

EP 15: Measure and optimize app retention like a pro

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Nir Eyal: You can always buy growth, you cannot buy [00:00:10] retention and engagement. It must be built into the product.

Marcus Gners: People are getting more interested in improving their lives. Taking care of your health has become the Rolex [00:00:20] watch of 2020.

Nir: I know all these tricks. These techniques are good, they're not that good. You can't make people do what they don't want to do. [00:00:30]

Tamzin Taylor: Customer retention is vital for every app business, and if customers don't hang around, neither will your app. Industry experts across the board agree about the growing importance of [00:00:40] a successful app retention strategy. Assessing user churn and user engagement helps to get a better understanding of what your users like and dislike. What's the best way to measure [00:00:50] and optimize app retention?

Dirk Primbs: Welcome to another episode of the *Apps, Games, & Insights* podcast. We're your host, Tamzin Taylor and Dirk Primbs. Today, we're exploring one of the [00:01:00] hottest topics for app developers right now, how app businesses can best measure and optimize app retention? This is the key to the success and survival of any app business, [00:01:10] and industry experts have been vocal on the importance of having a strong retention strategy.

Joining us is Nir Eyal, best-selling author of *Hooked and Indistractable*, and Marcus [00:01:20] Gners, co-founder of the health and wellness app, Lifesum. Welcome to our podcast. Awesome to have you. Nir, I know you're a best-selling author. I know you wrote awesome stuff. [00:01:30] Maybe you can put in your own words what your background is and how we should remember you. Well, that sounded weirdly wrong.

[laughter]

Nir: I didn't know I was going to die soon, but in case I do, [00:01:40] you can remember me as a behavioral designer. I help companies build the kind of products and services that build healthy habits into users' lives. I wrote a book [00:01:50] about six years ago called *Hooked: How to Build Habit-Forming Products*.

The intention of the book was to use the psychology behind what makes some of the world's [00:02:00] stickiest products like Facebook and Twitter and Instagram and YouTube and Slack and Snapchat, what is the psychology behind how these products keep us hooked so that we can [00:02:10] utilize those same tactics to build good habits in people's lives.

Since *Hooked* was published, it's been used in every conceivable industry, from education companies to [00:02:20] health care companies, to language learning apps, all sorts of companies can use these very same tactics to build healthy habits in users' lives. That's been my focus.

Tamzin: Amazing. [00:02:30] Marcus, tell us a bit about yourself.

Marcus: I'm co-founder of Lifesum health app that focuses on nutrition. We're trying to get people to eat [00:02:40] better and therefore, save the world. 70% of the US population has a BMI over 25. Europe is not that far [00:02:50] behind them. The world is going in the wrong direction with sort of the trickle-down diseases, general unhappiness. It seems like no app or digital product has [00:03:00] solved it, and there's no correct answer either from science, like what is the perfect way to live?

We're going into, I think, a new era now [00:03:10] where the problem is being more acknowledged. That is also the opportunity comes from technology is the only way to solve it, because society cannot afford to [00:03:20] give everyone a nutritionist, for example, and we can't afford to not do anything about it.

As hardware and the technology side and also you have [00:03:30] people are getting more interested in improving their lives, taking care of your health, that's become like the Rolex watch of 2020. We want to create software [00:03:40] that meets that and helps users make better choices and I think solve the issue of motivation and also destigmatize [00:03:50] the issue of health and take away the shame by meeting it with delightful design that makes it fun and makes you proud [00:04:00] to try to better yourself.

We've been battling this for seven years. Passion comes from-- I worked in gaming before at a company called Stardoll, [00:04:10] which was this index venture of Sequoia company where the [unintelligible 00:04:14] functions and marketing. We sold the digital dresses to teenage girls to simplify. We had [00:04:20] 200 million users, but learned a lot about the power of virtual and how pretend worlds can be very strong.

Then I got really sick [00:04:30] and went in and out of hospitals and then felt mistreated by the system and lost in perspective to what I thought was correct. Then I wanted to [00:04:40] create something that could be a product for when you're not sick enough to get quality care, but you're not well enough to have a good [00:04:50] life because they found what was wrong with me and after eating medication for two and a half years and killing my complete microbiome, I was cured, but I was still [00:05:00] a mess and discovered at the same time, the holistic health movement and creation of the iPhone. I really wanted to do this.

Tamzin: That's an incredible story. [00:05:10] I'm really glad to see that you found not only a way out of the illness, but also a way to give back to society through building an app to address this. It's a really interesting point you raise [00:05:20] about people these days wanting to have a digital persona and have that kind of personality online. I wonder, how do you keep people coming back [00:05:30] to Lifesum? What are some of the aspects that you think make it engaging as an app?

Marcus: The hard thing with digital health products is that it's both creating [00:05:40] digital habits, but then it's also habits in real life. With health habits, I don't fail going to the gym because there's something wrong with the gym. [00:05:50] It's me that is bad at being a human.

We're trying to create products that solve both of them.

I think for us, it's both trying [00:06:00] to use tactics and mechanics from the gaming world and applying it to health, but also creating an environment and a context where we deshame [00:06:10] the problem and try to, I think not build traditional health products always appeal to the-- their users' [00:06:20] 'shoulds'. I think everyone wants to create

the need. I think you don't create a need, usually, you go 'should' [00:06:30] if it's health and we're trying to create 'want'. Then go from, want to need.

Tamzin: It sounds like a good plan. I must say, that I'm a big exercise fan. I think, Nir, you can probably correct me here, [00:06:40] but I read somewhere that if you do something for six weeks, then you get hooked. As the author of the book *Hooked* is here, he can correct me. One of the things-- I'm also a Peloton junkie as most [00:06:50] people might know.

One of the quips that their instructors say is that you don't have to be here. You get to be here. I find that so motivating, like changes the perception [00:07:00] of why you're there ~~to be~~; you're lucky. You should feel grateful for being able to exercise and jump on a bike. Nir, what's your view on some of the reasons why retention is important and [00:07:10] some of the principles of your book in *Hooked*?

Nir: Retention is incredibly important because it is one of those things you cannot buy. Everybody's crazy about growth, everybody wants to be [00:07:20] a growth hacker, everybody wants their product to go viral, but customer growth while it's very important, you can always buy it. Go buy some ads on Google, [00:07:30] go buy some Facebook ads, go buy a television commercial. You can always buy growth, you cannot buy retention and engagement. It must be built into the product.

What I noticed [00:07:40] back when I was teaching at Stanford was that, the future of product design, when it came to this digital interface would increasingly rely upon habits. This was [00:07:50] a very long time ago, back when the iPhone first came out. I realized that what was happening was we were going from desktops, to laptops, [00:08:00] to mobile devices, to now wearable devices like the Apple watch, to now we have these devices where the visual interface has all but disappeared.

If you talk [00:08:10] to Amazon Alexa or your Google Home device, the screen has gone away as it's shrunk. Now, it doesn't even exist anymore. [00:08:20] So what that means is that there's less opportunity to trigger people with what we call external triggers, the pings, the dings, the rings, there's just less visual real estate [00:08:30] to send people messages, to tell them what to do.

If you're not on the front page of someone's home screen, if you're not a skill on Amazon [00:08:40] Alexa or on the Google Home device that someone can remember to ask for, your product doesn't exist for them. You might as well not have even built it because they can't remember to use it. [00:08:50]

This is why habits are so important and will become increasingly important. That habits are a tremendous competitive advantage, and it's very difficult for the competitor [00:09:00] to swoop in and take your customer away once you've built a habit with your customer. Whether it's in the healthcare space like Marcus described, many companies I work with are in the [00:09:10] healthcare space, whether it's SAaS products.

Oh, my goodness. If you're building a SAaS product, it used to be that enterprise software was sold top-down. That you just got the IT [00:09:20] department to buy your software and everybody in the company had to use it. Well what the consumerization of IT has taught us is that now it's products that people use because they want to, [00:09:30] not because they have to, that ultimately succeed.

You must get people to come back to your SAaS product or one day, somebody wakes up and says, "Hey, why are we paying this bill every month? Let's cancel." Of course, [00:09:40] churn is the death of any of these SAaS products. Whether it's enterprise, consumer, mobile, web, it doesn't matter. Any product that requires repeat engagement must know [00:09:50] these principles of designing for habits.

Marcus: Also, with the increase in prices in the advertising markets, you'll go bankrupt pretty quickly if you don't get users [00:10:00] to stay.

Nir: That's right. Yes, that's typically where I'm called in. A lot of times, my buddies will call me the plumber because I'm called in when a venture capitalist has put a lot of money [00:10:10] into a company. Typically, this is when they're having this inflection point of, "Oh, my goodness, look how viral the product is." That's when the VCs invest. Then a month or two later, somehow [00:10:20] all the users are leaking out. We call these leaky bucket businesses. We see these all the time.

That's why they call me the plumber because I plug up the consumer leaks. I figure [00:10:30] out, "Okay, why aren't people coming back? It sounds like they had something here that they were interested in or else they wouldn't have installed the app. Why don't they continue to engage with it?" My work has really focused on, [00:10:40] can we look to consumer psychology principles? Many of these principles are 40, 50 years old, but can we use these principles to understand where our product is deficient so that we can ultimately [00:10:50] stop up those leaks and build a product that is designed for high retention and engagement?

Tamzin: Yes, it is such an important topic to discuss at this moment in time, especially for game [00:11:00] developers. If there's any out there listening, you'll probably realize that the quality of games is just increasing in sophistication. They're becoming a lot more sticky and CPIs are increasing. [00:11:10] There's just more emphasis now than ever before on building a really engaging game so your users stick around.

I think we're seeing a lot of social aspects and [00:11:20] community aspects, and we're seeing games change into more narrative style with multiplayer just to keep people inside. Marcus, from your gaming experience, [00:11:30] you've probably seen a lot of that before. What are some of your key retention strategies on Lifesum?

Marcus: I think separating between embracing the marketing and doing something that is interesting, [00:11:40] it scales, because you've had inflation in external triggers and the amount of them. You need to be different and stick out and preferably be seen as better, [00:11:50] but that is also delighting the user, meeting the user, where I think the key drop off is getting people to understand [00:12:00] what it is you're for.

We done a lot of mistakes where we've optimized retention way down the line before we made a good first impression. I think say hello, [00:12:10] I think with health apps also, games are downloaded for a different reason. It's like, you're bored. You want to do something. Whereas health, everyone is very [00:12:20] motivated when the download happens and then you can look at the retention curve and say, "Was I good at saying hello or not?" I think [00:12:30] we're putting a lot of effort there and getting the basics right, personalizing and thinking about how can we meet different types of users [00:12:40] differently, and I think focus on the basics of design.

We've done a lot of Harlem Globetrotting a bit where you sort of tried to play fantasy [00:12:50] basketball, but instead play like LA Lakers where you played basketball for real.

We're using Nir's book a lot right now, and actually [00:13:00] using the book and not only using the model to make good presentations, which we also screwed up and done in the past, because it's very easy to just like fill the boxes, but it becomes [00:13:10] a bit like, "Yes, I know a movie should have a start, a middle and an end. Now, I'm ready to direct."

I think before filling the boxes, doubling down [00:13:20] on asking the different 'whys' to the different questions and realizing that the user doesn't care if you use Nir's model or not, or the habit model or any other [00:13:30] model, meet the user and look at that.

Dirk: I like to go back to something we said earlier here, because he said something very interesting just now, Marcus. You're using Nir's model. It's [00:13:40] easy to basically tick a lot of the boxes and still are just on the surface of this. What does it mean if something is actually really-- What is habitual usage for [00:13:50] instance, and what is the difference between something that wows people upfront or the kind of work you have to do when you are in your plumbing business, and you stop users from leaking out?

Nir: [00:14:00] The best place to start is to maybe walk me through very quickly what the hook model is. The hook model is a design experience to connect the user's problem with your solution with enough frequency [00:14:10] to form a habit, connecting your product to the customer's problem with enough frequency to form a habit, that is your goal, and frequency is a really big deal. We can talk about that frequency component. [00:14:20]

Unfortunately, that 60 days to create a habit is a myth, sorry to burst your bubble. That's not true. [chuckles] I wish it was that simple, it's not, but what we do need is a little bit more sophistication [00:14:30] when it comes to the steps users take when they interact with our products. Every hook, whether it's Facebook's hook, YouTube's hook, Amazon's hook, Slack, [00:14:40] you name it. If you think of any product that is a habit forming product online, offline, enterprise, consumer, web, doesn't matter, if it's a habit forming product, you're going to find these same four steps.

These four steps [00:14:50] begin with a trigger. Marcus alluded to this a little bit. We have what we call external triggers, which are the pings, the dings, the rings, things in our outside environment that tell us what to do next. [00:15:00] Then we have what we call the internal triggers. I'll get back to those in just a minute. The external triggers, we're all very familiar with. The next step of the hook is the action phase. [00:15:10] The action phase is defined as the simplest behavior done in anticipation of a reward — open an app, scroll a feed, check a dashboard, [00:15:20] play a video — very, very simple behaviors done in anticipation of an immediate reward. The simpler that behavior is to accomplish, the more likely the user is to do it. [00:15:30]

The next step of the hook is the reward phase. This is where the user's itch is scratched, where they get what they came for. It's not good enough just to give people what they want. [00:15:40] We find that habit forming products also inherently have some element of variability. We call this intermittent reinforcement. This came out of the work of B.F. Skinner, the father [00:15:50] of opera and conditioning. He had these experiments where he took pigeons, he put them in the little box. He gave these pigeons a little disk to peck at.

Every time they pecked at the disk, [00:16:00] they would receive a little reward, a little food pellet. Skinner discovered very quickly that he could train his pigeons to peck at the disk whenever they were hungry. Now, mind you, [00:16:10] the experiment did not work if the pigeon wasn't hungry. People forget this part of the experiment that it didn't work unless the pigeon had this inherent need.

Just like [00:16:20] for our users, I don't care what kind of psychological tips and tricks, you're not going to hijack people's brains. I think there's this misconception that habits equal addictions, [00:16:30] equal mind control. I'm telling you, I wrote the book *Hooked*. I know all these tricks. These techniques are good, they're not that good. You can't make people do what they don't want to do. [00:16:40]

Fundamentally, as Marcus said, you have to understand what are their deeper motivations for using your product. This is not mind manipulation. It doesn't work that way. Everybody who's built product actually knows it's much harder [00:16:50] than just: give people points, badges, and leaderboards. That does not work long-term.

Let me get back to Skinner's story. Skinner could train these pigeons to peck at the disk whenever they were hungry, [00:17:00] but then one day he had a little problem. You see, one day, he walked into his lab and he realized he didn't have enough of these food pellets, these little rewards. He couldn't afford [00:17:10] to give a food pellet every time the pigeon pecked the disc, he could only afford to give it to them once in a while.

Sometimes the pigeon would peck at the disc, no reward.

The next time the pigeon would [00:17:20] peck at the disc, they would receive a food pellet. They would receive a reward. What Skinner observed was that the rate of response, the number of times the pigeon peck at the disc increased [00:17:30] when the reward was given on a variable schedule of reinforcement. In all sorts of products online, offline, it doesn't matter, the ones that are most engaging, [00:17:40] most habit-forming, you always have some element of mystery, some bit of uncertainty.

That is the element of surprise that brings us back. Whether it's sports, [00:17:50] what makes sport, why do we love watching a stupid ball bounce around a court or a pitch? It's all about variability. Why are we hooked to reading the news every day? Because the first three [00:18:00] letters of news is new, N-E-W. Why do we love scrolling feeds? There's uncertainty around what you might find next. That variability is very, very important to establishing [00:18:10] all sorts of habits, good habits, and bad habits.

Then the last step, and probably the most overlooked of the hooked model is what we call the investment phase. The investment phase [00:18:20] is where the user puts something into the product to make it better with use. This is revolutionary. This has never been done before in the history of manufacturing.

Henry Ford [00:18:30] famously said that you could have any color of Model T as long as it's black. Why did he say that? To retool his factory and make you [00:18:40] a blue car and another person, a red car, another person, a green car back then, that was really hard to do. Well, manufacturing got better and better and better and now we have more variety, more choice, but for the first time [00:18:50] in manufacturing history, we can manufacture a product to each and every user based on their investment in [00:19:00] the product.

The kind of data you give the service helps us customize that experience just for you, the followers you have, the reputation you earn, [00:19:10] all of these things. These forms of investment into the product, make it better and better. I call this 'stored value' and they also make it stickier and stickier with use. [00:19:20] Through perpetual cycles, through these four steps — trigger, action, reward, investment — eventually, you're not using the app [00:19:30] because of the external trigger at all. Eventually, you start using it because of what we call an internal trigger.

Most designers don't think about the internal triggers, they only think about the external triggers, [00:19:40] but if you want to build a habit-forming product, you have to identify your internal trigger. An internal trigger is an uncomfortable emotional state that we seek to escape from. [00:19:50] That all human behavior is prompted by a desire to escape discomfort. Even the pursuit of pleasure is psychologically destabilizing. This is called the homeostatic response. [00:20:00]

This means, fundamentally, that as designers, if we want to build a habit, a healthy habit in users' lives, whether it's helping them exercise, eat right, [00:20:10] save money, re-connect with loved ones, be more productive at work, it doesn't matter, we have to understand their psychological itch. We have to understand what is that frequently occurring [00:20:20] internal trigger that the customer will eventually associate our product's use with the satiation of that need.

Tamzin: I really, really resonate [00:20:30] with that whole internal trying to avoid an uncomfortable emotional state. When I exercise, it is literally to forget about the world and de-stress. Nir, that [00:20:40] makes complete sense to me, at least.

Nir: Because you're already habituated.

Tamzin: Yes, I'm lost. [laughs]

Nir: Yes, part of the definition of a habit is when not doing a behavior causes a bit of pain. [00:20:50] There's this old mythology in Silicon Valley that we hear that do you want to build a vitamin or a painkiller? You never want to build a vitamin. A vitamin is considered a nice to have. [00:21:00] If people go on vacation, they forget their vitamins, no big deal.

If you have a headache, you need the painkiller. Venture capitalists and people will oftentimes dismiss vitamins [00:21:10] and say, "Oh, this isn't a painkiller. This isn't important enough." I think that sometimes that's a mistake, because if you think about some of these world-changing companies like Facebook, [00:21:20] like Twitter, like Instagram, when these products came out, they were all dismissed as toys. You know how many investors passed on these products?

Pinterest, how many people did Ben Sibermann [00:21:30] have to talk to who said, "I don't get it?" What people didn't realize is that a habit takes a nice to have, and makes it a must-have. [00:21:40] Takes a vitamin and turns it into a painkiller through the process of habituation.

Dirk: Where would you say is the line between habituation, something positive, [00:21:50] going to sports every day, and addiction, something that I may have started on good purpose. I also can see easily that businesses [00:22:00] may be very tempted to use somebody who habituated something on the app now that they are hooked to double down on this. How would you draw the line and is there something like a safety [00:22:10] valve that we can give?

Nir: My publisher originally when I wrote *Hooked*, wanted to call the book, how to build addictive products, and I pushed back and said, "Absolutely not. That the book is titled [00:22:20] *How to Build Habit-forming Products*, for a very specific reason." The definition of an addiction is a persistent compulsive dependency on a behavior or substance that harms the user. [00:22:30] We would never want to harm our users. A habit, unlike an addiction, is simply an impulse to do a behavior with little or no [00:22:40] conscious thought.

About half of what you do every single day is done out of habit. We have bad habits, of course, but we also have a lot of good habits. What I want to help people do is to **[00:22:50]** use this psychology to build those good habits in our lives. Now, what about the addicts? Is there that risk? For the vast majority of people out there, they're not worried about addiction. **[00:23:00]** [laughs] Nobody is getting addicted to an app that helps you learn a language. Nobody is getting addicted to enterprise **[00:23:10]** software. [laughs]

That is almost nobody's problem. For some people building certain types of apps, you can see this problem with addiction. This is why it's very important to understand **[00:23:20]** what is addiction. Today, we live in a society, unfortunately, that loves to use this term, and for some reason, it's so different from any other term **[00:23:30]** like it. Addiction is a pathology. It is a disease. We don't talk about Tourette's or diabetes, or epilepsy the way we talk about addiction.

Somehow, **[00:23:40]** everybody's addicted, everybody can't stop. It's disrespectful to people who actually have the disease of addiction. Think about alcohol. Alcohol is **[00:23:50]** highly addictive, much more addictive than video games or Facebook, or any of these products. Yet, not everyone who has a glass of wine with dinner is an alcoholic. Of course not. **[00:24:00]** There is a very small percentage of people who do have addictions. It's typically between 1% and 5% of the population depending on the product. The vast majority of people are not **[00:24:10]** addicted. What I propose is that, if you are working in an industry where addiction may be a problem, for example, let's say social media, let's say gaming, you're building a gaming **[00:24:20]** app, for example, there's a very simple thing you can do, which is have what I call a use and abuse policy, which says because we know how much people are using our products, **[00:24:30]** we have a responsibility to help people who want to cut back, who may be suffering from the pathology of addiction. We have a responsibility to help them quit.

[00:24:40] An alcohol manufacturer has no idea how much people are using. They don't have personal identifiable information, but we in the tech industry, we know. What I've proposed, I've met with **[00:24:50]** Facebook, I've met with Reddit, I've met with Snapchat, I've met with all these companies. What I propose for years and if they don't do this, somebody is going to make them do it by regulation is to tell us some number of hours. **[00:25:00]** 40 hours a week, 50 hours a week. I don't care what it is.

Give me some number in your use and abuse policy and when somebody uses it to that degree, it trips a circuit breaker that **[00:25:10]** sends them a very polite, very respectful message that says, "We see you may be using our product in a way that may indicate you're struggling with an addiction, can we help?" An honest, **[00:25:20]** respectful approach to these people who may be suffering from an addiction, the 3% to 5% of people who really do struggle, and that's where we have an ethical responsibility as product makers. **[00:25:30]** The vast majority of us are not struggling with addiction, we're struggling with maybe what we call a distraction.

The topic of my second book *Indistractable* is all about essentially how we can **[00:25:40]** have our cake and eat it too. I do not subscribe to this current crop of chicken, little tech critics who tell us, "Oh, my God, there's nothing you can do because the algorithms are hijacking your brain," rubbish. **[00:25:50]**

It is so not true and it's so disempowering to tell people that because it makes it true that when you tell people there's nothing you can do about it, guess what they do? **[00:26:00]** Nothing. We need to tell people the exact opposite that, "Look, you can use technology to

build healthy habits in your life and you can also understand how to make sure you don't overuse [00:26:10] these technologies in a way that creates bad habits in your life."

Dirk: It's also how, as a society, we decide to implement it. If you take psychological principles like described in [00:26:20] your book or in other methodologies, all of them can be used for good or bad. One thought that I had, for instance, as soon as you as a startup, become increasingly under [00:26:30] pressure to increase whatever stupid metric you have to chase in order to make money, it's very tempting to care about that safety procedures later, but that's not [00:26:40] necessarily the model to blame.

This is something where healthy business habits and maybe also as a society, what we are willing to put up with is more important. There is probably a chance [00:26:50] that every once in a while, somebody comes along, that exploits some of those mechanisms and it's on us to basically spot that right.

Nir: Yes, there's an ethical framework in my original book, *Hooked* called the manipulation matrix, [00:27:00] which walks you through these questions on how to make sure you're using this stuff ethically, as an individual. I also wanted to create some test that we can use in a boardroom [00:27:10] context.

What do you say if somebody wants to use one of these behavioral design techniques in a potentially unethical way? We call these dark patterns. What do you do? I came [00:27:20] up with a test. I came up with what I call the regret test. The regret test says that we use what we've always done in [00:27:30] design, we call in a group of users to do user testing. You say, "Knowing everything that I as the designer know, would you do what I've designed for you to do?"

[00:27:40] That test and assessing regret, assessing that metric is incredibly important because we have to remember, there are two types of manipulation. Manipulation has a negative connotation, but it's not necessarily [00:27:50] a negative. There is two types. There's what we call coercion, which is getting people to do things they don't want to do, that is unethical. Then on the other side of the spectrum, there's [00:28:00] persuasion, which is all about getting people to do things they do want to do.

If I want to get in shape, yes, Lifesum's wonderful. I want Lifesum to persuade me. That's a healthy form of manipulation. [00:28:10] If I want to learn a language, if I want to get in shape, whatever the case might be, if that's what I want to do, I want the technology to persuade me to help me do that. What I don't want is to be coerced into [00:28:20] doing something.

The difference between persuasion and coercion is regret. When we run these user tests, not only are we on the right [00:28:30] side ethically of the business equation, but we also are doing the right thing for our bottom line. When you fool somebody, when you trick them, when you get them to do something they don't want to do, [00:28:40] guess what, they don't want to do business with you anymore. Not only that, they're gonna tell all their friends not to do business with you.

Tamzin: Nir, I call that post-purchase anxiety. Usually happens when I get sucked [00:28:50] into an online clothing store via Facebook. Marcus, how do you relate to this with Lifesum? What are some of the ways that you try and meaningfully retain people in a positive [00:29:00] way?

Marcus: I think it's finding the right balance and having respect for the user and the right ethics. Say, you're BMI 30, 35-plus [00:29:10] then we need to throw all tactics we can at you.

Tamzin: Is that high or low for the listeners just to give context?

Marcus: That's high. Then you're classified as obese. [00:29:20] Then, say, our product is really good when it comes to user interviews and user testing. It's like people [00:29:30] say it gives you control of your life. That can be a good thing, but it could also be a disorder and a problem like Matt, [00:29:40] if you have anorexia, for example, and I think we have a responsibility to try.

We know what BMI people have when they come in. [00:29:50] If we capture someone that might be using the product in not a healthy way, no matter how engaged they might be, we should try to build in technology that [00:30:00] counteracts that.

One question, if I may ask, Nir, which I think is difficult to see how you should be thinking about [00:30:10] it and framing it from a technology perspective, which is very logic-driven and rationale-driven where it comes to variable rewards. [00:30:20] I think with healthy habits, it often comes to, "Oh, you should get healthy habits," and it sounds like something "If you just do 60 days, then [00:30:30] your life is going to be like, you're playing the same level of Tetris all over again, but you're not going to think it's boring". How do you think about that to [00:30:40] figure out a smaller point of the framework?

Nir: This is a terrific point because I think in many ways we've reached peak habits. [laughs] I wrote my book [00:30:50] six years ago and now there's been a wave of other books that's all about habits. Unfortunately, I think many people believe not only in our industry but also in the self-help [00:31:00] space, that when they say they want to form a habit, what they really mean is they want something that's difficult, that's effortful to be easy. [00:31:10] The definition of a habit is a behavior done with little or no conscious thought.

In many ways, a habit is the antithesis of deliberate practice. [00:31:20] The whole 10,000 hour-rule of if you want to be good at a certain skill, you have to focus on the mess-ups, you have to have a lot of conscious thought. [00:31:30] When somebody starts exercising, if you go to the gym and you're just doing as many reps as you can, and you're not really thinking about it, well, you're not really getting much stronger. It requires [00:31:40] effort. It's the opposite of a habit. This is why it's funny. I wrote an article probably five years ago called *Why Your Fitness App is Making You Fat*. [00:31:50]

Tamzin: Tell me!

[laughter]

Nir: I was so frustrated back then with so many health apps in this space, doing such a horrible job that [00:32:00] many of them I think were backfiring because they were doing the opposite of the hook model. Let me give you a great example. By the way, these companies are started by the nicest people on earth. All they want to do is help people, but [00:32:10] they make some really critical mistakes.

One of them is that they oversell this idea of habits and they tell people, "Oh, this will be effortless," when it won't be. Thinking that [00:32:20] I want to create a writing habit, look, I've written two bestsellers, hundreds of articles. Writing has never become a habit for me because it requires a lot of conscious thought.

The trouble is, [00:32:30] that when we tell people, "Oh, anything can be made into a habit," as a consumer, what happens after 60 days, and they say, "This still sucks, this is still hard." Do they blame [00:32:40] the author's book that told them they can create a habit? No. Do they blame the app? No. They blame themselves. They think there's something wrong with them and they quit.

We have to get away from this [00:32:50] language of telling people, "Oh, everything can become a habit," because not every behavior can become a habit. Every behavior can become what we call a routine. A routine is simply a series of behaviors frequently repeated. [00:33:00] Every habit must start as a routine but not every routine is going to become a habit. That's something that's very important that we realize. Another big mistake [00:33:10] that I see these companies making is when it comes to the variable reward, they don't follow this principle. If you open up an app that's, let's say, an app that's meant [00:33:20] to help you lose weight or exercise or save money.

Again, these are started by the most altruistic, wonderful people who want to use technology to build healthy habits. The reason I was getting so [00:33:30] frustrated is because if I open up your app and your app tells me, "Hey, guess what? You're still fat and you're still broke." That's not a variable reward. That's a variable punishment. [00:33:40] How does that make me feel? What's the internal trigger if I'm opening the app for one specific reason, I guarantee you the reason is not to tell me I'm a failure.

I need to study your app a little bit more but [00:33:50] the app that I was really impressed by is called Fitbod. I don't have any vested interest in them, I'm not an investor or anything. They realized that there was a certain internal trigger [00:34:00] that wasn't being met. A certain habit they could create. Look at how different this is. As opposed to being the kind of company that says, "Hey, we want to take you from being a couch potato to [00:34:10] running a marathon," they said, "Our customer segment are people who go to the gym and don't know what they're doing." That was absolutely me.

I would go to the gym and I would see all [00:34:20] these muscle heads and they looked like they knew what they were doing and I had no clue. What this app did was go for the internal trigger of uncertainty. [00:34:30] They only wanted people who currently went to the gym but felt that uncertainty. The action was to open the app.

The variable reward was, "What exercise do I do?" There's [00:34:40] uncertainty there that now, the answer to that uncertainty is assurance. "Okay, now I know what to do. I do this many sets, this many reps, this exercise at this weight." The app told you exactly [00:34:50] what to do. Every time you opened it, it would be a little bit different day by day.

Then, the investment was every time you did those reps and sets and exercises, you would put that data into the app [00:35:00] and it would get smarter and smarter the more you used it. If you did legs on Monday, it would tell you to do arms on Tuesday and it would tell you exactly how much weight because you had inputted that in the [00:35:10] past. The more you used it, the more sticky it became. That, I think, is a wonderful example of how we can change habits for good with these healthy habits.

Dirk: What is the habit that [00:35:20] you need to form and where comes the pain or the effort? I would say, maybe the habit is not that I'm exercising and have maybe some effort [00:35:30] and pain while doing so, maybe the habit is that I go to the gym and as soon as I'm at the gym, I'm having a high enough threshold that it becomes weird now that I'm dressed up and everything and [00:35:40] work out again.

It's like going every day for a run. The run is not the part that is habitual, going for the run, getting dressed up, and doing that every day would be the habit. [00:35:50] In a sense, we are connecting habits. Then we have those teaching, learning, improvement moments in there and the improvement and teaching moments are not the ones we try to have [00:36:00] a habit in. Just getting there and then having enough critical mass that we carry on is maybe the point. What are your thoughts on that?

Nir: As app designers, [00:36:10] we want to look for the place where we can insert a behavior that is done with little or no conscious thought. Strava is a wonderful example. The vast majority people who are on an app like [00:36:20] Strava, or who count their calories with My Fitness Pal, they are not people who went from zero activity to active. No, no, it's people who were already active, [00:36:30] who have now added this to their life. Put your stats or it didn't happen. That's now the additional behavior.

Again, it was a brilliant piece [00:36:40] of identifying the target market, of people who are already doing this behavior, of exercising either on the bike in the gym on a treadmill. Now [00:36:50] we're going to add this effortless app integration that makes your life better. All I have to do is open the app and now I'm communicating with my friends and comparing our runs [00:37:00] or our times, or I'm using the app to record my workout. That becomes the investment phase.

The key question we have to ask ourselves is, where is there the opportunity to insert [00:37:10] a behavior with little or no conscious thought that improves the user's life?

Dirk: It becomes quite a collection of habits that I have already. The number one habit is, I'm picking up my [00:37:20] phone in the morning. Then the next habit is, I'm turning it on to be surprised what I find in notifications.

Then I open the first notification usually, I don't know [00:37:30] what my news app gave me or whatever. In a way, you're building habit, on habit on habit on habit. Is that a building that at some point risks breaking down? If one of these things [00:37:40] start shaking, if for some reason I don't have access to my phone for a week, and then I broke that habit, and I'm not picking it up anymore, everything else comes crashing down. Are there breaking points like this?

Nir: [00:37:50] Well, fundamentally, it has to address people's needs that again, just like Skinner with his pigeons, we can't concoct these internal triggers. We don't create these internal triggers, we look for them in users' lives. [00:38:00] I would argue that that problem in order to build a habit around that internal trigger, it has to already exist. It shouldn't be some kind of fake problem [00:38:10] that's created by the app for this exact risk.

A few months ago, there was a lot of criticism around Snapchat had this streaks mechanic. Streaks is when you [00:38:20] write back and forth and back and forth, and you don't want to break the chain, you don't want to break the streak. It got so bad that Senator Hawley, a senator we have here in the United States proposed legislation [00:38:30] making these illegal.

People like Tristan Harris, you might have seen him in the *Social Dilemma* movie, "Oh, this is what we have to regulate. This is what we have to legislate." That's an example I think of one of these kind of a little bit of [00:38:40] a contrived need.

That it's cute for a while, but then it fades away. As much gamification often does, as much as we talk about gamification being so [00:38:50] sticky, being so habit-forming, actually, games are a pretty bad example if you think about it. Who do you know that's still playing

[00:39:00] Pac-Man? For that matter, who's still playing Farmville or Angry Birds? We moved from one game to the next, to the next, because we constantly want [00:39:10] variability. The game got monotonous, we figured it out.

The more you played it, the less variable it became and now, two weeks ago it was, Oh, my God, Fortnite is [00:39:20] the thing, all the kids won't stop playing Fortnite. Then Minecraft and now it's Among Us or whatever the latest game is. We always look for new, new, new, new, and when something [00:39:30] is just gimmicky, it doesn't sustain our attention, it needs to be perpetually, infinitely variable, as opposed to these short-term variable rewards.

Dirk: Looking at your user base, Marcus, [00:39:40] do you have a particular example in mind, you must have a whole range of groups using Lifesum? Is there one that particularly stands out?

Marcus: I think we have [00:39:50] many that stand out. Like we have MMA fighters or fitness professionals that are really good at life. I think core demographic is [00:40:00] millennials, but then millennial women but then you also have people that I think our core demographic are the ones we want to help is the ones [00:40:10] that think life is hard.

I'm not good at life that's why I tried to create the product that helps me figure it out. I think it's [00:40:20] helping people to go from where they are now to something that is a little bit better and not creating a product where you're comparing your life to great and then you just feel bad. [00:40:30]

I think it's a big part of how we wanted to create the context and like, we work with Nike for example, and how do we make it feel cool and glossy [00:40:40] so it doesn't feel like a weight loss product for people that are not good with health. We tried to deliberately make it feel like winning and improving [00:40:50] and destigmatized the thing.

Dirk: How would I, as a MMA fighter use this app, or do you have any particular examples who may know how they integrated it?

Marcus: I think [00:41:00] elite athletes, they really need to pay attention to nutrition. MMA fighters are elite athletes that need to pay attention to nutrition normally [00:41:10] and then usually when they go up in the ring, you want to lose weight, so you get to fight smaller people that don't hit you as hard in the face, so that's [00:41:20] a motivation for them to do it also, but it's finding the balance.

What we try to do is, there's been a lot of debate: is ketogenic [00:41:30] diets better than a balanced diet? Is intermittent fasting better than a balanced diet? I think, now, everyone can agree that [00:41:40] balanced diet is really hard and people are failing with that and like keto, fasting, is different types of hacks to try to sort of get your life in order and find balance.

I think we [00:41:50] tried to meet these things, so if it works for you, if it's healthy, we try to support you and use the power of trends [00:42:00] to help you feel motivated. You make better choices and succeed.

Tamzin: Good points. I've got a question about re-engagement and how you know when people are about to churn because [00:42:10] it is such an important topic, the idea of retention, and it's great when you've got someone using the app, but what are some of the signals that a developer should look out for [00:42:20] that might indicate someone's about to churn?

Marcus: I think if they didn't get it to start with, I think that's where most of us lose most of our users, and then it's like figuring out how to look at retention. [00:42:30] If you want to look at a steady curve, not compare everything to what was the retention of Clash of Clans or Facebook, and not think that you could have 100% retention, nothing has that [00:42:40] except chronic diseases without medication.

They have 100% retention, but otherwise, everything has some kind of drop. Look at, try to [00:42:50] break up cohorts. This has become much easier with technology. It's been difficult to get it done, but it's easier now than a couple of years ago to see which users fall off.

Tamzin: Nir, any [00:43:00] comment from you on how you might spot churn early before it happens?

Nir: Yes, the best retention metric is 'percentage of habituated users'. This is contextually specific to each app. [00:43:10] Every app or service I should say, has a baseline frequency of use and every app is going to be different. If [00:43:20] it's an app like Marcus says, maybe you're going to use it three times a week. If you use it three times a week, you're probably a habituated user. If you're building a social network, it's probably an everyday type [00:43:30] product.

If it's a SAaS product, maybe it's once a week. It doesn't matter what that frequency level is, it needs to be by the way, within a week's time or less. That seems to be the critical cutoff where if a product is not [00:43:40] used within a week's time or less, it turns out it's very hard to change a consumer habit. Assuming it's within a week's time or less, define how many times per week a habituated [00:43:50] user, you would expect to use the product.

Let's say, we say, "Hey, 5% of our user base today is using it three times a week." Terrific, 5% is [00:44:00] currently habituated. Now, we have our first cohort and what we're going to do is then change the product in some way, we can look at the hook model and say, "Okay, where can we make it better? Are the external [00:44:10] triggers clear? Is the action easy enough? How can it be made easier? Is the reward rewarding?"

Can we try either three types of variable rewards? Can we try different variable rewards? Is the investment [00:44:20] improving the product with use and storing value," and we can make adjustments. Then what we're going to do is we're going to have our second cohort. We're going to build ourselves what we call a shark fin graph, where we have [00:44:30] 100% retention when someone installs within a cohort, and then you see this precipitous decline.

Each cohort, what you want is you want these shark fins to get higher and higher [00:44:40] and level off higher, one on top of the other, which is telling you that the percentage of habituated users is increasing with each subsequent change you've made.

Tamzin: Guys, [00:44:50] I'm curious to know, give us your top three tips for developers on retention. If they only take away three things from each of you, what would they be? Marcus.

Marcus: Figure out a user [00:45:00] problem that is narrow, but big enough, and then look at data as a way to navigate. Retention is a [00:45:10] KPI of the actions you do and how good your idea was. On the shark fin graph, one side has the people that like you and stop liking you. The other side [00:45:20] are the people that didn't like you and don't care.

Realize that there's people on the other side, and try to think about their emotions and also think about the value you [00:45:30] create. Then look at good models of how you can apply psychology, and then try to do it before going into a dungeon [00:45:40] and getting a behavioral science degree before you get started.

There are good books and good thoughts that you could just try to apply and see [00:45:50] if it works, and try to not marinate in uncertainty in the world of maybe with your fantastic idea. Try it and then think about, was it a good idea? [00:46:00] Or if it failed, was it a bad idea or was it badly executed?

Tamzin: Excellent. We've got data, having a scope and experiments. We're all for experiments here at Google. [00:46:10] Nir, what are your top three?

Nir: I can't give you three, I have to give you five, because that's the model. The first question is, [00:46:20] what's the external trigger that prompts your user to action? Number two, what's the internal trigger, the user itch that your product seeks to address? Number three is, what is the key action and how can it be [00:46:30] made easier? Number four is, is the reward fulfilling and yet leaves the user wanting more?

Then finally, number five, what's the bit of work the user does to increase the likelihood of the next pass through [00:46:40] the hook? Those five questions are super useful at two different stages, either very, very early, before you've committed any code, before you've hired any designers, [00:46:50] to ask yourself, "Look, if my product needs repeat engagement, if I want people to use the product because they want to, not because they have to, can I answer these five questions in the affirmative? [00:47:00] Do I know what my hook is going to look like?"

That's a great thing to do with a piece of paper and a pen, you can do that. You don't need to commit any code to do that. The other place is really helpful is, if people aren't [00:47:10] coming back to your product or service, if your retention rates stink and you don't know why, these same five questions can be used as a diagnostic tool to figure out where your product may be deficient. [00:47:20]

Tamzin: Amazing. Even if you've already built your product, you can still use the model.

Dirk: Thank you. That was amazing. Thanks, Marcus. Thanks, Nir.

Nir: Thank you very much. I appreciate. That was fun.

Marcus: [00:47:30] Thank you very much.

[music]

Tamzin: Thank you, Nir and Marcus for joining us today and sharing [00:47:40] your expert insights. Thank you to our listeners for tuning in. If you have thoughts on the topics

covered in today's episode, we'd love to hear from you. You can find us on Twitter at **[00:47:50]** #GooglePlayDev. Keep an eye out and subscribe to our podcast for the next episode coming out soon. As always, keep playing and learning. **[00:48:00]**

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[00:48:08] [END OF AUDIO]