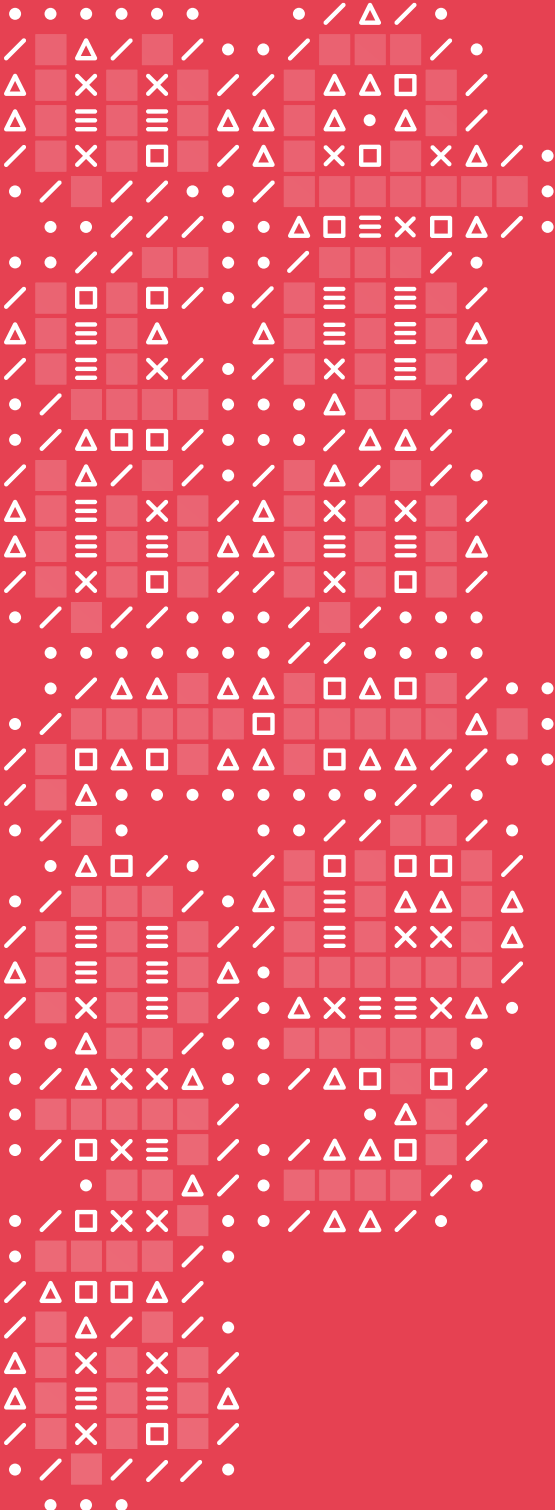


Design Systems

A practical guide to creating design languages for digital products.

by Alla Kholmatova



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and reviewed by Karen McGrane and Jeremy Keith.

Please send errors to: errata@smashingmagazine.com

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Please note that this is a pre-release version of Design Systems that only contains Part 1. Part 2 will be released at the end of September 2017 and is included in your purchase. We'll let you know as soon as the update is available for download.

About the Author

Alla Kholmatova is a UX and interaction designer with a nine-year experience of working on the web, for a range of products and companies. Most recently she was a senior product designer at an open education platform, FutureLearn.



She's particularly interested in design systems, language, and collaborative ways of working. In the last two years this interest has led her to spend a huge amount of time working on and researching the subject.

She's been sharing her insights with people through articles, workshops, and projects. Alla contributes to design publications, such as A List Apart, and speaks at conferences around the world.

Design Principles

Solid principles are the foundation for any well-functioning system. In this chapter we'll discuss the qualities of effective design principles and look at some of the ways of defining them.

Earlier we talked about the importance of starting with the purpose and ethos of the product when designing the interface. Having clarity on the purpose is paramount because all other decisions should be shaped by it, even if indirectly.

How do we make sure that the purpose of the product is manifested through design? By establishing a few ground-ing values and principles.

In some companies, especially early on, trying to articulate shared guidelines can be hard. Design principles are not something that can be measured and quantified, and defin-ing them can take a few iterations.

There might also be some confusion about what principles are exactly. Depending on the company, they can be more focused on the brand, the team culture, or the design process. The [principles at Pinterest](#)⁶ are more brand-focused (“Lucid,” “Animated,” “Unbreakable”),

⁶ <http://smashed.by/pinterestredesign>

whereas at the UK's [Government Digital Service](#)⁷ (GDS) they're directed more at how the team operates ("Do less," "Iterate. Then iterate again").

Sometimes principles are used for a limited time, for a specific project. Designer Dan Mall likes to write a "design manifesto" at the start of every project, to make sure creative direction and objectives are clearly expressed.⁸ In other cases, principles are more long-lasting, and their heritage becomes part of the company ethos. Take Jack Daniel's values of "confidence," "independence" and "honesty," which have remained the same for the last century.⁹

Larger companies might have separate sets of principles for the user experience, the brand and the design system.¹⁰ Additionally, each team working in a company might also have their own team principles. While this works for some, others can find that having multiple sets of guidelines can contribute to a design system's fragmentation.

7 <http://smashed.by/govukprinciples>

8 <http://smashed.by/whatdoimake> by Dan Mall

9 "[When It Comes To Whiskey, America Knows Jack](#)" by Avi Dan

10 Google has well known broad-brush design principles such as "Focus on the user and all else will follow," and a more specific set of principles for its material design language, such as "Motion provides meaning."

At Atlassian, an enterprise software company, the principles for marketing and for the product were initially different. Over time, the team brought them closer together, and they are now working on a unified set of principles, with the goal of having a shared philosophy to bridge the gap between the disciplines of marketing, product and support.



It is **one** system. The principles are there to connect the dots.

– Jurgen Spangl, head of design, Atlassian

Instead of having a separate set of principles for different teams and parts of the system, Atlassian aims to have a few key values – such as “Bold,” “Optimistic” and “Practical, with a wink” – going *across* all the touchpoints in the customer journey of Atlassian products. While those values are the same throughout the journey, they are not represented with the same level of intensity at different stages.

There is a lot of “boldness” in the sales and marketing areas of the site, to showcase the products and help people understand their value. But once you get to the product itself and support areas, the experience becomes more about getting the work done and making sure people are able to be as effective as possible. So the boldness is toned down and the “practical” value is shifted up. As Kevin Coffey, design manager at Atlassian noted: “*Nobody wants a bold support page.*”

Qualities Of Effective Design Principles

Approaches to design principles are unique to every company and can take many forms. Principles can be overarching or more granular, temporary or long-lasting. What matters is how effective they are at unifying design thinking and distributing creative direction in the team. In the context of this book, *design principles are shared guidelines that capture the essence of what good design means for the team, and advice on how to achieve it*; in other words, agreed criteria for what constitutes good design in your organization and for your product.

Regardless of your approach, effective guidelines typically have these qualities in common

1. THEY ARE AUTHENTIC AND GENUINE

I'm sure you're familiar with these principles: "Simple. Useful. Enjoyable." They are ubiquitous, we hear them everywhere. There's no argument that products that are designed well follow a certain set of common principles (take Dieter Rams' ten commandments of good design, for example). But qualities like these should be a given – they should be done by design – along with other concerns, such as accessibility and performance.

I've yet to see a consumer digital product which has "Complex," "Useless," and "Painful to work with" among its principles.

Knowing that your product should be useful and enjoyable is not going to be hugely helpful in guiding your design decisions, because these qualities can be interpreted in a variety of ways. What would make them more helpful is knowing exactly what those words mean to your team and your product. What does *innovative* entail? When is a design considered *useful*? How do you know if it's really *delightful*? Good design principles define qualities that can be interpreted in different ways, and ground them in the context of a specific product.

Let's take TED as an example. One of TED's design principles is "*Be timeless, not cutting edge.*" The word *timeless* is specific not only to TED's interface but its entire brand and design approach. And this means they are not going to adopt a new technology or introduce a design element for the sake of following a trend. First and foremost, it has to serve a purpose, and it has to work for as many users as possible. For TED, *timeless* means not only simplicity but also being conscious of stylistic features that have no proven benefits to users. The team wouldn't introduce a parallax effect, for example, even though it feels very current, unless it solved a real design problem.

2. THEY'RE PRACTICAL AND ACTIONABLE

A principle should offer practical guidance on how to solve a design problem within the context of a specific product. Compare these two versions of one of Future-Learn's principles:

Make it simple. *Make it so simple it's almost invisible! We should always work to remove friction on the platform, creating an experience that allows users real freedom to the content. If our platform is easy to understand, people can and will use it more."*

This statement makes perfect sense – no one can argue with the need to have a simple and usable interface. However, it's not clear from this advice exactly what simplicity means and how to achieve it. Compare it with this version:

No needless parts. *Every design element, from the largest to the smallest, must have a purpose, and contribute to the purpose of a larger element it is part of. If you can't explain what an element is for, most likely it shouldn't be there."*

In practice, the question "Is it simple?" is much harder to answer objectively than "Does this contain needless parts?" The latter can be acted on by going through the interface and questioning the purpose of every element.

To phrase the principles in a more practical way, try thinking of them not as something that should merely sound good, but something that offers *actionable advice*. Imagine a new person joined your team and you've been asked to share five things that are most important when designing for your project.

If you tell them “We like things to be delightful here. Make it delightful!” it's probably not going to help them do their job. You'd need to define what delight means and share practical examples of what delight looks like in the context of your interface.

Let's take a look at a couple of examples of design principles and how they can be made more practical.

Vague: “**Make it clear.**”

Practical: “**Only one number 1 priority.** What do you want your users to see and do first?”

Vague: “**Make it simple.**”

Practical: “**Make it unbreakable.** Just like a children's toy, make sure it is designed for exploration and impossible to mis-tap.”¹¹

¹¹ Pinterest design principles: <http://smashed.by/pinterestredesign>

Vague: **“Make it useful.”**

Practical: “Start with needs. If you don’t know what the user needs are, you won’t build the right thing. Do research, analyze data, talk to users. Don’t make assumptions.”¹²

But even the best-worded principle can still be interpreted in a variety of different ways. Nothing can make a principle more practical than pairing it with a real-life example to show how it can be applied in practice.

Find specific parts of your interface where a principle is clearly represented and connect the two together. Can you point to a place which clearly shows having “only one number 1 priority”? Can you demonstrate how a pattern can be truly “unbreakable” despite having rich interactions?

3. THEY HAVE A POINT OF VIEW

Design is shaped by the choices we make. Should this page be more visually alive or more utilitarian? Is it appropriate to be more playful or more serious here? Can we justify making this module more usable at the cost of making it less flexible?

By achieving some things we often have to say no to others. Good design principles help to work out priority and balance, even if there are conflicting factors to consider.¹³

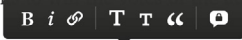
¹² GDS design principles: <http://smashed.by/govukfirst>

¹³ See <http://smashed.by/matterofprinciple> by Julie Zhuo

Take the [Salesforce Lighting Design System](#)¹⁴ principles as an example: “Clarity. Efficiency. Consistency. Beauty.” It’s emphasized that they must be applied in the priority order above. Beauty should not be promoted over efficiency or consistency, and clarity should always come first. Ranking the principles in this way communicates to the team what should take priority when making design decisions.

It can be useful to acknowledge the conflicting values and suggest how to find a balance. One of the early design principles at Medium was “Direction over Choice.” This principle was often referred to while the team was designing the Medium editor. They purposely traded a variety of formatting options for guidance and direction to allow people to focus on writing.¹⁵

Rob Smith and Chris Jones used an interesting format in their talk “Is E-Commerce an Art or a Science?” One of them pitched on the Design side, while the other speaker represented Data. Both ‘opponents’ used compelling arguments to win the votes of the audience.



For example, [on the design side](#) Chris argued that intuition, creative direction and the ‘gut feel’ were the qualities that had historically given us iconic designs with a strong voice and unique personality. On the other hand, data driven design is somewhat akin to design by committee:

The few options available in Medium’s minimal editor clearly illustrated one of Medium’s principles, “Direction over Choice.”

¹⁴ <http://smashed.by/lightning>

¹⁵ <http://smashed.by/usefulprinciples> by Dustin Senos

Good principles don't try to be everything for everyone. They have a voice and actively encourage a designer to take a perspective. This idea has been emphasized by Dan Mall in "[Researching Design Systems](#):"¹⁶



A design system should have guidelines for: perspective, point of view, extending creative direction to everyone that decides to build something with the design system. That stuff should be baked in. Otherwise, we all might as well use Material Design and call it a day."

– Dan Mall

4. THEY'RE RELATABLE AND MEMORABLE

Here's a fun test. Try asking people in your company what your design principles are. If no one can remember them, chances are they can be improved. To be memorable, the principles must be in constant use. They should be referred to in everyday conversations, included in presentations and design critiques, displayed where they can be seen. And to be in use, they must be genuinely useful, possessing the qualities above.

It also helps not to have too many of them. Human memory is limited and remembering more than four things at a

¹⁶ <http://smashed.by/researchingsystems>

time can be hard.¹⁷ The optimal number of design principles – if you want them to be in use – is between three and five. When the teams at TED, Atlassian and Airbnb were asked about their design principles during interviews for this book, they were all able to recall them instantly. There wasn't a moment's hesitation; no one got confused or tried to look up the principles in a brand manual. How could they remember them so well? Their principles were simple, relatable, useful – and there weren't many of them.

Most importantly, the teams used them on a daily basis for making design decisions. Airbnb's four design principles (“Unified,” “Universal,” “Iconic,” “Conversational”) are deeply engrained in its design process:



*When we design a new component, we want to make sure it addresses **all four of those**. If we didn't have a set of principles it would be difficult to agree on things. We want to make sure each piece lives up to it.”¹⁸*

– Roy Stanfield, principal interaction designer, Airbnb

¹⁷ For further reading on the limitations of human working memory see “The Magical Mystery Four: How is Working Memory Capacity Limited, and Why?” by Nelson Cowan

(<http://smashed.by/workingmemory>)

¹⁸ Interview with Roy Stanfield, Principal Interaction Designer, Airbnb, August 2016

The team at Spotify came up with the acronym TUNE (tone, usable, necessary, emotive) to make their design principles more memorable. Asking if a design is “in TUNE” during critiques and QA sessions has become part of Spotify’s design process.¹⁹

Making sure your principles possess the qualities above takes time, commitment and teamwork. But it’s worth the effort – a core set of principles are at the heart of any design system.

Defining Your Principles

Expressing your design approach in five sentences is not easy. Every team arrives at their principles in their own way: some go through rounds of workshops, others might get input from their CEO or a creative director. Regardless of how you get there, the following tips can be useful to keep in mind.

START WITH THE PURPOSE

Design principles must support the larger purpose of the product and help express the product’s ethos. If you aren’t sure where to start, look first at your company’s overarching values or a product vision, and then try to work out how design principles can contribute to that larger goal.

¹⁹ <http://smashed.by/designscale> by Stanley Wood

The main purpose of TED's website can be captured in one sentence: "Spread the talks as far and as wide as possible." In terms of TED's ethos and values, this means reaching as many people as they can, lowering the barrier to entry, and making the product inclusive and accessible. It means prioritizing performance and accessibility over flashy features, clarity of message over bold experimental design. Their "timelessness" principle encompasses that.

FIND SHARED THEMES

If you're still in the process of defining your principles, a useful exercise is to ask a few team members (or everyone, depending on size of the team) to write them down individually. What, in their opinion, does good design mean for your product? How would they explain it in five sentences to a new member of the team, in a way that's practical and easy to grasp?

Ask them to find a practical example in your product's interface and include it alongside each principle.

Comparing your team's answers can reveal how much unity you have in your design approach. Are there many shared themes and overlaps? Have different disciplines ended up with similar principles? It's always interesting to see everyone's responses, in particular how they differ between people who have just joined the team, and those who've

worked on the product for some time. These answers can be a valuable starting point in further work on the principles, as you identify common themes and agree on priorities.

WRITE FOR PEOPLE, NOT BRAND MANUALS

A surefire way to end up with vague design principles is to have no idea who they're for. Are you writing for a corporate identity brochure? For the company website? A careers website? Potential partners and customers? Try writing your principles for yourself and for your colleagues, first and foremost: designers, developers, content producers, marketing professionals, domain experts – people directly involved in the creation of the product. Aim to come up with an informal agreement on what constitutes good design for your product, and offer practical guidelines for achieving it.

TEST AND EVOLVE YOUR PRINCIPLES

As your product evolves, so will your principles. They will be shaping the design language, which in turn will be shaping the principles. Your principles might be very loose and abstract in the beginning, gradually gaining more and more clarity. Or they might start off being clear and focused, but over time become more diluted and lose their authenticity. To make sure your design principles continue to improve, they need to be constantly tested, evaluated and refined. This can only be done by being conscious of them

and applying them in your work every day. By making your principles part of design critiques, for example, you can continuously test if they help in your design process, and if not, continue iterating them.

From Principles To Patterns

One of the challenges I've had in my work as a designer is working out how to materialize higher-level concepts, such as design principles and brand values, into concrete UI elements. How exactly are they embodied in the design patterns we create?

A lot of it is about choice and execution of patterns. For Medium, on the functional level a rich-text editor was required. It could have been any kind of editor, with any degree of complexity. But out of all the possibilities, Medium chose the simplest one, guided by its principal, "Direction over Choice."

For TED, clarity of message is valued over aesthetics. Trying to distill a talk into a single sentence can be hard, and sometimes titles can be long. It would be easier to clip the title, but for the team the message of the talk must always take priority. Instead of opting for an easier solution, they make sure that their design patterns can accommodate long titles.



The hero banner pattern on a TED.com talk screen can accommodate long titles, which is in line with their design principles.



There's a sense of prioritization also from the brand standpoint. For example, The TED team chose not to introduce a new image-rich home page until they developed a compression tool to minimize the impact such imagery would have on performance.

For the team at Atlassian, the “optimistic” principle is embodied in an “[optimistic interface](#).”²⁰ In JIRA, for example, when a user has to move a card from “In progress” to “Done,” cards are allowed to be moved right away, providing an instant response to the user, even though in the background there are a lot of checks and validations, and many things that can go wrong. The “practical with a wink” principle is found in the friendly language of the copy, feedback messages, on-boarding, and other places throughout the site.

²⁰ <http://smashed.by/truelies>

Design patterns are shaped by the core idea of how a product works. Think about how an ethos of “transparency and collaboration” is embodied through open channels on Slack; how the idea of “capturing life’s unique moments” translates into Instagram’s photo feed and interactions; or how cards on Trello (a functionality that goes back to the seminal HyperCard system) encourage a certain type of workflow.

The choice and execution of the patterns and their unique combination are influenced by a product’s purpose, ethos and design principles. You can view design principles as grammar rules for creating patterns and combining them in ways that make intrinsic sense.

Equally, as the brand and functional patterns evolve and become more refined, they shape the design principles. Principles and patterns are refined and influenced by one another continuously.

Over the next two chapters we’ll talk about design patterns in more detail, taking real-life products as examples. We’ll see how design patterns emerge and how they are affected by a product’s purpose and ethos, user behaviors, brand, business requirements, and other factors.