› AI-Inside, AI-Assistance & Sustainability ‹

Alles bleibt anders!

Dr. Dominik Birkmeier & Dr. Martina Beck

München, 24. April 2024

new spective

Wir lieben Technologie.

Wir leben Design.

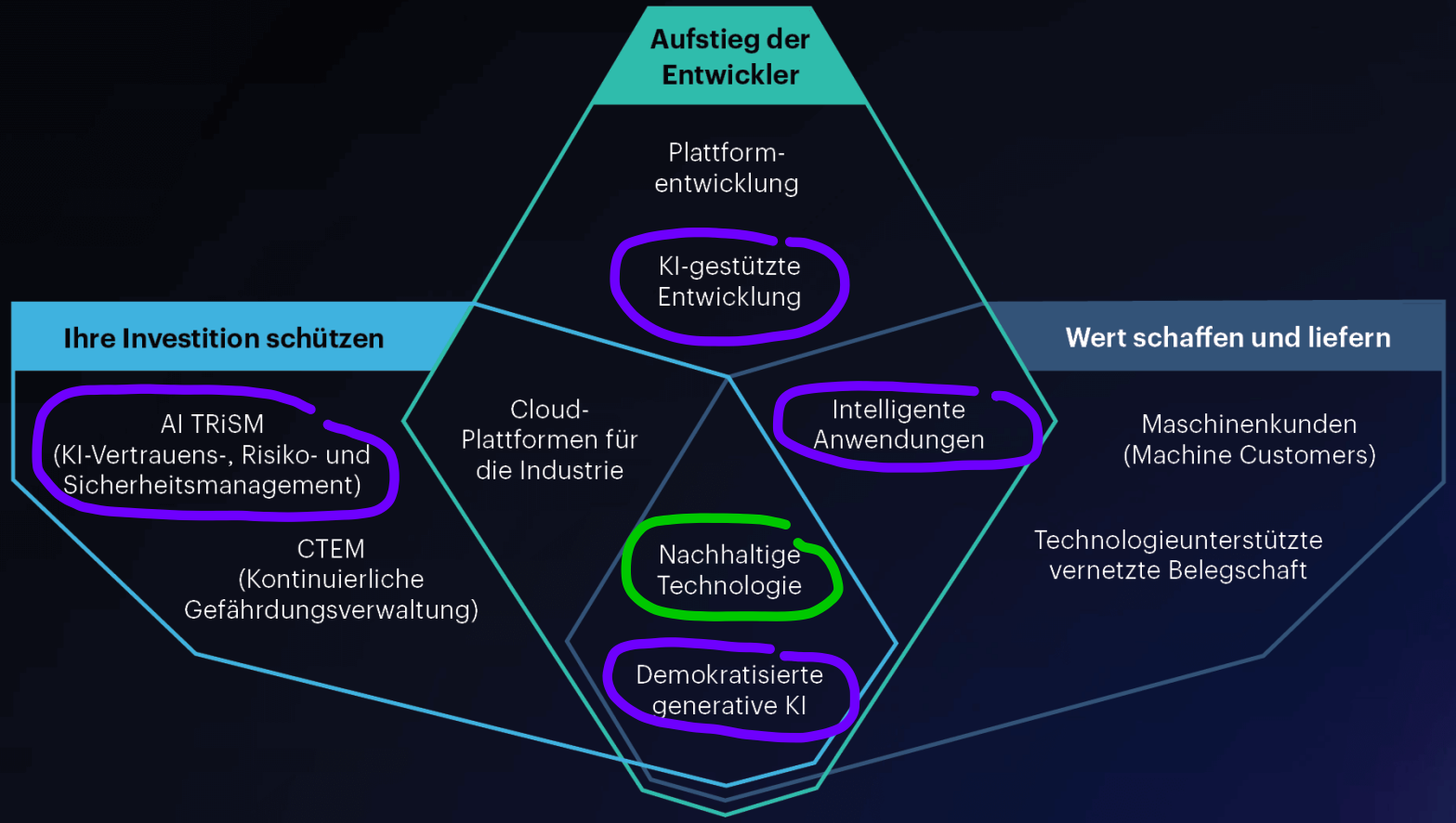
700+
Software
Engineers

100+
Designer

CreditPlus Dräger Miele DB SMA

new spective

Die wichtigsten strategischen Technologie-Trends für 2024



Quelle: Gartner

© 2023 Gartner, Inc. und/oder deren Tochterunternehmen. Alle Rechte vorbehalten. CM_GTS_2080051

Gartner®

Trends, die die Arbeit als RE beeinflussen

AI-Inside, AI-Assistance & Sustainability

Die Technologie-vielfalt steigt

Nachhaltigkeit spielt eine immer größere Rolle

AI

1 – in den Produkten

2 – im Arbeitsprozess

Sustainability

10 neue

Interaktionsmuster

durch AI

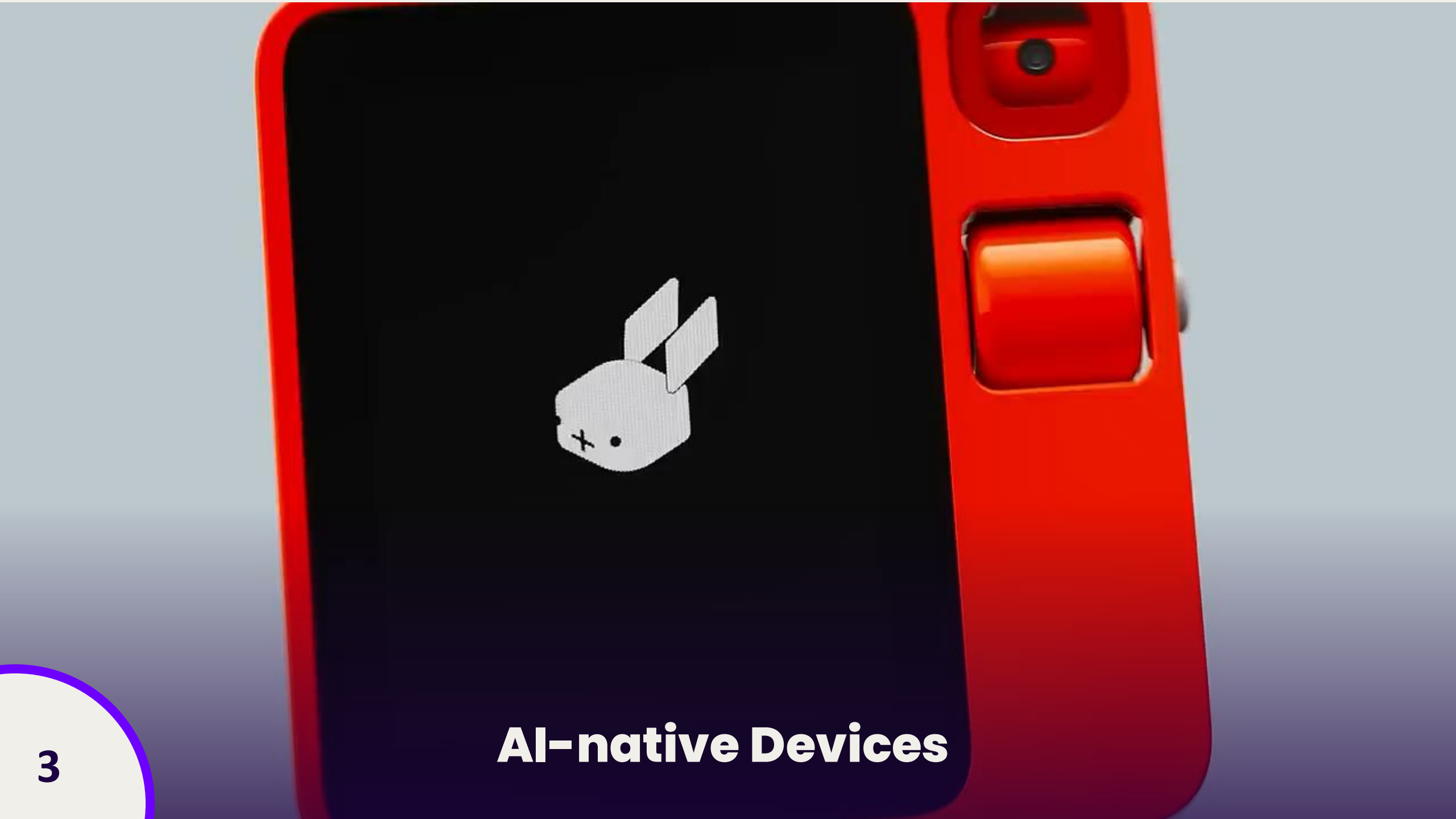
new spective

Text In – Text Out

Nächste Generation von Sprachassistenten

From Command to Conversation

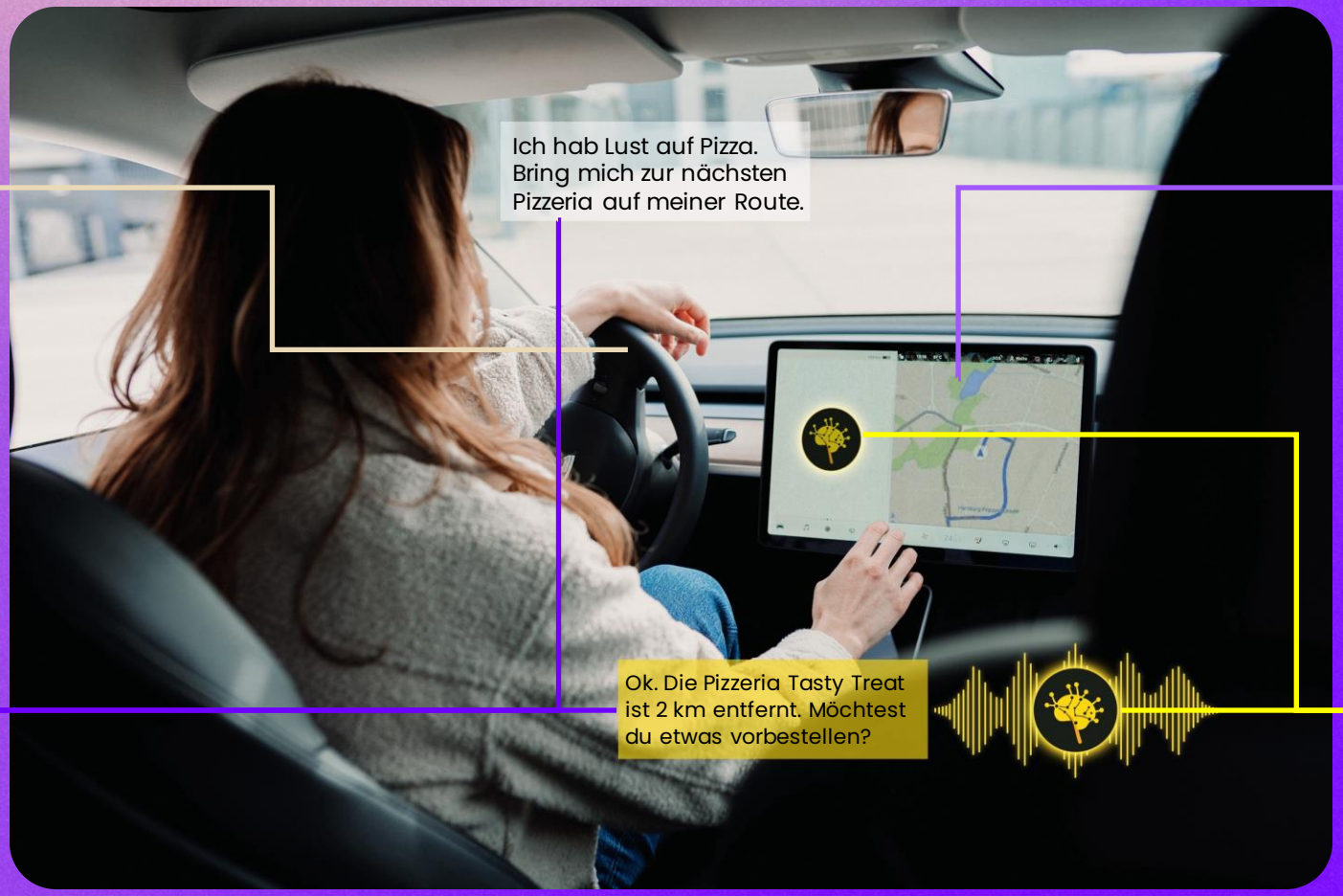
AI-native Devices



AI-native Devices

Haptical User Interface

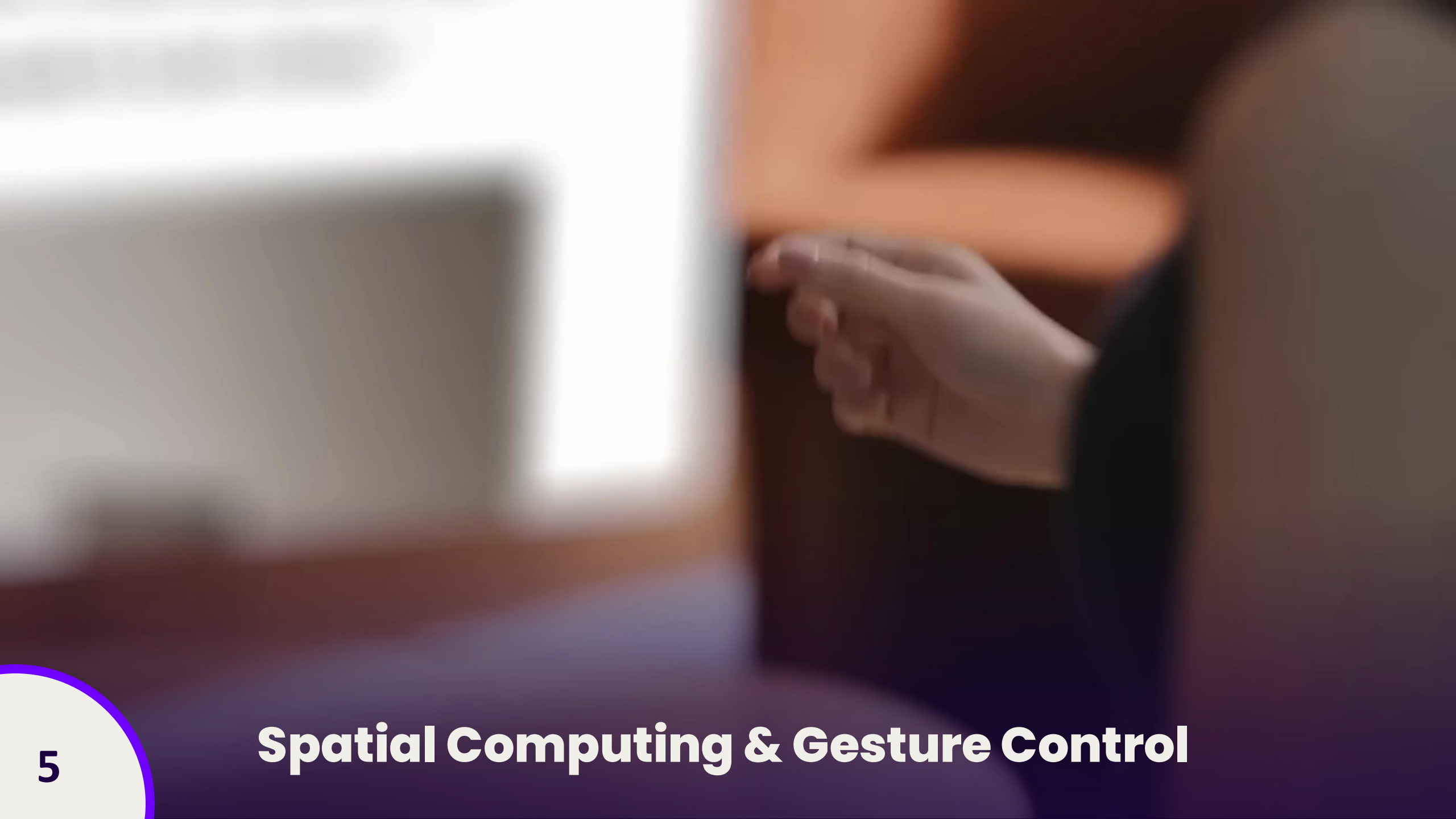
Voice User Interface (VUI)



Graphical User Interface (GUI)

Artificial Intelligence (AI)

Konsequent multimodal

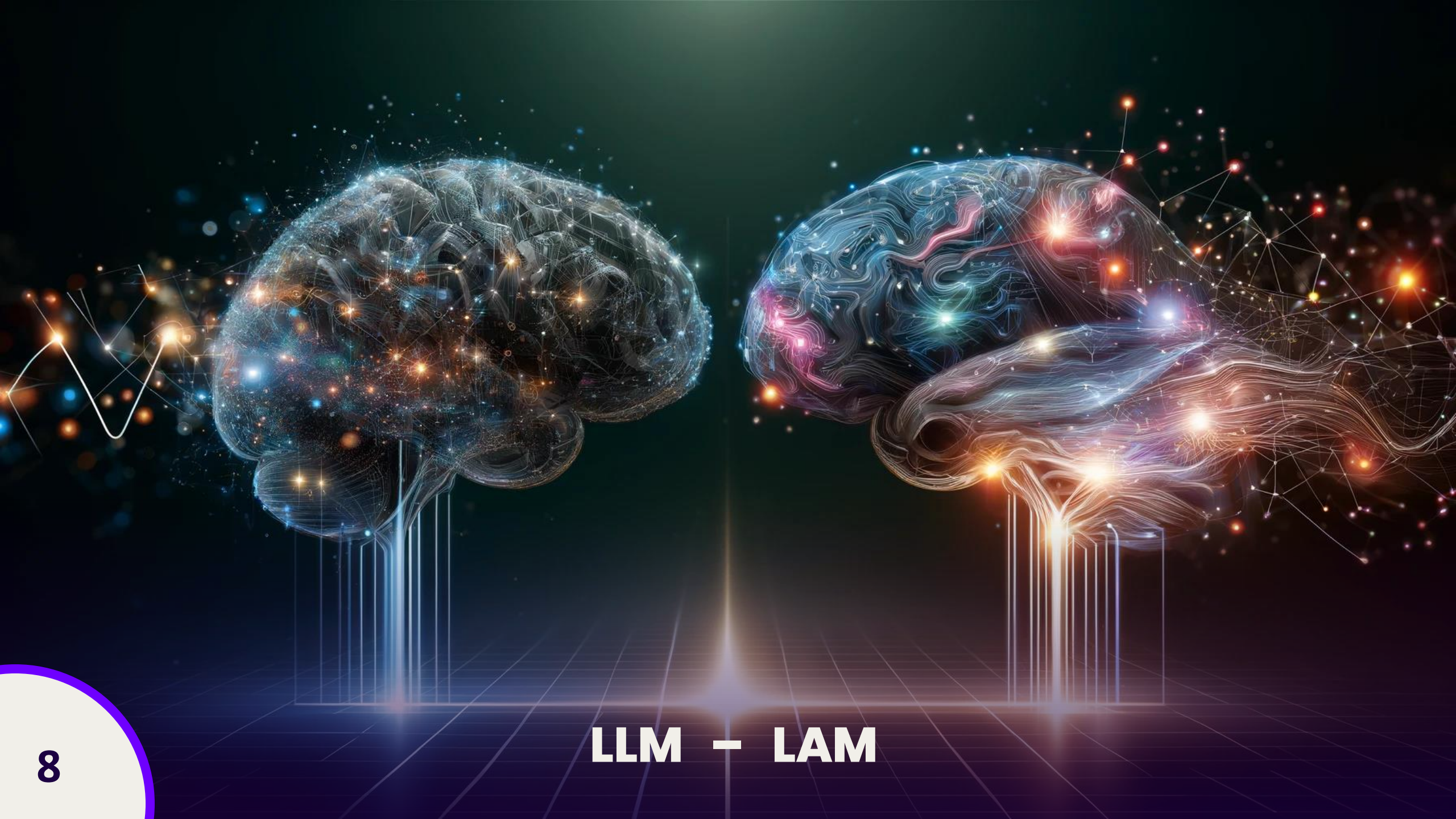


5

Spatial Computing & Gesture Control

Next Level Accessibility

Hyperpersonalisierung / Adaptive UI


LLM – LAM

Funktion vor Marke?

Missbrauch von KI

10 AI Interaction Pattern

1. Text in - Text out
2. From command to conversation
3. AI Devices
4. Consequently multimodal
5. Spatial Computing / Gesture Control
6. Next level accessibility
7. Hyperpersonalization / Adaptive UI
8. From LLM to LAM
9. Function > Brand
10. Misuse

new spective

KÜNSTLICHE INTELLIGENZ

So viel Wasser verbraucht ein Gespräch mit ChatGPT

Pro 10 bis 50 Antworten ...	... „trinkt" ChatGPT-3 500ml Wasser*

ChatGPT-4 verbraucht wahrscheinlich **noch mehr Wasser**, weil es ein wesentlich größeres KI-Modell ist.

Quarks

Woher kommt der Wasserverbrauch?

*abhängig davon, wann und wo es eingesetzt wird

Quellen: Li et al. (2023)

WDR

new spective

Website Carbon Calculator

Website carbon results for: hood-group.com/reconf

E

Oh no! This web page achieves a carbon rating of E

This is dirtier than 65% of all web pages globally

Global average

A+ A B C D E F

Website carbon results for: maibornwolff.de

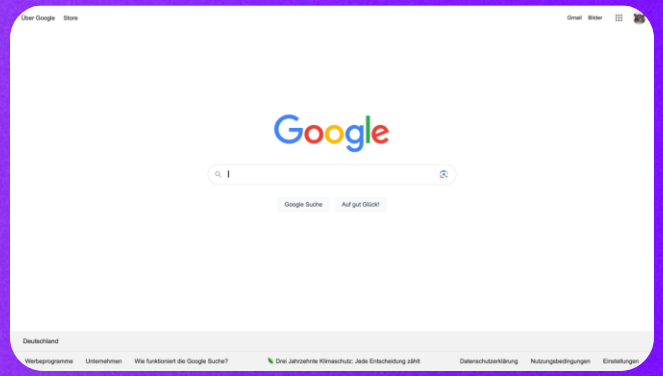
F

Oh no! This web page achieves a carbon rating of F

This is dirtier than 77% of all web pages globally

Global average

A+ A B C D E F



Website carbon results for: google.com/?gws_rd=ssl

A

Hurrah! This web page achieves a carbon rating of A

This is cleaner than 84% of all web pages globally

Global average

A+ A B C D E F

https://www.websitecarbon.com

„We need to move from a human to an *humanity* and *environmental centered* design approach.“

Thorsten Jonas - SUX Founder

Der Lösungsraum
ändert sich schneller denn je.

Mit Lösungsneutralität
kommen wir nicht weiter.

Wir müssen der Digitalisierung
eine Richtung geben.

Digitale Produkte müssen
ganzheitlich gestaltet
werden.

new spective

Trends, die die Arbeit als RE beeinflussen

AI-Inside, AI-Assistance & Sustainability

Die Technologie-vielfalt steigt

Nachhaltigkeit spielt eine immer größere Rolle

AI

1 – in den Produkten

2 – im Arbeitsprozess

Sustainability

10 Prinzipien für gutes Digital Design

1. Gutes Digital Design ist nützlich und gebrauchbar.
2. Gutes Digital Design ist elegant und ästhetisch.
3. Gutes Digital Design ist evolutionär.
4. Gutes Digital Design ist explorativ.
5. Gutes Digital Design nimmt den ganzen Menschen in den Fokus.
6. Gutes Digital Design antizipiert die Auswirkungen seiner Ergebnisse.
7. Gutes Digital Design achtet den Datenschutz und die Datensicherheit.
8. Gutes Digital Design ist nachhaltig und schafft Nachhaltigkeit.
9. Gutes Digital Design würdigt Analoges und Digitales in gleicher Weise.
10. Gutes Digital Design setzt Digitales nur dort ein, wo es erforderlich ist.

BITKOM - Digital Design Manifest, 2018

new spective

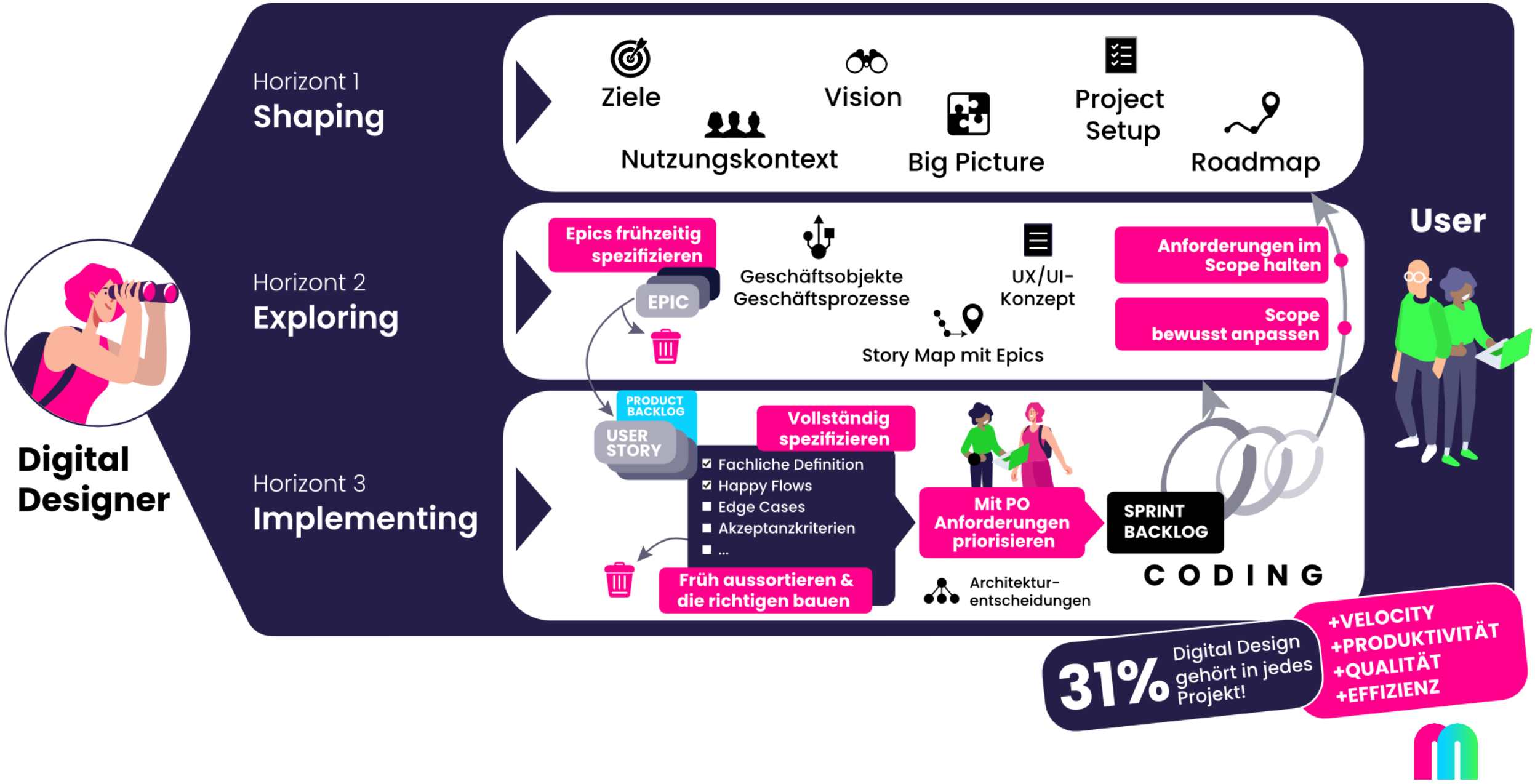
Digital Designer

Horizont 1
Shaping

Horizont 2
Exploring

Horizont 3
Implementing

User


Horizont 1
Shaping
Ziele
Vision
Project Setup
Nutzungskontext
Big Picture
Roadmap
Horizont 2
Exploring
Epics frühzeitig spezifizieren
EPIC
Geschäftsobjekte
Geschäftsprozesse
UX/UI-Konzept
Story Map mit Epics
Anforderungen im Scope halten
Scope bewusst anpassen
Horizont 3
Implementing
PRODUCT BACKLOG
USER STORY
Vollständig spezifizieren
Fachliche Definition
Happy Flows
Edge Cases
Akzeptanzkriterien
...
Früh aussortieren & die richtigen bauen
Mit PO Anforderungen priorisieren
Architektur-entscheidungen
SPRINT BACKLOG
CODING
Digital Designer
User
31% Digital Design gehört in jedes Projekt!
+VELOCITY
+PRODUKTIVITÄT
+QUALITÄT
+EFFIZIENZ

SHAPING

We clarify with the customer where the project should lead them. In doing so, we use methods such as Lego® Serious Play® to get creative ideas out of the customer, so that they are amazed at what they are capable of. With a Big Picture, for example, we make cloudy thoughts tangible. We ground the ideas with an analytical view, for example with a Business Model Canvas. With creativity methods such as Design Thinking, we design a variety of solution ideas together with the end-user.

CONTEXT

MOTIVATION
What's the motivation for you to do this? What do you want to achieve at the end of this project?

USERS & CONTEXT
What are the potential users? What is their characteristic/ motivation/ preference?

STAKEHOLDER
Who is interested in our product apart from our users?

GLOSSARY
A collection of definitions for context-specific terminology, abbreviations, acronyms, everyday terms with special meaning, synonyms and homonyms to avoid misunderstandings.

COMPETITORS
Who are our competitors? What is their USP?

VISION, GOALS & BIG PICTURE

VISION
What is the vision of this project/ plan? How does it interact with the company wide vision & strategy?

GOALS
What are the goals of this project?
HEART Framework
SMART Framework

BIG PICTURE
We want to draw a big picture of the project to understand the overall context and build a communication base.

CUSTOMER & BUSINESS STRATEGY

VALUE PROPOSITION
What do we promise to our customer when he buys our product? What's the value/ use of this product?

CUSTOMER EXPERIENCE
We want to describe the customer experience using journeys with touch points, motivation, timeline and positive/ negative experiences.

BUSINESS MODEL
We want to define the business model concerning budget, revenue streams and resources. It's partly based on the empathy map.

ROADMAP & CONDITIONS

SCOPE
What's in, what out-of-scope? Where is the difference to other products/ project?

ROADMAP
We define a product/project roadmap for a longer duration. It should include mile stones (incl. content) and deadlines.

RISKS
What are the risks of the project/ the product?

CONSTRAINTS
What constraints the project?

COLLABORATION

TEAM
Who is involved in this project? What are their roles and their responsibilities?

MEETINGS
Which meetings are carried out in which project phase?

TOOLS
Which tools do we use? How can I find these tools? What do we do with these tools?

CALENDAR
Who is available when? Availability for the Project and Absences.

EXPLORING

There is no end customer or user for whom we design a solution. The end customers or users are diverse and have different needs. We capture the diversity of needs through interviews or observations and present them through personas and empathy maps. With customer journeys, we make the needs tangible. We test the ideas with pre- or prototypes. We iteratively improve the solution ideas until the best solution for the end customer or user is available.

INTRODUCTION

PLACING EXPLORATIONS IN CONTEXT
In each (long-term) project, many explorations are done. Those explorations have to be set in context.

MODELS

BUSINESS CONTEXT
Visualisation for a shared understanding of the busines context in a Business Context Diagram.

BUSINESS DATA
The exchanged and processed information is structured into functional related units to achieve high cohesion within a context. (e.g. UML, ER Diagram)

BUSINESS PROCESS
A common understanding of the current and future business processes is key. (e.g. as Flow Chart, BPMN, UML diagrams)

HIGH-LEVEL CROSS-FEATURE CONCEPTS

OVERVIEW CROSS-FEATURE TOPICS
Overall, principal regulations and solution ideas that are relevant in multiple parts (→ cross-cutting)

SECURITY
Describing the weighting of the objectives and the methods planned to ensure data protection, data security and to prevent data misuse.

TESTING
Defining test deliverables, responsibilites & approvals and schedule.

TRAINING
Overall goal: Users and Stakeholders understand the Functionalities of a Product.

ROLLOUT
A rollout plan is a description of how to get your Software successfully applied to production and working as expected.

DATA MANAGEMENT
Determine, how Data can be integrated into the projects business processes and to ensure its optimal use.
It covers additional aspects like data quality and Information Privacy.

UI/UX & USABILITY

DESIGN SYSTEM / STYLEGUIDE
Develop or use existing design building blocks and extract or define design principles in order to ensure consistency and reduce redundant work.

INFORMATION ARCHITECTURE
Defining the hierarchy of each content element from a user's perspective. Card Sorting is a common method to do so.

NAVIGATION STRUCTURE
Bases on the information architecture, think of a meaningful way how the user gets the information and navigates through the product.

DESIGN MOCKUP
Visualise ideas in a scribble, low- or high-fidelity design prototype.

USABILITY TEST
Think of quantitative and qualitative measurement goals and KPIs.
Plan and conduct a usability test with around 5 users per persona group.

ACCESSIBILITY
Define the necessary and easy to achieve accessibility goals for your user segments and design and test your interfaces accordingly.

QUALITY

ARCHITECTURAL QUALITY
Identify and analyse relevant technical quality requirements and develop strategies to solve them.

UX QUALITY
Identify and analyse relevant user centered quality requirements and develop strategies to solve them.

IMPLEMENTING

We further refine the solution until it is ready for agile implementation. Our tools are for example wireframes of the graphical user interface, which we design in PPO workshops together with the end customer or user. From the wireframes, we develop click-prototypes that end customers or users evaluate in a Think-Aloud evaluation. We incorporate the results into user stories and develop the software too.

PRODUCT SPECIFICATION

STORY MAP
Story Mapping or User Story Mapping is a method/technique used in product discovery: outlining a new feature for an existing product or a new product.

PRODUCT BACKLOG
Characteristics of a good quality Product Backlog Item (commonly written in user story format, but not required to be): INVEST

DESIGN & DEV HAND-OFF
Design concepts will be refined so that all edge cases, assests and specs are done as defined in the DOR.

AGREEMENTS

DEFINITION OF READY
When is a story readily defined so it can be developed? What's the right granularity? What parts are necessary? Conduct a workshop at the beginning of the project to establish a common DoR with the entire team.

DEFINITION OF DONE
And when is the implementation done? What tasks have to be completed for each story? Conduct a workshop at the beginning of the project to establish a common DoD with the entire team..

ARCHITECTURAL CONSTRAINTS
Architectural constraints that influence or restrict architects in their architectural design. Architectural constraints can be organisational, political or technical in nature.

ARCHITECTURE & TECHNOLOGY

TECHNICAL CONTEXT
Technical interfaces (channels, busses ...) linking the system to its environment e.g. hardware as well as virtual environments.

ARCHITECTURAL DECISIONS
Your system's stakeholders should be able to understand and comprehend your decisions.

BUILDING BLOCK & RUNTIME VIEW
Describing how information is exchanged between the system and the outside world and between the building blocks of the software solution.

MANUALS & TRAININGS

USER MANUAL
A possible structure could refer to system parts or use cases. But there should always be some examples for better understanding.

TRAINING CONCEPT
The structure should be based on the knowledge and needs of the users.

OPERATIONS

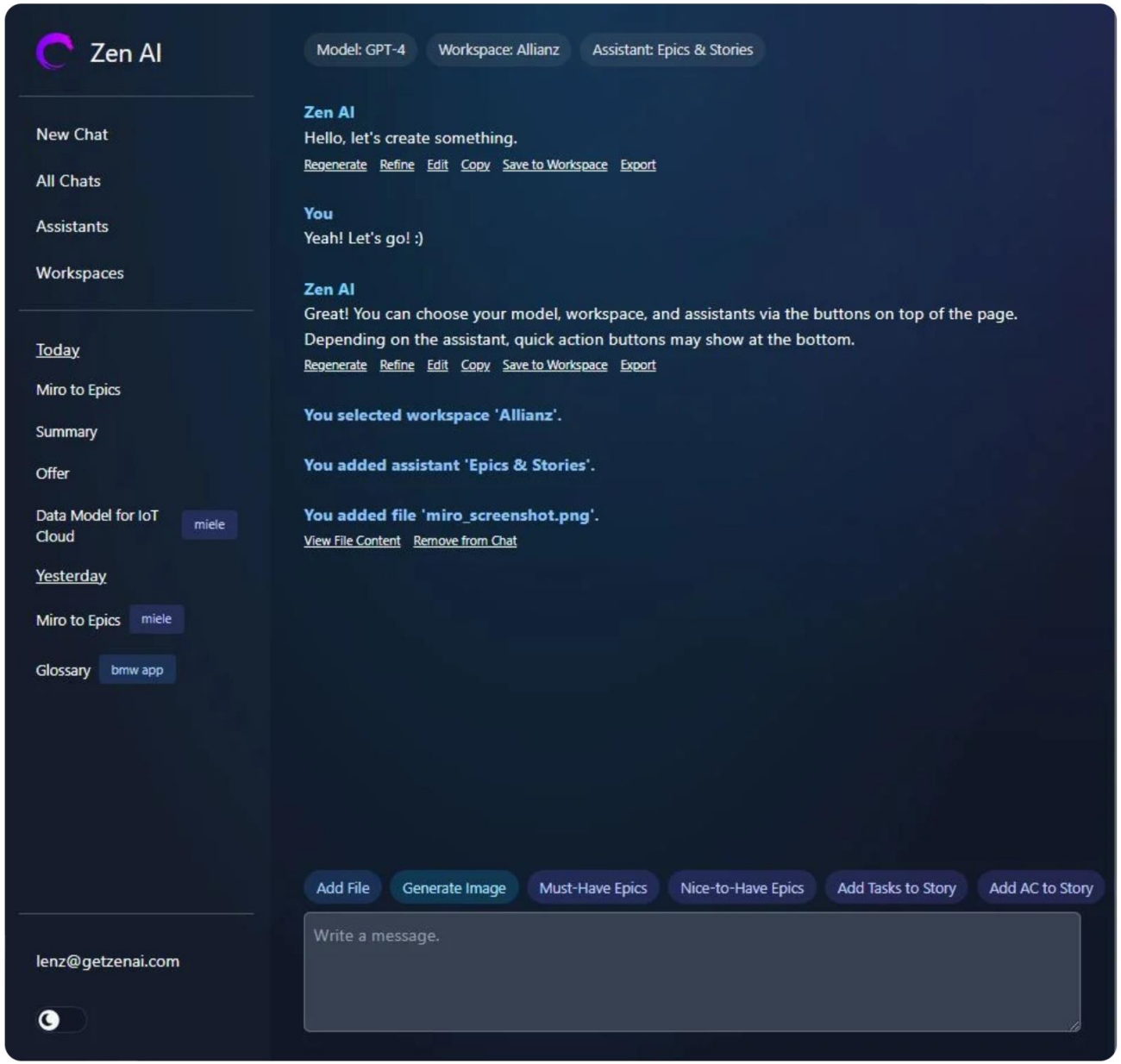
RELEASE PROCESS
There is not the perfect release plan. However, it is necessary, that there is a process and everyone knows about it.

SUPPORT/ OPERATIONS
For example, use Confluence to define a playbook with an action plan for a particular problem.

TRACK & ANALYSE
Revise your analytics board, if your new increment brings you closer to your quality goals and learn for the next iteration.

Zen AI

100% Private AI for Requirements Engineers



LEAN SCOPE

"Die ständigen Änderungen und unklaren Anforderungen machen es schwer, den Überblick zu behalten und effektiv zu arbeiten."

Rolf Blum

Requirements Engineer in einem AI Software Projekt

Erstellen von Anforderungsdokumenten für das AI Software Projekt | Durchführung von Anforderungsanalysen und -workshops | Abstimmung von Anforderungen mit dem Entwicklungsteam | Überwachung der Einhaltung von Anforderungen während des Entwicklungsprozesses | Erstellung von Testfällen und Durchführung von Tests zur Überprüfung der Anforderungen

PROFIL

- analytisch
- strukturiert
- kommunikativ
- teamorientiert
- technikaffin

MOTIVATION ⊕

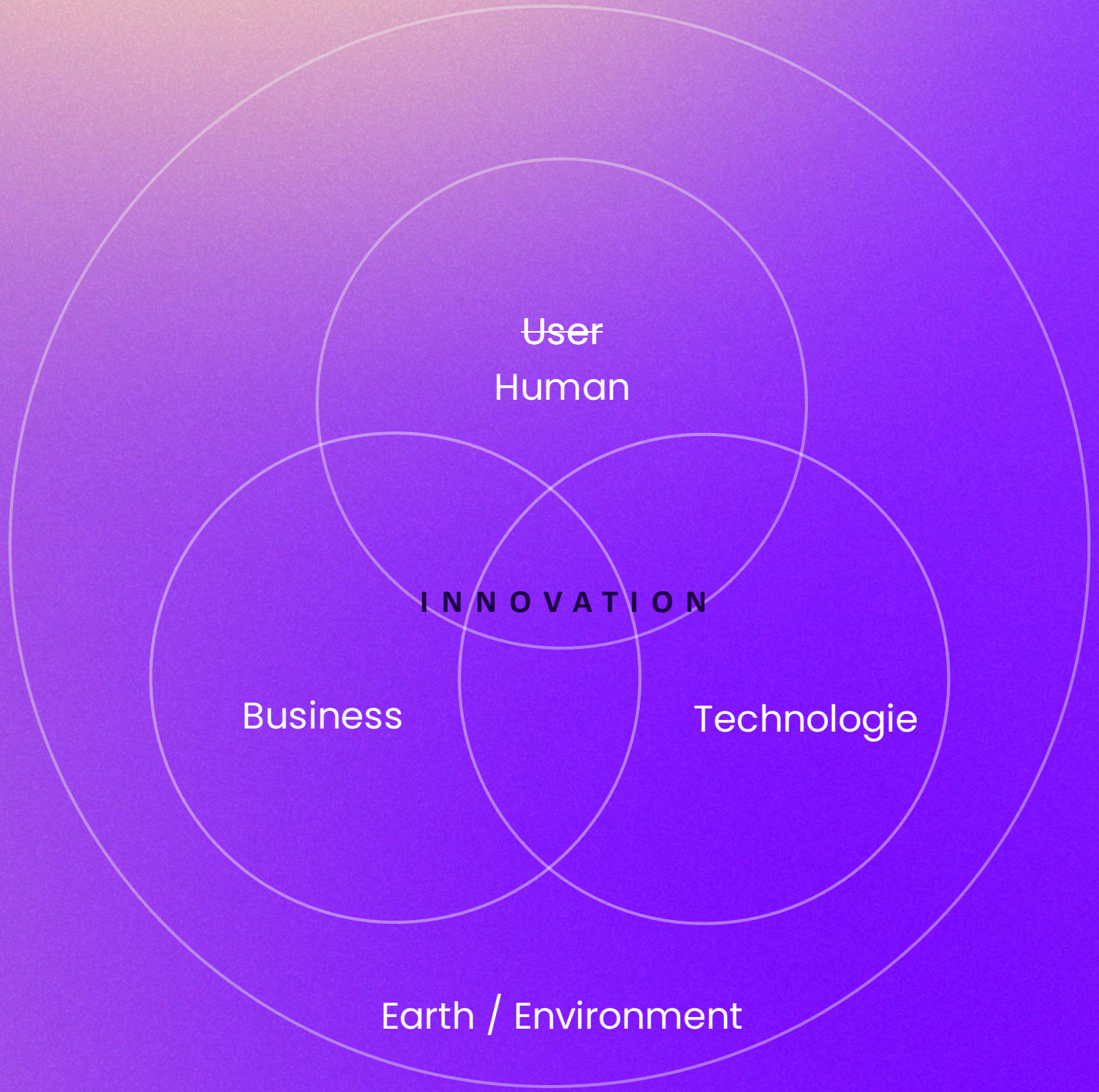
1. Herausforderung
2. Innovation
3. Fortschritt
4. Teamarbeit
5. Verantwortung

⊖ FRUSTRATION

- Unklare Anforderungen seitens des Kunden
- Ständige Änderungen der Anforderungen
- Schwierigkeiten bei der Kommunikation mit dem Entwicklerteam
- Zeitdruck bei der Erstellung und Überarbeitung der Anforderungen
- Komplexe technische Anforderungen, die schwer zu verstehen sind

SOZIODEMOGRAFISCHE INFOS

Familienstand	Verheiratet
Alter	35
Kinder	2
Schulbildung	Ingenieur, Master, Erfahrung
Beruf	Requirements Engineer in einem AI Software Projekt
Arbeitsumgebung	Büro, Team, Projektmanagement, Technologie, Kreativität, Flexibilität, Innovation, Zusammenarbeit, Herausforderungen, Fortschritt, Verantwortung, Dynamik
Nationalität	german
IT-Fähigkeiten	Requirements Engineer, AI Software Projekt, iPhone, Windows, PowerPoint
Hobbies	🎨 Malen, 📷 Fotografie, 🎸 Musik hören, 📚 Lesen



new spective

SUSTAINABLE DEVELOPMENT GOALS
1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS

Unsere Antwort auf das…
ist die Digital Design Profession.

Digital Design bedeutet
Gestaltung mit
ganzheitlichem Blick

Digital Design ist eine
übergreifende
Dachprofession

Digital Design baut
Brücken zwischen
IT und Fachbereichen

Die digitale
Materialkunde macht
den Unterschied

Die Digital Designerin
hält 3 Horizonte im Blick

BITKOM
Das Gestaltungsvakuum identifiziert
Rollenideal Digital Design (2017)
Digital Design Manifest (2018)

Gemeinsam mit dem BITKOM
sind wir Pioniere.

AIdeation Heroes

Serious Game
Customizable cards

2 - 5 Players

30 - 90 Min

YOUR JOURNEY

Where it all begins

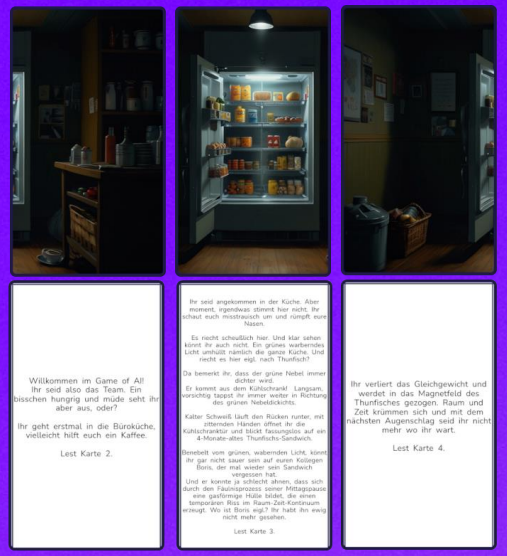
As a team, you unexpectedly fall into an adventure. At first, you have no clue what exactly is happening here.

Discover a new world

Step by step, you discover a new, strange world. This place is full of robots ... but there is one problem! This is where you come into play.

Your mission

You take a creative journey, help the robots and get something in return.



WHAT YOU WILL WIN

Method-based Idea Generation

Everyone's perspectives and ideas are heard. The game is conceptualized to **encourage creative ideation** both individually and as a group.

Innovative solutions for your challenges

You will create new ways to solve your challenges by playfully **combining hardware** & **interfaces** with **AI technologies.**

Take the best ideas for your team

Everyone has an equal vote and together you evaluate and **select the ideas** that are **most helpful and effective for your context**.

Discover the possibilities of AI

Over the course of the game, you will **discover** various **use cases and AI technologies**.

Apple Vision Pro Webinar

Vielen Dank!

Martina Beck • Dominik Birkmeier
Digital Design
Ganzheitliche Gestaltung in der Praxis
MAIBORNWOLFF
dpunkt.verlag

MAIBORNWOLFF & NEWSPECTIVE

Welche Trends öffnen euch neue Perspektiven?

Dr. Dominik Birkmeier
Head of Digital Design & Engineering

dominik.birkmeier@maibornwolff.de

Dr. Martina Beck
CEO MaibornWolff

martina.beck@maibornwolff.de