

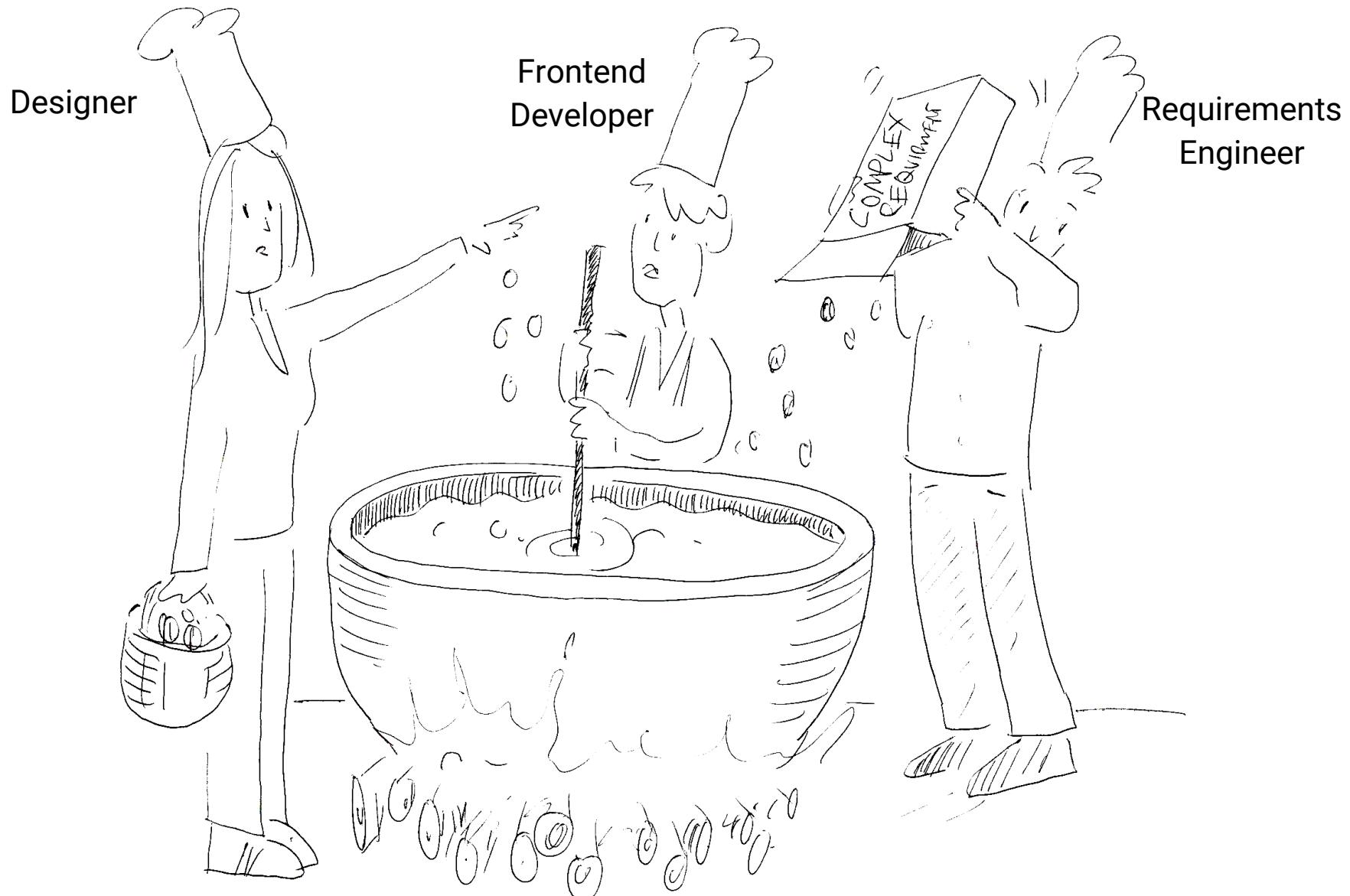


Linking RE and Design in Agile Projects – where Teamwork meets Fun in day-to-day Project Activities

Efficiency and Usability in agile front-end development

Janika Pelz, Josephine Tan and Jens Kawelke

Just add it and stir. But will it taste good?



Is RE expertise alone enough for a successful specification?





Speaker – Who we are

Janika Pelz

- UX Designer since 2015
- UXQB certified since 2018
- NTT DATA since 2019
- Certified Requirements Engineer since 2020

Focus: User Research, Wireframing und Prototyping



Speaker – Who we are

Josephine Tan

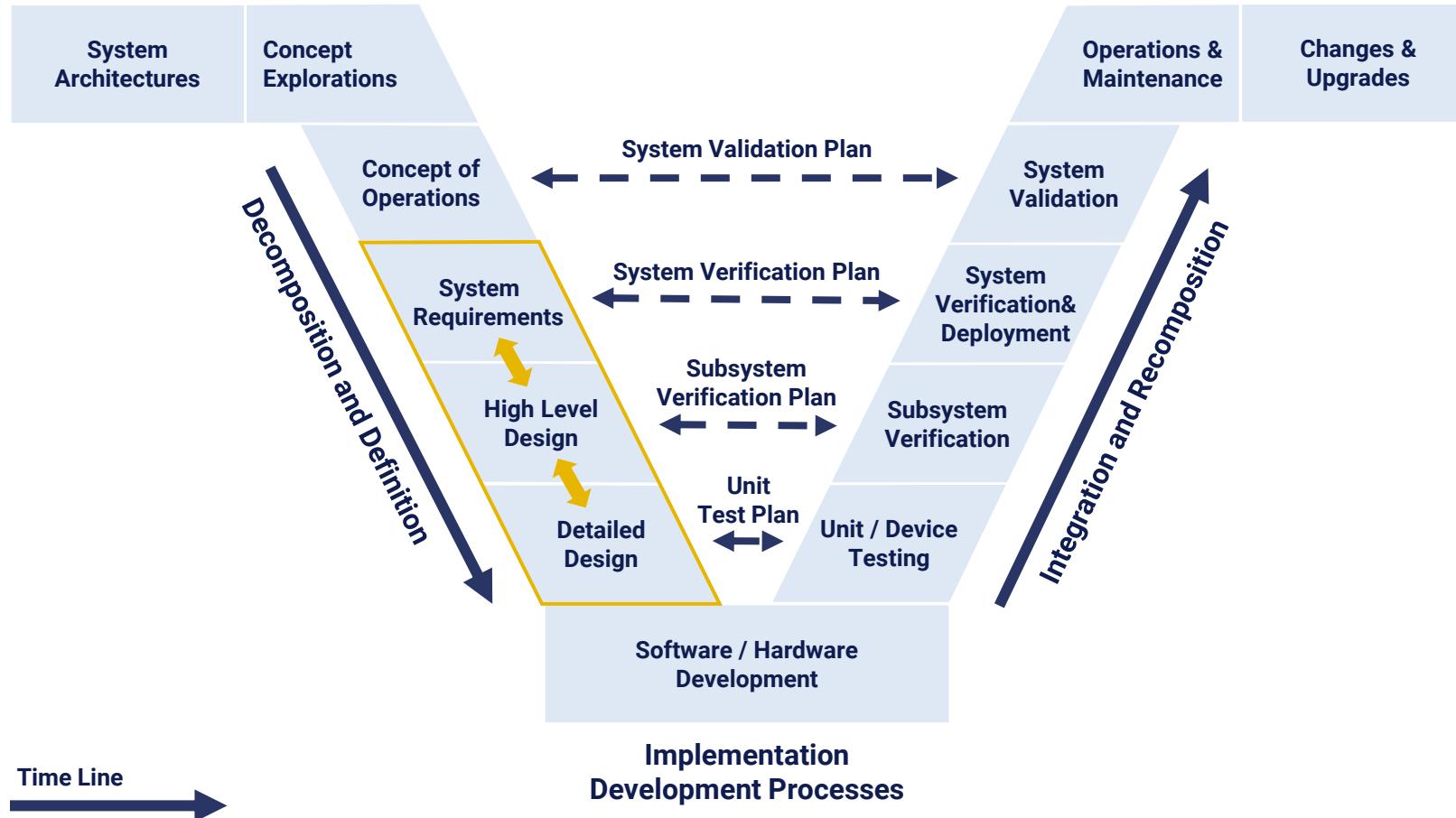
- Design Professional since 2013
- Managing Projects & Accounts since 2014
- Business Analyst since 2016
- Certified Professional RE since 2019

Focus: Bridging Business, IT & Design

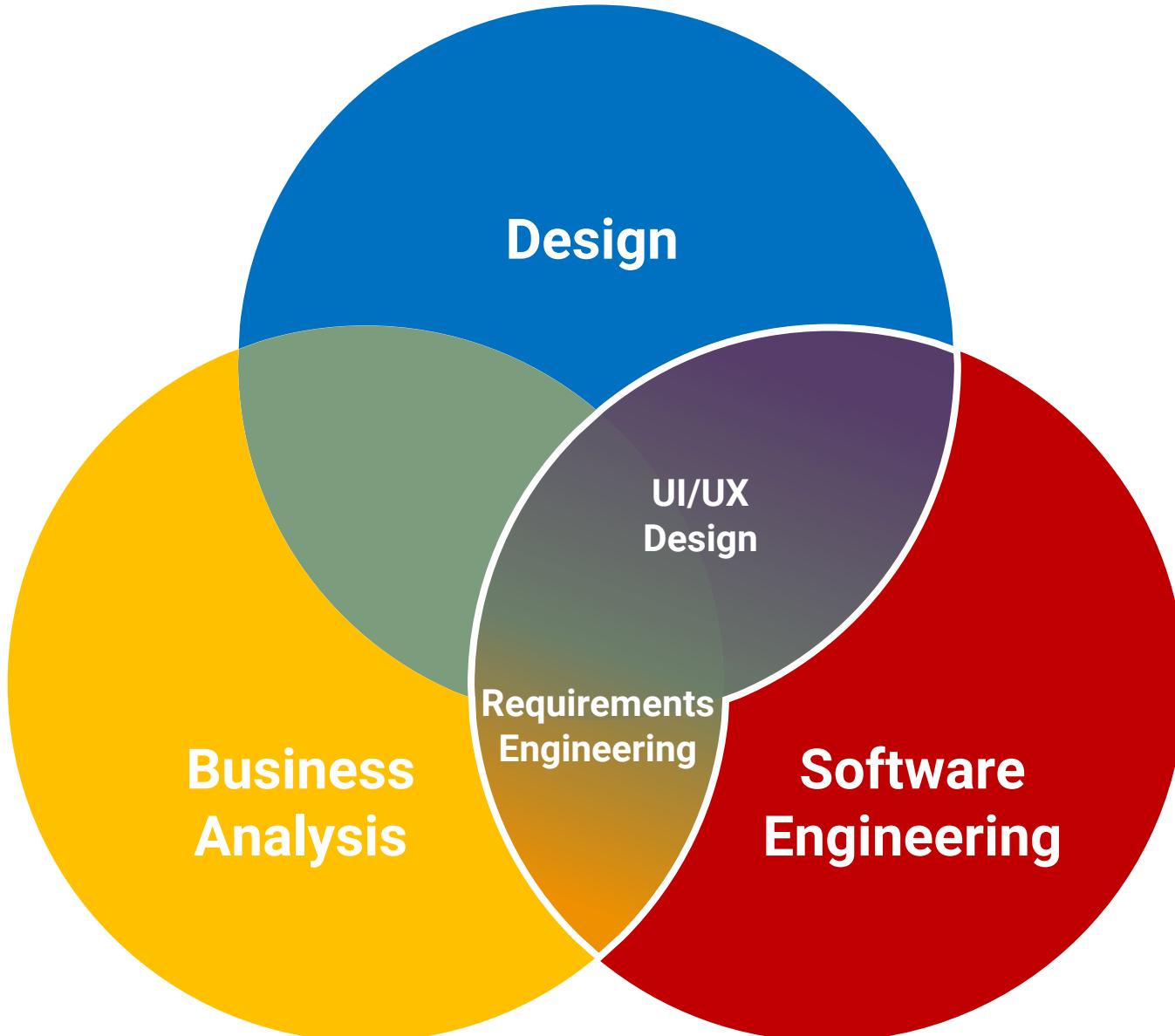
Contents

- I. RE and design in the context of SE & IT**
- II. Efficient collaboration**
- III. Usability as a yardstick for a successful product**
- IV. Use cases: How we have improved efficiency and usability**
- V. Q&A**

RE is a thoroughly integrated component of systems engineering



RE and design in the context of IT



Improving efficiency in project work through collaboration between RE and UX

Requirements Engineering		UI/UX Design
Questions	<ul style="list-style-type: none">▪ What is the end goal of the users?▪ What to create to achieve this goal?▪ What is the most cost-effective way to achieve this goal?	<ul style="list-style-type: none">▪ Which specific user group do we need to address and how?▪ What are the user's unspoken intentions?▪ What factors in the environment influence the user group and how?
Methods	<ul style="list-style-type: none">▪ System Architecture▪ UML Modeling▪ Versioning & Configuration Management▪ Change Management <p>What?</p>	<ul style="list-style-type: none">▪ Workshop▪ Stakeholder Interview▪ Apprenticing▪ Validation of Requirements▪ Usability Testing
Artifacts	<ul style="list-style-type: none">▪ User Story▪ System and context demarcation▪ Quality requirements and boundary conditions▪ Concept and information model	<ul style="list-style-type: none">▪ User Persona▪ Use Case Model▪ Wireframe▪ Prototype



How artifacts assist requirement specifications and design

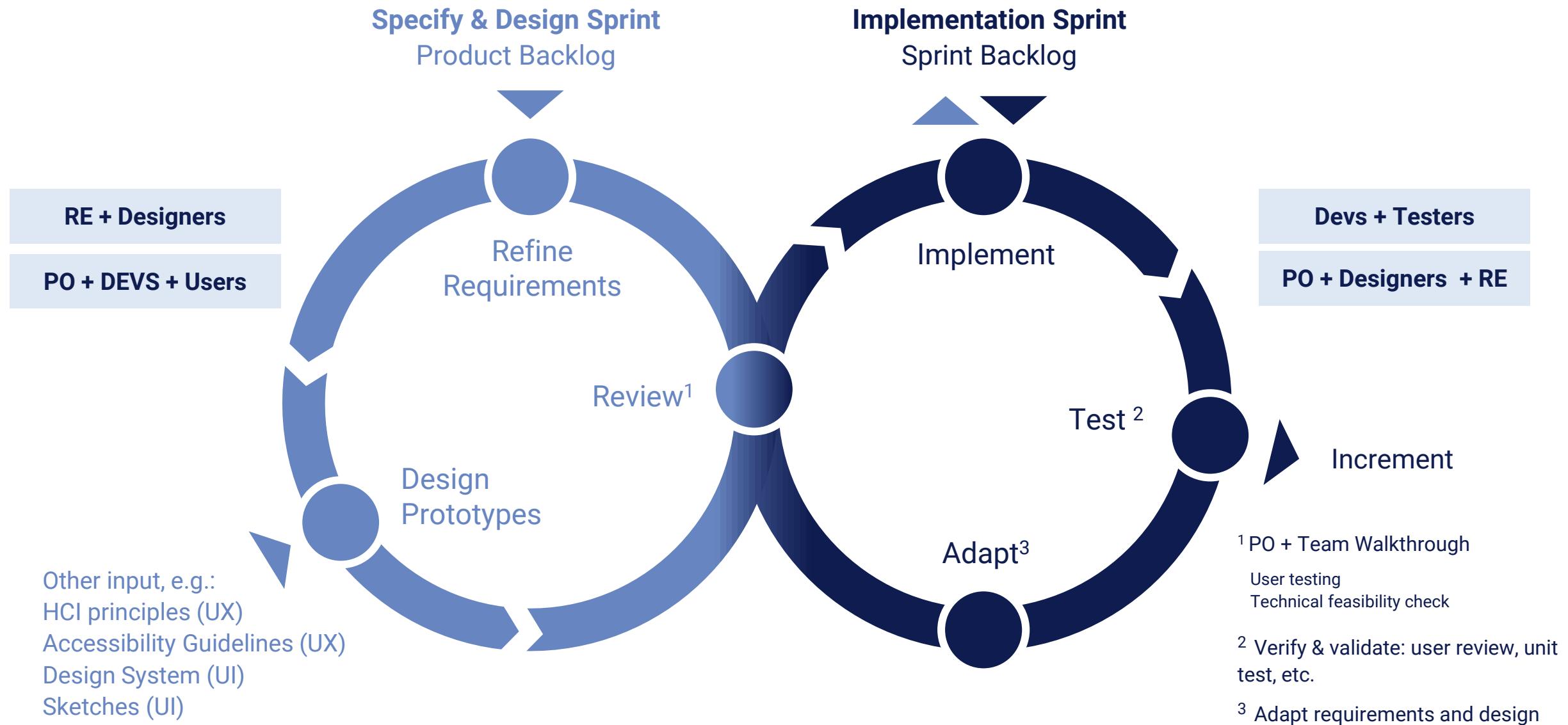
Requirement artifacts

- ... describe the business requirements in text and models
- ... serve as the basis for the high-level design
- ... are affected by the high-level and low-level design

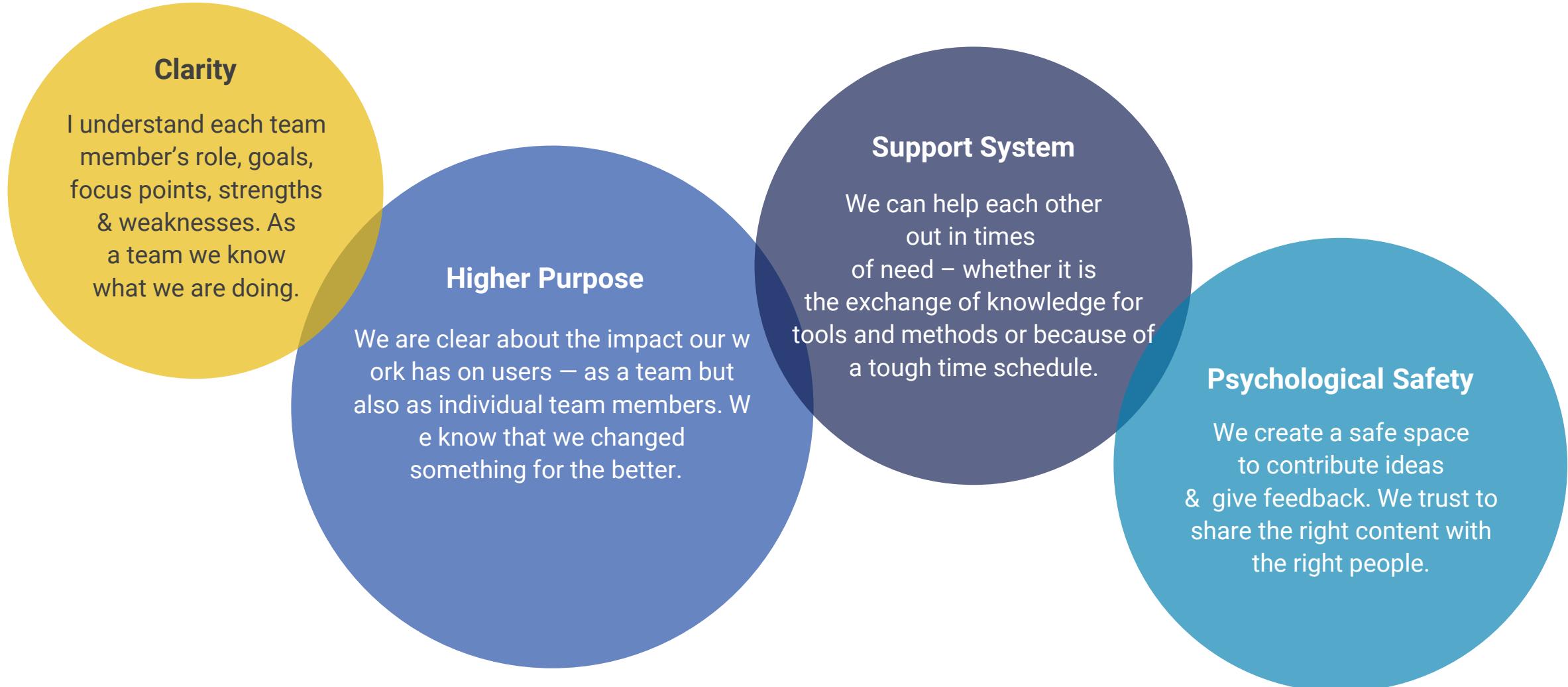
Design artifacts

- ... enrich the visualization of requirements
- ... support the further elicitation of requirements
- ... serve as a basis for discussions with non-technical stakeholders
- ... help to verify against requirements and validate system early on

Agile front-end requirement refinement and implementation



Where is the fun in all of this?



Usability as a yardstick for a successful product

**Usability is invisible
but not insignificant!**

86%

Have deleted or uninstalled an app because they had problems with its functionality or design

88%

Are less likely to return to a website after a bad experience.

90%

indicated that they stopped using an app due to poor performance



What is Usability? The 5 dimensions of Usability (5 „E“)

Usability according ISO (9241-11:2018)

"The extent to which a system, product, or service can be used by specific users to achieve specific goals with effectiveness, efficiency, and satisfaction in a specific context of use."

1 **Effective**

How completely and accurately can the work be done or can the goals be met by the product?

2 **Efficient**

How quickly can this work be completed?

3 **Engaging**

How well does the interface involve the user in the interaction and how pleasant and satisfying is it to use?

4 **Error tolerant**

How well does the product prevent errors and help the user fix them?

5 **Easy to learn.**

How well is initial orientation and if ongoing learning is supported throughout the life of the product?

Source: Carol M. Barnum – Usability Testing Essentials; 2021

► What project staffing do we need to achieve good usability?

Our roles and results in sample projects (I)



Automotive

UX



Sarah

UI/UX + RE



Josephine

UI/UX + RE



Yasmin

Evolution of Project staffing

Devs

PO & Key users



Our roles and results in sample projects (I)



Automotive

UX



Sarah

UI/UX + RE



Josephine

UI/UX + RE



Yasmin

SETTINGS FOR SEQUENCE STREAM „ASF H.50 RECHTS“

Basic Data

Header Data

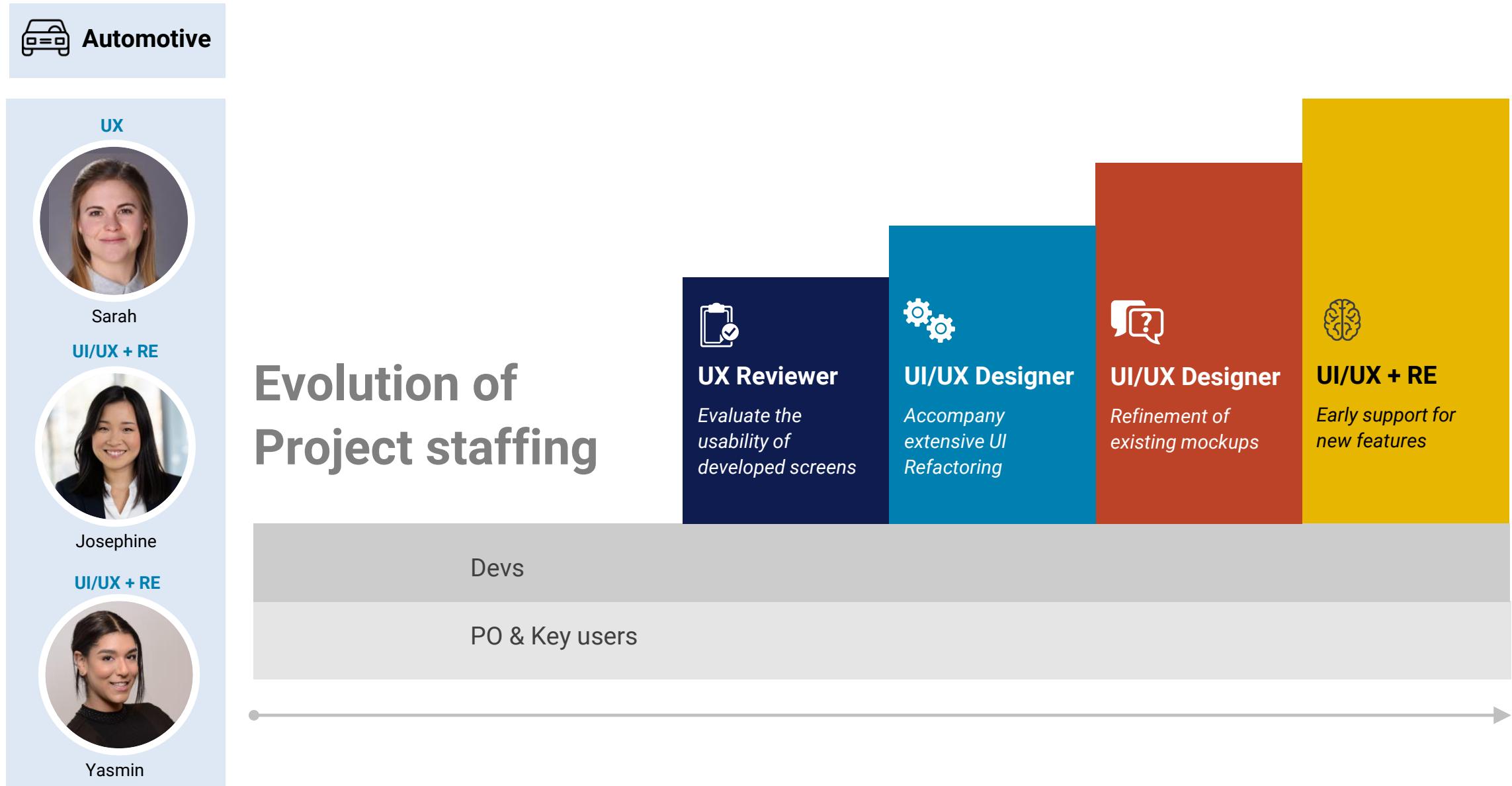
Description: ASF H.50 Rechts

Working Area / Cycle: Takt Aufnahme Stoßfänger Rechts

PSA: [empty]

The screenshot shows a software interface for configuring a sequence stream. The title bar reads "SETTINGS FOR SEQUENCE STREAM „ASF H.50 RECHTS“". The main area is titled "Basic Data" and contains a "Header Data" section with a description field set to "ASF H.50 Rechts". Below this are fields for "Working Area / Cycle" (set to "Takt Aufnahme Stoßfänger Rechts") and "PSA" (which is empty). On the left, there is a sidebar with a search bar and a list of "Werksbereiche" (workshop areas) including "Batching Test Streams", "Halle 8x", "New CTW Hall", "Stoßeee", "Sumas plant Rosslyn", "TESTAREA", "VZ Ost", "VZ-2", "VZ-3", and "Werksbereich UX Redesign". A large black question mark is drawn over the sidebar, and another large black question mark is drawn over the main data entry area.

Our roles and results in sample projects (I)



Before and after...



Automotive

UX



Sarah

UI/UX + RE



Josephine

UI/UX + RE



Yasmin

The screenshot shows a software interface for managing sequence streams. The title bar reads "SETTINGS FOR SEQUENCE STREAM „ASF H.50 RECHTS“". Below the title, a navigation bar includes tabs for "Summary", "Basic Data", "Material Attributes", "Selection Criteria", "Rack definition", "Grouping & Sorting", "Layout & Workflow", "Printing Settings", and "Process Times". The "Basic Data" tab is active. Under "Basic Data", there is a section for "Header Data" with fields for "Description" (containing "ASF H.50 Rechts") and "Working Area / Cycle" (containing "Takt Aufnahme Stoßfänger Rechts"). There is also a field for "PSA". On the left side of the interface, there is a sidebar with a search bar and a list of "Werksbereiche" (Workshop areas) including "Batching Test Streams", "Halle 8x", "New CTW Hall", "Stoßeee", "Sumas plant Rosslyn", "TESTAREA", "VZ Ost", "VZ-2", "VZ-3", and "Werksbereich UX Redesign".

Before and after...



Automotive

UX



Sarah

UI/UX + RE



Josephine

UI/UX + RE



Yasmin

Search

- ▼ Hall 8x
 - ▼ Hall 84 North
 - Hall 84 North WA 1
 - Hall 84 North WA 2
 - Hall 84 North WA 3
 - Hall 84 North WA 4
 - Hall 84 South
- ▼ VZ-2
 - > VZ2 North
 - ▼ VZ2 South
 - ▼ VZ2 South lorem ipsum
 - > Takt Gepäckraumverk
 - > Takt Motorabschirmur
 - > Takt Windlauf
 - GPR VKG LI VZ2
 - > Takt Aufnahme Stoßf
 - > Takt Aufnahme Stoßf
 - > Takt Radhausabdecku
 - > Takt Blende Ladekant
 - > H.50 OG/Bühne
 - > H.51.2 SDI
 - > Testarea

Sequence Stream GPR VKG LI VZ2

Summary

Selection Criteria

Batch & Rack Definition

Layout & Workflow

Material Attributes

Printing Settings

Basic Data

Name* GPR VKG LI VZ2

PSA* lorem ipsum

Working area* Takt Windlauf

Status

Version Summary

History of non-critical changes

Our roles and results in sample projects (II)

Automotive

RE



Clara

Design Lead + RE



Elisa

RE + UI/UX



Yasmin

UI/UX



Parham

RE + UI/UX



Alexandra

Feature Team Lead



Janika

[Modell ändern](#)[Antrieb](#)[Modellvariante](#)[Exterieur](#)[Interieur](#)[Pakete & Sonderausstattungen](#)[Nächste Schritte](#)

275 kW (374 PS) ⓘ
Leistung

4,6 s
Beschleunigung (0-100 km/h)

6,9 l/100 km ⓘ
Verbrauch (NEFZ)

B 157 g/km ⓘ
CO2-Emission (NEFZ kombiniert)

ANTRIEB

Ab 69.700 €

Sport-Automatic Getriebe Steptronic

Technische Daten

[Motorisierung ändern](#)

MODELLVARIANTE

Wählen Sie Ihre Modellvariante

M Automobile
Ab 69.700 €

[Mehr Details](#)

AUSSENFARBEN

[Kauf/Leasing anfragen](#)

[Zusammenfassung](#)

...

Gesamtpreis 70.620 € ⓘ

[Finanzieren & Leasen](#) ⓘ

[Modell ändern](#)[Antrieb](#)[Modellvariante](#)[Exterieur](#)[Interieur](#)[Pakete & Sonderausstattungen](#)[Nächste Schritte](#)

18" M LMR Doppelspeiche 790 M Bicolor / MB

de

275 kW (374 PS) ⓘ

Leistung

4,6 s

Beschleunigung (0-100 km/h)

6,9 l/100 km ⓘ

Verbrauch (NEFZ)

B 157 g/km ⓘ

CO2-Emission (NEFZ kombiniert)

Leistung

Beschleunigung (0-100 km/h)

Verbrauch (NEFZ)

CO2-Emission (NEFZ kombiniert)

Saphirschwarz metallic

920 €

RÄDER

Informationen zur EU Reifenkennzeichnung finden Sie im Bereich „technische Daten“ auf der fahrzeugspezifischen Informationsseite.

18" M LMR Doppelspeiche 790 M Bicolor / MB
0 €

POLSTER

STOFF

[Kauf/Leasing anfragen](#)[Zusammenfassung](#)

...

Gesamtpreis 70.620 € ⓘ[Finanzieren & Leasen](#) ⓘ

NTT DATA

[Modell ändern](#)[Antrieb](#)[Modellvariante](#)[Exterieur](#)[Interieur](#)[Pakete & Sonderausstattungen](#)[Nächste Schritte](#)

IB-M 1.5 L MHP Doppelkupplungsgetriebe 7G-DCT M-Edition M

de



275 kW (374 PS) ⓘ
Leistung

4,6 s
Beschleunigung (0-100 km/h)

6,9 l/100 km ⓘ
Verbrauch (NEFZ)

B 157 g/km ⓘ
CO2-Emission (NEFZ kombiniert)

POLSTER

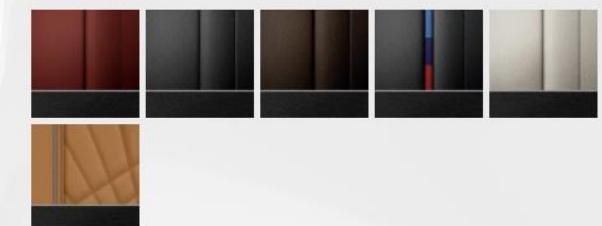
STOFF



LEDEROPTIK



LEDER



INDIVIDUAL

[Kauf/Leasing anfragen](#)[Zusammenfassung](#)

...

Gesamtpreis 70.620 € ⓘ

[Finanzieren & Leasen ⓘ](#)

NTT DATA

[Modell ändern](#)[Antrieb](#)[Modellvariante](#)[Exterieur](#)[Interieur](#)[Pakete & Sonderausstattungen](#)[Nächste Schritte](#)[Konfiguration speichern](#)

Konfigurationsliste

**275 kW (374 PS)** ⓘ
Leistung**4,6 s**
Beschleunigung (0-100 km/h)**6,9 l/100 km** ⓘ
Verbrauch (NEFZ)**B 157 g/km** ⓘ
CO2-Emission (NEFZ kombiniert) Laserlicht[Alle 5 Sonderausstattungen anzeigen](#) Hinzufügen[Mehr Sonderausstattungen hinzufügen](#)

**IHRE KONFIGURATION IST
ABGESCHLOSSEN.**

70.620 € ⓘ[Finanzieren & Leasen](#)[Kauf/Leasing anfragen](#)[Konfiguration speichern](#) [Infomaterial anfordern](#) [Zusammenfassung](#) [BMW Partner finden](#)[Sofort verfügbare Neuwagen](#)[Home](#) [Cookies](#) [Kontakt](#) [Datenschutz](#) [Datenschutz Financial Services](#)**NTT DATA**

Let's take a look at the Usability

Modell ändern Antrieb Modellvariante Exterieur Interieur Pakete & Sonderausstattungen Nächste Schritte

ANTRIEB

Ab 69.700 € BENZINER

Sport-Automatic Getriebe Steptronic

Technische Daten

Motorisierung ändern

MODELLVARIANTE

Wählen Sie Ihre Modellvariante

M Automobile Ab 69.700 €

Mehr Details

AUSSENFARBEN

Kauf/Leasing anfragen Zusammenfassung ...

Gesamtpreis 70.620 € Finanzieren & Leasen

275 kW (374 PS) Leistung 4,6 s Beschleunigung (0-100 km/h) 6,9 l/100 km Verbrauch (NEFZ) 157 g/km CO2-Emission (NEFZ kombiniert)

+ Easy to learn

Users know what are categories they can change and get an overview. Clear structure.

+ Engaging

Effortless when interacting with it. Object of interest always in focus. Can interact and play with it

+ Efficient

Car can be configured in a reasonable time and you see your changes

Before: Segregation of design and requirements engineering



Home > Modell ändern

Preis: 92.550,00 €

F 239 g/km

Freude am Fahren

Modellvarianten

Eine Modellvariante bestimmt die Ausrichtung für Ihre Konfiguration und beeinflusst, welche optionalen Ausstattungen Sie später wählen können.

1 / 2

Ab 70.300 €
M Automobile

Erleben Sie die vier leistungsstarken Fahrzeuge des X3: Der M überzeugt mit einem besonders ausgewogenen Zusammenspiel von Performance, Komfort und Effizienz. Der BMW X3 M besitzt

Details

Motor & Getriebe

Benzin Diesel

Automatik Getriebe Sport-Automatic Getriebe Steptronic

Allradantrieb

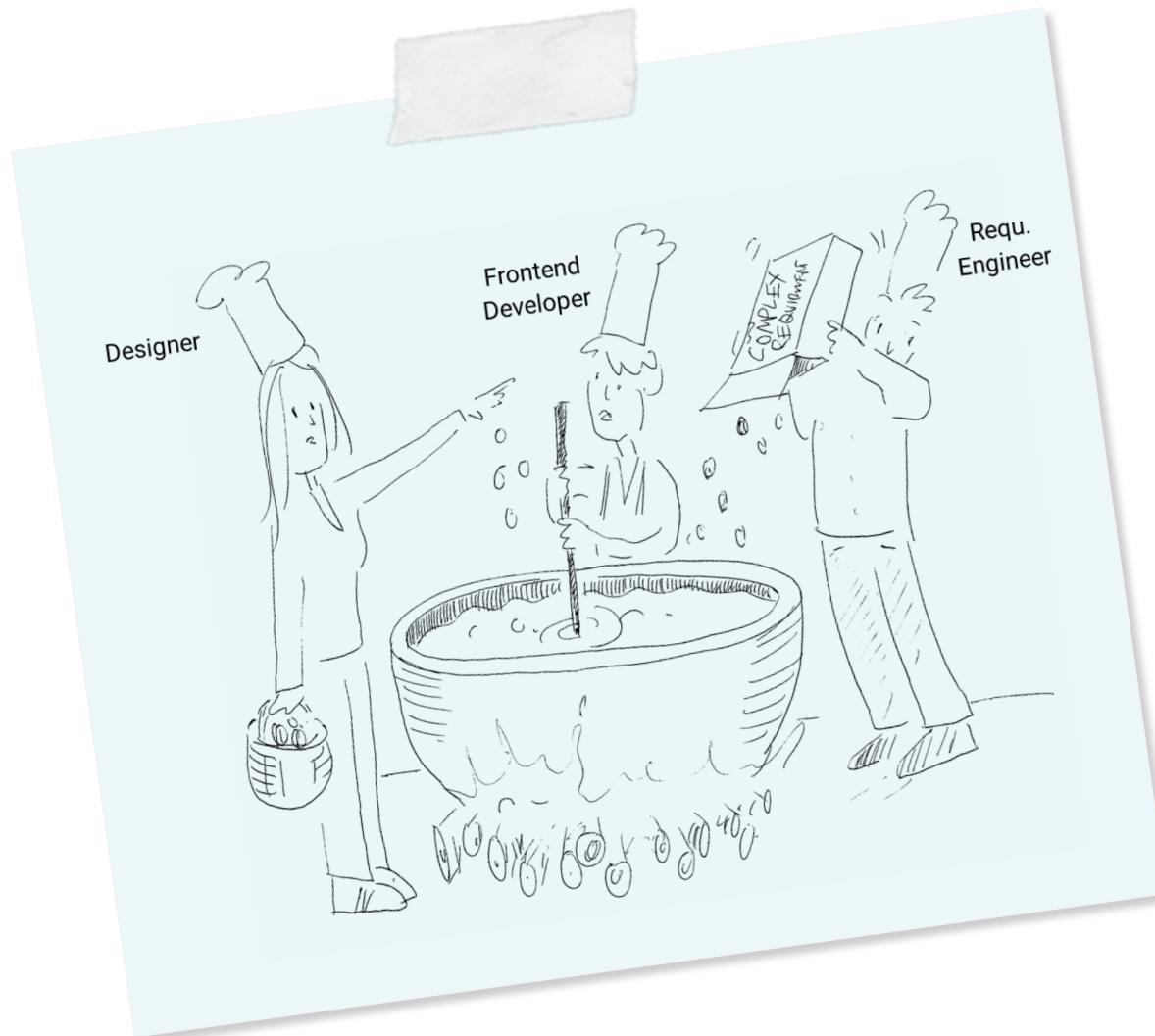
Alle Filter zurücksetzen

+ 14.600 €

BMW X3 M

NTT DATA

Before: Segregation of design and requirements engineering



Home > Modell ändern

Preis: 92.550,00 €

F 239 g/km

Freude am Fahren

Räder

Für Ihre Modellvariante Für andere Modellvarianten

1.850 €
21" M LMR V-Speiche 765 M Bicolor Orbitgrau / MB

Polster

Für Ihre Modellvariante Für andere Modellvarianten

★ BESTSELLER 0 €
Leder 'Vernasca' Oyster Dekorsteppung mit

A screenshot of a car configuration website. The top navigation bar includes 'Home', 'Modell ändern', 'Preis' (Price) at 92,550,00 €, 'F 239 g/km', and a 'Freude am Fahren' (Joy of Driving) logo. The main content area shows a white BMW X2. On the left, there are sections for 'Räder' (Wheels) and 'Polster' (Interior). The 'Räder' section shows a white BMW X2 with a license plate 'M-NT1300' and offers '21" M LMR V-Speiche 765 M Bicolor Orbitgrau / MB' wheels for 1,850 €. The 'Polster' section shows interior color options for 'Leder 'Vernasca' Oyster Dekorsteppung mit' (Vernasca leather 'Oyster' decorative stitching) for 0 €. The 'BESTSELLER' status is marked with a star.

Before: Segregation of design and requirements engineering



Home > Modell ändern

Preis
92.550,00 €

F 239 g/km

Freude am Fahren

Interieurleisten ↗

850 €
Interieurleisten Carbon Fibre

Pakete & Editionen

1.300 €
Entertainment Paket

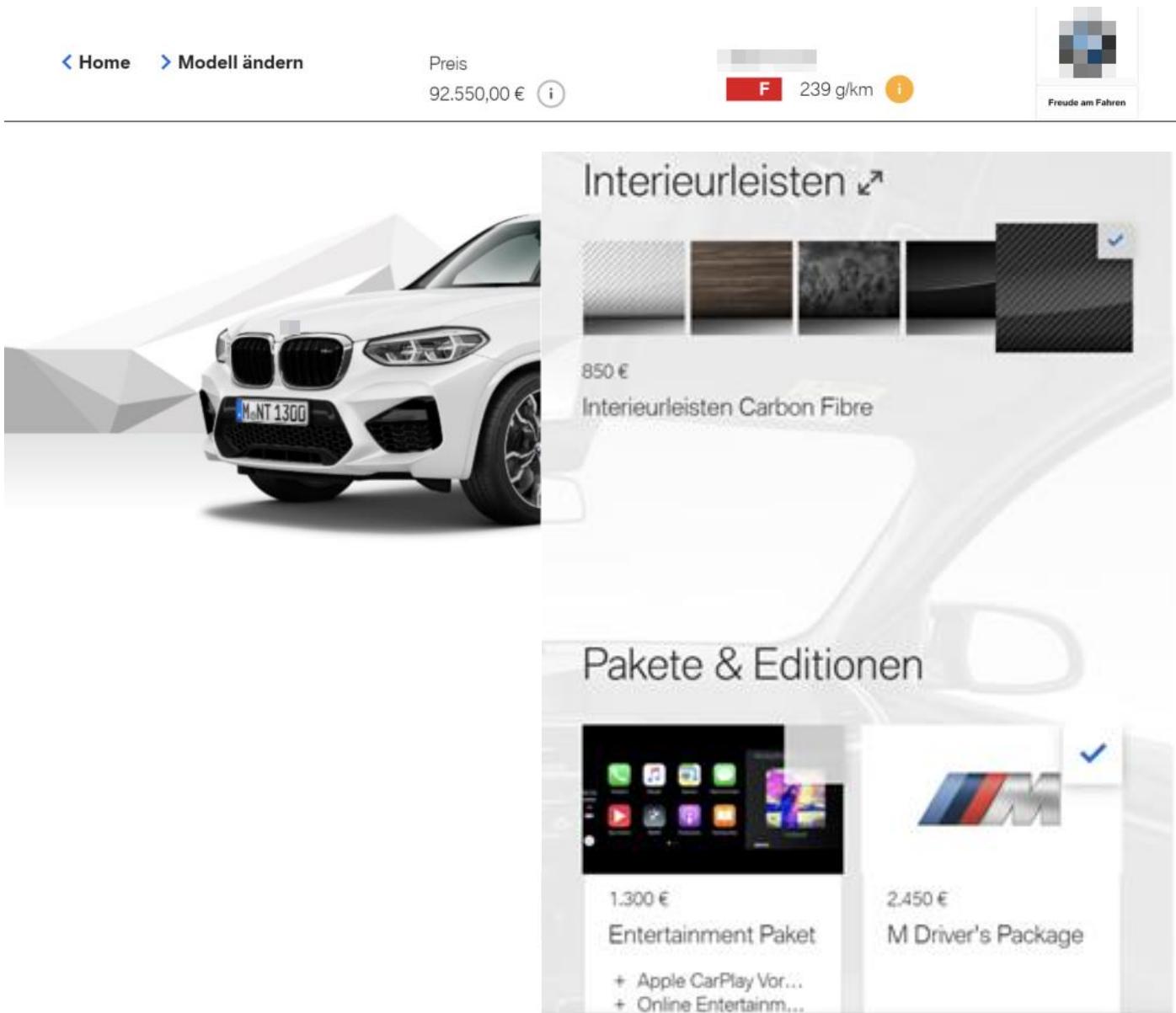
+ Apple CarPlay Vor...
+ Online Entertainm...

2.450 €
M Driver's Package

Details Details

A screenshot of a BMW car configuration website. It shows a white BMW X2 on the left. On the right, there are sections for interior trim options (Interieurleisten) and package editions (Pakete & Editionen). The Interieurleisten section shows a 'Carbon Fibre' option for 850 €. The Pakete & Editionen section shows an 'Entertainment Paket' for 1.300 € and an 'M Driver's Package' for 2.450 €, both with checkboxes for Apple CarPlay and Online Entertainment.

Before: Segregation of design and requirements engineering



The screenshot shows a BMW car configuration interface. At the top, there are navigation links ('Home', 'Modell ändern'), a price of '92.550,00 €', and a fuel efficiency rating of '239 g/km'. Below this, there is a 'Freude am Fahren' logo. The main content area features a white BMW X5 on the left. On the right, there are two sections: 'Interieurleisten' (interior trim) showing a grid of five options with 'Interieurleisten Carbon Fibre' selected, and 'Pakete & Editionen' (packages & editions) showing the 'Entertainment Paket' and 'M Driver's Package' with the latter selected. Each package has a price and a list of included features.

Paket	Preis	Inklusive
Entertainment Paket	1.300 €	+ Apple CarPlay Vor... + Online Entertainm...
M Driver's Package	2.450 €	

- Effort in Learning

What are the categories that users can change? Where do they begin and where do they end?

- Engaging

Switching between categories is not easy → need to aim at the ui element

- Efficient

User loses time when trying to find orientation

Our roles and results in sample projects (III)

Figma

Our roles and results in sample projects (III)

Reinsurance

RE + UI/UX



Jessica

RE + UI



Jens

RE + UI



Stephan

KISS project / Pricing and Upload

Kiss 2.0

Search

EUR (thou)

COMPANY

Proportional Pricing Programmes

Filter

Programme Name	Cedent	Class of Business	Is facultative	Effective from	Effective to
Test Title (Tria, FSRI)					
Period Name	Cedent	Class of Business	Is facultative	Effective from	Effective to
yC Credit Quote 2022		Domestic Credit	true	01 Jan 2021	31 Dec 2022
yC Bond Quote 2015		Bond miscellaneous	false	01 Jan 2021	31 Dec 2022
Fixed Commission Programme (LRH, FSRI)					
Period Name	Cedent	Class of Business	Is facultative	Effective from	Effective to
yC Credit Quote 2017		Domestic Credit	false	01 Jan 2021	31 Dec 2022
yC Bond Quote 2017		Bond miscellaneous	false	01 Jan 2021	31 Dec 2022
Profit Commission Programme (Tria, FSRI)					
Period Name	Cedent	Class of Business	Is facultative	Effective from	Effective to
QS (2) 2023		Export Credit	false	01 Jan 2021	31 Dec 2022
yC Bond Quote 2017		Bond miscellaneous	false	01 Jan 2021	31 Dec 2022
Sliding Scale Programme (Tria, FSRI)					
Period Name	Cedent	Class of Business	Is facultative	Effective from	Effective to
yC Credit Quote 2022		Domestic Credit	false	01 Jan 2021	31 Dec 2022
yC Bond Quote 2015		Bond miscellaneous	false	01 Jan 2021	31 Dec 2022
Signed Pricing Programme (LRH, FSR)					
Test Title (Tria, undefined)					

Show All

Items per page: 10 1 - 6 of 6

Figma

Before: UI Design with excel

Implementation hints:

By default treaty programmes with an effective to date within the last 18 months are shown. "Show All" will show all available treaty programmes.

Participant	Class of Business	Label	Is PIRI	State	Effective from	Effective to
2021 (Work in Progress)	Delcredere miscellaneous		false	Work in Progress	01 Jan 2021	31 Dec 2021
2021 (Pending)						
2021 (Pending)						
2021 (Pending)						
021	Bond miscellaneous		false	Offered	01 Jan 2021	31 Dec 2021
2021 (Offered)						
2021 (Pending)						
2021 (Pending)						
2020 (Extra)	Bond miscellaneous	Extra	true	Signed	01 Jan 2020	31 Dec 2020
2020 (Signed)						
2020 (Signed)						
2020 (Signed)						
2020 (Signed)	Delcredere miscellaneous		false	Signed	01 Jan 2020	31 Dec 2020
2020 (Signed)	Bond miscellaneous		false	Signed	01 Jan 2020	31 Dec 2020

Items per page: 10 1-5 of 5 >

Achieve customer satisfaction through teamwork and fun



Thank you for your attention!

Time for questions...

You still have questions and feedback? Feel free to contact us!



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Josephine Tan



josephine.tan@nttdata.com



linkedin.com/in/josephine-tan-nttdata