

Creating a global Design System

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Introduction

This report is an activity for the Hyper Island's Digital Management Masters program. Its objective is to present a scoped project for the author's workplace, Adevinta. The project intends to evaluate the feasibility of creating a global modularised and reusable set of visual interface components, known as a Design System. A solution that can potentially accelerate and standardize design and development decision-making across all the company's products.

The content is presented in two main sections. Part one introduces the topic, how it can potentially impact the business and its effect on its primary stakeholders. The second part is a reflection of the key learnings and findings from part one, validation with leadership stakeholders and how these insights will shape the idea moving forward.

Part One

The What: A way of standardizing interface design

In 1981, the operating system Xerox Star (Fig 1) became commercially available. With its launch, a different way of interacting with computers was introduced, the graphical user interface (GUI). The interface was now composed of different visual elements instead of command lines, so that users could interact with computers in a more intuitive way. In addition, the whole interface was composed of reusable visual components, such as the way menus look, the graphic of icons and folders, and how buttons were provided in the header of pages. This was not because of a lack of creativity or resources. Instead, it was an intentional move towards standardization and consistency. Park *et al.* (2011) affirms that the overall usability of a digital product can benefit from this type of predefined standards since users can learn and identify patterns across the product more easily. A now known fact that was already known when Xerox Star was created, judging by its interface.

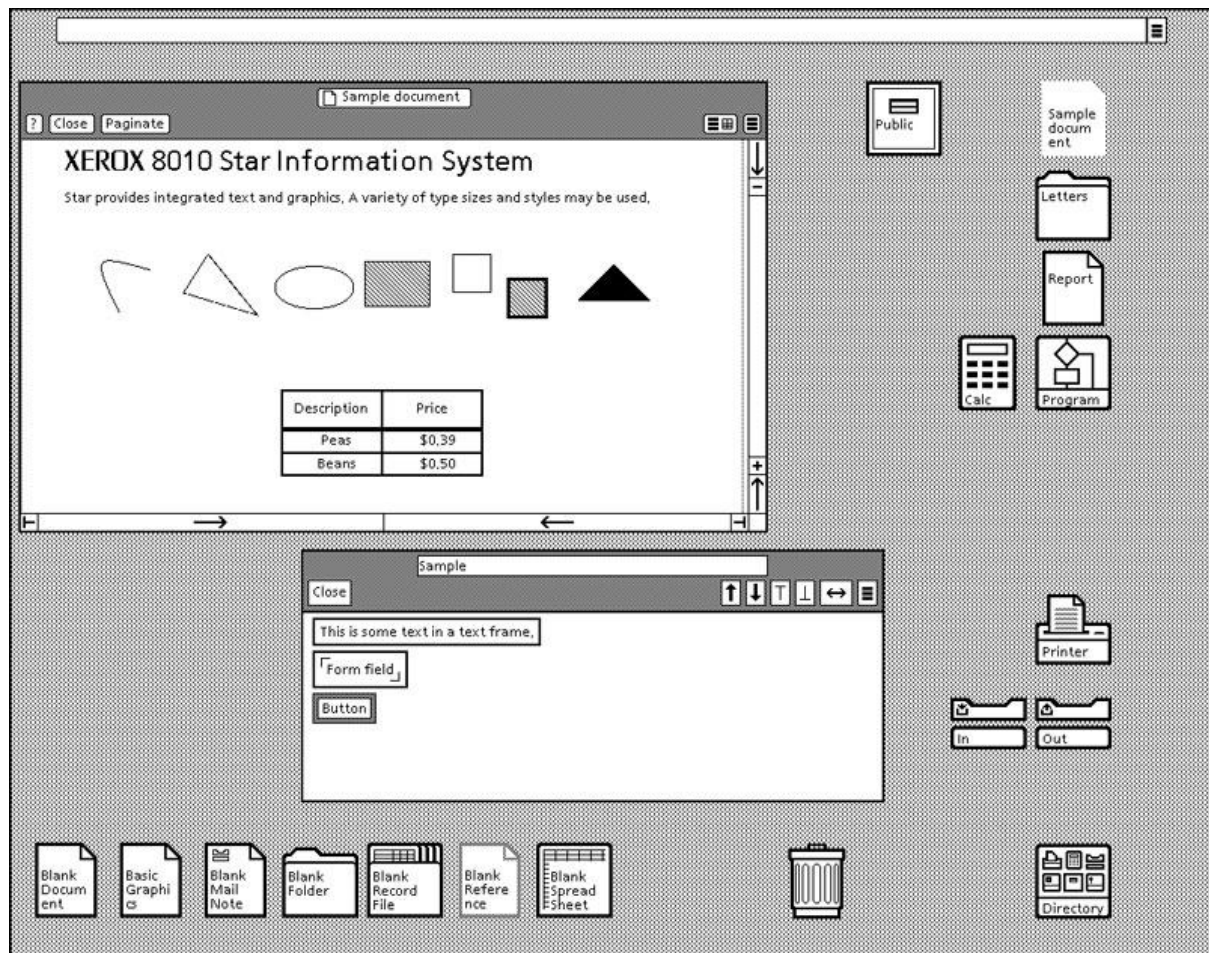


Figure 1 - Xerox Star. Source: <https://interface-experience.org/objects/xerox-star-8010-information-system/>

The origins of these interface patterns can be traced to an earlier period. Alexander et al. (1977) published a book called "A pattern language: towns, buildings, construction" (Fig 2) that explored how the design of environments rely on "languages". So when creating an architectural project of a house or building, these languages can be used in the same way to communicate, so the patterns in the space can express intent and coherence.

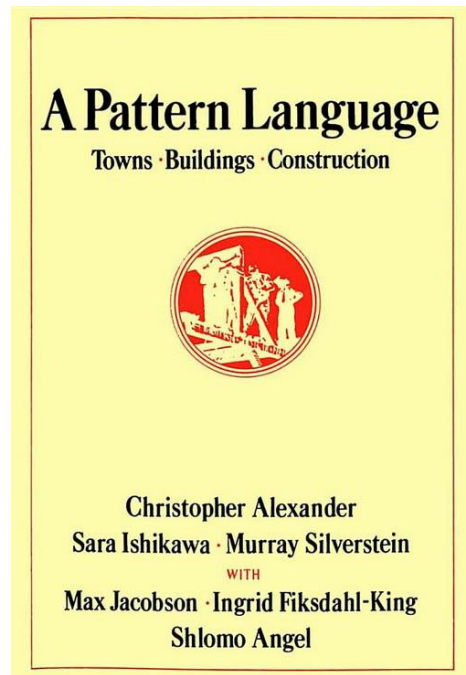


Figure 2 - A pattern language book cover. Source:

<https://www.patternlanguage.com/bookstore/pattern-language.html>

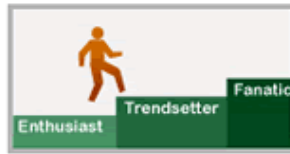
Over the years, more studies addressed how humans interact with computational interfaces, supporting the growth of the human-computer interaction field. These studies addressed topics such as how motivation can become a driving force for engagement with interfaces (Szalma, 2014). Thus, providing a deep understanding of how the digital design of an interface impacts the usage of software and websites. Yahoo! was one of the pioneers benefiting from some of these learnings. Still, in 2004 they introduced their own design pattern library, which was created to orient designers and developers on creating guidelines (Fig 3). This potentially marked the move from applying learnings before only applied to operational systems into websites as well.

Solution Patterns



The Competitive Spectrum

The designer needs to match the reputation system to the community's degree of competitiveness.



Named Levels

Participants in a community need some way to gauge their own personal development within that community.



Numbered Levels

Participants in a community need some way to gauge how far they've progressed within that community.



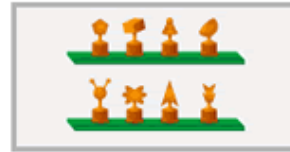
Identifying Labels

Community members need to identify distinguished members of the community.



Points

In some communities, participants want a tangible measurement of their accomplishments.



Collectible Achievements

Some participants in communities respond to opportunities to collect and display awards.



Ranking

In highly competitive communities, users may want to compare their performance against that of their peers.



Leaderboard

In highly competitive communities, users may want to know who are the very best performers in a category or overall.



Top X

Participants in some communities welcome the challenge of striving to enter the top tier of competitors.

Figure 3 - A section of the Yahoo Design Patterns (Reputation). Source:

<https://thewavingcat.com/2008/06/yahoo-releases-reputation-design-patterns-yay/>

A new era of design patterns libraries started to emerge around 2017, when companies such as Airbnb, Uber, and IBM began to invest in this type of initiative (Fig 4). This was the moment when large software companies realized that they could benefit from creating their own design pattern libraries, which started to be called Design System.

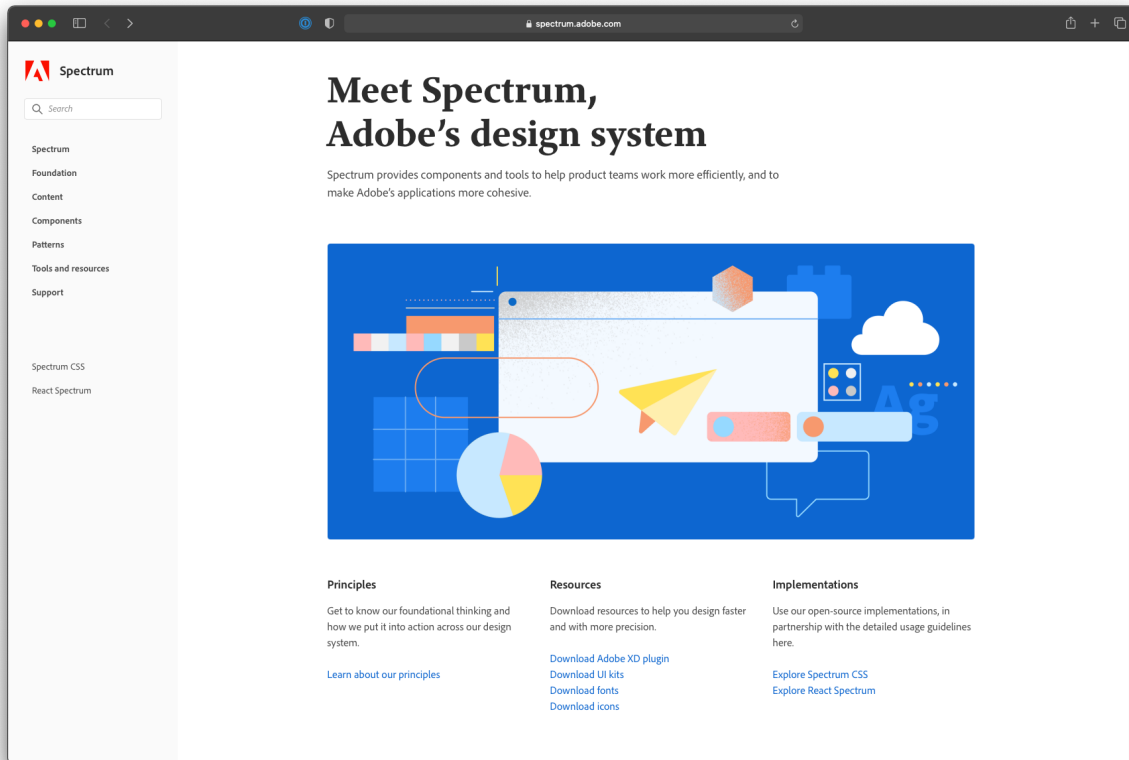


Figure 4 - Adobe Design System. Source: <https://spectrum.adobe.com/>

The main driver for this move was the understanding that the standardization of design patterns could offer more efficiency. A Design System provides a defined set of visual components and patterns, allowing different iterations to be designed and built faster. A process that will enable designers and developers to spend less time on these phases and dedicate the extra time researching to correct problems. This evolution and adaptability are explained by Tidwell *et al.* (2020). That affirms that interface design patterns, like everything else, changes to keep up with the changing times. Something that can be noticed by its evolution from old operating systems to current startups mobile applications.

Internal learnings and experiences with the opportunity

Back in 2019, the author of this project worked from scratch to create a minimum viable version of a Design System for two of the company's local brands, Markplaats and 2dehands (Fig 5). What started as a side project transformed into the author's full-time job in the middle of 2020, resulting in the company's first design position for someone dedicated to Design Systems.

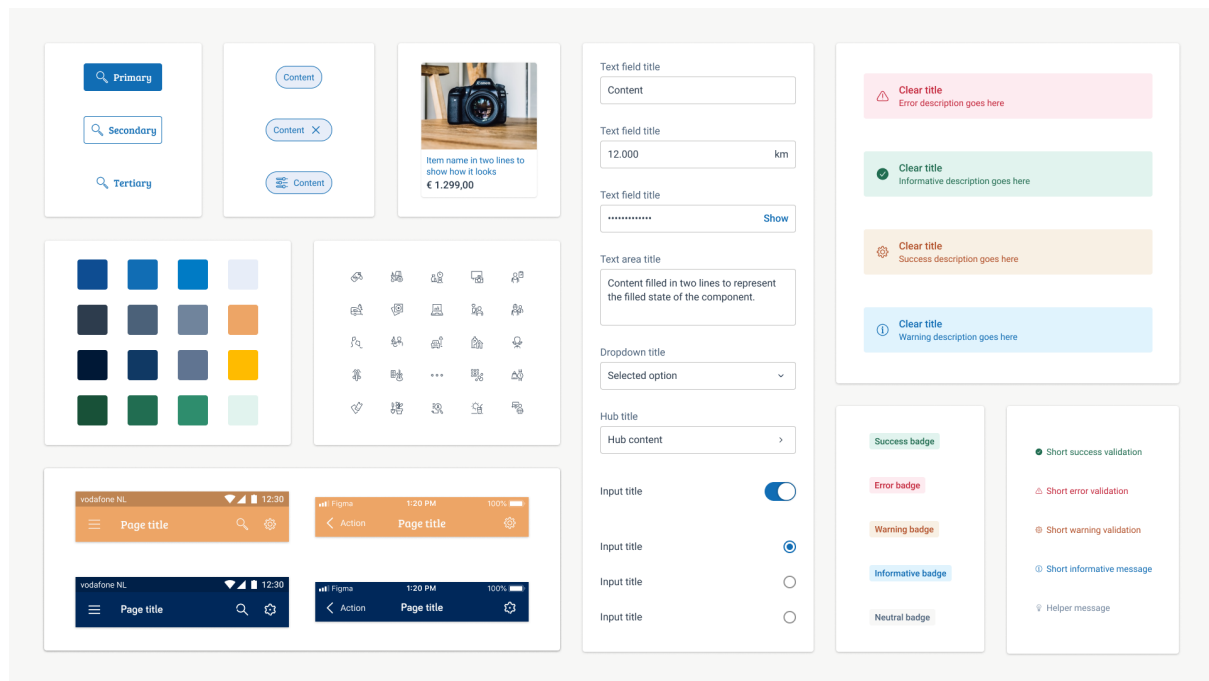


Figure 5 - Visual components of our local Design System (Markplaats and 2dehands).

The author was appointed to a leading project position, and resources were granted for a dedicated team to be created. As will be demonstrated later, the local version of our Design System already exceeded the company's expectations on success metrics and efficiency. This success triggered the question of how this can be leveraged for the other products of the company. Or in other words, what would it take to create a global Design System, that can provide all the identified benefits for the company's entire portfolio of products.

The Where: Taking advantage of our new recent merger

The intended project will be conducted at the author's workplace, eBay Classifieds Group, which has been acquired by Adevinta, an international family of local digital brands, as of June 2021. This merger created the leading global online classifieds specialist. Adevinta now operates an expressive portfolio of digital online classifieds products in 16 countries (Fig 6), with an average of 1.5 billion visits and 250 million unique users each month (Adevinta, 2021).



Figure 6 - AdeVinta's global product portfolio. Source: <https://www.adevinta.com/brands/>

Creating a Design System that supports two products (Markplaats and 2dehands) was not an easy task, and it took almost two years to happen. So making the leap to more than thirty products will pose a significant challenge. Each of these products is an individual local brand, but they all serve the same purpose of connecting buyers and sellers in their markets. Therefore, many of their features are common, so much of what has already being built can already be used. The potentially main challenges will come from catering to local requirements, like local payment solutions and prominent brand characteristics such the brand fonts and colours.

The Why: A powerful solution to replicate great design

Visual components by themselves do not solve problems, and they should be provided with guidelines on how to be used. Santala (2020) affirms that guidelines in Design Systems serve two purposes. The first one is to define constraints that will limit certain aspects of the system, making it easier to achieve cohesive user experiences. The second is to offer a mechanism that allows good designs to be repeatable and reusable. With the combination of guidelines and ready to use visual components, designers and developers can not only work faster, but also increase the quality of their solutions.

The current local Design System at Marktplaats and 2dehands can already be considered a successful initiative. Its vast offer of guidelines and ready to use components lead to a rapid increase in adoption. When the project started, an initial assessment indicated that it would be able to reduce the average speed on delivery from problem definition to implementation (Fig 7) by half.

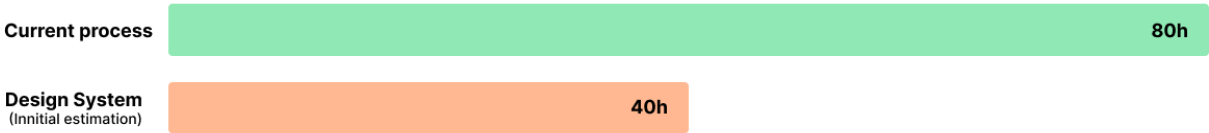


Figure 7 - Initial estimation of the average speed on delivery from problem definition to implementation with a Design System.

A recent assessment into this metric over the last six months demonstrated even better results than initially anticipated. Besides achieving 100% adoption by all the product teams in these two local products, the average speed on delivery was reduced by three times, compared to the previous way of working without the Design System (Fig 8).

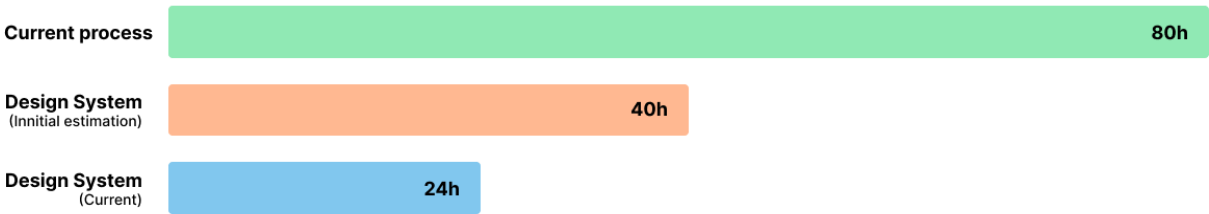


Figure 8 - Latest results of the average speed on delivery from problem definition to implementation with a Design System.

Design systems considerations regarding accessibility and brand recognition

There are also benefits from a brand perspective on using a Design System. Pyrhonen (2019) affirms that providing a consistent GUI across a set of digital products can increase a company's brand recognition. Besides gains in productivity, consistency and brand image, a Design System can also be an incredible way to bring accessibility and inclusion to a digital product. Accessibility is often ignored on digital products. According to AbilityNet (2018), over 90% of websites don't even meet single-A compliance regarding the WCAG (Web Content Accessibility Guidelines). An alarming statistic considering that an estimated 24% of the world's population has some form of disability (Donovan 2020).

The way a Design System contributes to accessibility is simple. Once a good design is made, it becomes repeatable. Its components can be created on the design side, considering accessibility requirements such as minimum interactive areas, font sizes, and colour contrast, among other recommendations. Our current local Design System already considers accessibility since the beginning of the project. It also went a step further by also providing informative content about how impairments affect the experience of users into its guidelines (Fig 9). This is a massive win for good usability and accessibility best practices since anyone using it will automatically comply with the highest quality standards.

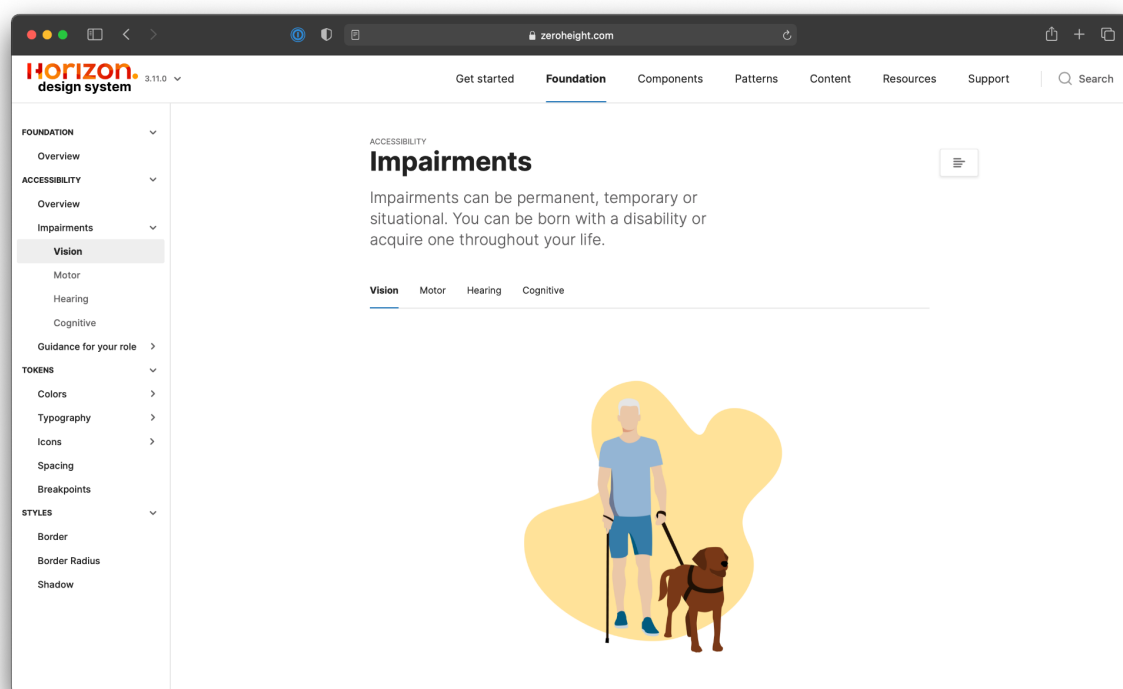


Figure 9 - Local Design System (Markplaats and 2dehands) documentation about impairments.

The Who: Changing the way all designers and developers work

The project's primary stakeholders are designers and developers, so their collaboration during this assessment phase for a global Design System is crucial. Moreover, it's a chance for them to help redefine and reshape how these practices will work for years from now. The decision to adopt any kind of global solution comes with potential pros and cons. This validation phase intends to understand these issues, uncover potential risks, and learn from experienced people who already implemented this type of solution outside of the company.

Considering that this is still an exploratory validation, some long term plans were not shared with stakeholders, since it could potentially create a bias towards a final solution. Also, since some information is considered confidential, they were shared with external people.

Considering these different information layers regarding sensitive information, three distinct phases of validation took place:

First validation

- **Stakeholders:** 1 (Direct manager).
- **Position:** Head of Design.
- **Country:** Netherlands.
- **Method:** 1:1 meeting.
- **Go/no go:** Proceed with the project.

This stakeholder was already a supporter of the current local Design System. So the focus of the validation was on how important a global solution would be for our future ways of working. Especially in our new merger situation, with expanded markets and a company that is triple the size it was before. The primary outcomes from the conversation were:

- With the increased number of designers working together, a solution like a global Design System can make it easier to work on solutions that require cross-product collaboration.
- There is a need to cater for the speed of what changes are implemented in the Design System. Otherwise, teams can be blocked by waiting for the system to adapt to their local market needs.

Second validation

- **Stakeholders:** 7 (Current Design System Team).
- **Positions:** UX Designer, Android Developers, iOS developers, Quality Assurance analyst and Engineering manager.
- **Countries:** Netherlands.
- **Method:** Meeting with pitch presentation (Fig 10).
- **Go/no go:** Proceed with the project.

The team sees the move from the local approach to a global one as a natural next step. But a few concerns were raised related to project requirements since, for a project like this to thrive, numerous technical assessments need to happen before, such as:

- How to support different development languages and platforms, since there are no guidelines or global agreement about standards across the company.

- How the approval process for changes would happen, considering that the Design System team would not have the local context of the user needs. This could lead to a potential onerous process of approval and update, defying the purpose of the solution to be a more efficient way of working.

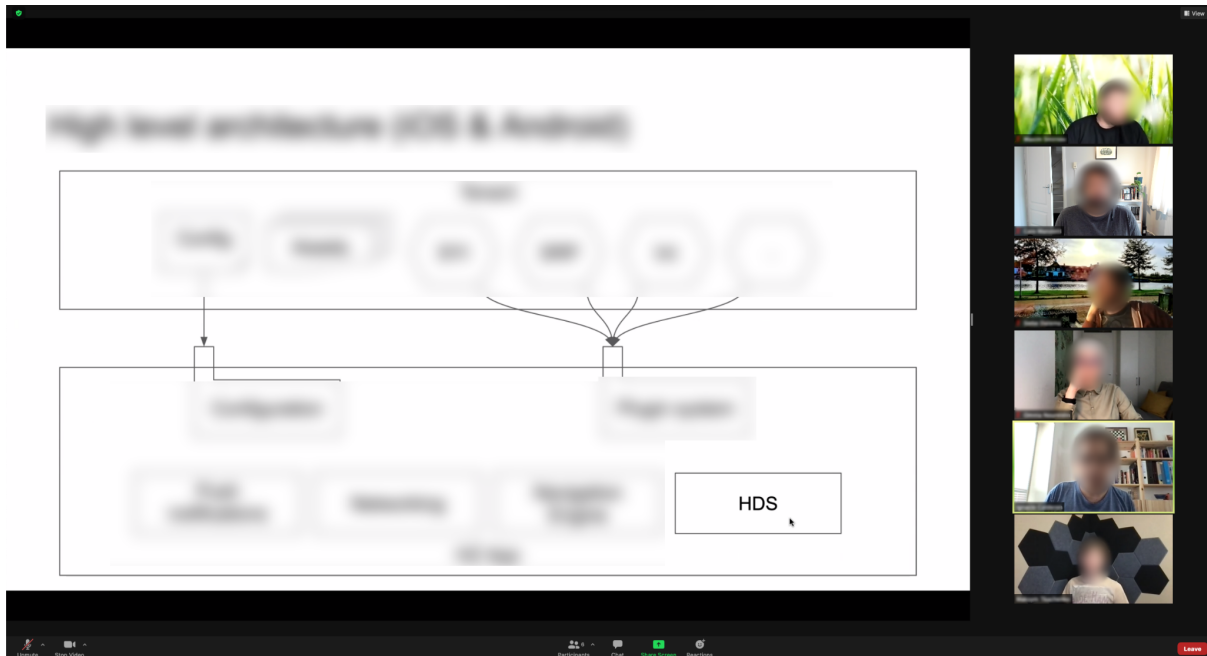


Figure 10 - Presentation of the potential Design System integration into our global technology framework.

Third validation

- **Stakeholders:** 12 (External Design System Specialists)
- **Positions:** UX Designers and Lead UX Designers.
- **Countries:** United States, Brazil and Portugal
- **Method:** Semi-structured interview with individuals and groups (Fig 11).
- **Go/no go:** The project was not shared with these interviewees.

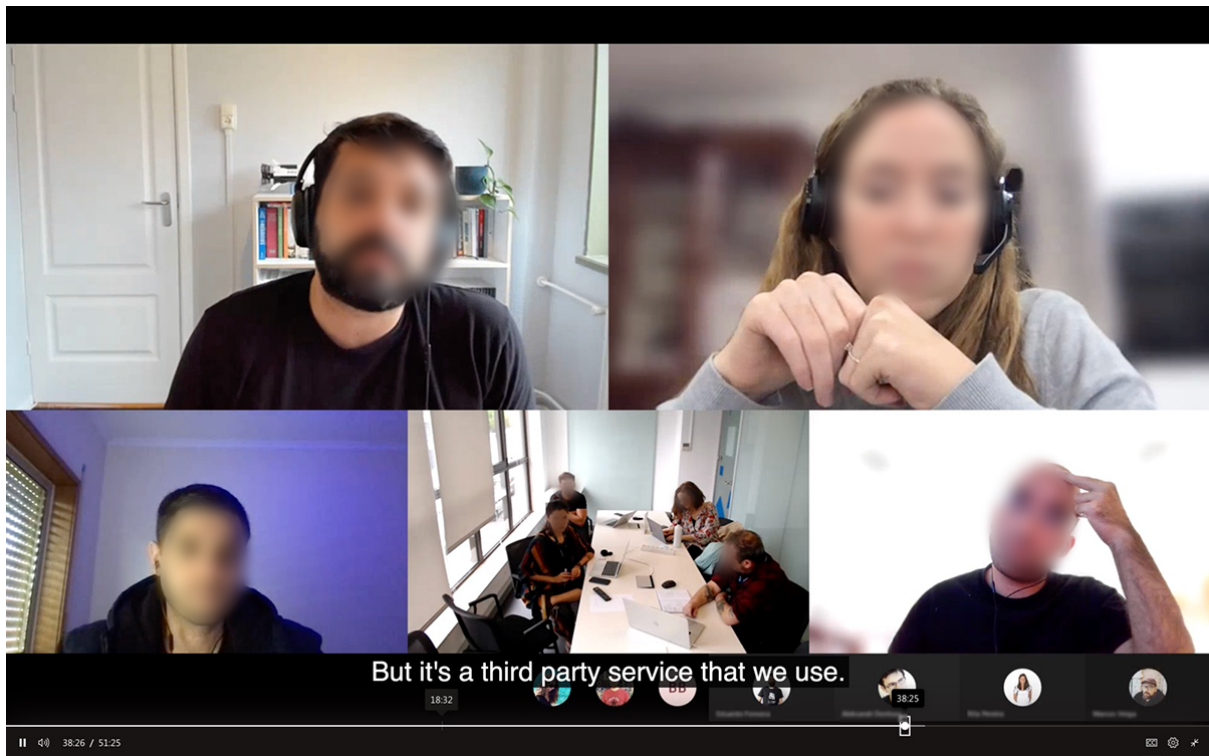


Figure 11 - Debate about Design System best practices with an external design team.

These conversations focused on learning from designers that currently work with global design systems, and how they handle its challenges. The main learnings were:

- The guidelines should focus on how to use the Design System instead of describing all its rationale and behind the scenes work. For example, a designer or developer should know when to use a button more than how it was created and built.
- A Design System goes beyond components and patterns. It should help guide users towards their flows and journeys ultimately.
- Changes of any kind should be shared as early as possible, so stakeholders have time to review how these updates will impact what they already built.

Part Two

Main learnings from part one

Part one was crucial to access and validate the project's scope. The overall sentiment towards the project is positive, but there are multiple questions yet to be answered. One of the main findings comes from the fact that a Design System does not stop at patterns and pages. It can go way further on complexity. The identified layers so far are:

- **Tokens:** The smallest Design System elements, used as a foundation for more complex elements
- **Components:** Interactive elements built with tokens and with distinct functions that can be customized based on design needs.
- **Patterns:** Combinations of components create patterns, such as launching a new feature, or creating a signup modal.
- **Pages:** Complete page templates that can be easily manipulated and adapted to test hypotheses quickly.
- **Flows:** Sequence of tasks across pages to accomplish a task.
- **Journeys:** The motivation to use a digital product is composed of one or more flows to solve a problem.

The insights gathered also helped to highlight how elements that compose a Design System connect with local and global needs (Fig 12). For example, the base layers reflect the local product's brand, so they need to be catered locally, while all the top layers can be created with a global mindset.

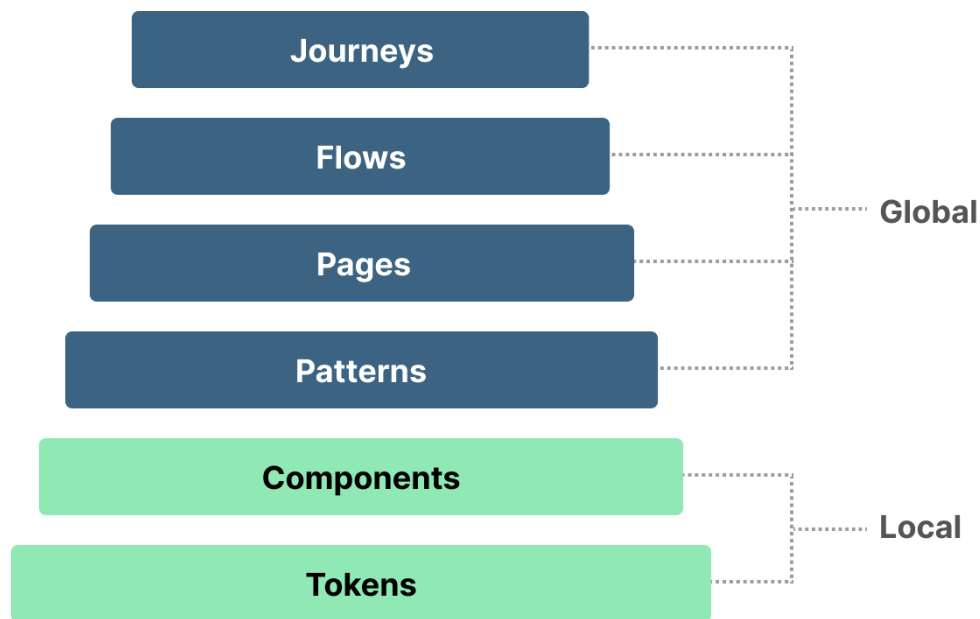


Figure 12 - Design System composition layers with local and global dependencies.

Several other findings were identified that will impact the scope and direction of the project moving forward. The main ones being:

- Understand how cultural and platform differences from our local markets can be considered. Followed by how customization for local solutions can be possible without impacting the overall system's purpose.
- Learn how to decentralize a global solution, so individuals can contribute and collaborate in a scalable way.
- Explore how to create contribution and collaboration models.

A proposed scope for the project

The project objective will be to create a global Design System that can be used by all the products at Adevinta (Fig 13). Helping designers and developers quickly build solutions for any device, platform, and brand. It will aggregate visual guidelines and design intelligence, that will allow for situations to be framed into a layered decision-making framework. The project will be considered successful if the following objectives are achieved:

- It offers a sustainable and better way for designers and developers to make decisions regarding their everyday work.
- It is adopted by the majority (85% or more) of the intended stakeholders.
- It offers a scalable and manageable source of truth for designers and developers.
- It improves collaboration with non-designers stakeholders.



Figure 13 - Current Design System availability (green check) compared to yet to be integrated ones (dashed line area).

Validation with the company leadership team

For the project to move forward, it needs to be approved by our leadership team (LT), which is composed of the most senior representatives of product, technology, data and design specialists. This group is responsible for the allocation of resources and priority of projects and teams.

Leadership Team Validation

- **Stakeholders:** 3.
- **Positions:** Chief Product/Technology Officer, Head of Engineering and Head of Design.
- **Countries:** Netherlands
- **Method:** 1:1 meetings and a pitch presentation.
- **Decision:** Proceed with the project.

Main learnings and feedback were:

- The current metrics may not work for a global approach since each local team works with different metrics. A new unified success metric needs to be agreed upon among the users.

- The LT worries that the new challenge is exponentially more complex, and the current approach and methods will need to be scaled accordingly.
- As a suggestion, the LT recommended a gradual approach to incorporating other products into the project. Having all at once on board from the beginning could be risky.
- The LT judges the initiative to be promising for the company's future, but it needs a more robust strategy and planning. The project will move forward to the strategy phase.

Next steps for the project

There is a long and challenging road to creating a genuinely global Design System. As learned previously, its scope goes way beyond offering a library of visual guidelines. Instead, it should be catered for the company user needs and expectations, carrying the intelligence and rationales behind the product ways of solving problems. This project will be expanded and rescoped based on the insights collected in the validation phase. It will continue as the authors' final work as the Industry Specialization Project for the Hyper Island's Digital Management Masters program.

Conclusion

Considering the recent company merger, the timing for the project is incredible. It creates a compelling and strong case to improve the way designers and developers at Adevinta work across all its product portfolio. Also, the local Design System team at Marktplaats feels confident to pursue the challenge of becoming a global initiative. The learnings from the past two years of the project create a solid foundation for such work. The take on a global solution will not be an easy journey, and a considerable effort still needs to happen to create a proper strategy for the project. Hopefully, the soon to start Industry Specialization Project can serve as a platform for its work to happen.

From a design perspective, this project is also an opportunity to create the first global position for Design Systems, increasing the participation of the design practice into the company strategy. This could raise the company's design maturity and create an environment where design thrives, helping us attract more talents and create a culture where the design practice is not only seen but heard across all levels of hierarchy.

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