



Behavioral Design for Digital Financial Services

How to increase engagement with products
and services that build financial health

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About ideas42

ideas42 has a clear mission: to use our unique experience as a non-profit at the forefront of behavioral science to change millions of lives. We create innovative solutions in economic mobility, health, education, safety and justice, consumer finance, energy efficiency and international development. Our approach is based on a deep understanding of human behavior and why people make the decisions they do. Working closely with our partners from government, foundations, NGOs and companies, we have more than 80 active projects in the United States and around the world.

Project staff: Katy Davis, Maddie Kau, and Abigail Kim

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Building financial health with digital financial services

Today, there's a digital tool for almost every aspect of financial management, from automated savings and investment to expense tracking to person-to-person payments. Compared with traditional brick-and-mortar financial services, digital financial services can offer greater accessibility and convenience at lower prices. Features such as real-time notifications and automated transfers can help people avoid fees and stay on track with critical goals such as paying down debt and saving for the future. The combination of convenience, affordability, and functionality that digital financial services offer can support greater financial health.

Many people aren't using helpful digital financial tools

The number of people using digital financial services is growing, but take-up is far from universal across different kinds of services and income levels. For example, while over 70% of [banking customers](#) in the United States use online banking, only 38% use mobile banking apps. In addition, some mobile payments, like bill pay, are popular, but nearly half of respondents to a [2016 Pew survey](#), had never heard of using mobile phones to send or receive money to other people. At lower levels of income, the use of mobile phones and smartphones generally [decreases](#), reducing access to digital products. This gap in engagement can lead to missed opportunities for building financial health—especially for low- and middle-income consumers and those whose [needs may not be fully met](#) by traditional financial products.

Understanding behavior can illuminate causes of low take-up and use

Regardless of the benefits of digital services, there are many subtle obstacles to transitioning financial lives into the digital world. For instance, it can be difficult to keep digital financial tools top-of-mind because there aren't many physical cues for using them. People may lack confidence in a completely virtual financial transaction with no tangible paper trail, and new providers may struggle to build trust without that human interaction. The seemingly unlimited set of complex options in an app store can be intimidating to navigate with little or no support. Finally, the hassle of setting up financial profiles, managing usernames and passwords, and linking external accounts can derail onboarding and cause people to give up. But understanding these behavioral obstacles and clients' needs can pave the way toward designing solutions that overcome them.

A playbook of solutions

This playbook is a guide for financial service providers to use behavioral design to increase engagement with digital tools. All of the strategies are rooted in behavioral science—the study of how people act and make decisions in the real world. It outlines design principles for common barriers to adoption that take into account how people process information, make decisions, and take action. By incorporating this behavioral perspective, providers of digital financial services can build (or improve) products and services that reach more consumers and help them achieve financial health.

» See the full playbook at ideas42.org/DFSplaybook

Introduction

This playbook outlines a behavioral approach to the design and delivery of digital financial services. In each section, you will find a description of behavioral challenges to adoption and evidence-based design principles to overcome them.



Capture Attention

See the design principles

on page 5



Inspire Trust and Confidence

See the design principles

on page 15



Simplify the Decision

See the design principles

on page 25



Facilitate Action

See the design principles

on page 32

Understanding the challenges your users face

To identify the challenges your users struggle with most, you'll need a deep understanding of the situations and external constraints they typically face. A mix of **qualitative and quantitative research methods** can help you gain insight and test your assumptions about your users.

- **Qualitative Research Methods:** *Understand your users' behaviors, beliefs, opinions, emotions, relationships, and context*
 - **One-on-one user interviews** are a good starting point for deep learning about barriers. You'll learn most by asking "how" questions, talking through specific past experiences, and asking about the process. Asking "why" questions requires users to understand and explain their own behavior (which we all struggle to do).

- **Direct observation** can help you map out the sequence of events, understand how actions are completed, and see how consumers react within an environment. Tools like [Fullstory](#) and [Swrve](#) can help you identify actual points of drop off and engagement in a digital environment.
- **Surveys and questionnaires** can help you gather data when administrative data isn't sufficient to paint a full picture.
- **Putting yourself in the user's shoes** and trying out elements of a product or service on your own can help you get a better sense of where they're encountering hang-ups.

For a detailed guide on conducting in-depth interviews and observations, see [Qualitative Research Methods: A Data Collector's Field Guide](#) from FHI 360.

For an overview of how to approach questionnaires, see [Survey Fundamentals: A Guide to Designing and Implementing Surveys](#) from the University of Wisconsin.

For a sample of validated questions, see this [Tip Sheet on Question Wording](#) from the Harvard University Program on Survey Research.

To learn more about the limitations of these techniques, see [Do people mean what they say?](#) from behavioral economists Marianne Bertrand and Sendhil Mullainathan.

For an organized opportunity to experience firsthand the challenges and opportunities in accessing financial services, see [FinX](#) from the Center for Financial Services Innovation (CFSI).

➤ **Quantitative Research Methods:** *Understand drop-off points and measure impact*

- **Administrative data** from existing systems are often underused but can offer quick insights and help you identify patterns of use and critical drop-off points.
- **Randomized Controlled Trials (RCTs)** are simple experiments that can accurately measure the impact of products and services.
- **A/B tests**, a type of Randomized Controlled Trial, measure and compare the effectiveness of different versions of a program feature, service, or communication.

For a comprehensive guide to running Randomized Controlled Trials (RCTs), see [Evaluating Financial Products and Services in the US](#) from Innovations for Poverty Action (IPA).

For a guide to A/B testing, see the [A/B Testing Tool](#) from ideas42.

➤ **Tests for accessibility standards:** *Specific tools and guidelines are available to help authors and developers ensure content is accessible to people with disabilities*

- The [Web Content Accessibility Guidelines \(WCAG\) 2.0](#) offers recommendations for making Web content more accessible to a wider range of people with disabilities such as blindness and low vision, deafness and hearing loss, learning disabilities, cognitive limitations, limited movement, speech disabilities, and photosensitivity.

- For a practical guide to testing native apps and the web for accessibility on Android and iOS, see [The TPG Mobile Accessibility Testing for Android and iOS](#) from The Paciello Group. Other [resources](#) from TPG include a [primer](#) on accessibility and a set of [inclusive design principles](#).
 - Programs and activities funded by federal agencies are required to adhere to guidelines in Section 508 of the Rehabilitation Act of 1973. Digitalgov provides an [overview](#) of requirements, along with resources for [developing content](#) and [testing content](#).
- **Secondary Research:** *Read about what other researchers and practitioners are learning in the field*
- The [Behavioral Evidence Hub](#) compiles innovative solutions from behavioral science that have been proven to amplify the impact of programs, products, and services.
 - The Federal Reserve Board conducts an annual survey, [Consumers and Mobile Financial Services](#), tracking trends in the adoption and use of mobile financial services
 - The FDIC fields a [national survey of unbanked and underbanked households](#) and has conducted qualitative research on [economic inclusion and mobile financial services](#)
 - [Catalyzing Inclusion: Financial Technology & The Underserved](#), a report by the Center for Community Capital at the University of North Carolina at Chapel Hill, explores the potential for technology innovation to increase the financial health and inclusion of American households
 - The [U.S. Financial Diaries](#) tracked 235 low- and moderate-income households over the course of a year. The detailed financial data collected through this study sheds light on common issues such as income volatility, financial planning and budgeting, credit challenges, perceptions about financial providers and products, and community dynamics.
 - In [Weathering Volatility: Big Data on the Financial Ups and Downs of U.S. Individuals](#), the JPMorgan Chase Institute analyzes detailed transaction data to determine how income and consumption fluctuate on a monthly and a yearly basis.

Putting your users' interests first

There is no “neutral” pathway when it comes to design—the way that we design programs, products and services will impact behavior. As you optimize your products and services for adoption, consider applying this [regret test](#) from Nir Eyal, author of *Hooked: How to Build Habit-Forming Products*:

“If people knew everything the product designer knows, would they still execute the intended behavior? Are they likely to regret doing this?”

For example, many people will never bother to change a default setting such as automatic subscription renewals, even if they don't want the subscription to renew. If your users were prompted to make an active choice, would they still be happy with the option you set as the default? ***Would they see you as a provider who's on their side?***

In an age when users can abandon your service or switch to another provider with one touch or swipe, a genuine dedication to the financial health of your users will differentiate your company and support long-term sustainability.



Capture Attention

Financial tasks usually capture our attention when there is an immediate, short-term need such as paying a bill that has come due. If we have established routines for managing our finances, it's especially easy for us to continue down those paths without much thought. In fact, most of us are *not* making a deliberate choice not to use digital financial services—those opportunities for usage simply never make it into our line of sight. The attention challenge is even more pronounced in a digital environment where physical cues and human interaction are limited, and an increasing number of digital products and services compete for visibility. Finding specific moments that align with a real-world need can help bring digital financial tools to the forefront of our attention and increase engagement.

The challenge:

- We have limited capacity for attending to the world around us, and digital financial services may never even enter that line of sight.
- Reminders and alerts may pop up for a moment, but may not arrive at the right time, with a compelling message, or with a natural action step—and ultimately may be forgotten.
- Even if a new product does capture attention, we tend to overestimate the costs of switching to something new and choose instead to stick with products and services we already use.
- In the absence of human interaction, outreach that feels impersonal or institutional can fade into the background.

Warning signs:

- Low engagement with marketing campaigns
- Low traffic on your website
- People using your product only one or twice
- Feedback from consumers that they already have another solution in place

THE SCIENCE OF:

Limited Attention



People tend to notice and respond to one aspect of their environment at a time. We automatically pay attention to what stands out—not necessarily what's most important. As a result, we can completely miss critical information or even physical objects that are right in front of us.




Capture Attention

Design Principle #1: Align with a moment of need.

Consumers aren't necessarily scanning the marketplace for new solutions, even if there are faster, more convenient options out there. To enter a consumer's consideration set, find a moment when they are looking to meet a specific need, and make sure your product breaks into their line of sight and facilitates positive action within that moment. Of course, that needs to be a moment when they have sufficient time—and mental bandwidth—to complete the action successfully.

EXAMPLE



ALLIANT
Member Since 1998

1154 West Taylor Avenue
Chicago, Illinois 60664-0945
800-328-1935
www.alliantcreditunion.org

Make a deposit with your smartphone

FREE \$5.00 STARTER CHECK

Jane Smith
123 Main Street
Anytown, IL 60666

Dear FIRST NAME,


Did you know that **47 million Americans** will deposit their checks with smartphone apps in 2015? That's a lot of time and postage saved compared to mail-in deposits. And just think, you'll be able to access money much faster than if you mail it in!

We invite you to join the mobile banking movement, so you can deposit all your checks quickly and conveniently.

To get you started, we've included this new Alliant Mobile Deposit Kit, with a \$5.00 STARTER CHECK.* That's right, **we're giving you \$5 just to try our mobile check deposit** using your smartphone or tablet!

Just turn the page, tear off that check and make your first mobile deposit.

Cheers!



Senior Manager, Deposit Products

PS: Don't have our app? Just download the free "Alliant Mobile Banking" app from your device's app store to get started! For help, give us a call 24/7 at 800-328-1935.

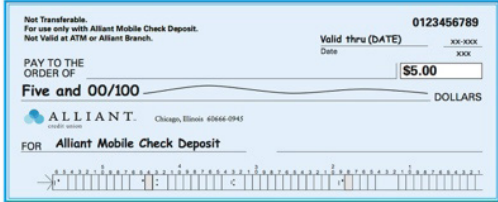
* Source: James DeBello, CEO, Meink Allmobile Deposit Technology Provider

How to make a mobile check deposit.

It only takes a few minutes!

- 1** DOWNLOAD and OPEN the "Alliant Mobile Banking App"
Visit the app store to download.
- 2** SELECT Mobile Check Deposit
Log in with your Alliant Online Banking username & password.
Questions? Call 800-328-1935.
- 3** SELECT your preferred deposit account
- 4** ENTER check amount
\$5.00
SELECT Capture Check Front
- 5** TAKE PICTURE front/back of check
(remember to sign it!)
- 6** COMPLETE
Keep checks for 60 days.

Further guidance available in your Mobile Deposit Kit's FAQ and in the "About" section under "Make a Deposit" within the Alliant app.



Not Transferable. For use only with Alliant Mobile Check Deposit. Not Valid at ATM or Alliant Branch.

Valid thru (DATE) 0123456789
Date XX-XXX-XXXX

PAY TO THE ORDER OF \$5.00 DOLLARS

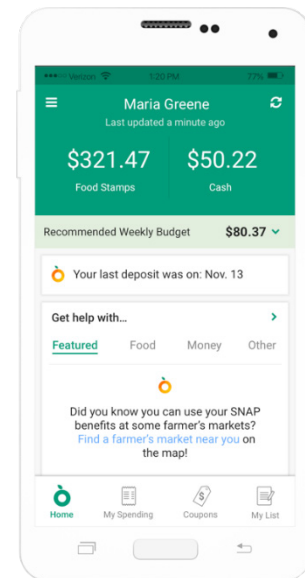
Five and 00/100

ALLIANT Chicago, Illinois 60664-0945

FOR Alliant Mobile Check Deposit

ideas42 partnered with Chicago-based Alliant Credit Union to **increase the use of their mobile deposit feature**. Members either weren't aware of the feature, had tried it but gotten confused, or simply defaulted to habitual ways of making deposits when checks came their way. To overcome these barriers, we created the Mobile Deposit Kit with illustrated step-by-step instructions for making a deposit and a \$5 check so customers could try the service right then and there. Over six months, credit union members who received a kit deposited 60% more of their checks through this digital tool. While the \$5 check helped grab attention, it also gave members a concrete opportunity to try mobile deposit. Facilitating the action just once proved effective in breaking down behavioral barriers to use.

This example does not constitute or imply an endorsement or recommendation of any product or service by ideas42.

EXAMPLE

Fresh EBT is a free mobile app that helps people manage their SNAP (food stamps) benefits. The app makes it easier for participants to check the balance on their EBT card, see recent transactions, and determine their next deposit date. Users often tell others about Fresh EBT when they see friends and family trying to call into a voice service to check balances at the start of a grocery trip. Sharing this information at exactly the right time and place brings the recommendation into focus.

This example does not constitute or imply an endorsement or recommendation of any product or service by ideas42.

Getting it right:

- Once you've identified a specific moment of need that your product solves, make sure that it's easy for users to quickly understand what your product does (see "Simplify the Decision") and give them a clear next step to complete (see "Facilitate Action").
- Test your assumptions about what the right moment is by conducting observations and asking for user feedback. Introducing the digital solution should feel natural and intuitive, not forced.
- Offering discounts, prizes, or gifts to try a new product is a common practice. But while economists may think of incentives as a way to sway a consumer's cost-benefit analysis, it's not necessarily the amount of the incentive that matters—it's the attention-grabbing effect. Behavioral science research suggests that even small rewards or prizes can be an effective (and relatively inexpensive) way of drawing attention to the opportunity to take up or use a tool, especially when delivered at the right time and aligned with an actual need.

Caution!

- Be mindful of overloading the user when they're in a rush, trying to do something else, or have limited mental bandwidth for a new task. Trying to divert attention in a "low bandwidth" moment can backfire.
- Incentives can help if the problem is that users don't know about your product or underestimate the value of trying it. However, they won't lead to sustained usage if you have bigger barriers to overcome. Even micro-incentives add up over time.
- Partnerships can open up new channels to offer your product and reach consumers at the right moment. However, remember that it's not just the product end user who has limited attention—it's all of us. Front-line staff and other employees at your partner organization also need to have the bandwidth and buy-in to deliver your product effectively.

» Read more:

Researchers explain the economics of prize-linked savings from the perspective of financial institutions and the perspective of depositors.

Guillén, Mauro F., and Adrian E. Tschoegl. 2002. "Banking on Gambling: Banks and Lottery-Linked Deposit Accounts." *Journal of Financial Services Research* 21(3): 219–231.

https://repository.upenn.edu/cgi/viewcontent.cgi?article=1111&context=mgmt_papers

People tend to believe that they should take advantage of opportunities that few others have. By framing opportunities as unique and exclusive, researchers increased people's willingness to volunteer their time and make purchases.

Burger, Jerry M., and David F. Caldwell. 2011. "When Opportunity Knocks: The Effect of a Perceived Unique Opportunity on Compliance" eds. Joanne R. Smith, Winnifred R. Louis, and P. Wesley Schultz. *Group Processes & Intergroup Relations* 14(5): 671–80. https://www.researchgate.net/profile/David_Caldwell6/publication/254095740_When_opportunity_knocks_The_effect_of_a_perceived_unique_opportunity_on_compliance/links/00b4953bd4eb2b1e78000000/When-opportunity-knocks-The-effect-of-a-perceived-unique-opportunity-on-compliance.pdf

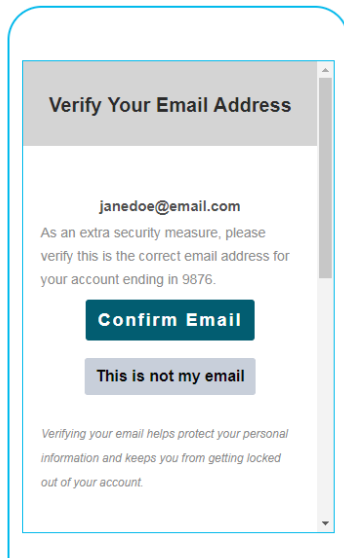


Capture Attention

Design Principle #2: Reminders and alerts need to be “smart”.

As financial management moves into a digital environment, the loss of physical cues or in-person interactions makes it easier to overlook financial tasks. Leveraging features such as real-time notifications and reminders has been shown to keep finances top of mind and boost financial health. However, these features must be well-timed, vivid and well-structured: grabbing people's attention at the moment when they can take action, and ideally providing a channel to complete the action.

EXAMPLES



Many companies give users clear action steps for confirming email addresses, including an opportunity to flag if something isn't right. In this example, the explanation of why this step is important comes after the action step, but doesn't interrupt the flow.



Pushing alerts at a set time each day or each week in batches, rather than in real-time, is unlikely to help the user take corrective action and can overwhelm the user.

You're \$61 over budget for Pharmacy

BUDGET	SPENT
\$30	\$91

Budgeting apps often send alerts when you're over budget, but not all allow you to create an alert when you're *approaching* your budget and corrective action can be most helpful.



In the United Kingdom, a regulatory authority has introduced a new rule requiring banks to set up an alert system to notify consumers before they incur an overdraft fee. While many banks already have alert systems in place, the rule will require all banks to send alerts via text message or a mobile banking app.

Getting it right:

- If you're sending a reminder to complete an action, set your user up for success. Think about when they are likely to receive your message and where they will be. A/B test your hypotheses about the optimal time to reach out, and facilitate that action step by including a direct link when possible.
- If you are sending an alert that may raise concerns (e.g., account privacy or security issue), share a concrete next step (e.g., verify this purchase, change your password) and make it easy for the user to contact you with questions.

Caution!

- Constant low balance or expenditure alerts can be a distraction that causes people to tunnel on their finances. Give people control over when alerts are triggered so they can set meaningful thresholds for their financial situations.

» Read more:

A prompt to wear your seatbelt delivered 30 seconds before the opportunity increased seatbelt use, but a prompt delivered 5 minutes before did not. Austin, J., Sigurdsson, S. O., & Rubin, Y. S. (2006). An examination of the effects of delayed versus immediate prompts on safety belt use. *Environment and behavior*, 38(1), 140-149. <http://journals.sagepub.com/doi/abs/10.1177/0013916505276744>

Researchers sent monthly text messages to bank customers who had made commitments to save. They found that reminding people of the specific purchase they were saving for helped people stick to savings goals. Karlan, D., McConnell, M., Mullainathan, S., & Zinman, J. (2016). *Getting to the top of mind: How reminders increase saving*. *Management Science*, 62(12), 3393-3411. <http://www.poverty-action.org/sites/default/files/publications/getting-to-the-top-of-mind.pdf>

THE SCIENCE OF:

Status Quo Bias



Sometimes, we like things the way they are simply *because* that's the way things are. There are many reasons for this. We disproportionately value things we have over things we don't have, a phenomenon that psychologists call the endowment effect. We also like to be internally consistent. Since making a switch would imply that previous decisions weren't the right choice, we'll avoid the change to avoid facing that inconsistency. And because we tend to overestimate the costs of switching, sticking with the current state of affairs feels easier than switching to something new, even when there are better options out there.

 **Capture Attention**

Design Principle #3: Interrupt the habit and redirect attention.

We sometimes use regular routines to manage our finances, such as going to the bank at lunchtime every Friday. Even when there are better alternatives out there, we tend to automatically stick with what we know and overweight the cost of switching to something new. Interrupting old habits provides an opportunity to reset the user experience and introduce digital financial services that can save users time and/or money while better supporting financial health.

EXAMPLE



Sometimes, when people receive a check, they automatically go to the bank simply because it's the way they've cashed checks in the past. At one financial institution, customer care representatives identify people who are waiting to cash a check with a teller and suggest they use mobile check deposit instead. If a customer does not have the mobile banking app, the representative offers to set up the app with them on the spot. Representatives walk customers through registration and help them with the first mobile check deposit. Because data usage can be a concern, Wi-Fi is typically available to support app downloads. Customers are able to fully complete the action and, if they encounter hurdles, access support immediately.

Getting it right:

- Start by identifying the cues that prompt old habits—often a place, time, or preceding action. In qualitative interviews, rather than asking people why they took a certain action, ask questions about the process (“Walk me through the last time you made a deposit. What was the first step you took? Where were you? What time of day was it? What did you do next?”). Think about how to change these cues and the environment in which people take action, rather than just persuading them to switch.
- People tend to believe it's harder to switch to a new technology than it actually is. Reduce the misperception by helping people navigate one-time administrative hassles such as registration and account authentication. Having support available to troubleshoot can help alleviate anxiety.

Caution!

- Don't put the burden on your user by asking *them* to establish new habits or actively spot opportunities to continue using your service.
- Some patterns of behavior aren't driven by pure habit alone. For example, if banking in-person offers a social connection that is important to the user, trying to change the routine is unlikely to support a change in behavior. Identify what aspects of the experience can be captured in a digital channel so that you can free up in-person resources for the highest-impact exchanges.

» Read more:

For a theoretical framework of how the status quo bias and habits affect technology acceptance, see Polites, Greta L., and Elena Karahanna. 2012. "Shackled to the Status Quo: The Inhibiting Effects of Incumbent System Habit, Switching Costs, and Inertia on New System Acceptance." *MIS quarterly* 36(1). https://www.researchgate.net/profile/Elena_Karahanna/publication/220260373_Shackled_to_the_Status_Quo_The_Inhibiting_Effects_of_Incumbent_System_Habit_Switching_Costs_and_Inertia_on_New_System_Acceptance/links/5478adb80cf293e2da2b2a7a.pdf

Researchers explain how habits are tied to environmental cues and present strategies for changing habitual behavior, such as fielding downstream interventions when there are natural shifts in lifestyle and upstream interventions when policies can change the context. Verplanken, B., & Wood, W. (2006). Interventions to break and create consumer habits. *Journal of Public Policy & Marketing*, 25(1), 90-103. <https://dornsife.usc.edu/assets/sites/208/docs/Verplanken.Wood.2006.pdf>

THE SCIENCE OF: Reciprocity



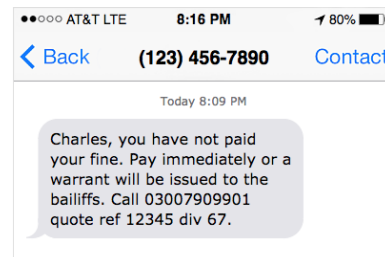
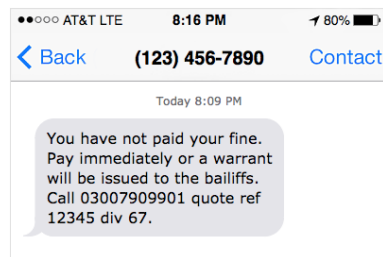
People tend to reciprocate positive social gestures. In fact, we will often go out of our way to return a small favor. Research suggests that while we're especially sensitive to this dynamic within established relationships, the impulse to reciprocate still holds when we interact with complete strangers.



Capture Attention

Design Principle #4: Incorporate the human element.

We may not notice generic communications, but when it seems like someone put extra effort into reaching out, or when we know that someone is waiting for our reply, we're more likely to pay attention and respond. Even if we don't know the sender personally, including visuals like a photograph or personal details can invoke a response.

EXAMPLE

The Behavioural Insights Team and the UK court service conducted experiments to test the effectiveness of low-cost strategies for increasing payment of delinquent court fines. They found that a personalized text message that addresses the recipient by name significantly increased fine payments by an average of £5.20 more than the standard text.

Haynes, L. C., Green, D. P., Gallagher, R., John, P., & Torgerson, D. J. (2013). Collection of delinquent fines: An adaptive randomized trial to assess the effectiveness of alternative text messages. *Journal of Policy Analysis and Management*, 32(4), 718-730. <http://onlinelibrary.wiley.com/doi/10.1002/pam.21717/full>

Getting it right:

- Include personal greetings (“Hi, Sara”) and signatures (“James”) in customer outreach, whether email, text message, or other formats.
- Use a personal, casual style where appropriate and acceptable (authoritative tone may be more appropriate in some instances, such as official notices).

Caution!

- People react reciprocally to negative interactions as well. Once a positive connection has been established, be deliberate about how you maintain it (see “Inspiring trust and confidence”).

» Read more:

Adding the person’s name to an otherwise generic text message significantly increased the amount of money paid toward delinquent fines. Haynes, L. C., Green, D. P., Gallagher, R., John, P., & Torgerson, D. J. (2013). Collection of delinquent fines: An adaptive randomized trial to assess the effectiveness of alternative text messages. *Journal of Policy Analysis and Management*, 32(4), 718-730. <http://onlinelibrary.wiley.com/doi/10.1002/pam.21717/full>

A hand-written note on a post-it note generated a 76% response rate, compared to a 36% response rate on a generic request. Garner, Randy. 2005. “Post-It® Note Persuasion: A Sticky Influence.” *Journal of Consumer Psychology* 15(3): 230–237. <http://media.cbsm.com/uploads/1/PostitNotePersuasion.pdf>

Borrowers who receive regular calls and high-touch service display better repayment behavior and greater customer satisfaction than borrowers who are not contacted or contacted only when payments are late. Schoar, Antoinette. 2012. “The Personal Side of Relationship Banking.” https://www.povertyactionlab.org/sites/default/files/publications/804%20ASchoarPaper_WB.pdf

Researchers sent text message reminders for loan repayments to borrowers of three banks in the Philippines. Repayment rates improved when borrowers knew the loan officer and messages included his or her name. *Karlan, Dean, Melanie Morten, and Jonathan Zinman. 2012. A Personal Touch: Text Messaging for Loan Repayment. National Bureau of Economic Research*

<https://pdfs.semanticscholar.org/30d0/941c4d98c8c3665e64613870e3f38ee165a3.pdf>

Researchers found that users were more likely to provide their personal contact information when a website provided content and then asked for the information, rather than asking for the information first. *Gamberini, L., Petrucci, G., Spoto, A., & Spagnolli, A. (2007, April). Embedded persuasive strategies to obtain visitors' data: Comparing reward and reciprocity in an amateur, knowledge-based website. In International Conference on Persuasive Technology (pp. 187-198). Springer, Berlin, Heidelberg.*

CHECKLIST Capturing Attention

Is your outreach campaign likely to reach users when they have a specific need?

Finding specific moments that align with a real-world need can help bring digital financial tools to the forefront of our attention when physical cues and human interaction are limited

Karlan, D., McConnell, M., Mullainathan, S., & Zinman, J. (2016). Getting to the top of mind: How reminders increase saving. *Management Science*, 62(12), 3393-3411. <http://www.poverty-action.org/sites/default/files/publications/getting-to-the-top-of-mind.pdf> (September 27, 2017).

Are reminders about required actions likely to reach your user at a time and place when they can respond?

Reminders are most effective when they grab people's attention at the moment when they can take action

Austin, J., Sigurdsson, S. O., & Rubin, Y. S. (2006). An examination of the effects of delayed versus immediate prompts on safety belt use. *Environment and behavior*, 38(1), 140-149. <http://journals.sagepub.com/doi/abs/10.1177/0013916505276744>

Is there a human element to letters, emails, and texts (e.g., personal information about the sender and/or photos)?

A personal touch has been shown to increase response rates and help people stay on top of their finances

Garner, Randy. 2005. "Post-It® Note Persuasion: A Sticky Influence." *Journal of Consumer Psychology* 15(3): 230–237.

Schoar, Antoinette. 2012. "The Personal Side of Relationship Banking."

Karlan, Dean, Melanie Morten, and Jonathan Zinman. 2012. *A Personal Touch: Text Messaging for Loan Repayment*. National Bureau of Economic Research.



Inspire Trust and Confidence

When people come across digital financial services, it can feel risky to trust a new provider or a virtual process with no human touch points and no tangible paper trail. The stakes are especially high when cash flows are tight. Any delays or errors in processing can result in fees and penalties that may affect long-term economic security. Each individual touch point, whether it a website visit, a log-in, or an email, represents an opportunity to either reinforce or break feelings of trust and confidence.

The challenge:

- People often look to others to inform their behavior, but in a virtual environment, it's harder to know what products and services peer groups are using.
- While many digital financial services provide increased clarity and control for their users, online processes may feel more opaque than services delivered in person at a brick-and-mortar financial institution.
- People are concerned about the security and privacy of their data, but may not know exactly what to look for to ensure security.
- A product's look and feel sends subtle signals about who should use it, which may not resonate with a consumer's identity.

Warning signs:

- People spending very little time on your website
- Some interest in your product but low conversion rates
- Feedback from consumers that they're "not sure if this is real" or "afraid it might go under"

THE SCIENCE OF: **Social Norms**



When we're not sure of what to do or how to behave, a critical source of information comes from the behavior of others. "Injunctive" social norms tell us what we should be doing, while "descriptive" social norms tell us what others are doing. Social norms can be a powerful driver of behavior, but their effectiveness can depend on how much the consumer identifies with the social group in question.

Social norms can also backfire if the behavior you're trying to promote is in the minority. In this case, you can use *dynamic* social norms that describe a change in behavior over time (for example, "The number of Americans who use online banking apps has increased by 37% from 2013 to 2015").




Trust and Confidence

Design Principle #1: Show that others have chosen to trust you.

People manage their finances in private, which makes it hard for people to see what others are doing. This makes it especially important to provide clear signals of quality. Show that others trust you and that it's safe to follow suit by encouraging word of mouth referrals, highlighting user reviews and press mentions, and including visible indicators of usage when they are likely to send a message of growth (count of users logging in, saving money, etc.). Other signals of credibility could include funders, partnerships or other prominent supporters. Remember that the supporters you highlight will also send a message to users about your target market, and could either encourage or discourage use (see “the Science of: Identity”).

EXAMPLES



4.7


Average Rating

★★★★☆

6,809 customer reviews


Super convenient and helps me stay on track!

- Justin B., Madison WI




James Smith ★★★★★

Easy to use and very intuitive. Makes budgeting a breeze!



Lisa Reede ★★★★★

I've been using this for a while now and I find it very helpful. I no longer have to track my finances using multiple platforms in addition to the pen...



Susan P. ★★★★★

I love this app! Highly recommend to anyone who is trying to get on top of their bills.

This summary shows a large number of total reviewers and positive feedback from individual users. Names and photos, plus small, concrete details like location, increase perceptions of closeness and similarity with the reviewer, while the star rating provides an easy-to-scan visual cue.

Getting it right:

- If your user base is small because you're just starting out, tell a compelling story of growth or highlight individual users' stories. This is also an opportunity to use a “dynamic” norm to tell a story of growth (“Americans are starting to invest more in their retirement...”).
- Ask users to help you spread the word. Even if they love your product, it may not occur to them unless you ask, and they may not follow through unless you make it easy for them. Give them links to forward or key search terms to talk about.

Caution!

- Don't share anonymous reviews—they strip out the social aspect of this type of information and can create distrust. If possible, share select information about the reviewer, such as a first name or hometown so readers can personally relate to them.
- Visible social norms can backfire when they reveal low uptake or engagement. Empty comment boards or outdated reviews send an undesirable message about what others are doing.
- Be careful about referencing social groups that the user might not identify with. For example, featuring a *Wall Street Journal* article on a website may appeal to some user bases but not others.

» Read more:

In a direct mail fundraising campaign for a charity, naming a well-known supporter increased the likelihood of donation by 26% and donation amounts by 51%. *Karlan, Dean and List, J. 2014. "How Can Bill and Melinda Gates Increase Other People's Donations to Fund Public Goods?" National Bureau of Economic Research. <http://www.nber.org/papers/w17954.pdf>*

Using data from reviews on Amazon.com, researchers show that information about the identity of the reviewer helps buyers form judgments about both the reviews and the products themselves, ultimately boosting sales. *Forman, Chris, Anindya Ghose, and Batia Wiesenfeld. 2008. "Examining the Relationship Between Reviews and Sales: The Role of Reviewer Identity Disclosure in Electronic Markets." Information Systems Research 19(3): 291–313.*

In a study conducted at Stanford University, people ate less meat and used less water for their laundry when told that those behaviors reflected changing societal norms. *Sparkman, G., & Walton, G. M. (2017). Dynamic norms promote sustainable behavior, even if it is counter normative. Psychological science, 28(11), 1663-1674. <http://journals.sagepub.com/doi/abs/10.1177/0956797617719950>*

THE SCIENCE OF: Reciprocity



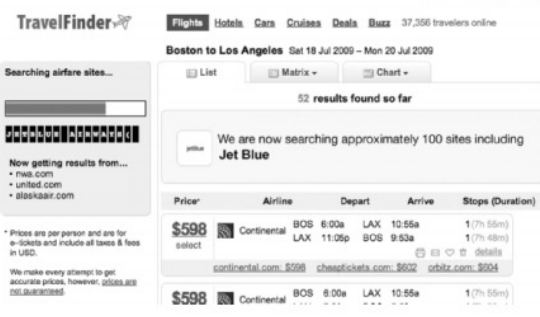
People tend to reciprocate positive social gestures. In fact, we will often go out of our way to return a small favor. Research suggests that while we're especially sensitive to this dynamic within established relationships, the impulse to reciprocate still holds when we interact with complete strangers.

 **Trust and Confidence**

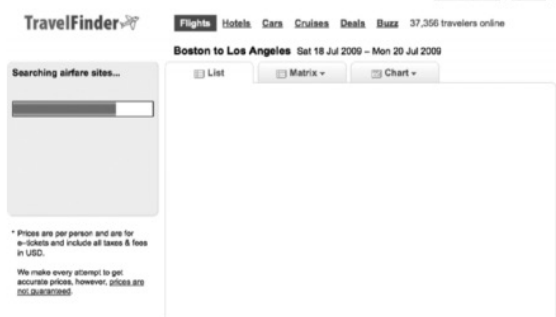
Design Principle #2: Give transparency to the process.

Sharing tangible cues about high-level processes prompts users to think about and appreciate the effort that goes into a service. As a result, they tend to value the service more highly, be more trusting and patient, and feel more satisfied with the user experience. Helping users imagine or check the system’s progress on key steps in a new or unfamiliar process can also increase confidence in expected outcomes. This can be especially important for consumers who are new to digital channels, those who have low initial trust in providers, and low- or middle-income consumers who can’t afford to have delays or mistakes in their finances.

EXAMPLES



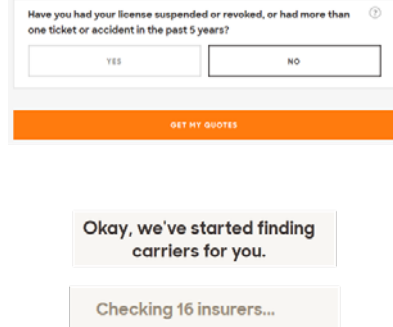
Transparent condition



Blind condition


Researchers used the interface of a travel website to test whether “operational transparency” affected perceptions of value. They found that listing the airlines being scanned as participants waited for search results increased perceptions of quality and value. Users often valued the transparent service even more highly than a faster version with no information on the process.

Buell, Ryan W., and Michael I. Norton. “The Labor Illusion: How Operational Transparency Increases Perceived Value.” *Management Science* 57, no. 9 (September 2011): 1564–1579.



When users submit information on the insurance website [Policygenius](#), the site frames an automated search process in “offline” terms that users can conceptualize.

This example does not constitute or imply an endorsement or recommendation of any product or service by ideas42.



A “paid” stamp was one of the strongest physical cues that customers at a large bank appreciated about in-person transactions. ideas42 helped add similar visual cues to their online banking interface.

Getting it right:

- Consider what *offline* processes people are familiar with and what tangible cues they may appreciate and look for in a digital channel.
- Share cues about the process if your user has to wait for results, or to demonstrate effort when a user would expect the website to “do work” before producing results (for example, searching many sites for a price comparison).

Caution!

- Don't confuse or overwhelm your user with technical details or exact operations. Instead, provide representative cues in “live” time, as they fit into a layperson's understanding of the process.

» Read more:

Researchers found that websites that provide operational transparency, or cues about operational processes, signal that they are exerting effort. This “labor illusion” evokes feelings of reciprocity that lead to increased perceptions of service value. *Buell, Ryan W., and Michael I. Norton. “The Labor Illusion: How Operational Transparency Increases Perceived Value.” Management Science 57, no. 9 (September 2011): 1564–1579.*

New banking customers repeatedly checked balances for several months before increasing deposit activity, demonstrating a need to monitor outcomes and develop trust over time. *Bachas, Pierre, Paul Gertler, Sean Higgins, and Enrique Seira. 2016. “Banking on Trust: How Debit Cards Help the Poor to Save More.” (Working Paper).*

THE SCIENCE OF:

System 1 and System 2 Thinking



Most of the time, people think using “System 1,” which is an automatic, quick mode of processing information. System 1 thinking requires little mental energy, but can lead to errors in judgments or decisions. “System 2” thinking is slower and more deliberative, but requires conscious effort. Many of the behavioral biases people exhibit are due to System 1 overshadowing System 2.



Trust and Confidence

Design Principle #3: Use visual cues to signal security

People make quick, automatic judgments about the security of a website based on visual cues, such as an image of a lock or the overall sense of professionalism on a page. Because this initial perception is sticky, spend time perfecting the surface-level cues. Then, identify specific moments when you need users to engage more deliberately and slow them down at those moments to ensure security.

EXAMPLES



To begin your protection we verify your identity.
Please complete the following information.

Your Home Address

Street Address

City ST Zip

I have lived at the above address for less than 1 year

Your Date of Birth

MM DD YYYY

Your Social Security Number

Confirm Social Security Number

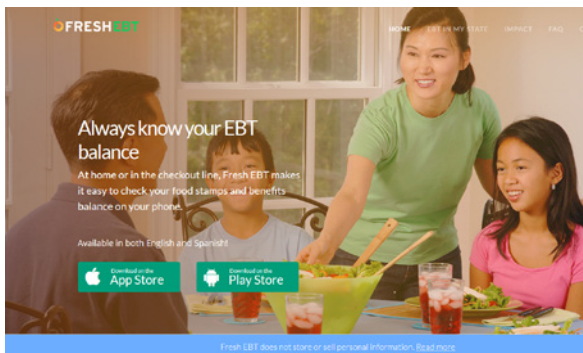
Your information is safe with us

- ✓ Fully encrypted
- ✓ Account numbers are not stored
- ✓ No money can be moved

We ask for your SSN to be able to monitor for identity theft and other suspicious activity on your behalf.

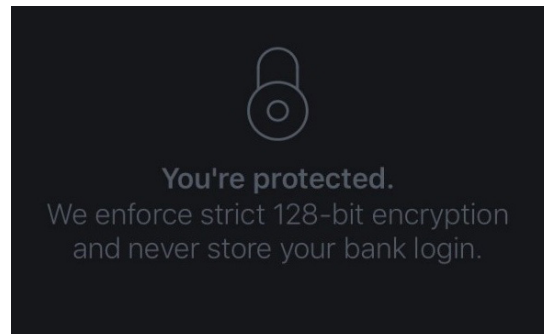
EverSafe is a service that protects consumers against identity theft and fraud. Their registration form highlights a short list of security measures, includes a visual lock icon next to sensitive fields, and gives a reason for requesting social security numbers (“to monitor for identity theft and other suspicious activity on your behalf”).

This example does not constitute or imply an endorsement or recommendation of any product or service by ideas42.



Fresh EBT is a free mobile app that helps people manage their SNAP (food stamps) benefits. The app makes it easier for participants to check the balance on their EBT card, see recent transactions, and determine their next deposit date. Fresh EBT shares a straightforward and simple privacy statement on its home page (“Fresh EBT does not store or sell personal information”). The statement is highlighted in blue and positioned at the bottom of the page so it stands out but doesn’t interrupt the flow of information.

This example does not constitute or imply an endorsement or recommendation of any product or service by ideas42.



Digit, an automated savings platform, shows users a visual image of a lock and highlights the standard industry language users may expect to see.

This example does not constitute or imply an endorsement or recommendation of any product or service by ideas42.

Getting it right:

- Design for System 1 (Fast Thinking): Use visual cues to signal a secure environment, and make it easy for users to follow best practices. For example, you may want to send smart reminders to install app updates that improve security or help people plan ahead to address security issues. Don't require sensitive information if you don't need it, and don't ask for it before you've established a sense of trust.
- Design for System 2 (Slow Thinking): Slow people down when you need them to be more deliberative for security reasons. Provide the option to access more information when users may want to engage more deeply. Explain why you need sensitive information, and be explicit about how the data will and won't be used. Share rules of thumb about what visual cues to always look for and what information never to share. Keep in mind that staff members are also human, with their own set of System 1 and System 2 challenges. Set security permissions to expire automatically so that they must be re-set. Use checklists as a safeguard. Make the consequences of a security breach concrete.

Caution!

- While automatic app updates for security may seem like a good idea, be cautious because some users may have limited data plans, low device storage, or older device models that might not accommodate large updates. Use settings that only push downloads when Wi-Fi is connected, and make it clear when an update is critical for security.
- Use warnings judiciously. Too many warnings that cover both minor and serious issues can cause fatigue, and people may become accustomed to automatically dismissing *all* warnings.
- Keep explanations short to avoid overloading your user. A straightforward phrase or sentence is often enough to reassure users ("We do not store account information"). Provide easy-to-find links with your security settings and privacy policy so users know where the details are if they need them.

» Read more:

In a usability study on detecting fraudulent websites, 23% of the participants did not look at browser-based cues such as the address bar, status bar and the security indicators, leading to incorrect choices 40% of the time. *Dhamija, R., Tygar, J. D., & Hearst, M. (2006, April). Why phishing works. In Proceedings of the SIGCHI Conference on Human Factors in computing systems (pp. 581-590). ACM. http://people.ischool.berkeley.edu/~tygar/papers/Phishing/why_phishing_works.pdf*

Human error drives 70-80% of the cost attributed to cyber-attacks. This novella presents challenges and designs for addressing human behavioral factors in cybersecurity. *Deep Thought: A Cybersecurity Story, ideas42 (2016)*

People form an emotional response to a product almost instantaneously, and that response shapes subsequent, more deliberative judgments even when it's irrational. Norman, D. A. (2004). *Emotional design: Why we love (or hate) everyday things*. Basic Civitas Books.

THE SCIENCE OF: Identity



Each of us has a multi-faceted identity: we are caregivers, savers, employees, neighbors, and much more. As different situations prompt us to assume particular identities, the values and goals associated with each role dial our choices in subtle ways. We seek to act in accordance with the way we see ourselves, which depends on the identity that is most “top-of-mind.”

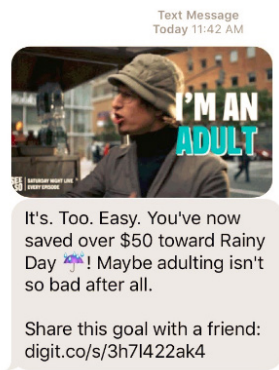


Trust and Confidence

Design Principle #4: Match the tone and style of your users.

The overall look and feel of your product evokes an identity that either resonates with your user or alienates them. Familiar details in language, presentation, and framing can encourage feelings of closeness and understanding, while unfamiliar or negative cues can create a sense of distance and distrust.

EXAMPLE



The images and phrasing in this text message from Digit, an automated savings platform, are designed to resonate with a specific audience of younger users.

This example does not constitute or imply an endorsement or recommendation of any product or service by ideas42.

Getting it right:

- Invest in first impressions. From the first glance, small details like images, amount of text, and level of polish can signal whether a product is designed for “someone like me.”
- Consider hiring from the communities you serve. This is one of the most straightforward and authentic approaches to finding the right voice.
- Getting the tone and style right matters for second language experiences, too. Some financial terminology doesn’t translate well, and poorly executed copy can reduce the credibility of non-English versions. Enlist native speakers and check that graphics reflect the local context, too.

Caution!

- Some products inadvertently call to mind a negative identity that makes us want to keep our distance. For example, a consumer receiving government benefits may choose to charge groceries to a credit card with high interest rates rather than use an Electronic Benefits Transfer (EBT) card due to sensitivity around using social service programs. Be aware of these subtle signals and how consumers may react.

» Read more:

People are more likely to comply with a request if they have something in common with the requester, even if it's an irrelevant coincidence. *Burger, J. M., Messian, N., Patel, S., del Prado, A., & Anderson, C. (2004). What a coincidence! The effects of incidental similarity on compliance. Personality and Social Psychology Bulletin, 30(1), 35-43.*

Other barriers to usage:

Transaction settlement speed

While there is a long history of behavioral science applications within marketing and user experience design, significant behavioral barriers can also arise in underlying product functionality. For instance,

speed is the second most common reason that underserved households give for using non-bank check-cashing services (after convenience). When given the choice, 90% of consumers on a banking and payments technology platform chose instant deposit with a fee over free deposit in seven business days.

Speed is critical because many low- and middle-income consumers lack a savings cushion or credit source to cover obligations amid volatile cash flows. These consumers end up needing immediate access to their funds on payday. Unfortunately, few traditional banking products offer instant liquidity. For reasons ranging from fraud protection to systemic delays, most consumers cannot immediately access 100% of funds deposited via paper check in a traditional checking account. Rules surrounding check deposit availability are both complex and vague, leaving consumers unsure when they will be able to access their money.

CHECKLIST Inspiring Trust and Confidence

- Can users easily find product reviews, press mentions, and/or other signals of credibility from peers or other trusted entities?**

Knowing that others trust you can encourage users to follow suit

Karlan, Dean and List, J. 2014. "How Can Bill and Melinda Gates Increase Other People's Donations to Fund Public Goods?" National Bureau of Economic Research. <http://www.nber.org/papers/w17954.pdf>

- Can users imagine or check on interim steps when the digital service time is faster or slower than expected?**

Getting a sense of the effort that goes into delivering services can build feelings of appreciation and reciprocity

Buell, Ryan W., and Michael I. Norton. "The Labor Illusion: How Operational Transparency Increases Perceived Value." *Management Science* 57, no. 9 (September 2011): 1564–1579.

- Are there visual cues that confirm outcomes (e.g., payment received, transaction complete)?**

People may be accustomed to physical cues such as receipts and "paid" stamps, and want to see proof of completion

Bachas, Pierre, Paul Gertler, Sean Higgins, and Enrique Seira. 2016. "Banking on Trust: How Debit Cards Help the Poor to Save More." (Working Paper).

- Are there visual indicators of security on your site?**

People make judgments about the security of websites quickly and automatically using salient visual cues

Dhamija, R., Tygar, J. D., & Hearst, M. (2006, April). Why phishing works. In Proceedings of the SIGCHI Conference on Human Factors in computing systems (pp. 581-590). ACM.

- Do you share why you need sensitive information when you ask for it?**

Providing an explanation can give users a reason to respond

Langer, E., Blank, A., & Chanowitz, B. (1978). The mindlessness of Ostensibly Thoughtful Action: The Role of "Placebic" Information in Interpersonal Interaction. *Journal of Personality and Social Psychology*, 36(6), 635-642.

Cialdini, R. B. (2007). *Influence: The psychology of persuasion*. New York: Collins.

- Do the images, aesthetic style, and wording you use reflect the way users see themselves or want to see themselves?**

Users are more likely to engage when the tone of your service is familiar to them and resonates with a positive self-image

Shih, Margaret, Todd L. Pittinsky, and Nalini Ambady. 1999. "Stereotype Susceptibility: Identity Salience and Shifts in Quantitative Performance." *Psychological science* 10(1): 80–83.



Simplify the Decision

Financial services can be hard to understand when they are unfamiliar or novel. When we come across information that is difficult to process, we may give up and turn our attention elsewhere. And processing new or complex information uses up cognitive resources, leaving less mental bandwidth for decision-making. Making it easier to scan and interpret information frees up resources for decision-making and action. When it comes time for the consumer to make a choice, it's important to structure the decision so that options are not overwhelming and are clearly comparable.

The challenge:

- People often scan information quickly and may have a hard time understanding what new products offer and how to use them.
- Technical or legal language can easily deter people from learning more.
- While people like having many options to choose from, they actually struggle when faced with a multitude of options (or complex options) that are difficult to compare.

Warning signs:

- A large number of people dropping off at product description or pricing pages
- Some engagement with your product but low conversion rates
- Drop-off around a particular decision point or option set

THE SCIENCE OF: Fluency



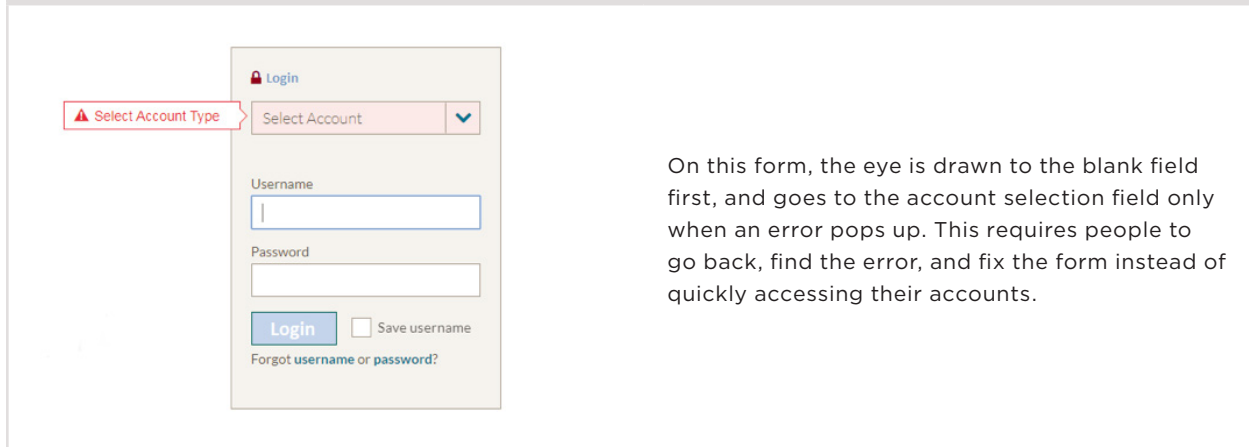
The ease or difficulty of processing information and completing a mental task can affect judgments and decisions in surprising ways. For example, we judge fluent statements that are easy to process as more true and likeable. We put off choosing or defer to the default when options are disfluent or hard to process. Many types of fluency can be at play, including linguistic fluency (e.g., words we know and don't know), perceptual fluency (e.g., a blurred or sharp image), and conceptual fluency (e.g., ideas that are familiar or unfamiliar).

Simplify the Decision

Design Principle #1: Facilitate understanding.

It requires less cognitive effort to navigate an interface that is well organized. Eye-tracking research shows that Americans read in an F-shaped pattern and scan information rather than read in depth. Use common design patterns and plain language, label icons, and break text into sections with headers to help users quickly understand and absorb the key information.

EXAMPLE



On this form, the eye is drawn to the blank field first, and goes to the account selection field only when an error pops up. This requires people to go back, find the error, and fix the form instead of quickly accessing their accounts.

Getting it right:

- Put key information at the top of the page and along the left side, where people tend to focus their attention, and use headers, lists, and bolding to help users scan information.
- Use common speech and concrete examples to help people quickly grasp the meaning (e.g., “Proof of residency, such as an electric bill with your name and address on it”).
- In forms, left-align all field labels and place them on top of the blank field. Leave suggestion text out of the fields, as our eye skips over this content to blank form spaces.

Caution!

- Don’t use graphics and icons without text labels -- it takes work to read and interpret new images, and some icons may not resonate with users at all. Instead, use text alongside graphics for most icons, and use graphics instead of text only for universal icons like “print,” “close,” and “play/pause/stop.”
- Legal language and technical industry jargon are not only off-putting and confusing, but they can also cause users to drop off or procrastinate. For those working in the financial services sector, it can be easy to forget that many Americans do not share the same financial vocabulary, even if they understand the underlying principles. Strike the right balance between using plain language up front and providing channels to access more detailed information for those who want it or when you’re required to share it.

» Read more:

People scan web pages in an “F” shape, first scanning the top of the page horizontally and then scanning downwards. Lorigo, L., Haridasan, M., Brynjarsdóttir, H., Xia, L., Joachims, T., Gay, G., ... & Pan, B. (2008). Eye tracking and online search: Lessons learned and challenges ahead. *Journal of the Association for Information Science and Technology*, 59(7), 1041-1052.

Three different experiments found a negative relationship between word complexity and judged intelligence. Oppenheimer, D. M. (2006). Consequences of erudite vernacular utilized irrespective of necessity: Problems with using long words needlessly. *Applied Cognitive Psychology*, 20(2), 139-156.

Investors perceive disclosures written in plain English to be more reliable because they are easier to process. Rennekamp, Kristina. 2012. “Processing Fluency and Investors’ Reactions to Disclosure Readability.” *Journal of Accounting Research* 50(5): 1319–54.

Empty form fields draw more attention than those with suggestion text in them, so suggestion text makes it easy to accidentally skip a field. Sherwin, K. (2014). Placeholders in Form Fields Are Harmful. *Nielsen Norman Group*, 11. <https://www.nngroup.com/articles/form-design-placeholders/>

THE SCIENCE OF: Choice Overload



As humans, we are often attracted to situations that offer us many options to choose from. However, when we face a multitude of options or options that are hard to compare, we struggle to decide. In the end, we may fail to choose, postpone the decision or simply stick with the status quo.



Simplify the Decision

Design Principle #2: Curate the choice.

In theory, the most straightforward way to reduce choice conflict is to simply remove the choice entirely, effectively limiting choice for consumers. In practice, this is usually unrealistic or undesirable. Instead, structure the choice in a way that helps consumers decide, and highlight the most important attributes that drive the decision.

EXAMPLES




Exhibit C2: Intervention Group Letter

December 2006

«First_Names» «Last_Names»
«Streets»
«City», «State» «Zip»

Dear UWHC Patient:

Thank you for participating in our Medicare Part D prescription drug plan study. I hope the information you received on the phone recently was helpful to you.

Please find enclosed a summary of the information that you received during the interview. As you can see from the Medicare web site, you may have an opportunity to save on your prescription drug costs by changing plans for 2007.

The plan you reported being in for 2006:	«M_06_PLAN»
The estimated cost of that plan for 2007:	«\$ANNUAL_OF_PTS_CURRENT_PLAN_06»
The lowest cost plan available to you for 2007:	«LEAST_EXPENSIVE_PLAN_07»
The estimated cost of that plan for 2007:	«\$ANNUAL_07»
Your potential savings for 2007 if you choose the lowest cost plan:	«POTENTIAL_SAVINGS»
Comments:	«COMMENTS_TO_SUBJECTS»

Note that even if you have already chosen a plan for 2007, you can still change your mind and choose a different plan until December 31, 2006! If you do choose to change plans, you can access the Medicare web site at:
<http://www.medicare.gov/MPDPF/Public/Include/DataSection/Questions/SearchOptions.asp>

Please remember that later this coming spring, we will call again to find out what plan you chose and how satisfied you are with your choice; that call will take about 10 minutes. If you have any questions or concerns about this study or the information you have received, please feel free to contact me at 608-262-7537. Thank you for your kind consideration!


Sincerely,

Lee Vermeulen, R.Ph., M.S., FCCP
Director, Center for Drug Policy
UW Hospital and Clinics
Clinical Associate Professor
UW-Madison School of Pharmacy

Medicare Part D is a government program designed to provide prescription drug coverage. It offers a wide range of plans that differ along a number of dimensions like monthly premiums, co-pay schedules, drug coverage, and pharmacy accessibility. The choice was confusing, and people signed up for plans that were too costly or didn't suit their needs. Two of ideas42's founders ran an experiment during the open enrollment period. They sent personalized information to one group of people about the three best options for them. A control group was offered instructions on using the Medicare website to research plans themselves.

People who received curated information about their three best options switched their plans at a higher rate, and ended up with an average cost savings of more than \$150 per person or 9% of the annual drug bill.

Kling, Jeffrey R. et al. 2012. "Comparison Friction: Evidence From Medicare Drug Plans." *Quarterly Journal of Economics* 127(1): 199-235. <http://www.nber.org/papers/w17410.pdf>



The screenshot shows a complex table with multiple columns. Key columns include: PLAN NAME, TARGET DATE, COST TYPE, and various cost metrics such as ANNUAL COST, POTENTIAL SAVINGS, and COMMENTS. The table lists several Medicare Part D plans and provides detailed cost information for each.

Employer-sponsored retirement plans often allow employees to choose from a long list of investment options. Fund information is available, but full of technical terms and fine print. Research shows that plan participation declines as the number of options available increases—in one study, the participation rate dropped by about 1.5–2.0 percent for every 10 additional funds.

Sethi-Iyengar, S., Huberman, G., & Jiang, W. (2004). How much choice is too much? Contributions to 401 (k) retirement plans. *Pension design and structure: New lessons from behavioral finance*, 83, 84-87.

This example does not constitute or imply an endorsement or recommendation of any product or service by ideas42.

Employer-sponsored retirement plans often allow employees to choose from a long list of investment options. Fund information is available, but full of technical terms and fine print. Research shows that plan participation declines as the number of options available increases—in one study, the participation rate dropped by about 1.5–2.0 percent for every 10 additional funds.

Getting it right:

- When the sheer volume of options is problematic, reduce the number of options or provide an easy way to sort and filter through them.
- Trim unnecessary information about the options and highlight the most important attributes for the decision.
- Specifically, draw attention to features that are important for financial health, so the user isn't focused only on short-term benefits.

Caution!

- Don't ignore the attributes your users prioritize. For example, the clarity of pricing structures, liquidity, and processing speeds may all matter more than the price itself. Use qualitative research to identify the features that matter to your users, and demonstrate how you meet these needs.

» Read more:

Americans who were mailed direct comparisons of prescription drug plans were more likely to switch plans than those who had to actively seek out comparative information, and as a result they spent an average of roughly \$100 less on their plan per year. Kling, Jeffrey R. et al. 2012. "Comparison Friction: Evidence From Medicare Drug Plans." Quarterly Journal of Economics 127(1): 199–235. <http://www.nber.org/papers/w17410.pdf>



Simplify the Decision

Design Principle #3: Find a balance between active and passive choice.

From organ donation to retirement savings, automatic enrollment or “default” options have won broad attention as a way to nudge consumers toward a particular outcome while giving them the opportunity to opt out. However, there are moments when providers may not be comfortable with defaulting consumers into a particular pathway (see “Putting the interests of your users first”). An alternative approach to defaults is an active choice framework, which requires the user to actively decide between options. An enhanced active choice framework goes one step further by requiring the user to choose, but also highlighting key attributes of each option.

EXAMPLE

Accounts		
<input checked="" type="checkbox"/>	Debit Payment Reminder	Email, SMS Edit
<input checked="" type="checkbox"/>	Low Account Balance	Email, SMS Edit
<input checked="" type="checkbox"/>	Large Deposit	Email, SMS Edit
<input checked="" type="checkbox"/>	Large Expense	Email, SMS Edit
<input checked="" type="checkbox"/>	Fee Charged	Email, SMS Edit

Some banks employ a strong default and automatically enroll people into receiving alerts.

EXAMPLE

Researchers asked participants to imagine they were interested in protecting their health and told that, according to the Center for Disease Control, a flu shot significantly reduces the risk of getting or passing on the flu virus. They were also told that through an employer-sponsored program they could possibly save \$50 off bi-weekly or monthly health insurance contribution costs.

42% opted to receive a flu shot in the first group, while 62% and 75% opted to get a shot in the second and third groups, respectively.

OPT-IN

- Place a check in the box if you will get a Flu shot this Fall

ACTIVE CHOICE

Place a check in one box:

- I will get a flu shot this Fall
 I will not get a flu shot this Fall

ENHANCED ACTIVE CHOICE

- I will get a Flu Shot this Fall to reduce my risk of getting the flu and I want to save \$50
 I will not get a Flu Shot this Fall even if it means I may increase my risk of getting the flu and I don't want to save \$50

Keller, P. A., Harlam, B., Loewenstein, G., & Volpp, K. G. (2011). Enhanced active choice: A new method to motivate behavior change. *Journal of Consumer psychology, 21(4)*, 376-383. Web: <http://gflec.org/wp-content/uploads/2015/03/Keller-paper-JCPS241.pdf>

Getting it right:

- Understand which attributes matter to your users, and what the implications are if they go with the default option.
- For enhanced active choice, draw attention to features that are important for financial health, so the user isn't focused only on short-term benefits.

Caution!

- In deciding between these approaches, consider the ethical implications of how involved you want your user to be in this decision (see "Putting the interests of your users first").

» Read more:

Enhanced Active Choice is a complement to automatic enrollment or when automatic enrollment is infeasible or unethical. Keller, P. A., Harlam, B., Loewenstein, G., & Volpp, K. G. (2011). *Enhanced active choice: A new method to motivate behavior change. Journal of Consumer psychology, 21(4)*, 376-383. Web: <http://gflec.org/wp-content/uploads/2015/03/Keller-paper-JCPS241.pdf>

Compelling new hires to make active decisions about 401(k) enrollment raises the initial fraction that enroll by 28 percentage points relative to a standard opt-in enrollment procedure. Carroll, G. D., Choi, J. J., Laibson, D., Madrian, B. C., & Metrick, A. (2009). *Optimal defaults and active decisions. The quarterly journal of economics, 124(4)*, 1639-1674. Web: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2798815/pdf/nihms-86882.pdf>

CHECKLIST Simplifying the Decision

- Is the information you want people to read at the top of the page or along the left side, with headers and lists to help users scan information?**

People tend to read in an “F-pattern” and focus their attention on the top and left side of the page

“F-Shaped Pattern For Reading Web Content (Original Eye tracking Research).” Nielsen Norman Group.
<https://www.nngroup.com/articles/f-shaped-pattern-reading-web-content-discovered/> (February 1, 2018).

- Do you avoid the use of jargon?**

Technical language takes time and effort to understand. Most people will stop reading when they see jargon

Reilly, S., & Richey, S. (2011). Ballot question readability and roll-off: The impact of language complexity. *Political Research Quarterly*, 64(1), 59-67.

Oppenheimer, D. M. (2006). Consequences of erudite vernacular utilized irrespective of necessity: Problems with using long words needlessly. *Applied Cognitive Psychology*, 20(2), 139-156.

Oppenheimer, D. M. (2008). The secret life of fluency. *Trends in cognitive sciences*, 12(6), 237-241.

- Do you present a limited number of options for choosing among plans or features?**

Although people like having choices, they have difficulty choosing among a large number of options

Iyengar, S. S., & Lepper, M. R. (2000). When choice is demotivating: Can one desire too much of a good thing?. *Journal of personality and social psychology*, 79(6), 995.

Sethi-Iyengar, S., Huberman, G., & Jiang, W. (2004). How much choice is too much? Contributions to 401 (k) retirement plans. *Pension design and structure: New lessons from behavioral finance*, 83, 84-87.

Tversky, A., & Shafir, E. (1992). Choice under conflict: The dynamics of deferred decision. *Psychological science*, 3(6), 358-361.

- Do you use the same attributes to describe all options so users can evaluate trade-offs?**

People have difficulty choosing among options with a complex range of attributes

Kling, Jeffrey R. et al. 2012. “Comparison Friction: Evidence from Medicare Drug Plans.” *Quarterly Journal of Economics* 127(1): 199–235.



Facilitate Action

Even if we intend to take up and use digital financial services, we sometimes fail to follow through. When signing up for a new product, we might drop off within the onboarding process if it includes complex steps or takes more time than expected. Even small hassles such as filling out a form or authenticating a separate account can derail progress. Ultimately, we may put the action off for another day, or even change our minds entirely.

The challenge:

- People may be interested in new products, but even small hurdles can cause them to procrastinate or change their minds.
- Automation can ease hassles for some situations, but sometimes can create new hassles for consumers, especially when cash flows are tight.
- Uncertainty in the process and perceived lack of progress can be demotivating and encourage drop-off.

Warning signs:

- Drop off in your registration process, especially around particular steps
- Drop off in engagement before a required task

THE SCIENCE OF: Hassle Factors



Seemingly minor inconveniences can prevent people from following through on their decisions—even when they want to. Hassles can derail progress by amplifying the negative effects of common behaviors like procrastination and forgetting.



Facilitate Action

Design Principle #1: Help people overcome hassles.

First, consolidate or eliminate as many steps as you can during the onboarding process while preserving user privacy and keeping all data secure. Put a particular focus on removing requirements that may involve multiple steps or uncertain steps. Taking advantage of autofill features can help when it comes to data entry. Next, make it easy for people to navigate the remaining steps by using plan-making tactics and available support.

EXAMPLES

Key information such as branch locations and phone numbers can be useful to have on-hand as soon as a mobile banking app is opened (i.e., without signing in).

Fresh EBT is a free mobile app that helps people manage their SNAP (food stamps) benefits. The app makes it easier for participants to check the balance on their EBT card, see recent transactions, and determine their next deposit date. When a user signs up and enters an account number, Fresh EBT uses an algorithm to check instantly whether the account is valid. If it is not (likely due to a typo), a warning allows people to see and fix the mistake right away, instead of receiving an error message after submitting the full form.

This example does not constitute or imply an endorsement or recommendation of any product or service by ideas42.

Getting it right:

- At each moment, highlight one concrete next step to complete. If people need to take action offline, after a delay, or in coordination with others, give them a template for making concrete action plans. Include details about when to act (date and time) and what to prepare, and help people anticipate and plan for obstacles.
- Provide materials such as return envelopes and stamps if needed, and make sure key information like addresses and phone numbers are readily available.
- Assume people will make mistakes. Find ways to spot and correct them early on so that users don't encounter errors later.
- Let users move as far into the product experience as possible, even if this requires the use of placeholder data. By proving the value of your service first, you preserve the opportunity to ask for additional information as users explore the product.

Caution!

- Make it easy to connect to live support, and don't overly restrict your team with scripts or protocols that can't be tailored for the situation.

» Read more:

Researchers find that forming specific, concrete plans increases follow-through across a range of domains because plan-making takes advantage of both the mechanical benefits of scheduling and people's preference for consistency. Rogers, Todd, Katherine L. Milkman, Leslie John, and Michael I. Norton. 2013. "Making the Best-Laid Plans Better: How Plan Making Increases Follow-Through." Cambridge, MA: Work. Pap., Harvard Univ. http://opim.wharton.upenn.edu/~kmilkman/Rogers_et_al_2013.pdf (August 18, 2017)

User insight consultants found that users of a fintech product did not want to create an account and log in before being convinced of the value of the product. Williams, L., & Chan, P. (2016, February). Going Mobile to Meet Demand. Retrieved March 7, 2018, from https://prosperitynow.org/files/resources/Brief_Going_Mobile_to_Meet_Demand_WESST.pdf

**Facilitate Action**

Design Principle #2: Automate tasks—if it reduces hassles.

Once users have taken up your product, look for opportunities to automate steps to cut down on user effort. When considering what features to automate and how to craft the experience, think about whether automation will reduce hassles or actually create more work for your user. For instance, automated bill pay may reduce hassles for many people because they no longer have to worry about keeping track of deadlines and logging into accounts to make payments. But this same feature can create a burden for low- and middle-income consumers who have to make sure funds are in place before payments are charged, while taking into account the timing of business days and weekends, delays in processing, and the risk of costly overdrafts (see more in "Other barriers to usage: Transaction settlement speed"). A compromise could be partially-automated solutions like a "click-to-confirm" savings transfer, which grabs the user's attention at the right time and gives them control over whether the transaction goes through.

EXAMPLE

TRANSACTIONS		
Tuesday, February 27		
	Vitamins Uncategorized	\$15.01
	Music Store Health	\$27.98
	Transfer Fee Uncategorized	\$8.00
	Transfer Uncategorized	\$145.97
Monday, February 26		
	Coffee Shop Health	\$2.50
	Restaurant Uncategorized	\$12.73

Many budgeting apps automatically assign expenses into budget categories. For new users, this is a huge hassle because mis-categorized expenses require "teaching" the software with careful monitoring and manual adjustments. Even later, proper categorization can still require some manual steps.

Getting it right:

- Because people are likely to stick with default options, choose settings that are likely to be best for the user's financial health and make it easy to change settings from one period to the next.
- Consider using reminders alongside or instead of automation.

Caution!

- Automation can create more work or threaten financial health in certain contexts. Consider the consequences users face if they forget about an automated setting and an unexpected transaction takes place. Similarly, what consequences does your user face if a task is NOT automated and they fail to take action on their own?

» Read more:

Helping people automate savings transfers led to a 21% increase in savings balances among program participants who had no savings at the start. Schoar, A. & Tanti, P. "The Financial Health Check: A behavioral approach to financial coaching." New America Foundation. 2014. Web. <https://www.newamerica.org/asset-building/policy-papers/the-financial-health-check/>.

This paper explores active decisions and defaults in the context of 401k savings. Active decisions boost enrollment in 401k savings plans by 28 percentage points, compared to standard opt-in settings. Carroll, Gabriel D. et al. 2009. "Optimal Defaults and Active Decisions." *The quarterly journal of economics* 124(4): 1639–74.

THE SCIENCE OF: Commitment



Most of the time, we seek to act in ways that are consistent with how we see ourselves or hope to be seen by others. We may go so far as to change our behavior or modify our beliefs to maintain this sense of consistency. Therefore, if we make a commitment to perform a task, we often do it—even if the commitment is just to ourselves.

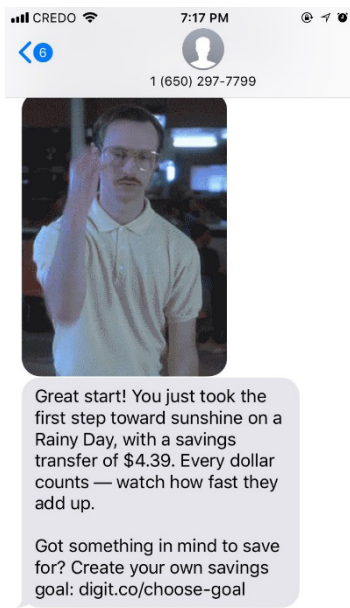


Facilitate Action

Design Principle #3: Foster a sense of progress.

Give people a sense of the progress they're making, from affirming that they've taken the first step already to reminding them that they're close to completion. Reminding them of their own previous decisions and commitments can motivate them to stay on course. Similarly, showing a visual of what they *haven't* accomplished yet can be a powerful motivator if well structured.

EXAMPLES

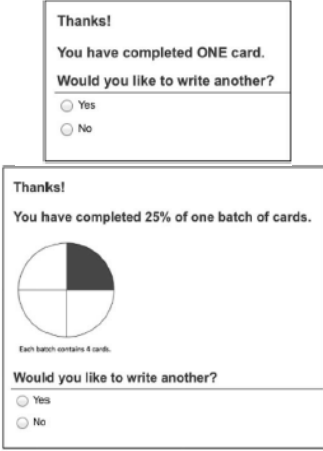


Great start! You just took the first step toward sunshine on a Rainy Day, with a savings transfer of \$4.39. Every dollar counts — watch how fast they add up.


Got something in mind to save for? Create your own savings goal: digit.co/choose-goal

Digit, an automated savings platform, gives users instant encouragement by sending them a text message as soon as they finish onboarding. Affirming early progress can help users stay motivated and engaged.

This example does not constitute or imply an endorsement or recommendation of any product or service by ideas42.



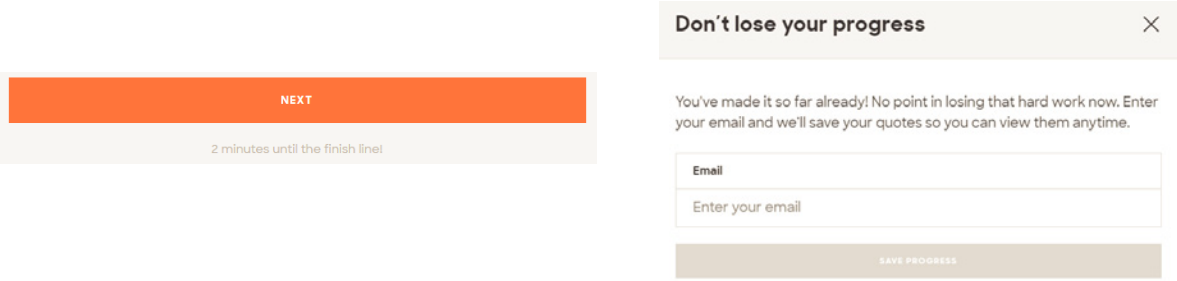
Thanks!
You have completed ONE card.
Would you like to write another?
 Yes
 No

Thanks!
You have completed 25% of one batch of cards.

Each batch contains 4 cards.
Would you like to write another?
 Yes
 No

Pseudo sets present effort as part of an incomplete set, compelling people to finish more tasks.

Barasz, K., John, L. K., Keenan, E. A., & Norton, M. I. (2017). Pseudo-set framing. *Journal of Experimental Psychology: General*, 146(10), 1460. https://www.hbs.edu/faculty/Publication%20Files/Psuedo%20Set%20Framing_2b3dd94c-fffd-4659-866d-fb8963cf6ce2.pdf

EXAMPLE



NEXT

2 minutes until the finish line!

Don't lose your progress

You've made it so far already! No point in losing that hard work now. Enter your email and we'll save your quotes so you can view them anytime.

Email

Enter your email

SAVE PROGRESS

On the insurance website Policygenius, users enter basic information to request quotes. The message below the “next” button on the form reads “2 minutes until the finish line!” This provides a concrete expectation for how much longer the process will take and frames it as a small accomplishment that’s almost complete. Before leaving the site, a message encourages people to save their quotes. The prompt makes the user’s effort stand out and gives it a personal frame (“your progress”, “your quotes”).

This example does not constitute or imply an endorsement or recommendation of any product or service by ideas42.

Getting it right:

- Provide encouragement from the very start by framing initial steps as complete.
- Use visual displays of progress (progress bars, etc.) to reinforce headway, help people orient themselves to where they are in the process and understand how far they have to go.
- If a user might not be able to fully complete a process due to a required step, provide a way to “save” their progress and return to it later. Pair this with timely and actionable reminders that link right to where they left off. If possible, let them dictate when they will receive the reminder.

Caution!

- It can be demotivating for people to feel that they have a long way to go before completing a task. At the start of a longer process, emphasize the progress people have already made by taking the first step, rather than the distance to completion.

» Read more:

In three different studies, researchers found that customers who were given ten-stamp customer loyalty cards with two stamps already completed were more likely to complete the whole card than customers who were given eight-stamp loyalty cards with no stamps completed, even though the situations were economically equivalent. Nunes, J. C., & Drèze, X. (2006). The endowed progress effect: How artificial advancement increases effort. *Journal of Consumer Research*, 32(4), 504-512. http://customerworld.typepad.com/swami_weblog/files/endowedloyalty.pdf

People who are approaching a goal put more effort towards pursuit of that goal if they can easily envision their progress. Researchers found this to be true in many different contexts, including commitment towards savings. Cheema, A., & Bagchi, R. (2011). The effect of goal visualization on goal pursuit: Implications for consumers and managers. *Journal of Marketing*, 75(2), 109-123. <http://journals.ama.org/doi/abs/10.1509/jmkg.75.2.109?code=amma-site>

People complete more tasks when they are framed as part of an unfinished set. Barasz, K., John, L. K., Keenan, E. A., & Norton, M. I. (2017). Pseudo-set framing. *Journal of Experimental Psychology: General*, 146(10), 1460. https://www.hbs.edu/faculty/Publication%20Files/Psuedo%20Set%20Framing_2b3dd94c-ffd-4659-866d-fb8963cf6ce2.pdf

Other barriers to usage:

Connectivity and hardware

Users won't always be online or have access to the right device when they want to use your product.

Designing for interruptions in connectivity and access to hardware can be especially helpful for low- and middle income consumers who may have pay-as-you-go mobile plans or limited data plans. These consumers are likely to rely on Wi-Fi, may share phones with others in the household, or may not always have access to a mobile phone. For example, in 2015, only 43% of unbanked households owned or had regular access to a smartphone. Only 28% of this group had home access to the Internet using a desktop, laptop, or tablet computer.

- Invest in the offline experience
- Provide access to the service from multiple interfaces—app, mobile website, text commands, retail location, etc.
- Make sure account access is protected in case people lose phones
- Design for the toughest scenario: cracked screens, users with vision problems, etc. A robust design will benefit all users

CHECKLIST Facilitating Action

- Can someone with little or no specialized knowledge complete each step?**

Uncertainty about how to proceed can cause people to abandon a process

Bettinger, Eric P., Bridget Terry Long, Philip Oreopoulos, and Lisa Sanbonmatsu. 2009. The Role of Simplification and Information in College Decisions: Results from the H&R Block FAFSA Experiment. National Bureau of Economic Research. <http://www.nber.org/papers/w15361> (September 1, 2017).

- Have you removed onboarding requirements that may involve multiple steps?**

Ideally, onboarding should be completed in one sitting

Bettinger, Eric P., Bridget Terry Long, Philip Oreopoulos, and Lisa Sanbonmatsu. 2009. The Role of Simplification and Information in College Decisions: Results from the H&R Block FAFSA Experiment. National Bureau of Economic Research. <http://www.nber.org/papers/w15361> (September 1, 2017).

- If you cannot avoid complex steps in onboarding (for example, actions that need to be taken offline, after a delay, or in coordination with others), have you provided plan-making support?**

Creating a detailed plan can help people anticipate and navigate obstacles

Rogers, Todd, Katherine L. Milkman, Leslie John, and Michael I. Norton. 2013. "Making the Best-Laid Plans Better: How Plan Making Increases Follow-Through." Cambridge, MA: Work. Pap., Harvard Univ. http://opim.wharton.upenn.edu/~kmilkman/Rogers_et_al_2013.pdf (August 18, 2017)

- For multi-step processes, is it always clear how far in a process the user has come?**

Past work reminds users of their original decisions and commitments to take up your product

Nunes, J. C., & Drèze, X. (2006). The endowed progress effect: How artificial advancement increases effort. *Journal of Consumer Research*, 32(4), 504-512.

- For multi-step processes, is it always clear how many steps remain?**

As people get closer to the end of a task, they are more motivated to complete it

Cheema, A., & Bagchi, R. (2011). The effect of goal visualization on goal pursuit: Implications for consumers and managers. *Journal of Marketing*, 75(2), 109-123.

- Are there options to automate recurring tasks?**

Once a task has been automated, there is no risk of forgetting to complete it

Schoar, A. & Tantia, P. "The Financial Health Check: A behavioral approach to financial coaching." New America Foundation. 2014. Web. <https://www.newamerica.org/asset-building/policy-papers/the-financial-health-check/>.

Lopez-Fernandini, A. & Schultz, C. "Automating Savings in the Workplace: Insights from the AutoSave Pilot." New America Foundation. 2010. Web. https://static.newamerica.org/attachments/3811-automating-savings-in-the-workplace/AutoSave%20Insights%20Paper%20Final%2015-10_0.e68ae02d77464d-1da37c32913ef501fa.pdf

THE SCIENCE OF...



LIMITED ATTENTION

Our ability to pay attention to several things at once is much more limited than we might think. This means that when our attentional capacity is stretched—for instance, when we are driving, listening to music, and texting all at once—we are left effectively blind to information we would easily notice under normal circumstances. Have you ever missed a highway exit and sworn there was no sign for it? Have you ever been admonished by a bureaucrat from forgetting to sign a form? If so, you have experienced limited attention. Do you think you can manage to carefully pay attention to two or three things at the same time?

If you do, then take a look at [this video!](#)

In this famous example, participants watched a video of two teams—one in white shorts and one in black shorts—passing a basketball. The participants were tasked with counting only the number of passes by the team in white shorts. While the participants are closely counting the number of passes, a woman in a gorilla suit walks to the center of the court, beats her chest, and exits. Remarkably, of the thousands of people who have now seen this video, only half notice the “gorilla”; and those that don’t notice are sure they didn’t miss anything.

When we design products and programs, we assume that if people don’t choose them, then they must not want them. Often, though, people simply didn’t notice what we put in front of them. Even if we get that people have limited attention, it’s hard to fathom how very limited it is. We may send a single email and then give up if people don’t respond. Or, we often put a large amount of information in front of people and expect that they’ll see all of it. Once we realize that attention is extremely limited and fleeting, we can design our products, programs or messages in a way that they can’t be missed. Making them visually prominent is one way to do this, as is exposing people to them multiple times. There are also subtler ways such as presenting them at times when people may be more likely to pay attention. You might be much more likely to pay attention to advice about healthy eating if you got it during your annual physical, than if your doctor’s office sent you a flyer several weeks later. Not only are you not focused on your health later, but that email or envelope is likely to be buried in a firehose of other communications.

Radiologists were asked to find medical abnormalities on CT scans. Focused on this task, 83% failed to spot an image of a gorilla on the scans, proving how limited attentional capacity can be. Drew, T., Vö, M. L. H., & Wolfe, J. M. (2013). The invisible gorilla strikes again: Sustained inattention blindness in expert observers. *Psychological science*, 24(9), 1848-1853. <http://doi.org/10.1177/0956797613479386>

Researchers demonstrate that the context of poverty causes people to engage more deeply in some problems while neglecting others, explaining why people may take on very costly debts to cover immediate needs despite future consequences. *Shah, A. K., Mullainathan, S., & Shafir, E. (2012). Some consequences of having too little. Science, 338(6107), 682-685. https://scholar.harvard.edu/files/sendhil/files/some_consequences_of_having_too_little.pdf*

SCARCITY

Imagine you leave your car with the mechanic and he calls with some bad news: your car needs \$150 worth of repairs. What would you do? Chances are, you'd find a way to foot the bill and move on with your day. But what if the mechanic tells you that the repairs will come to \$1,500? Would you be able to finish writing an important memo or focus on your next meeting? If you can easily cover an unexpected, out-of-pocket expense like this one, you probably could (at least, you'd do no worse than usual). But many of us, across a range of incomes, would struggle to come up with the funds and, as a result of that distraction, would probably miss key points in that memo or meeting.

Constantly worrying about household finances takes up an inordinate amount of mental bandwidth. The single-minded focus, or tunneling, on financial concerns sharply reduces cognitive capacity to attend to other tasks. Researchers have measured the impact of financial insecurity on cognitive capacity as a temporary drop in mental performance so large that it would move someone from an "average" to "borderline deficient" IQ when they are distracted by financial concerns.

Helping people manage cash flows and build even a small savings cushion can help alleviate the consequences of scarcity.

Mani, A., S. Mullainathan, E. Shafir, and J. Zhao. 2013. "Poverty Impedes Cognitive Function." *Science* 341(6149): 976–80.

STATUS QUO BIAS

"There's no place like home."

This memorable quote from *The Wizard of Oz* sums up how many of us feel about home—it's comfortable and familiar. But beyond the physical place, we often unconsciously consider other things "home" too, such as beliefs, previous choices, and set routines. These things form an individual's status quo, which we tend to prefer to stick to. As a result, we often "choose" pre-set options even when many other options are available.

Even arbitrary options that set the status quo—for example, default settings—play incredibly important roles in decision-making, and can influence what people choose and what eventually happens. One of the many studies on these effects gave people a hypothetical inheritance from a great-uncle and asked them whether they would like to invest in a moderate-risk company, a high risk company, treasury bills or municipal bonds. For different groups researchers told people that a significant portion of the inheritance was already invested in one of the options, effectively setting an arbitrary status quo. Even though there were no costs to switching away from the randomly set status quo option, it increased in popularity well beyond the personal preferences of the individuals.

If we want people to be able to make unbiased choices, we must be careful not to set one option as the status quo. If there is already a status quo, we need to recognize that people will be less likely to switch to an alternative even if they would have chosen it in the absence of the status quo.

For an explanation of the status quo bias and a review of evidence, see Kahneman, Daniel, Jack L Knetsch, and Richard H Thaler. 1991. "Anomalies: The Endowment Effect, Loss Aversion, and Status Quo Bias." *The Journal of Economic Perspectives* 5(1): 193–206. <https://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.5.1.193>

In a political race of two candidates, a candidate who otherwise would have gotten only 39% of the vote will still win if he happens to be the incumbent, due to the status quo effect of 11%. The incumbent status quo bias increases as the number of candidates increases. Samuelson, W., & Zeckhauser, R. (1988). Status quo bias in decision making. *Journal of Risk and Uncertainty*, 1(1), 7-59.

Participants in a lab study were given prompts indicating whether a good image, bad image, or neutral image would appear next. When the prompt was uncertain and didn't indicate anything about the following image, people reacted as if it were going to be bad. Grupe, D. W., & Nitschke, J. B. (2011). Uncertainty is associated with biased expectancies and heightened responses to aversion. *Emotion*, 11(2), 413.

RECIPROCITY

When a stranger in an elevator says hello, many of us can't help but return the greeting. We tip more generously when servers are friendly, buy more products when we receive free samples, and are more likely to comply with requests when others do us a favor first.

Deeply ingrained norms of fairness and obligation drive this reciprocal impulse to reward kindness and punish unkindness. We often respond to social gestures even when we need to go out of our way do so and even when we're interacting with complete strangers.

Researchers tested the impact of reciprocal behavior on charitable giving in a direct-mail fundraising campaign by sending small gifts with donation letters. Households either received a plain letter asking for donations, a letter accompanied by a small gift of one postcard and envelope, or a letter with a large gift of four postcards and envelopes. Those who received a small gift donated at a rate 17% higher than those who received a plain letter. The reciprocal response was even more pronounced for those who received a large gift. This group donated at a rate 75% higher than those who did not receive a gift at all.

By extending small acts of kindness such as a gift, personal favor, or extra attention or service, we establish a reciprocal relationship that supports positive exchanges.

Researchers present a formal theory of reciprocity that takes underlying intentions into account. Falk, Armin, and Urs Fischbacher. 2006. "A Theory of Reciprocity." *Games and Economic Behavior* 54(2): 293–315

Researchers sent text message reminders for loan repayments to borrowers of three banks in the Philippines. Repayment rates improved when borrowers knew the loan officer and messages included his or her name. Karlan, Dean, Melanie Morten, and Jonathan Zinman. 2012. A Personal Touch: Text Messaging for Loan Repayment. National Bureau of Economic Research. <https://pdfs.semanticscholar.org/30d0/941c4d98c8c3665e64613870e3f38ee165a3.pdf>

Researchers found that a small gift elicits a reciprocal response among philanthropic donors and boosts the likelihood of making a charitable contribution by as much as 75%. Falk, Armin. 2007. Gift Exchange in the Field. *Econometrica*, 75, 1501-1511.

This book outlines fundamental principles of persuasion. Cialdini, R. B. (2007). *Influence: The psychology of persuasion*. New York: Collins.

SOCIAL NORMS

Parents of teenagers have often wheeled out the line, “If your friends jumped off a bridge, would you do it too?” But high school kids are not the only ones who care about what their peers are doing. All of us are heavily influenced by our perception of what others are doing—the social norm. However, our perceptions are not always reality.

For instance, take binge drinking in college: a survey with French university students found that more than half of them overestimated the prevalence of binge drinking by their peers. Worryingly, the more common they (incorrectly) assumed binge drinking was, the more they themselves binge drank. Such findings suggest that we misperceive social norms when some choices are highly visible (the bar full of college kids drinking), and others are not (the much larger number of college kids not drinking).

When a negative behavior is most prevalent, we need to take care in how we communicate norms. For example, to combat a prevalent negative behavior—such as stealing pieces of petrified wood from Arizona’s Petrified Forest National Park—researchers found injunctive norms (what is perceived to be approved by others) to be more effective than descriptive norms (what others are actually doing). In their study, the most effective message was, “Please don’t remove the petrified wood from the Park, in order to preserve the natural state of the Petrified Forest.” This message was paired with a picture of a person stealing a piece of petrified wood, with a red circle-and-bar symbol over his hand. The least effective message used a descriptive norm, most likely because it wound up conveying that the negative behavior was prevalent.

When most people are performing the desired behavior—but perhaps are not a silent majority—it is effective to make the descriptive norm more salient. Simply informing people of the descriptive norm in these situations is often more effective than telling them what they should do (an injunctive norm). In a review of twenty-one studies ranging from pertinent topics such as condom use, healthy eating, smoking and infidelity, researchers found that knowing what others do is a stronger influence on how people eventually behave than knowing what society says they should do.

College students conform to perceived social norms around binge drinking. França, L. R., Dautzenberg, B., & Reynaud, M. (2010). Heavy episodic drinking and alcohol consumption in French colleges: the role of perceived social norms. *Alcoholism: Clinical and Experimental Research*, 34(1), 164-174. <http://onlinelibrary.wiley.com/doi/10.1111/j.1530-0277.2009.01078.x/full>

Social norm messaging that draws attention to negative behavior can backfire. Cialdini, R. B. (2003). Crafting normative messages to protect the environment. *Current directions in psychological science*, 12(4), 105-109. <http://www.uky.edu/~ngrant/CJT780/readings/Day%2013/Cialdini2003.pdf>

Social norms can help reduce energy consumption or have an undesirable boomerang effect, depending on how much energy households were originally using. Schultz, P. W., Nolan, J. M., Cialdini, R. B., Goldstein, N. J., & Griskevicius, V. (2007). The constructive, destructive, and reconstructive power of social norms. *Psychological science*, 18(5), 429-434. <http://assets.csom.umn.edu/assets/118375.pdf>

SYSTEM 1 AND SYSTEM 2 THINKING

A bat and a ball cost \$1.10 in total. The bat costs \$1.00 more than the ball. How much does the ball cost?

Two systems are at work in our brains: “System 1” and “System 2.” System 1, fast thinking, operates automatically and intuitively with little or no effort and no sense of voluntary control. System 2 is slower and requires conscious effort. System 1 dominates many of the numerous decisions we make every day. We use System 2 less frequently because it demands more effort.

When System 1 is at work, we look at the question above and answer intuitively: the ball costs 10 cents. However, when we slow down and engage System 2 thinking, we realize that the bat costs \$1.00 *more than* the ball and the ball actually costs 5 cents.

Our reliance on System 1 is a deep necessity. If we had to think about every tiny decision consciously, we’d be paralyzed by choice and never leave the house. However, System 1 thinking is prone to error and bias that can cause us to misjudge risks and likelihoods, be inattentive to small details, plan poorly, or make us overconfident in our abilities.

Understanding the shortcomings of System 1 thinking can help us design specifically for moments when it’s best to slow down and take a deliberative approach with System 2.

This article provides an overview of the research on System 1 and System 2 thinking, and how they compete for control over our behavior. Evans, J. S. B. (2003). In two minds: dual-process accounts of reasoning. *Trends in cognitive sciences*, 7(10), 454-459.

This book explains System 1 and System 2 thinking and related topics. Kahneman, D. (2011). *Thinking, fast and slow*. Macmillan.

IDENTITY

Many of our choices are impacted by our perception of ourselves and our roles. We all have multiple identities—for instance, someone can be a mother, a lawyer, a daughter, and a gardener—and each identity may carry different goals and values. Our perceptions, choices, and actions are often made in accordance with the identity (and its associated values) that is most salient to us in our moment of choice.

For instance, when we are primed to consider a specific identity, we often behave in ways that fit with its associated stereotypes—even if the priming is completely inadvertent and even if we do not believe the stereotype. Relatively miniscule identity-priming interventions can have massive effects on behavior. For example, in a study of college students, researchers found that standardized achievement test scores were affected by whether students had to report their ethnicity. For white students, the ethnicity priming significantly increased performance, but African-American students’ performance suffered. In a similar study, researchers found that when Asian-American females were primed with their racial identity, they achieved higher scores on a math exam, but the opposite was true when they were primed with their gender. These examples of “stereotype threat” show the pernicious effects that priming negative stereotypes—even in minor ways—can have on our performance.

However, we can also prime positive identities to encourage socially beneficial actions. For example, priming an individual’s identity as a “citizen” or “community member” may increase the likelihood that she recycles or conserves energy. The existence of multiple social identities—and the sway they hold over our choices—means that the extent to which a message or option primes a specific identity can have important effects on the decisions that we make.

Ethnicity priming improves performance for white students and worsens performance for African-American students. Steele, C. M., & Aronson, J. A. (2004). Stereotype threat does not live by Steele and Aronson (1995) alone. https://www.researchgate.net/profile/Joshua_Aronson2/publication/8909504_Stereotype_Threat_Does_Not_Live_by_Steele_and_Aronson_1995_Alone/links/55df0e6208ae7983897e4229/Stereotype-Threat-Does-Not-Live-by-Steele-and-Aronson-1995-Alone.pdf

Researchers found that when Asian-American females were primed with their racial identity, they achieved higher scores on a math exam, but the opposite was true when they were primed with their gender. Shih, Margaret, Todd L. Pittinsky, and Nalini Ambady. 1999. "Stereotype Susceptibility: Identity Salience and Shifts in Quantitative Performance." *Psychological science* 10(1): 80–83.

FLUENCY

Fluency refers to the subjective feeling of ease or difficulty in completing a mental task. Perceptions of fluency affect the judgements and decisions we make in subtle ways.

For example, we see fluent, easy-to-process statements as more reliable and true. In one study, researchers provided participants with fictional stock indices with either fluent or disfluent names. People paid more attention to the ratings from indices that had easier to pronounce names. Fluency can also influence how we interpret the world around us. Researchers gave people a written prompt asking them to describe New York City. Those who were received the prompt in a hard-to-process font described the city more abstractly than those who received the prompt in an easy-to-read font. In some cases, disfluency can actually encourage slower, systematic thinking and attention to detail.

Many types of fluency can be at play, including linguistic fluency (e.g., words, sounds, and grammatical structures we know or don't know), perceptual fluency (e.g., a blurred or sharp image), and conceptual fluency (e.g., ideas that are familiar or unfamiliar). By taking the potential impacts of fluency into account, we can help people process information and approach decisions with the right level of deliberation.

People judge statements that are easy to process as more true, more likeable, and more likely to come from a more intelligent source. Oppenheimer, D. M. (2008). The secret life of fluency. *Trends in cognitive sciences*, 12(6), 237-241.

Three different experiments found a negative relationship between word complexity and judged intelligence.

Oppenheimer, D. M. (2006). Consequences of erudite vernacular utilized irrespective of necessity: Problems with using long words needlessly. *Applied Cognitive Psychology*, 20(2), 139-156.

CHOICE OVERLOAD

Have you ever looked at a supermarket display and felt paralyzed by the sheer number of options available? How about the menu at a diner? The Netflix homepage? Too many choices can be overwhelming, and lead to choice overload. When faced with a huge range of options, many people fail to choose the best option or fail to choose altogether. Having more options often leads to less realized choices.

In **one experiment**, psychologists offered samples of jams to shoppers in a supermarket. On some days, there were 24 jams for sale, while on other days there were only six. More shoppers stopped by to try a sample of jam when there were more options, but, counter-intuitively, the more jams that were for sale, the less likely shoppers were to actually make a purchase. Meanwhile, the smaller selection of just six jams resulted in a tenfold increase in jam purchases. With two dozen jams to choose from, shoppers were paralyzed in an attempt to determine whether they liked the Strawberry & Champagne, Tiptree Strawberry, East Anglian Strawberry, or Little Scarlet Strawberry flavor most. The implications of this phenomenon are larger than people not getting the right jam—**later work** showed that as the number of retirement investment options a company offers increases, employee participation declines.

By taking steps such as limiting the amount of unnecessary information presented, decreasing the number of choices presented, and increasing the meaningful differences between them, we can facilitate decision-making and prevent the paralysis created by choice overload.

The option to delay choice or seek new alternatives is more likely to be selected when conflict is high than when it is low. Tversky, A., & Shafir, E. (1992). Choice under conflict: The dynamics of deferred decision. *Psychological science*, 3(6), 358-361.

Researchers found that the more options shoppers had, both among different jams and different chocolate bars, the less likely they were to buy one and the less satisfied they were with their eventual choice. Iyengar, S. S., & Lepper, M. R. (2000). When choice is demotivating: Can one desire too much of a good thing?. *Journal of personality and social psychology*, 79(6), 995.

In a real-world study of more than 800,000 employees, researchers found that those who were given only a handful of options for 401(k) plans were more likely to choose to participate in a 401(k) plan than employees given ten or more options. Sethi-Iyengar, S., Huberman, G., & Jiang, W. (2004). How much choice is too much? Contributions to 401 (k) retirement plans. *Pension design and structure: New lessons from behavioral finance*, 83, 84-87.

HASSLE FACTORS

Sometimes we don't act in accordance with our intentions because of seemingly minor inconveniences, or "hassle factors". We might intend to mail an important document for weeks, but the having to find a stamp and an envelope (or, heaven forbid, going out to buy them) can be enough to convince us that tomorrow is definitely a better day to mail that paperwork.

One well-known hassle factor among college applicants is the Free Application for Federal Student Aid (FAFSA). Although filing a FAFSA can give low and middle-income families thousands in grants and subsidized loans towards college, many families still fail to complete the form. Why? Behavioral science shows that—unlike the rational model of standard economics—we can be greatly affected by hassles such as an eight-page, 100 question form, even when the reward of several thousand dollars in financial aid make it clearly worthwhile.

How do we address these hassle factors? **One study** gave aspiring college students professional assistance in filing out the FAFSA from professional H&R Block tax preparers. These students were 15.7% more likely to submit the form than a control group (which received no help, just information about the FAFSA). And it did not just lead to more applications—simply reducing the hassles of filling out a form led to a 29% increase in college enrollment among those who received federal assistance.

Minimizing hassle factors by eliminating unnecessary complications and confusing jargon, as well as providing clear channels for our actions are essential steps to help those actions match our intentions. When a process is by nature complicated or confusing, offering regular reminders and clear steps for seeking assistance can help people get through the hassle.

Simplifying the process for completing the Free Application for Federal Student Aid increased FAFSA submission rates by 40% and college enrollment rates by 25-30%. Bettinger, Eric P., Bridget Terry Long, Philip Oreopoulos, and Lisa Sanbonmatsu. 2009. The Role of Simplification and Information in College Decisions: Results from the H&R Block FAFSA Experiment. National Bureau of Economic Research. <http://www.nber.org/papers/w15361> (September 1, 2017).

At a German bank, an interruption in the adoption of online banking reduced the likelihood of them using the technology regularly. Coming back from an interruption, users forgot important knowledge they had previously accumulated about the product and onboarding process. Lambrecht, A., Seim, K., & Tucker, C. (2011). Stuck in the adoption funnel: The effect of interruptions in the adoption process on usage. *Marketing Science*, 30(2), 355-367. https://repository.upenn.edu/cgi/viewcontent.cgi?article=1035&context=bepp_papers

COMMITMENT

We see ourselves as consistent beings and will go to lengths to keep up this appearance in public and private. If we make a commitment, we're likely to follow through, and we sometimes adjust our attitudes or behaviors so they align with how we see ourselves or hope to be seen by others.

Imagine that you are on a beach and you see a stranger a few feet away leave a radio on her blanket to take a walk. If a second person came by and tried to steal the radio, would you stop them? In one study, researchers found that normally, only four of twenty people would pursue the thief. They then tested whether a commitment to watch over the stranger's belongings would affect people's willingness to get involved. Having agreed to keep an eye on the radio, 19 out of 20 people in this scenario chased after the thief.

Commitments may be self-imposed, or requested by third parties. Initial pledges can be small, and small pledges can easily turn into large ones. Well-designed commitments are specific and actionable, and can be used to overcome self-control problems or achieve goals.

A commitment to watching over a stranger's belongings turned people from passive bystanders into vigilantes. Moriarty, T. (1975). Crime, commitment, and the responsive bystander: Two field experiments. *Journal of Personality and Social Psychology*, 31(2), 370.

This book outlines fundamental principles of persuasion. Cialdini, R. B. (2007). *Influence: The psychology of persuasion*. New York: Collins.



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