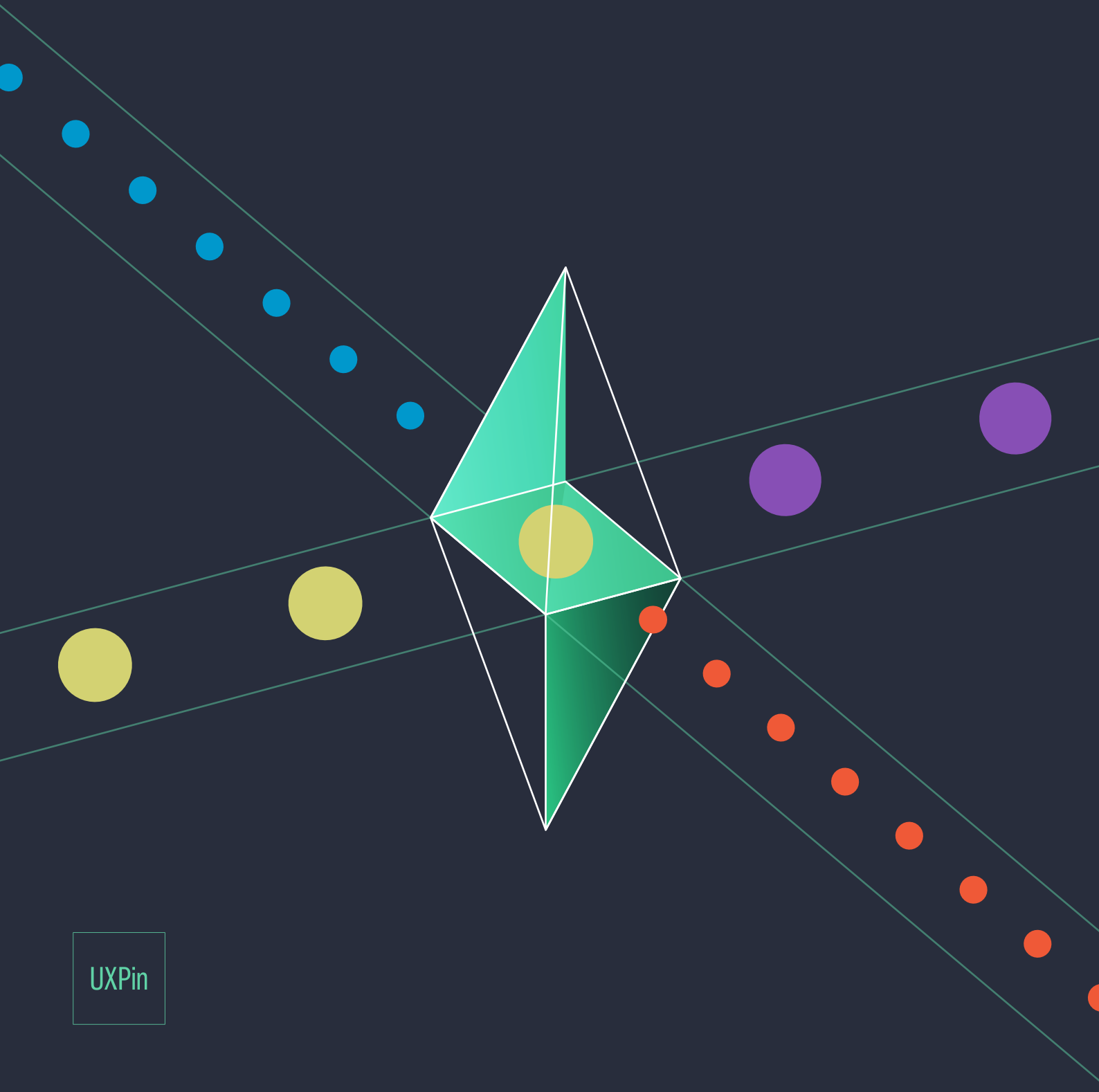


# Interaction Design Best Practices

Mastering Time, Responsiveness, and Behavior



UXPin

# **Interaction Design Best Practices**

**Mastering Time, Responsiveness, and Behavior**

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# Introduction

*A quick note from the authors*

Interaction design can be broken down into 5 dimensions: words, visuals, objects/space, time, and behavior. Words are interactions. Visuals and objects/space are what users interact *with*. Time is what users interact *within*. And finally, behavior is how users and the interface *act* and *react*.

The first three dimensions allow for interaction, while the last two dimensions define interaction. In this volume, we'll dissect the last two intangible dimensions: time and behavior.

Interactions occur over time, while behavior triggers interactions. The user's first action can trigger many reactions that occur over time. There may be a lull in the user behavior as they await feedback from the interface, or they may engage in a series of rapid-fire actions in hopes of speeding things up. It all depends upon the task, the context, and of course, the user.

Behavior works both ways. Just like a conversation, your interface needs to react in a way that feels logical, natural, helpful, and most importantly, personable. Interaction design is much like poetry because your goal is creating conversations that live beyond the medium through which they occur.

In this e-book, we cover topics spanning UX design, UI design, psychology, and human-computer interaction. While these topics can get quite theoretical at times, we want to explain them as practically as possible. In our experience, we've always found it helpful to analyze visual examples, so you'll find plenty of explanations in plain English.

We wrote this book to be as practical as possible. Interaction design, especially when it comes to the intangibles, can become extremely theoretical as we dive into human-computer-interaction, psychology, UX design, and interface design. But this is a book of action, not of big words and lofty ideals.

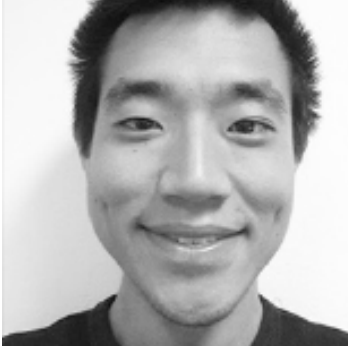
We will explain the theories, but teach by example.

Beginners can learn about the fundamentals of behavioral design such as Hick's Law, the three categories of animations, and friction vs. motivation. More advanced readers will learn how to create user habits, how to apply the art of persuasion towards interface design, and other tactics that combine practical design with human psychology. To make this book as actionable as possible, we've also

analyzed visual case studies from 30+ companies including **Apple**, **AirBnB**, **Google**, **Twitter**, **Mint**, **MailChimp**, **Kickstarter**, **Wufoo**, and **Netflix**.

We'd love your thoughts on what we've written, and feel free to share if you find this book helpful.

For the love of interaction design,  
Jerry Cao  
co-written by Kamil Zieba & Matt Ellis



Jerry Cao is a content strategist at UXPin where he gets to put his overly active imagination to paper every day. In a past life, he developed content strategies for clients at Brafton and worked in traditional advertising at DDB San Francisco. In his spare time he enjoys playing electric guitar, watching foreign horror films, and expanding his knowledge of random facts.

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Co-founder and head of product, Kamil previously worked as a UX/UI Designer at Grupa Nokaut. He studied software engineering in university, but design and psychology have always been his greatest passions. [Follow me on Twitter @ziebak](#)



With a passion for writing and an interest in everything anything related to design or technology, Matt Ellis found freelance writing best suited his skills and allowed him to be paid for his curiosity. Having worked with various design and tech companies in the past, he feels quite at home at UXPin as the go-to writer, researcher, and editor. When he's not writing, Matt loves to travel, another byproduct of curiosity.



# Understanding Time in Interaction Design

*How Timing Impacts UX, and How to Control It*

The elements of timing can be difficult to describe, but we all feel them, from the annoyance of waiting for something to load, to the exhilaration of breezing through page after page. The scale of timing is wide, ranging from noticeable increments to the tiny milliseconds that individually seem meaningless, but can add up to sway a user's opinion one way or the other.



*Photo Credit: Marcin Treder, UXPin*

Our discussion in this chapter applies to all content that changes over time: video, sound, animations, and more. We'll start by explaining why time matters, then discuss the elements of timing and how they can be improved, and then we'll explore how speed and simplicity play a role.

## Why Time Matters

Time can be a difficult concept to grasp because its range is so vast. Just as the size of an electron is almost unfathomable compared to the enormity of our galaxy, so too the span of a millisecond seems unrecognizable to the duration of a millenium.

But digital time is not the same as human time. A few seconds can mean the difference between a frustrating experience and a delightful one. We can attribute that to basic human psychology:

- **Limits of memory and attention** – As we described in the [first volume](#) on interaction design best practices, designers must evaluate the cognitive load of interfaces. Otherwise, users will suffer from the loss of information in short-term memory, which causes frustration.
- **People must feel in control** – Nobody wants to be at the mercy of technology. Like we stated in a [recent blog post](#), some people still treat computers as a black box. Digital products that make you wait will give off the impression of incompetence and/or arrogance.

Digital time does not equal human time.  
Only a few seconds separate frustration from delight.



There is a rhythm to user actions. In the field of UX, the power of time is measured in **magnitudes of 10**. It takes users 0.05 seconds to decide if a website is worth their time. If they decide to stay, they usually leave within 2-4 minutes.

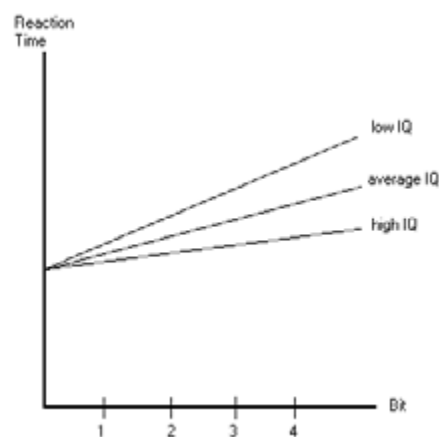
Whether the goal is getting an update on your **Facebook** feed or comparing and buying products on **Amazon**, every experience breaks down into a series of interactions, and the time between interactions has a compounding effect on the user experience.

## Elements of Time in Interaction Design

So how exactly does time relate to interaction design? David Malouf, Design Consultant, believes that **time separates interaction design from all other UX disciplines**. Time is more than just a linear progression because all interactions happen over time. As Malouf suggests, we can actually examine time from 3 separate perspectives: pace, responsiveness, and context.

### 1. Pace

In terms of design, pacing relates to how much is accomplished in a given amount of time. Immediately, you may be thinking, “well, the more the user can accomplish, the better,” but that’s not necessarily true.



*Photo Credit: Roth's application of Hick's law by Zetkin, Creative Commons CC BY-SA 3.0*

Experiential flow is much more important than the sheer number of available actions. As described by **Hick's Law**, too many interface objects actually impede decision-making (and therefore goal accomplishment).

The flow of the experience matters more than the number of available actions at any time.



Consider, for example, the difference between one gigantic signup form and a multi-page series of smaller forms with the same information. As discussed in *Web UI Patterns 2014*, the one long form will take less time, but the series of smaller forms will seem more manageable and less complicated to the user.

In the below example from **LinkedIn**, combining a wizard form with a progress bar is a great tactic for improving the pace of the experience. The long process of creating a professional profile is divided into 4 manageable steps. Users can also see how far they've progressed, which incentivizes them to proceed further. Pacing is less about efficiency, and more about user comfort – not overburdening them, but not slowing them down either.

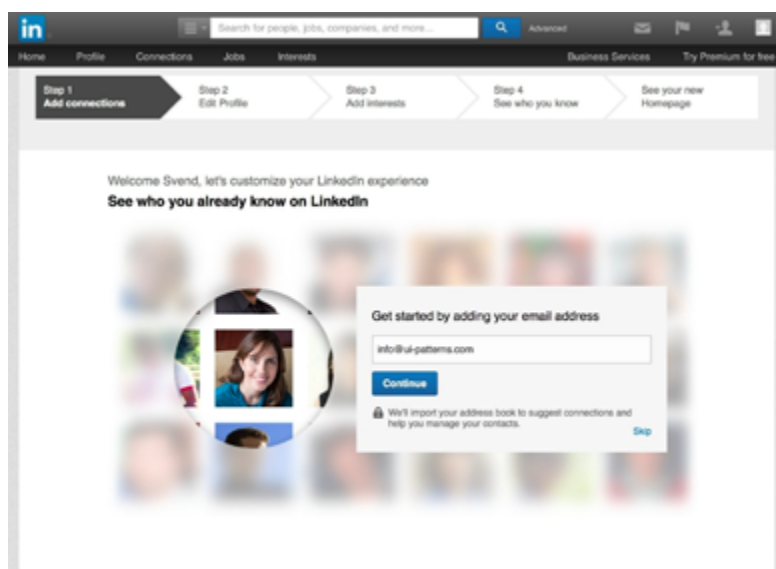


Photo Credit: [www.linkedin.com](http://www.linkedin.com)

## 2. Responsiveness

A product's reaction time relates directly to the level of user control. According to Jakob Nielsen, the **3 most important response time ranges** for digital products are:

- **0.1 second – Direct Control** – The user feels they are directly manipulating the system, as they would a physical tool. No feedback is necessary except the visual manifestation of their results.
- **1 second – Indirect Control** – The user notices the delay, but still feels in control over the site experience. For example, this delay is acceptable for loading new pages.
- **10 seconds – Little Control** – The user loses their attention and their workflow is interrupted. Feedback helps minimize abandonment, which is why load screens are so popular.



Source: [UXPin](#)

Delays in response time must match the magnitude of the task. For instance, 5 seconds is acceptable for loading a cloud-based dashboard, but it's unacceptable for triggering a dropdown menu. The longer the delay, the more the relationship between the user and the interface dissolves.

### 3. Context

How, when, where, and even why an application is used all affect the perception of time.

For example, the average website visit lasts 2-4 minutes, while the [average ecommerce sale lasts 28 minutes](#) (and that's not even factoring in what kind of sale – buying a car could take days). Likewise, someone comparing prices on their phone while at the mall values speed more than someone doing the same thing at home on their couch.

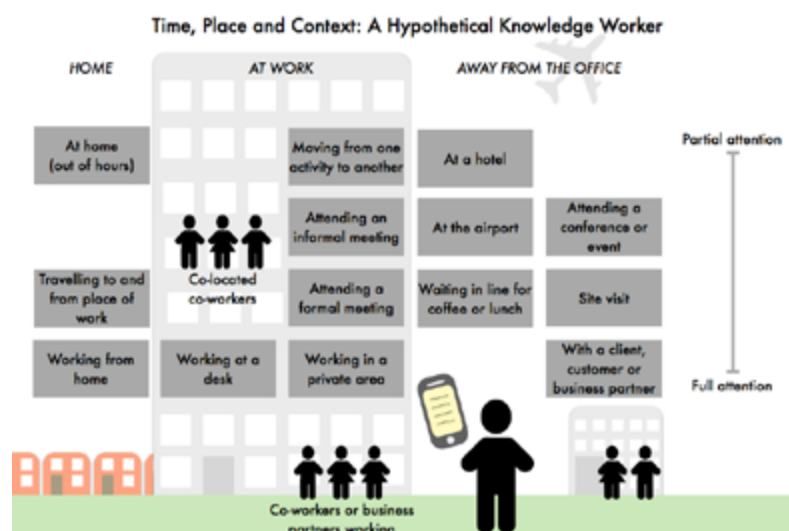


Photo Credit: *Time, Place and Context: A Hypothetical Knowledge Worker* by James Dellow, Headshift Asia Pacific. Creative Commons CC BY-SA 3.0

If you find that users are leaving your site prematurely, you may want to revise your link copy (as we discussed in *Interaction Design Best Practices Vol. 1*). You can also check the visual hierarchy (colors, contrast, typography) of the page to ensure important information is emphasized.

However, these attention-grabbing methods can be counter-intuitive on a site where you want to immerse the user in a single page of content, such as a blog. In that case, you'd probably want to make better use of white space to emphasize the content (similar to **Medium**). The same strategy for capturing attention has two different effects depending on the type of site – it all depends on context.

## Faster = Better... To A Certain Extent

When discussing an interface's pace, we mentioned that [faster is not always better](#)

To be fair, most time-related usability problems result from the system being too slow. But there are some instances when speed kills. Most often, an interface that is *too* fast can lead to two problems: information is missed, or the users can't keep up.

Faster is not always better. If your interface is too fast, users might miss information or fail to keep up.





## 4. Users Miss the Information

When information changes too quickly, the user might miss it, even if they were simply looking at the wrong part of the screen for a moment.

These apply mainly to unexpected actions that were *not* initiated by the user, and generally the farther the change is from the relevant action, the more likely the change will be missed. A simple fix is to draw attention to the change with properly executed animation (which we'll discuss later in the book).

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Photo Credit: [Siemens.com](http://Siemens.com) via [NNGroup.com](http://NNGroup.com)

As Jakob Nielsen, co-founder of the Nielsen-Norman Group [describes](#), users failed the task even though the top of the page

mentioned the sale in large point font. Why did this happen? Because the carousel (which looks a lot like an accordion) auto-rotates every 5 seconds. Once that screen changed, the only other indication was the banner on the right side – and that was mostly ignored due to [banner blindness](#).

You can also see that the meaningless words “Rewarding. Life. Style.” also show up in the carousel and banner. Like we described in [Interaction Design Best Practices Vol. 1](#), words are the foundation for interactions – designers must delete any fluffy content.

## 5. Users Can’t Keep Up

Nielsen also explains that users who notice rapid on-screen transitions [still may not understand them](#). This is most common with carousels, rotators, and other automatic functions – a user becomes intrigued by the image on the screen, but by the time they move their mouse over it, it’s been replaced by a new, less interesting one.

You can see that the prior Siemens example shows a combination of bad UX decisions. The 5-second carousel, however, ranks as the worst.

Because of its prime location on the page, the carousel image immediately draws user attention. But instead of clearly communicating the sale information, the carousel disorients the user by changing the slide every 5 seconds. Users didn’t trigger the

action, so in the effort to regain control of the experience, they become more sensitive to other UX shortcomings (like the bad copy, for instance).

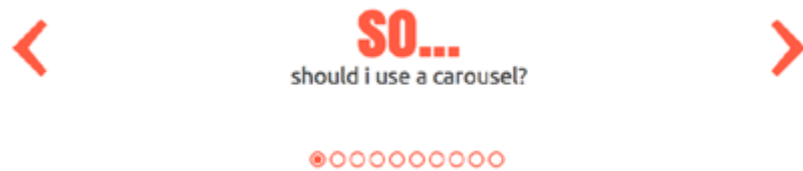


Photo Credit: [www.shouldiusecarousel.com](http://www.shouldiusecarousel.com)

In fact, it's best to do away with auto-rotating carousels altogether since they are **distracting at best and frustrating at worst**. Users trying to accomplish goals unrelated to the carousel content will find it distracting. Users who actually need to access the content won't react in time.

Reactionary problems are even worse for foreign-language users, the elderly, the disabled, or those unfamiliar with technology. To make sure your interface doesn't react too quickly, here's some other helpful tips:

- **Hand control to the user** – Fast on-screen updates shouldn't happen unless the user triggers them. Otherwise, this violates the **Principle of Least Astonishment** that states that users generally don't like surprises for core functions.
- **Slow it down with an animation** – As Jakob Nielsen suggests, try signalling any on-screen changes with animations that last between 800 ms – 1 second.

- **Give each slide enough time** – If you absolutely must use an auto-rotating carousel, read the copy aloud, then multiply by 2.5, as designer Tammy Everts [suggests](#). That’s how long you should show each slide. Then once people mouse over a slide, make sure the rotation pauses.

Remember, perception is reality in interaction design. It’s much better to make the wait more pleasant than it is to push people forward in line.

## Strive for Simple Clicking Over Quick Clicking

While we’re on the topic of speed, it’s important to dispel another common design misconception, the 3-click rule – the rule citing that a user should be able to access any content on a site within 3 clicks. As we said in our free ebook [The Guide to Prototyping](#), the 3-click rule can be best described as “[well-intentioned, but misguided](#).”

**Hubspot** UX Director Joshua Porter [ran a study](#) to show that there’s no real correlation between the amount of clicks and a user’s satisfaction. The lesson here is that designers should worry less about users completing a task as *quickly* as possible, and more on completing the task as *easily* as possible – too very different goals that warrant very different interface designs.

To further our point, just take a look at this diagram. It follows the 3-click rule since any page is accessible within 3 clicks, but does that pattern actually improve usability? It actually hurts it because users now need to sift through too many navigation choices at once. Besides, once someone reaches a new page, they'll need to sift through all the options again.

Worry less about the speed of task completion.  
Focus more on the ease of task completion.



tweet this



Photo Credit: [www.oracle.com](http://www.oracle.com)

Just take a look at the **Oracle** site above. Sure, you can access any product category (like database or Java) within 3 clicks, but do you actually *want* to?

Any kind of fanatical adherence to strict guidelines like this is inadvisable – plenty of successful sites require more than 3 clicks to fully appreciate.

For example, let's look at these series of clicks during when signing into Chase to redeem my rewards for cash:

1. I visit the homepage. Navigation options include *Products & Services*, *News & Stories*, and *Log In or Enroll*. I see the call-to-action to log in and type in my info.

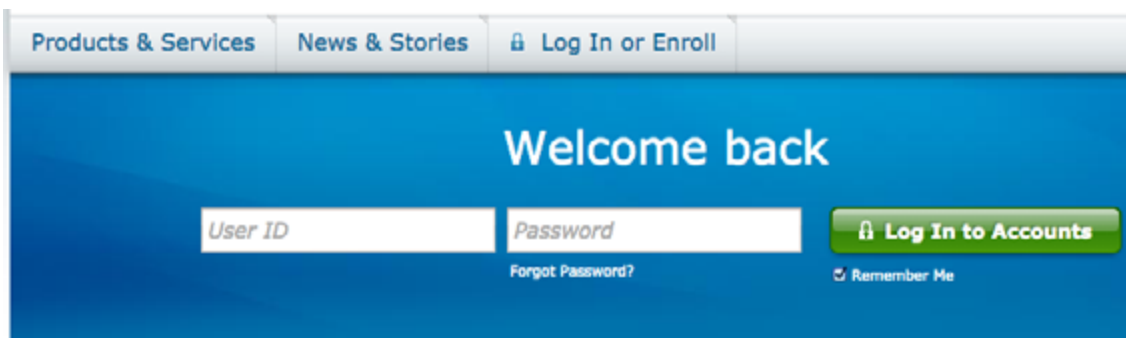


Photo Credit: [www.chase.com](http://www.chase.com)

2. My account page loads. I see a call to action for *Ultimate Rewards* and I click it.

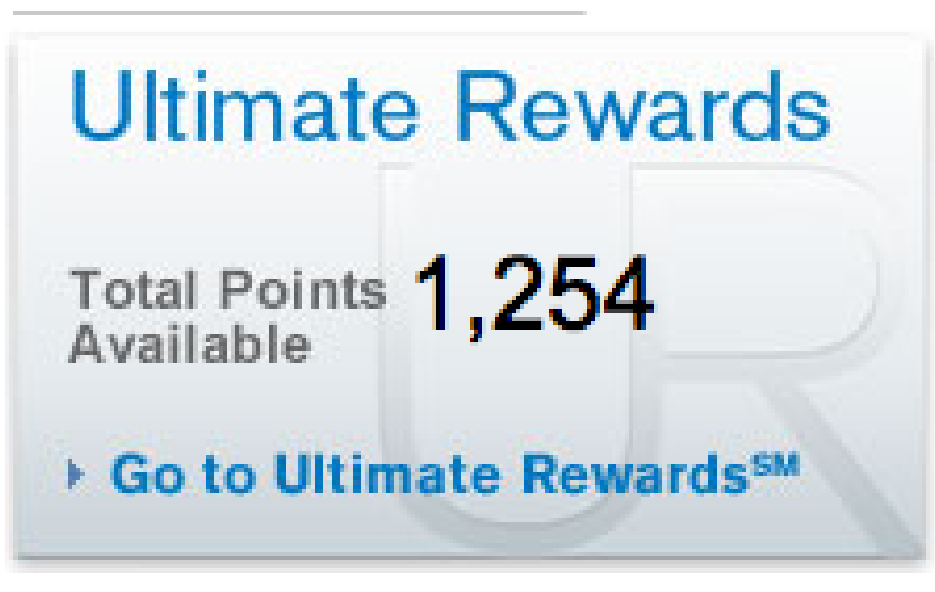


Photo Credit: [www.chase.com](http://www.chase.com)

3. The rewards page loads. I see options to either *Use Points* or *Earn Points*. I click on *Use Points*.

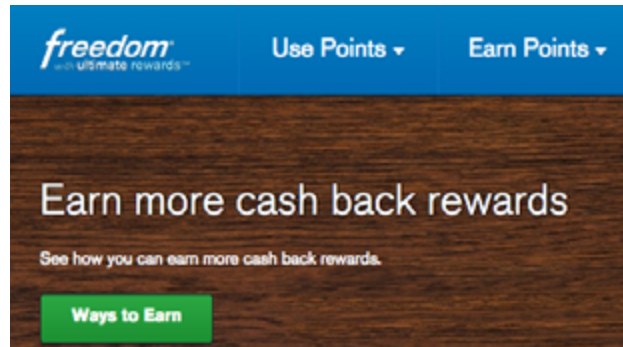


Photo Credit: [www.chase.com](http://www.chase.com)

4. **Once** the point redemption page loads, I can see how many points are available and how many I can redeem. In this case, I know that I still need to rack up more points.

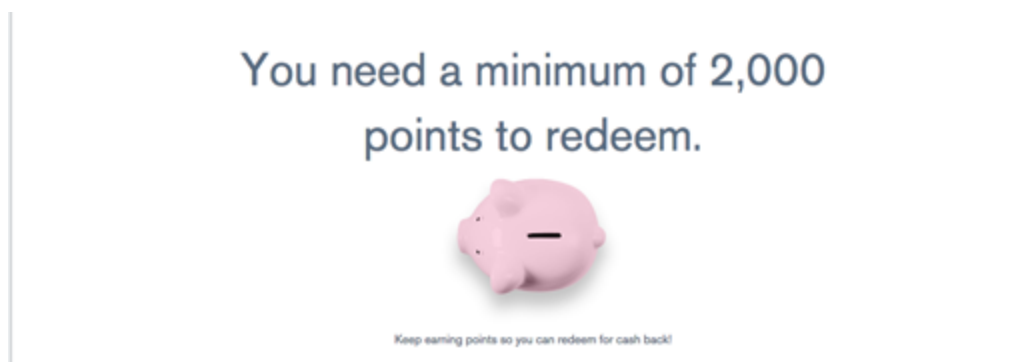


Photo Credit: [www.chase.com](http://www.chase.com)

More than 3 clicks are required, but each of the clicks requires very little effort. Each click also moves the user forward a step on their path to the goal. Now, if you were adamant about the 3-click rule, you might make one of the top-level navigation labels “Use Your Rewards”. The clicks are certainly reduced, but this wide-and-flat strategy will eventually present too many items to sift through at once. Usability is therefore sacrificed for the sake of a shorter click path.

We want to emphasize the spirit behind the 3-click rule: clicking should be as simple and organic as possible. Make sure that the time users spend on site isn't just minimal, but worthwhile.

## Takeaway

When it comes to interaction design, even a delay of one second can mean the difference between success or failure. If the user experience is too slow, then people become frustrated. If the user experience is too fast, people might miss vital information (or not know what it means). Understand the human perception of time, the limits of speed (and carousels), and the importance of directness in clicking.

When in doubt, remember this simple usability principle: clear is smooth, and smooth is fast.

In interaction design, perception is reality. Instead of forcing users through the line, make the wait more pleasant





# Interaction Design for Decisionmaking

*Decision Processes Over Design Elements*

Decisions are the first step of user interactions. Before users click on a link or image, they first need to decide that such an action is worthwhile.

We understand that a user's choice to engage with a site or app is affected by more than just the amount of interface objects. Color, typography, and visual hierarchy are among the dozens of elements that influence decisions. But even the prettiest color scheme, the sharpest typography, and the most sensible visual hierarchy don't matter if they're executed without considering the user's decision-making process.

Fail to provide enough decisions, and users will go elsewhere to find what they want. Provide too many decisions, and users suffer from [choice paralysis](#). As we described in [Web UI Best Practices](#), all design principles require balance for success.

In this chapter we'll talk about how to effectively apply Hick's Law towards interaction design, and end with tips on how to influence user decisions.

## Why Hick's Law Is Crucial to Interaction Design

In 1951, British psychologist William Edmund Hick conducted the experiments that led to [Hick's Law](#), which states that the time required to make a decision increases logarithmically based on the number of choices available.

Fast forward to the modern age, and Hick's Law is now a strong argument for clarity and simplicity in web and mobile design.

Traditionally, designers accept the most basic interpretation of Hick's Law: limit the amount of options you have in navigational

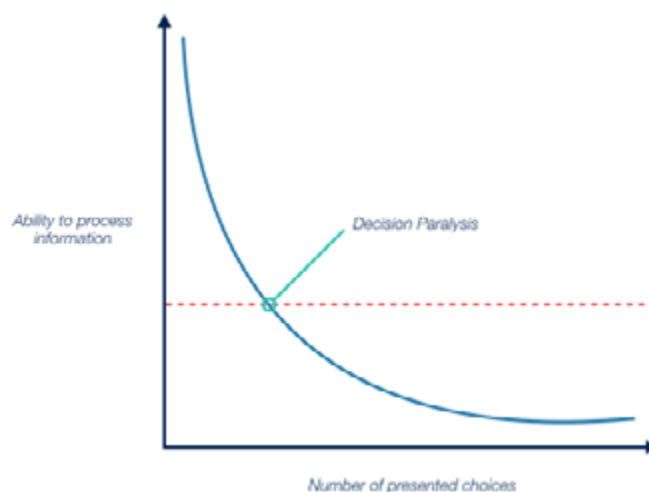


Photo Credit: Marcin Treder, [UXPin](#), based on: [Shake, Rattle & Roll to my Magic Number: 7 +/-2](#) by Kate Simpson

menus, dropdowns, etc. This isn't wrong – in fact, it's actually a good tip. Designers should always trim the amount of on-screen choices down to only what's needed to accomplish immediate user goals.

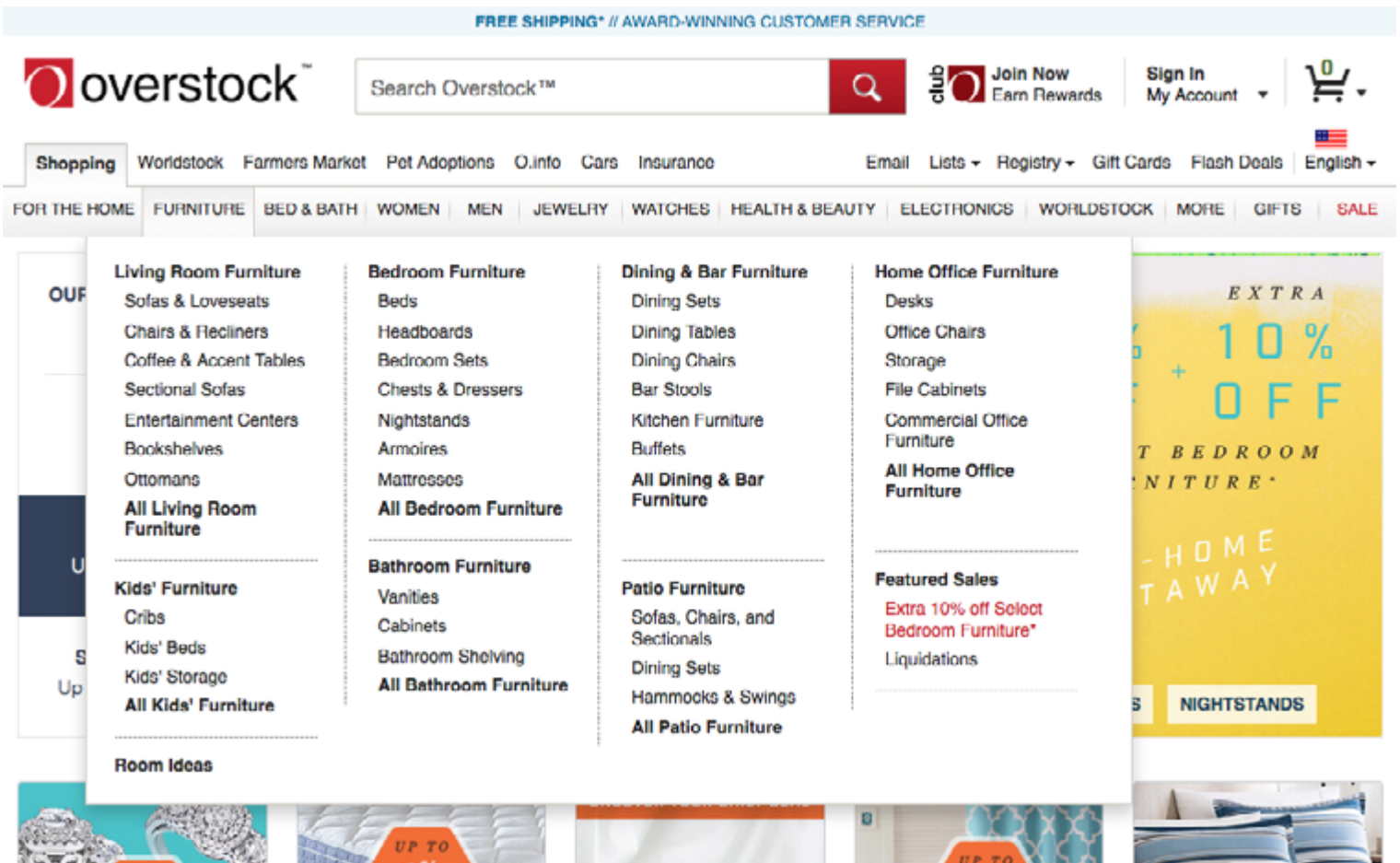


Photo Credit: [www.overstock.com](http://www.overstock.com)

In the example above, the aptly named **Overstock** site suffers from a mess of options.

Notice the lack of consistency in the information architecture: *Men* and *Women* are clustered together with specific product categories like *Watches* and *Jewelry*. Hovering on a top-level category like *Furniture* instantly triggers a submenu featuring a clutter of secondary categories. As we described in *Interaction Design Best Practices*

*Vol. 1*, interfaces must be consistent in order to be learnable (and therefore usable).

In this case, the transition of information is far too jarring.

Unless the user knows precisely what they want, Overstock's interface quells any desire to browse freely, which is one of the most enjoyable elements of online shopping. Following the **3-click rule** too literally can lead to these UX mistakes. Sure, users can technically find a kitchen table within 3 clicks, but the decision process is muddled with too much information parsing.

Now, let's compare that to **Amazon** below:

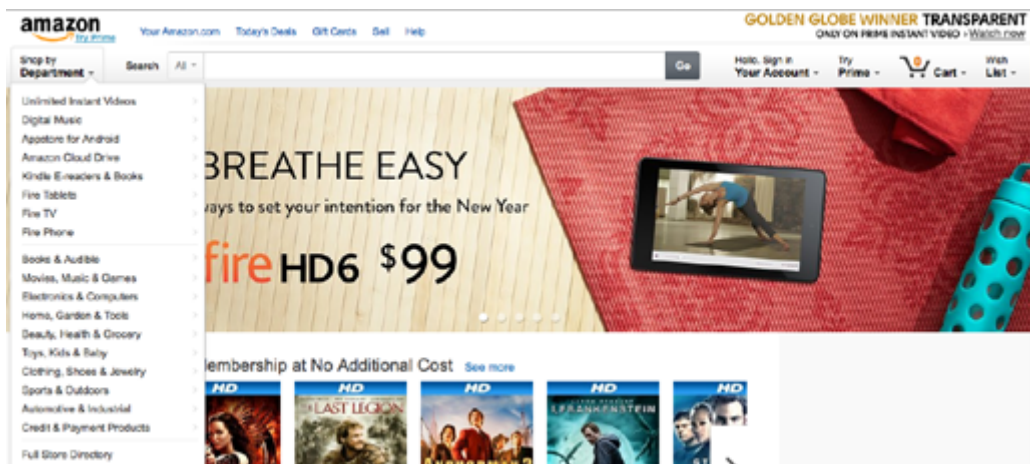


Photo Credit: [www.amazon.com](http://www.amazon.com)

Amazon, which offers roughly the same breadth of products, perhaps more, keeps it simpler.

The *Search* bar is free of competing visual elements, encouraging informed users to dive right in. But the option of navigating through

a menu remains available, though as a simplified dropdown (that doesn't sprawl across the page). Instead, the interface incorporates a compartmentalized decision-making process.

Users must choose their category first before seeing a more-involved submenu. The key lesson here is that Amazon keeps the options hidden until they're needed, supporting a paced decision-making process. Ultimately, this simplifies both the interface and the process of shopping.

Limit on-screen choices only to what's needed immediately to accomplish user goals.



This is Hick's Law applied well. The trouble is that most designers stop here. They fail to see the more far-reaching applications of the law, limiting their comprehension of interaction design.

## How to Apply Hick's Law to All Content

Decision-making extends far beyond deciding which menu option to use – in fact, the choice to use a menu at all is also a decision. This [new line of thinking](#) requires a broader, more abstract interpretation of Hick's Law that's quite useful.

When analyzing the spirit of Hick's Law (instead of just the words), several new strategies emerge for simplifying user decisions. In

our experience, we advise designers to trim content when possible, return to the fundamentals, and keep eye scanning in mind. Let's take a deeper look below.

## 1. Reduce Secondary Content

Consider minimalism.

The heart of Hick's Law is that more options mean more cognitive stress and more competition for your user's attention. Less options, then, means less stress – and a higher likelihood that your users will choose the actions you want them to. Secondary content like widgets, external ads, and sidebar tools may seem to enhance your product; however, the cost is that they water down the main content.

If you want draw more attention to your primary content, trim the secondary content.



Photo Credit: [www.overclothing.com](http://www.overclothing.com)

At **Over**, the choices are simple, and the site is aesthetically pleasing. Users are presented with only the basic options on the home-

page, with the popular Winter Collection 14/15 selection the most easily visible.

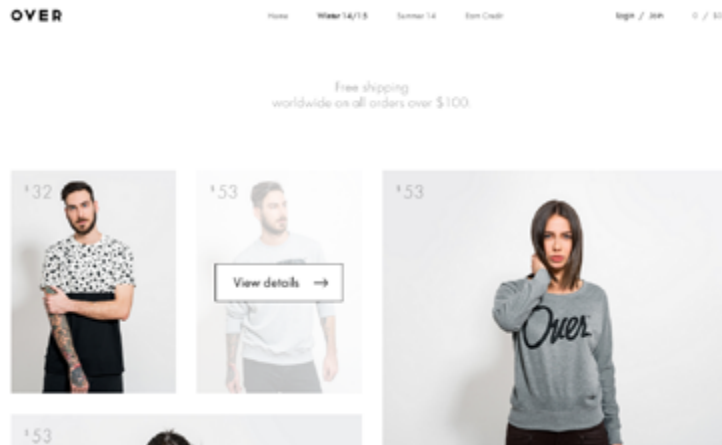


Photo Credit: [www.overclothing.com](http://www.overclothing.com)

Once users select a collection, the site creates an exploratory experience by only providing details on hover. The visuals allow the clothing speak for itself, enticing users to know more. As Stephen P. Anderson alludes to in his book *Seductive Interaction Design*, this simple approach lures users into deeper engagement with the site by alluding to (instead of plastering) the next steps.

In short, provide only enough secondary content to move users towards their goal. Overdo it, and you disrupt the pace of the experience.

## 2. Execute the Fundamentals Flawlessly

As a designer, you probably know the basics of good interface design. If you execute them well, they will naturally help with smoothing out the decision-making process – especially for primary decisions.

Within **50 milliseconds**, users will know if they want to stay on your site. Design your top-tier decisions – namely the main navigation options – to be as clear as possible. To achieve this, remember the fundamentals of UI design described in *Web UI Best Practices* such as:

- **Layout** – Are your primary choices displayed prominently, or are they subdued by less important options?
- **Structure** – Is your information displayed coherently? Make sure even first-time users know how to access content.
- **Color/Contrast** – If you’re opting for a minimalist approach, use color and negative space to accentuate the important decisions.
- **Spacing** – Are objects on the interface each given adequate space, or are they jumbled together? Space creates breathing room, which creates relationships between content.
- **UI Patterns** – Holistically, does your site feel somewhat familiar with users? Does it use recognizable patterns as described in *Web UI Patterns 2014*?

Let’s look at **Fitbit** below for some inspiration on layout, organization, color, and spacing.



Top-level decisions like *Get Active* and *Eat Better* are called out with a round icon and white contrast font. If users are already sold on the value and want to find a product, a grid treatment

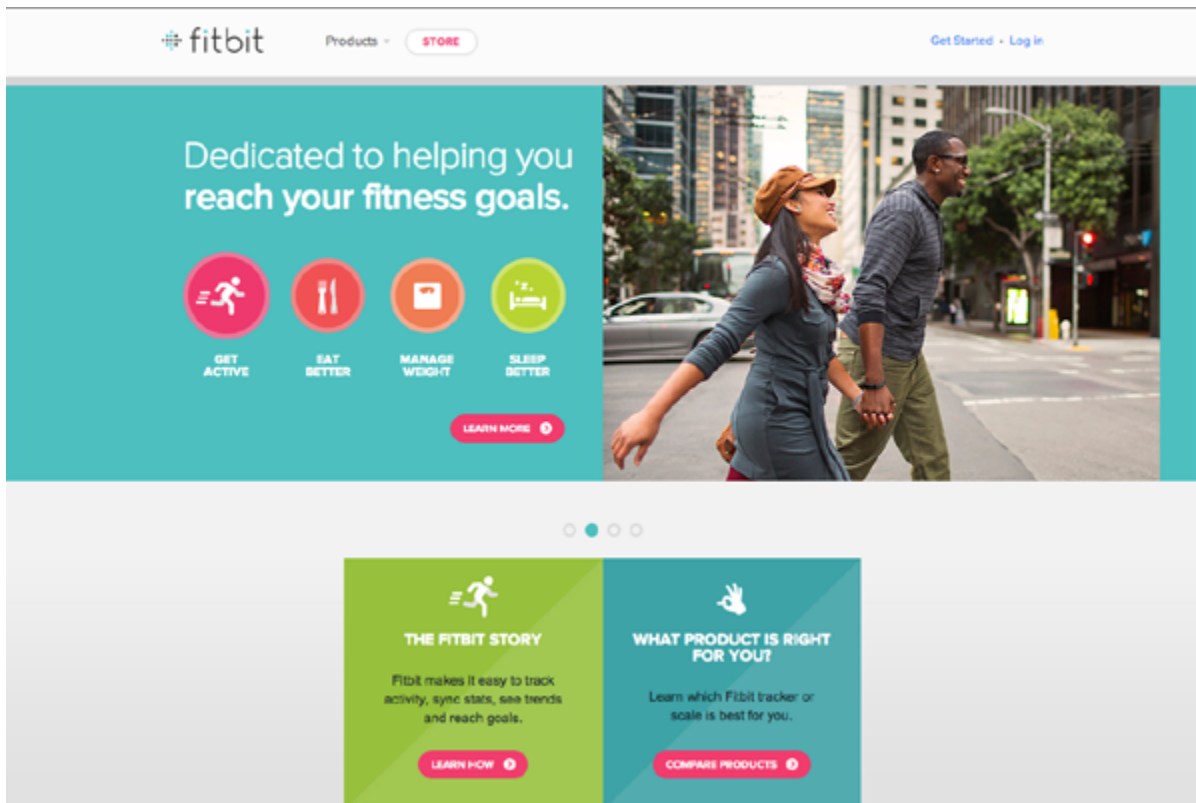


Photo Credit: [www.fitbit.com](http://www.fitbit.com)

on the bottom of the page helps differentiate that decision. The design also employs gray space to create distance between these two types of decisions (value vs. product).

Similar shades of blue are also used in the fitness goals and product sections, which cleverly create an association between the two (and draw clicks to the most valuable parts of the interface). In terms of overall layout, Fitbit has clearly used a **Z-pattern** that maps to how people naturally scan sites.

### 3. Anticipate Scanning of Information

Not only do more options strain your users, they also encourage users to skim more and pay less attention. If your site is content-heavy, you must design it knowing that users are not reading linearly. How could this impact the interface design of your website? Take a look below.

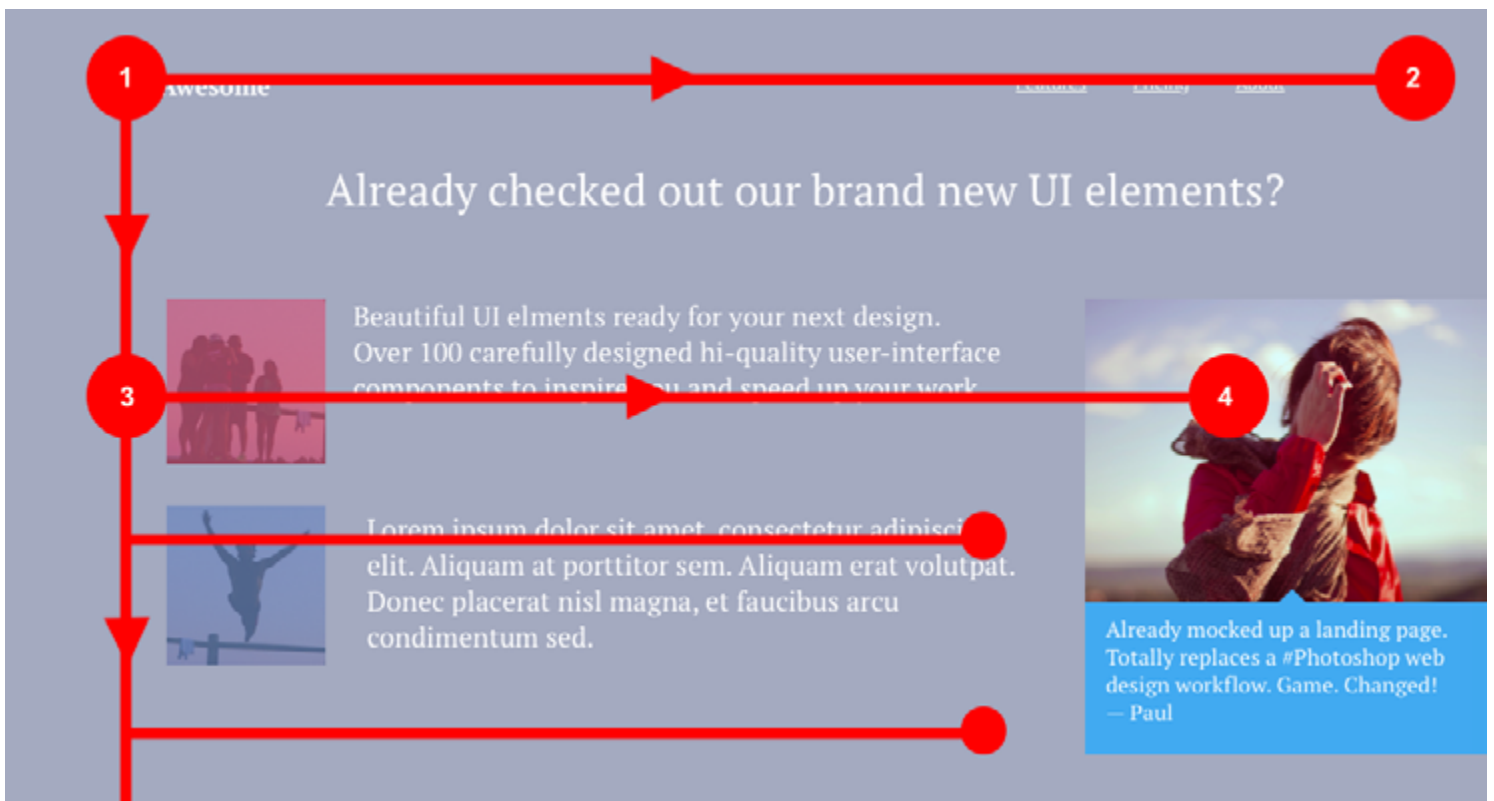


Photo Credit: Marcin Treder, UXPin based on: *Understanding the F-Layout in Web Design* by Brandon Jones

You can see in the above image that prime content is immediately visible, with more detailed content (and a call-to-action) located below for quick scanning. This F-pattern helps sites that want to embed advertising or calls to action without distracting from content (such as **The New Yorker** below).

As with all patterns, the F-Pattern is a guideline – not a template – because **the pattern can feel boring after the top rows of the F.**

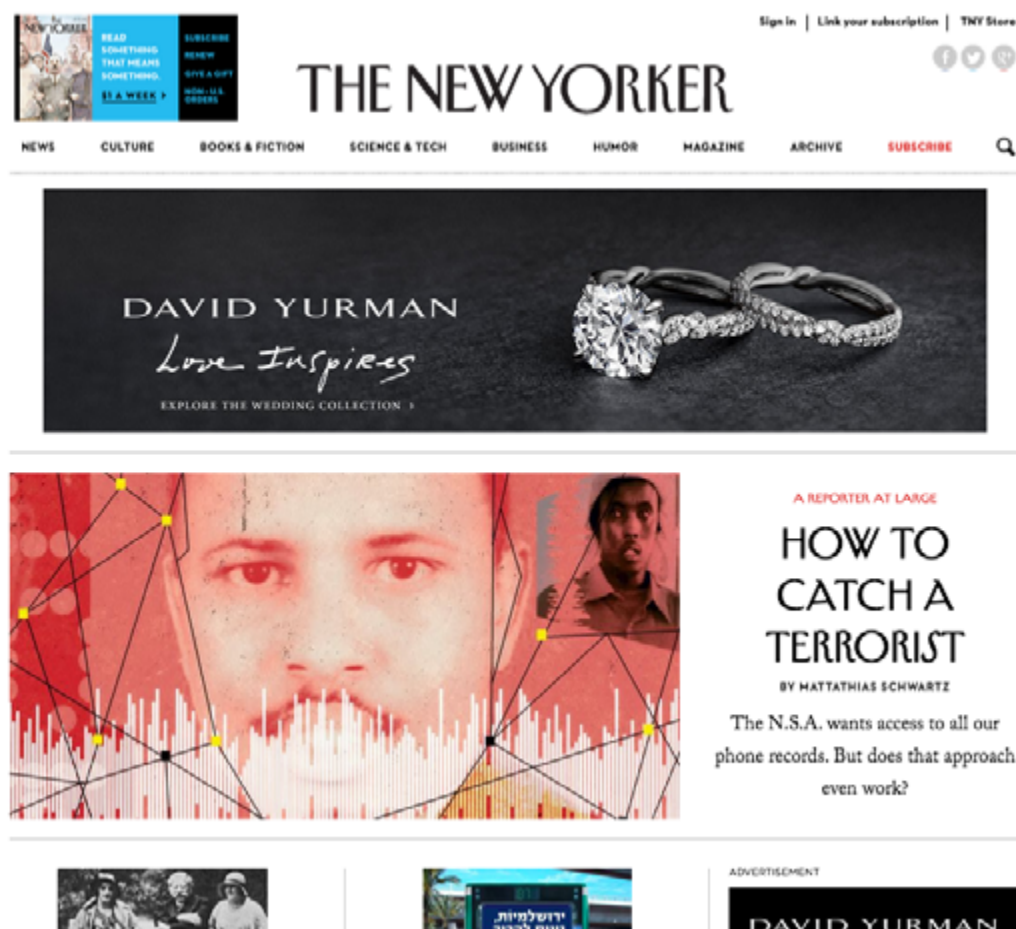


Photo Credit: [www.thenewyorker.com](http://www.thenewyorker.com)

As you'll see below, designers can also adapt the pattern for sites that aren't text-heavy.

**Kickstarter** actually adds in some widgets (laid out horizontally) to keep the design visually interesting beyond the first 1000 pixels.

Since exploring popular ideas is core to the Kickstarter experience, the popular projects are visually prioritized over the side-

bar. As you scroll down the page from the banner to popular projects, the number of choices available feels just right.

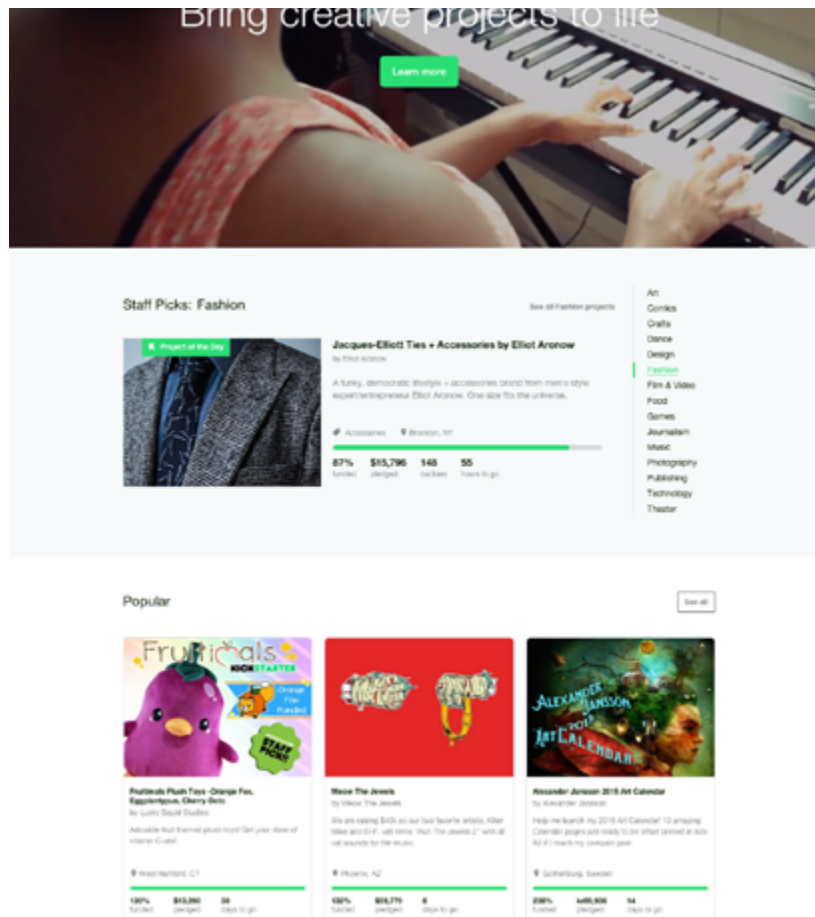


Photo Credit: [www.kickstarter.com](http://www.kickstarter.com)

As an alternative, you can also consider the Z-Pattern. To learn more about the Z-Pattern, check out [Web UI Best Practices](#).

## How to Influence User Decisions

Everyone knows the importance of suggestion. Because your interface is how you directly communicate with the user, you should design it for persuasion.

Colleen Roller, Senior User Researcher at Merrill Lynch, provides [some tips](#) for improving user decisionmaking. Some of these tactics are adapted for digital content from interpersonal communication techniques, so let's dive into more detail below.

## 1. Saliency

Our discussion of designing for scanning extends beyond just the F or Z pattern.

Saliency refers to when an object appears more important than its surroundings. Both you and the user want to achieve their goals, so why not create a design that satisfies both your needs?

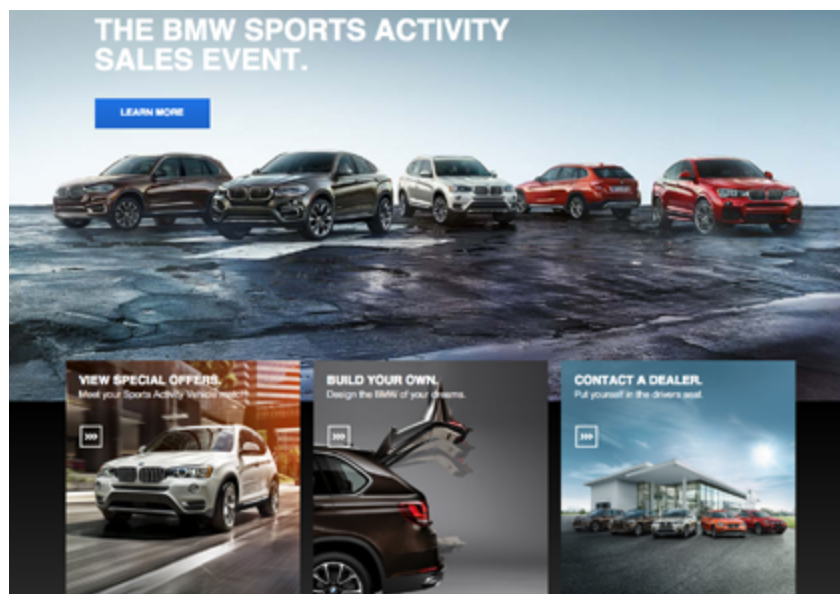


Photo Credit: [www.bmwusa.com](http://www.bmwusa.com)

**BMW North America's** site design makes it easy for users to decide where to go. The blue call to action stands out against the vehicle background, while the three options below it are all strong secondary choices.

If you're interested in a BMW, most of the important decisions are covered here, covering the spectrum of buyer readiness:

- Learn about a seasonal sale (most prominent option)
- Learn about other special offers
- Customize your own BMW
- Contact a dealer

The site presents these options in a clear hierarchy that's easy to interpret thanks to the grid format.

Saliency is enhanced when you present it in the right context. For ecommerce sites, one of the best ways to present sale items or accessories is when someone has already shown interest in a product.

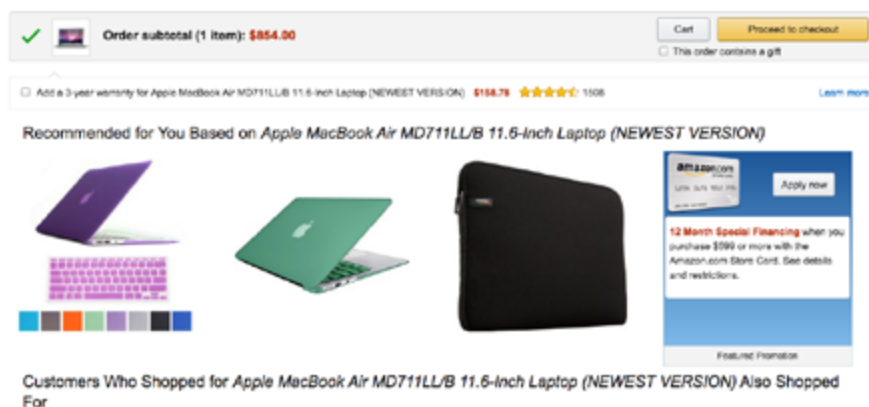


Photo Credit: [www.amazon.com](http://www.amazon.com)

For example, on **Amazon**, once I've placed an item in the cart, the site suggests that you'll also need something to protect the laptop (like the black case). They also suggest a warranty. The checkout



stage is a perfect time to remind users about “upsell” products since they’ve already demonstrated a willingness to buy.

## 2. Anchoring & Ordering

First impressions set the context for the rest of the experience; creating this frame of reference is anchoring. For example, if a user sees an expensive laptop displayed prominently, it will make other laptops on the screen seem cheaper. While it might seem counter-intuitive, this initial “sticker shock” makes other options more attractive.

One of the best ways to utilize anchoring is with the order you choose to display your content.

In the above example, putting your most expensive laptop at the top of a product list is a subtle way of anchoring it in the user’s mind. Whichever laptop you choose to list next will automatically look more affordable.

## 3. Context

The design below from **Macy’s** includes a higher price, but *feels* like a good deal thanks to the \$75 price anchor.

As Roller explains, this is because decision-making requires the logical brain and the “gut brain” – but the gut leaves the first and strongest impression. The gut brain decides, while the logical brain usually just reviews the decision.

If you wanted to make context even more powerful, combine it with the tactic of ordering. For example, listing a \$109.99 pair of shoes before the one shown below would make the cheaper set more enticing.

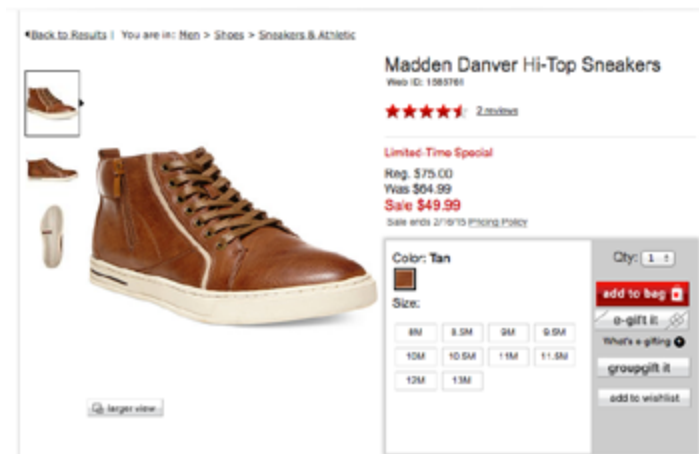


Photo Credit: [www.macys.com](http://www.macys.com)

To learn more about salience in decision-making, check out this [excellent piece](#) on UXMag.

#### 4. Framing

Framing is the language in which an option is presented.

Framing can also complement anchoring and ordering – if you have a surcharge for using credit cards, you can “frame” the cash price as a discount. The credit card price becomes the anchor, and the cash price seems more attractive.

#### 5. Reference

If you want people to do something, show how far they’ve already come.



This could be something as simple as a progress bar (like the profile completeness meter for **LinkedIn**), or something more complex like **Mint** below.

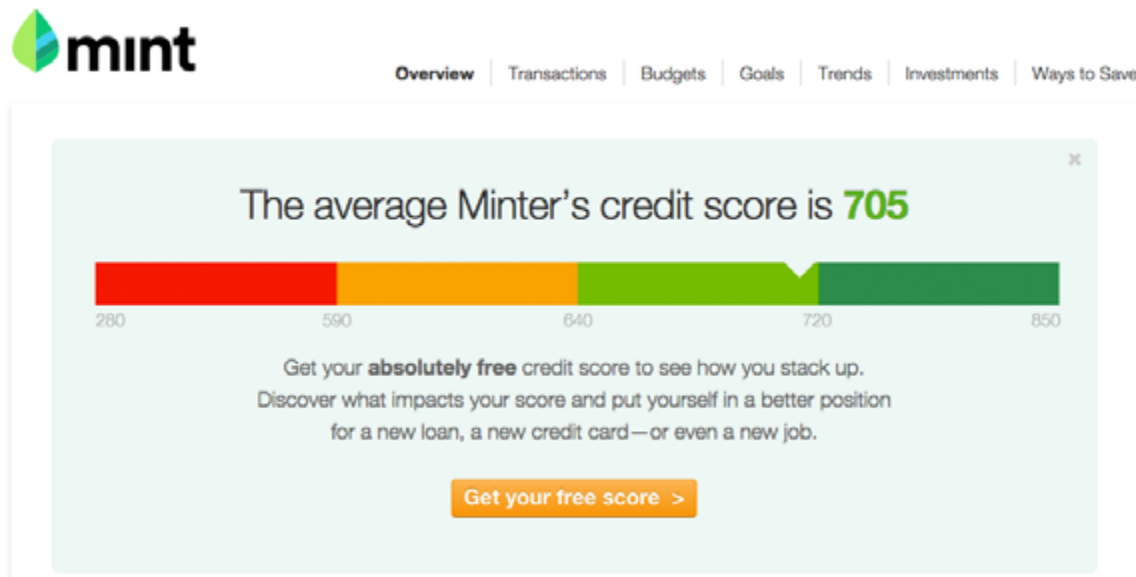


Photo Credit: [www.mint.com](http://www.mint.com)

While this requires some more complex data capability, this tactic provides social reference as a means of incentivizing users to interact deeper. Once users see the average score, they'll actually want to request a free credit report so they can see if they've beaten others.

## 6. Loss Aversion

**Studies show** that people fear loss more than they value gains. “You can save \$30 by signing up,” is weaker than, “You’re losing \$30 if you don’t sign up.”

One of the best uses of the loss aversion for web design is in the **Scarcity Principle** – limiting the availability of time, products, in-

clusions (membership), or information to make each seem more valuable. The UI pattern of a clock counting down the end of a sale, for example, is a glaring reminder to the user of the loss they could experience if they wait, inciting them to **avert that loss** by buying quickly.

In the example below, **Groupon** makes use of both time limits and product availability.



Photo Credit: [www.groupon.com](http://www.groupon.com)

If you'd like to learn more about crafting effective copy for interaction design, check out the **first volume** of our books on the topic.

## Takeaway

While big decisions like buying a expensive product might overshadow the smaller decisions of where to click next; it's the smaller decisions that affect the user's enjoyment of a product.



*Photo Credit: [Quasic](#). [Creative Commons CC BY-SA 2.0](#)*

Identify potential decisions your users could make – big or small – and design accordingly. This means, as we mentioned above, reducing secondary content and menu selections, creating a cohesive layout, and utilizing some tried-and-true persuasion techniques. You don't need to listen to us, though – that's entirely your decision.

# Delightfully Tricking Users With Animation

*How Animations Improve Functionality and Appeal*

When you close a tab, it disappears from the screen: at this basic level, motion provides immediate feedback (which is crucial since vision is our dominant sense), but at a more advanced level, motion adds a layer of humanity and realism. Animation makes interfaces feel alive and truly responsive to the user.

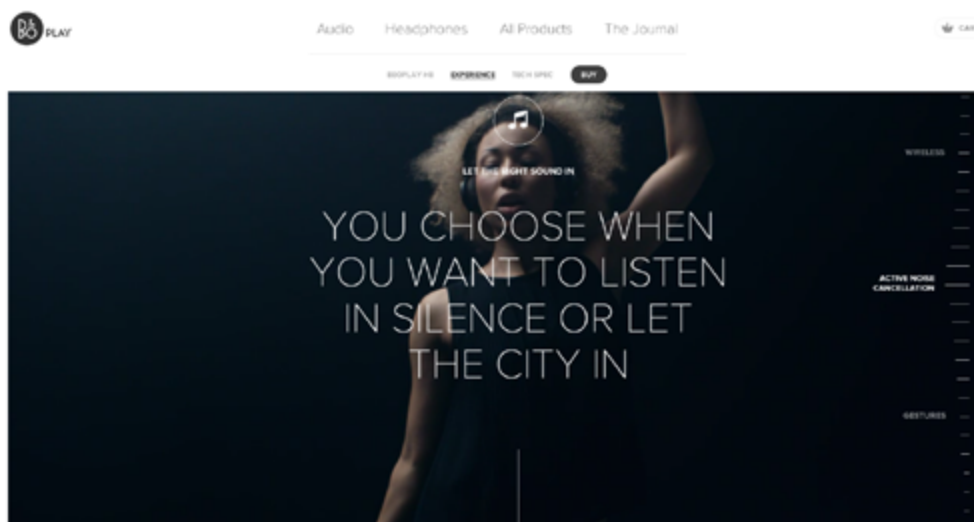


Photo Credit: [www.beoplay.com](http://www.beoplay.com)

In the past, animations were a luxury mostly for Flash-based sites, but now almost every site uses CSS/Javascript/HTML5 animations ranging from simple sliders to more complex parallax scrolls.

This isn't a bad thing – in addition to looking nice and pleasing users, animations solve a lot of functional problems within interfaces. In relation to interaction design, animations also create “communicators,” entities that communicate certain ideas more completely and succinctly than text descriptions and images.

Let's explore some animation tactics that improve the functionality and emotional power of your interface.

## Distract Users During Loading Time

Loading time is a byproduct of our ambitions outreaching our technical capabilities. While some products suffer more than others (video games, data-heavy websites), it is an unavoidable situation for most digital products.

But when we can't shorten the line, we can certainly make the wait more pleasant. Load time animations (a type of static animation) do exactly that.

While animations won't solve the problem, they certainly make waiting less of a problem. As Chad Vadera, IxD Director at The Barbarian Group, [points out](#):

*“There are technical ways to speed up the response time of our designs, but sometimes it isn't enough. This is when I design*

*ways to trick people. Remember that while people are predicting an expected outcome, they can be easily distracted. Use this to your advantage when technology isn't keeping up and design the unexpected."*

For loading time, that “trick” is creative animation that goes beyond a simple load bar. Best case scenario, the animation influences your users’ perception of your product’s technology, making it seem better than it actually is. Worst case scenario, your users have something fun to watch while they wait, improving the overall experience.

In fact, users are [more forgiving](#) towards sites and apps that create an emotional connection. Just like a clever 404 error page can alleviate some frustration, an interesting load screen adds emotional value to what would otherwise be a waste of time.

The power of animation is best shown through real-life examples. Take the digital creative agency **Dunckelfeld**. [Their site](#) features an interesting loading animation when you first enter.

Making creative use of the conventional loading bar and their unique orange diagonal line logo, the opening animation lets users know the wait won't be long, entertains them, and at the same time promotes brand awareness. Once completed, the loading bar, now simply the Dunckelfeld logo, flies to the upper-left of the screen, transitioning seamlessly into an interface that the user can now interact freely with.

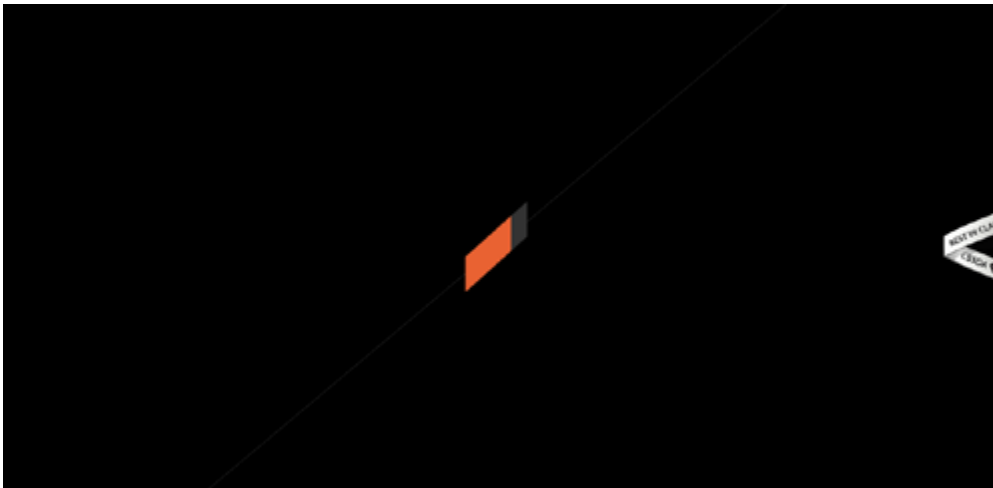


Photo Credit: [www.dunckelfeld.de](http://www.dunckelfeld.de)

The site in general uses animations well. Explore for yourself the way the interface moves and changes based on where your cursor is. These kinds of [microinteractions](#) embed personality into your product, plus make the experience more fun for your users.



Photo Credit: [www.dunckelfeld.de](http://www.dunckelfeld.de)

Neither the initial loading animation nor the microinteraction animations are technically required for the site – after all, their loading time isn't *that* long, and the microinteractions are mostly cosmetic.

However, these small additions make the site stand out, and make interacting with it that much more satisfying. In interaction design, never underestimate the value of eye candy.

For more examples of loading screens done right, check out these [12 Creative, Clever Loading Screens](#) listed by Sitepoint.

## Transition & Inform Users

Animations shouldn't just distract users from dead time, but also signal and ease them into content.

Whether it's moving from one page or object to another, or something as simple as a dropdown menu appearing from nowhere, animations can enhance every point of interaction – but the best animations are those that seem natural and don't draw attention to themselves.

Let's examine how we can strike a balance between speed and comprehension, while making your site feel more fluid. Like UI patterns, treat these as guidelines to customize as needed for your site or app.

### 1. Animated Notifications

Because movement naturally draws attention, animating your notifications is a pleasant way to remind users without intruding too much upon the experience.



Online photo gift retailer **Photojojo** makes their shopping cart experience helpful and fun by animating a “+1” across the screen and into the cart whenever users add items.

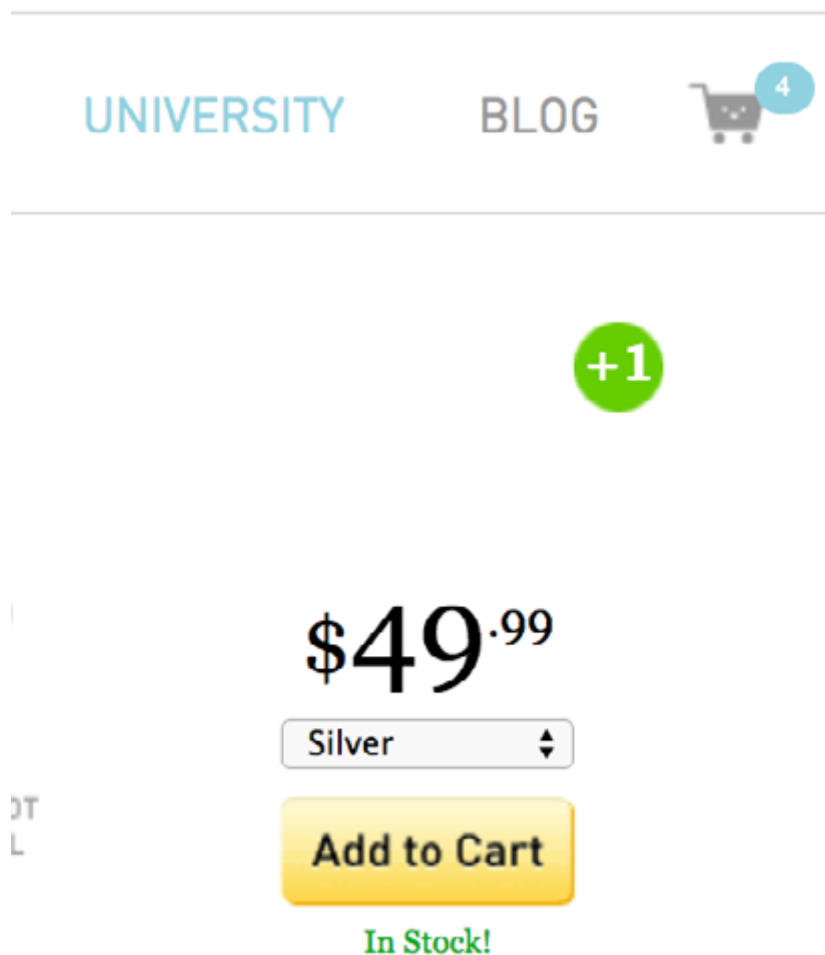


Photo Credit: [www.photojojo.com](http://www.photojojo.com)

The animation also serves a clever business purpose: by providing visual feedback on the item page, the site doesn't need to redirect users to the checkout page. The shopping experience remains uninterrupted and users have more time to buy more items.

Of course, this animation pattern applies to more than just e-commerce sites. If you want to notify users in a friendly way, consider

animating the message, like **RelateIQ** does with its drop-down notification (which disappears after a few seconds).

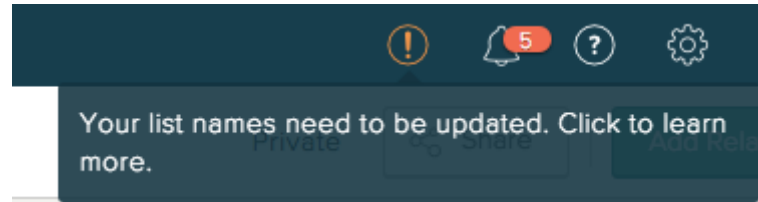


Photo Credit: [www.relateiq.com](http://www.relateiq.com)

## 2. Revealing Information

Animations can also trigger additional information. Two of the most common methods are hover-to-reveal and click-to-reveal.

The hover technique is quite straightforward. As the user mouses over the content, more content appears. You don't want to use hover to engage users in actions, but only to show subtle secondary information. Also, keep in mind that hover doesn't work when browsing sites on mobile devices.



Photo Credit: [www.flickr.com](http://www.flickr.com)

For example, on **Flickr**, you need to hover over the photo to reveal the caption.

To engage users in primary content, try the alternative approach of click-to-hover. You can see [AirBnB's map](#) hides the fun tips (the site's main content) until you actually click on each destination icon.



Photo Credit: [www.airbnb.com](http://www.airbnb.com)

### 3. Highlighting Content

If you're using a grid or cards layout, this pattern is almost a no-brainer. Like we discussed in Volume 1, make sure you set generous parameters so that the animation triggers when the person scrolls over the content area (not just the link text). You can see this is what [Adidas](#) does in the example below.

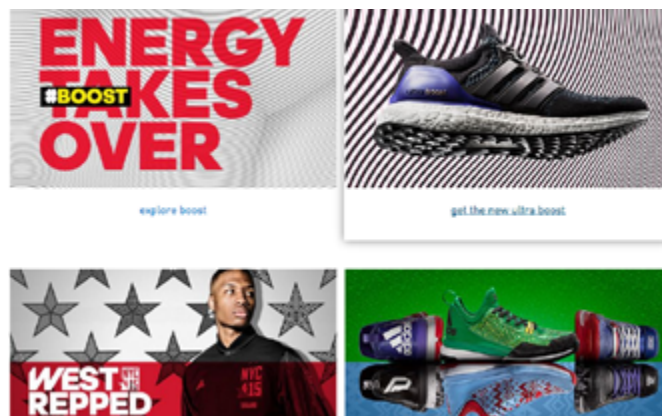


Photo Credit: [www.adidas.com](http://www.adidas.com)

#### 4. Collapsing Forms and Menus

As we mentioned, sometimes it's best to hide features until they're needed for the sake of saving screen space. If you're using this pattern, you'll want the collapse or dropdown to be smooth and fluid, as opposed to simply "now you see it, now you don't." This will signal the user that the change is occurring (feedback), without interrupting their flow.



Photo Credit: [www.cabedge.com](http://www.cabedge.com)

In the above example from **Cabedge**, the traditional dropdown menu is revamped with an animation. Instead of all appearing at once, the menu expands and collapses gradually. The effect makes an otherwise standard UI pattern feel fresh again.

If you'd like to play around with animations without slowing down for code, feel free to play around in [UXPin](#) with a library of over 24 [animations and interactions](#).

## 5. Animated Scrolling

One of the (few) advantages print media has over digital media is its linearity.

If you're reading a magazine, you always have some semblance of where in the magazine you are. Flipping through pages to get to your destination even creates new opportunities to browse, and often a particular picture or heading might catch your attention and you end up reading a piece you never originally intended to. Digital media usually lacks this quality... but it doesn't have to.

Animated scrolling is the design scheme where an entire site is laid out linearly, top-to-bottom (known as a [single-page site](#)); when you click on the different menu options, the site automatically scrolls through the content on its way to your target – less disorienting than the “jump-to-section” mechanism.

The animated scrolling method mimics the browsing aspect of print media, and accomplishes 3 main functions:

- Orients the user with how much content is on the site and where they are in relation to the rest of it
- Opens up opportunities to browse and discover new content that page-to-page layouts lack
- Smooths jarring transitions from page-to-page

A great example of it done right is the website of [Laura Meroni](#). Notice how each layer of the site moves at different speeds during the transitions, creating a more stimulating visual effect.



*Photo Credit: [www.laurameroni.com](http://www.laurameroni.com)*

When it comes to the web and mobile, you need to treat users as if they've just crash landed. Combined with the navigation and orientation best practices discussed in [Volume 1](#), an animated scroll acts as a pleasant limousine ride that ferries a potentially confused visitor to exactly where they belong.

[Twitter: When designing navigation, imagine that your users have just crash landed on your site.]

If you are creating a more traditional multipage website, you can still add interactivity through the alternative method of [parallax scrolling](#). To learn more about this tactic, download our free ebook [Web UI Best Practices](#).



## Follow Disney's 12 Animation Principles

Because it would require several books to cover all the different animations in interaction design, we thought it more helpful to describe guidelines you can follow for any animation.

Who's a better expert on animation than **Disney**? In 1981, the book *The Illusion of Life: Disney Animation* outlined [12 of the principles](#) that helped Disney become the animation powerhouse they are today. Digital designers have since adapted these principles for mobile and web.

1. **Squash & Stretch** – In order to simulate an object realistically, give the object mass and rigidity, then display this by how it “squashes” or “stretches” when moved. The choice of whether an object moves as a solid object or with flexibility is up to you.

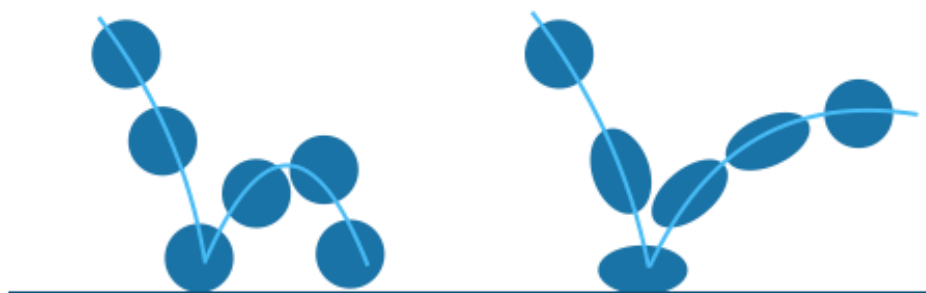


Photo Credit: [Marcin Treder, UXPin](#), based on: [12 Principles of Animations](#)

2. **Anticipation** – For example, in the below screenshot you can see how the card pattern suggests that the content will drop accordingly.



Photo Credit: [www.jelly.co](http://www.jelly.co)

3. **Staging** – Presenting the right context around your animation will help anchor your user so that they feel more comfortable interacting with your app/site. Use color, contrast, composition, and motion to focus the user on the primary objects while keeping them grounded in the overall experience.



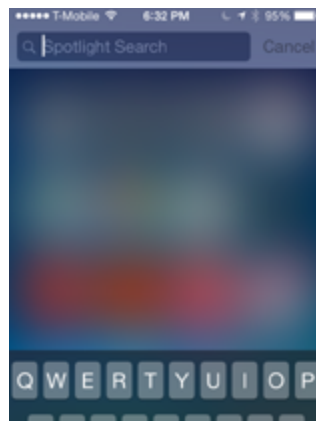
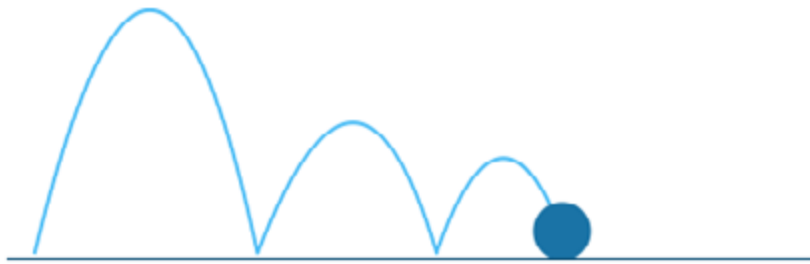


Photo Credit: [Apple iOS](#)

For example, you can blur the background after a form pops up to better direct users to the data fields.

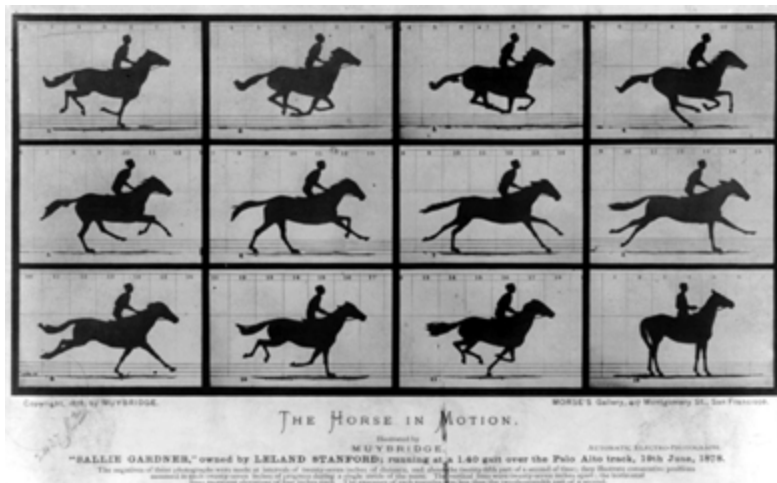
4. **Straight-Ahead and Pose-to-Pose** – Use straight-ahead animation to capture dynamic and complex movement, and pose-to-pose to cover more predictable movement. [In this example](#), the top image shows straight-ahead, while the bottom one shows pose-to-pose.
5. **Follow-Through and Overlapping Action** – One main distinction between realistic and unrealistic animation is the different movement in different areas. [In this example](#), when the man lands from the jump, his cape will swing for a second or two longer due to the momentum (follow-through). When a man lands, his cape and legs also move at different rates of speed (over-lapping action).
6. **Slow In and Out** – Give the impression that your interface follows the laws of inertia by adding more frames to the beginning and end of an animation. This creates an acceleration/deceleration feel.

7. **Arcs** – Movement along an arc feels more organic, while movement along straight lines seems mechanical. For example, **Android**'s UI has straight-line scrolling that gives it a robotic feel true to its name.



*Photo Credit: Marcin Treder, UXPin, based on: The Guide To CSS Animation: Principles and Examples by Tom Waterhouse*

8. **Secondary Action** – In the real world, actions have multiple consequences – take a look at how the horse's body and tail moves (primary action) and how it's tail changes shape (secondary action) below. As user researcher Rachel Hinman [suggests](#), this can be applied to digital design: for example, if the user opens a new submenu, animate the previous submenu closing.



*Photo Credit: "The Horse in Motion". Wikimedia. v.*

9. **Timing** – The proper use of timing is subjective, as different speeds convey different tones. Fast might work best for light, fun apps/sites, while slow might be better for more structured and complex ones. To create the illusion of direct user control, the animation must be [triggered within 0.1 seconds](#).
10. **Exaggeration** – One of the joys of animation is that it can be playful. While realism is good, too much realism negates the creativity of animation. Use this effect sparingly, so that you only slightly push beyond reality. [As shown in this example](#), you can add a wobble to a squash-and-stretch effect to make a ball bounce more playfully.
11. **Solid Drawing** – Make use of 3D space, weight, and volume, as a real world object does.
12. **Appeal** – This is the trickiest and most subjective aspect of animation. Remember to follow best practices for emotional design.

In closing, remember to use animations moderately. Animations should help ferry users between actions and pages as they complete goals, not act as a pretty layover. To see all 12 principles of animation in action, check out this [cool video](#) from **Subtraction**.

## Takeaway

The demand for animation will only increase with time, and falling short will give your site or app a dated feel. Don't forget that animation is a powerful tool in that it satisfies not just the entertainment goals of interaction design, but also the functional ones. Keeping in mind the 3 different types of animations, apply them to your interface in order to smooth over loading times and transitions. When building your animations, don't forget Disney's 12 principles.

It's rare that a site element is both practical and fun, so don't take animation lightly.

# Designing for User Behavior

*Knowing How Your User Will Behave with Your IxD*

As creatures of habit, we humans behave predictably.

The most human of the [5 interaction dimensions](#), behavior therefore refers to how users respond to your interface – what is happening on *their* side of this interaction. Effective interaction design doesn't just anticipate standard user behavior, but also shapes it.



*Photo Credit: Marcin Treder, [UXPin](#)*

In order to design for behavior, you must first know how habits form, how they can be used, and how feedback plays into each step.

Effective interaction design doesn't just anticipate standard user behavior, but also shapes it.



## Use Human Behavior to Your Advantage

*“We are, all of us, creatures of habit, and when the seeming necessity for schooling ourselves in new ways ceases to exist, we fall naturally and easily into the manner and customs which long usage has implanted ineradicably within us.”*

~Edgar Rice Burroughs, *The Beasts of Tarzan*

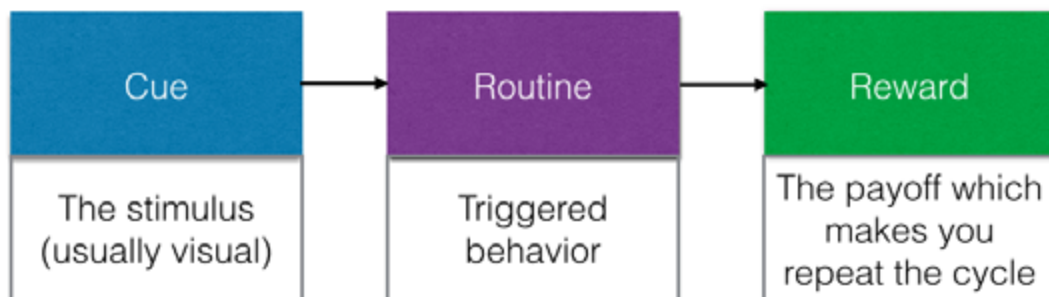
Studies have verified that **we spend more than 40% of our time engaged in habitual action**. Our brains seem to prefer being on auto-pilot, as the mechanisms for creating habits are so deeply ingrained. By knowing the finer points of habit development, you can design interactions that:

- **Create helpful habits** – Know how to entice your users to form the habits you want.
- **Don't harm existing habits when redesigning** – If your users already formed habits with your product, don't destroy them because of a few careless tweaks.

Catriona Cornett, UX Designer for **RelateIQ**, [explains in general terms how to apply the study of habits to IxD](#). We'll dive into more detail below on how habits are formed, how to identify habits, and how to change user habits.

## 1. How Habits Form

Obviously, habits are formed when people perform the same actions repeatedly, but how can you streamline the process? The first step is knowing the 3 parts that make up a habit, which Charles Duhigg explained in an [interview with NPR](#) and we've summarized in our illustration.



Let's look at an example of a digital habit, logging in to your email from your phone. The cue is feeling the vibration, the routine is opening the message, and the reward is staying updated (or distracted).

Interaction design strives to elevate functional rewards to emotional rewards by crafting memorable [micromoments](#). Over time, these micromoments add up to promote deeper engagement – and thus a better overall user experience.

The key here is the reward.

If you want a user to perform a certain action, offer them a reward for doing so. If you want them to perform it repeatedly, offer them a reward repeatedly. Make sure the reward is strictly voluntary, as the user will resent having to complete additional actions for one of your product's necessary features. You don't have to get so Pavlovian about it, but your users won't complain if you're offering them more rewards.

Interaction design strives to elevate the functional rewards to emotional rewards by crafting memorable micromoments.



Photo Credit: [www.netflix.com](http://www.netflix.com) via *The Art & Science of Seductive Interactions* by Stephen Anderson

A great example of a voluntary reward is **Netflix**. The company values user ratings – the more ratings, the more accurate their



suggestion system works. In order to incentivize users to rate previously watched movies, they offer a reward for doing so: 2 personalized suggestions. They even tease the reward by showing 2 mysterious placeholders where the suggestions would appear.

Users watching movies repeatedly creates the need to rate them repeatedly. If after every viewing they see the same rating window (cue), they will rate the movie they just saw (routine) because they know if they do, their suggestions will appear (reward).

## 2. Revealing Behavior Patterns

To uncover user habits, conduct qualitative and quantitative analysis.

Like we described in *The Guide to Usability Testing*, qualitative testing can be accomplished through informal hallway tests or formal lab tests. You could also encourage them to keep a user diary, logging their behavioral patterns for common tasks. In doing so, you'll better uncover their cues and routines.



Photo Credit: [Lucamascaro](#). Creative Commons CC BY-SA 2.0

Evan Williams, co-founder of Twitter, actually found great value in [watching how early adopters used Twitter](#). Twitter was originally intended as a broadcast tool, but then users started using it more for conversations. For example, neither the @ handle or hashtag were part of the original design. They were later implemented based on close observance of early use habits.

In terms of quantitative testing, our team at [UXPin](#) creates events in [KISSMetrics](#) that track when someone completes key actions like creating wireframes, turning wireframes into prototypes, and sharing those prototypes. When aggregated and mapped out, this product data helps reveal the most common action paths and routines.

Once you know how users are currently behaving, you'll be able to take the next step into tweaking or redesigning your interface to affect those habits.

For example, we saw that our Layers functionality was one of the most used features between January to July 2014. Because layers were so important, we used this data to support our decision to integrate [layered prototyping with Photoshop & Sketch](#). Two months after the integration, we saw decreased usage of layers, but a drastic rise in integrations.

### 3. Changing User Behavior

It's human nature to resist change, so users don't want to lose their old habits. Forcing users into new habits will only hurt the UX, so you need to be delicate with redesigning new user paths.

As [Duhigg suggests](#), here's a simple framework for designing new habits:

- Find the cue and the reward
- Don't modify the cue or reward. Create a new routine.

Let's look at **Groupon** as an example.



Photo Credit: [www.groupon.com](http://www.groupon.com)

Before the company came along, if users saw a product they liked, they would need to scour the Internet in order to find a killer deal.

Groupon succeeded because they simplified the process. Instead of scouring the web, users can just check a single site for aggre-

gated deals. The cue is the same, and the reward is the same (if not slightly better) – only the routine has changed.

If you're making changes to an existing design, try implementing the updates piecemeal (recall the anecdote of the boiling frog) and make sure you provide plenty of customer support materials. Just like you used analytics to uncover habits, you also want to use them to track user behavior in light of redesigns.

## Focus on Feedback Loops

Feedback – what it says, when it comes, how it looks – is your part in the human-computer interaction. The goal is to make the computer as “human” as possible so the interaction feels more natural. This turns feedback loops into conversations between the user and the product.

According to Jeff Gothelf, UX Designer and Writer, [feedback loops take the same dominance in interaction design as communication does in visual design](#). Handling feedback loops with care humanizes the experience and the company behind it, and can also mitigate user frustrations.

As direct interactions with your users, feedback loops go a long way in affecting your user's behavior. That's why we've summarized these helpful tips from Gothelf for designing your feedback interactions:

- **Communicate right and wrong** – Don't save all your feedback for errors. Keep your users posted on the good as well as the bad so they also receive positive reinforcement.
- **Match visuals to the dialogue** – A warning message should look different than an update message, for example. Proper visuals indicate of what the message means before users read it – as in the example from Lego below. Not only does the unplugged cable indicate error, but the use of red in the foreground character and background icon all play into our cultural understanding of red as a warning color.



Photo Credit: [www.lego.com](http://www.lego.com) via *7 of the Best Error Messages on the Internet* by Dan Nosowitz

- **Be consistent** – While you should vary your feedback styles based on the purpose, it's important to have some kind of consistency between all types of messages, as well as all feedback in general (to establish a “voice” of the product).
- **Don't be oppressive** – Be communicative, but don't overdo it. Make some feedback optional by showing it only when the

user hovers over a relevant items, and fade away if ignored (unless immediate action is required).

Let's look at **Gmail**. Take for example the message that appears when deleting an email:

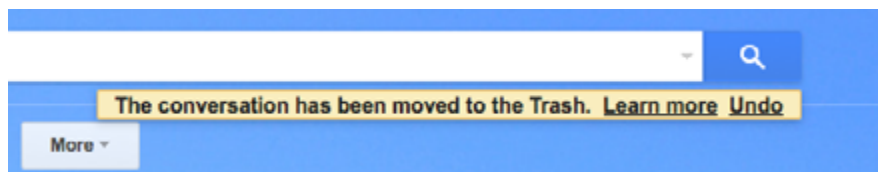


Photo Credit: [www.gmail.com](http://www.gmail.com)

The feedback is simple (and not particularly innovative), but it does everything right. For starters, it isn't completely necessary, but it is helpful, so its mere presence as part of the interface is a plus. Because it's not necessary, it requires no activity; it's there just as a notification. It appears in a noticeable place without getting in the way of other interactions, and will fade away on its own if ignored.

Delving further, the message is a great tool for communicating with the user. It explains what exactly happened, with details (mentioning the message is in the Trash). Then, it gives the user options for more interaction with "Learn more," or the opportunity to undo the action (a forgiving format described in *Web UI Patterns 2014*). Both of these options provide a greater sense of control.

For a more clever example, let's look at **MailChimp**. It can feel nerve-wracking the first time you're about to email an entire user base. MailChimp understands the nervousness, and rewards users with humor.

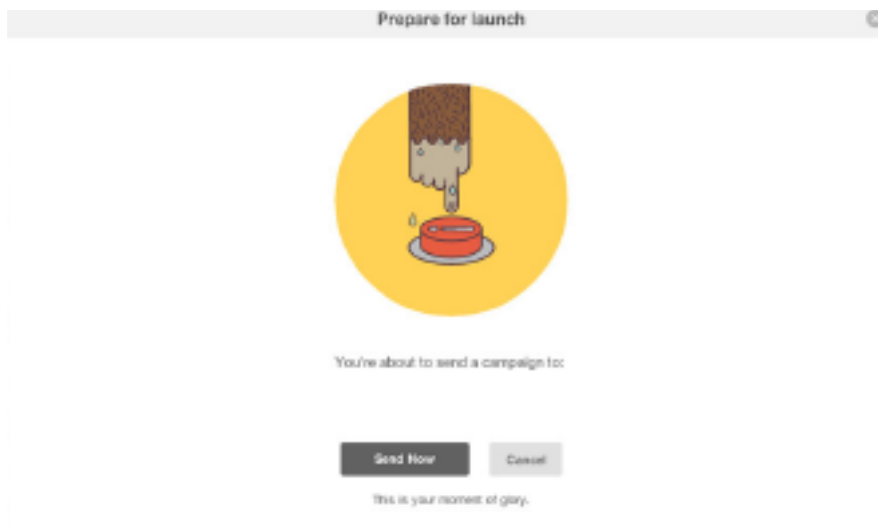


Photo Credit: [www.mailchimp.com](http://www.mailchimp.com)

Once the email campaign is queued, Mailchimp again uses humor to lighten up an otherwise tense situation.

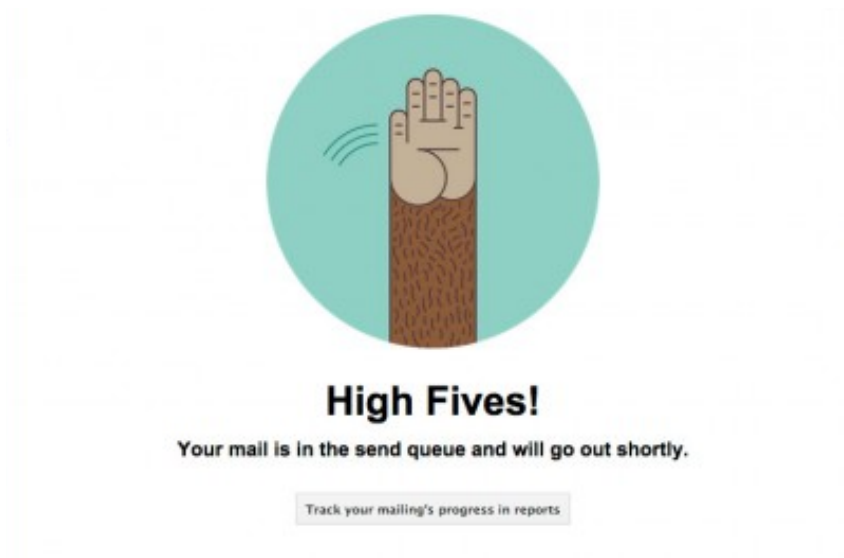


Photo Credit: [www.mailchimp.com](http://www.mailchimp.com)

Finally, when the emails are actually sent, Mailchimp encourages you once more. You can see that these 3 microinteractions combine to make sending email campaigns a more fun experience. In doing so, sending emails with MailChimp becomes more than just another marketing routine – it's actually kind of fun.

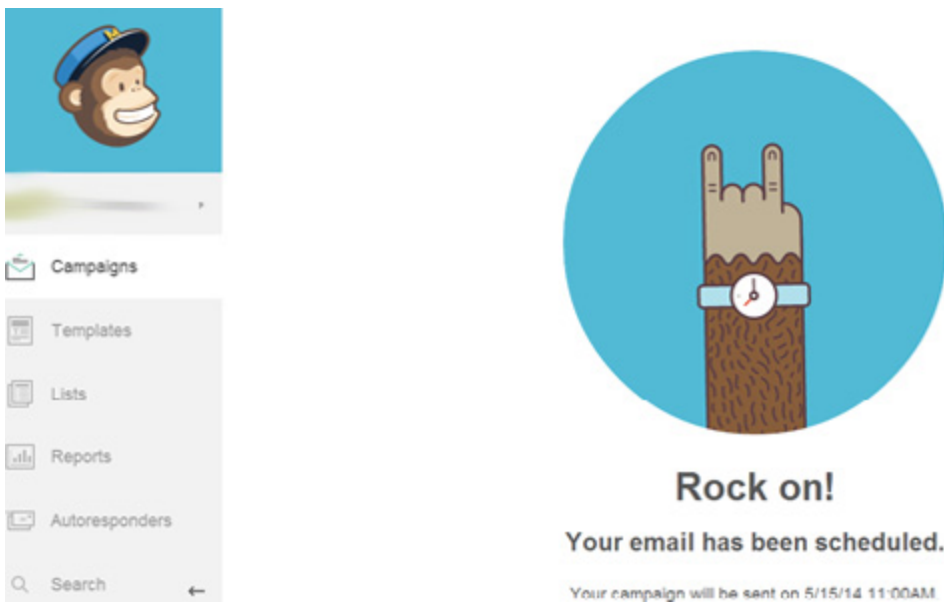


Photo Credit: [www.mailchimp.com](http://www.mailchimp.com)

Morgan Brown and Chuck Longanecker of digital-telepathy say that these types of **emotional feedback loops** are the key to “visceral design” – creating that gut feeling that something “clicks” in your user. The best place to start are the core user flows: registration, ordering, conversion points, exploration, etc. As these are the most common interactions, they will benefit the most from a behavior-focused tuneup.



## Takeaway

Both you and users want a design that facilitates habit-forming; you for the benefits it has on your product/company, your user for the convenience it provides in using the interface.

By keeping in mind the 3 parts of a habit (cue, routine, reward) at each point of interaction – or if you're forced into a necessary re-design – then you can guide the user behavior that will benefit you both. On the same note, proper feedback throughout the interaction will also promote the right behavior, with you maintaining control of which behaviors are “right.”



# Reducing Friction for a Smooth Experience

*How to Design the Best IxD for User Flow*

Friction weighs down interactions, making even the most well-designed interfaces a nightmare to use. Weightless experiences are the best experiences, so your goal is to create interactions which unravel with a natural sense of order and logic.

Reducing friction is good hygiene for your interface. A frictionless interface leads to interactions without complications – [clean](#) interactions. In this chapter, we'll teach you how to clean up your interface by reducing friction, show you some patterns that help, discuss the importance of motivation, and explain how prototyping can help.

Reducing friction is good hygiene for your interface.



tweet this

## How to Identify Friction

Let's start by defining friction.

The devil often comes in many names and many forms. Some define friction as any hurdles the user must overcome, whether that's loading times or poor navigation. Others use the term for anything excessive or unneeded in the interface. Fans of [Steve Krug](#), writer of *Don't Make Me Think*, identify friction as “cognitive load,” basically any thought involved in the task that isn't required.

While [a lot of research has gone into cognitive load](#), we can summarize the forms it takes as:

- Cluttered or distracting visuals
- Inconsistencies in the interface
- Unnecessary decisions/actions
- Confusing or never-before-seen functions

Whatever name you give it, interface friction is every micro-moment that slows your user down. Here's a quick and simple method for checking the amount of friction in your interface: pick any given task and list out the steps.

For example, let's imagine the process of sending a revised design to a client via email:

1. Open email service
2. Click "New/Compose Message"
3. Enter recipient's name
4. Hit "tab" or click to the next field (usually "CC:")
5. Type in the all necessary recipients
6. Hit "tab" or click to go to the subject field
7. Think of a clear, concise subject
8. Type in the subject
9. Hit "tab" or click to the message body field
10. Drag the appropriate file into the email message
11. Type in your message
12. Review the message
13. Click send

The less steps involved in a task, the less friction. If the steps in your interface are hitting double-digits, try listing out your competitor's steps for the same task. How do they compare? If a high number of steps is absolutely necessary, do your best to make sure each step feels as effortless as possible.

Logging in usually requires the most amount of friction, with how often you have to do it, and how tedious it becomes the more you repeat it. As an example of a login with the least amount of friction, let's look to **Reddit**.

The login overlay above appears automatically whenever the user clicks on an action that requires logging in, so right away that's one less step. Then, after logging in, the original action is executed right away, eliminating another step.



Photo Credit: [www.reddit.com](http://www.reddit.com) via *Reducing User Interface Friction*

Consider the **Google** homepage, as well. A Google search requires only 2 steps:

1. Type in query. (The page opens with the cursor already in the Search field, a pattern we'll discuss below.)
2. Hit "Enter" or click the search button.



Photo Credit: [www.google.com](http://www.google.com)

With only 2 steps, there's not a lot of room for friction. In this case, the goal of accomplishing user information is literally as simple as plug and play.

## How to Minimize Friction

Whether you're optimizing a site that's already fairly simple or cleaning up a more complex site, here's a few tips to keep in mind.

### 1. Explore different mediums for balance

Content exists in multiple dimensions: text, images, graphics, and animations. The web is a visual world, so use images and graphics to take advantage of different cognitive processes. This creates a rhythm in the user's mind, which of course lessens the cognitive load.

The web is a visual world, so use images and graphics to take advantage of different cognitive processes.



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In the below screenshot from live performance troupe **Dragone**, you can see how the design uses clear headlines, magical photographs, surreal colors, all balanced with just the right amount of background space. As a result, the user can process the rich information without feeling overwhelmed from an overload of one type of content (such as too much text or too many images).

It is one of those rare sites where visitors are tempted to click on the “Start the Journey” call to action, even if they already have a specific page in mind (which is still easily accessible in through each of the four bottom grids).

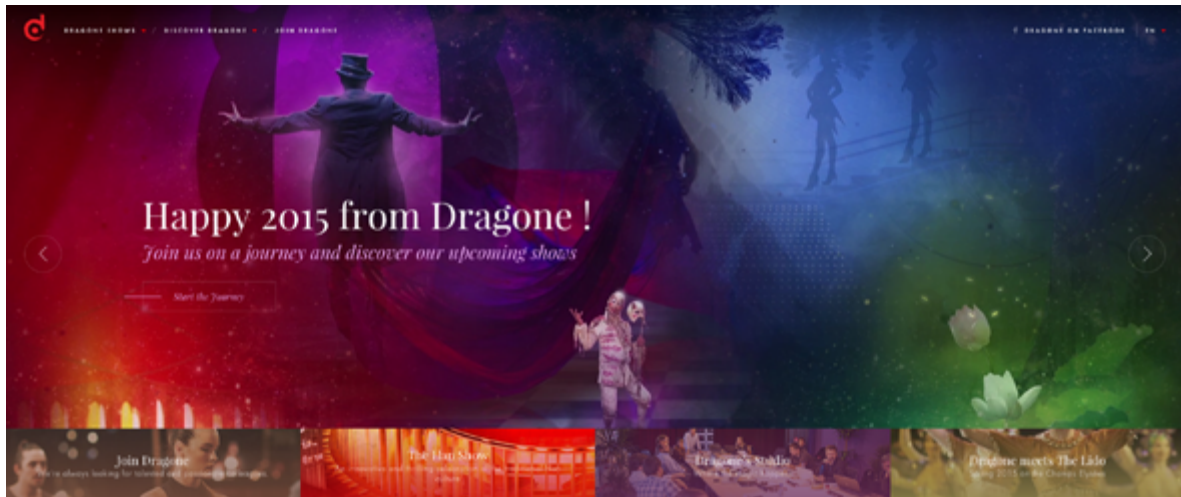


Photo Credit: [www.dragone.com](http://www.dragone.com)

## 2. Embrace the magic of video

Continuing from the previous point, most people are naturally visual learners.

But visuals alone aren't enough, so make sure you create a clear relationship between text and graphics. Either embed the text in the graphic or take advantage of [Hick's Law](#) and place related text and graphics close to each other.

HD video curation and sharing site [Distill](#) is a good example of the power of video for persuasion. Amidst a flowing scenic video, the bold words “FOR CREATIVES” pops out to the user and emphasizes the connection between what the site's purpose (free HD videos) and audience (creative professionals).

The embedded secondary text explains the value in more detail (10 free videos every 10 days). Finally, by offering a persistent preview of the quality of videos, the site makes a more compelling case for users to actually engage with the “Submit Video” call-to-action.

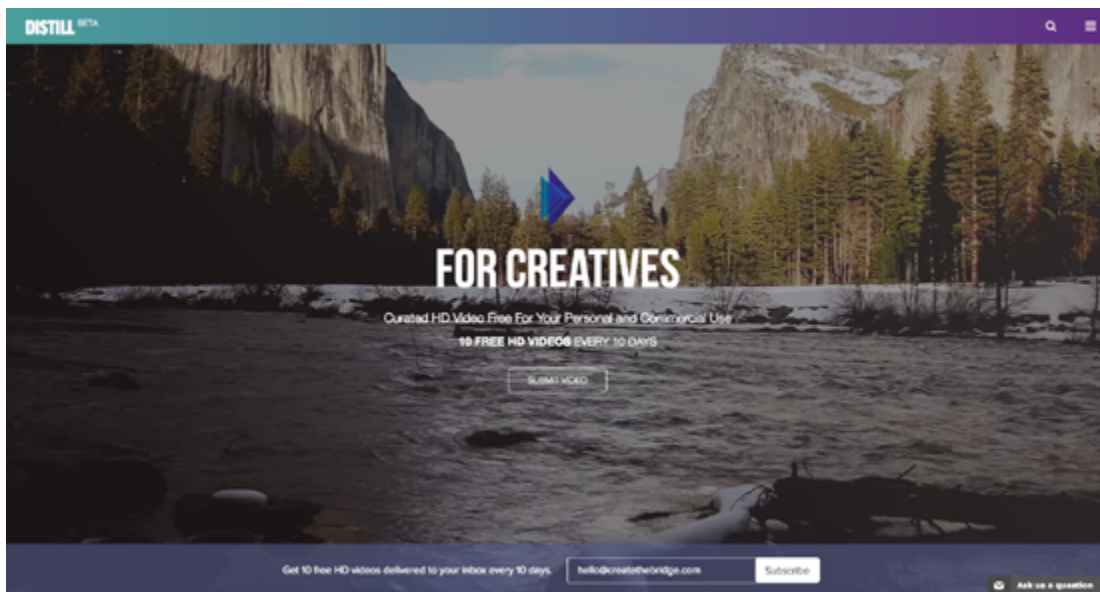


Photo Credit: [www.wedistill.io](http://www.wedistill.io)

By showing rather than telling, Distill communicates its quality and product details without a large block of text about the video specs or dimensions.

### 3. Focus the content

Strip down the content so you only include what helps users move forward toward their goals. This applies to everything ranging from the overall layout to graphics and typography.

While complex graphics can make a site more interesting, they can also require more cognitive processing.





Prioritize only the aesthetics that convey the brand and match user expectations, then trim anything that doesn't inform the user. You can see this KISS principle in action in the above picture showing a

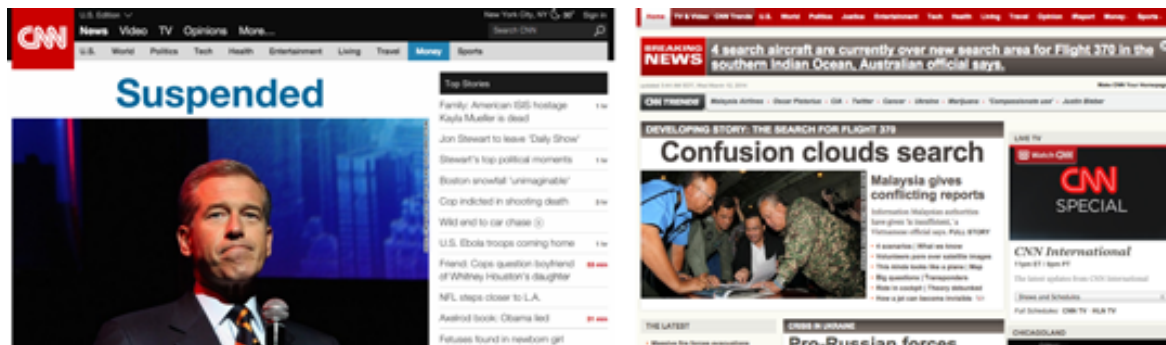


Photo Credit: [cnn.com](http://cnn.com)

before-and-after shot of the [CNN](http://cnn.com) website. As we discussed in [Web UI Best Practices](#), by limiting the visuals only to what's necessary, you create more breathing room. The extra space then allows for more prominent and crisper typography, and more captivating headline story images.

Prioritize only the aesthetics that convey the brand and match user expectations, then trim anything that doesn't help the user.



#### 4. Piece it out

Like we discussed in the [first volume](#) of *Interaction Design Best Practices*, dividing complex content into smaller sections improves the pace of the experience.

Known as “[chunking](#)”, this practice prevents the user from feeling overwhelmed upon the first impression. As a result, users actually want to engage with the content, and retain it better.

The site for Norwegian design agency **Heydays** uses a grid pattern to present content in a visually digestible format. The contrasting images and short section titles help break up the content naturally, while the burst of text in the top left and white accents draw attention where it matters. As you scroll down the page, you notice that the asymmetric grid format strangely works because it lures your eye along a **Z-pattern**.

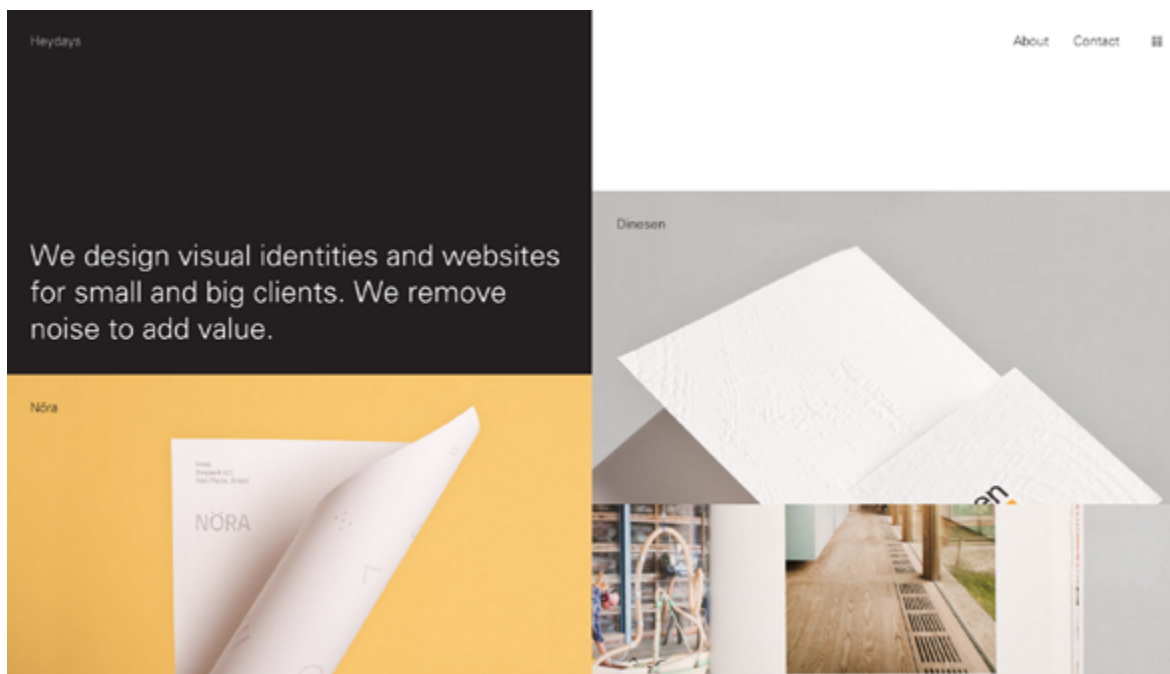


Photo Credit: [www.heydays.no](http://www.heydays.no)

## 5. Keep it consistent, but interesting

Design patterns are extremely helpful since they improve the familiarity of your design, but if your design will look cookie cutter if you follow them too rigidly.

If you follow UI patterns too rigidly, your site loses its rhythm as everything starts to look the same. As a result, users can quickly lose interest.

Let's take a look at the product page for the UP3 wearable fitness device from **Jawbone** below.

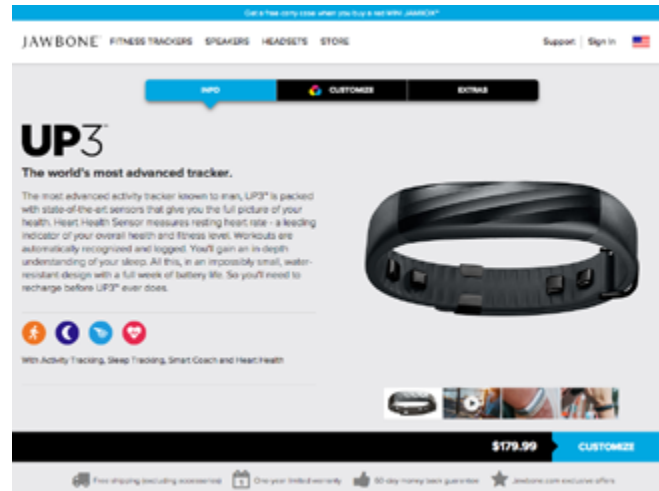


Photo Credit: [www.jawbone.com](http://www.jawbone.com)

It's a fairly straightforward fitness device, so the copy on the page and three tabs at the top are enough. Users wear the bracelet constantly, and as a result, get updates that form a complete picture of their health. Once the users understand this benefit, they'll likely want to play around with some features, which is easily accessible through the tabbed layout.

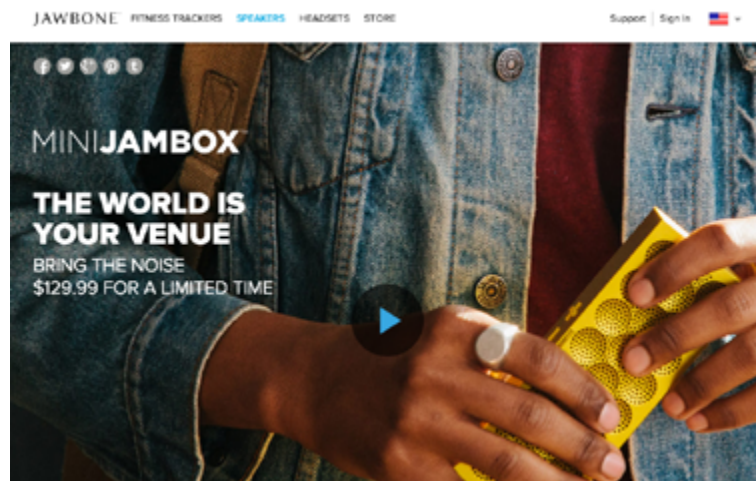


Photo Credit: [www.jawbone.com](http://www.jawbone.com)

Now let's look at the [Mini Jambox](#) from the same company. A livelier product (literally), with a different set of user benefits. It provides better sound for movies, for parties, all while staying portable. Aside from color, there's not a high degree of customizability. We're telling a different story here, so it's alright that this page is scroll-based (to show off the different user scenarios) rather than tab-based (like the UP3).

The primary navigation, photography, typeface, and placement of "Shop Now" call-to-action remains the same, but each product is given its own distinct layout. This strikes the perfect balance between consistency (which improves usability) and personality (which increases desirability).

If you follow UI patterns too rigidly, your site loses its unique story as everything starts to look the same.



## Use UI Patterns to Eliminate Steps

Speaking of design patterns, let's look at a few that are designed specifically to reduce friction. We've already discussed patterns at length, outlining and describing 100 of the most effective ones in our books [Mobile UI Design Patterns 2014](#) and [Web UI Design Patterns 2014](#). Here, we'll only touch on the ones most attuned to reducing friction: Guided Actions, Default Settings, and Wizards/Stepped Forms.

## 1. Guided Actions

Your users are open to suggestion.

As long as you're not suggesting something cumbersome or forcing it upon them, you can *guide* their *actions* through a few convincing and well-designed recommendations. While this encourages repeated and deeper involvement in your site or app, it also saves the users time by reducing the steps required.



Photo Credit: [www.twitter.com](http://www.twitter.com)

Take **Twitter**, for example.

When a new user goes to the URL, they are taken automatically to the above sign-up screen. Not only that, but the cursor is already activated in the first field (*Phone, email or username*) so the user only needs to start typing to begin the sign-up process. This guided action

saves the user at least 2 steps: clicking to go to the signup screen, and clicking in the first form field. And because signup is necessary before using the site, these steps would have been necessary.



Photo Credit: [www.spotify.com](http://www.spotify.com)

Dmitry Fadeyev points out that guided action can be used on a more subtle level by [emphasizing key functions, controls, and buttons](#). As you can see above, just look at how badly **Spotify** wants you to download them compared to, say, look at their features. Keep this in mind if usability testing shows your users are having trouble finding certain links – making the action clear will also save your users physical and mental steps

## 2. Default Settings

Consciously setting your user defaults will both save them the hassle of doing it themselves (reducing friction) and allow you to set them in a way beneficial to you (guided action). Statistically speaking, users will rarely change the default settings, no matter how extensive their customization options. That means the defaults you set at the beginning will likely remain in place.

**Living Social** takes a smart approach by making the default audience for email deals “everyone,” which encourages users to forward deals to people of the other gender (which presumably, helps with the company’s goal of user acquisition).



Of course, restricting options causes friction as well, so always give your user the opportunity to change their defaults. For more examples of default settings done right, [check out this entry in the UI Patterns library](#).

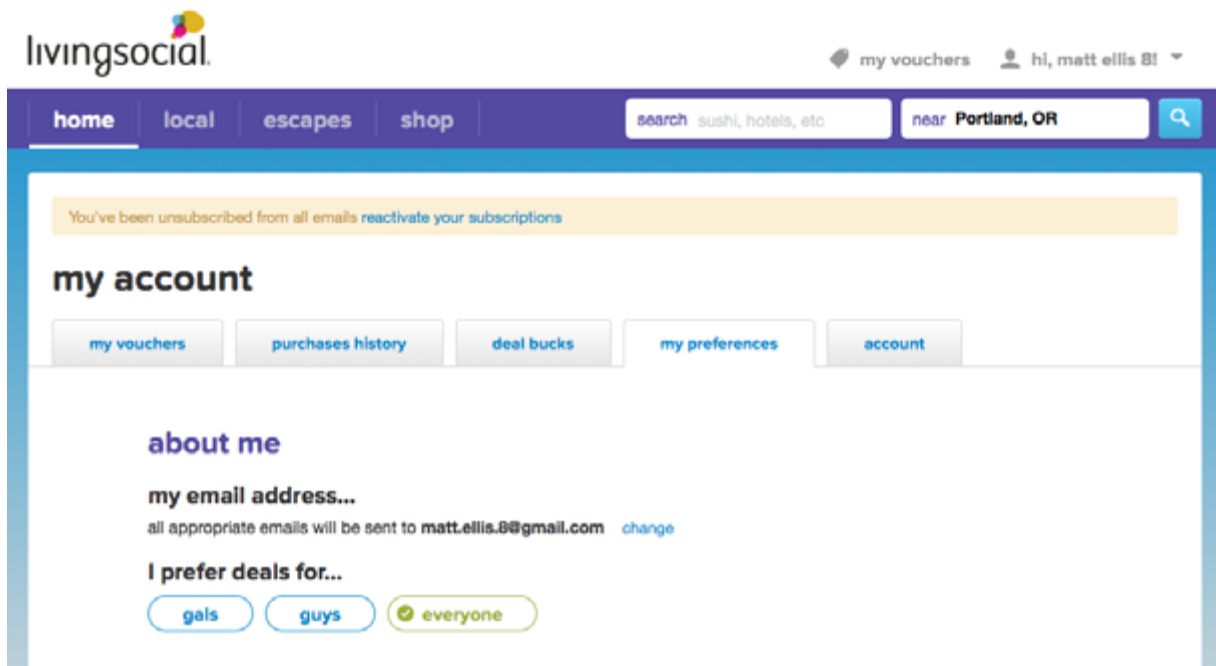


Photo Credit: [www.livingsocial.com](http://www.livingsocial.com)

### 3. Wizards/Stepped Forms

As we described before, sometimes it's best to break up complex content into smaller sections. The same principles apply to input forms in breaking one long form into multiple smaller steps.

Keeping in mind that these should only be used for data-heavy tasks, stepped forms (wizards) allows you to break down the task into manageable doses, and clarify each step without overloading your users. Perfect for gradually initiating new users, this pattern works well with the completeness meter, so your users knows how much exactly is involved.

In the **Grammarly** example below, you can see by the top completeness meter that the signup process is broken down into 3 steps even though all the data could be entered on one page. Breaking the process up is extra important because money's involved – Grammarly does not want to “scare off” sales with a cluttered interface.

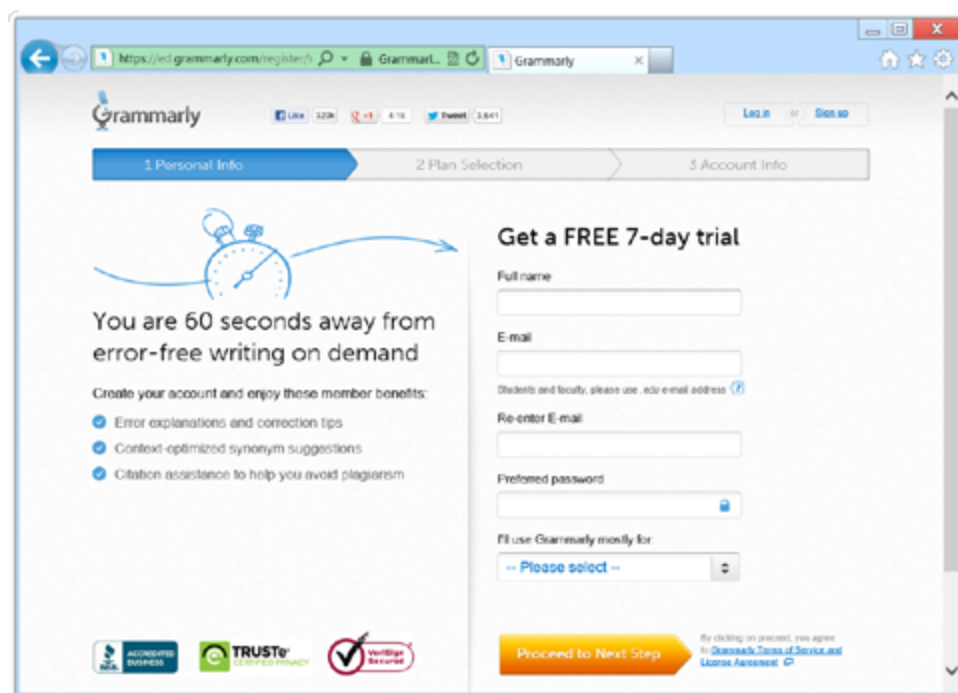


Photo Credit: [www.grammarly.com](http://www.grammarly.com) via [Spell and Grammar Checkers by Cygon's Blog](#)

As a bonus, pay attention to that fine print next to the “Proceed...” button. It verifies that clicking the proceed button is also official agreement of the site’s terms of service. By combining the 2 actions, Grammarly eliminates an extra step in the signup process and becomes closer to a frictionless interface.



## How Motivation Counteracts Friction

The trouble with interface friction is that in some cases it's unavoidable.

There is no way to reduce some frictional elements, and there never will be until they invent thought-controlled computers ([which they're working on](#)). Until then, however, you'll need to find a way to reduce the inconvenience of friction in the cases that you can't remove it completely.

An alternative to directly reducing friction is to increase motivation.

Anders Toxboe, Designer for Bonnier Interactive, [cites motivation as the force that opposes friction](#) in the realm of interaction design. A properly motivated user will be willing to withstand more friction and still have a positive experience. A poorly motivated user will, on the other hand, give up after only a small amount of friction.

Aside from the biggest motivation – providing a service your user needs – there are subtler ways to get your users excited about your product. Among some of the most common are:

**Recognition** – Encouraging feedback makes the user feel that their input is appreciated, which in turn deepens the interaction.

**Reward** – Giving the user a reward (discussed in the previous chapter) will incentivize them to perform more tasks or harder tasks.

**Personal Growth** – For example, a game that successfully teaches the user to type at a faster speed will motivate them to play the game more to increase their typing speed more.

As Toxboe puts it, “As long as the motivation is bigger than the friction, the user will keep moving in a forward motion.”

Known as **progressive disclosure**, gradually revealing your site or app helps to build this momentum. As users achieve their goals, the interface should reveal other relevant features to highlight the product’s value (which helps increase motivation). These secondary features could include export functions, email notifications, and integration capabilities.

But sometimes motivation can be as simple as letting the user know the task won’t take long. If there’s a task that has inherent and inescapable friction, using a pattern the **Completeness Meter** will reduce the friction by assuring the user that only a little effort is needed.

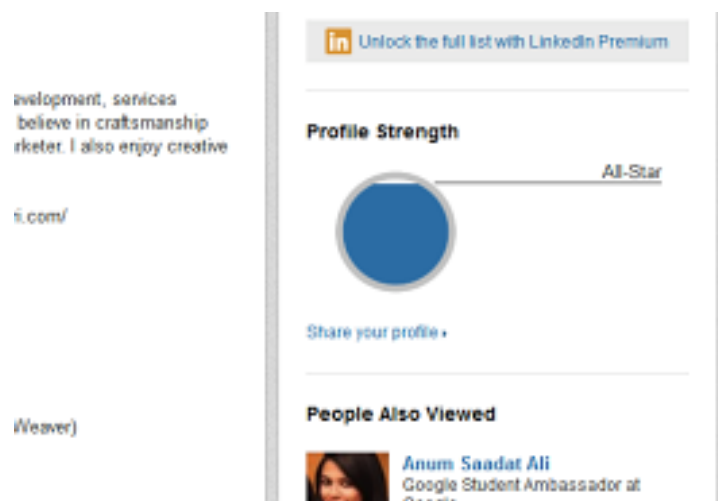


Photo Credit: [www.linkedin.com](http://www.linkedin.com)

Take the **LinkedIn** example above. It's in LinkedIn's best interest that their users fill in as much of the profile as possible, so they motivate them to do so by showing the Completeness Meter. Labels like "Profile Strength" heighten the appeal of filling it out (would you want a *weak* profile?), having only a little space until completion reduces the amount of perceived friction, and finally the title of "All-Star" gives Recognition for the users' efforts so far.

## Takeaway

Friction is the enemy of interaction design, the super-villain looking to thwart an otherwise enjoyable experience.

We'll leave you with one last piece of advice about friction: if you're having trouble locating the areas of your interface that are causing friction, return to the prototyping and usability testing phase. These experimental phases will shed some light on the problematic points of your user flow, so you know where to apply the tips we discussed.

Friction is the enemy of good interaction design.



# Designing Delightful Interactions

*How to Craft Delightful and Effective Experiences*

The arts of seduction and interaction design go hand-in-hand. Your goal, after all, is making the user fall in love with your website or application. The same principles of courtship apply: trying too hard repulses the user, while not trying enough will make them pass you over.

*As UX consultant Stephen P. Anderson explained in his insightful book [Seductive Interaction Design](#), an enticing interface requires a good degree of subtlety, tact, charm, and honest understanding of users.*

In this piece, we'll explain how to take advantage of human psychology and emotional design to create an alluring charm to your interface.

## Inspiring Flow

An alluring interface is designed to put the user in a state of flow – a mindset in which they are so focused on interacting with your

product, they forget the rest of the world. Mihaly Csikszentmihalyi, in his book *Flow*, explains that this is the optimal experience because the user focuses on their work, and the interface becomes only an invisible hand guiding them along.

The way to inspire flow is to constantly and rewardingly engage the user – “seducing them,” in other words. Paul Trenchard-Seys, UX Designer, puts forth that **an engaging experience is not only fun, but also easy and productive**. To create such an experience, at least two factors are needed:

1. **Control** – The user must feel in control the entire time. This is why seduction favors subtlety over aggressive approaches.
2. **Achievement** – Obviously, the user needs a purpose for using your product, whether business or pleasure. Beyond the main goal, the sense of achievement can be bolstered by positive and well-placed feedback from the system.

While a simplistic viewpoint of the much more complex field of interaction design, creating this “flow” in your users is a nice, simple goal to chase throughout the rest of the design process.

## Understanding Your Users

Still other experts, like Stephen P. Anderson, [go into more detail about how to get your users into a state of flow](#). To him, the first step is understanding as much as possible about people.



JONATHAN VIZZIER

*"Design isn't just how it looks, it's how it works."*

#### Demographics:

- 27 years old
- Masters in Visual Design
- Visual Designer

#### Key characteristics:

- Obsessive over visual quality
- Hates when product managers use the word "just" before describing last-minute tasks
- Wants to be as involved in the design process as possible
- Loathes jargon, wishes people would get to the point

#### Description/User story:

Jonathan graduated from one of the top graduate art programs in the United States, but soon found that reality is nothing like school. As a visual designer at a small B2B company, he gets treated as the "go-to" design guy - even if the requirements are more UX design than visual design. He's overworked, but still passionate, and is looking for flexible design tools that help him easily communicate with his team (some of which work remotely).

#### Goals:

- To build a strong portfolio, regardless of whatever job I'm at
- To start mastering UX design by the end of this year for a career transition
- To rise up in his company and start getting assigned larger-profile projects
- Wants to help the product team see the value of emotional design, not just "core KPIs"

This list of observations about individuals as a whole leads the way to interaction designs that give people what they want. From this list, we can derive a list of elements that will make your website or app more attractive to the common person:

- **Social Proof** – Most people follow popular opinion, so if your product seems popular, its perceived value increases. If you don't have the numbers to parade openly, even a few considerate testimonials will help.

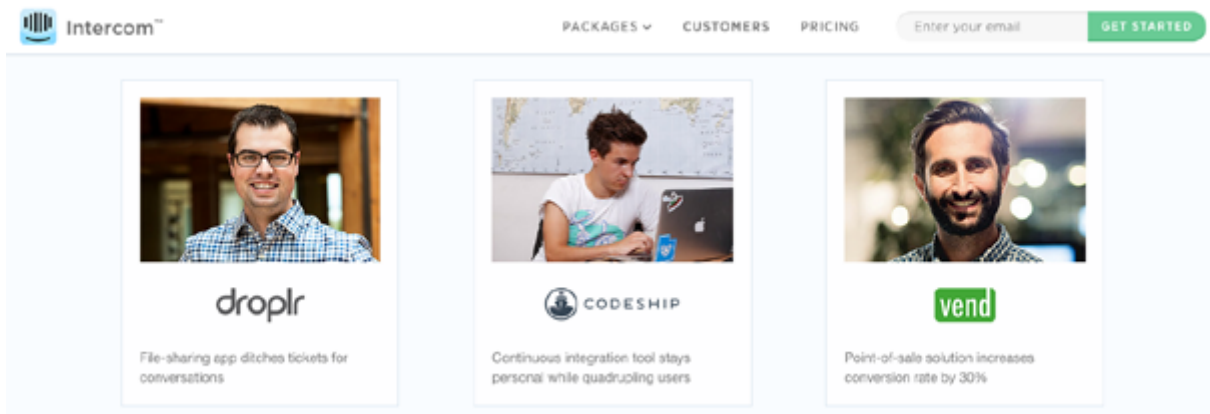


Photo Credit: [www.intercom.io](http://www.intercom.io)

- **Scarcity** – Just like an exclusive club, scarcity adds the allure of something not everyone can have. Offering limited promotions or even a private, invitation-only beta version of the product can generate more excitement from non-users than the users themselves.



Photo Credit: [www.amazon.com](http://www.amazon.com)

- **Recognition over Recall** – As we explained in *Interaction Design Best Practices*, the more the user must think, the less they'll enjoy



the product. Design your interface with recognizable patterns so users don't need to relearn basic controls. For example, link text should be labelled the same as the headlines of the linked content.

- **Sensory Integration** – Stimulating more of your users' senses will engage them deeper. Aside from visuals, this can only apply to *audio effects/music*, or some creative use of gesturing in mobile devices. For example, the Wunderlist app plays a pleasant bell chime when you complete a task.
- **Visual Superiority** – While sensory integration is welcome, vision remains the dominant sense (as we explain in [Volume 1](#)). Design your interface along a solid *visual hierarchy* so that it looks as good as it functions.

Because so much of interaction design concerns human experiences, you must design for what the brain cares about (which is different than what the conscious mind cares about). To design for a brain that's evolved over a long period of time, you'll need to incorporate beauty, visual variety, and of course emotion.

## Designing for Emotion

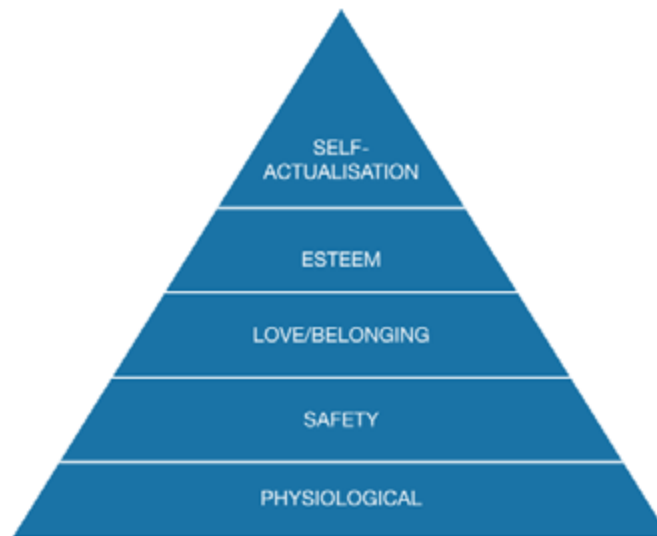
While we're on the topic of the human element, let's explore emotion in interaction design. First we'll explain the difference between usability and enjoyment, and then we'll discuss some practical tips for designing emotional experiences.

### 1. Understand Usability vs. Enjoyment

Emotional stimuli make the difference between a product that's loved, rather than simply usable. Anders Toxboe, Designer for Bonnier Interactive, [makes the case that, while usability will satisfy your users, the satisfaction will be short-lived](#). To be loved, an interface requires more than functionality.

Despite having a product that works – perhaps one that's even ground-breaking or revolutionary – good usability can still lead to poor product adoption, and thus, failure..

Let's examine Abraham Maslow's [Hierarchy of Needs](#) to better explain this situation. These were formulated from the psychologist's 1943 paper on the basic human needs, and the way we typically prioritize them:

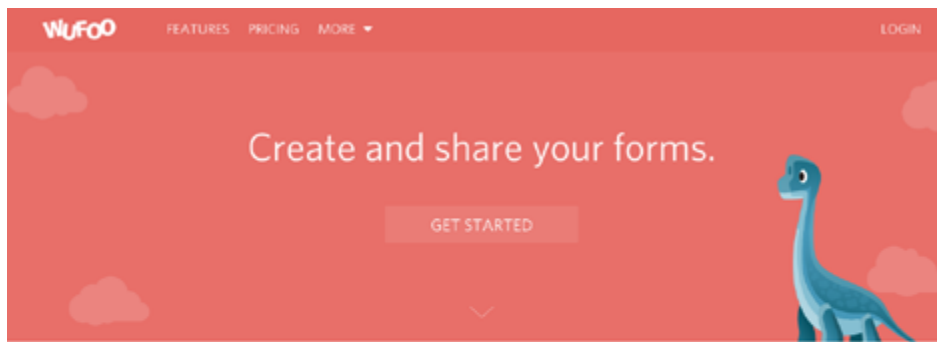


*Photo Credit: Marcin Treder, UXPin*

As you can understand, a homeless person who comes into some money will likely spend it on food or shelter instead of a psychologist appointment – physiological needs hold more weight than self-actualization needs. Likewise, we can apply Maslow’s work to interaction design. [According to Aarron Walter](#) the interface must be first of all functional (foundation of the pyramid), then reliable, usable and, finally, pleasurable.

Usability goals are still core to interaction design. But once they are fulfilled, there remains a lot of room for improvement. In Walter’s view, the peak of the pyramid - pleasurable design - is what other designers most often neglect.

For example, let’s look at **Wufoo**. It applies shapes, colors, and typography in a way that makes the mundane task of form creation actually feel fun.



Building online forms can be hard.  
Wufoo makes it easy

*Photo Credit: [www.wufoo.com](http://www.wufoo.com) via [Emotional Design as the Gateway to Passionate Users](#) by Aaron Walte*

As cofounder Kevin Hale [explained in 2012](#), they took the opposite direction of their competitors by designing the app to look like something out of a Fisher-Price product lineup. Wufoo's design is highly usable since the core actions are easily accessible, but its desirable presentation makes it stand far above its cookie-cutter database competitors.

Don't make the mistake of designing only for usability. Make sure you design experiences that also fulfill the user's emotional needs.

## 2. Focus on Delight

One of the reasons a lot of designers miss the top part of the pyramid is because it's difficult.

Knowing whether something is usable is relatively easier – a test can determine if it works, and some troubleshooting options can solve the problem if it doesn't. But how can you determine

if your interface creates an emotional response or not? That's a little trickier to test.

Aarron Walter, UX Director at MailChimp, [elaborates on the importance of emotion in design](#), and how to manufacture it. There are in fact a handful of helpful tips discovered by the experts that can guide you into developing the UX your users wants:

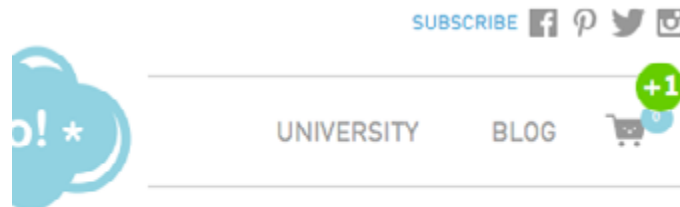
1. **Appealing Visuals** – While a delightful mascot may seem cheesy to some, its appeal to users is well-known. If you're shying away from something as silly as the bird from the Feathers app (above), you can still draw an emotional response from a pleasing visual, like the TapBots apps (below).



Photo Credit: [www.tapbots.com](http://www.tapbots.com) via [Emotional Design as the Gateway to Passionate Users](#) by Aarron Walter

2. **Discoverables** – People generally enjoy surprise treats more than expected ones. Photojojo uses unexpected and cute ani-

mations to infuse a little fun into the experience; for example, clicking the “Add to Cart” buttons creates a “+1” balloon that floats up to the cart icon in the upper-right corner.



## droid Lens Series

*Photo Credit: [www.photojojo.com](http://www.photojojo.com)*

3. **Trust** – This should go without saying, but if users don’t trust you – i.e., product pictures don’t match descriptions – they will turn off emotionally. It’s best to be honest with your content and media, albeit with your best foot forward. Like we previously discussed, personality and social proof are also some of the [factors that build trust](#).
  
4. **Reciprocation** – When the user feels like they were done a favor, they’re more likely to return the favor. If your design permits, try to give away small gifts (like a sample chapter for a book as designer Steven Bradley does [for his e-book](#), or free newsletters) in exchange for a link, referral, or purchase.



*Photo Credit: [www.vanseodesign.com](http://www.vanseodesign.com)*

5. **Personalization** – When your interface responds to a user without them disclosing information, you can create an immediate rapport. You can implement this on a complex level (like Quora does with its recommended content) or with a simple touch like a “Happy [day of the week]” message.
6. **Novelty Surprises** – As we described in Volume 1, the core functions themselves should be predictable (e.g. a popup form shouldn’t redirect users after clicking “OK”). Surprise only works to your advantage when it adds delight rather than affect the function.

For example, when you try to type in a fake email on FunnyOrDie, the interface becomes quite sarcastic. It’s a surprising reaction that matches the brand’s irreverent content.

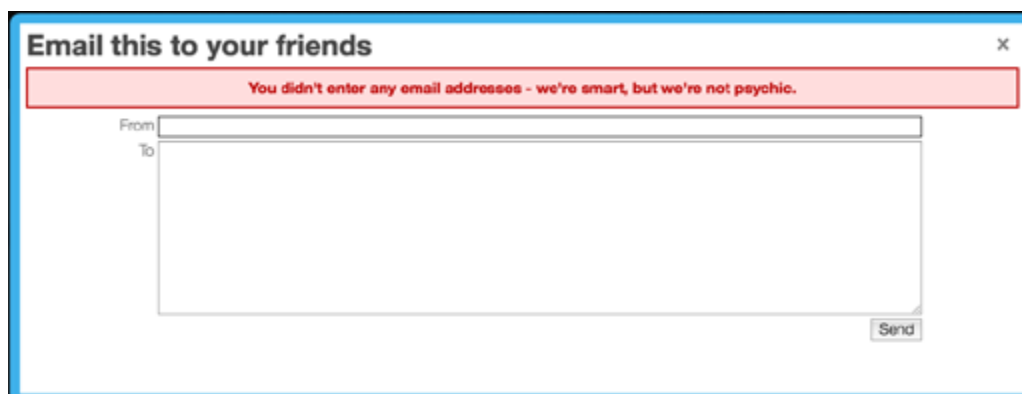


Photo Credit: [www.funnyordie.com](http://www.funnyordie.com)

Just as with human interaction, the more personality you show, the more it will polarize you. This means if you make a statement like, “Fantasy is better than sci-fi,” fantasy fans will love and appreciate your site much more, but you will lose some sci-fi fans.

While eliciting an emotional response can occasionally backfire, it's better to stir something in your users than nothing at all.

## Applying Delight To Transform Bad Experiences

One last note before we wrap up: designing for human interactions can do more than just create an enjoyable UX, it can also reduce the amount of displeasure for unavoidable errors.

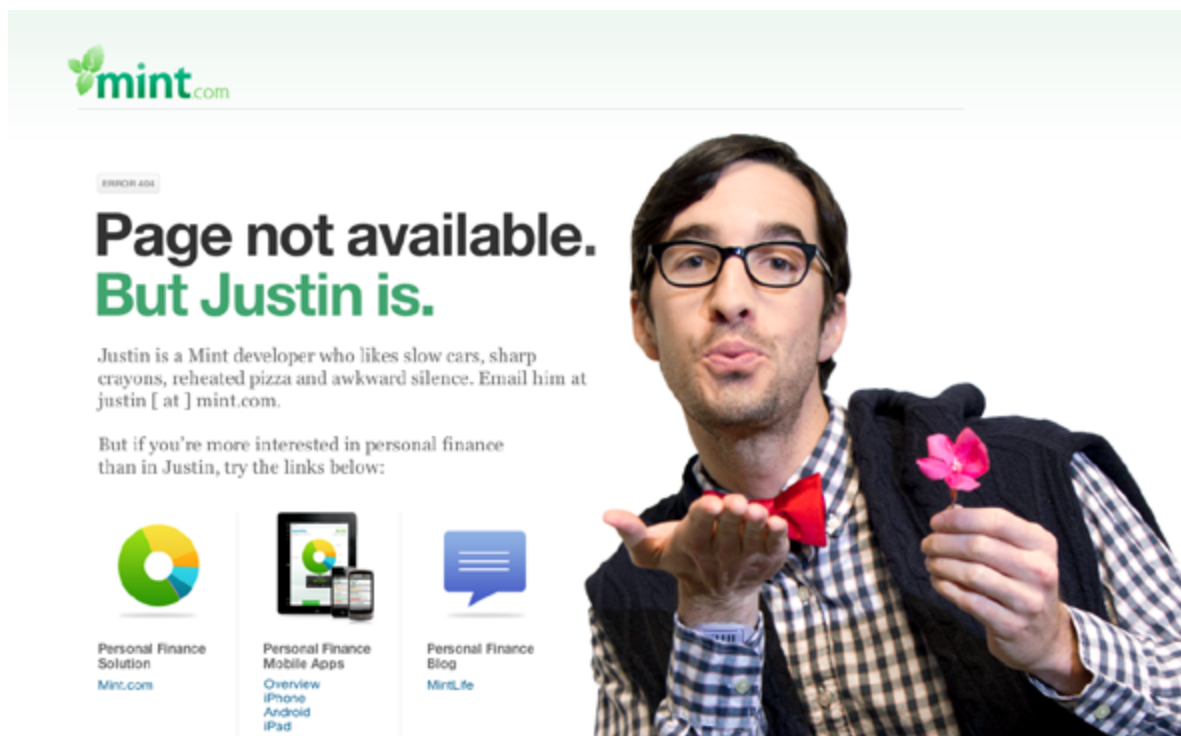


Photo Credit: [www.mint.com](http://www.mint.com)

Smart websites like to have fun with their 404 pages, as you can see by [Mint](http://Mint) above. When done right, even error messages can delight users.

The interaction design for this 404 page is perfectly executed. The humor deflects the frustration of the moment, while the fun em-



ployee information instantly creates a human connection. All this isn't done at the cost of usability, of course, since suggested links are still provided to help the user access the content.

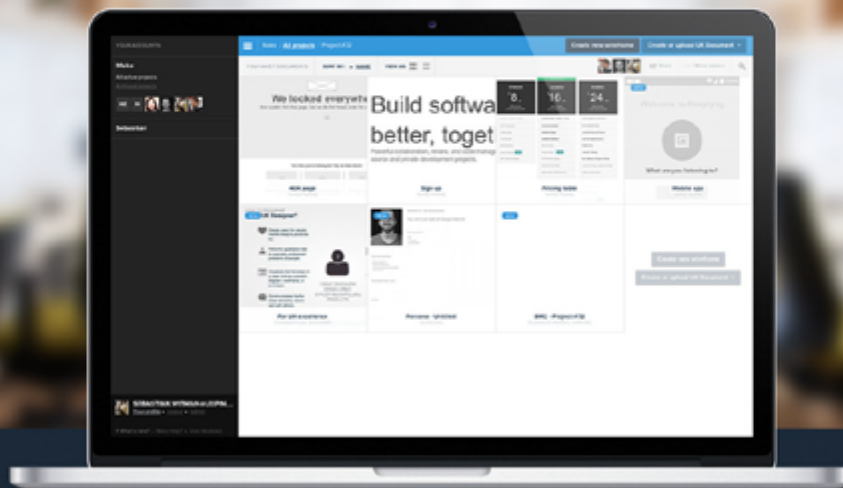
This example perhaps epitomizes the power of seductive interaction design. When we play to basic human needs (such as humor/fun), our interaction design can even transform negative experiences into positive ones. For more inspiration, Smashing Magazine compiled a list of their 50 best 404 error pages.

## Takeaway

Seductive design isn't about tricking your user into behaving a certain way. It's about getting them to want to behave that way on their own.

You shouldn't be deceitful or manipulative – it's just a matter of creating an interface that's enjoyable enough so that users want to use it. Words and phrases like “engaged” or “in the flow” are just synonyms for “having fun.” If you want users to keep coming back, you need to incorporate the foundations of any good human relationship: be helpful, reliable, understanding, and interesting.

Our goal is to help you understand that interaction design isn't just about creating interfaces. It's about mastering human-to-human design, because your goal is to make the black box of technology feel as empathetic and alive as possible.



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- ✓ Collaboration and feedback for any team size
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