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Everything you need to know about Design Systems



Audrey Hacq May 23, 2018 · 10 min read

DESIGN SYSTEM



PEOPLE



TOOLS



PATTERNS



GUIDELINES



BRAND

→ [Pour la version en Français, c'est par ici](#)



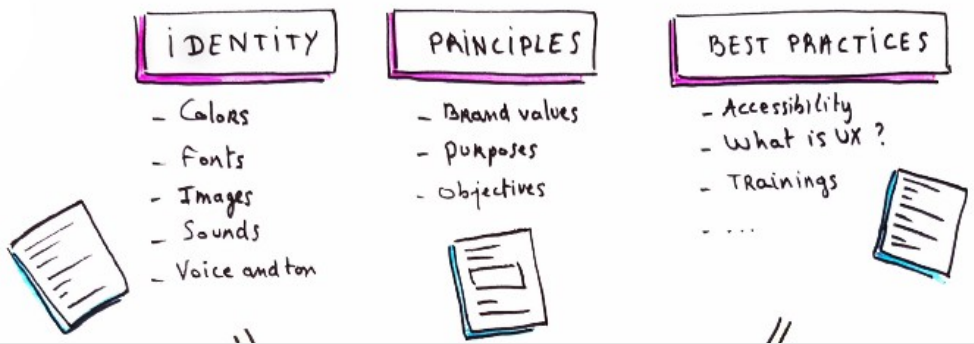
of people ;)

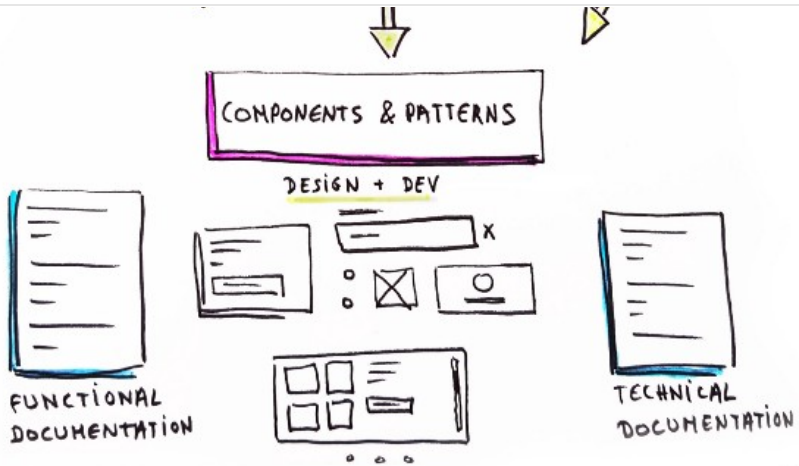
After reading Alla Kholmatova's book last year, I was lucky to attend the first European conference on the subject in March. All of this strengthened my conviction that, in the future, every brand and every product will use a Design System, simple or comprehensive, strict or loose, mono or cross platforms...

What is a Design System?

I keep hearing various definitions, so let me start by saying what a Design System isn't: it is not a Sketch library, no more than a Style guide or a Pattern Library... Actually, it's all of this and so much more!

A Design System is the single source of truth which groups all the elements that will allow the teams to design, realize and develop a product.





©audreyhaq

So a Design System is not a deliverable, but a set of deliverables. It will evolve constantly with the product, the tools and the new technologies.

As Jina Anne describes perfectly in [this conference](#), the System is composed of tangibles and non-tangibles elements :

- Tools for designers & developers, patterns, components, guidelines...
- But also -and it's often the most difficult thing to achieve- some abstract elements such as brand values, shared ways of working, mindset, shared beliefs...

Style Guide or Pattern Library: what's the difference?

As it should be clear for you now, the Style guide and the Pattern Library are just some of the deliverables of a Design System.

Most of the current Design Systems contains both, just as Shopify for example which has one tab “Visuals” for its Style Guide and one tab “Components” for its Pattern Library.



The desire for factorizing design and components is not new. But we can see that the trend has accelerated during the past years. More and more companies are based on digital supports and do not even have Graphic guidelines for print anymore!

For a long time, digital was treated like the “side project”: we use to make Graphic guidelines for printed elements and then, add some extra-guidelines for the digital... Who has never received 300 pages of graphic guidelines with only 6 pages about digital? I have... And as a Designer, that's not the kind of inputs I expect from a brand...



A designer who receives the Graphic guidelines of his client

We must now close the gap between print and digital around a shared language that will evolve with time. Design System is the direct descendant of the Graphic guidelines but it's more mature and more integrated into the teams' workflow. We also now have the tools which allow us to build and share systems of components.

. . .

What's inside?

The fundamental purpose of a Design System is to facilitate the work of the teams. So the first question we need to ask ourselves is not “What should I put inside my Design System?” but “Who is going to use it and how?”.

Once our target is defined and we have a first idea of what is already in place in the company (What is working or not? Which is the level of maturity of the teams about this subject? What are the existing tools?...), it will be easier to know where to start.

#1. Purpose and shared values





©[Jahit Janberk](#)

Where are we going? Why? And How?

Before starting anything, it's essential to align teams around a clear set of shared goals. It will help to build a vision and making sure everyone looks in the same direction. These goals will evolve with time and it's normal. We just have to make sure that changes are broadly communicated.

As for the values, they are like great ideals that will guide our choices, according to the brand objectives. We need to make sure that what we're designing does not differ from these key values.

Beside these brand and product values, we could also define some team values that will bring each collaborator around a shared state of mind.





Posters the ASH team created for their core values

#2. Design Principles



Design Principles

Design Principles: A collection of Design Principles and methods

First thing to keep in mind: Design principles are so much more than just the visual aspect of a product...



sentences that helps the teams to reach the purpose of the product thanks to the design.

They will help the teams to make meaningful Design decisions.

I will take the example of Medium. One of their Design principles is “Direction over choice”. Thanks to that principle, instead of designing a regular text editor with unlimited choices of colours and fonts, they opted for a simpler one. That allows the author to focus on the content of his article rather than on its visual aspect.



share these **components** and make s
works with the same raw material, w

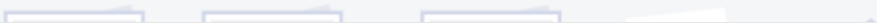
Design Principles must guide design choices

#3. Brand identity & language

DEFAULT AVATARS



SPOT ILLUSTRATIONS



[default image](#)[upload image](#)[download image](#)[new post](#)[contact](#)

Shopify brand identity

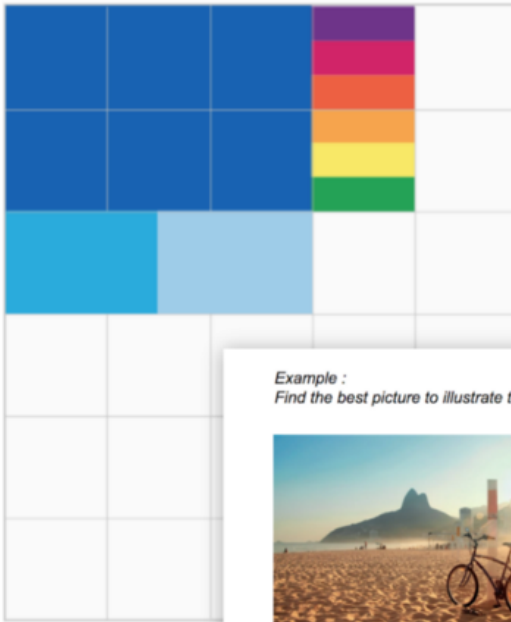
The identity should be defined in line with the strategy and the objectives of the brand. Alla Kholmatova speaks about the “perceptual patterns” that she lists as follow:

- Colours
- Fonts
- Spaces
- Shapes
- Icons
- Illustrations
- Photographies
- Animations
- Voice and tone
- Sounds



It's a good starting point but that's surely not enough to speak a language! We have to go further to use this alphabet to compose some words and then associate these words to obtain sentences that make sense. These brand elements will need some rules which will be, in a way, the grammar and the conjugation of the System.

In our Design System, it's materialized by guidelines, *do's and don'ts* and "good examples" of use.



Example :

Find the best picture to illustrate the headline **"Looking for travel inspirations?"**



Relevance:

Yes, the picture shows a recognisable destination



Yes, the picture shows a recognisable destination



Story:

Yes, we can imagine someone who parked his bike to enjoy an early quiet swim.



No, it just looks like another aerial picture of Manhattan.



Style:

Yes, the picture is clean, authentic and vibrant.



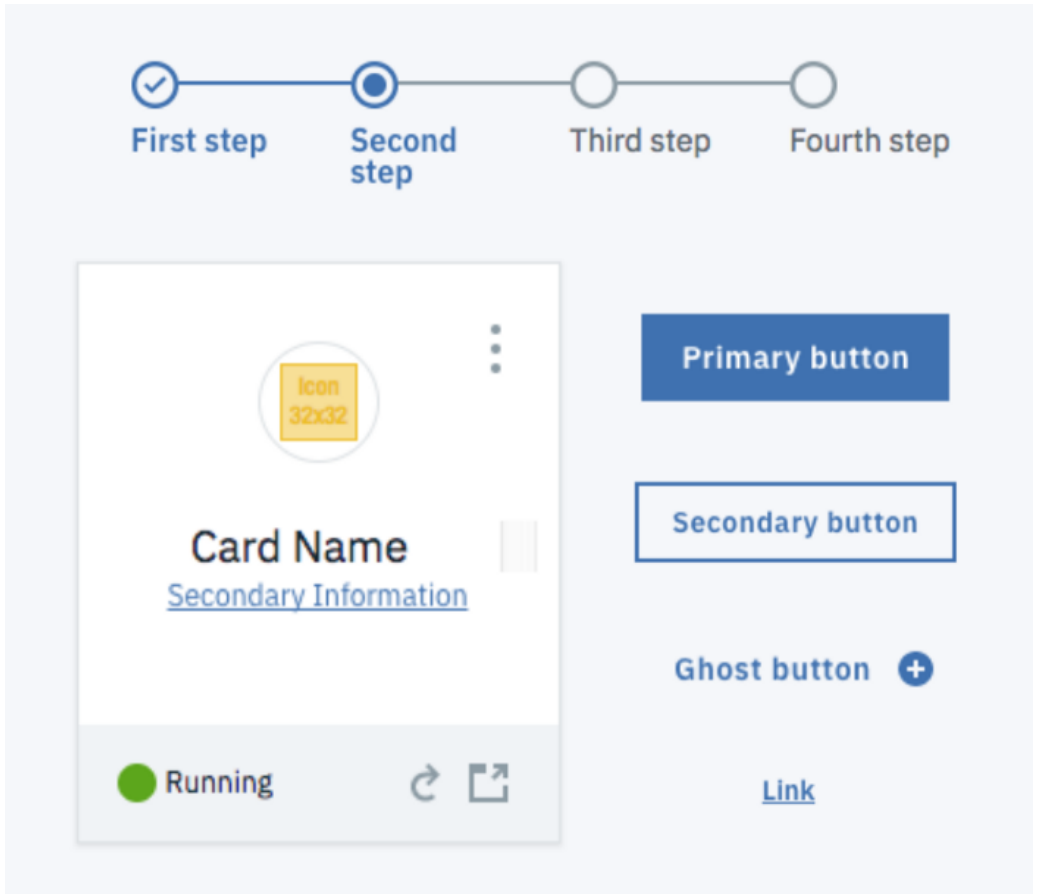
Yes, the quality of the picture is clean, authentic and vibrant.





This will ensure the design teams use the “right combinations” of this language, those who make the brand so unique and recognizable.

#4. Components & patterns



Components & Patterns are at the heart of the System. All the previously mentioned elements will help us to create them and deliver a consistent experience.

behaviour must be specified.

As for the **patterns**, they are the building instructions that will allow us to use these components in a logical and consistent way, across all the products.

In the image below, we can clearly see that a component will be specified with technical and functional documentation, whereas a pattern will give recommendations about how to use it:

Yahoo Design Pattern

Accordion

Issue: Last modified October 9, 2009

An accordion or expansion menu is a group set of collapsible panels that provide access to a large number of links or other accessible items in a consistent space.

Each expandable menu is individually supported. Usually having the web software, generally by hovering or clicking the title of an expandable/contractible element on the specific panel, to display a single subset of the options.

What Problem Does This Solve?

When there are too many items to fit in a single space or when the number of items, if displayed at all, would overwhelm the user, then the question is how to give the user access to all of the items in a digestible manner and without needing scrolling, which can remove the user from the content on a page problem they may rather solve.

When to Use This Pattern

Use when the number of options is large, the space is constrained, and the list of items can be logically grouped into smaller, meaningful expandable items.

What's the Solution?

Present a list-based set of options:

- The first level is collapsed or "grayscale"
- The secondary level is a list of options that fill into each group.

Accordions are typically signed on a stack of collapsible panels (not on the back of hierarchical structure) with the top-level category items used as labels. The category labels may function as full-width headers or may be provided with a consistent subnavigation bar.

An accordion may have one panel open by default on initial display.

RECOMMENDATIONS

- Use the most important panel open by default. Both to expose the important choices and to demonstrate the full featured content for use as individual options.
- Highlight the current panel so the user can distinguish open panel headers from closed panel headers.
- Avoid nesting multiple levels of other options. If you find yourself nesting in this, consider whether a tabset or other element better suited to multiple-level hierarchies would be more appropriate.

options

- Accordions may be configured to require that there is always a single panel open or to allow for more flexible possibilities of panels closed, multiple panels open. Some practitioners consider it a best practice to permit only one panel to be open at a time, but others disagree.
- An accordion may be configured so that only one panel can be open at a time, but many examples of accordions allow for multiple panels to be open at once.

Why Use This Pattern?

The primary reason to use an accordion element is to compress a large amount of options into a limited space.

Special Cases

Most accordions are created vertically, but they may also be laid out horizontally.

Accessibility

For keyboard users an accordion usually works on tabbing either on a line view or on a tab view. It may be possible to add keyboard navigation to the accordion with tabbing between labels and opening/closing buttons between the panels.

An accordion should degrade into something useful when JavaScript is off, perhaps opening up panels. Display more details should be used as this might take the content from a screen reader instead of creating scrolling a "page full".

Bootstrap Component

Accordion example

Below the default collapse behavior we create an accordion with the accordion component.

EXAMPLE

Below are three expandable, one expanded from the accordion using the following HTML:

```

<div class="card">
  <div class="card-header">
    <h4>Collapse Group Item #1</h4>
  </div>
  <div class="card-body">
    <p>Collapse Group Item #1</p>
  </div>
</div>

```

Below are three expandable, one expanded from the accordion using the following HTML:

```

<div class="card">
  <div class="card-header">
    <h4>Collapse Group Item #2</h4>
  </div>
  <div class="card-body">
    <p>Collapse Group Item #2</p>
  </div>
</div>

```

Below are three expandable, one expanded from the accordion using the following HTML:

```

<div class="card">
  <div class="card-header">
    <h4>Collapse Group Item #3</h4>
  </div>
  <div class="card-body">
    <p>Collapse Group Item #3</p>
  </div>
</div>

```

Code

```

<div class="card">
  <div class="card-header">
    <h4>Collapse Group Item #1</h4>
  </div>
  <div class="card-body">
    <p>Collapse Group Item #1</p>
  </div>
</div>

```

Material to inform design decisions

Options to use based on how it's built

Pattern vs component ©Nathan Curtis

If you wonder which component you should develop first for your system, you can run a component prioritization workshop.



System, best practices will accompany teams in a larger and more transversal way.

The idea is to dig into the general best practices and extract only those who make sense, based on the product and the level of maturity of the teams.

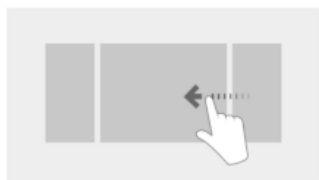
Best practices will help the teams to form and develop their technical skills.



How to design for the web

This guideline will show you our Responsive Web Design principles for designing great experiences for browser-based products.

v1 7 Aug 2015



How to design for touch

This guideline will explain how to design for touch across responsive BBC sites.

v1 7 Aug 2015



How to design infographics

This guide will show you what an infographic is, the principles behind them and the style we use to bring them to life.

v1 28 Apr 2016

“How to” in the BBC Design System



or product... To define our own, we have to ask ourselves the right questions:

- How many people will use this system?
- What is their profile and are they mature enough on the subject?
- How many products must we align? On how many platforms?
How many different technologies (Angular, React, others...)?
- What degree of consistency do we want across our products?

All these answers will help us to define the most appropriate kind of Design System.

In her book, [Alla Kholmatova](#) gives us some inspiration:

Strict or loose?



On the left: Airbnb / On the right: Ted

A strict system will have a comprehensive and detailed documentation and will be fully synchronized between design and



to cover the majority of cases the teams may encounter.

A **loose system** will leave more space for experimentation. The System is here to provide a framework for the teams while preserving some freedom. Designers and developers are free to use it or not, regarding their particular needs for their product.

From my experience, we have to find the right balance between strictness and flexibility: a very strict system might repel designers and developers who will not want to use it. On the other side, can we still speak about Design System if this one is too loose?

Modular or integrated?



Modular vs integrated systems ©[Alla Kholmatova](#)

A **modular system** is made of interchangeable and reusable parts. It suits well for projects that have to scale quickly and that have to adapt to multiple user needs. The negative part is that it's often more expensive to realize (because it can be difficult to make modules that can be independent while working well together). This kind of

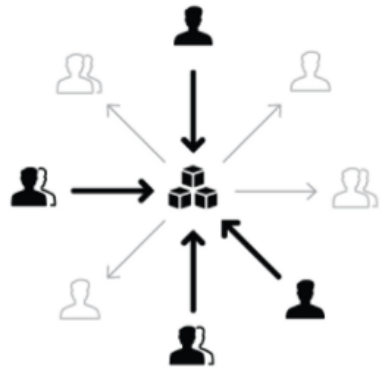


interesting to work with atomic design in mind.

An **integrated system** focus on one unique context. It's also composed of parts, but these parts will not be interchangeable. This kind of system suits products that have very few repeating parts and that need a strong and often changing Art Direction (portfolios, showcases, marketing campaigns...).

Centralized or distributed?

The organization around Design Systems is really important for its evolution and scalability. In this article, Nathan Curtis details the different types of models. Here are two of them:



Which model for your Design System: centralized or distributed? ©Nathan Curtis

In a **centralized model**, one team is in charge of the System and makes it evolve. This team is here to facilitate the work of the other teams and has to be very close to them, to be sure that the System covers most of their needs.



everyone feels involve but it also needs team leaders that will keep an overall vision of it.

In each case, I advise allowing everyone to participate and make suggestions to improve the system, in order to create a sense of membership.

Place your system on a scale

The idea will be thus to position our system on these three scales, in order to define the kind of system that we want:

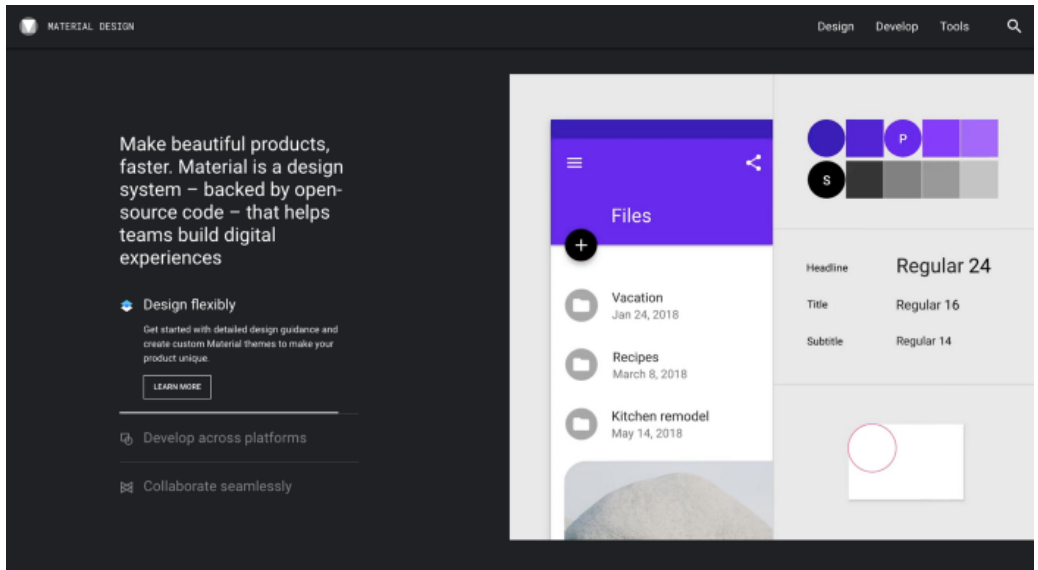


Airbnb: a strict, modular and centralized system

. . .

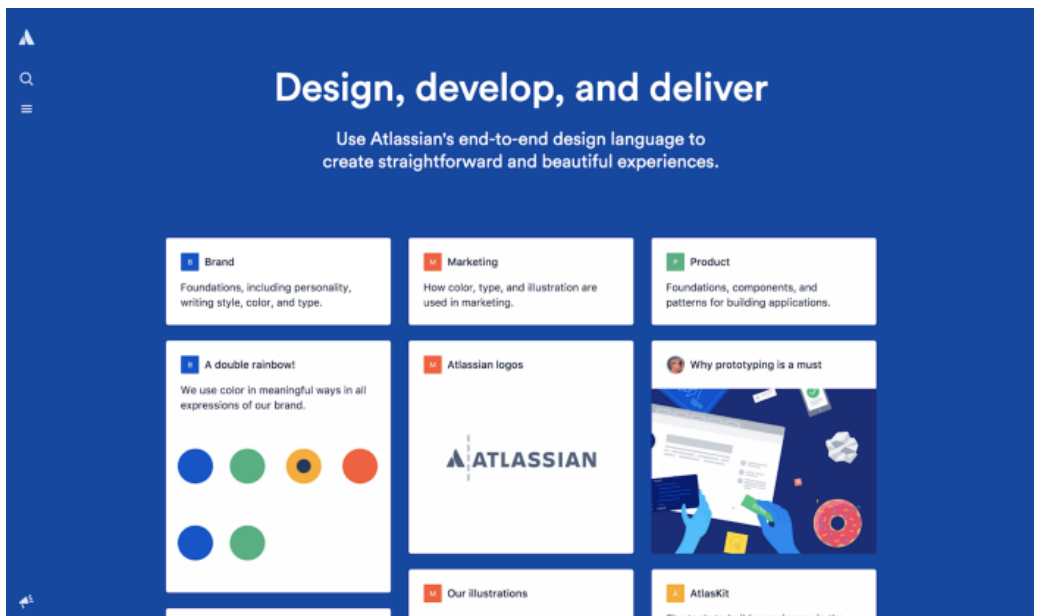
Some examples

Without any originality, here are some of my favourites:



Material Design System

- **Atlassian** for its exhaustiveness



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- **Polaris** from Shopify, because of its integration into the designer and developer's workflow



Be principled

Explore what we care about most when we build new features and products.

Find out more



Write it

Learn how to use language to design a more thoughtful product experience.

Get writing



Get visual

Find out how we approach the visual elements of our interface with purpose.

Take a look



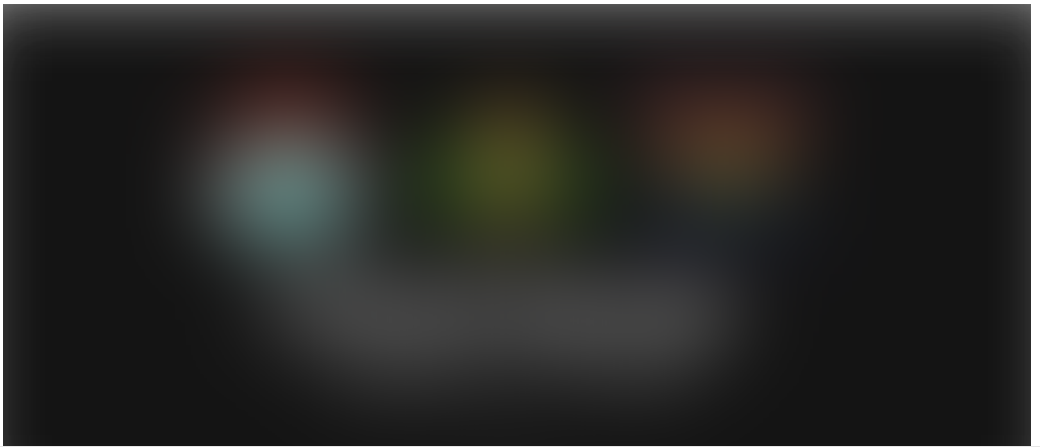
Build something

Use components as building blocks as you develop new products and features.

Start creating

[Polaris by Shopify](#)

- **IBM** for its wonderful work on the Design language






• • •

Last words

A Design System is a full product, which is going to help the actors of a project to build other products.



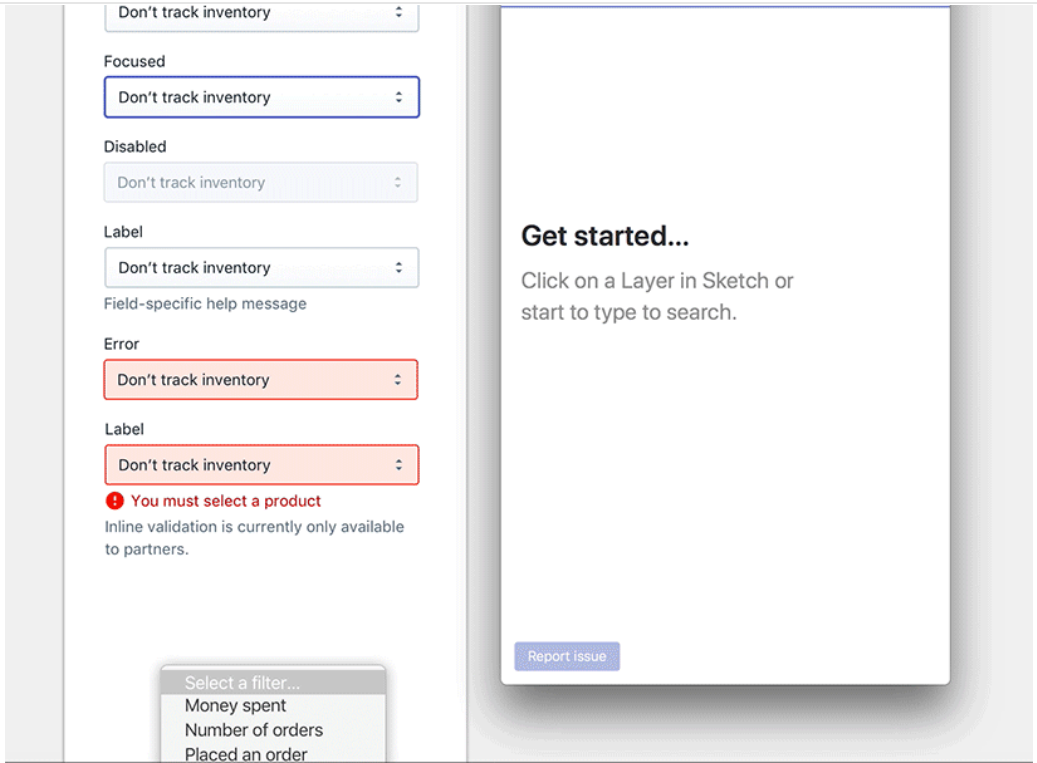
**Products own their destiny.
System equip products to realize that destiny.**

Nathan Curtis

As for every good product, it will have its own backlog and will have to build itself in an iterative way, keeping the users (designers, developers, PO...) at the heart of the approach.

The more integrated the system will be with the designers and developers workflows, the more effective it will be.

One really good example of this integration is the Sketch plugin of Polaris that displays the components and documentation of the system directly in Sketch, so the designers have everything they need during the conception phase:



Telescope: the sketch plugin, by Polaris

And all of this is only a beginning!

I'm convinced that the future will provide us with a lot of great technical evolutions to facilitate our lives and to allow us to concentrate on the experience of our products and our users ;)

And if you want to run some workshops around design systems, you can also read my articles about “[How to prioritize your design system components?](#)” and “[How to measure your design system success?](#)”.



- [Anna Khomatova's book on Design Systems](#)
- Every article of the fabulous [Nathan Curtis](#)
- Conferences and writings by [Jina Anne](#)

You can also find other examples of very good Design Systems on this repo:

Design Systems Repo

This is not a comprehensive list of every design system that I have come across. Rather, it's a...

designsystemsrepo.com



Thanks for reading!

Thanks to Soizic Le Colleter, Valentin Chrétien, and Florent Hacq.

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