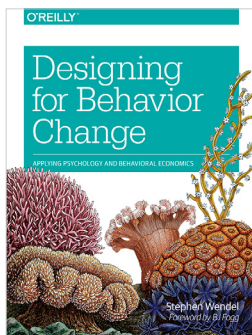


A TOOLKIT FOR

Designing For Behavior Change

By Stephen Wendel



*Tips for applying techniques from the book,
Designing for Behavior Change*

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Introduction

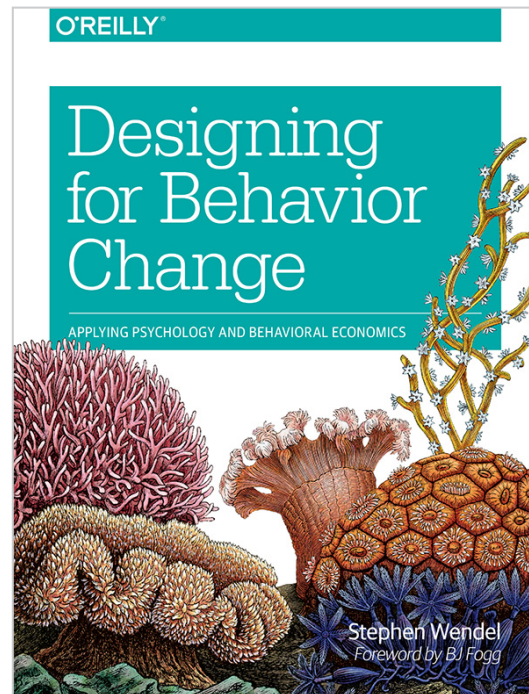
This toolkit will help you design products that enable your users to change behaviors in their daily lives — from exercising more, to saving for the future.

It's meant to accompany the book *Designing for Behavior Change*, which was published by O'Reilly Media in November 2013. The toolkit provides a brief summary of the book's key lessons, and gives additional tips on how to apply the book to your own projects.

Both the book and this toolkit are based on our experiences at HelloWallet. Over the past few years we've successfully built and experimentally tested products that help people take control of their finances. But, we had numerous mistakes and outright failures along the way — as we searched for effective ways to apply the behavioral science literature to software products. We also had the unique opportunity to share notes about behavior change with the folks at Action Design DC, 1776 DC, and 500 Startups where we've field tested these ideas; we are indebted to them for their help.

In the end, we've codified these lessons in a step-by-step process for discovering, designing, implementing, and iteratively improving products that help their users take action. That full, highly detailed process, is given in *Designing for Behavior Change*. In this toolkit, we've tried to create the shortest, simplest presentation of main themes from the book, but necessarily had to drop important details. If you'd like to learn more, please check out the full book on Amazon or Oreilly.com.

NOTE — This toolkit is very much still a draft, and we welcome your feedback. You can reach out to Steve Wendel via “@sawendel” on [Twitter](https://twitter.com/sawendel), [LinkedIn](https://www.linkedin.com/in/sawendel) or email (steve@hellowallet.com) with any comments or suggestions. We'd also love to hear about the behavioral products you're working on!

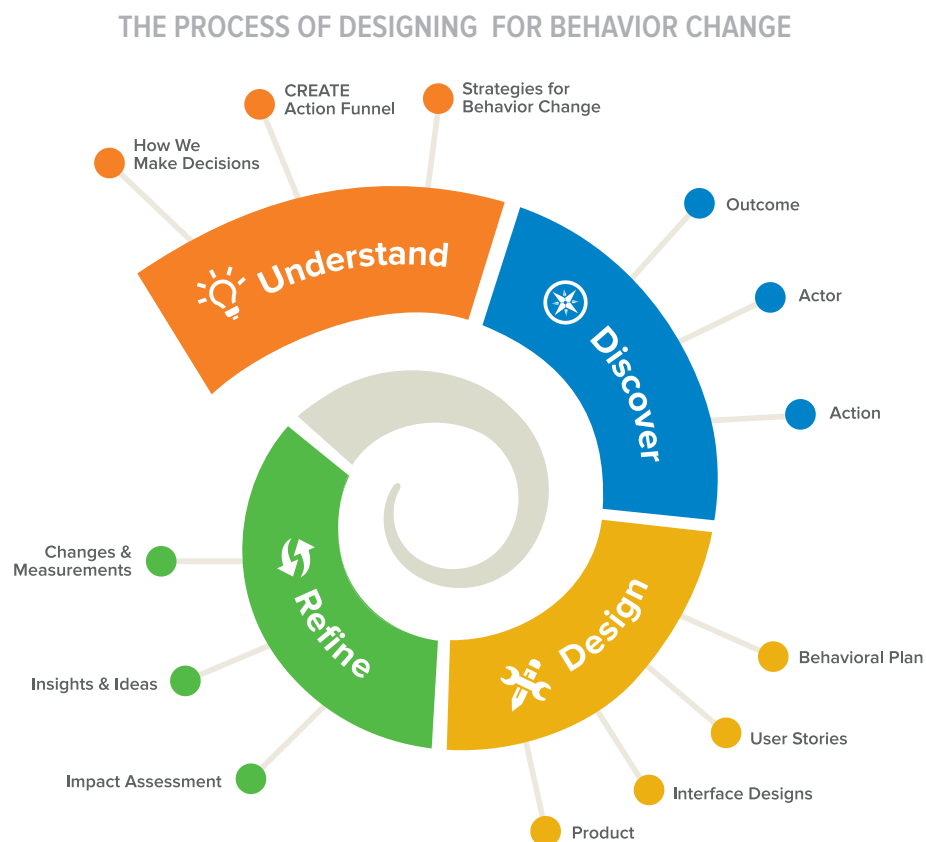


Overview

Designing for Behavior Change is a four-phase process:

1. **Understand** how the mind decides to act and what that means for behavior change
2. **Discover** the right behaviors to change, given your goals and your users' goals
3. **Design** the product itself around that behavior
4. **Refine** the product's impact based on careful measurement and analysis

These four phases layer on-top of, and don't replace, your existing product development process. You can use an Agile Process, Lean, or even a sequential development (Waterfall) process. At some point in each development methodologies, the tasks of understanding, discovering, designing, and refining around a particular behavior slot in. Figure 1 shows an example of that process, using an Agile development process. The dots show the outputs of each stage. In this Toolkit, you'll learn how each of these outputs work.

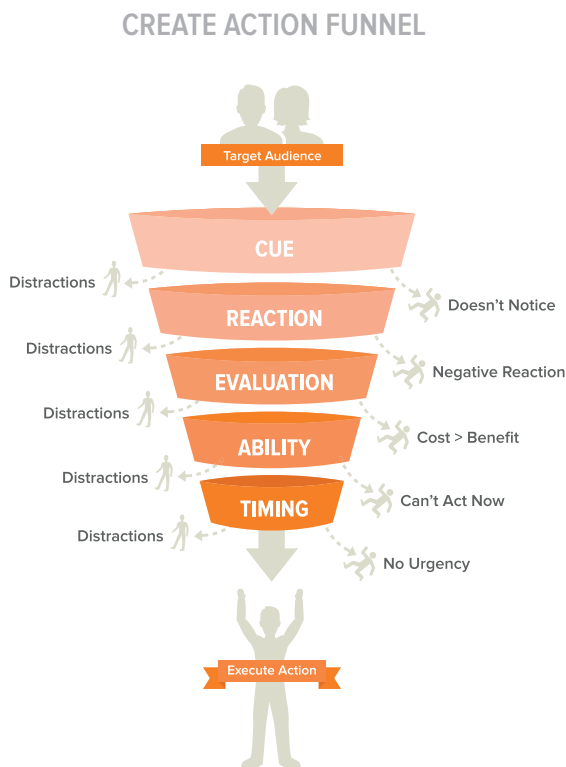


When you already have a product in the market, and want to improve it using behavioral techniques, the process is similar. After an initial **understanding** of the decision making process, and clarification of the product's outcomes, you quickly jump to the **refine** phase: assessing the current impact of the product. Then, as needed, you do additional **discovery**, **design**, and further rounds of **refinement**.

Designing for Behavior Change at a Glance

Step 1: Understand

The first phase entails understanding how the mind makes decisions. In order for a person to take action, five preconditions need to be in place. Here they are, using the example of a running app like RunKeeper:



Cue: Something needs to cue the person to think about acting. Why would your users think about running? Maybe a push notification, an SMS invite from a friend, or an ad on TV.

Reaction: The mind automatically reacts intuitively and emotionally. What do your users think about running? For some, it's great; for others it's new and strange, or embarrassing to be out of shape.

Evaluation: With conscious awareness, the mind does a quick cost-benefit analysis. How hard will the action be to take, what's the action's value for the user, what are other alternatives, etc.? For some users, running is a net negative (maybe it aggravates a knee condition) and for others, positive.

Ability: The person must actually be able to act and know it. The person must know logistically what to do, have the resources to do it, and not be dissuaded by an assumption of failure. Some users may not have running shoes, for others it's raining outside: they can't run even though they want to.

Time pressure: The person needs to have a reason to act now, rather than doing something else that is more urgent. The user may want to run, but is busy doing something else.

Execution: If all of the above are in place, then a person can execute the action.

Together, they form the C-R-E-A-T-E Action Funnel. At each point, people leak away: either intentionally deciding not to take the action, or becoming distracted by other things. Designing for Behavior Change helps people pass through all five stages, from inaction to action. If the user faces obstacles, often they can be resolved; but, that process takes time and leaves the person open to distraction along the way.

There are three basic **strategies** to pass this funnel: helping users make a **conscious choice** to act, triggering an ingrained **habit**, or restructuring the action to "**cheat**" so the product performs the action on the users' behalf, given consent. Each of these *start* with a conscious process, and so we focus on that here (all three are covered in the full book).

Step 2: Discover

Designing for Behavior Change builds upon a clear understanding of the target outcome, action, and actor:

The **Outcome** is **what** will be different in the real world when the product is successful;

The **Actor** is **who** will cause that change: the actor is usually the user of your product; and

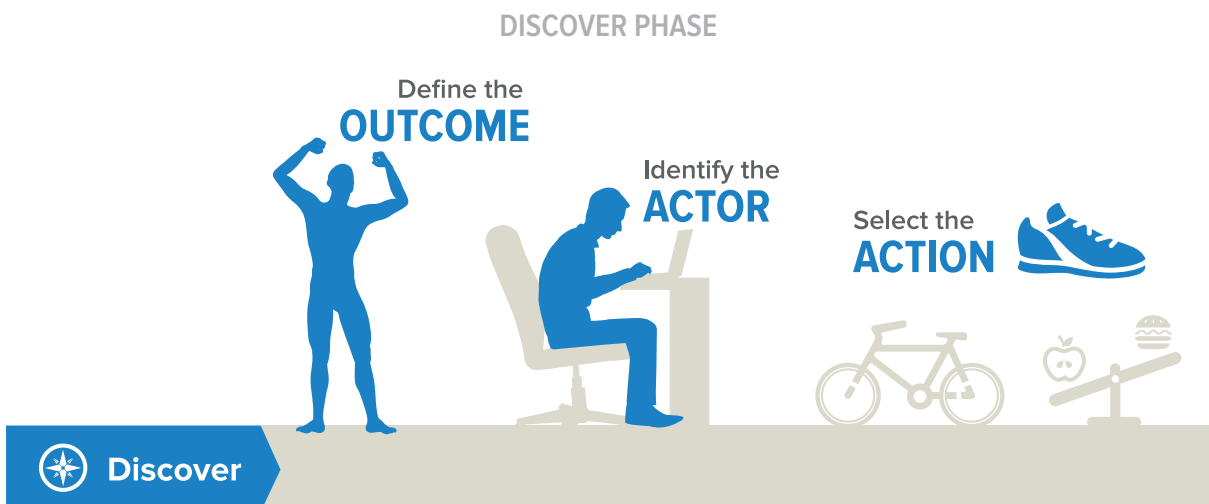
The **Action** is **how** the actor will do it – the behavior the actor will undertake.

Let's say your company has identified a market opportunity: people want to be healthier, and aren't satisfied with current products. Here's how the process would go:

1. **Define the Outcome:** Make sure it's observable. Avoid states of mind like "knowing how to eat healthy" that fall short of the outcome you really care about. E.g. Weight loss.
2. **Identify the Actor:** Who is your target market? The clinically obese? Active 20-25 year olds? Be specific as possible. E.g. Sedentary office workers in New York City.
3. **Select the Action:** Brainstorm at least 5 very different ideas about what action your actors can take that will meet the outcome (for example: healthier eating, a diet pill, gastric bypass, exercise). Then, evaluate according to four criteria:
 - a. **Impact:** How well will the action actually achieve the target outcome?
 - b. **Ease:** How difficult is it for the user to take that action?
 - c. **Cost:** How costly will it be for you to build a product supporting that action?
 - d. **Fit:** does the action make sense for the company's larger goals and culture?

For example, a diet pill may be effective, but is very costly to develop and doesn't fit the culture of the company. Let's say you decide on the action of running.

The goal of the discovery phase is two-fold: (a) to provide guidance what to design and build and (b) to *fail fast*. You can find problems early in the development process: problems where the team disagrees on the product's actual purpose, who the target audience is, how the product will be judged for success or failure.



Step 3A: Conceptual Design

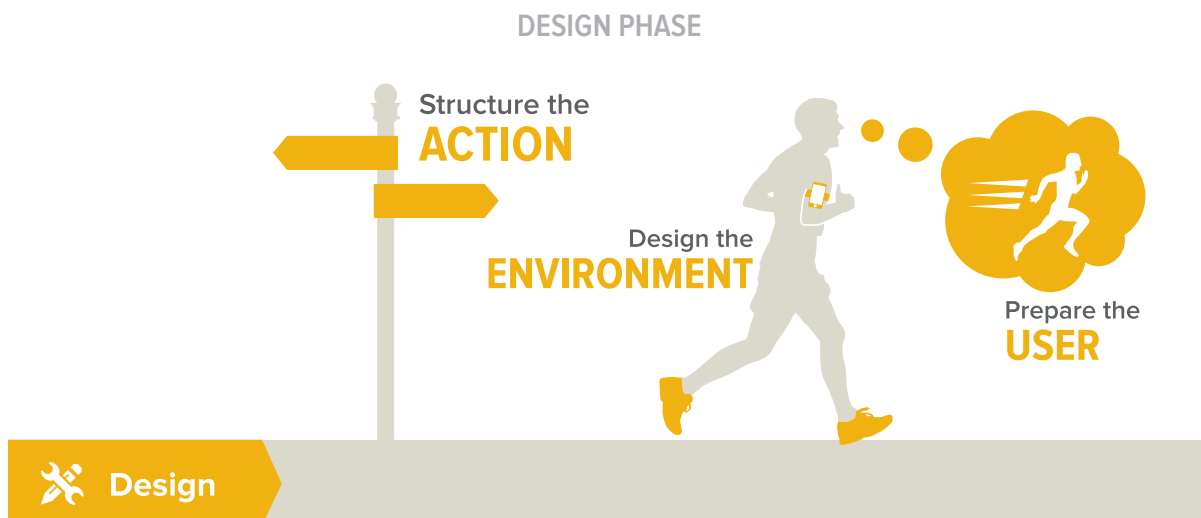
In the design phase, we deploy a considerable body of behavioral research, at both a **conceptual** level (what functionality the product should have), and at the **interface** level (what the product should look like).

At each level, we try to change the entire decision-making context to support action; the product itself is just one part. That context encompasses the *user*, the surrounding decision making *environment*, including the *product* itself, and *action* the user is taking. Here's how we shape each one, for the **conceptual design**:

1. **Structure the Action:** Break the target action down into discrete steps. Refine the steps using a combination of **automation**, **simplification**, and **tailoring** to the users' existing expertise and knowledge. For example, develop a series of runs of increasing difficulty for the user to train on. Focus on the **Minimum Viable Action**: the smallest user action that can test the product's viability.
2. **Design the Environment:** Design the **product itself** and broader decision **environment** to support action by ensuring the motivation and cue for action is clear, the user gets clear feedback on progress, and competing actions are sidelined. For example, a tracker on the user's wrist provides clear feedback and reminds the user to go running.
3. **Prepare the User:** Use a combination of **narration** (change how users see themselves), **association** (build upon other things they've done before), and **education** (show them logistically what's required to complete the action). For example, have the user think about themselves not just as someone who runs, but as a "runner" who's increasingly fit and healthy.

Use this three step process, focusing on the behavior, then the environment, then the person, to develop a **behavioral plan** – a narrative that describes what the user might do, to progress from not taking the action, to taking it. That plan can be articulated in a customer experience map, journey map, textual narrative, or a simple list of bullet points with annotations.

Then, for each step in the journey, use the Create Action Funnel as a checklist, to ensure you have all five pieces in place for action (cue-reaction-evaluation...). The three design elements (action, environment, and user) are *how* you influence behavior; the Create Action Funnel tells you *what* needs to happen here.



Step 3B: Interface Design

After you develop the conceptual design, translate the concepts into the raw material of your team's product development methodology. In an Agile environment, that's User Stories. In a sequential development environment that's *functional requirements and specifications*.

The team will take the stories or requirements and develop wireframes or clickable prototypes. But, avoid taking the behavioral plan as a simple blueprint for the actual UI: nobody likes a to-do list! The UX team must be free to innovate within the *functional* constraints given by the behavioral plan's user stories.

With wireframes or prototypes in hand, get out of the building and get in front of users. Identify where problems lie, using the Create Action Funnel as a guide (e.g.: do users have a strong, negative emotional *reaction?*). When you identify the problem, you can deploy tactics from the behavioral literature to encourage action, and resolve those particular challenges. Here are the most powerful, general purpose tactics:

Component	To do this	Try this
Cue	Cue Action	Tell the User What the Action Is
	Increase Power of Cue	Make It Clear Where to Act
	Increase Power of Cue	Clear the Page of Distractions
Reaction	Increase Trust	Make Site Beautiful and Professional
	Increase Interest & Trust	Deploy Social Proof
	Increase Interest & Trust	Display Strong Authority on the Subject
	Bypass Automatic Rejection	Be Authentic and Personal
Evaluation	Increase Motivation	Prime User-Relevant Associations
	Increase Motivation	Leverage Loss Aversion
	Increase Motivation	Use Peer Comparisons
	Increase Motivation	Use Competition
	Decrease Cost of Action	Avoid Cognitive Overhead
	Decrease Cost of Action	Avoid Choice Overload
	Increase Motivation	Avoid Direct Payments
Ability	Increase Logistical Ability	Elicit Implementation Intentions
	Decrease Constraints	Default Everything
	Decrease Constraints	Lessen Burden of Action and Information (Cheat)
	Increase Sense of Feasibility (Self-Efficacy) Constraints	Deploy (Positive) Peer Comparisons
Timing	Increase Urgency	Frame text to avoid temporal myopia
	Increase Urgency	Remind of prior commitment to act
	Increase Urgency	Make it scarce
	Increase Urgency	Make it time-sensitive

Based on the (revised) interface designs, you then build the product itself.

Designing for Behavior Change at a Glance

Step 4: Refine

Whenever we make products that interact with the vagaries of human behavior, we're going to get some things wrong. The design process makes the initial product *less wrong*. But, there will always be significant room for improvement. Improving the product proceeds like this:

1. **Assess the impact:** Start with clear metrics of what you're trying to accomplish – the target outcome and action from the Discover step. Before you measure anything, define what “success” and “failure” look like – to avoid wrangling and spin-doctoring after the fact. Then, it's time to measure:
 - a. **A/B Tests.** If possible, run an A/B test or another type of controlled experiment to measure impact. That's the gold standard, and there are numerous tools to help companies run them with online products. Statistical knowledge is not required (though it can help).
 - b. **Other Options.** If experiments aren't feasible, you'll need to measure overall impact, then formally or informally control for other things that might influence user behavior. Statistical techniques such as matching and panel analysis can mitigate these issues, but require statistical expertise.
 - c. **Build a data bridge.** If the outcome isn't directly measurable within the product, develop a data bridge: a statistical relationship between things you can measure in the app, and the real-world outcome. (E.g.: when people *say* they'll go running, 34% of the time, they actually do). It can come from existing research, or a small pilot study conducted by the team or third party academics.
2. **Develop Insights and Ideas to improve the product:** Watch your users using the product. Look for page-by-page drop-off in your data. Segment the user population and see who the product is helping, and who it isn't. All of these are techniques to find *where* problems occur. Sometimes, *why* they occur is obvious (the page is broken); at other times, you can do additional user testing or use the Create Action Funnel to think through the types of problem users face.
3. **Change and Measure:** Gauge the impact of each change on your users.
 - a. **Prioritize proposed changes** to the product designed to improve behavioral impact alongside other proposed changes meant to support business goals, engineering goals, etc.
 - b. **Test each major change.** Regardless of whether everyone on the team thinks it's a good idea, check the impact of that change on behavior. Human behavior is just too complex to accurately forecast, and a culture of testing can help check everyone's assumptions.

REFINE PHASE



 Refine

This section has a set of exercises you can use with your team. For each of the exercises, divide into groups of up to 8 people. Each group should have a shared writing space (whiteboard, butcher paper, etc.).

Using the CREATE Action Funnel

You can quickly stress-test a product design (or proposed change to an existing product) by asking whether each stage of the Create Action Funnel would be an obstacle to users.

Component	Current State? Is This An Obstacle?	Potential Improvements?
Cue to think about taking action		
Emotional Reaction		
Conscious Evaluation of costs and benefits		
Ability to act (resources, logistics, self-efficacy)		
Timing and urgency to act		

Notes:

Conducting the Discovery Phase for a New Product

The goal of this exercise is to determine the aims of the product — the outcome, action, and actor that the product should target.

BACKGROUND

Project Name: _____

Date: _____

Product Vision or Market Opportunity: _____

Scope of the Project:

New Product

New Product Feature

Revamp of Entire Product

Revamp of Feature

Tweak Existing Feature

Product Domain:

Website

Web App

Mobile App

SMS App

Hardware + Software

Whatever it takes

Other constraints: _____

DISCOVERY

Company Objective: _____

Target Outcome for User: _____

How Could You Measure It: _____

What Is Success by this Metric: _____

Target Actor: [*You complete this in the next step*] _____

Target Action: [*You complete this in the next step*] _____

Conducting the Discovery Phase for a New Product (Continued)

PERSONA

Primary behavioral persona targeted: _____

Other personas among the target actors: _____

POTENTIAL ACTIONS

Brainstorm at least 5 very different ideas for actions that your actors can take to achieve the outcome.

1. Evaluate your actions according to 4 criteria:
 - a. **Impact:** How well will the action actually achieving the target outcome?
 - b. **Ease:** How difficult is it for the user to take that action?
 - c. **Cost:** How costly will it be for you to build a product supporting that action?
 - d. **Fit:** Does the action make sense for the company’s larger goals and culture?
2. Select the best action according to user and company needs based on these 4 criteria. There’s no hard-and-fast rule here – it depends on the constraints and priorities of the company.
3. Take a look at the behavioral personas again; can a single product really serve everyone? Identify which personas in particular the product will prioritize, to refine and clarify your target **actor**.

Action	Impact	Ease	Cost	Fit	Summary

Designing the Behavioral Plan

In this section, describe where users are starting from (#1) and each small step the user needs to undertake to move from inaction to action (#2-#8). Use additional paper as needed. Afterwards, ask whether each part of the CREATE Action Funnel is present at each step. If not, look for ways to restructure or simplify the action, change the environment, or educate the user to help smooth the process.

1. WHAT IS THE USER'S INITIAL STATE?

2. WHAT CUES THE USER?

3. WHAT DOES THE USER DO NEXT?

4. WHAT DOES THE USER DO NEXT?

5. WHAT DOES THE USER DO NEXT?

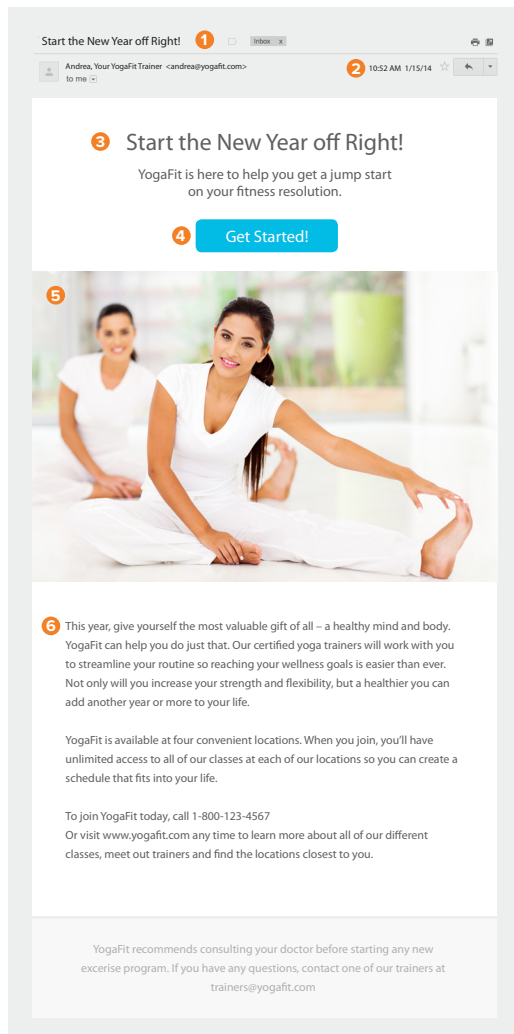
6. WHAT DOES THE USER DO NEXT?

7. WHAT DOES THE USER DO NEXT?

8. FINAL USER ACTION!

Designing a Sample Email Announcing Your Product

Here, we'll design a simple email about the product, as an example of the behavioral questions you'd ask when working on the full architecture and layout of the product itself. Take a look at your behavioral plan (previous page) — what are the riskiest or more difficult pieces? Use the chart on page 6 to select specific techniques to employ in this email (like scarcity, social proof, etc.) to help users overcome those obstacles.



1. Subject Line: _____

2. Send Day & Time: _____
3. Short Description: _____

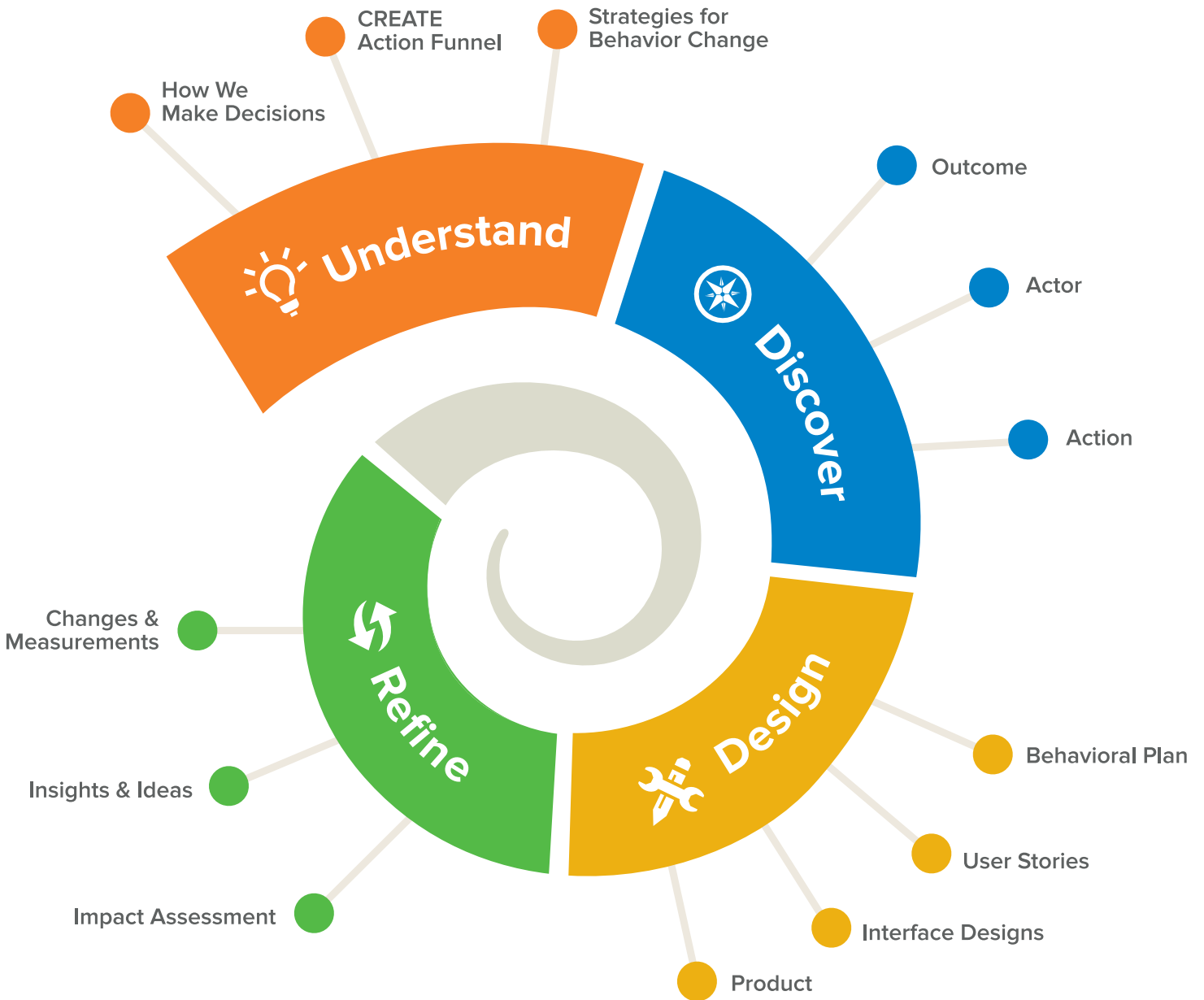
4. Link Text: _____
5. Image: _____
6. Detailed Description: _____

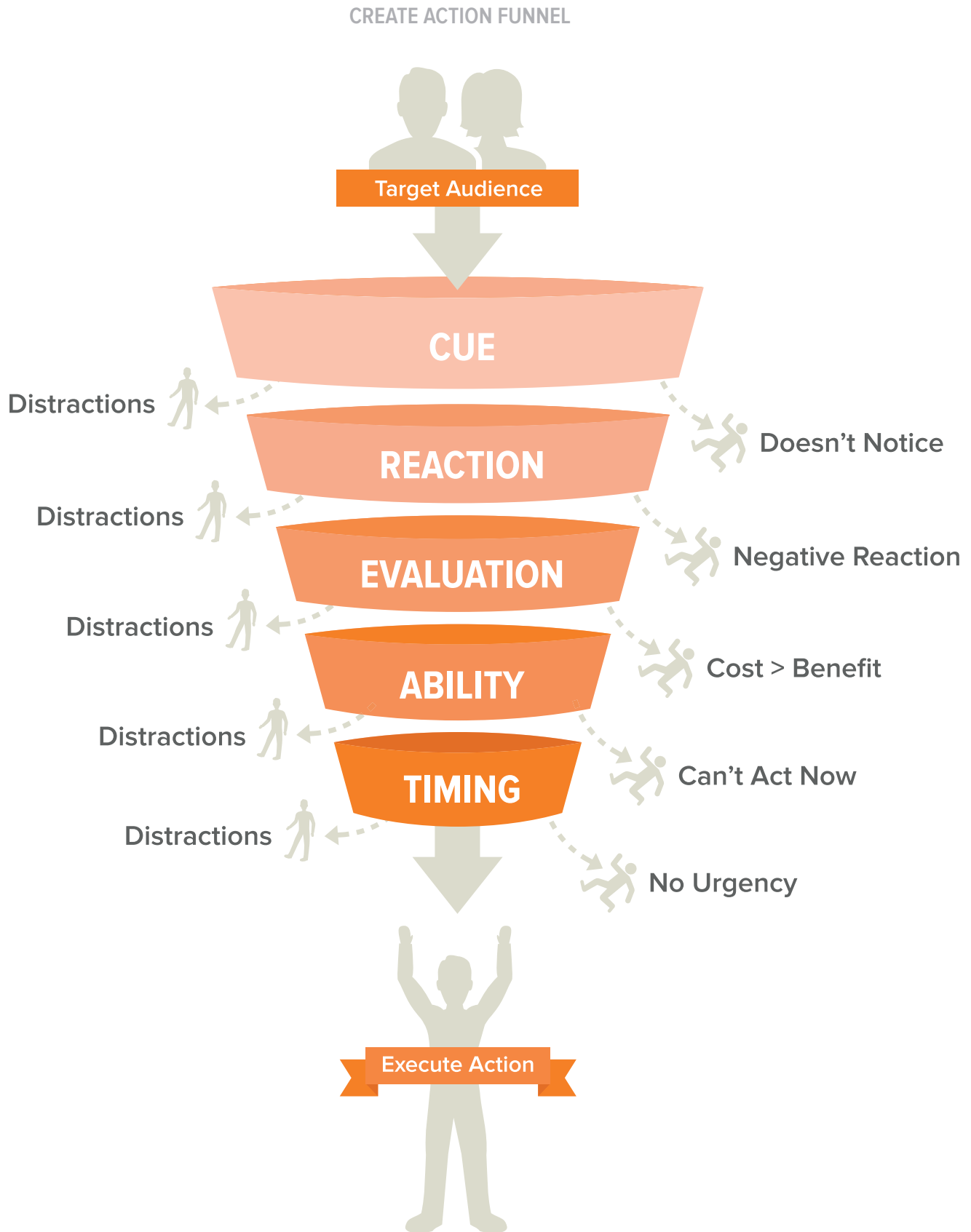
Ok, that's a good start. Now, what about this email do you want to test?

ELEMENT TO CHANGE

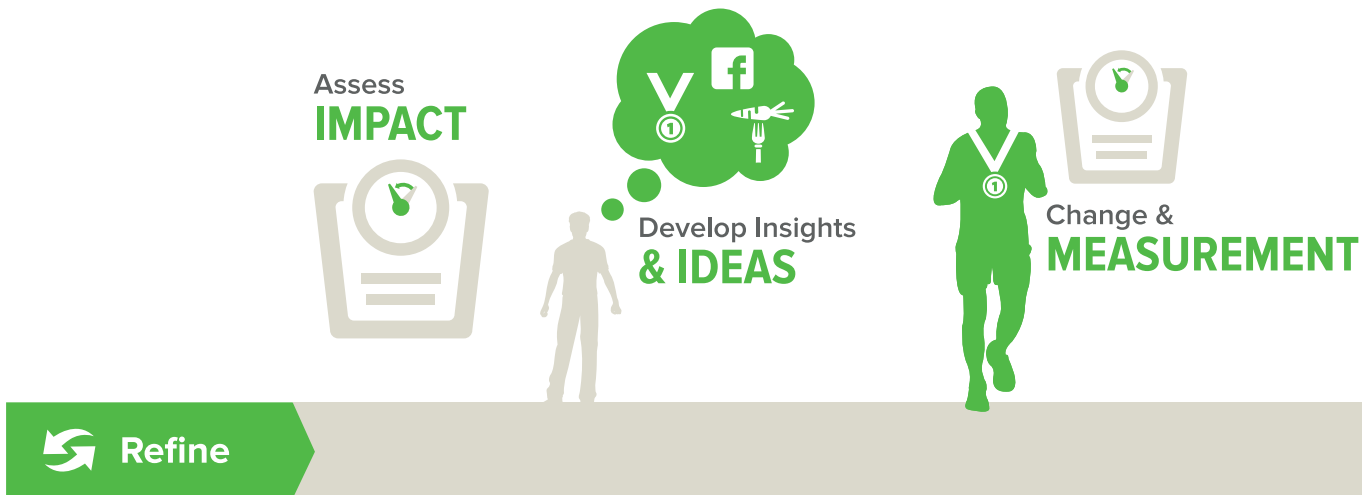
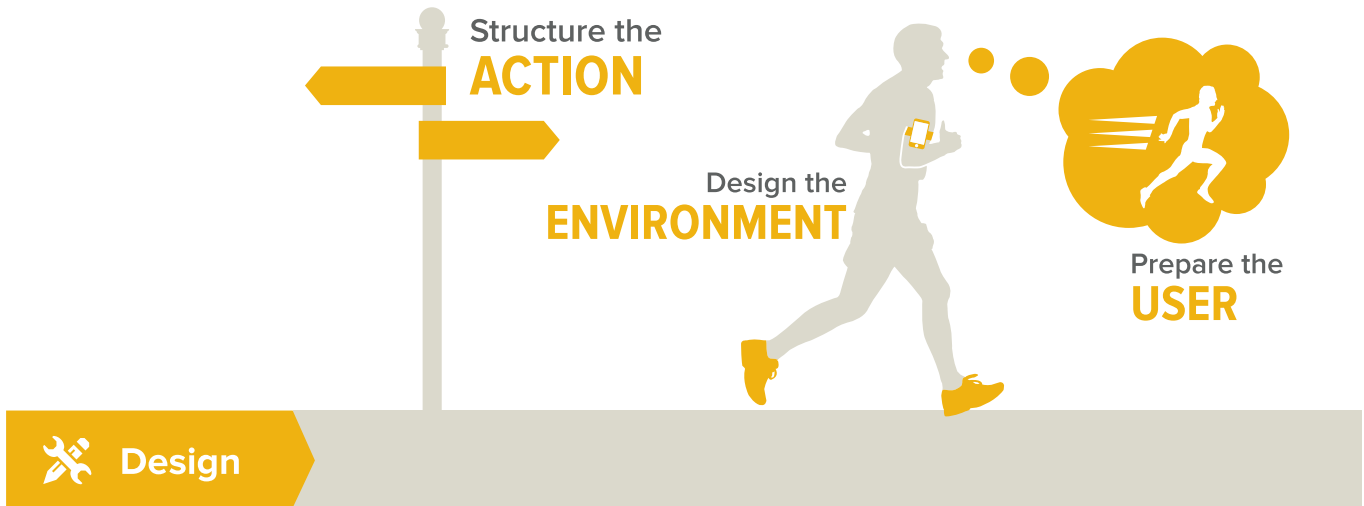
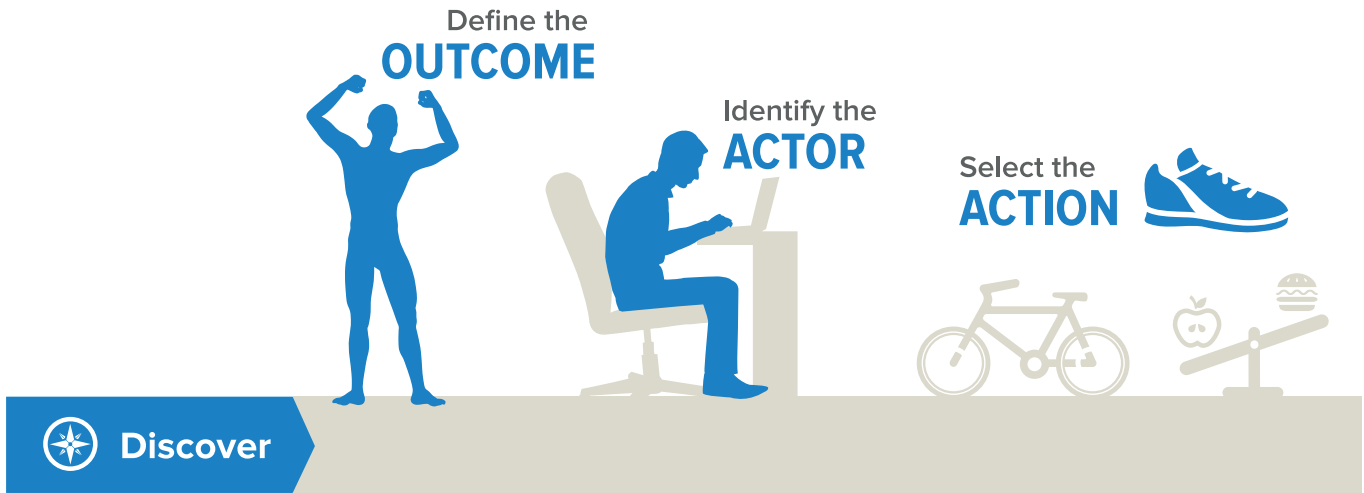
NEW VERSION TO TEST

THE PROCESS OF DESIGNING FOR BEHAVIOR CHANGE





REPEATING PHASES





Please email Steve Wendel with any comments or suggestions

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