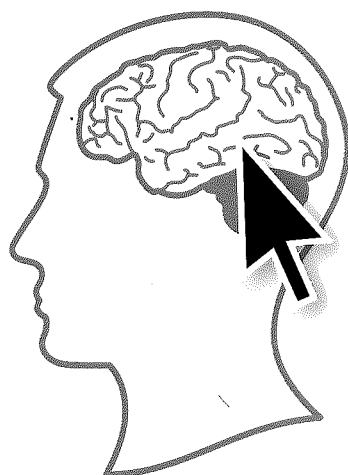


**'A must-read for everyone who cares
about driving customer engagement'**

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HOOKED



How to Build
Habit-Forming Products

NIR EYAL

WITH RYAN HOOVER

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RORY SUTHERLAND, vice chairman, Ogilvy & Mather

'The book everyone in Silicon Valley is talking about'

BORIS VELDHUIJZEN VAN ZANTEN, founder of The Next Web

'Hooked gives you the blueprint for the next generation of products. Read it or the company that replaces you will'





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How do successful companies create products people can't put down?

Why do some products capture our attention while others flop? What makes us engage with certain things out of sheer habit? Is there an underlying pattern to how technologies hook us?

NirEyal answers these questions (and many more) with the Hook Model – a four-step process that, when embedded into products, subtly encourages customer behaviour. Through consecutive 'hook cycles,' these products bring people back again and again without depending on costly advertising or aggressive messaging.

Hooked is based on Eyal's years of research, consulting, and practical experience. He wrote the book he wished had been available to him as a start-up founder – not abstract theory, but a how-to guide for building better products. *Hooked* is written for product managers, designers, marketers, start-up founders, and anyone who seeks to understand how products influence our behaviour.

Eyal provides readers with practical insights to create user habits that stick; actionable steps for building products people love; and riveting examples from the iPhone to Twitter, Pinterest and the Bible App.



NIR EYAL spent years in the video gaming and advertising industries where he learned, applied, and at times rejected, techniques used 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*.

RYAN HOOVER's writing has appeared in *TechCrunch*, *The Next Web*, *Forbes*, and *Fast Company*. After working on *Hooked* with Nir Eyal, Hoover founded Product Hunt, a company that has been described as 'the place to discover the next big things in tech.'

To learn more or to get in touch with Nir, visit:

NirAndFar.com



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| introduction |

Seventy-nine percent of smartphone owners check their device within fifteen minutes of waking up every morning.¹ Perhaps more startling, fully one-third of Americans say they would rather give up sex than lose their cell phones.²

A 2011 university study suggested people check their phones thirty-four times per day.³ However, industry insiders believe that number is closer to an astounding 150 daily sessions.⁴

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": things we do with little or no conscious thought.⁵ The products and services we use habitually alter our everyday behavior, just as their designers intended.⁶ Our actions have been engineered.

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?

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

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

FIRST TO MIND WINS

Companies that form strong user habits enjoy several benefits to their bottom line. These companies attach their product to *internal triggers*. As a result, users show up without any external prompting.

Instead of relying on expensive marketing, habit-forming companies link their services to the users' daily routines and emotions.⁷ A habit is at work when users feel a tad bored and instantly open Twitter. They feel a pang of loneliness and before rational thought occurs, they are scrolling through their Facebook feeds. A question comes to mind and before searching their brains, they query Google. The first-to-mind solution wins. In chapter 1 of this book, we explore the competitive advantages of habit-forming products.

How do products create habits? The answer: They manufacture them. While fans of the television show *Mad Men* are familiar with how the ad industry once created consumer desire during Madison Avenue's golden era, those days are long gone. A multiscreen world of ad-wary consumers has rendered Don Draper's big-budget brainwashing useless to all but the biggest brands.

Today, small start-up teams can profoundly change behavior by guiding users through a series of experiences I call *hooks*. The more often users run through these hooks, the more likely they are to form habits.

a practical tool (rather than a theoretical one) made for entrepreneurs and innovators who aim to use habits for good. In this book I have compiled the most relevant research, shared actionable insights, and provided a practical framework designed to increase the innovator's odds of success.

Hooks connect the user's problem with a company's solution frequently enough to form a habit. My goal is to provide you with a deeper understanding of how certain products change what we do and, by extension, who we are.

HOW TO USE THIS BOOK

At the end of each section, you'll find a few bulleted takeaways. Reviewing them, jotting them down in a notebook, or sharing them on a social network is a great way to pause, reflect, and reinforce what you have read.

Building a habit-forming product yourself? If so, the "Do This Now" sections at the end of subsequent chapters will help guide your next steps.

REMEMBER & SHARE

- *Habits* are defined as "behaviors done with little or no conscious thought."

- The convergence of access, data, and speed is making the world a more habit-forming place.
- Businesses that create customer habits gain a significant competitive advantage.
- The Hook Model describes an experience designed to connect the user's problem to a solution frequently enough to form a habit.
- The Hook Model has four phases: *trigger*, *action*, *variable reward*, and *investment*.

The Habit Zone

When I run, I zone out. I don't think about what my body is doing and my mind usually wanders elsewhere. I find it relaxing and refreshing, and run about three mornings each week. Recently, I needed to take an overseas client call during my usual morning run time. "No biggie," I thought. "I can run in the evening instead." However, the time shift created some peculiar behaviors that night.

I left the house for my run at dusk and as I was about to pass a woman taking out her trash, she made eye contact and smiled. I politely saluted her with "Good morning!" and then caught my mistake: "I mean, good evening! Sorry!" I corrected myself, realizing I was about ten hours off. She furrowed her brow and cracked a nervous smile.

Slightly embarrassed, I noted how my mind had been oblivious to the time of day. I chided myself not to do it again, but within a few minutes I passed another runner and again—as if possessed—I blurted out, "Good morning!" What was going on?

Back home, during my normal post-run shower, my mind began to wander again as it often does when I bathe.

many persistent nail-biters, the unconscious trigger is the unpleasant feeling of stress. The more the biter associates the act of nail chomping with the temporary relief it provides, the harder it becomes to change the conditioned response.

Like nail biting, many of our daily decisions are made simply because that was the way we have found resolution in the past. The brain automatically deduces that if the decision was a good one yesterday, then it is a safe bet again today and the action becomes a routine.

On my run my brain had associated making eye contact with another person during my run with the standard "Good morning!" greeting; thus I automatically uttered these words no matter how inappropriately timed.

WHY HABITS ARE GOOD FOR BUSINESS

If our programmed behaviors are so influential in guiding our everyday actions, surely harnessing the same power of habits can be a boon for industry. Indeed, for those able to shape them in an effective way, habits can be very good for the bottom line.

Habit-forming products change user behavior and create unprompted user engagement. The aim is to in-

HABIT AS STRATEGY

Sometimes a behavior does not occur as frequently as flossing or Googling, but it still becomes a habit. For an infrequent action to become a habit, the user must perceive a high degree of utility, either from gaining pleasure or avoiding pain.

Take Amazon as an example: The e-tailer has its sights set on becoming the world's one-stop shop. Amazon is so confident in its ability to form user habits that it sells and runs ads for directly competitive products on its site.¹⁹ Customers often see the item they are about to buy listed at a cheaper price and can click away to transact elsewhere. To some, this sounds like a formula for disaster. But to Amazon, it is a shrewd business strategy.

Not only does Amazon make money from the ads it runs from competing businesses, it also utilizes other companies' marketing dollars to form a habit in the shopper's mind. Amazon seeks to become the solution to a frequently occurring pain point—the customer's desire to find the items they want.

By addressing shoppers' price concerns, Amazon earns loyalty even if it doesn't make the sale and comes across as trustworthy in the process. The tactic is backed by a 2003 study, which demonstrated that consumers' preference for an online retailer increases when they are offered competitive price information.²⁰ The technique has also been used by Progressive, the car insurance company, to drive over \$15 billion of

annual insurance sales, up from just \$3.4 billion before the tactic was implemented.

By allowing users to comparison shop from within the site, Amazon provides tremendous perceived utility to its customers. Although shopping on Amazon may not occur as frequently as searching on Google, the company solidifies its place as the default solution to customers' purchasing needs with each successful transaction. In fact, people are so comfortable comparison shopping on Amazon that they frequently use the company's mobile app to check prices when standing in the aisles of real stores—often making a purchase from inside a competing retailer.²¹

In the Habit Zone

A company can begin to determine its product's habit-forming potential by plotting two factors: *frequency* (how often the behavior occurs) and *perceived utility* (how useful and rewarding the behavior is in the user's mind over alternative solutions).

Googling occurs multiple times per day, but any particular search is negligibly better than rival services like Bing. Conversely, using Amazon may be a less frequent occurrence, but users receive great value knowing they'll find whatever they need at the one and only "everything store."²²

By progressing users through the four steps of the Hook Model—trigger, action, variable reward, and investment—hooks form habits.

REMEMBER & SHARE

- For some businesses, forming habits is a critical component to success, but not every business requires habitual user engagement.
- When successful, forming strong user habits can have several business benefits including: higher customer lifetime value (CLTV), greater pricing flexibility, supercharged growth, and a sharper competitive edge.
- Habits cannot form outside the Habit Zone, where the behavior occurs with enough frequency and perceived utility.
- Habit-forming products often start as nice-to-haves (vitamins) but once the habit is formed, they become must-haves (painkillers).
- Habit-forming products alleviate users' pain by relieving a pronounced itch.
- Designing habit-forming products is a form of manipulation. Product builders would benefit from a bit of introspection before attempting

to hook users to make sure they are building healthy habits, not unhealthy addictions (more to come on this topic in chapter 8).

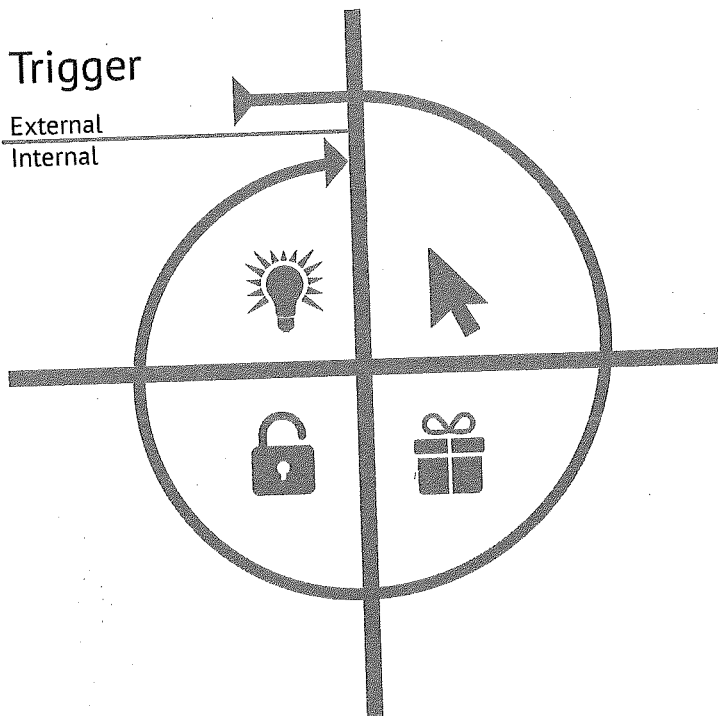
DO THIS NOW

If you are building a habit-forming product, write down the answers to these questions:

- What habits does your business model require?
- What problem are users turning to your product to solve?
- How do users currently solve that problem and why does it need a solution?
- How frequently do you expect users to engage with your product?
- What user behavior do you want to make into a habit?

Trigger

External
Internal



Trigger

Yin (not her real name) is in her mid-twenties, lives in Palo Alto, California, and attends Stanford University. She has all the composure and polish you'd expect of a student at a prestigious school, yet she succumbs to a persistent habit throughout her day. She can't help it; she is compulsively hooked on Instagram.

The photo- and video-sharing social network, purchased by Facebook for \$1 billion in 2012, has captured the minds and attention of Yin and 150 million other users like her.¹

The company's acquisition demonstrates the increasing power of—and immense monetary value created by—habit-forming technology.

Naturally, the Instagram purchase price was driven by a host of factors, including a rumored bidding war for the company.² But at its core Instagram is an example of an enterprising team—conversant in psychology as much as technology—that unleashed a habit-forming product on users who subsequently made it a part of their daily routines.³

Yin doesn't realize she's hooked, although she admits she regularly snaps and posts dozens of pictures per day using the app. "It's just fun," she says as she reviews her latest collection of moody snapshots filtered to look like they were taken in the late 1970s. *"I don't have a problem or anything. I just use it whenever I see something cool. I feel I need to grab it before it's gone."*

What formed Yin's Instagram habit? How did this seemingly simple app become such an important part of her life? As we will soon learn, habits like Yin's are formed over time, but the chain reaction that forms a habit always starts with a trigger.

HABITS ARE NOT CREATED, THEY ARE BUILT UPON

Habits are like pearls. Oysters create natural pearls by accumulating layer upon layer of a nacre called mother-of-pearl, eventually forming the smooth treasure over several years. But what causes the nacre to begin forming a pearl? The arrival of a tiny irritant, such as a piece of grit or an unwelcome parasite, triggers the oyster's system to begin blanketing the invader with layers of shimmery coating.

Similarly, new habits need a foundation upon which to build. Triggers provide the basis for sustained behavior change.

Reflect on your own life for a moment. What woke you up this morning? What caused you to brush your teeth? What brought you to read this book?

Triggers take the form of obvious cues like the morning alarm clock but also come as more subtle, sometimes subconscious signals that just as effectively influence our daily behavior. A trigger is the actuator of behavior—the grit in the oyster that precipitates the pearl. Whether we are cognizant of them or not, triggers move us to take action.

Triggers come in two types: *external* and *internal*.

External Triggers

Habit-forming technologies start changing behavior by first cueing users with a call to action. This sensory stimuli is delivered through any number of things in our environment.

External triggers are embedded with information, which tells the user what to do next.

An external trigger communicates the next action the user should take. Often, the desired action is made explicitly clear. For example, what external triggers do you see in this Coca-Cola vending machine in figure 2?

Take a close look at the welcoming man in the image.

necting them with others, sharing photos, and swapping lighthearted banter.¹⁴

Like many social networking sites, Instagram also alleviates the increasingly recognizable pain point known as *fear of missing out*, or FOMO. For Instagram, associations with internal triggers provide a foundation to form new habits.

It is now time to understand the mechanics of connecting the user's problem with your solution by utilizing the next step in the Hook Model. In the next chapter we'll find out how moving people from triggers to actions is critical in establishing new routines.

REMEMBER & SHARE

- *Triggers* cue the user to take action and are the first step in the Hook Model.
- Triggers come in two types—external and internal.
- *External triggers* tell the user what to do next by placing information within the user's environment.
- *Internal triggers* tell the user what to do next through associations stored in the user's memory.

- Negative emotions frequently serve as internal triggers.
- To build a habit-forming product, makers need to understand which user emotions may be tied to internal triggers and know how to leverage external triggers to drive the user to action.

DO THIS NOW

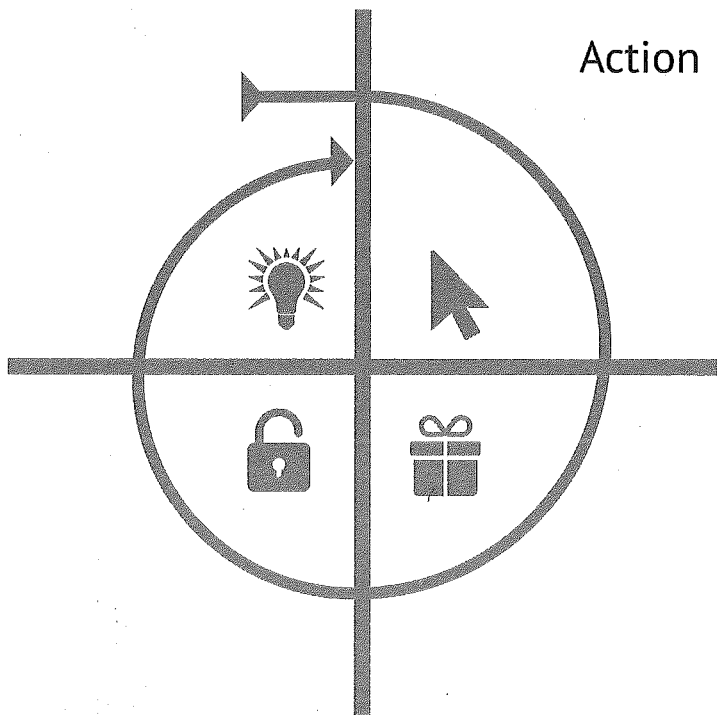
Refer to the answers you came up with in the last "Do This Now" section to complete the following exercises:

- Who is your product's user?
- What is the user doing right before your intended habit?
- Come up with three internal triggers that could cue your user to action. Refer to the 5 Whys Method described in this chapter.
- Which internal trigger does your user experience most frequently?
- Finish this brief narrative using the most frequent internal trigger and the habit you are designing: "Every time the user (internal trigger), he/she (first action of intended habit)."
- Refer back to the question about what the user is doing right before the first action of the

habit. What might be places and times to send an external trigger?

- How can you couple an external trigger as closely as possible to when the user's internal trigger fires?
- Think of at least three conventional ways to trigger your user with current technology (e-mails, notifications, text messages, etc.). Then stretch yourself to come up with at least three crazy or currently impossible ideas for ways to trigger your user (wearable computers, biometric sensors, carrier pigeons, etc.). You could find that your crazy ideas spur some new approaches that may not be so nutty after all. In a few years new technologies will create all sorts of currently unimaginable triggering opportunities.

Action



Action

The next step in the Hook is the *action phase*. The trigger, driven by internal or external cues, informs the user of what to do next; however, if the user does not take action, the trigger is useless. To initiate action, doing must be easier than thinking. Remember, a habit is a behavior done with little or no conscious thought. The more effort—either physical or mental—required to perform the desired action, the less likely it is to occur.

Action Versus Inaction

If action is paramount to habit formation, how can a product designer influence users to act? Is there a formula for behavior? It turns out that there is.

While there are many theories about what drives human behaviors, Dr. B. J. Fogg, Director of the Persuasive Technology Lab at Stanford University, has developed a model that serves as a relatively simple way to understand what drives our actions.

Variable Reward

Ultimately, all businesses help users achieve an objective. As we learned in the previous chapter, reducing the steps needed to complete the intended outcome increases the likelihood of that outcome. But to keep users engaged, products need to deliver on their promises. To form the learned associations we discussed in chapter 2, the trigger phase, users must come to depend on the product as a reliable solution to their problem—the salve for the itch they came to scratch.

The third step in the Hook Model is the *variable reward phase*, in which you reward your users by solving a problem, reinforcing their motivation for the action taken in the previous phase. To understand why rewards—and variable rewards in particular—are so powerful, we must first take a trip deep inside the brain.

Understanding Rewards

In the 1940s two researchers, James Olds and Peter Milner, accidentally discovered how a special area of the brain is

Investment



In exploring the Hook Model, we discussed in chapter 2 the importance of aligning with the right internal triggers, and how by utilizing external triggers, designers can then prompt users with information for the next intended action.

In chapter 3 we learned about the role of the smallest actions taken in anticipation of immediate rewards. In chapter 4 we looked at how variable outcomes influence repeat engagement. There is one last step in the Hook Model that is critical for building habit-forming technologies. Before users create the mental associations that activate their automatic behaviors, they must first *invest* in the product.

Changing Attitude

In chapter 1 we learned about the tooth-flossing study in which researchers determined that the frequency of a new behavior is a leading factor in forming a new habit. The study also found that the second most important factor in habit formation is a change in the participant's attitude about the behavior. The finding is consistent with the Habit

and the less they question its use. Users do not stay hooked forever, though. Invariably, the next big thing will come along and provide a better, more compelling hook. However, by creating habits fueled by investments in a product or service, companies make switching to a competitor difficult. User habits are hard to break and confer powerful competitive advantages to any company fortunate enough to successfully create them.

REMEMBER & SHARE

- The *investment phase* is the fourth step in the Hook Model.
- Unlike the action phase, which delivers immediate gratification, the investment phase concerns the anticipation of rewards in the future.
- Investments in a product create preferences because of our tendency to overvalue our work, be consistent with past behaviors, and avoid cognitive dissonance.
- Investment comes after the variable reward phase, when users are primed to reciprocate.
- Investments increase the likelihood of users returning by improving the service the more it is used. They enable the accrual of stored

value in the form of content, data, followers, reputation, or skill.

- Investments increase the likelihood of users passing through the Hook again by loading the next trigger to start the cycle all over again.

DO THIS NOW

Refer to the answers you came up with in the last "Do This Now" section to complete the following exercises:

- Review your flow. What "bit of work" are your users doing to increase their likelihood of re-turning?
- Brainstorm three ways to add small investments into your product to:
 - Load the next trigger.
 - Store value as data, content, followers, reputation, and skill.
- Identify how long it takes for a "loaded trigger" to reengage your users. How can you reduce the delay to shorten time spent cycling through the Hook?

What Are You Going to Do with This?

The Hook Model is designed to connect the user's problem with the designer's solution frequently enough to form a habit. It is a framework for building products that solve user needs through long-term engagement.

As users pass through cycles of the Hook Model, they learn to meet their needs with the habit-forming product. Effective hooks transition users from relying upon external triggers to cueing mental associations with internal triggers. Users move from states of low engagement to high engagement, from low preference to high preference.

You are now equipped to use the Hook Model to ask yourself these five fundamental questions for building effective hooks:

1. What do users really want? What pain is your product relieving? (*Internal trigger*)
2. What brings users to your service? (*External trigger*)
3. What is the simplest action users take in anticipation of reward, and how can you simplify your product to make this action easier? (*Action*)

REMEMBER & SHARE

- To help you, as a designer of habit-forming technology, assess the morality behind how you manipulate users, it is helpful to determine which of the four categories your work fits into. Are you a facilitator, peddler, entertainer, or dealer?
- *Facilitators* use their own product and believe it can materially improve people's lives. They have the highest chance of success because they most closely understand the needs of their users.
- *Peddlers* believe their product can materially improve people's lives but do not use it themselves. They must beware of the hubris and inauthenticity that comes from building solutions for people they do not understand firsthand.
- *Entertainers* use their product but do not believe it can improve people's lives. They can be successful, but without making the lives of others better in some way, the entertainer's products often lack staying power.
- *Dealers* neither use the product nor believe it can improve people's lives. They have the lowest chance of finding long-term success and often find themselves in morally precarious positions.

DO THIS NOW

- Take a minute to consider where you fall on the Manipulation Matrix. Do you use your own product or service? Does it influence positive or negative behaviors? How does it make you feel? Ask yourself if you are proud of the way you are influencing the behavior of others.

Case Study: The Bible App

In the previous chapter I urged you to be a facilitator and use the tools in this book to improve the lives of others. I encouraged you to align your work with a purpose that provides you with meaning and helps cultivate meaning for others. This is not only a moral imperative, it's good business practice.

The most highly regarded entrepreneurs are driven by meaning, a vision for greater good that drives them forward.

Start-ups are grueling and only the most fortunate persevere before finding success. If you only build for fame or fortune, you will likely find neither. Build for meaning, though, and you can't go wrong.

The Hook Model is a framework based on human psychology and a close examination of today's most successful habit-forming products. Now that you have an understanding of the model and the psychology behind why we do the things we do, let's study how it all comes together in one of the world's most popular apps. Whether or not you agree with the mission of the app described below is

REMEMBER & SHARE

- The Bible App was far less engaging as a desktop Web site; the mobile interface increased accessibility and usage by providing frequent triggers.
- The Bible App increases users' ability to take action by front-loading interesting content and providing an alternative audio version.
- By separating the verses into small chunks, users find the Bible easier to read on a daily basis; not knowing what the next verse will be adds a variable reward.
- Every annotation, bookmark, and highlight stores data (and value) in the app, further committing users.

Habit Testing and Where to Look for Habit-Forming Opportunities

Now that you have an understanding of the Hook Model and have reflected on the morality of influencing user behavior, it is time to get to work. Running your idea through the four phases of the model will help you discover potential weaknesses in your product's habit-forming potential.

Does your users' internal trigger frequently prompt them to action? Is your external trigger cueing them when they are most likely to act? Is your design simple enough to make taking the action easy? Does the reward satisfy your users' need while leaving them wanting more? Do your users invest a bit of work in the product, storing value to improve the experience with use and loading the next trigger?

By identifying where your technology is lacking, you can focus on developing improvements to your product where it matters most.

To uncover where interfaces are changing, Paul Buchheit, a partner at Y Combinator, encourages entrepreneurs to “live in the future.”¹⁰ A profusion of interface changes are just a few years away. Wearable technologies like Google Glass, the Oculus Rift virtual reality goggles, and the Pebble smartwatch promise to change how users interact with the real and digital worlds. By looking forward to anticipate where interfaces will change, the enterprising designer can uncover new ways to form user habits.

REMEMBER & SHARE

- The Hook Model helps the product designer generate an initial prototype for a habit-forming technology. It also helps uncover potential weaknesses in an existing product's habit-forming potential.
- Once a product is built, *Habit Testing* helps uncover product devotees, discover which product elements (if any) are habit forming, and why those aspects of your product change user behavior. Habit Testing includes three steps: *identify*, *codify*, and *modify*.
- First, dig into the data to *identify* how people are using the product.

- Next, *codify* these findings in search of habitual users. To generate new hypotheses, study the actions and paths taken by devoted users.
- Finally, *modify* the product to influence more users to follow the same path as your habitual users, and then evaluate results and continue to modify as needed.
- Keen observation of one's own behavior can lead to new insights and habit-forming product opportunities.
- Identifying areas where a new technology makes cycling through the Hook Model faster, more frequent, or more rewarding provides fertile ground for developing new habit-forming products.
- *Nascent behaviors*—new behaviors that few people see or do, yet ultimately fulfill a mass-market need—can inform future breakthrough habit-forming opportunities.
- New interfaces lead to transformative behavior change and business opportunities.

DO THIS NOW

Refer to the answers you came up with in the "Do This Now" section in chapter 5 to complete the following exercises:

- Perform Habit Testing, as described in this chapter, to identify the steps users take toward long-term engagement.
- Be aware of your behaviors and emotions for the next week as you use everyday products. Ask yourself:
 - What triggered me to use these products? Was I prompted externally or through internal means?
 - Am I using these products as intended?
 - How might these products improve their onboarding funnels, reengage users through additional external triggers, or encourage users to invest in their services?
- Speak with three people outside your social circle to discover which apps occupy the first screen on their mobile devices. Ask them to use these apps as they normally would and see if you uncover any unnecessary or nascent behaviors.
- Brainstorm five new interfaces that could introduce opportunities or threats to your business.