week 4. This is where our engagement comes into play. If we don't keep our users engaged, they'll likely churn. Then eventually to late stage churn, even if our users engage, if they don't build a habit around using our product and we don't deliver the value that they're

looking to expect, they can still leave. Focusing on early-stage churn has the most improvements on late-stage churn. After determining the why and the who, we can determine the what to do. The way to decrease churn is to establish more perceived value here, so your users don't slide into mid or late churn. Now that we learned about churn stages, what churn level should you actually aim for? Of course, some may say zero percent churn, and that's true. However, to determine a healthy business, we actually aim for net negative churn. Net negative churn happens when additional revenue from the new user, so the new revenue plus existing customers when they expand their contract sizes, this surpasses revenue from lost customers. To get to this moment, find ways to upgrade your existing customers into higher-paid plans, add extra services, and make sure you have the right ICPs or ideal customer profiles that you're bringing in. However, net negative churn is not possible for all companies, so here's what we should expect. The early startups, they may reach a churn of 25 percent. These early companies will likely take anyone as their customers to validate their early product and that's not a bad idea in the early stages. However, when you develop to a midsize or established company, you should aim for 3-5 percent churn. This is a healthy level of churn which proves that you have hit product market fit. But we shouldn't stop there. Remember we did that analysis where five percent churn per month still equals about half of your customers you lose every year? So our goal is to get into the one percent club. The enterprise companies or at-scale companies reach that level because they've developed the exact formula and simply need to pour fuel to grow.

Let's apply what we learned about churn stages to Udacity. B2B have the largest Delta in churn at an early stage, as users have low patience to try new tools. They give up quite often. However, B2C education products like Udacity, their users have much more patience early on. So for Udacity, let's determine the three stages of churn. Most Udacity courses are three months long. So the early stage is likely the first two weeks, followed by mid-stage from week 2 to month 2, and the late-stage being that third final month. For Udacity, the largest Delta and churn is likely in the mid-stage. Early-stage would likely not be it because students are voluntarily paying for the education. So they would likely be motivated to go out of their way to learn how to use the product and take on at least less than zero and less than one. However, in mid-stage, as the user uses the service, some may lose motivation. This might not be what they thought the course was going to be. They may get off-task and they may not keep up with their learning schedule and be demotivated, so the likely churn a lot of users at this stage. By late-stage churn, most users have invested enough to see the finish line and they'll get there.

First, let's focus on early stage churn. How can we avoid our users from churning right after they subscribe or purchase? Here, we'll focus on how to fix churn by running different experiments on how to avoid early, mid, or late stage churn. First, let's focus on early stage churn. Some of the ways we can avoid early stage churn would be; to invest in better onboarding. The earlier in the lifecycle of the user gets more sticky, the lower the chances of

them churning later on. We can constantly provide tutorials and trainings via product tours, text, video content, or even gifts. We can ensure that our messaging highlights the actual product capabilities that the users can expect. We can conduct exit surveys to understand the bigger trends over time on why users actually leave. We can re-use our top performing content and onboarding to guide users to our blog and create a habit around consuming content around our product. Then finally, we could be sending more personalized emails, like without the no reply to ensure that the users feel like they have access to somebody. After all, people relate with people, not marketing at, not support at, not hello at, and not hello reply at.

Let's do the same for mid-stage churn. In mid-stage churn, you can avoid churn here with a few examples. First is by increasing the engagement types. More use cases, more frequency, more intensity, more adoption, or any of the combination of which. We could educate customers on the capability of our product. What else can you do for them? We can actually price based on value, so they deliver an ROI, and we can provide ways that users can voice their opinion and support to ensure that their voice is heard. We can be more proactive with our customer rather than be reactive and wait until they simply reach up to support app. We can create a red flag metric to determine dormant users ahead of time by determining all the actions that lead to inactivity, and along the way, we can just celebrate little wins. So users feel confident that they're using the product for the intended use. Here's where we can apply gamification.

Next, we learn how we can solve late stage churn. For late stage churn, here's a few examples. We can provide proactive support than reactive support. Don't wait for them to reach out to support app. Use proactive metrics to determine when a user is stuck and reach out to them. We can iterate on better ICPs, ideal customer profiles. Find users who are more like your power or core users. We can conduct NPS surveys, net promoter surveys, to know how your users are performing all the time and how satisfied they are. We can constantly add value by delivering new functionality that increases the perceived value of our product, and we can be more proactive about our card expirations. Because cards are always expiring and users are not going to be very proactive about fixing things. One of the best ways actually is to convert a monthly users into annual customers. With monthly users, you'll always be scared and nervous when they can churn. However, with annual contracts, we can have better predictability. We can proactively offer dormant users success options and support options, and ask them what they want to accomplish and what they're struggling with.

If you made it this far, you definitely haven't churned. So let's go on to our last exercise together. Let's see how we can apply all the concepts we learned about churn and their stages to Udacity. First, let's look at short-term churn for Udacity. Couple the ideas to help with the early-stage short-term churn could be to implement, making it part of their onboarding flow, read after post-purchase, to book a session with a mentor or a career coach right away. So the student can see long-term value with Udacity. When starting the lessons,

give a walk-through out the project to establish the value of learning by doing, before the student enters in all the lessons. To address middle stage churn, let's use positive reinforcement and gamification by providing examples and cases of how students fell behind in the past have caught up. So a student doesn't feel like they're on their own if they are falling behind. Let's resurface content from the free PM Nanodegree to provide validation that what you're about to learn is applied to real life, and how learning these skills now will help you address interview questions later on. To address late-stage churn for Udacity, let's perhaps resurface the day in the life of a growth PM, to show our users and our students what life will be when they actually enter the world as a growth product manager. If we want to take it really up a notch to do something that doesn't scale, which I personally recommend, let's create a call or a text campaign if we actually collected the user's phone number to try to understand why did our students leave. If there's something that's going on with their life that we can help out with in terms of the course, let's certainly find a way to do so.

Let's take everything that we've learned together in building an experiment. It should reduce churn, and let's apply to a case study for Autopilot, a marketing automation tool. First, we always define our business objectives and goals. For Autopilot, they simply wanted to lower their short-term churn by 10 percent. This KPI is attached to their one million annual recurring revenue goal. Then we want to determine questions to address. One of the things that I'm thinking is, for our low value customers that are paying us less than 300 a month, why do we have a high churn early on? Now let's define the hypothesis of what would happen if. Since the users were not paying high in value to justify one-to-one on-boarding, Autopilot decide to convert what they offer their success teams to the enterprise customers for on-boarding. They decide to replicate that to one-to-many on-boarding, for self-serve users. Doing so, low quality and low value customers won't be left on their own to figure out the tool. The business also won't spend many resources besides simple two hours a week hosting live webinars at scale. We predict that we can reduce short-term churn by three percent as we'll guide our users faster to the "aha" moment than they would do on their own. Now the exciting part to create an experiment. You know the business objective, you know our goals, the assumptions we're going to make. Why don't you take a second to think about an experiment yourself. Take into account all the processes we've learned before. Remember, there's no bad way to suggest an experiment. Here's one for example. What Autopilot actually did, is they A/B tested for their low value users, and they split those users into two different buckets, the control and experimental group. They chose one month as their length of experiment because they were looking to focus on short-term churn, which for them was about one month. So one month was a good time to see the impact and have statistical significance as well. The control group kept going to the same flow as before. However, the experiment group receive different e-mail notifications or in-product notifications and messages to guide them to join a one-to-many on-boarding session. This session provided them a product walk-through, best practices, and addressed questions they had live. After one month of hosting these sessions two times a week, they looked at how the two cohorts

performed. Finally, we test and we iterate. The experiment group actually churned less than the control group by one percent. Now we've reduced our short-term churn from 10 to nine percent. However, they learn from hosting all the sessions that new customers didn't want to see the 100 bells and whistles. They just wanted to see the next steps that was going to be challenging, and the next steps that would help them get on-boarded on the tool. This was a challenge with that one hour on-boarding session, it contained a lot of content. Autopilot iterated and launched experiment 2. Autopilot then broke their one hour-long webinar into four mini short 30-minute webinars that are hosted every week. They tested this for another month, and short-term churn reduced by another two percent from nine to seven. So we've brought our short-term churn from 10 to seven percent, and we still have another seven percent to go. As mentioned before, there are no silver bullets to address all of the problems. We have to take it step-by-step and chomp on that metric little by little.

Friends, now we've completed the entire lesson and as always, let's recap. Let's summarize what we learned and did in this lesson. In this lesson, we analyze the users life cycle and created experiments to reduce churn. First, we determined what a leaky funnel is by understanding churn itself, and then we established our users life cycle state and map their users churning. After understanding what a leaky funnel is, we determined how leaky it is by measuring churn. We calculated the churn rate and the lifetime value. Measuring is certainly the first step. But we also want to discuss how to improve the LTV and churn rate over time to reduce the size of this funnel. Finally, in the essence of a true growth PM, we fixed the leaky funnel by designing experiments to reduce churn

Congratulations. We have completed the course. The focus of this course was to determine how to analyze and improve activation and retention. These are the two primary metrics you may help co-own in your company. We use best practices and theories to help understand each metric and how it impacts the business. Through analysis, we determined how we're doing on these business fronts, and then covered how we created experiments to improve these metrics. However, we didn't worry about acquisition, revenue or referral in this course. We analyze activation and retention frameworks using loops. How to break them down into sign up flows, activation, retention and churn. We analyzed, measure and optimize the performance of this activation and retention funnel, and we determine the target audience and the platform and channel to engage these customers. All in all, we created experiments based on all this analysis. We practice a bunch of small little exercises throughout the course, that will help you on your final project. Let's figure out what this final project is.

Welcome to the Growth Monetization course. I'm your instructor, Rizwan Ansary. My background started out as an engineer at Microsoft, transitioning into product management. However, it has really been my craft and growth product management that has shaped me as an executive. I've been lucky enough to work at some of the most interesting companies of the past decade. There's Credit Karma, which has been wildly successful at balancing user

engagement with monetization, There's also Postmates, which probably operates in one of the most cutthroat and margin constrained markets out there. As I designed Postmates pricing plan, and the first subscription model of the food delivery market, I got a front row seat to observe how product, technology, and operations driven leverage can impact revenue, profitability, and market share. I'm passionate about transferring all that I've learned through this experience in this course. I welcome you to join me on this ride.

Let's start by taking a look at who that should take this course. The target audience for this course is any entrepreneur, product manager, or growth marketer looking to achieve revenue targets through product-driven leverage. The business may either be pre-revenue and looking to start exploring different monetization models, or it could have some revenue fraction and looking to optimize the levers to achieve revenue growth. The student brings a healthy blend of prior to experience, and a curiosity for data analysis, building spreadsheets, user engagement tactics, and consumer psychology.

We're going to take a brief look at the course outline shortly, but first, I wanted to spend a couple of minutes talking about monetization. Monetization is not just the price that you charge for your product, it is the oxygen that sustains your business. It is relevant at every stage of the customer experience and not just at the point of payment. Every business function is impacted by monetization and conversely influences its outcomes. Of all these functions, product exerts the highest influence on the outcome of monetization. So it behooves every manager to keep monetization front and center on their radar, whether they are identifying the target market, designing the customer experience, merchandising it to customers, or managing operations and logistics.

Let's preview some of the things we will learn in this course. In this course, you will learn a set of principles and building blocks that guide the design of a monetization strategy. This include selection of markets in which you play, persona of the buyers that you target in that market, and the outreach channels through which you reach to potential customers, best practices for designing an end-to-end customer experience that optimizes for monetization, qualitative methods to identify customer value and the price you charge for it, and quantitative KPIs to evaluate the effectiveness of the strategy. All along the way, we will leverage practical examples from the industry to highlight concepts. Let's briefly overview the five lessons. In the first lesson, we will introduce the fundamentals of monetization: goals of a growth monetization strategy, basic moves made by a strategy, the building blocks for building the strategy, and scorecards to evaluate the strategy. In lesson 2, we will learn how to target buyers in order to achieve our monetization goals. We will see how to identify the target buyer by closely aligning a product strengths, market segment, decision-maker's persona, and acquisition channels. By properly targeting the right decision maker among new customers, a business is able to charge a fair price, acquire more customers, retain them longer, and sell them more products. In lesson 3, we will walk through the fundamentals of building a

successful path to purchase that is traversed by the buyer identified in the previous lesson. First, we will define the path to purchase and its importance. We will then look at friction intrinsic in all pots that can slow them down and potentially prevent purchase conversion. Next, we will look at how to leverage buyer psychology tactics to accelerate the journey over the path to purchase. Finally, we will review the first of several scorecards for evaluating a monetization strategy, the acquisition model. In lesson 4, we will look at some practical methods to identify premium value that a buyer will be willing to pay for. We will start with defining premium value and its importance, then look at methods to discover premium value as well as how to amplify it, and finally, we will review the second scorecard for evaluating a monetization strategy, the unit economics model. In the last lesson, we will address how to price the premium value discovered in the previous lesson. First, we will look at the concept of a pricing metric and how it derives from value metrics discussed in the previous lesson. We will then discuss the Westendorp Price Sensitivity Analysis, a method for setting price. Next, we will look at how to build a pricing plan by connecting the buyer personas with premium value and price points. We will also review some of the typical strategies employed in pricing. Finally, we will dive into the remaining three scorecards for evaluating a monetization strategy, starting with the customer accounting model, followed by the revenue accounting model, and finally, the growth ratios.

Like all other Udacity courses, this course too has a project. The title of the project is interestingly, Priceless Penny. It is a hands-on evaluation and analysis of the monetization performance of a B2B SaaS business. The details about the company's business model and the raw data for their recent performance will be provided. The first part of the project is evaluating current performance. Students will be building quantitative models to calculate monetization KPIs. Based on these models, some important questions about current performance will have to be answered, and using these models students will forecast future revenue and market share. The second part is identifying growth opportunities. Some key funnels of the end to end customer journey will have to be modeled like sign up, becoming a paid customer, upgrading and downgrading the plan, canceling the account and resubscribing. Students will analyze the model and make recommendations on how to grow monetization KPIs. The impact of those improvements on future revenue and market share will have to be quantified. Students will make data informed predictions about the company's future monetization performance. Part 3 is about exploring new models. Students will come up with a hypothesis for modifying the monetization model, more specifically its pricing strategy, and describe the change in detail. The original model will have to be modified to accommodate the proposed change in pricing. Students will quantify the impact of this change on the business and articulate the pros and cons of new pricing. Let's get to Lesson 1. I cannot be more excited to go on this journey with you, look at some of the most interesting tech companies out there, and learn some monetization fundamentals from their examples.

Welcome to Lesson 1, Fundamentals. In this lesson, we are going to cover the fundamentals of a monetization strategy. We're going to look at why monetization is important, and the five goals of a growth monetization strategy. Next, we will look at five basic moves made by the strategy. We will then list out the five building blocks for building this strategy while leaving the details for subsequent lessons. Finally, we will list out the five scorecards used to evaluate a monetization strategy. Just because a list of five's would remain unbalanced without a fifth item, I'm going to leave a list of five readings of the above topics in the classroom for further reading. Let's get started.

Let's take a step back and define what is growth monetization. There are several definitions of monetization that you can find on the Internet. Broadly speaking, monetization refers to how a business earns its revenues. In the context of the growth product manager, nanodegree, growth monetization refers to the strategies and tactics for acquiring leverage by causing the trajectory of revenues and profits to inflect upwards. A one percent change in the growth rate today that remains stable, will compound over time into exponential growth in revenue and market share. Worse is, infrequent, large occasional increases. Now let's briefly look at the five goals of a strong monetization strategy. We will shortly go into the details of each. The first is paying the cost of transaction. Second, afford customer acquisition. Third, grow profitably by reducing payback period. Fourth, grow competitively by outbidding while acquiring more customers. Fifth, grow faster by offsetting churn. These are the reasons why a strong growth monetization strategy is needed and benefits the company.

Goal number 1, pay cost of transaction. We'll dive deep into the first goal and see how a strong growth monetization strategy helps in meeting this goal. First, let's define a few relevant terminologies. The classroom has more detailed explanation and examples. It's strongly recommended to read through that. Revenue is the income from the sale of goods and services to customers. Recurring revenue is the portion of a company's revenue that is expected to continue in the future. A good example to distinguish between the two is Amazon. Their revenue from Amazon Prime subscription counts as recurring revenue as it recurs either monthly or annually. Whereas each e-commerce transaction counts only as one time revenue. Recurring revenue is highly sought after since it provides a predictable stream of cash flow to the business. For a subscription-based businesses especially in SaaS, recurring revenue is a fundamental measure of the strength of their monetization strategy. The project for this course is related to a SaaS business, with the recurring revenue component. Cost of goods sold is also known as the cost of transaction, which is what I mentioned as part of goal 1. These costs are expenses incurred in the sale of a single unit of the product or service. Let's take an example. Consider a fashion e-commerce business that offers free shipping. The CoGS for this business include shipping cost and stripe fee for the credit card transaction. These costs are needed to be borne in order to materialize the transaction. On the other hand, the rent for the warehouse is not part of CoGS since it has to be borne regardless of any sale. More examples for this concept are on this page in the

classroom. Gross profit is the revenue from sales less CoGS. Gross margin, a related concept, is gross profit expressed as a percentage of revenue. It is a good top line measure of a company's efficiency in delivering products and services. The benefit of a strong monetization strategy is that it increases gross margins which in turn fuels growth.

Let's walk through a model to see the impact of better gross margins. This model is available for you to access on this page in your classroom. Seeing here is a relative comparison between two companies, company A and company B, of their customer acquisition performance over 12-month period. The way to read this is, in January 2019, company A acquired 10 customers and sold 12 units to those 10 customers, earning a revenue of $120. This means 1.2 units per customer and $10 in revenue per unit. Notice though that company B charges just slightly one percent more in revenue per unit while selling the same 1.2 units per customer. This nets them $121 in revenue for the same month for selling the same number of units to the same number of customers. Let's assume that the cost of goods sold for both company A and B is the same $96. This means company A earns a gross profit of $24 while company B earns a dollar extra, $25. Let's also assume that both companies transfer their entire gross profit into the growth budget for the next month. Now, let's look at how both companies acquire customers in the next month of February. Before that, we are going to look at a couple of other important assumptions that we make about both companies. Let's say both companies spend the same five dollars to acquire a single customer, and the month over month retention of their customers is the same 80 percent. What does this 80 percent mean? Well, eighty percent of the 10 customers in January will come back in the month of February and make a purchase. Why is this number 12? Remember that company A had a growth budget of $24 in month 1, which gets them four new customers in the month of February. However, company B, remember, had an extra dollar in gross profit, which gets them five new customers on top of the eight retained from the 80 percent month over month retention of January. In February, company B has started to separate in terms of its number of customers from company A. Extending the same model for the next 10 months, we can see how the separation starts widening. In this chart, the solid blue line is the number of customers that company B has acquired over a 12-month period. The dotted blue line is the number of customers company A has acquired over that same 12-month period. On accumulative basis after 12 months, company B has more than 20 percent more customers than company A. Same for some of the other important metrics, like number of units sold, amount of revenue earned, the cost of goods sold, and the gross profit, which goes into their growth budget. The gross profit is also represented by the green lines here. Solid for company B, dotted for company A. Overtime, the exponential growth starts to separate company B from the rest of the market and gives it a growth leverage. A side node worth mentioning here, we're going to have a lot of fun with spreadsheet-based quantitative models in this course. Monetization is a fairly connotative subject. While we do not cover all types of models in this course, we do introduce a fair number of basic and intermediate models that students can then take and build further upon after the course.

Next up, we'll dive deep into how a strong growth monetization strategy helps afford the cost of acquiring customers. First, let's define a few terminologies. I strongly recommend reading through the detailed explanation and examples of these terminologies in the classroom. Cost per acquisition, or CPA for short, is the cost of acquiring a lead. This can often be referred to as cost per lead, or CPL for short. A lead is a perspective customer who may either be a non-paying user of the product or has expressed some intend to use the product, perhaps as part of some marketing campaign ran by the company. CPA includes costs associated with all stages of the journey right up to becoming a lead. It excludes costs incurred by the business after becoming a lead up to becoming a paid customer. That component is included in the next cost, customer acquisition cost, or CAC for short. This is the cost of acquiring a paying customer, it includes costs associated with all stages of the journey right up to purchase conversion. Notice that customer acquisition cost encompasses the cost per acquisition. Let's look at an example to distinguish between CPA and customer acquisition cost. Take the example of a SaaS product offering free trial. All users who sign up for a free trial are leads. The cost of acquiring them is called cost per acquisition. Everyone on a free trial who becomes a paid subscriber is a customer, the cost of acquiring them is customer acquisition cost. Once again, notice that the customer acquisition cost encompasses the cost per acquisition. Let's look at a few more concepts. Operating expenses: there are many types of operating expenses. For this course we will only consider customer acquisition costs, that we just touched upon. Operating profit is the revenue from sales, less operating expenses. Operating margin, a related concept, is operating profit expressed as a percentage of revenue. It is a good measure of a company's efficiency in delivering products and services. The benefit of a strong monetization strategy is that it increases operating margin through higher revenue per unit and lower customer acquisition cost, which in turns fields growth.

Let's walk through an example to see the impact of better operating margins. This is the revenue of company A over a 12 month period. The x axis is the number of months, the y axis is the cumulative revenue of company A at any point in time. This is the revenue earned from all the customers up until that point, not just a single customer. But the total cost to acquire a customer has to be paid, which is equivalent to some months worth of revenue. After CAC is paid, the rest is profit, more specifically, operating profit, as we just defined. In contrast, company B earns a higher recurring revenue per month. Assume that their customer acquisition cost is identical as company A, this effectively generates a surplus for company B as compared to company A. This means company B can afford the rising cost of customer acquisition better. This example was based on improvements in revenue per unit. Further improvements in customer acquisition cost can also impart similar leverage to the business.

The archives of TechCrunch are full of companies that grew too fast, but eventually fizzled out. The key difference between them and the ones that survived and thrived for a long

period of time is profitable growth. The third goal of monetization is grow profitably. We're going to look at the details now. Let's define the concept of payback period. Payback period is the amount of time it takes for profits to pay back the cost of acquiring customers. It has fundamental importance in the profitability of a company. The cost of acquiring each customer is an investment for the future. It's your first break even, and then create positive cash flows going forward. On the other hand, if a company starts overspending in customer acquisition before the payback period has elapsed, that it is forced to borrow from future cashflows to fund this acquisition. After a few cycles, this significantly starts compounding to losses, and makes it even harder for the company to become profitable.

Let's walk through an example to see the impact of a shorter payback period. Remember our earlier example of Company A revenue over 12 months. Once again, months on the X axis, cumulative revenue over the Y axis. Assume the costs for acquiring the customer are paid by company A by month number 9. All of this is the costs. All of this is the profit. In contrast, Company B has slightly higher revenue per unit. Assume the customer acquisition cost of Company B is identical to that of Company A. This is going to shift left the point of payback, essentially paying off the customer acquisition costs earlier by month seven. This effectively generates a surplus in Company B's profit as compared to Company A. This surplus acts like extra rocket fuel. By reinvesting the surplus towards customer acquisition in earlier cycles, Company B can effectively acquire more customers from the get-go, and repeating this over several cycles, month over month compounds the growth for B over time. This is a classic example of growth leverage. A slight improvement in the fundamentals has inflected the revenue trajectory upwards over time for Company B. A shorter payback period provides capital for growth sooner, avoids borrowing from future cash flows, and results in profitable growth.

We're now going to introduce the idea of LTV to CAC ratio and how it gives a competitive growth leverage to capture the market. We're going to define these concepts with the aid of the illustrations in the slides that follow. Lifetime value, or LTV for short, the ratio of LTV to CAC, and why it's important. Lifetime value, or LTV, is the cumulative profits generated by a customer over their lifetime after paying all the expenses, such as CoGS, and the customer acquisition cost. The chart here labels what we had so far being calling the operating profit as lifetime value. It is important to base LTV on profits rather than revenue, since that paints an accurate picture after considering all costs. LTV is important as it helps measure the net value added to the business by a single customer over their lifetime. It is usually measured by picking a timeframe and then calculating the profit averaged across all customers retained and churned. We're going to revisit LTV again in lesson 4, premium value and discuss detailed formulae and models. The ratio of LTV to customer acquisition cost is a measure of how far a company's acquisition leverage can extend. After paying back the cost of acquiring a customer, there might be some surplus leftover. The LTV to CAC ratio informs how many more customers a company can acquire using this surplus. If the ratio is one to one, you

have barely broken even. It will be impossible to become profitable. If the ratio is slightly better than one-to-one, it is still going to be hard to be profitable, especially as the business grows. For SaaS businesses, usually a ratio of three is to one LTV to CAC is generally recommended. Further reading on this page in the classroom expands on this concept.

Let's walk through an example and see how a high LTV to CAC ratio makes a company competitive. Recall the contrasting cases of company A versus company B. We saw that a higher revenue per unit and identical CAC leaves company B with a higher LTV and thus more capital to reinvest in growth. Company B is thus set to have a higher LTV to CAC ratio than company A. Assume both company A and company B acquire their customers through ads. A higher bid price on ad network means higher customer acquisition cost, and thus a longer payback period, extending from the previous month 7 to now month 10. Company A can choose to keep up with this competitive pressure, but that can prove to be costly for them. The higher bids by company B on ad networks can raise the market wide bid price. Company A's CAC and payback period also goes up, from month 9 month 12. The net effect is that both company A and B have reduced the amounts of LTV left for them to reinvest. While company B still has some profits left to reinvest in growth, company A, on the other hand, has very little margin left because of this bidding war. In short, company B's higher LTV to CAC ratio has pushed competitors out of the market. The benefit of a strong monetization strategy is that, it produces a higher LTV to CAC ratio that creates enough surplus to dominate customer acquisition channels while maintaining profitability. All of this leads to a competitive growth leverage for the business.

Churn is inevitable for any product, but beyond a certain point, it can kill the company. This warrants that the monetization strategy should offset inevitable churn as much as possible. We're now going to look at the fifth and last goal of a monetization strategy, offsetting churn and grow at a faster rate. I strongly recommend reading through the detailed explanation and examples of these terminologies in the classroom content. Customer churn is more commonly known as just churn. It is the rate at which paying customers cancel their subscriptions. Similar to customer churn is the concept of active user churn. It is the rate at which users stop using the product. Use, in this case, is defined based on some end-product action that is important to the business. For example, a Facebook user that likes, comments, or shares a post, maybe considered an active user. If they do not take any such action week over week, then that is considered active user churn. Active users can also be defined within the context of paying customers. For example, if an employee does not use a collaboration software purchased by their company, but the company continues to pay for it, then the customer, that is the company, has not churn, but the user, that is the employee, has churned. We will revisit churn again in Lesson 5; Pricing. Let's look at some more important definitions before moving further. Contraction revenue is the revenue lost due to paying customers reducing their spend. For example, by downgrading their plan, downgrading the term of subscription, or by removing recurring add-ons for their next month's subscription. It

is also referred to as dollar churn. In contrast, expansion revenue is the revenue gained due to existing paying customers increasing their spend, either by upgrading their plan, or upgrading the term of their subscription, or by purchasing recurring add-ons. Net dollar retention, or NDR for short, is the percentage of revenue from existing customers that is retained after accounting for customer churn, contraction revenue, and expansion revenue. An NDR of 100 percent implies that the loss of revenue from churn and contraction is made up for by expansion revenue. When this happens, revenue from new customers is net growth for the business. An NDR greater than 100 percent implies that the business is growing even before adding new customers. After accounting for new revenue, the business achieves exponential growth. Essentially, the rate of growth has been accelerated. This is the most desirable trend that companies aim for in their revenue growth. An NDR less than 100 percent implies the growth rate has slowed down, and will lead to a tapering growth curve even after accounting for new customer revenue. This is the situation that companies want to avoid.

Let's look at the impact of churn with the aid of charge in the following slides. So far in this lesson, we have been looking at the trajectory of total revenue as a straight line, breaking it down further. This is company B's revenue after month 1. Month 2 as they acquire more customers, there is an increase in revenue. However, that is the ideal case. The reality is that churn is inevitable and immediate. Just as there are new customers being acquired in month 2, there're customers from month 1, who will choose not to continue using the product in month 2, the churned customers. Therefore, the total revenue with customer churn looks something like this, tapering below the straight linear line we saw earlier. This is company B, close to reality, inevitable and immediate churn. Let's walk through an example and see how a high NDR makes for fast growth. We just reviewed how the revenue curve tapers down in reality due to churn. However, it does not always have to taper down. It can very well move up as well. We will now review how strong monetization can increase the rate of growth. Let's rewind back to the fundamentals of why a revenue curve tapers down. It's primarily because customer churn reduces the gains from new customers. However, if you factor in both expansion and contraction revenue, then the net revenue in month 2 can very well be higher than month 1. This is the fundamental secret sauce of the most successful SAS companies. First time observers are often surprised at how expanding the earnings from existing customers can offset both contraction revenue as well as customer churn payments company stripe offers a view into how that's possible. What we see here is the pricing page for stripe. It scrolls for several pages. One can see that stripe monetize is at several points in the customer journey beyond just the first purchase conversion. This creates many opportunities to expand earnings from existing customers and not relies solely on new customers for growth. I strongly encourage everyone to go through their pricing page in detail. Stripes success with add-ons is reflected in the exponential growth curve and their valuation. In eight years, they've grown from 0- $20 billion in valuation. In fact, this churn is slightly older. As of September 2019 their public valuation is North of $35 billion. Their growth is reminiscent of

our ideal case revenue curve. Moving upwards while growing. Going back to the fundamentals of the revenue curve lifting up. As long as the expansion revenue can outpace the combination of both contraction revenue and customer churn. In other words, an NDR greater than 100 percent. The revenue from new customers ends up being net revenue growth month over month. The curve lifts up, producing faster growth compared to a tapering curve. The benefit of a strong monetization strategy is that it produces a high NDR that can offset churn, resulting in a faster growth rate.

Five basic moves of a growth monetization strategy. Any monetization strategy aims to make one or more of the following five basic moves. First is adopt. This is essentially getting more customers to pay for the product, either by buying the product or converting non paying users into paying customers. The second is collect, which is essentially not leaving any money on the table and charging a fair price for the product delivered. The third is expansion, which is increasing the amount of revenue earned from existing customers. We just looked at that in the concept of expansion revenue. The fourth is retain, which is essentially making sure that the existing customer base, as well as the revenue from them, is retained in perpetuity or at least as long as possible. The last move is profit, which is essentially increasing the lifetime value from a customer so that more surplus is available for growth in subsequent cycles. These five monetization moves will be revisited with more relevant examples from the industry in lesson number 5.

Five building blocks of growth monetization. Let's visualize these one by one. The first building block of a growth monetization strategy is targeting the right buyer who pay for the product. The second is the path to purchase, taken by this buyer. The third is the premium value or the subset of value propositions or features that the buyer acquires at the end of the path. The fourth is the segments of buyers and the clusters of value we have identified earlier. The last is the price that can be charged to each buyer segment for the value that they're acquiring through the product. We're going to look at identifying the right buyer and their various segments in lesson 2. Lesson 3 is about the path to purchase. Lesson 4 is about the premium value and the clusters of that value that map to each buyer persona, and lesson 5 is about pricing that premium value for each persona.

Five scorecards to evaluate monetization. The following five models serve as the scorecards to evaluate a monetization strategy. We will discuss them in detail in future lessons, as well as learn how to build them, followed by relevant exercises and quiz related to each of them. The first model is acquisition. This model tracks the acquisition of users, prospects and leads starting from off product, sales, and marketing activity, all the way to their conversion to paid customer. In lesson 3, paths through purchase, we will dive into the details and look at underlying components of an acquisition model, such as conversion journey from non-user to prospect to customers, and the cost associated with the conversion journey. The second scorecard is the unit economics model. It calculates the cost and value of acquired

customers. In lesson 4, premium value, we will dive into the details and look at the underlying components of unit economics model, such as the customer acquisition cost, the lifetime value, the ratio of LTV to CAC, and the payback period. The third scorecard is the customer accounting model. This model tracks the inflow and outflow of paying customers and the growth rate of the customer base. In lesson 5, pricing, we will dive into the details and look at the underlying components of customer model, such as new customers, returning customers, and reactivated customers. The fourth scorecard is the revenue accounting model. This tracks the inflow and outflow of revenue and the growth rate of revenue. In lesson 5, we will dive into the details and look at underlying components of the revenue accounting model, such as new revenue, returning revenue, reactivated revenue, expansion revenue, and contraction revenue. The fifth and the last scorecard is growth ratios. These ratios inform us about the growth trajectory of revenue and market share. In lesson 5, pricing plans, we will dive into the details and look at underlying components such as quick ratio and net dollar retention.

Let's recap what we learned in Lesson 1. We went in to the details of the five goals of a monetization strategy. Goal number 1 is to pay the cost of transaction. Number 2 is to afford customer acquisition. Goal number 3 is to grow profitably by reducing payback period. Goal 4 was to grow competitively by outbidding on customer acquisition. The fifth and last goal is to grow faster by offsetting churn. Beyond the deep dive into the five goals, we briefly enumerated the five basic moves of a monetization strategy, the five building blocks, and the five scorecards to evaluate a monetization strategy. This brings us to the end of Lesson 1. Now's the time to give yourself a pat on the back. This was a lot to take in. I'm glad that you learned some important concepts that will set you up for some applied and hands on learning to come in the remaining lessons of this course. With Lesson 1 under your belt, you've set yourself up for success for the remainder of this course. Let's get to the rest of it.

Welcome to lesson 2, buyer targeting. In lesson 1, we introduced the basic building blocks of monetization strategy. We will start in this lesson with targeting the right buyer and its segments. In lesson 3, we will discuss the path to purchase traversed by the buyer identified in this lesson. Lesson 4 is about the methods to identify the premium value, whether the buyer is willing to pay for. Finally, lesson 5 is all about how to price this premium value and build a pricing plan. Let's give an overview of our buyer targeting lesson now. In this lesson, we are going to cover how to identify and target the right buyer for the product. There are four dimensions involved in targeting a buyer. We will take an incremental approach, layering each subsequent dimension on top of each other one by one. Starting with the key differentiation of a product, the market for that product, the persona of the decision-maker and influencing stakeholders and finally, the channels that help acquire these buyers. All along the way, we will also touch upon how each of the above dimensions can produce different segments of buyers. Earlier in the course, I had mentioned that monetization is not just the price that you charge for your product. It is relevant at every stage of a customer's journey and it impacts all

functions of the business. So it behooves a product leader to keep monetization front and center on their radar through all phases of building a product. In this lesson, we're going to look at the various dimensions of targeting the buyer. For example, the market in which a company sells its products, and the persona of the buyer decision maker. The selection of the right market and the right buyer in that market can significantly enlarge the total addressable revenue for that company. Similarly, picking the right mix of acquisition channels in the customer acquisition strategy can significantly lower a company's costs and reserve more capital to reinvest in future growth. We're now going to look at the various dimensions of buyer targeting. Let's get started.

The product differentiation is the first dimension for targeting the buyer. Differentiation is, an advantage that a business has due to some unique technology it possesses, or, a process that it can execute better than other players in the market. For the purposes of monetization, differentiation has the following importance. It creates value that can be monetized. It breeds loyalty to create repeat transactions, and, it protects the business from price-driven competition.

For the rest of this lesson, we will use a meal business as an example to learn buyer targeting. There can be several strengths that can be differentiating for this meal business for example, cost, logistics, experience for the customers, and selection of cuisine. Let's say the core strengths of our business are number 1, logistics, they can deliver under an hour. Number 2, customer experience, they can provide organic, freshly cooked meals and number 3, cuisine selection. They offer a wide variety of cuisine types ranging from Asian, Mexican, Italian, salads, burgers, and a lot more. For the rest of this lesson, we will choose the following product differentiation for our meal business, on-time, healthy meals with a diverse selection. Let's look at how differentiation helps in identifying and targeting the right buyer. Assume we have company A whose differentiation is the ability to deliver within a one hour window. They provide an organic, freshly cooked diet with multiple cuisine options. Company B, on the other hand has strengths in regulatory compliance, relationships with consumer brands, at-scale food preparation, and relationships with suppliers. The next dimension after differentiation in order to help identify the buyer is market. We are briefly listing all the markets here and we'll discuss them shortly. We have the consumer market, small and mid-size companies, large-size companies, grocery stores, and schools. Certain products trends have a stronger affinity with certain markets. For example, the one hour delivery window might appeal to consumers as well as professionals who work for small and mid-size companies. Freshly cooked meals are desired by the consumer, the small and mid-size companies and large-size companies. The organic diets similarly appeals to small and mid-size companies and schools, and multiple cuisine options are desired by consumers and small and mid-size companies. While accumulative of all strengths yield several candidate markets, the largest cluster of strengths suggests small and mid-size companies as the target market, where company A's trends can deliver the greatest value. In the same way, Company

B's trends appeal to a different set of candidate markets and yields a different target market where company B can deliver its greatest value.

The second dimension for targeting the buyer, is the market. A market is a group of customers that have similar budgets and can be targeted by the same sales and marketing strategy. Why is market important? Well, market is important for a couple of reasons. It sets the perimeter of focus for the business. Too many tech companies have failed trying to sell into every possible market. Each market has unique needs and customer budgets. It also enables the unique product differentiation that helps exceed customer expectations. A customized product and sales process, is more likely to exceed expectations.

Let's walk through our example, meal business, to understand how the choice of market influences the customer budgets and sales processes. Recall that the markets we had selected for the meal business were: consumer, AKA a mom; a small and mid-size company, for example, a 20-500 person tech startup; a large company, for example, a 500 plus marketing agency; a grocery store like Safeway; or schools like K through 5 elementary schools having 200 students. The customer budget for each of these markets, as we see, varies on a large spectrum. For consumers, it might just be $100 per month, averaging out to $10-$15 per meal on some days. For small and mid-sized companies, it could be thousands of dollars per month, averaging out to hundreds per employee. A large company might spend a lot more because they have a lot more employees, for example tens of thousands per month. A grocery store, on the other hand, may spend hundreds of thousands of dollars per month, their budget is determined by how many end customers they have and how much they spend. With thousands of buyers at that store per month spending tens per transaction, this can easily help them with a customer budget running into hundreds of thousands per month. A school on the other hand, may only spend tens of thousands of dollars per month, but with a guaranteed revenue spreading multiple years, along with the compliance overhead of working with state county in schools. The second component of the market dimension and buyer targeting, is the sales and marketing process. For the consumer market, it might be feasible to reach the mom buyer with digital-led awareness and marketing campaigns, followed up with a self-serve purchase experience where they use a credit card. A similar marketing strategy could be used for small and mid-sized companies, where a host of digital awareness mechanisms like content marketing, Google search ads, combined with cold outreach by sales rep of the company, can introduce the product to the prospect customers. Similarly, a self-serve purchase mechanism led by a credit card might be utilized. However, a somewhat of an onboarding experience within the product has to be created to setup all the employees of the small company. For a large company with a much bigger budget, you might need a high-touch sales marketing, onboarding, and support process just because they have complex systems, procurement rules, and possibly compliance requirements. A grocery store might be approached through long-term partnerships that take months to develop, followed by a high-touch sales, marketing, onboarding, and support process where you have

dedicated agents helping out the customer account. Similarly, a school district might require similar high touch operations, marketing, sales, and support, and in addition to those, a legal and compliance department that can work with the regulations of the school and state districts. Recall that we had narrowed down the product differentiation for our meal business as on-time healthy meals with diverse selection. This was based on certain strengths of the business, for example, there's strengthened logistics to be able to deliver within a one hour window, the customer experience of providing organic, freshly cooked meals, and the diverse cuisine selection of multiple cuisine types. These differentiations mapped to different segments of the market, for example, small and mid-sized companies for company A. With that market narrowed down, it maps to a certain customer budget and sales process. Thousands of dollars per month, hundreds per employee, with a cold outreach plus digital awareness-led marketing process, and a self-serve purchase and onboarding sales process. Let's see how differentiation combined with market helps identify the buyer's persona. Earlier, we looked at the product strengths for company A being in its ability to deliver within a one-hour window, its ability to supply organic ingredients that are freshly cooked into meals across multiple cuisine options. We also narrowed down the market segment as small and mid-sized companies. As far as the personas are concerned, the target buyer in the small and mid-sized company could either be the office manager responsible for provisioning the supplies for the office, or the employee directly purchasing meals. We are going to choose the office manager for this market size and company differentiation going forward. In contrast to company A's differentiation, market, and persona combo, is company B's differentiation and consumer brand relationships and its target market of grocery stores. The candidate buyer personas for this combination of company differentiation and target market, could be the CEO of the grocery store, the executives of those stores, or the directors and general managers for the grocery stores. We're going to choose the executives as the buyer persona for the combination we selected here. This is in contrast with the combination of differentiation, target market, and buyer persona for a different company A.

In the context of monetization, a persona refers to the demographic traits and behaviors exhibited by buyers across the entire purchase journey. Starting from acquisition, extending to in product usage, all the way up to post-purchase support. Why is persona important? Persona defines how a company structures its product and operations around the buyer. It helps define the purchase experience for the customer and the sales and marketing operations during acquisition. It helps define the product experience for in product usage and it helps define the customer experience for post-sale ongoing relationship management. In addition to buyer persona's, there may be other stakeholders that are not directly involved in the buying process, but who can influence the buying decision. Some good examples of this for our meal business are; employees who are the eventual consumers of food and may have preferences, the finance department, the city's health department, an agency that gives certification about organic diet. Working with them can impact the sales, marketing, and operational cost structures of the company, and hence, they're important consideration in the

buying process. There are two categories of personas; demographic personas and behavioral personas. In order to understand them better, let's look at some examples of buyer personas for the previously selected market of small and mid-sized companies. Demographic personas are based on some demographic attribute. For example, CEO, office manager, employees, these are all personas based on the demographic attribute of job title. Downtown office district ZIP codes, university ZIP codes are personas based on the demographic attribute of location, coupled with the secondary demographic attribute of occupation. Behavioral personas are based on some behavioral attribute of the buyer. For example, searching on Google for a meal service and taking recommendations from friends to acquire a meal service product falls under the behavioral trait of how they discover new products. Ordering a meal after reading reviews, falls under the behavioral attribute of how they make decisions at the point of purchase. How do these personas really help in practice? Let's say, we're looking at students who download the app while physically located in a university and are influenced by what's trending and popular in the student community. For this student persona, paid referrals and other viral mechanisms can be an effective channel to increase sign-ups. Reviews by people at their university can help push them past cart conversion. We will be looking at this in detail shortly.

Let's go back to persona in the context of our meal business. Recall, we just learned that a persona helps determine the purchase experience during customer acquisition, the product experience for end product usage, and the customer experience for the ongoing relationship after the sale. We will use the previously chosen persona of office manager in the market of small and mid-sized companies for company A. A couple of popular acquisition channels for this persona could be Google search ads and paid referrals. Also, the purchase process might have to be based on the use of credit cards to complete the purchase. The product experience probably involves a self-serve onboarding mechanism, a consumer grade quality user experience, and the provision of basic billing and reports for the office manager to run expenses. The customer experience for post-sale relationship management might involve an online help center with frequently asked questions. Possibly a small community for support of the Office Manager, which might involve contributions from similar office managers at other customer companies. Last but not the least, e-mail and chat support that connects the office manager directly to a customer support representative inside company A. This is in stark contrast with company B. The target persona and market segment for company B was executive at a grocery store chain. In order to acquire this buyer, it might require several months worth of marketing campaigns, enterprise sales rep that engaged this buyer in lengthy conversations, finally culminating in what is possibly multi-year contracts materialized through purchase order instead of a credit card. The customer experience likely involves a high touch onboarding process with implementation specialists from company B involved, a dedicated account manager that looks at the health of the customer on a week-to-week basis, custom requests by the customer. The product experience might involve detailed report on taxes, receipts, and maintaining a ledger. Finally, the customer experience for post-

sale relationship management might involve dedicated customer support agents organized in a multi-tier support process involving both phone and e-mail support, as well as guaranteed support, SLAs. The dimension of persona continues the process of targeting, started by product differentiation and market. Next, we will look at how the combination of dimensions identified so far, differentiation, market, and buyer persona takes it to the final targeting dimension channel. Earlier for company A, we had narrowed down their differentiation as a logistics ability to deliver within a short one-hour window, the ability to provide organic, freshly cooked meals across multiple cuisine types. Their target market was small and mid-size companies and the buyer persona was an office manager. For these dimensions, certain types of acquisition channels are the perfect fit. For example, Google and Facebook ads and paid referrals.

Channel is the last dimension for targeting the buyer. In the context of monetization, a channel refers to the means to acquire customers. Why is channel important? Dominating a channel is important to extracting maximum profitable growth from it. To do that, some fundamental levers of the channel need to be mastered. First, there is the cost of acquiring a customer. We discussed this in the previous lesson as the customer acquisition cost, then the volume of customers that can possibly be acquired through this channel, the cycle time, which is how long it takes a prospect from exposure to paid conversion, and finally, the fourth lever, the point of saturation at which the acquisition cost has to be raised in order to acquire the next customer. This is the start of the saturation phase, though customers can still be acquired at an increasing cost. Towards the end of this phase, it becomes hard to acquire the next customer, without exorbitantly raising the cost to acquire them. Some examples of channel for our meal business; Google and Facebook ads, paid referrals, sales representatives, content marketing blogs.

We'll look at some channels for our meal business example. For each channel, we will also consider the four underlying levers of a channel; cost, volume, cycle time, and saturation point, and study their characteristics for the channel. The first channel we will consider is Google and Facebook ads. The cost of acquiring a customer on these channels could potentially be neither too high nor too low, we'll mark it as medium. A large volume of customers can be acquired through these channels because of the reach of these advertising platforms. I will mark that as high over here. The cycle time from seeing an ad to becoming a paid customer is really fast. However, the point of saturation is really short. Since multiple competitors in the market are simultaneously bidding on these ad platforms, the cost of acquiring a customer keeps increasing and does so very soon. For the remaining channels, we will use this color-coding of blue being the strength of that channel and red being a weakness of that channel. The second channel is paid referrals by existing customers to their friends and family. The cost compared to Google and Facebook ads is low. A high volume of new customers can potentially be acquired because of the viral spread of the channel. The cycle time from the time an existing customers sends a referral to the referred friend or family,

becoming a paid customer is neither too long or too short, so we'll mark it as medium. The point of saturation is long, simply because it really depends on how many existing customers are there, how many of them will actually make a referral. The next channel is human sales representatives. Their salaries are obviously making the cost of this channel high. The volume is medium. The cycle time is slow simply because of the nature of a human transaction, and the point of saturation is medium. The last channel that we will look at is content marketing, for example, blogs. The cost of a content writer to produce several content pieces in a given month is medium. The volume is low simply because of how much content can be produced, how many people will view them over time. The cycle time is slow and the point of saturation is medium.

Let's recap what we learned in this lesson. There are four dimensions of identifying and targeting the right buyer for the product. There is the differentiation of that product, the market for that product, the persona of the decision maker and influencing stakeholders, and lastly, the channels from which the buyers can be acquired. This wraps up the second lesson in our course, buyer targeting. In the next lesson, we will focus on the path to purchase.

In Lesson 1, we introduced the basic building blocks of monetization strategy. In Lesson 2, we looked at how to target the right buyer and it's segments. In this lesson, we will discuss the path to purchase that is traversed by the buyer identified in the previous lesson. We will start with defining the concept of a path to purchase and discuss its importance. We will then look at the various types of frictions encountered in that path, along with relevant examples of each from the industry, followed by an overview of buyer psychology tactics used to overcome friction. All of these are part of the qualitative aspects of this lesson. There's also a quantitative aspect. We will look at building the acquisition model, which is the first five scorecards used to evaluate in monetization strategy. Peaking beyond this lesson briefly, Lesson 4 is about the methods to identify premium value that this buyer acquires at the end of their path to purchase and is willing to pay for. Finally, Lesson 5 is all about how to price this premium value and build a pricing plan. Let's get started with the path to purchase.

Let's start with a brief introduction to the path to purchase. We'll look at its definition, the scope of the paths to purchase, and its importance to monetization. The path to purchase is the sequence of steps in the end-to-end customer experience taken by the buyer towards the purchase decision. The path is not just that taken by new customers towards their first purchase, it is also about the path taken by existing customers towards upgrading or increasing their span by other means. It can consist of both in product and off product experiences across both physical and digital worlds. It can be spread across several sessions, possibly days. A path that is difficult to navigate is expensive, dilutive, and overbearing. Let's see. As we saw in lesson 1, a low conversion rate raises the customer acquisition cost. In the same way, a hard to navigate path converts fewer buyers and is thus expensive. As a result, the company might be compelled to compensate by lowering premium

price for an otherwise premium value. This is dilutive for the company. It charges emotional and cognitive overhead to the buyer, which results in a sub-optimal, overbearing customer experience. This can reflect in lower willingness to pay by the customer or them wanting to pay lower prices.

We will now look at the various types of frictions, encountered in the path to purchase, along with relevant examples of each from the industry. Path friction, is any step in the path to purchase, that delays purchase conversion or increases the likelihood of the buyer leaving without making a purchase. There are three categories of friction. Functionality gaps, usability obstacles, and cognitive overhead. Let's start with, functionality gaps. A functionality gap, is any hole in the solution that prevents a customer's use case from being fulfilled. Take for instance, the comparison between Netflix and Hulu. Early on, Netflix was the only video streaming platform in the market where you could binge-watch multi episode TV series. This functionality advantage helped Netflix attract more customers and grow faster. People would pay for Netflix, even though Hulu was free due to ads. Eventually, Hulu started catching up, and offer some parts of its content for binge-watching. Another comparison is Google Photos versus the rest of the photo storage apps in the market. Early on, Google Photos was the only product that offered a high-quality deep search functionality, that could even search objects inside someone's photos. This feature, got people to adopt Google Photos. When the storage needs for their photos got bigger, it even got them to buy Google One storage plans. Essentially, the stronger functionality set of Google Photos helped sell more products. Eventually, other players started catching up. The moral of the story is, functionality gaps may prevent purchase conversion. But on the other hand, should not be relied upon solely to provide a competitive advantage. That advantage, comes from premium value which we are going to discuss in lesson 4, along with methods for discovering it. We're also not going to cover how to plug these functionality gaps. Since those tactics are custom to each market and each person or type.

Next up are usability obstacles. A non-intuitive or inefficient design delays purchase conversion and increases the likelihood of the buyer leaving without making a purchase. Design here refers to not just the digital experience, it also covers the design of customer experience for services delivered in the physical world, especially for companies whose products straddle both physical and digital worlds. We're going to look at Uber's tactics for removing usability obstacles. Uber supports a customer experience that straddles across both digital and physical worlds. Let's look at the design of the pickup step in Uber's path to purchase. One of the most fundamental steps in ride hailing is for a rider to specify a pickup point and for the driver to arrive at that exact point on time. Shorter wait times at the point of pickup are extremely crucial, especially in high volume and high density pickup areas. Anything less than a safe and smooth pickup experience can result in ride cancellation. Not only does this incur a loss in revenue, the losses can compound further if it ends up incurring customer support charges. Not surprisingly, Uber has made a lot of innovations in the end-to-

end pickup experience. In order to book a ride, it is crucial for riders to be able to locate the pickup point on the map. This experience has to be easy and intuitive or else, purchase conversion at risk. Uber has innovated in its app's user experience by recognizing that it is far easier to move the map when scrolling versus moving the pin. At the time it was introduced, the more popular UX design pattern across several apps was to move the pin on scrolling. Uber also innovated in the physical world experience by introducing color-coding and pickup pin numbers to accurately and efficiently connect drivers with riders. Anything less than a safe and smooth pickup experience can result in ride cancellation. This page in the classroom has links to the blog posts from Uber when they introduced these features. I encourage reading through those to understand the depth of their thinking. Another example of removing usability obstacles to help monetization is how seamlessly slack charges for additional users. Look closely at their pricing metric. The customer is charged for another user as soon as another teammate is invited. Given the viral DNA of the product and its users, the invitation is inevitable. By not adding payment confirmation to this flow, slack has kept friction low. This no action purchase conversion and payment flow helps slack´s monetization goals. Another example of slack's obsession with reducing friction is the seemingly trivial, forgot password flow. As we just saw, slack charges by active users and not just users. While their definition of active users is not public, it likely depends on some amount of usage of the product which won't be possible for users who have forgotten their passwords unless they can recover it. Slack, innovated in basic usability design to accelerate active usage. They introduced magic links, which eliminates the need for passwords. This UX design pattern, like Uber's map innovation, was rare at the time it was introduced. Magic links have seen quick adoption even by companies that don't charge by active users. Seen here is WordPress, a content management system, and Scaleway, an infrastructure in the Cloud developer product both making good use of magic links, not just in spirit, but also in letter. Designing an intuitive UX is outside the scope of this course. However, let's walk through some indicators of usability obstacles that can adversely impact monetization. Users are not starting the purchase journey or not completing it, they are either taking longer than the expected duration, or an unusual number of steps to complete the purchase journey, or they are canceling their purchase after completing it.

Next up is cognitive overhead. Cognitive overhead is the number of logical connections or jumps your brain has to make in order to complete a goal or to understand the things that you are looking at. Reducing cognitive overhead is an entirely separate body of research, and study on its own. But let's look at the example of Amazon's checkout page to see how it impacts monetization. Getting distracted by unnecessary information at the point of conversion is likely too delayed, and increase the likelihood of the buyer leaving without making a purchase. In order to reduce distraction, Amazon strips down everything from their checkout page, which is the last step in purchase conversion. There's no catalog, no search bar, no recommendations, no way to get to the wish list, no easy way to even go back to card and add more things. Until recently, not even the logo to take back to the homepage, zero

distractions.

So far we have examined the several ways in which path friction is detrimental to the customer's experience and resultantly to the businesses bottom line. Alternatively, there is good friction that can serve as a useful means to an end for monetization. Good friction is friction added knowingly to the path to purchase due to an intentional design choice that ends up benefiting monetization. We're going to look at when to add and when not to add good friction. First, let's look at the five situations when intentionally adding friction helps the monetization strategy. When it helps select users with a strong purchase intent, it gets users to accrue more value, sells the value proposition better, earns the trust of a niche customer, and wins back a customer at risk of churning. Let's look at each in detail.

We'll see how asking for credit card before starting a free trial is good for business. Let's briefly review the three popular models of adoption in subscription businesses. First is Freemium. Under Freemium, users start out using a limited version of the product without paying anything. As they use the product, they derive more value. Eventually, they want more capabilities out of the product. At this point, they are asked to pay in order to upgrade to a stronger version of the product. If they choose not to pay, they can still continue using the basic version with limited capabilities. This model is usually a good fit for products that are looking to get more sign-ups. For example, an early stage company that is still searching for product market fit. Next model is free trial without credit card. In many ways, this model is similar to Freemium. Users start out with a limited trial of the product. The limits are usually defined in terms of time duration, but could also be based on a different users metric, for example, number of users or stores amount. Once the trial limits are reached, they must pay in order to continue using the product. An important detail in this model is that credit card details are not required to start the trial. This reduces path friction and increases trial sign-ups. Just like Freemium, this model is usually a good fit for products that are looking to increase sign-ups. The last model is free trial with credit card. In this model, users start out with a limited trial of the product and must provide credit card details in order to start the trial. The card is not charged during the trial, but as soon as the trial limits are reached, the card is automatically charged usually without any notice. Asking for credit card details adds a usability obstacle. It also adds significant cognitive overhead since the user starts mentally processing all aspects connected to paying. They may procrastinate while evaluating whether the product is worth the price, or if they are okay getting charged automatically at the end of the 30 day trial duration, specially if they forget canceling it. All of this can potentially lower the trial sign-up rate and can impact the number of buyers and revenue. The upside is that the users who do sign up for the trial with a credit card have a stronger purchase intent compared to users that signed up without a credit card. Totango, a customer success platform ran a market survey to compare the relative performance of requiring credit cards to start a trial versus not requiring it. According to Totango's data, sign-up conversion in models that require a credit card to start a trial is two percent compared to 10 percent for models that

do not require credit cards. Make sense? Not requiring credit cards will get you more sign-ups. However, the conversion from starting a free trial to becoming a paid customer is 50 percent with credit card require, versus 15 percent for models that don't require credit cards. If you find yourself asking, "Why does adding payment friction increase paid conversions?" Especially when we have just discussed that removing all forms of friction from the path to purchase is important for purchase conversion. By that logic, it would make sense to delay asking for payment information until the user is ready to purchase. The reason is free may attract the wrong type of user who may never purchase, whereas a free trial with credit card attracts users with relatively stronger purchase intent. Everything exists in a balance. This model is good for companies that are looking to increase paid subscribers versus just sign-ups, increase revenue versus market share, and increase margins by not having to bear the cost of supporting many free users.

Another situation where intentionally adding friction to the path to purchase can increase the likelihood of purchase conversion is when it causes the customer to accrue more value. Consider the design of the onboarding experience for the brain training app Elevate. Their onboarding experience is exceptionally long. From the splash screen on launching the app to the point of purchase, there are a total of 41 steps. At the end, the users are asked to sign up for a paid subscription with a 7-day trial. The Course resources folder has screenshots for all steps in the flow. I encourage you to download the app and go through it on your own. What we're seeing here on the screen are only the first five of 41 steps. We will start with the last screen here, which is giving users the first of several tasks it asks them to complete. Setting a goal. The first tasks for users is to set their goals. A lot of users do not have a clearly articulated goal in their mind. There are a total of seven steps in setting their goal while the extra steps for goal-setting add more friction for users, it gets them to identify their purpose and become motivated. This gets them to anticipate more value from the product than they had originally expected. Elevate does not stop there after giving one task two users. Next task is to take a test which has 12 screens in total. The incentive of personalization is baked in to make the extra investments seem worth it. While the extra steps for taking a test add more friction for users. It gives them a personalized plan at the end. They will now anticipate more value from the product than they had originally expected. Once again, we see adding friction gets the user to build more value. As users progress through the test, they're anticipation for seeing their score increases with each step. Somewhere during the onboarding experience, subtly but strategically, the app transforms itself from a training app into a game that rewards. The value anticipated from the product is raised. With that, a higher premium can be charged. Notice how each screen has a timer that starts from the top and keeps dropping to the bottom of the screen. This is a time deadline for them to finish their response. We just saw three examples of how friction added intentionally to the product experience creates extra value for the user. We saw that adding the friction of asking for their goals, gets them to recognize their purpose. Personalizing their plan increases their trust and willingness to pay. Taking a test gets them in the mindset of competing and anticipating a

score. All right, let's do an exercise. It is based on the same onboarding flow of Elevate app that we just walked through. The goal of the exercise is to identify all good friction tactics employed by the app and it's onboarding flow and complete the above table. I strongly recommend downloading the free app and going through the entire flow on your own. The Course resources folder has screenshots for all steps in the flow. The deliverable of this exercise is to complete this partial table.

The next situation where good friction increases conversions is when it helps sell the value proposition better. The example we will consider is the driver experience for the popular ride sharing app Lyft. Here, we see it asking the drivers to go out of their houses, meet a mentor, and complete a welcome ride. Instead of minimizing steps so the driver can breeze through the onboarding process, Lyft is adding intentional friction. By connecting drivers with mentors, it is helping them get trained on how to find passengers, complete the rides, and earn more money. By having more qualified drivers complete the onboarding process, Lyft can increase its driver supply, which increases its ability to fulfill more rides requested by riders.

The fourth type of situation where adding intentional friction to the path to purchase is almost essential is when the customer is a niche or expert persona and the good friction gets the product to earn the trust of this expert. What is a niche persona? It's someone with intricate needs that requires a complex solution. These people generally have a high amount of knowledge about their domain and they hold a high bar for giving their trust to the app. Let's look at some examples of niche personas. Workers in a gig economy app are a good example of a niche persona, like a Lyft driver or an Airbnb host. Their needs are intricate, which makes them niche. Same goes for creative freelancers, like a podcast host. The amount of effort that goes into producing quality content and then recording it at studio quality is a complex workflow. Engineers is another such persona since they hold a high amount of knowledge about their domains. This is why products like AWS, Sentry, and Docker provide a very wide loved personal onboarding experience to their users. Finally, lawyers are an example of a niche persona for legal tech products like Carta and Atrium. Lawyers have a high bar for giving their trust. We'll look at the example of Patreon. It is a platform that empowers creators to run their own subscription based content service. Why is such a creator a niche persona? They have a high bar for artistic excellence. They are reluctant to ask for money. They may already have a following and those followers may have preferences, and they may need to pay back commissions. The article linked on the classroom page is about the six hypotheses that improve their activation rate. We'll discuss here hypothesis six and five, though I strongly recommend reading the entire article. Hypothesis six literally calls out friction earns trust. Whereas, hypothesis five highlights why slowing down during onboarding can motivate creators. Other hypothesis in the article also reflect design choices that increase path friction.

The last situation where adding friction is needed for monetization is winning back customers

who are about to cancel. We will take LinkedIn as an example. LinkedIn earns revenue from both consumers and from commercial enterprises. Paid premium subscriptions by consumers is a major revenue stream. Let's walk through their cancellation flow for premium subscription. First, it's not visible anywhere on the main page. If you click on the details of your premium plan, you come to this page. Again, no way to cancel subscription on this page. Instead, the user is pitched the different ways in which the subscription plan helps them. For example, how many InMail credits are remaining, people who have recently seen their profile, and insights about their suitability for certain opportunities. If you scroll down below the fold, there are still no obvious ways to cancel. After some exploration, you can eventually find it. But there are still a few caveats. It's buried under a dropdown. It's not the first item in the list which adds further overhead for scanning. It's on the right reel, which is generally a region of peripheral focus for the user. All of this is on top of being below the fold. Now we're ready to cancel. Not quite. Another attempt is made to highlight the benefits they stand to lose if they proceed with cancellation. Even the default option is not to cancel despite this being the cancellation flow. The default call-to-action plus the border emphasizes this option more than the cancellation one. Even if the user chooses the cancel option, one last attempt is made to leverage any lingering doubts in the buyer's mind. "Are you sure you want to cancel?" No. Yes, I'm sure. No conversation about good friction is complete without talking about how it can go wrong. An intentional design choice that adds friction to the path, but in the process, loses the customer trust or compromises on basic principles of design simplicity and intuition should not be confused with good friction. For example, the free to play online games. They rely heavily on adding friction to achieve monetization, whereas on the other hand, the players would want nothing more than to race past all the levels of the game. By intentionally designing cycles of repetitive tasks with just the right amount of monotony, the free players are slowed down enough to the point where their impatience tilts their willingness to pay. Such tactics for B2B products, as well as a host of consumer products, can lose the customer trust, sometimes permanently.

Despite improvements that remove path friction, some unwanted friction will likely remain in the customer experience for various reasons. Those can be circumvented by leveraging a buyer psychology. Next, we're going to look at some of the tactics that leverage psychology. Buyers psychology is a large subject area and there are several mechanisms in this body of knowledge. We will cover a small handful and look at practical examples of their impact on the path to purchase. Further reading is provided in the classroom. We start off with social proof, which is a tendency to guide one's actions based on observed behavior by other people. This is driven by the desire to behave perfectly, especially in new situations. There are numerous examples of this tendency influencing buyer behavior. From Yelp reviews, influencing purchases to like comments and tweets, influencing participation and social platforms. We see social proof in action everywhere, every day. Let's use the example of a tech company Course Hero to illustrate social proof. Course Hero operates an online learning platform where students can access course specific resources submitted by a community of

students and other educators. They use a novel gamification technique, where students earn credits by submitting their materials from their previous courses. Later on they can use these credits to unlock desired materials for new courses. Monetization is based in part on a paid subscription model, where students can access all course materials without first having to earn credits by submitting materials. This novel gamification technique to nudge students on the path to purchase does not have a prior precedents. Let us now look at how Course Hero employs social proof to nudge students along the path to purchase, which does not have prior precedents. Shown here is the first step of their sign-up flow. Notice how Course Hero ask for the students school, this student provided Stanford University. A couple of steps later on, the payment page, school is used as social proof. Join more than 19,000 Stanford University students who have used Course Hero to get better grades. The point of purchase is where reassurance of an unusual behavior being commonplace is most needed, and social proof is most effective in providing that reassurance. If they had provided UC Berkeley as their school, they would have seen 66,000 University of California Berkeley students. If they had chosen Gonzaga University, they would have seen join more than 3,000 Gonzaga University students who have used Course Hero to get better grades. By making a strong reference on the payment page to how many students from the Buyer's University are already part of the community. Course Hero makes the case that it's not unusual to pay for crowdsourced course materials on a subscription basis.

Next, we're going to look at urgency. The key psychological drivers in the case of urgency are; the desire to be part of a group of individuals with a certain behavior and meeting a deadline. It is based on FOMO, the fear of missing out, which is the desire to adopt a certain behavior due to an approaching deadline, or lose out on the opportunity. FOMO can either be based on time or quantity. If it is driven by quantity, it is commonly referred to as scarcity. Have you ever encountered time-limited deals offered by certain e-commerce websites that are going to, "Expire soon"? That is an example of the same tactic at play. However, the effectiveness of such tactics can be diminished if the urgency is artificial. Sometimes, the time-limited deal is tied to a popular seasonal event to lend it some credibility. At other times, consumers can tell the difference between a real bargain and a fake one. Course Hero, on the other hand, is an example of plausible FOMO done right.

Next we look at loss aversion, which is essentially a generalized form of urgency and scarcity, two concepts that we just looked at. Put simply, loss aversion refers to people's tendency to prefer avoiding a loss than to make a similar gain. For example, it is better to not lose $10 than to find $10. Loss aversion has certain similarities with FOMO. It is not just a single tactic, but an entire category of psychology levers, the full treatment of which is beyond the scope of this course. I highly recommend checking out further reading in the classroom.

The last tactic we will look at is anchoring. Anchoring is the tendency to evaluate a benefit relative to some reference point while making the purchase decision. Let's look at how

anchoring works. Usually, the product has several purchase options, and one of them is the most desirable. That option is made prominent by emphasizing upon a benefit. The set option will have higher levels of the benefit compared to the rest. This is called anchoring. Nudging the buyer along the path to purchase towards the most desirable purchase option by emphasizing relatively higher levels of benefit available in that option. There are three types of anchoring generally found in products: price anchoring, duration, and commitment based anchoring. Let's look at the example of Headspace, a popular mental health app. Like most other subscription apps, the goal of their pricing plan is to guarantee maximal revenue. For that purpose, the annual plan seems to be a better option than the monthly plan. Total revenue with monthly plans can be lesser due to the risk of cancellation somewhere during the year. The first anchor that Headspace uses is a price anchor. By base-lining the price of both annual and monthly plans, by recalculating on a monthly basis, they are making the annual plan pop out better than monthly. The next anchor is a duration anchor. Annual has two weeks of free uses to evaluate the product, while monthly only has one week of free usage to evaluate the product. They have highlighted this with a stronger emphasis through font. Once again, they've tried to make the annual plan win through duration anchoring. The next example is slack. We looked at their friction-less pricing model earlier, now let's look at their price anchoring. Once again, as a subscription business, the goal of their pricing plan is to prioritize annual plans over monthly. This guarantees maximal revenue. Slack does anchoring by recalculating on a monthly basis, whereas a lot of other SaaS companies require the user to press a toggle button to switch back and forth between monthly and annual pricing.

So far in this lesson, we have reviewed the qualitative aspects of customer acquisition. We're now going to take a quantitative perspective and evaluate the impact of customer acquisition on monetization. We will do this using an acquisition model. Acquisition model is the first of five scorecards for evaluating monetization. In the next lesson, we will look at scorecard number 2, unit economics. Finally, in the last lesson, we will look at the rest of the scorecards. In building the acquisition model, we'll first look at the goals of the scorecard, then dive deep into the details of designing it. We'll look at how to use the scorecard in action. Finally, we'll wrap up with an exercise related to this scorecard. First, let's look at the goals of acquisition model. Fundamentally, an acquisition model informs about the effectiveness of a product's acquisition and suggest ways to improve it. How many users lead and customers are being acquired? Which persona's are most likely to become buyers? Which channels produce more buyers than others? What is the true cost of acquiring a buyer for each channel, and what is the conversion efficiency behind each channel's output?

For the purposes of building an acquisition model, as well as the subsequent exercise, we will consider a fictitious business during the walk-through called ScreenGrabr. We will use the same business and subsequent lessons for other scorecards. The product for ScreenGrabr enables users to take screenshots as images and animations and share them as a URL. A

couple of persona's and corresponding markets are under consideration. First is professionals who use it at work. This is the commercial market. The second is the student persona, who use it for projects and assignments. This is the consumer market. A few channels for ScreenGrabr are direct visitors to their website. Visitors that come through Google ads and visitors that come through in product referrals from friends and family. The monetization model of ScreenGrabr is based on freemium adoption, which is users can sign up for free to use a limited version of the product, and they earn subscription revenue, which means some of these free users upgrade to a paid subscription. Only annual subscriptions are supported for now. We'll add more once later in the course. There are three paid tiers and one free tier. We will add more details about pricing tiers for remaining scorecards in subsequent lessons. Let's design the model.

Throughout the course, we will follow the structure of inputs, transformations, and outputs to design the model. Let's start with inputs. The input for an acquisition model are channels and personas. This includes the raw numbers of prospects approached, engaged as leads, and converted into customers. For example, in case of Google ads as an acquisition channel, the inputs would be the volume of impressions, click-through rates, and sign-ups associated with each channel and persona combination. We can choose to be as granular as we want and record the inputs at each stage of the journey towards becoming a customer. Going back to the screen grabber example, both professionals and students work collaboratively on projects. The referrals are therefore a useful acquisition channel. They may also search on Google for the right tool. Each channel persona combination has its own dynamics. Let's start building the model in the spreadsheet. Shown here is the input section of the acquisition model. The starting budget for Google Ads, let's say is $350,000. Throughout building this model, we're going to use a certain color coding. Everything in font color blue is an assumed value of the input and everything in black is a calculated value based on some formula. The cost-per-click is set by Google. Let's assume it to be $10. It is a function of how much competition there is on the ad network given the set of keywords that are being bet upon by screen grabber. Based on the cost per click and the total ad budget, the number of clicks that screen grabber can purchase is 35,000. Let's assume the click-through rate on Google Ads is 3.5 percent. We will visit this shortly again to understand its importance. Inherently, it is a function of how effective the ad is, its rank on the search results page and Google's ranking algorithms. Based on the ad click-through rate and the number of clicks purchased, the number of impressions that took to get to 35,000 clicks was 1 million. Again, we'll revisit shortly why this becomes important. We're going to assume a couple more inputs. The daily support costs for a non-paying user of $0.06 per non-paying user and the average number of days a user remains non-paying, 47.6 days.

The next part of designing the model is transformations. Transformations are conversions applied by the product to the inputs. Examples or signup conversions, purchase conversion, and conversion to some key engagement action. Conversions are the highest levers impact

that a product can exert on the monetization outcomes. Even fractional improvements to the signup landing page, purchase flow, or even to the ease of taking core engagement actions can yield outsize gains. Let's go back to the Screen Grabber model and spreadsheet. The second sheet and the acquisition model's spreadsheet is transformations. All transformations are assumed inputs. Primarily, there are two types of transformations. The first is the signup conversion rate. This is the number of people who come from Google ads on a landing page and are then passed through a signup flow and convert to being registered users. The second type of transformation is the upgrade from free to any of the paid plans. The primary transformations are getting users signed up and then up sold to one of the three paid subscription plans. This is a simplified version. In reality, there can also be secondary transformations. For example, in case of Screen Grabber, it is likely that non-paying users need to take a certain number of specific actions before they cross the threshold of value at which they're willing to pay. Engagement is therefore a secondary transformation here. Another example of an engagement based secondary transformation is nudging users to use the product while imposing some kind of limits on free trial usage. As they use the product more and more, they get closer to the point where they need to upgrade to a paid plan in order to continue using the product. For the sake of simplicity, we're going to not include secondary transformations based on engagement in the acquisition model discussion here.

The last part of designing the model is outputs. Outputs are the result of applying transformations to the inputs. The two types of outputs central to the acquisition model are; number one, volume of leads and paying customers, and number two, the cost of acquiring leads and paying customers. Let's go back to the screen grabber model to understand the outputs. The third sheet in the acquisition model spreadsheet is outputs. Primarily, there are two sections within outputs; the leads and customers, and the cost to acquire the leads and customers. We'll start off with leads and customers. First and foremost in leads and customers, is registered users. These are the leads. These are users who started off by clicking on a Google ad and landing on a landing page or screen grabber, then they went through a sign-up flow and converted into registered users. There is another type of lead that we are not discussing here, those are, the landing page visitors from Google ads. Right before a free user signs up, their status is that of a landing page visitor from a Google ad. That is also a type of lead, but at a previous level. The cost to acquire each landing page visitor, which is the cost per click, is like the cost per acquisition of these leads. The next set of line items within leads and customers, are registered users who upgrade to a paid plan. There are three paid plans, each with a different conversion rate from sign-up to paid subscription. The number of customers is a function of registered users and the percentage conversion rate. The total number of customers across all plans is the sum of customers on each plan. The next section is the cost to acquire those leads and customers. The cost per lead, also known as the cost per acquisition, is essentially the total ad budget divided by the number of leads. The last cost line item is customer acquisition cost. This is the combined total cost to acquire a single paying customer. It is a function of all the ad spend, plus all the

support costs across all the free users, as well as paying users, divided by the number of paid users. A common mistake made in calculating the customer acquisition cost is that it is often divided by the number of free users. That is not correct. Let's look at the details of how the customer acquisition cost has been calculated. The total ad spend factor is straightforward. The next factor on the numerator is a total cost to support free users, which itself is a function of the number of free users, times the daily support costs for a single non-paying user, times the number of days a user remains non-paying. Combining all of these yields $134.19, the customer acquisition cost. Notice that we did not include revenue earned from paid customers in the acquisition model. It's part of unit economics model that comes later in lesson 4, and also customer and revenue counting models that come later in lesson 5. We'll now move to the next part and see how to use the scorecard in action.

Recall that an acquisition model has certain goals. We're now going to slow down and dive deep into using the acquisition model to analyze how to meet those goals. The model can help us forecast and predict set targets for the business and build feasible and actionable plans to achieve them. First is forecast and predict. The model that we just walked through was a forecast of outputs achieved through certain inputs. We can also extend the model to predict the outcome of certain scenarios. Let's look at the impact of product lead transformations on the outcomes. As we saw earlier, there are two main types of transformations. The sign-up conversion rate from landing page visitors to registered users, and the upgrade conversion rate from free to paid users. We're going to change the sign up conversion rate. Keep an eye out on the leverage we achieve here. Let's set up some of the formulas to measure the before and after Delta. Primarily, we are interested in the impact to register users, the impact to paid customers, the cost per lead, and customer acquisition cost. The value is copied here in the second column right now, are identical to these values. As I change some factors here, it will reflect in this column. The third column measures the Delta. I am going to change the sign-up conversion rate just one percent from 18-19 percent. That increased registered users by nearly six percent. The same change trickled all the way down to customers and translates into approximately similar savings in cost per lead and customer acquisition cost. A one-percent change to sign up conversion rate produced close to six percent more sign-ups and resultantly six percent more customers and similar savings in cost per lead and customer acquisition cost. From minor copy changes on the sign-up landing page to major design changes like simplifying the UX flow can yield gains in the sign-up conversion rate and give a high leverage impact to the bottom line. Let's reset the numbers and look at the impact of the conversion rate from free to paid users. I'll make this 18 percent, all of this goes back to zero. Now, let's change the conversion rate from free to the first paid plan basic by just one percent. It gives us a savings in customer acquisition cost by two percent. Since we didn't change any conversion rate that impacts registered users, the cost per lead remains the same. But the savings even to the customer acquisition cost are important as it leaves more surplus available to acquire more customers. Once again, by changing the product experience and improving the conversion rate from a free plan to a paid

plan, the company can now acquire more customers and reduce the cost of acquisition for a customer. How might the company encourage users to upgrade more and more from free to paid plans you may ask. First of all, by building a desirable set of features in the product at the basic pro and premium tiers that users in the free plan are excited to adopt. Second, by reminding them of the value proposition that awaits them through email campaigns and other means to get them to upgrade. Lastly, by making the process of upgrade seamless and easy. By doing any or all of these measures, screen grabber can increase the number of customers that upgrade from free plans to paid plans.

An acquisition model can also help set targets for all the teams in the company. We're going to look at how to set targets for product, engineering, and marketing teams. Let's first look at setting targets for product. Earlier, we looked at the input factor of average number of days a user remains non-paying at 47.6 days. That is nearly seven weeks. Seven weeks after somebody signs up for a product, do they decide to pay for it? We can certainly reduce that. Setting free trial limits and reminding users of the value proposition that awaits them, can be effective in reducing the number of days a user remains non-paying. Let's look at the impact of reducing this number. We're going to go from 47.6 to 37.6. That is more than 20 percent reduction, which translates into a little over one percent reduction in customer acquisition costs. Notice that the number of customers as well as the number of non-paying users did not change. Essentially, what we did was reduce the amount of time it takes to get a non-paying user become a paid user. However, by reducing the customer acquisition cost, we now have more surplus available to re-invest in future growth. Let's reduce the daily cost by one cent. That is a drop of 16 percent that translates to a little under one percent improvement in customer acquisition cost. The total cost to support free users, there's a small but non-trivial component of the total customer acquisition cost. By using the acquisition model, we can forecast a company's customer acquisition targets, then use this model to work backwards and define the targets for both the product and the engineering team to bring down their numbers correspondingly. I should note here, that as we make changes to these two cost numbers significantly by 16 percent, by 20 percent, we were only able to see close to a one percent improvement in customer acquisition cost. In stark contrast are changes we made earlier to the sign-up and upgrade conversion rates. A one percent change in both of those numbers yielded a significantly larger gain in customer acquisition cost. Like I mentioned earlier, changes to the end product experience that lead to improvements in conversion rates have a much higher impact than changes to any of the raw unit cost numbers. Conversion rates are a higher leverage factor. So far, we have seen how to set targets for the product and engineering teams. Similarly, we can also set targets for the marketing team. The two factors that we're going to look at that can be impacted by marketing are the cost per click and ad CTR on Google. Let's start with a cost per click. Earlier, we said that the cost per click is determined by the ad network based on the competition on those keywords. However, by carefully selecting the keywords on which screen grabber bids, it can effectively reduce the total cost per click averaged across all

keywords. Let's reset back to our original numbers, now at zero Delta. Now, let's bring about a one percent change in the cost per click. Straightforward to see that that results in a one percent change in signed up users, which results in a one percent change in paid customers, as well as the corresponding cost factors. Let's reset the numbers and see how can the ad click-through rate on Google impact the numbers. I'm going to change this from 3.5 to 3.6, which results in achieving the same number of clicks, but in fewer impressions. Essentially, the marketing campaign has acquired 35,000 clicks in lesser time than before. The impact of this is the company is able to acquire the same number of customers in sign-ups, but at a faster pace, a lower turnaround cycle time. By improving upon the ad copy and other elements of the Google ad, the marketing team can improve the cycle time and increase the rate of growth. Similarly, by improving the cost per click, the marketing team can increase the number of customers, and reduce the customer acquisition cost. Notice that I did not change each of the factors we were just playing around with proportionately. That is similar to reality. The ease with which unit cost on the marketing side can be changed is different from the ease with which the in product experience can be changed to improve the conversion numbers. Conversion rate might be a stronger leverage, but by the same token, conversion rate improvements are harder to come by. Lastly, the acquisition model is used to build feasible and actionable plans. For example, how many customers can be extracted from a channel? How much more marketing budget is needed to meet targets? How fast can we realistically grow based on the potential of available channels, conversion rates, and personas?

Time for an exercise. On this page in your classroom, we ask you to complete an exercise where you will extend the model we just walked through to account for another channel, in product referrals to friends and colleagues. You'll build an acquisition model for the referral channel and build a blended outputs section, combining both Google ads and referrals. I'll walk you through the key component needed in this model. You can use that to complete the rest of it. For the referral component of this model, you'll have to calculate the number of customers acquired from this channel as well as the cost to acquire those customers. The cost to acquire from this channel is essentially the cost to acquire a referrer. Essentially, there are two types of customers after we introduce this channel. One is the referrer and the other is the recipient of that referral. Essentially, you have to determine how many users end up referring to their friends or family. You do that by starting from the number of existing users in total, then step-by-step through each stage of the funnel, they eventually complete the referral. Similarly, on the referral recipients side, there is a funnel from opening the invitation all the way up to completing the sign-up process. Step-by-step, you have to make assumptions about each stays in that funnel and find out how many referred recipients end up becoming registered users. Essentially, the cost of acquiring a referrer from the Google Ads channel is the cost factor within the referral channel. The number of leads are the referred recipients that eventually complete the sign-up process. Then you have to blend the outputs from put channels and create a blended output model. Once you have completed

your work on the exercise, or if you get stuck at some point, you can check my solution spreadsheet. The link is provided in the classroom.

This brings us to the end of lesson 3, path to purchase. In this lesson, we looked at the fundamental concept of the path to purchase, its scope, and why it's important for monetization. We then proceeded to look at the various different types of friction that can slow down the progress along the path to purchase. Alternatively, we looked at the concept of good friction followed by a few different buyer psychology tactics that can accelerate the progress along the path to purchase. Finally, we looked at the first scorecard to evaluate a monetization strategy, the acquisition model. The path to purchase was one of the five building blocks of a monetization strategy. In the next lesson, we will focus on the building block of premium value and value clusters.

Welcome to lesson 4, premium value. In lesson 1, we introduced the basic building blocks of monetization strategy. In lesson 2, we looked at how to target the right buyer and it's segments. In lesson 3, we discussed the past approaches that is traversed by the buyer identified in the previous lesson. At the end of this path, the buyer acquires some value. In this lesson, we will learn the methods to identify that premium value for which the buyer is willing to pay. We will define what we mean by premium value, followed by methods to identify premium value and break it into separate clusters for each buyer persona. We will then examine the different ways to amplify this value proposition. All of these are part of the qualitative aspects of this lesson. There is also a quantitative aspect. We will look at building the unit economics model, which is the second of five scorecards used to evaluate a monetization strategy. Finally, lesson 5 is about how to price this premium value and build a pricing plan. Let's get started with premium value.

Premium value is the subset of product features which provide enough value to the customers that they're willing to pay a premium for using it. Below this threshold, the customer is agnostic towards the product and if asked to pay, would be comfortable discontinuing their use of the product. Customers can often be willing to pay a higher premium price depending on the amount of value they're getting. Consider Amazon's shipping options here. While the standard shipping fee is $399, a higher fee, nearly double that amount, may be acceptable to the customer if the delivery as desired earlier.

In this section, we will figure out a framework for discovering premium value and expressing it as a value metric. The most obvious source of information to discover the set of features that constitute premium value is asking the buyer. Several methods exist for doing that. For example, the very important, least important survey that we often come across in our experiences. However, this method is fraught with limitations. The first problem is that the respondents are often not forced to make a choice, so often everything ends up being important. The second is interpretation bias, which is essentially different respondents having

different interpretations of the same rating scale, thereby, skewing results. We see here the responses by two different respondents. Even though they're materially different, directionally, they communicate the same preferences. The bottom line is asking customers what they value does not reveal the actionable subset of product that is the premium value for them. Hence, we need a more actionable method for discovering the value metric.

Maximum different scaling, or max-diff for short, is a technique to evaluate the importance of alternate value propositions of the product, or in other words, the product's features. Max-diff operates on the basis of these principles, pairwise comparisons between alternatives and discrete choice among alternatives. The goal of max-diff technique is to find the cluster of alternatives that generate the maximum value for a chosen persona. It produces features ranked by importance and a sense of distance between the ranks. Let's look at how max-diff is executed. We are going to look at the max-diff survey, analyzing the survey, and the outputs from the max-diff methodology. To illustrate how the survey is executed, we will use our fictitious company, ScreenGrabr, as an example. We will use some of its features as value proposition alternatives. Survey respondents are randomly sampled from the user base to represent several user personas for later segmentation. The crux of the survey is the most least question. Respondents are shown 4-5 value proposition alternatives per question. For ScreenGrabr, we will choose screenshots, GIF recording, annotation for GIFs and images, third party integrations, and file uploads as a value prop alternatives. They are then asked to choose which of those alternatives is the most important to them, and which one is the least important to them. This question is posed several times, each with a different grouping of alternatives. The alternatives are grouped systematically usually by some specialized software. The total number of questions depends on the number of alternatives and how many can be asked in each question. Once all responses are collected, they are tallied, and analyze for patterns. Several techniques exist for doing the analysis of massive surveys, such as count analysis, which is most commonly used technique that tallies the number, or percent of times each alternative is chosen as most or least important. The second technique is logic modeling, which is modeling the utility of each alternative using a logic model. Lastly, the hierarchical Bayes technique, which is a more advanced mathematical technique. The details of these are outside the scope of this course. Though I highly recommend reading up about them by searching on Google or looking at the research papers. Here we see the responses of the survey tallied for the student persona of ScreenGrabr. This persona has a strong preference for screenshots, GIF recording, and annotation for GIFs and images. They do not care as much for third party integrations, and file uploads. Whereas a different persona, like professional, may have different preferences. This persona does appreciate screenshots, GIF recording, and annotation, just like the student. But unlike the student persona, they have a strong preference for third party integrations. Similarly, file upload is not something that appeals to the professional persona. By repeating the max-diff methodology for different segments, we can build a mapping for each segment to the value cluster. This helps us build the pricing plan, which we will look at in the next lesson. Going back to the max-diff

methodology, the output of the survey is first and foremost feature importance. For each persona, a list of features ranked by their importance, as well as the importance gap between those alternatives. This is what helps build feature clusters. Next is premium value. This is the cluster of features that offers the maximum value to each persona based on how many times those features are valued as most important. This also constitutes the value metrics for that persona and helps inform the pricing metric, which we will look at in the next lesson. Before wrapping up our discussion of max-diff, let's spare a brief moment to understand its advantages and constraints. The advantages are, it's simple to understand for respondents, yet powerful insights can be gleaned for the researcher. Compared to other methods, max-diff better enables the mapping between value clusters and persona segments. The constraints are, max-diff is the most efficient up to 20 alternatives. Beyond that, it becomes complex for respondents to understand and give meaningful response due to the sheer number of combinations of alternatives, and the resulting number of questions that need to be asked from respondents.

We're now going to examine the various ways in which value can be amplified for the buyer. Oftentimes, the premium value does consist of the right subset of features. However, it still has to be reiterated and amplified for the user to adopt the product. We're now going to look at five value amplification tactics. First up is usage. Google Photos is a great example of a product that amplifies value through usage. It encourages the use of the product by offering free stories for less than original quality. However, as soon as the user desires to store original quality photos, they start using up their storage quota. This way, they start inching closer to pay plan with greater storage capacity. Encouraging greater usage of the product amplifies the value for users. Next is network. Slack makes it easy for its users to connect with their workplace network. By making it easy to invite colleagues and enabling other viral mechanisms for acquiring the workplace network, Slack strengthens the case for upgrading to pricy enterprise plans and also makes it hard for any user in the team to switch to another communication tool. Acquiring a user's personal or professional network makes the product amplify the value for the user. Functionality. Stripe is a great example of going deeper into the functional needs of their customers and offering solutions for more than just payment facilitation. Features like international payments, fraud detection, and reporting and analytics all fulfill needs that are deeper in the customer journey on the path to upgrade and expansion. This is well after the customer has become familiar with the basic payment feature. Offering a complete solution with strong functionality for all needs, helps users accrue more value. Integrations. Amplitude and analytic software offers a number of integrations with tools in several categories ranging across marketing automation, attribution, collaboration, data warehousing, business intelligence tools, customer data platforms, and many more. With each category, they end up supporting multiple tools. By offering multiple seamless integrations with several tools, amplitude increases their value by reducing the barrier to adoption for perspective customers, especially those who are deeply integrated to one of these tools previously. Lastly, financials. LinkedIn offers several ways to amplify the

value of their platform. It has been popular for recruiting and general networking. However, sales and marketing teams use it heavily for prospecting and lead generation, which in turn helps them generate more revenue. Improving financials, either on the cost or revenue side, will help users accrue more value. This wraps up the five value amplification tactics, usage, network functionality, integrations, and financials.

So far in this lesson, we have reviewed the qualitative aspects of discovering and amplifying value. We're now going to take a quantitative perspective and evaluate the economic efficiency of customer acquisition and revenue on monetization. We will do this using a unit economics model. This is the second of five scorecards for evaluating monetization. In the next lesson, we will look at the other three scorecards, customer accounting, revenue accounting, and growth ratios. We will follow the similar structure that we saw in the previous lesson for building this model. First, we will list out the goals of this model, then we'll go deep in the design, then we'll see the scorecard in action. Finally, we're going to review some common mistakes that are made in building a unit economics model. For the purposes of building the unit economics model, we will use the same fictitious business ScreenGrabr that we introduced in the last lesson. We will add a few more pertinent details for this model. The product for ScreenGrabr enables users to take screenshots as images and animations, and then share them as a URL. A couple of personas and corresponding markets are under consideration. First, is professionals who use ScreenGrabr at work. This is the commercial market. Second, is students who use it for projects and assignments. This is the consumer market. A few channels for acquisition used by ScreenGrabr are direct visitors from the website, visitors through Google ads, visitors through in product referrals through friends and family. The monetization model is first and foremost, freemium adoption. Users can sign up for free to use a limited version of the product. Subscription revenue, some of them upgrade to a paid subscription. Only annual subscriptions are supported for now, we'll add more nuance to their payment plans later in the course. The only supported payment method is credit cards. Stripe charges 2.9 percent plus 30 cents per transaction. This is a new detail that will become relevant for this model. There are three paid tiers in addition to the free tier. We will add more details about pricing tiers such as, the basic tier costs $200 per customer per year, limited to one user. The professional tier is $500 per customer per year, limited to one user. The premium tier is $1000 per customer per year, for unlimited team members. Let's start discussing the unit economics model. First and foremost are the goals of the unit economics model. Fundamentally, a unit economics model measures the economic efficiency of a product's acquisition and revenue generation. For example, how much value does a business generate from a single customer? How much does it cost to acquire a single customer? How long does it take to pay the cost of acquiring a single customer? How well can the business compete in the market? What will be the impact of investing in growth on profits?

Next, we'll dive deep into designing the unit economics model. Similar to the acquisition

model, the unit economics model is a transformation applied to a set of inputs, in order to produce certain outputs. But first, let's build a mutually exclusive, collectively exhaustive, breakdown of operating profit. The notion of operating profit is central to building a unit economics model. Before diving into designing the model, we will break down operating profit into mutually exclusive, collectively exhaustive sub-components. Each of these components, have been defined in previous lessons and will be revisited again shortly. We will start with operating profit as the top level node. Operating profit is a function of gross profit or GP and operating expense or OPEX. Gross profit is revenue less COGS. Operating expense is the sum of customer acquisition cost and support cost for paid users. Revenue is a function of number of customers times the average sales price, ASP. The ASP for screen grabber paid customers is simply the price of their payment plan. Similarly, COGS is a function of number of customers and unit COG per transaction. Like we learned earlier, COGS is the cost of materializing the transaction. For example, the credit card swipe fee, which we will look at shortly in the unit economics model. Finally, the customer acquisition cost is the marketing spend plus the support cost for free users. We looked at this in detail in the acquisition model in the last lesson. The leaf nodes highlighted in green here, are the inputs of the unit economics model while the rest highlighted in yellow are the transformations.

Next, we will walk step-by-step into the model. This is the list of inputs that form the design of the unit economics model. The first six factors on the left are part of the mutually exclusive, collectively exhaustive breakdown of the operating profit that we just discussed. Let's go into the details of some of these. The unit economics model is built on top of the acquisition model, so we will import the inputs for our screen grabber example from the acquisition model. First is the number of paid customers seen here copied from the acquisition model. Next, is average sales price. Average sales price is the average price paid by the customer. For a screen grabber, there are only three price plans for now. Their weighted average is the average sales price. We'll discuss that next in the transformations sheet. For some products, average sales price could be quite complex to calculate as different customers may end up paying a spectrum of different prices. Number 3 is the cost of goods sold. In this model, the cost of goods sold is essentially the charges incurred by using stripe to charge a credit card. Number 4 is total marketing spend. Once again, these are values imported from the acquisition model. The total spend of $350,000, same number as we used in that model. The support costs per day of free users of six cents, and the average number of days a free user remains non-paying, which is 47.6 days. They have also calculated the support costs per day of paying users for all three tiers separately. This was number 6 in the list, support costs for paid users. Unlike the acquisition model, this model has been organized for the inputs force that I'm showing right now. The next section, transformation is going to fill some of the rows that are empty here, and then we'll proceed to outputs. We will ignore number 7 and number 8 right now in the interest of simplification and consider them later. Finally, the customer lifetime duration is the average duration before a customer churns. We will use three years for the screen grabber example, although this varies from product to product.

Next up, is transformations while designing the unit economics model. Similar to the acquisition model, the unit economics model is a transformation applied to a set of inputs in order to produce certain outputs. We will now look at those transformations while simultaneously building them for our screen grab, for example. The second sheet in the unit economics model's spreadsheet is about transformations. Notice that I've combined inputs and transformations into one sheet for better readability and model design. There are six transformations that we are going to look at one by one. First is total revenue, which is the number of customers times the average sales price. The number of customers individually for each plan, times the price of each plan yields the revenue that is earned for each tier of the pricing plan. All of these sum is the total revenue earned by a screen grabber. The next transformation is total CoGS, which is a function of the number of customers times the CoGS per customer. The CoGS for screen grabber is the stripe fee to charge the credit card. The stripe fee has a percentage component. This is the percentage of the total transaction and a flat fee component which is charged once per transaction. Naturally, the CoGS per customer depends on what tier that customer is from, because the price per tier is different. For example, for the basic tier, it turns out to be $6.10, which is essentially 2.9 percent of $200 plus $0.30. Similarly, you can walk through the formulae of the CoGS per customer for professional and premium tier. The total CoGS across all the customers is essentially the number of customers for that tier, times the CoGS for customer for that tier. Similarly, you can calculate and sum all the CoGS for the other tiers. The blended CoGS for all the tiers combined is $22,936.60. Dividing that by the total number of customers, this number 2,747, we get a blended $8.35 CoGS per customer. The third transformation is gross profit, which is total revenue less total CoGS. We just calculated total revenue and total CoGS. Gross profit should be straightforward and then on a blended per customer basis, it is $269.23. The margin as a percentage of revenue is 96.99 percent. Essentially, gross profit divided by total revenue.

Customer acquisition cost is the fourth transformation. We have discussed this several times from lesson 1 all the way up to previous lesson when we visited the first scorecard of acquisition model. It is simply the cost per lead plus the cost of supporting free users. Customer acquisition cost is the true cost of acquiring a paid customer, inclusive of all marketing and operational expenses incurred up to the point of purchase. Up to the point of purchase is an important consideration here. That is why we included not just the Google ad spend in calculating the CAC for Screen Grabber, but also the cost of supporting for users. Letting these free users use the product without paying, encourages them to one day go past the point of purchase. On the other hand, the cost of supporting paid users is not included in calculating CAC. This cost is incurred once a user has gone past the point of purchase and become a paid customer. Calculating the customer acquisition cost should be straightforward. It's the same calculation that we visited in the previous scorecard. All these numbers are the same as the previous model. We get the same customer acquisition costs of

a $134.18. The fifth transformation is operating expenses, which is the sum of the customer acquisition cost we just calculated plus the cost of supporting paid users. We just saw the calculation of customer acquisition costs while skipping over a number of line items. Essentially, the customer acquisition cost is just one of the several components in the operating expense. The other components are the cost to support paid users. Digging deep into this line item, it is the sum of the total ad spend, the total cost to support free users, and the total cost to support paid users. The total cost to support paid users is based on the unit cost per day to support the paid users at each of the tiers. These are different because each paid user will incur a different amount of cost for the business depending on the features and the storage, infrastructure, and bandwidth costs needed by the features in that tier. I'll leave it as an exercise for you to go in the worksheet, double-click into the formulas and look at the details of each of these line items. Operating expense is simply the sum of the support costs for paid and free users and the total ad spend. The last transformation is operating profit, which is gross profit less operating expenses. The calculation for operating profit is fairly straightforward. Gross profit less operating expenses. On a blended per customer basis, the operating profit is a $126.57. We'll see how this becomes important in a while. The operating margin is 45 percent, roughly, which is the percentage of total revenues that is operating profit. Operating profit is the surplus leftover to invest in growth after all types of expenses, like COGS, support costs, and other marketing expenses are accounted for. Operating profit is the basis for lifetime value that we will look at next in inputs.

Let's wrap up the scorecard design with the outputs of the unit economics model. There are four outputs for a unit economics model: Lifetime value, or LTV, customer acquisition costs or CAC, the ratio of LTV to CAC, and the payback period. Simply stated, lifetime value is the total value generated by a customer before they turn. The formula shown here is for the entire customer cohort of a product, where m is the operating profit, r is the retention rate of customers. For screen grabber, we have simplified the situation and assumed all customers are retained. Later on, we will remove this simplifying assumption, including four exercises. Lastly, i is the rate of discount. Again, for screen grabber, we have simplified and remove the discount rate. Let's plug in the outputs in our screen grabber example to round out the model. The third sheet in the unit economics models spreadsheet is outputs. Scrolling all the way down, you'll see the output section with the four outputs we just enumerated. The lifetime value per customer is the surplus accumulated after all costs are paid on a blended per customer basis for the duration of the customer's lifetime. Essentially operating profit times three. We made simplifying assumptions that the rate of retention and the cost of capital is one. So all other factors in the formula round out to operating profit, essentially $379.71. The next two outputs are customer acquisition cost and the LTV to CAC ratio. We just discussed CAC. The ratio of lifetime value to CAC informs the ease with which a company can acquire customers while remaining profitable. For SaaS businesses, a ratio of three is to one is generally recommended. Finally, payback period is the amount of time it takes for the profits to pay back the investment of acquiring customers. It is the customer acquisition cost divided

by the operating profit. The LTV to CAC ratio is simply the ratio of these two numbers. It is approaching three, though not quite. The payback period is the customer acquisition cost divided by the operating profit. Clearly, the amount of surplus generated in the first year is a little less than the cost of acquiring that customer. The payback period is 12.72 months, a little over a year. This wraps up our discussion on designing the unit economics model. Next, we are going to see how to use the unit economics model in practice.

Recall from lesson one that a short payback period creates a surplus in profits, which provides capital for growth sooner and avoids borrowing against future cashflows. This leads to profitable growth for the business. Further, recall again from lesson one that a higher LTV to CAC ratio for company B allows it to raise its bid prices during customer acquisition. The net effect is lower amounts of LTV left for company B. However, a higher LTV to CAC ratio affords some capital to company B for reinvestment and growth whereas for company A, very little profits are leftover for reinvestment. They have been pushed out of the market by company B. A higher LTV to CAC ratio helps dominate acquisition channels and grow competitively. This brings up the last discussion item, common mistakes while building the unit economics model.

Unit economics is a powerful tool to evaluate a business. However, careful thought must be exercise while building these models. I'm now going to share some commonly observed mistakes in calculating CAC and LTV. First, we look at mistakes while calculating customer acquisition cost. The marketing cost of acquiring non-paying users is incorrectly excluded. The platform cost of supporting free trial or freemium users is incorrectly excluded. Their unpaid usage helps increase their willingness to pay later on, so that must be included. Only the cost incurred for paying customers is included in the numerator. This will incorrectly show lower costs. Both paying and non paying users are included in the denominator. This will incorrectly show lower cost. Not measuring CAC per channel is misleading. The best insights are revealed by segmenting along channel cohorts. Now some mistakes in calculating lifetime value. The first, is using revenue versus profit. This is misleading because profit is what the business pockets and gets to reinvest in growth. Profit is what should be used in calculating lifetime values rather than revenues. Not having enough time periods while calculating churn is the next common mistake. In annual plans, measuring churn for less than a 12 month period is misleading and will yield unrealistically optimistic LTVs. LTV like CAC differs by channel and customer segments. Not analyzing LTV by channel is misleading. The best insights are revealed by segmenting along channel and customer segment cohorts.

I've included links to some exciting case studies in unit economics on this page in the classroom. First up is Bird Bikes. Bird's business model incurs several types of costs, ranging from one time capital expenditure on scooters and batteries to recurring variable costs for getting the batteries charged. The links to readings for this very interesting case study are in this phase in the classroom. They illustrate the importance of unit economics in evaluating a

business. Next up is Amazon Drones. Amazon Drones have evoked a lot of interest. There are several benefits to Amazon as a business if it offers premium delivery options. However, like all things, there are no free lunches. Costs pile up quickly, showing up from sources you would least expect, such as wireless network bandwidth for communicating with base stations. Links to readings for this case study are on this page in the classroom. They explore the viability of drones and their impacts to Amazon's growth by way of unit economics. Both case studies reference concepts that we just learned in this lesson. Although they may use different terminologies, I strongly recommend going through these case studies in detail. All right, it's time for a couple of exercises now that we have wrapped up our discussion on unit economics model. The first exercise is to build a unit economics model for the inputs provided in the accompanied worksheet linked on this page in the classroom. The second is to calculate the lifetime value for a B2B SaaS business based on revenue projections in the accompanying worksheet linked on the classroom page.

In this lesson, we walk through the following concepts, premium value. This is the subset of product features which provide enough value to the customer that they are willing to pay a premium for using it. These also define the value metrics for that persona. Next was value discovery, Max-Diff. Several methods exist for discovering premium value based on customer feedback. However, those aren't without their limitations, such as the respondents not being forced to make a choice and thereby ending up marking everything as important. Secondly, the respondents having different interpretations of the same rating scale and skewing results. Maximum Different Scaling or Max-Diff, is a technique to evaluate the importance of a number of different product features. It operates based on the principles of pairwise comparisons between alternatives and discrete choice among alternatives. That technique produces features ranked by importance, and a sense of distance between the ranks. By repeating the Max-Diff methodology for each buyer segment, we can identify the premium value cluster for each of them. This mapping helps build the pricing plan, which we will look at in the next lesson. We also looked at value amplification in this lesson. Oftentimes, the premium value consists of the right subset of features, however the value still has to be reiterated and amplified. Several different methods exist for value amplification. We looked at five of them. Increasing the product's usage helps users accrue more value. Acquiring a person's professional or personal network, makes the product more valuable to them. Offering a complete solution for all needs helps users accrue more value. Integrating seamlessly with several tools, reduces the barrier to adoption for prospects who are tied to one of those tools. Finally improving financials either on the cost or revenue side, will help users accrue more value. The last topic we looked at was unit economics model. Unit economics model is the second scorecard for monetization. It builds upon the first one, acquisition. It measures the economic efficiency of a product's acquisition and revenue generation. Primarily, it informs about value generated by a single customer, the cost to acquire a single customer, the time to pay back the cost of acquisition, competitive leverage and acquiring new customers, and impact growth investments on profits. Similar to previous

models, a unit economics model consists of inputs, transformations, which are conversions applied to the inputs, and outputs, which are the result of applying those transformations. We also looked at several common mistakes in calculating CAC and LTV while building a unit economics model. So far we have learned how to target different personas of the buyer, and segment the premium value for each persona. In the next lesson, we will learn how to set price points for combinations of buyer personas and value clusters to build a pricing plan.

Welcome to lesson 5, pricing. In lesson 1, we introduced the basic building blocks of a monetization strategy. In lesson 2, we looked at how to target the right buyer and it's segments. Lesson 3 was about the path to purchase that is traversed by this buyer identified in the previous lesson. At the end of this path, the buyer acquires something of premium value. Lesson 4 was about the methods to identify premium value. This lesson is about how to price the premium value and build a pricing plan. First, we will look at the concept of pricing metric and how it derives from value metrics discussed in the last lesson. Next, we will discuss [inaudible] price sensitivity analysis, a method for setting price. We will then look at how to build a pricing plan using the buyer persona's premium value and price points. We will review some of the typical strategies employed in pricing. Then we will dive into the remaining three scorecards for evaluating a monetization strategy, the customer accounting model, the revenue accounting model, and growth ratios. Let's get started with pricing.

We're first going to look at the concept of pricing metric. Suppose you have two options for getting a rental car. One charges 25 cents per mile for unlimited days. The other charges $25 per day with unlimited miles. Which one are you going to pick? The right answer is it depends. If you need the car temporarily for a few hours, then you would go with option 1. However, if you're headed along for a long trip for several days, then you will appreciate the cost savings of unlimited miles. Going back to the fundamentals of buyer targeting in lesson 2, there are two different types of buyers here, each with a unique notion of premium value. There can be multiple value metrics for each buyer. Each of those defines a different direction for how the product will be priced for maximum revenue growth. Pricing metric is the unit in which prices are charged to the customer. It aggregates several value metrics important to the buyer. Let's look at the breakdown of Zapier's pricing plan. The charges here are based on both per account pricing as well as usage. There are a number of value metrics for the persona here. For example, the fundamental access to a differentiating product is charged a monthly license fee. In this case, the pricing metric is based on the entire customer account. Similarly, the number of tasks are charged based on usage. In this case, the pricing metric is tasks per month. Oftentimes, a value metric or feature does not necessarily map to a pricing metric, but is instead use to incentivize plan upgrades or retention. We see that here in the case of the last six rows. Broadly speaking, pricing metrics fall in one of the following categories. Account based pricing metric charges a flat license fee per customer. We just saw this for Zapier. User-based pricing metric charges a license fee for each user and the customer's company. Zoom is a good example of this. Feature based pricing is based on a

tiered pricing plan where a cluster of features is grouped under a single tier. Customers upgrade to a higher priced tier to get access to more features. We just saw this for Zapier. In usage based pricing metric, the value metric is aligned with the customer's usage of the product. We just saw this for Zapier, where tasks per month were part of their pricing metric. The key strategy in having a usage based pricing metric is to align the incentives of your business with that of the customer. The last category is end customer based pricing metric. This is a rarely used model where the value metric is aligned with the usage of the customer's product by their end customers. This is in contrast with the preceding category of usage based pricing, which is all about the usage of your company's product. Rather than this category, which is all about the usage of the customer's product. A good example of this is Segment, and their pricing plan is linked on this page in the classroom for further review. Before we wrap up on pricing metric, it's important to stress that for a pricing metric to provide leverage and growing revenues, it must be easily understandable to the buyer, align closely with their value metrics, and grow with their usage. Pricing metrics are a complex yet interesting topic. I encourage pursuing the optional reading provided in the lesson.

We're now going to look at a technique for defining price points. Van Westendorp price sensitivity analysis. Dutch economist Peter Van Westendorp developed this technique for determining customer price preferences. It takes the form of a survey of four questions asking respondents about their price sensitivity to a given feature set. Multiple responses are collected for each question from a large sample of respondents across all personas. Each respondent is shown a feature set corresponding to their persona. The responses are plotted as separate distributions for each question and subsequently analyzed for acceptable price ranges and price points. The questions are generally along the following lines. The first question determines the price at which the product is too expensive for the value it provides. It asks, at what price would you consider the product to be so expensive that you would not consider buying it? The second question determines the price at which the product is so cheap that it is suspected to have quality issues. It asks respondents, at what price would you consider the product to be priced so low that you would doubt its quality? The third question determines the price at which the product is considered expensive despite being considered valuable. It asked respondents, at what price would you consider the product starting to get expensive that you would think twice before buying it? The fourth and last question determines the price at which the product is considered to be a bargain despite being considered valuable. It asks, at what price would you consider the product to be a bargain? This is what the graph looks like after plotting all four distributions. The solid green line labeled too cheap, shows respondents that consider a certain price point to be so low that it makes them wonder about the quality of the product. The way to read this, is 50 percent of the respondents consider $20 to be such a low price for this product that they would not buy it out of suspicion about quality. The dotted green line labeled cheap, indicates respondents who consider the product to be a bargain. In other words, while they do derive premium value out of it, they still consider it to be priced below what should be fair market value for such a

product. The dotted red line labeled expensive, are respondents who consider the product to be expensive beyond their affordability, despite believing that it provides enough premium value. The solid red line, labeled too expensive, represents respondents who do not consider the product to be providing enough value for the price it charges. Take a moment to look at this plot and think about the trend for each distribution.

The intersection points of the four distributions produce key metrics necessary for setting price points. The first metric is the point of intersection between the too cheap and expensive distributions. This is the point of marginal cheapness, shown here as PMC. It is the lower end of the range of acceptable prices. Below this price point, more sales would be lost due to the perception of poor quality, then would be gained due to the perception of a bargain. The second metric is the point of intersection between the cheap and too expensive distributions. This is the point of marginal expensiveness shown here as PME. It is the upper end of the range of acceptable prices. Above this point, the price is considered expensive and transactions would be lost due to the perception of not having enough value for money. Together, these two price points define the range of acceptable prices indicated as RAP. Any price between these two points is acceptable to most customers. The fourth metric is the point of intersection between the too cheap and too expensive distributions. It is the optimal price point, or OPP. At this point, about the same percentage of respondents regarded as not delivering enough value as those who feel it is of questionable quality. The fifth metric is the point of intersection between the cheap and expensive distributions. This is the indifference price point, or IPP here. At this point, about the same percentage of respondents regarded as a bargain as those that consider it to be too expensive. Most customers are indifferent to price at this point. These are the computed values of the metrics for the preceding example. The accompanying spreadsheet in the lesson has a raw data for this example. The point of marginal cheapness is $24.50, the point of marginal expensiveness is $57.50, producing the range of acceptable prices between $24.50 and $57.50. The optimal price point is $35.50, whereas the indifference price point is $39. Based on this method, the company should price the product somewhere between $24.50 to $57.50. The optimal price is $35.50. Above this price point, sales would be lost because the product is perceived as not providing as much value as the charges. Below that, sales are lost due to low prices signaling a perception of poor quality and revenue is left on the table.

We're now going to evolve a pricing plan from buyer persona's, value metrics, and associated price points. A pricing plan is a combination of tiers, features, and associated price points. Each persona typically maps to a pricing tier. Recall from lesson two that buyers can be segmented into several different persona's. The persona definitions determine how they are approached, onboarded, and charged. Features are the value metrics for the persona. In lesson four, we learn that different sets of features can appeal to each buyer persona as premium value. This premium value or value metrics of the persona determine what features go into each pricing tier. As for price, the Van Westendorp analysis can be run for a large

enough sample of respondents across all persona's with a corresponding feature set. The Van Westendorp metrics are then calculated for each persona separately and used to construct the pricing plan. The Van Westendorp survey can be run for all persona's based on a different feature set for each persona. The responses here are for two separate persona's of our fictitious screen grabber product. The optimal price point for the individual persona with their corresponding feature set is $35.50, whereas the OPP for the professional persona is $91. Similarly, the rest of the Van Westendorp metrics for each persona are shown in the table. Finally, overlaying the feature set on persona's and prices produces the final pricing plan. There is the individuals tier priced at $39. It offers screenshots and GIF recordings as features. There is the professional pricing plan, price at $99 and offers screenshots, GIF recordings, and secure sharing. Notice that both tiers are priced not at the optimal price point, but rather at the higher indifference price point. Probably because the company feels optimistic or wants to be aggressive in the price it can charge. A pricing plan combines buyer segments with value clusters and associated price points. Some things to keep in mind when using this method to set the price. It is a starting point which provides a foundational basis to experiment further rather than being the final step in the process. The guidelines here are not agnostic of market forces. Pricing is often sensitive to move made by other competitors in the market. So the need to adapt accordingly still persists. Finally, the normal scientific procedures for running representative surveys, including how many responses are necessary to generate statistically significant results apply here. Those aren't part of the scope of this course. So consider consulting a survey expert or use software for running surveys.

Once a basic structure of a pricing plan is in place for different buyer persona's, there are a few different monetization strategies around which a company can iterate its pricing. In lesson 1, we numerated five monetization moves. Number 1, adopt. Adoption is a market share maximization move in which the product is priced at the lower end of the spectrum to win dominant market share. A low price, typically accompanied by a free trial or freemium adoption model, is part of the learn and expand sales tactics. It aims to minimize friction to adoption in order to grow quickly and subsequently move up market after broad adoption has been secured. Slack and Zoom are good examples of adoption pricing. The first plan is a free sign up, after which they upgrade to a paid plan. One of the interesting things in the free pricing tier is group meetings are limited to 40 minutes. Obviously, if there's an hour-long meeting, users will need to upgrade to a paid plan. The second monetization move, collect. Collection is a revenue maximization strategy where the aim is to collect a fair market price for the premium value offered by the product. This is typically common with a niche product that targets a new market or vertical. It aims to preserve brand prestige by charging a high enough price to convey a sense of luxury and exclusivity, instead of a low price diluting away the perceived value of the product. SaaS companies sometimes offer a premium tier that is priced maximally offering every feature and a high-touch customer support representative. Expand is the third type of monetization move. It maximizes revenue per customer from existing customers by optimizing for expansion revenue. We saw earlier with Strive and Tulio

and over here with Netlify, that by offering a core product for a lower price, but charging extra for add-on that are required to get the most from the product, a company can earn a lot more per customer. Expansion revenue is more financially efficient than generating revenue from new customers. Seen here are the results of a 2016 Pacific Crest survey from David Skok and Matrix Partners that shows the median cost to acquire a dollar of revenue from new customers is $1.18. While the median cost to acquire a dollar of upsell revenue is 28 cents and 13 cents for a dollar in renewal revenue. Clearly, revenue from existing customers is a lot cheaper to acquire than revenue from new customers. The chart here mentions an acronym, ACV, which stands for annual contract value. It is the revenue acquired from customers on an annual basis. The fourth monetization move is to retain customer and revenue. The retention pricing strategy aims to enlarge the customer base over time by way of maximizing customer and revenue retention. In lesson 1, we demonstrated the impact of a small lift in customer retention on LTV. Retention is crucial not just to maintain current revenues, but also to earn expansion revenues from retain customers in the future. Companies often introduce premium features into the most popular tiers of their pricing plans instead of always adding them to the topmost tier by default in order to increase the value they derive for price paid. This is especially important in competitive markets where multiple players are vying for the same wallet share. Dropbox as shown here, offers a significant number of features in each tier. It continues to add more premium features in each of these tiers. The bulk of tier differentiation is based on storage capacity and enterprise IT management features. The last move is profit, often known as skimming. This is a profit maximization strategy. It involves setting a high price initially and later offering cheaper alternatives to address more buyer segments at lower price sensitivity. Over time, the company can traverse the entire demand curve in the market. Well, this strategy is more common among hardware products. For example, Apple introduces several versions of iPhone with each release and sets a multitude of prices. We can often observe this strategy among SaaS companies as well. For example, back in the day, Microsoft Office used to only be available within a 100 to $500 price frames. In recent years though, because of competitive pressures and market saturation, they have introduced subscription pricing with prices as low as 699 per month. These were the five basic moves of a monetization strategy. With that, we conclude our deep dive into all things pricing. Learning from your mistakes, that's wise. Learning from others mistakes that's genius. Pricing is a complex topic and requires several iterations to get it right. So you should experiment a lot and learn from each iteration. It also requires a fair bit of intuition in addition to quantitative analysis. If you're just starting out on monetization, then the best way to train your intuition is to learn from the mistakes of other companies who have written about their experiences. I've provided a list of articles on this page of the classroom for further reading. They are derived from the experiences of other companies and I strongly recommend to read them.

We're going to look at the rest of the three scorecards in this lesson, starting with number 3, the customer accounting model. For building the customer accounting model, we will look at the goals of this model, how to design it, and then see it in action, just like we have done for

the previous two scorecards. We will continue to use the same fictitious business ScreenGrabr that we introduced earlier for the remaining scorecards in this lesson. But after adding a few more pertinent details. ScreenGrabr product enables users to take screenshots as images and animations, and then share them as a URL. The personas and corresponding markets under consideration are first and foremost, professionals who use it at work. This is the commercial market, and students who use it for projects and assignments, this is the consumer market. A few channels to consider, are direct visitors from the website, visitors through Google ads, and visitors through in-product referrals to friends and family. The monetization model is based on freemium adoption, where users can sign up for free to use a limited version of the product. Some of them upgrade to a paid subscription. The only supported method is credit cards, where Stripe charges 2.9 percent plus $0.30 per transaction, and only monthly subscriptions are supported. This is the key change from previous lessons. There are three paid tiers in addition to the free tier. The basic tier charges $20 per customer, per month. It's limited to just one user. Professional is $50 per customer, per month. It's also limited to one user. Premium is $100 per customer per month, unlimited team members. Notice though, the stock difference in price because we switched from annual to monthly in this lesson. Existing customers can upgrade and downgrade across different tiers. Let's start with the goals of the customer accounting model. Fundamentally, a customer accounting model informs about the growth of the customer base. How many customers will there be after a certain number of months and years? What retention rate is needed to achieve certain growth targets? How many new customers are needed to achieve those growth targets?

Let's look at designing the model. Similar to previous models, the customer accounting model is also a transformation applied to a set of inputs in order to produce certain outputs. The inputs are the time series of certain transactions across several accounting periods. These are, transactions by new customers, transactions by existing customers, all cancellation transactions, and separately, we also record if a customer restarts their subscription after canceling it previously. All transactions for plan upgrades and downgrades, will be considered as part of existing customers for the purposes of this model. We will differentiate in the next model, revenue accounting. Finally, an accounting period is typically a cycle over which a customer is charged. Oftentimes, it's simply a recurring time period such as, a day, a week, a month, or an year. The first transformation for building a customer accounting model, is the churn rate. The formula for the churn rate is essentially customers at the start of the accounting period, less customers at the end of that period divided by customers at the start. The second transformation is the concept of growth accounting. It is fundamental to building both the customer accounting model and the revenue accounting model, which is next. Let us now dig deep into the concept of growth accounting. This bar represents the total number of customers of a company at the end of some month T. By the next month, some of those customers will have churned. Only a few will be returning customers for the next accounting period, month T plus one. However, in month T plus one, there will be some new customers

who join, as well as a few who reactivate their accounts. Reactivated customers are those who are not paying in the previous month because they had canceled their subscriptions in a prior month. However, they restarted their subscription in the current accounting period of month T plus one. In this example, all the customers shaded yellow were not paying customers in month T, but they were paying customers in some prior month and ended up canceling their subscription prior to month T. The same breakdown can be extended to all prior accounting periods, as well as future accounting periods. For most companies, over time, the size of the returning customers cohort, is the biggest among all three growth accounting subcohorts. This is because it accumulates month over month. If the return rate is high, the growth of the overall customer base, compounds. Conversely, if the churn rate is high, then either the growth of the customer base starts slowing down, or worse, may even starts shrinking. In this case, a company may be compelled to rely on either, new customers, or reactivated customers to meet its growth target. This can be a tricky situation for a couple of reasons. Number 1, new customers will likely churn soon given the high churn rate. Number 2, reactivated customers have already tried the product, they didn't like it, they cancel their subscription. So it cannot be an easy proposition trying to win them back. This rarely makes for a sustainable business, and may only work in markets that have a low frequency and high value transaction model. For example, high-end fashion e-commerce for precious jewelry. For all other businesses, it is important to have a high rate of returning customers. There are four outputs to a customer accounting model. Each of them is measured for every accounting period. There's new customers. These customers start paying in the current accounting period. Returning customers. These are customers who were paying in the previous period and continue paying in the current accounting period. Reactivated customers. These customers became paying customers in some prior period, were not paying customers in the previous period, but did restart their subscription in the current accounting period. Finally, total customers. These are the sum of the above three for each accounting period.

We're now going to build the customer accounting model. We'll start from a small subset and build incrementally out of that, layering each module step by step on top of each other. All light items in blue are inputs, all black items are calculated values. New customers are customers who started paying in the month of January 2019. Returning customers, 8,622, are those who were paying in December 2018 and continued in January. Reactivated customers are those who started their subscriptions at some point prior to December 2018 and canceled by till December 2018, and then restarted it again in January 2019. Total customers is just the sum of all of these three. Just like we have measured these numbers for January 2019, we can actually measure it for every month throughout the year. All monetization scorecards are best measured for every accounting period. In the previous scorecards of acquisition model and unit economics, we only showed the calculations in one column. This was for the sake of simplicity. In practice, each of these calculations, even for the previous two scorecards have to be done for each accounting period. Going forward,

we're going to use every accounting period when measuring the important inputs, outputs, and transformations of any of the scorecards. Coming back to the customer accounting model, we're now going to look at some of the transformations. Each period is connected to the next by way of returning customers. For example, out of the 10,862 customers in January 2019, 9,792 customers continued their subscriptions in February. We have looked at the transformation of growth accounting, let's look at the next important transformations; retention and churn rates. Churn customers in February, 1,070, is everyone in January out of the 10,862 customers who did not continue their subscription in February. This is 10,862 minus 9,792 equals 1,070. These are the customers that churned. The churn rate is a percentage off of the previous month's total, and so as the retention rate. As you can see, the two sum up to 100 percent.

We will now include the final module of the customer accounting model, in order to include the complete customer acquisition funnel, starting from sign-up through upgrade, all the way to becoming paid customers. Remember, the customer acquisition journey begins when a prospective customer sees an ad on Google, clicks on it, arrives on the landing page, signs up for the product and becomes a free, non-paying registered user. We saw that transformation in the previous scorecards. This section over here, is about the growth accounting for non-paying users. We're going to visit this shortly. The next section is about the upgrade by those non-paying users to some paid plan. The final section that we just looked at, are the paying customers and their growth accounting. Notice that the total number of new paying customers every month is the same as the total number of non-paying users that upgraded from their free plan to one of the three paid plans. This number itself, is the sum of all of the three plan upgrades. The upgrade cohorts are segmented by the pricing planned here. They can be further split up by which cohort of non-paying users they were originally part of; new, returning, or reactivated. We're not going to split them up further in this scorecard. We are going to reserve that for the next scorecard, the revenue accounting model. Moving further up in the customer acquisition journey, we have the non-paying users that have not yet upgraded. We're now going to look at how to apply the same transformation of growth accounting to them. We have new sign-ups, returning non-paying users. This is calculated as the total non-paying users of the previous month, less churn on this month. Essentially, these are users from the previous month who did not upgrade and also did not churn. Next, we have reactivated users. These are users who had canceled their account sometime by January 2019, but rejoined in February 2019. Finally, we have total non-paying users, which is simply the sum of all of the above three. The non-paying users who upgraded in a given accounting period are tracked separately in this line. For example, 2,186 users upgraded in January, they made their way all the way through the section for free to paid upgrades, into the growth accounting cohort for paying customers. Next line item is combined total. We're going to skip this for now and come back to it shortly. The final growth accounting cohort is churn users. Looking at the churn for February, 6,104 non-paying users from the month of January, neither upgraded their account to a paid plan, nor continued to be a

registered user in February, they simply canceled their free account. There can be other ways to measure churn apart from account cancellation. For example, lack of engagement with key product features. It really depends on the nature of the product and the business. The churn rate is, churn users as a percentage of the combined total users, which itself is a sum of upgraded users in that month, plus the total non-paying users of that month. Notice that we used the combined total users to calculate the churn rate, instead of this total. This is because churn is, essentially those users who cancel their account. Both upgraded and returning users did not cancel their accounts by definition, so the churn numbers have to exclude both, and thus base off the combined total users, inclusive of both upgraded users and the total non-paying users, instead of just the total non-paying users.

Let's recap the cohorts. In the month of January, the combined total of non-paying and upgraded users was 27,286. Out of those, 2,186 upgraded to a paid plan by the end of the month. The remaining 25,100 users made up of new, returning, and reactivated users, all ended the month of January as non-paying users. Going into the month of February, 6,104 users out of January's total canceled their accounts. The remaining 18,996 users continued using their accounts in February and the whole cycle repeats over and over again over time. Accounting by time periods is a powerful tool and I cannot emphasize enough the importance of granularly accounting key customer activity by each time period. For example, we see some important differences when we start measuring the free to paid upgrade granularly by each accounting period. The month of January 2019 roughly maps to the same calculation we have been doing in the previous scorecards. 6,300 free non-paying users acquired through Google Ads. This is the same as the 6,300 new non-paying users over here. However, the total upgraded users in this month is 2,186, whereas it's 2,747 in these models. This is not just a mere coincidence or a random choice of numbers, even though our model is based on assumed numbers. The reason is that in our previous scorecards, we were agnostic of time periods. 2,747 is the number of total upgrades across all future time periods that were extracted out of the 6,300 registered users. Whereas in this model, the upgrades are spread over several months, 2,186 measures only the upgrades that were extracted in the month of January. Further, this number also includes the upgrades that were extracted from the returning and reactivated cohorts of non-paying users. In the next scorecard, the revenue accounting model, we will see that the upgrade cohorts will be further split up by the new returning and reactivated cohorts of non paying users that they were originally part of before the upgrade. This wraps up our design of the customer accounting model.

Next, we will look at this model in practice in the context of our fictitious company Screen Grabber. Let's see how we can use the model in practice to derive improvements for the business. We're going to look at three separate cases where the model comes in handy. The first is forecasting and reporting the size of the customer base. We just got done building the model by adding the assumptions for each subsequent month. We can forecast the future customer base, as well as report on the past month's progress to all stakeholders. Let's plot

the trend lines and look at how the growth is trending. First, we're going to plot the trend line in the growth of the combined total of non-paying and upgraded customers. We see here that it starts out going nicely with a linear upward trend that quickly starts to taper as the months go on. Eventually, even starting to shrink. The customer base starts to decrease as months go by. This is not a healthy trend for the business. One of the biggest reasons for this is the high churn rate and we'll shortly look at how the churn of non-paying users can eventually impact the paying customer base as well. Next, we're going to plot the trend line in the growth of the total paying customer base and compare it to the first trend line. The growth trend line for the total paying customers is a lot straighter, even though it starts to slightly taper as months go by. Compared to the non-paying customers, this seems to be in a healthier state. Notice that the churn rate for the paying customers is a lot lower compared to the churn rate for the non-paying users. We're next going to look at the impact of making small improvements to this churn rate on the overall customer base as well as non-paying users. Let's make a copy of our model and see how modifying the churn numbers ends up affecting the customer and user base. Let's look at the 22 percent on average churn rate for non-paying users. I've modified the churn rate to 19 percent. Let us now look at the trend line in growth for both the non-paying user base and the paying customers. The trend line in the growth of the combined total of non-paying and upgraded users is no longer showing a shrinking trend like before although it is still slowing down as months go by. Because of a lower churn rate, we're now able to upgrade more non-paying users into paid customers. Let us now look at the trend line in the growth of total customers. This is the trend line in the growth of the total paid customers. While the shape of the curve does not quite change, the total at the end of December 2019 has gone up by nearly 10 percent from the previous 20,164 customers to the now 22,938 customers. A 2 percent decrease in the churn rate for non-paying customers has not only increased the user base of registered non-paying users, but also the paying customers at the end of the customer journey. Lastly, we're going to look at how the customer acquisition model helps plan marketing budgets. Earlier in the first scorecard of acquisition model, we saw how working forwards from a marketing budget through sign-ups and paid conversions gives us non-paying users and paid customers. Then by measuring them for each accounting period, we're able to forecast the non-paying user base as well as the paid customer base. These models help us connect all the underlying factors that can influence the outcome of our objective metric. While planning marketing budgets, most companies start by setting a target for either revenue, paid customers, or leads. Then working backward and playing with certain assumptions like the churn rate as we just saw, or conversion rates, which can be modeled similarly, they can arrive at a certain paid customer, non-paying user or revenue outcome number. Then they can use the same assumptions to arrive at the marketing budget needed to achieve the said conversion targets. Just like we built our models, working from a marketing budget to revenue and paid customers, we can build them backwards where the marketing budget is the target metric based off of certain desired revenue and customer base targets.

The next scorecard to evaluate a monetization strategy is revenue accounting model. This model is as complex as it will get in this course. The last scorecard of growth ratios is fairly straightforward. Similar to previous models. We will look at the goals of a revenue accounting model, its design, and then we will see the scorecard in action. Let's start with the goals. Fundamentally, a revenue counting model informs about revenue growth. What is a revenue forecast after certain number of months or years? What expansion rate is needed to achieve growth targets, and how much revenue from new customers is needed to meet those growth targets. Next, we will see how to design this model. As always, there will be inputs, transformations, and outputs. The inputs to a revenue of accounting model are similar to those of the customer accounting model. That is, the time series of the falling transactions across several accounting periods. Transactions by new customers, transactions by existing customers for same plan as previous period, plan upgrade and downgrade transactions, all cancellation transactions, and separately, we also record if a customer restarts their subscription after a previous cancellation. The same transformation of growth accounting that we first learned in the context of customer accounting still apply to revenue accounting. We will look at the different sub-components of total revenue, some of which will be similar to the ones that we first learned during growth accounting for customers. New revenue is revenue that started accruing in the current accounting period, most likely due to new customers signing up. Returning revenue or continuing revenue is revenue from existing customers that were paying in the previous period T minus 1 and continued to pay in the current period T without any changes to their plan. Reactivated revenue is revenue gained from previously churned customers restarting their payments in the current period. Churned revenue is the amount of revenue from their previous accounting period that did not carry over to the next, due to the customer churning. It is not included in the calculation of the total revenue for that period. Churned revenue shows up in the regions outside the dotted lines that do not carry over to the next period. Apart from these four components, there are a couple of additional new components for the revenue accounting model. The first one is contraction revenue. This is the amount of revenue from the previous accounting period that did not carry over to the next, due to the customer downgrading their plan or reducing their spend in some other way. It is somewhat similar to churned revenue. Except for the difference that churned revenue is lost due to the customer being lost. Whereas contraction revenue is revenue that is lost due to the customer downgrading their spend despite being retained. Similar to churned revenue, contraction revenue is not included in the total revenue of time period T. For this reason it shows up in the region outside the dotted lines that do not carry over. It is part of the revenue for time period T minus 1. The second new component is expansion revenue. This is the amount of revenue gained from existing customers increasing their spend in the next accounting period, either by upgrading their plan or by spending extra. Expansion revenue is part of the total revenue for time period T. To sum it all up, the total revenue for any accounting period T is the sum of all the green bar shown here. The new revenue plus continuing revenue plus reactivated revenue plus revenue that comes from expansion. The outputs for a revenue accounting model are new revenue, continuing revenue, reactivated,

expansion, contraction, churned, and total revenue. They're measured separately for each accounting period. Let us now build this model all in this spreadsheet.

At this point, let us take a step back and look at the dynamics of upgrades and downgrades in any given month. To recap what we just discussed, each month has new, returning and reactivated customers. The plan upgrades and downgrades are done by returning customers in our example. For the sake of simplicity, we will assume that new and reactivated customers do not upgrade in the same month as they subscribe. However, they can upgrade in the next month when they come back as returning customers. Layered on top of the accounting cohorts are segments based on their subscription plan. Basic, professional, and premium. Shown here is the plan breakdown just for the returning customer cohort. There are three possible upgrades and three downgrades that can be performed by returning customers. Basic to professional, basic to premium and professional to premium. In the same way, the downgrades are premium to professional, premium to basic and professional to basic. Essentially, there are six possible plan upgrades and downgrades that can be performed by a returning customer. Coming back to the model, let us now take a look at the numbers behind the six plan changes we just discussed. The three upgrades, as well as the three downgrades are all assumed input values. Separate from that, are returning customers who did not change their plans throughout the month. Based on these upgrades, downgrades and customers who did not change their plan, we can calculate the breakdown by plan at the end of the month. Take a moment to compare the plan breakdown for the month of March, before and after plan changes. We're going to hide some of the rows temporarily so that the numbers for March, both before and after the plan upgrades and downgrades, are in the same view. There were 13,469 total customers in the month of March. The total does not change across the month because of upgrades and downgrades since we earlier discussed, they only happen to returning customers. Within total customers, at the start of the month, there were 2,669 customers on the professional plan. After all the upgrades and downgrades, we're left with 2,684 customers on the professional plan. This is after two entries to the professional plan. The upgrade from basic to pro, and the downgrade from premium to pro, as well as two exits from the professional plan, which are the upgrade from professional to premium and the downgrade from professional to basic. The same changes happen to customers in the basic and premium plan and their numbers change after upgrades and downgrades by the end of the month. A critical nuance to note over here is how we calculate returning customers in the next month. Seen here are 2,262 customers in the professional plan that return in the month of April. Those are calculated based off of the total customers by the end of the previous month in that plan, rather than the total customers in that same plan at the beginning of the month. Returning customers are based off of the customers at the end of the previous month. This wraps up the accounting of customers by their growth cohorts, further broken down by their subscription plan.

We're now ready to calculate revenue. Let us re-expand the rows that we had hidden earlier.

First off, we just tabulate the pricing for each of the three plans. This makes it easy to build a spreadsheet. The outputs of a revenue accounting model are these seven metrics, as we just discussed. The same metrics show up as the output in our spreadsheet. There is new revenue broken down by plan, returning, reactivated, expansion, contraction, total, and churn revenue. The new revenue is simply the sum of revenue accrued from new customers on basic, professional, and premium plans. How did we calculate the revenue from new customers in basic plan? Simply by multiplying the price for the basic tier by the number of customers who were on the basic plan signed up in that month. The same calculation is used for reactivated as well as churned customers. Unit price times the number of customers in that segment. Expansion revenue is the sum of all upgrades. Contraction revenue is the sum of all downgrades. Returning revenue is calculated off of the number of returning customers at the beginning of a given month. This is simply because when we are going to calculate the total revenue, we will adjust for expansion and contraction. Finally, the total revenue for that month is the sum of new, returning, reactivated, expansion, and contraction revenues. Right beneath that is a different method for calculating total revenue for verification purposes. The $1.9 million of total revenue from customers and the basic plan is essentially the unit price of the basic plan times the total number of customers on that plan at the end of the month. The sum of the revenue across all three subscription plans should equal the number that we arrived at using the first method. Finally, the churn rate is calculated in the same way as we saw previously, using the relevant total revenue cohort from the previous month. Notice the rows for retention rate are empty and left green. Unlike churn rate, the retention rate for revenue is not calculated using the same method that we learned for customer retention rate. In the next scorecard of growth ratios, we will learn how to properly calculate the revenue retention rate. This wraps up our design of the revenue accounting model. One last thing I would like to call out is that the recurring and nonrecurring components of revenue should be measured separately. Mixing the two can yield very misleading insights.

Let us now take a look at how the revenue accounting model helps make decision in practice. We're going to look at three separate cases where the model comes in handy. First, we will evaluate the impact of churn, expansion revenue and contraction revenue. The chart on the left is the total customers represented by the blue line. The growth shows a tapering trend over the months. The chart on the right is a stacked bar chart showing the breakdown of growth cohorts. Let us play around with the churn rate. We start off by reducing the churn in half and see that the total number of customers have increased over time. The trend line in the growth, although is still tapering over months, starts to show an improvement towards becoming a linear trend. The bigger churn problem actually exists in our non-paying user base. A whopping 22 percent non-paying users do not return the subsequent month. Let us see what happens if we reduce this churn rate in half. I'm going to go back to the chart and I've changed the churn rate from 22 percent to 11 percent. The trend line is now linear and if you look closely, it's started to turn towards a more exponential growth rate. Let us reset the numbers and look at the impact of expansion and contraction rates. We're going to visualize

the total revenue and the breakdown of that revenue into growth cohorts. Again, the line chart on the left is total revenue, represented by the blue line showing a tapering trend and growth over months. The chart on the right is the same revenue broken down by growth cohorts. There is the new revenue, the returning or continuing revenue, the reactivated revenue, this thin lines noticeable here. The expansion revenue, which is the dark green bars at the top. The contraction and the churn revenue, both of which are below the zero line. We're not going to modify each and every single upgrade in the interest of time. Let us see what happens if we double the expansion revenue coming from the basic to professional upgrade. Let us now double the expansion revenue from this upgrade. As we can see, the revenue growth is faster than before. Doubling the expansion rate made the revenue grow faster, but it did not change the shape of the growth trend line. Let us now play with contraction revenue and observe the impact. The biggest contribution comes from the professional to basic plan downgrade. Let us slice this contraction revenue in half and see what happens. Again, the revenue is growing faster, although the trend line still shows a tapering trend over months. A question arises here; can improvements in expansion and contraction accelerate the growth rate to exponential levels? The short answer is yes. But in this case, their impact to revenue growth rate is small. The reason is that the only option available in our screen grabber example for expansion is plan upgrades. Plan upgrades are, number 1, capped by how many plans are available, screen grabber has only three. Number 2, they're capped by the number of returning customers. Number 3, a smaller subset of returning customers will choose to upgrade. Number 4, once you upgrade, you aren't likely going to upgrade again. The key takeaway here is giving several options for account revenue expansion, as well as decreasing contraction revenue will continue to make the revenue grow faster, potentially even at exponential growth rates. For screen grabber, improvements in churn for paying customers and non-paying customers continue to be the dominant lever to achieve exponential growth rates.

Next, we will see how this model, in conjunction with the previous models, can help plan the roadmap for product and revenue teams. When put together, these models connect the underlying levers of a target output metric. When planning budgets, product and marketing teams generally start out by setting a revenue target, this is our output metric, and then modeling backwards to paying customers leads, conversion rates, churn rates, and eventually, marketing spend. We started out modeling the customer acquisition journey for screen grabber in the first scorecard; the acquisition model. A prospective customer starts out by searching on Google, clicking on a search ad, arriving on a landing page, then going through the sign-up flow to become a registered user, eventually upgrading to one of the several paid plan options, and then repeating the same cycle, month-over-month, for several months. Eventually, we translate that into the total revenue earned by the paying customer base. Just as these models transform a marketing budget down to revenue, in the same way, we can build the models intervals, deriving the marketing budget needed to achieve the desired revenue targets. In the process, we also end up identifying product investments

needed to improve conversion rates, customer retention, and revenue expansion. Lastly, we will look at how the revenue accounting model helps decide the best billing policy. We briefly alluded to this while building the model. The billing policy governs when the customer is charged. In our example, it determined the accounting period in which we accounted for upgrading and downgrading customers, as well as the resulting change in revenue. There are three examples of billing policy that could have been considered. In the first option, the customer starts getting charged at the new plan rate, right from the start of the month when they made the change. This is the billing option that we chose for our example. Both the upgrading and downgrading customers were tallied in the same month that the change was made. If the number of upgrades are greater than downgrades, then this billing policy translates into more revenue for the company. However, it does make for a less than ideal experience for upgrading customers, by charging them for the whole month at the higher plan rate, despite not having access to the extra features for the whole month. The opposite is also true and beneficial for downgrading customers. Another type of billing policy could be to charge from the start of the next month. In this case, the benefits for upgrading and downgrading customers are reversed compared to the first option. The way it works is, while the upgrading and downgrading customers for the month of January are counted in January, the expansion or contraction in revenue is counted in the next month. This policy makes for a slightly more complicated model, since we have to readjust the customer counts and revenue, appropriately for the right month. The last billing option is prorating. This option is fair to the company, fair to the upgrading customers, and fair to the downgrading customers. However, it does come at the cost of the model becoming significantly more complicated. The customers too have to bear overhead for properly tracking their spend, especially the personnel in their finance department. Similar to the first scorecard, where we measured the average number of days before a free user upgraded to a pay plan, we have to measure the number of days before each of the six plan changes, and then appropriately account for revenue in the right month. This way, the model is helpful in estimating the impact to revenue from each billing policy. It also helps estimate how much extra will be paid by customers due to the timing of the billing policy.

We are at our last scorecard growth ratios. Let's walk through the goals, design, and scorecard and action step by step. Starting with the goals. Growth ratios provide a couple of key metrics about the growth trajectory of the business. It quantifies the trend line for growth of customer base going forward. In other words, it tells us how fast will the customer base grow. It quantifies the future trend in the growth of revenue. In other words, it tells us how fast the revenue will grow. Next, we'll dive deep into the design of this model. There are only two key performance indicators that constitute this model. Quick ratio and net dollar retention. We will look into the details for each of these in the next few slides. This is going to be a fairly simple model, since many of the inputs and transformations needed to compute these two KPIs have already been produced by the previous two models, customer and revenue accounting. Quick ratio informs about the pace of growth in customer base. The formula is

simply new plus reactivated customers divided by those who left the churn customers. A ratio greater than one implies the base is growing. In other words, for every customer that churns, a new customer is added to the base. A quick ratio of two implies, for every customer that churns, two customers are added to the base. A quick ratio less than one implies the churn is overwhelming. New additions. At this rate, all customers will eventually churn. Let's head back to the same spreadsheet we used for the revenue accounting model. The quick ratio as seen here for each of the several months, we see a decreasing trend as months progress, which essentially means for every customer that leaves the customer base, we're adding fewer new customers month over month. While the ratio towards the end is still greater than one, it is decreasing. The next KPI is net dollar retention, or NDR for short. It is the percentage of revenue retained from existing customers after accounting for customer churn, contraction, and expansion. The formula is simply the new revenue added from existing customers, which is just the expansion revenue, less the revenue lost due to contraction and churn, divided by the revenue from the previous period. NDR of 100 percent or one implies the revenue growth rate is accelerating essentially, achieving exponential growth. NDR of 100 percent implies that all revenue lost to churn and contraction is made up for by expansion of existing customers accounts. At that point, all revenue from new customers is net growth for the business. An NDR of less than 100 percent implies the growth rate is slowing down, eventually leading to a tapering growth curve. In fact, if there are no new customers then the revenue is actually shrinking. The NDR, for our example, is close to 92 percent. This is the right way of measuring revenue retention that we had briefly alluded to at the end of the previous scorecard. I encourage everyone to change the churn rate, expansion and contraction rate, and observe the impact to NDR on their own. You can do that by modifying the values in the appropriate row and observing the impact. For example, if you wish to change the basic two professional upgrade rate, you can simply modify it here. If you wish to change the churn rate for paying customers, you do that here, and so on and so forth for each of the other input factors. Net dollar retention is quite possibly the single most important indicator of monetization success. Some of the most iconic SAS companies to go public in the last few years have had one thing in common, an NDR well above 100 percent.

Finally, we will look at the actionable insights that can be derived from the ratios in practice. If you are a product leader building a monetization strategy, then some of these product-based levers should be on your radar as they can impact both quick ratio and NDR. Take the example of a typical B2B SaaS business. Working from the bottom-up, a wide number of use cases that are fully supported will espouse high usage across several departments within the customer's organization. This will lead to an increase in the number of licenses that the customer purchases. Thereby increasing the expansion revenue and decreasing the likelihood of churn, which will eventually translate into gains in both net dollar retention and quick ratio. This concludes our deep dive into the fifth and final scorecard, growth ratios.

With that, the five scorecards to evaluate a monetization strategy. An acquisition model

measures the effectiveness of a product's acquisition. A unit economics model measures the economic efficiency of customer and lead acquisition. A customer accounting model tracks changes to the customer base. A revenue accounting model tracks revenue accumulation. Growth ratios forecast the future trend line and the growth of customer base and revenue. It's important to note here that the organization into five separate scorecards is primarily to discuss them better in this course. They can either be consolidated or split up into further sub-models if it suits the situation. At the end of the day, the goal is to measure the number of leads and customers acquired, that is roughly the first scorecard. Calculate the cost as well as value to the business by acquiring them. The second and the first scorecards. Track changes to the customer base, that is the third one. Track revenue accumulation, the fourth scorecard we looked at in this lesson. Forecast growth and set targets for both customers and revenue, approximately the third, fourth, and fifth scorecards combined.

In this lesson, we walk through the following concepts. We learned about pricing metric, which is the unit in which prices are charged to the customer. It can aggregate several value metrics important to the buyer. A good pricing metric is easy to understand for the customer, aligns with their core value metric, and scales with their usage. Pricing metrics generally fall in one of five categories. Account based metrics, user-based, usage-based, feature-based, and customer-based. Next, we studied a price setting technique Van Westerndrop's price sensitivity analysis. It takes the form of a survey of four pricing questions, the answers to which are plotted as separate distributions for each question. The intersection of these distributions define acceptable price ranges and price points. Next, we looked at building a pricing plan, which is essentially a combination of buyer segments that map two tiers in a pricing plan. Value clusters that map to the feature set of that tier, and associated price points. We reviewed five typical strategies employed in pricing. These are adoption, collection, expansion, retention, and profit. Finally, we looked at the remaining three scorecards of monetization. A customer accounting model helps forecast number of customers. A revenue counting model helps forecast revenue and the growth ratios of quick ratio and net dollar retention inform about the trend lines in growth of customer base and revenue respectively.

In the first lesson, we enumerated the fundamentals of monetization and went into the details of the first one; the goals of a monetization strategy. We briefly enumerated the basic moves made by a strategy, the building blocks for building a strategy, and the scorecards to evaluate the strategy. There are five goals of a monetization strategy. The first goal of a strong monetization strategy is that it helps pay for the cost of transactions and increase the gross margins, which in turn fuels growth. We saw in our example how a small one percent increase in revenue can result in large gains and number of customers and gross margins. The second goal is that it lowers the customer acquisition cost, which in turn fuels growth. The third goal of a strong monetization strategy is it leads to a shorter payback period, which provides capital for growth sooner and avoids borrowing from future cash flows. This leads to

profitable growth. The fourth goal is it helps dominate customer acquisition channels by producing a higher LTV to CAC ratio compared to competitors. Finally, the last goal is to produce a high NDR that can offset churn and support faster growth. The next four lessons introduce the building blocks of a monetization strategy; buyer targeting, path to purchase, premium value, the segments and clusters of buyer in premium value, and pricing. The second lesson was about targeting the right buyer and its segments. We looked at how a company in the meal business can identify its target buyer by narrowing down its differentiation, market, persona, and channels. The third lesson was about the path to purchase that is traversed by the buyer identified in the previous lesson. It is the sequence of steps in the end-to-end customer experience taken by the buyer towards the purchase decision, both for their first purchase as well as subsequent upgrades. A path full of friction creates a poor customer experience, makes customer acquisition expensive, and dilutes premium value of the product. There are three types of friction that were discussed; functionality gaps, usability obstacles, and cognitive overhead. Friction can sometimes be used for the advantage of monetization. We looked at several practical examples of situations where good friction can help and studied elevate apps onboarding flow to identify such tactics. Despite improvements that remove path friction, some unwanted friction will likely remain in the customer experience for various reasons. Those can be addressed by tactics that leverage a buyer psychology, such as social proof, urgency, loss aversion, and anchoring. Finally, we reviewed the first of several scorecards for evaluating a monetization strategy, the acquisition model. It informs about the effectiveness of a product's acquisition tactics and suggest ways to improve it. Using that, a business can determine how many users, leads, and customers are being acquired. What is the true cost of acquiring a customer per channel? What is the conversion efficiency of a channel? We looked at how the incoming traffic is converted into leads and customers, as well as how to calculate key acquisition metrics such as cost per lead and customer acquisition cost. The fourth lesson was about methods to identify premium value for which the buyer would be willing to pay. We define premium value, followed by methods to identify premium value, and break it into separate clusters, one for each buyer persona. Max diff or maximum different scaling is a technique to evaluate the importance of a number of alternatives. Seen here is the heart of that technique. A forced discreet choice between alternatives organized in a pairwise comparison. Because of this, the technique avoids typical problems associated with other methods, such as it prevents respondents from marking every feature as important and forces a choice. It counters the interpretation bias of scales found in other methods. This technique can be repeated for each persona to produce a list of features ranked by their importance to the persona. This list constitutes the value metrics for that persona and is needed to build a pricing plan for all personas. We also examined the different ways to amplify this value proposition. Oftentimes, the premium value does consist of the right subset of features, but it still has to be reiterated and amplified. We looked at five amplification tactics; usage, network, functionality, integrations, and financials. We then looked at the second scorecard for evaluating a monetization strategy, the unit economics model. It helps

evaluate the economic efficiency of customer acquisition and revenue on monetization. Using that, a business can determine how much value does a business generate from a single customer, how much does it cost to acquire a single customer, how long does it take to pay the cost of acquiring a single customer, how well can the business compete in the market, and what will be the impact of investing in growth on profits. We learned how to calculate the unit economics metrics, such as the customer acquisition cost, lifetime value, the ratio of LTV to CAC, and the payback period. We also saw the impact of optimizing these KPIs on growing competitively and profitably. The fifth and last lesson was about methods for pricing the premium value and building a pricing plan. The first concept we looked at was that of a pricing metric. It is the unit in which prices are charged to the customer. It maps to value metrics important to the buyer. A good pricing metric is easy to understand for the customer, aligns with their core value metric, and scales with their usage. Next, we looked at Van Westendorp Price Sensitivity Analysis, a technique for determining customer price preferences. It takes the form of a survey of four questions that ask respondents about their price sensitivity to a given feature set. By plotting the survey responses as separate distributions, a range of acceptable prices is computed, which helps determine the optimal price point. Each respondent is shown a feature set corresponding to their persona. The technique can be run for all identified personas using a different feature set to ask survey questions from each persona. We looked at how this helps identify the price points for two separate personas of our fictitious screen grabber company. This eventually helps build a tiered pricing plan, which is essentially a combination of tiers that roughly map to personas, features which roughly map to the personas value metrics, and price points which roughly map to the range of acceptable prices determined by the Van Westendorp Price Sensitivity Analysis. Lastly, we looked at the five strategies at play when building a pricing plan, along with examples from the industry. Those are adoption, collection, expansion, retention, and profit. We wrapped up the course with the remaining three scorecards to evaluate a monetization strategy, starting with the customer accounting model. This scorecard informs about the growth of a customer base, specifically the number of customers at a certain point in time in the future, and the retention rate of new customer targets needed to meet that growth forecast. We looked at the key concept of growth accounting that applies to both customer accounting model and the revenue accounting model. It breaks down the total customers into new, returning, and reactivated customers. We follow that up by subsequently learning how to model the various growth cohort for customers, as well as the upgrade from non-paying users to customers, and finally the same growth accounting applied to non-paying users. Our next scorecard was the revenue accounting model. This scorecard informs about the growth of revenue, specifically forecast revenue at a certain point in time in the future, and the retention rate, expansion rate, and new customer targets needed to meet the growth forecast. Once again, we use the concept of growth accounting to break down the components of new, returning, reactivated, and churn revenue, as well as contraction and expansion revenue. We followed that up by modeling how to break down revenue into new, returning, reactivated, expansion, contraction and churn, finally totaling up to total revenue for

the company. Finally, the last scorecard is growth ratios. These ratios inform about the trend line in the growth of customer base and revenue. In other words, how fast will the customer base and revenue grow? The two KPIs of this model are quick ratio, which is the ratio of customers added to the base to customer's churn and net dollar retention, which is the percentage of revenue retained from existing customers after accounting for customer churn, contraction, and expansion. A quick ratio greater than one implies the base is growing. For every customer that leaves the customer base, a new customer is added. A ratio less than one implies churn is overwhelming new additions. At this rate, all customers will eventually churn. An NDR greater than 100 percent implies the revenue growth rate is accelerating, essentially achieving exponential growth. An NDR of exactly 100 percent implies all revenue loss to churn and contraction is made up for by expansion of existing customers accounts. At that point, all revenue from new customers is net growth for the business. An NDR less than 100 percent implies the growth rate is slowing down, eventually leading to a tapering growth curve. In fact, if there are no new customers, then the revenue is actually shrinking. To wrap it all up, we looked at these product-based levers underlying quick ratio and net dollar retention. These should be on your radar if you are one such product leader, lucky enough to build a monetization strategy.

Congratulations on finishing the course. You have learned so much. You're now ready to do a fantastic job on the priceless penny project coming up next, where you will get a chance to develop and demonstrate your skills and understanding of growth monetization. After you're done with the project and the course, I wish you happy minting and best of luck in building a profitably growing business.