MAIBORNWOLFF

>UX Trendradar at MaibornWolff

UX Trendradar: How mature is a trend?

PXD, May 2022

MAIBORNWOLFF

We solve our customers' problems in the way of an excellent product experience.

Our **customers** are facing new challenges

› Digital transformation

› Pressure to innovate in the market

Our **goal** today and for the future:

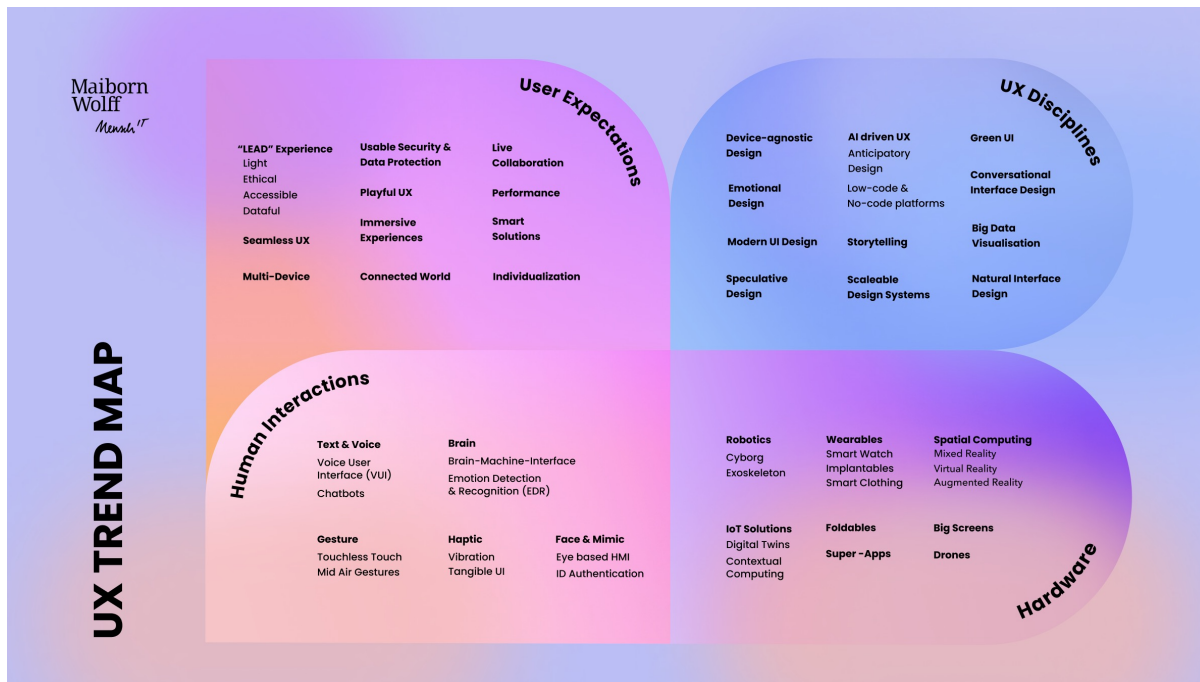› Design excellent software product experiences to solve our customer's problems.

For this it is **necessary**

› Keeping up with the times (new methods & trends)

› Know what the drivers are in the market

Our approach:

› What are the UX-trends? => UX Trend Map

› How mature are the trends? => UX Trend Radar

› How important are these trends for different industries? => Macro Trends
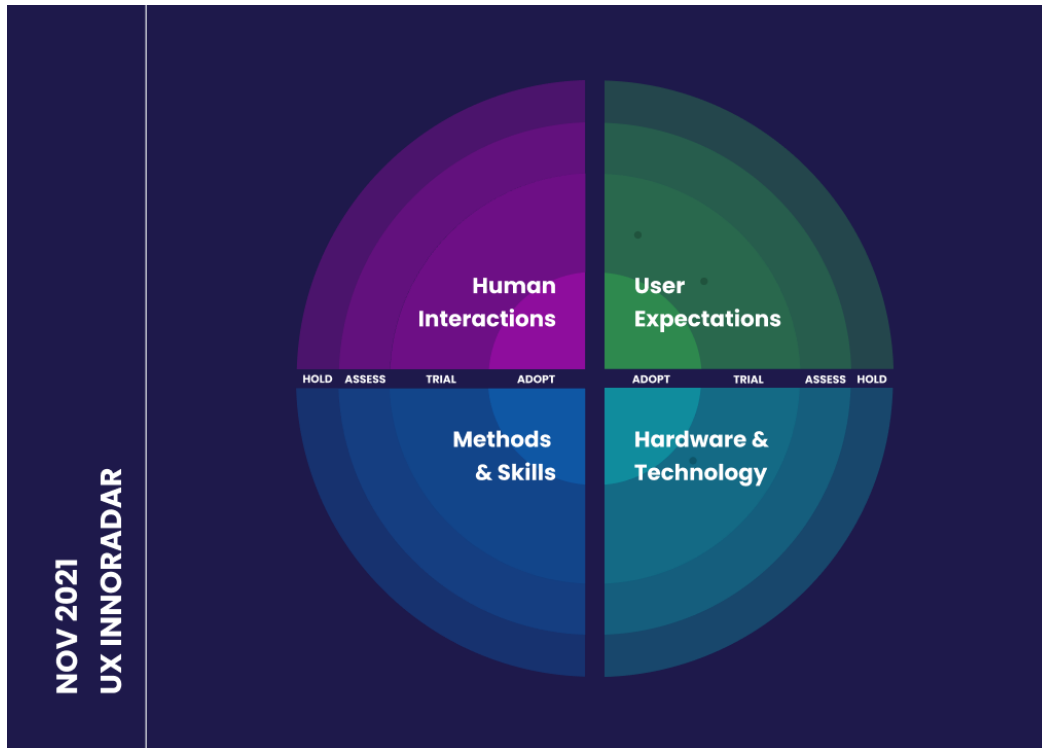
The UX Trend Map – Our big picture of UX trends.

Maiborn Wolff
Mensch'IT

UX TREND MAP

User Expectations

"LEAD" Experience
Light
Ethical
Accessible
Dataful

Usable Security & Data Protection

Live Collaboration

Playful UX

Performance

Immersive Experiences

Smart Solutions

Seamless UX

Multi-Device

Connected World

Individualization

UX Disciplines

Device-agnostic Design

AI driven UX
Anticipatory Design
Low-code & No-code platforms

Green UI

Emotional Design

Conversational Interface Design

Modern UI Design

Storytelling

Big Data Visualisation

Speculative Design

Scaleable Design Systems

Natural Interface Design

Human Interactions

Text & Voice
Voice User Interface (VUI)
Chatbots

Brain
Brain-Machine-Interface
Emotion Detection & Recognition (EDR)

Gesture
Touchless Touch
Mid Air Gestures

Haptic
Vibration
Tangible UI

Face & Mimic
Eye based HMI
ID Authentication

Hardware

Robotics
Cyborg
Exoskeleton

Wearables
Smart Watch
Implantables
Smart Clothing

Spatial Computing
Mixed Reality
Virtual Reality
Augmented Reality

IoT Solutions
Digital Twins
Contextual Computing

Foldables

Super -Apps

Big Screens

Drones

The UX Trendmap helps us to answer the following questions:

› What are the current UX trends?

› What are the drivers behind these trends?

The UX Trend Radar gives us orientation.

NOV 2021
UX INNORADAR

Human Interactions

User Expectations

HOLD   ASSESS   TRIAL   ADOPT   ADOPT   TRIAL   ASSESS   HOLD
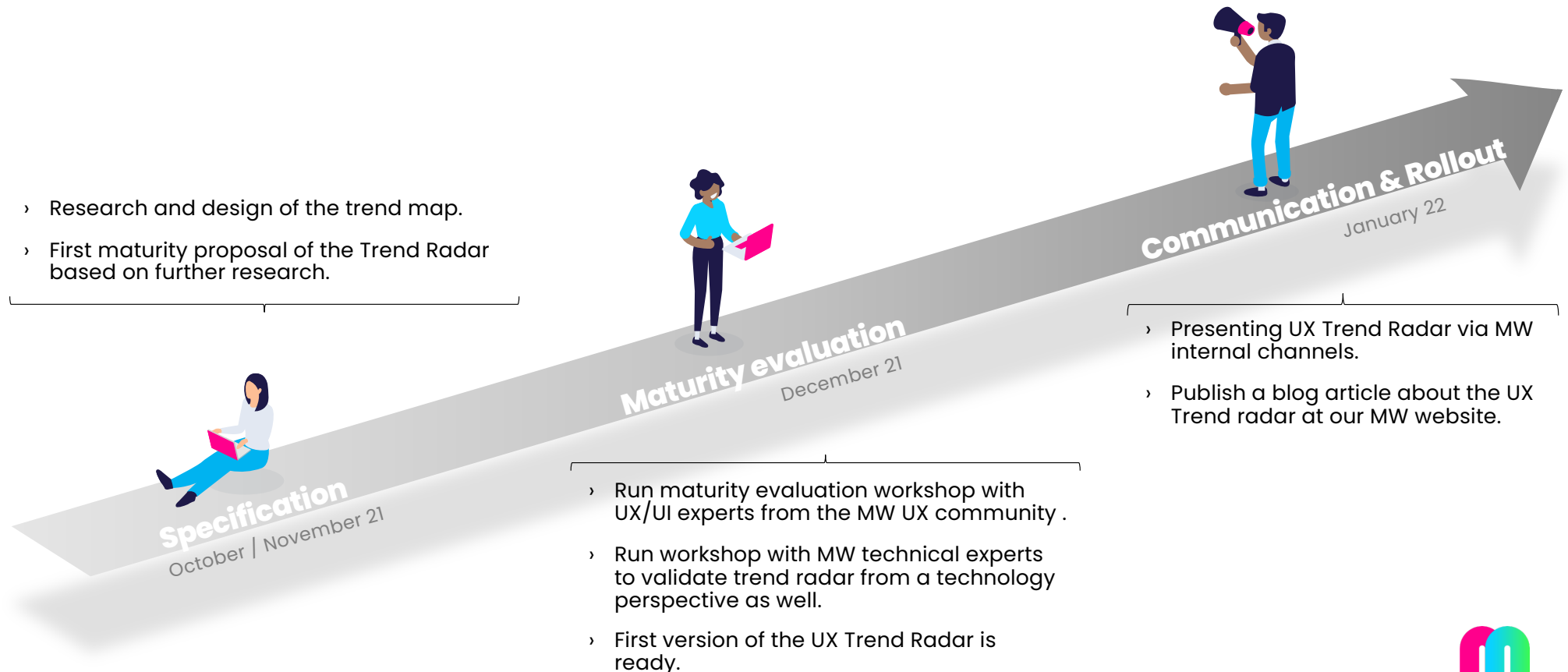
Methods & Skills

Hardware & Technology

The UX Trend Radar helps us to answer the following questions:

› What is the current maturity level of UX trends?

› Which UX trends do we have to take a closer look at?

› What are the concrete needs for action that result from this?

ADOPT - ready for market, in use
TRIAL - F&E, first use cases
ASSESS – relevant in the future
HOLD – has not prevailed (yet)

Our approach for the UX Trend Radar from idea to rollout.

Specification
October / November 21

› Research and design of the trend map.

› First maturity proposal of the Trend Radar based on further research.

Maturity evaluation
December 21

› Run maturity evaluation workshop with UX/UI experts from the MW UX community .

› Run workshop with MW technical experts to validate trend radar from a technology perspective as well.

› First version of the UX Trend Radar is ready.

Communication & Rollout
January 22

› Presenting UX Trend Radar via MW internal channels.

› Publish a blog article about the UX Trend radar at our MW website.

Trends and their maturity in the area of User Expectations.

Trends and their maturity in the area of User Expectations.

› Performance (S. 9)

› Connected World (S. 9)

› Modern UI (S. 9)

› LEAD Experience – Light (S. 10)

› LEAD Experience – Ethical (S. 10)

› LEAD Experience – Accessible (S. 10)

› LEAD Experience – Dataful (S. 11)

› Live Collaboration (S. 11)

› Multi Device (S. 11)

› Smart Solutions (S. 12)

› Seamless UX (S. 12)

› Immersive Experience (S. 12)

› Individualization (S. 13)

› Design for Product Platforms (S. 13)

What's behind the trend?

Performance

Regardless of the device, users are becoming increasingly impatient with applications and their tolerance for waiting is decreasing.

System performance therefore remains an important factor for the user experience. The days of long computing times and low latencies are long gone. More sophisticated technologies, 5G, and growing computing power will continue to ensure that the data flow does not get bogged down in the future.

Connected World

Improvements and cost reductions in wireless communications are enabling companies to connect their products to the Internet of Things. In the constantly connected world, consumers expect to have access to data and services anytime, anywhere. In doing so, companies face the challenges of quickly bringing secure, effective, and high-performing products to market that meet global regulatory requirements.

Modern UI

Users have become increasingly demanding over time. If an app or website doesn't convince us from the point of view of user-friendliness or just comes across as old-fashioned, we quickly look for alternatives. A visually appealing design attracts the attention of users and also has a positive effect on user awareness.

Visual techniques such as balance, symmetry, regularity, predictability, sequentiality, sparsity, unity and grouping enhance the visually appealing design of the user screen.

What's behind the trend?

LEAD Experiences - Light

"LEAD" is an open source approach that identifies four quality attributes for a good user experience.

"Light" stands for light, immediate experiences. They are characterized by their speed, timeliness, and responsiveness to the intentions and context of their audience.

LEAD Experiences - Ethical

"LEAD" is an open-source approach that identifies four quality attributes for a good user experience

Ethical experiences are truthful. They are trustworthy, honest, and transparent. For example, ethical applications provide all relevant data, terms, and conditions.

LEAD Experiences - Accessible

"LEAD" is an open-source approach that identifies four quality attributes for a good user experience

Accessible experiences are frictionless. They are inclusive, promote diversity, and are consistent across all touchpoints. Inclusive design is also universally available, compatible, and usable in the native language of the target audience.

What's behind the trend?

LEAD Experiences - Dataful

"LEAD" is an open-source approach that identifies four quality attributes for a good user experience

Data-driven user experiences are characterized by their intelligence. They personalize interactions and anticipate the situation and needs of the audience.

Live Collaboration

Real-time collaboration (RTC) or live collaboration (LC) refers to the digital collaboration of at least two people without time delay (real time) across geographical boundaries. The term is often used in connection with the topic of e-learning and audio/video conferencing systems.

Multi Device

In a connected world, the user experience ranges across many devices - from smartphones to smart TVs. We are no longer limited to a single screen, but interact with an entire ecosystem of connected things. Designers need to be aware of this cross-device user interaction. The goal is to create a coherent user experience across all devices with which the user interacts.

What's behind the trend?

Smart Solutions

Every day, we are surrounded by smart products that perform a wide range of actions and make our lives easier. Smart products are characterized by their interconnectedness and collect information about the user or various contextual factors in order to intelligently adjust behavior automatically. Users' expectations that they can interact with smart products in the same way as with other people are correspondingly high. When developing smart products, we need to be aware of these expectations.

Seamless UX

Means seamless transition between different devices and consistent user experience across all channels. As designers, we need to consider this ecosystem rather than focusing on individual devices. Devices are not products in their own right - they are portals for accessing content.

Regardless of the access point, the objects included should be recognizable and fit the user's mental model. As a user, you want to be able to pick up where you left off without having to restore contexts and/or repeat work.

Immersive Experience

"Immersion" refers to complete entry, or rather immersion, into an (artificial) world. If the user can thus immerse himself in virtual reality with the help of a technology (e.g. AR/VR), this is called immersive. The transition from reality to augmented reality to virtual reality is fluid. In the future, for example, the brain could even be connected to various technologies via so-called brain machine interfaces (BMI).

What's behind the trend?

Individualization

In individualized personalization, content and features adapt to a specific user based on data collected about that user's preferences and behavior. Individualized recommendations can be based on machine learning or other artificial intelligence techniques, explicit customization instructions from the user, or a combination of both.

Design for Product Plattforms

In many industries, companies use product platforms as a means of reducing costs and gaining access to multiple market segments by developing different product variants. Product platforms are a collection of modules or parts common to a set of products. These commonalities are developed intentionally to achieve the desired effects and thus create added value.
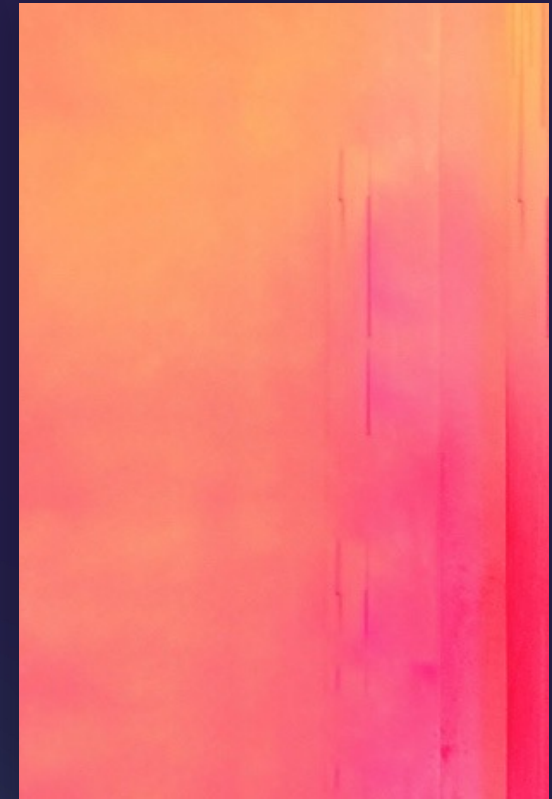
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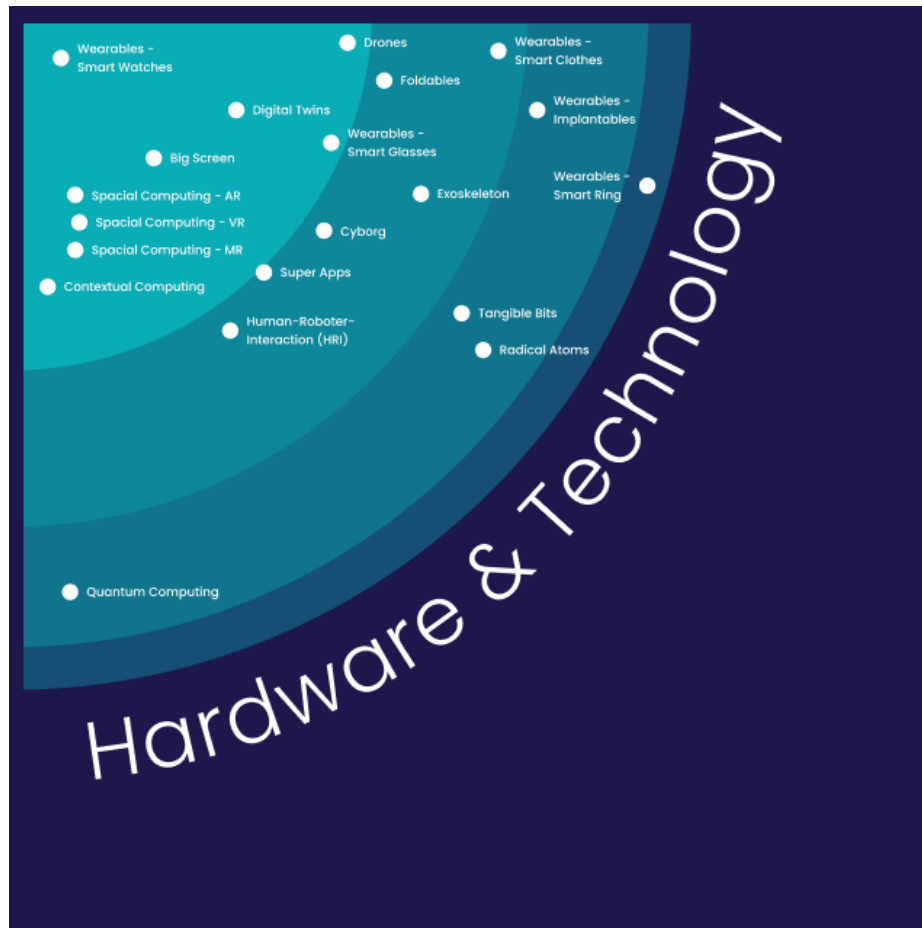
› Wearables (S. 15)

› Foldable (S. 15)

› Cyborg (S. 15)

› Exoskeleton / Ergoskeleton (S. 16)

› Big Screen (S.16)

› Super Apps (S. 16)

› Drones (S. 17)

› Big Screen (S. 17)

› Contextual Computing (S. 17)

› Spatial Computing (AR / VR / MR) (S. 18)

› Human-Roboter-Interaction (S. 18)

› Tangible UI / Tangible Bits (S. 18)

› Radical Atoms (S. 19)

› Quantum Computing (S. 19)

What's behind the trend?

Wearables (Ring / Watches / Glasses / Implantables)

Wearables are portable computer systems. A wearable is worn on the user's body during use, is inserted in the body, or is integrated into clothing. Depending on their function, wearables measure data of various types and collected by technical functions, such as a GPS function, or sensors in the respective device.

Foldable

A foldable smartphone is one that can be opened and closed and has a display that can be folded in the middle. Some foldables reach a screen size that corresponds to a tablet.

Cyborg

The term cyborg describes a hybrid of biological organism and machine. It is usually used to describe people whose bodies are permanently supplemented by artificial components. People with technical implants such as pacemakers, artificial limbs, complex prostheses or implants in the eye and ear are already cyborgs according to the term.

What's behind the trend?

Exoskeleton / Ergoskeleton

Artificial machine exoskeletons are mechanical structures worn by the human body that are relatively easy to remove. They are therefore also referred to as robotic suits. Exoskeletons take the form of robots or machines worn on the body that support or amplify the wearer's movements.

Big Screen

As large screens become more affordable, researchers are investigating the impact on productivity and techniques to make the user experience with large screens more effective. Recent work has shown significant productivity benefits, but has also identified numerous usability issues that hinder productivity.

Super Apps

A super app is a mobile application or closed ecosystem of many apps that people (should) use every day because they provide a seamless, integrated, contextual, and efficient experience.

Examples include Tencent's WeChat and Ant Group's Alipay in China and Paytm in India.

What's behind the trend?

Drones

A drone is an unmanned aerial vehicle. The pilot is on the ground and controls the drone by means of a control unit (remote control). However, a drone can also be controlled autonomously via a computer. Drones are already widely used today for private or commercial purposes.

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Digital Twin

A digital twin is a digital representation of a tangible or intangible object from the real world in the digital world. They are used to analyze and evaluate data from the use of the real twins.

Contextual Computing

The term "contextual computing" (or "context-aware computing") refers to the use of computer technology to collect and analyze data about the user's environment. Context-aware computing relies on stored data about the user's preferences and past actions, as well as data collected in real time, such as the time of day or the location of the device.

What's behind the trend?

Spatial Computing (VR / AR / MR)

The term spatial computing refers to the interaction between humans and machines. Here, the machine creates references to real objects in the room and manipulates them. Physical interactions such as body movements, gestures and speech are used as an input medium for interactive and digital media systems.

The fields of virtual reality, augmented reality and mixed reality fall into the area of spatial computing.

Robotics / Robotic Interaction Design / Human-Robot Interaction (HRI)

Human-robot interaction (HRI) is the study of interactions between humans and robots. Human-robot interaction is a multidisciplinary field with contributions from human-computer interaction, artificial intelligence, robotics, natural language understanding, design, and psychology.

Tangible UI / Tangible Bits

EA Tangible User Interface replaces the "painted bits" of graphical user interfaces with "tangible bits" and is based on ways of acting that are familiar to humans from dealing with non-technological aspects.

A well-known TUI application is the Reactable, an electronic musical instrument with an intuitive tangible interface in which simple plastic objects mimic a modular synthesizer.

What's behind the trend?

Radical Atoms

The vision of "Radical Atoms" is based on hypothetical, extremely shapable and reconfigurable materials that can be described by digital models in real time, so that dynamic changes in digital information can be reflected by a dynamic change in physical state, and vice versa.

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Quantum Computing

In the near future, the technology should help to evaluate and interpret huge amounts of data faster and more intelligently.

Quantum computers interpret and process information differently than conventional computers.

Quantum computing works with quantum bits (qubits). These can assume not only one state, but also two at the same time - 1 and 0.

Trends and their maturity in the area of Methods & Skills.

Methods & Skills

Usable Security & Data Protection
AI driven UX
Natural Interface Design (NUI)
Anticipatory Design
Progressive Disclosure
UX Writing & Microcopy
Emotional Design
Scalable Design Systems
Playful UX/ Gamification
Low code & No-code platforms
Storytelling
Big Data Visualisation
Data-driven RE
Micro Interactions
Speculative Design
The power of Tech Background
Crowd-based RE
Product Ownership advanced
Device-agnostic Design
Conversational UI Design

› Scalable Design System (S. 21)
› Emotional Design (S. 21)
› Natural Interface Design (S. 21)
› Device-agnostic design (S. 22)
› Storytelling (S. 22)
› Micro Interactions (S. 22)
› Speculative Design (S. 23)
› Big Data Visualization (S. 23)
› Crowed-based RE (S. 23)
› Data-driven RE (S. 24)
› Usable security & Data Protection (S. 24)
› Progressive Disclosure (S. 24)
› Low-code & No-code platforms (S. 25)
› The power of Tech Background (S. 25)
› Playful UX / Gamification (S. 25)
› Anticipatory Design (S. 26)
› AI-driven UX (S. 26)
› Product Ownership – Product Value & KPIs (S. 26)
› Conversational User Interface Design (S. 27)
› UX Writing & Microcopy (S. 27)

What's behind the trend?

Scalable Design Systems

A design system is a collection of standards for design and front-end code. It is a library of proven, reusable design components and assets with a guide to their use. Scalable Design Systems support the scalability of a product to respond consistently and efficiently to changes such as new features, new markets, dynamic content.

Emotional Design

Emotional design emphasizes that the subjective perception processes of the target group must also be taken into account when designing products. Products should inspire, surprise, arouse curiosity, so that they are bought and used in the first place.

Natural Interface Design

The discipline of "Natural Interface Design" (NUI) or "Reality Based User Interface" is a type of user interface that is designed to feel as natural as possible for the user. In this process, action patterns learned in everyday life are adopted in the applications. The goal of an NUI is to create a seamless interaction between the user and the machine, so that the interface itself seems to disappear.

What's behind the trend?

Device-agnostic Design

The goal of device-agnostic design is to achieve the best possible UX for every device with which a product can be operated. The process model helps to maintain an overview and to proceed in a structured manner so that all aspects are considered and tested as far as possible.

Storytelling

Good stories always engage audiences. Stories are clearly a powerful form of communication, and integrating story principles into UX design has the potential to make user experiences with products and services more understandable, memorable, and meaningful.

Micro Interactions

Microtransactions are small animations that are activated during various events and interact with the user. Used correctly, these mini interactions improve the user experience and thus contribute to the fact that users like to use the product frequently. They can also be used to make processes clearer and more efficient. But beware! If used incorrectly, micro interactions can become real UX killers.

What's behind the trend?

Speculative Design

The Speculative Design approach sketches non-commercial design proposals that primarily initiate discussions. The approach is also known as "critical design" because sketching the future is primarily about questioning the status quo, so it's not necessarily about problem solving (prototyping), nor about predicting the future (forecasting) but about possibilities.

Big Data Visualization

UX designers face the challenge of visualizing complex issues in a way that is easy for users to understand. Visualization is a way to help people make sense of the data. If it makes sense to users, they can communicate that to relevant stakeholders and make decisions together on it.

Crowd-based RE

Crowd-based RE describes the approach of involving the crowd in RE. In a (semi-) automated approach, user feedback is collected and analyzed to derive validated user requirements.

Technologies such as Big Data, Deep Learning, text and usage mining enable the evaluation of texts, comments, ratings and log files on a large scale.

What's behind the trend?

Data driven RE

Data driven RE refers to data-driven, user-centric identification, prioritization and management of software requirements.

Users can provide feedback on software products in app stores, social media, etc. In addition, software vendors collect large amounts of implicit feedback. The systematically collected implicit and explicit user data serves as the basis for decisions in the RE process.

Usable Security & Data Protection

For end-to-end security, security solutions must be user-friendly. This means that security mechanisms must fit into the user experience so intuitively that they are hardly noticeable by the user. Security and privacy mechanisms can only provide effective protection if users are both motivated and capable of using them.

Progressive Disclosure

Progressive Disclosure is a pattern of interaction in which information and actions are spread across multiple screens (e.g., a step-by-step login process). This is intended to reduce the likelihood that users will feel overwhelmed by what they are presented with.

What's behind the trend?

Low-code & No-code platforms

Low-code and no-code are development approaches in IT that require little or no programming knowledge. While low-code requires little programming effort, no-code platforms do not require the user to program at all.

The power of Tech Background

Although user-centered design focuses on the users of digital solutions, designing good digital solutions also requires a solid understanding of the technologies and devices used. It is helpful for designers to have an overview of the possibilities and limitations of the devices, to know the advantages and pitfalls of the forms of interaction in human-machine interaction (keyboard, mouse, touchscreen, speech, gesture), to be able to assess the technical maturity of end devices, and to generally have a basic understanding of IT architecture.

Playful UX / Gamification

As UX designers, when we design a new, complex, interactive tool or introduce new functionality, our job is to get users to complete a user journey without noticing the journey itself.

Instead of trying to motivate users to complete journeys for which they have no personal motivation, we should rather use their natural inclinations and play instincts to get them to interact with our products.

What's behind the trend?

Anticipatory Design

The goal of this discipline is to create automated, predictive, and anticipatory systems. The user experience is thus optimized by predicting or proactively anticipating the user's next interaction. Thus, there must be an interaction of technology, machine learning & UX.

AI driven UX

This method refers to the use of AI to support and enhance the RE & UX process.

This is understood to mean both that we, as digital designers, design an AI-based application based on different values and needs; and that AI is an augmented intelligence that efficiently performs tasks for us.

Product Ownership - Product Value & KPIs

As a Product Owner (PO), maximizing the value of the product delivered to the customers and users is just as much a part of the job as the functional design of the product. What value is depends on the context in which the POs finds themselves. For example, value can be "value to the business," "value to customers," "knowledge value," and "technical value." A PO can measure value in many different ways, but the most important thing is that he actually measures value, validates it, regularly questions his methods and adjusts them if necessary.

What's behind the trend?

Conversational User Interface Design (CUI Design)

Conversational Interfaces are, strictly speaking, nothing more than dialogs between a person and a bot or several people. CUIs offer the user the opportunity to communicate with the computer in its natural language, rather than with a special command syntax. The design of CUIs is about how and where a dialogue takes place, as well as the design of the dialogue itself that a user has with a real person or bot.

UX Writing & Microcopy

UX Writing is the writing of user-friendly texts that are intended to provide a positive UX. One part of UX writing is microcopy. Anything that does not belong to any continuous text on a screen and is not content is microcopy. This can be buttons, dialogs, or small pieces of information, for example. In principle, this includes everything that helps users to find their way within the app or web application.
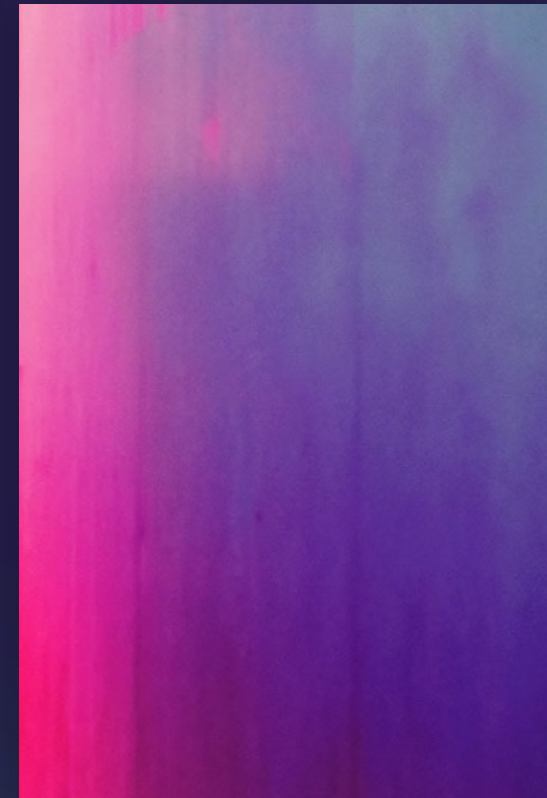
Trends and their maturity in the area of Human Interactions.

› Full Body Tracking (S. 29)

› Head Motion Tracking (S. 29)

› Touchless Touch (S. 29)

› Emotion Detection & Recognition (S. 30)

› Eye-based HMI (S. 30)

› Mid-air Gestures (S. 30)

› ID Authentication / Face Recognition (S. 31)

› Brain-Machine-Interface (S. 31)

› Voice User Interface (S. 31)

› Chatbot (S. 32)

› Vibration (S. 32)

› Gesture control (S. 32)

› Haptic VR (S. 33)

› Smell-based UI (S. 33)

What's behind the trend?

Full Body Tracking

Full-body tracking is often considered the Holy Grail for the virtual reality experience. The ability to imitate real body movements in an avatar is something that greatly enhances immersion in VR and offers countless possibilities for new behaviors. However, this technology is not only used in entertainment but also for industrial purposes, for example.

Head Motion Tracking

Head motion tracking refers to a motion tracking method that detects the position, orientation and movements of the head. It also makes it possible to provide a display that corresponds to the viewing angle or, for example, to enable control using the head. Sensors on the head or one or more cameras directed at the head can be used for such optical tracking.

Touchless Touchscreens

This technology uses artificial intelligence that predicts what the user intends to do and executes the movement. This technology uses a gesture tracker, a visual or RF-based sensor, information about the user, environmental conditions, and even an eye-tracker to determine what the user wants to do.

What's behind the trend?

Emotion Detection & Recognition

Emotion Detection & Recognition (EDR) is a method for recognizing human emotions (such as joy, sadness, anger, ...) by incorporating technological capabilities such as facial recognition, speech and voice recognition, biosensing, machine learning, and pattern recognition.

Eye-based HMI

Eye tracking in itself is not a new trend in UX. It has been used for many years in user testing when the goal is to gain deeper insights into how users interact with technology.A new use case is controlling a system via eye tracking.

Mid-air Gestures

Mid-air gestures are defined as gestures that are executed freely in 3D space without necessarily touching the display. Mid-air gestures can be performed with one or more body parts.

What's behind the trend?

ID Authentication / Face Recognition

A facial recognition system is a technology capable of matching a human face from a digital image or a video image to a database of faces; it is typically used to authenticate users through ID verification services and works by detecting and measuring facial features from a given image.

Brain-Machine-Interface

Brain-machine interfaces (BMI), or brain-computer interfaces (BCI), enable communication between the brain and a connected device or computer.

BMI is based on the assumption that the simple thought of an intended behavior, such as raising an arm, triggers changes in brain activity. BMI measures these changes and converts them into control signals, e.g. into digital commands to a robotic arm.

Voice User Interfaces (VUI)

A Voice User Interface is the user interface for voice input and output.

Via such a voice-controlled interface, the user can intuitively enter information and control instructions. This is much faster than, for example, textual input.

What's behind the trend?

Chatbot

The term "chatbot" is a compound of chat and robot. A chatbot is therefore a robot with which a user can communicate. A chatbot is often used on websites for effective customer communication and support. Communication takes place via a text field or voice recognition.

Vibration

The purpose of using vibration is to provide useful information. To develop suitable haptics here that convey appropriate information, we need to understand how people interpret vibration patterns for success, failure, or neutral states. Most popular mobile devices have built-in haptics. These are standard patterns that designers and developers can use to enhance the experience.

Gesture control / Design pattern for gesture control

Gesture recognition, as a new interaction pattern, aims to teach our devices to master human movements so they can instantly interpret what they mean, similar to how humans interact with each other. Human gestures include facial expressions, hand movements, sign language, gait, posture, and more.

What's behind the trend?

Haptic VR

Giving users the feeling of being right in the middle of things - that is the goal of virtual reality. Attempts are being made to address many human senses through software and hardware in order to make the scenarios even more realistic. In the audiovisual field, we are already getting very close to this. The integration of haptics is increasingly becoming the focus of current trends and developments.

Smell-based UI

Thanks to the structure of the human brain, smell is incredibly stimulating. The olfactory cortex - the part of the brain that processes smells - is part of the same system that stores your feelings and memories. For this reason, a whiff of certain aromas can trigger very specific memories. Moreover, the sense of smell is one of the most underrated senses. Increasingly, artists and designers are exploring the creative potential of scents. Smells have enormous potential for AR and VR applications because they appeal so directly to our emotions.

We are always there for you!

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