A New Superpower

Building Habit-Forming
Products | Nir Eyal

As an entrepreneur, there is always one nagging question that has to be answered every single day— what should we build next?

As the CEO of two tech companies, this question awaited me as soon as I opened my laptop in the morning and was still on my mind when I turned out the lights before bed each night.

"What do we build next?" is the most important question because the answer determines who you hire, how much you spend, and most importantly, whether your company will succeed or fail. Building is where your blood, sweat, and tears (not to mention your investors' money) all go. But how do we decide what to build next? What determines what teams should invest in improving versus what they should ignore?

For most of the history of product development, employees built whatever the boss wanted them to build. The leader of the company sent down orders from on high and teams got to work making the vision into reality. Sometimes, the executive was right and the innovation would be successful, but most often those at the top were wrong. Product teams would spend months if not years (typically isolated from customers) building products no one ultimately wanted. The blind faith and lack of user input led to countless product failures.

More recently however, a new philosophy of innovation has changed the way many companies do business. Entrepreneurs-turned-authors like Steve Blank and Eric Ries have promoted building products through continuous improvements by constantly testing and validating ideas with customers. By listening to customer feedback, they argue, companies can increase the odds of success by decreasing the odds of building something no one really wants.

I am a subscriber and advocate of Blank and Ries' process of "customer development." However, I found something missing when I implemented their methodology—that same nagging question regarding what to build still had to be answered.

Clearly, user feedback was important, but I often found users were not able to articulate what they really wanted. Observing and listening to customers was a good way to find pain points but often led to incremental improvements and not the kind of big breakthroughs I was looking for.

I wanted to go deeper by understanding why users behaved the way they did. I believed that if I could understand the building blocks of behavior, I could design products and features with a higher chance of success.

There is a common pattern found in products that move us to action again and again—that become habit forming.

By looking to the four phases of what I call the Hook Model, a product team building a product can determine if they have the basic elements in place to make it habit-forming. If not, they will immediately see areas for improvement and know where to focus their efforts. (But be warned, designing user engagement provides no guarantee of instant success. Companies must still have a method for acquiring new customers as well as a way to monetize their service.)

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79 percent of smartphone owners check their device within 15 minutes of waking up every morning. Perhaps more startling, fully one-third of Americans say they would rather give up sex than lose their cell phones. A 2011 university study suggested people check their phones 34 times per day. However, industry insiders believe that number is closer to an astounding 150 daily sessions.

Face it, we're hooked.

The technologies we use have turned into compulsions, if not full-fledged addictions. It's the impulse to check a message notification. It's the pull to visit YouTube, Facebook, or Twitter for just a few minutes, only to find yourself still tapping and scrolling an hour later. It's the urge you likely feel throughout your day but hardly notice.

Cognitive psychologists define habits as, "automatic behaviors triggered by situational cues." They are things we do with little or no conscious thought. The products and services we use habitually alter our everyday behavior, just as their designers intended. Our actions have been engineered. But how do companies, producing little more than bits of code displayed on a screen, seemingly control users' minds? What makes some products so habit-forming?

For many products, forming habits is an imperative for survival. As infinite distractions compete for our attention, companies are learning to master novel tactics to stay relevant in users' minds.

Today, amassing millions of users is no longer good enough. Companies increasingly find that their economic value is a function of the strength of the habits they create. In order to win the loyalty of their users and create a product that's regularly used, companies must learn not only what compels users to click, but also what makes them tick.

Though some companies are just waking up to this new reality, others are already cashing in. By mastering habit-forming product design, companies make their goods indispensable.

In the fall of 2012, Dr. Baba Shiv and I designed and taught a class at the Stanford Graduate School of Business on the science of influencing human behavior. The next year, I partnered with Dr. Steph Habif to teach a similar course at the Hasso Plattner Institute of Design.

These years of distilled research and real-world experience resulted in the creation of the Hook Model: a four-phase process companies use to forms habits. Through consecutive hook cycles, successful products reach their ultimate goal of unprompted user engagement, bringing users back repeatedly, without depending on costly advertising or aggressive messaging.

While I draw many examples from technology companies given my industry background, hooks are everywhere—in apps, sports, movies, games, and even our jobs. Hooks can be found in virtually any experience that burrows into our minds (and often our wallets).

The four steps of the Hook Model provide a framework.

The Hook Model

1. Trigger

A trigger is the actuator of behavior—the spark plug in the engine. Triggers come in two types: external and internal. Habit-forming products start by alerting users with external triggers like an email, website link, or the app icon on a phone.

For example, suppose Barbra, a young woman in Pennsylvania, happens to see a photo in her Facebook newsfeed taken by a family member from a rural part of the state. It's a lovely picture and since she is planning a trip there with her brother Johnny, the external trigger's call-to-action intrigues her and she clicks.
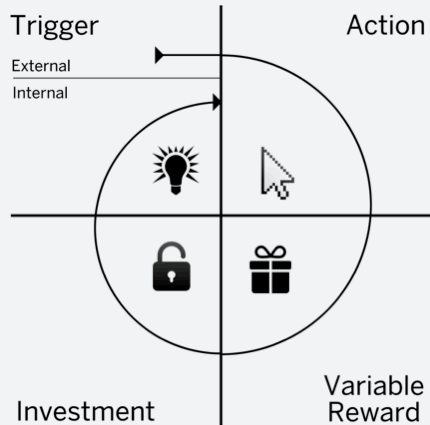
By cycling through successive hooks, users begin to form associations with internal triggers, which attach to existing behaviors and emotions.

And when users start to automatically cue their next behavior, the new habit becomes part of their everyday routine. Over time, Barbra associates Facebook with her need for social connection.

2. Action

Following the trigger comes the action: the behavior done in anticipation of a reward. The simple action of clicking on the interesting picture in her newsfeed takes Barbra to a website called Pinterest, a "pinboard-style photo-sharing" site.

This phase of the hook draws upon the art and science of usability design to reveal how products drive specific user actions. Companies leverage two basic pulleys of human behavior to increase the likelihood of an action occurring: the ease of performing an action and the psychological motivation to do it.

Once Barbra completes the simple action of clicking on the photo, she is dazzled by what she sees next.

3. Variable Reward

What distinguishes the Hook Model from a plain vanilla feedback loop is the hook's ability to create a craving. Feedback loops are all around us, but predictable ones don't create desire. The unsurprising response of your fridge light turning on when you open the door doesn't drive you to keep opening it again and again. However, add some variability to the mix—say a different treat magically appears in your fridge every time you open it—and voila, intrigue is created.

Variable rewards are one of the most powerful tools companies implement to hook users. Research shows that levels of the neurotransmitter dopamine surge when the brain is expecting a reward. Introducing variability multiplies the effect, creating a focused state, which suppresses the areas of the brain associated with judgment and reason while activating the parts associated with wanting and desire. Although classic examples include slot machines and lotteries, variable rewards are prevalent in many other habit-forming products.

When Barbra lands on Pinterest, not only does she see the image she intended to find, but she is also served a multitude of other glittering objects. The images are related to what she is generally interested in—namely things to see on her upcoming trip to rural Pennsylvania—but there are other things that catch her eye as well. The exciting juxtaposition of relevant and irrelevant, tantalizing and plain, beautiful and common, sets her brain's dopamine system aflutter with the promise of reward. Now she's spending more time on Pinterest, hunting for the next wonderful thing to find. Before she knows it, she's spent 45 minutes scrolling.

4. Investment

The last phase of the Hook Model is where the user does a bit of work. The investment phase increases the odds that the user will make another pass through the hook cycle in the future.

The investment occurs when the user puts something into the product of service such as time, data, effort, social capital, or money.

However, the investment phase isn't about users opening up their wallets and moving on with their day. Rather, the investment implies an action that improves the service for the next go-around. Inviting friends, stating preferences, building virtual assets, and learning to use new features are all investments users make to improve their experience. These commitments can be leveraged to make the trigger more engaging, the action easier, and the reward more exciting with every pass through the hook cycle.

As Barbra enjoys endlessly scrolling through the Pinterest cornucopia, she builds a desire to keep the things that delight her. By collecting items, she'll be giving the site data about her preferences. Soon she will follow, pin, re-pin, and make other investments, which serve to increase her ties to the site and prime her for future loops through the hook.

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A New Superpower

Habit-forming technology is already here, and it is being used to mold our lives. The fact that we have greater access to the web through our various connected devices—smartphones and tablets, televisions, game consoles, and wearable technology—gives companies far greater ability to affect our behavior.

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As companies combine their increased connectivity to consumers, with the ability to collect, mine, and process customer data at faster speeds, we are faced with a future where everything becomes potentially more habit-forming. As famed Silicon Valley investor Paul Graham writes, "…unless the forms of technological progress that produced these things are subject to different laws than technological progress in general, the world will get more addictive in the next 40 years than it did in the last 40."

Recently, a blog reader emailed me, "If it can't be used for evil, it's not a superpower." He's right. And under this definition, building habit-forming products is indeed a superpower. If used irresponsibly, bad habits can quickly degenerate into mindless zombie-like addictions.

Did you recognize Barbra and her brother Johnny from the previous example? Zombie film buffs likely did. They are characters from the classic horror flick Night of the Living Dead, a story about people possessed by a mysterious force, which compels their every action.

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No doubt you've noticed the resurgence of the zombie genre over the past several years. Games like Resident Evil, television shows like The Walking Dead, and movies including World War Z are a testament to the creatures' growing appeal. But why are zombies suddenly so fascinating? Perhaps technology's unstoppable progress—ever more pervasive and persuasive—has grabbed us in a fearful malaise at the thought of being involuntarily controlled.

Although the fear is palpable, we are like the heroes in every zombie film—threatened but ultimately more powerful. I have come to learn that habit-forming products can do far more good than harm. "Choice architecture," as described by famed scholars Thaler, Sunstein, and Balz, offers techniques to influence people's decisions and affect behavioral outcomes. Ultimately though, the practice should be, "used to help nudge people to make better choices (as judged by themselves)."

This could unleash the tremendous new powers innovators and entrepreneurs have to influence the everyday lives of billions of people. I believe the trinity of access, data, and speed presents unprecedented opportunities to create positive habits. **When harnessed correctly, technology can enhance lives through healthful behaviors that improve our relationships, make us smarter, and increase productivity.** ⑂

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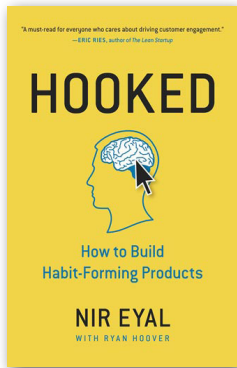
BUY THE BOOK | Get more details or buy a copy of Hooked.

ABOUT THE AUTHOR | Nir Eyal spent years in the video gaming and advertising industries where he learned, applied, and at times rejected, techniques described in his book, *Hooked*, to motivate and influence users. He has taught courses on applied consumer psychology at the Stanford Graduate School of Business and the Hasso Plattner Institute of Design and is a frequent speaker at industry conferences and at Fortune 500 companies. His writing on technology, psychology, and business appears in the *Harvard Business Review*, *The Atlantic*, *TechCrunch*, and *Psychology Today*.

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