

SUNZINET

Accessibility

How to Make Web Design
Work for Everyone

Talk given by Linnea Erlich & Sebastian Spill

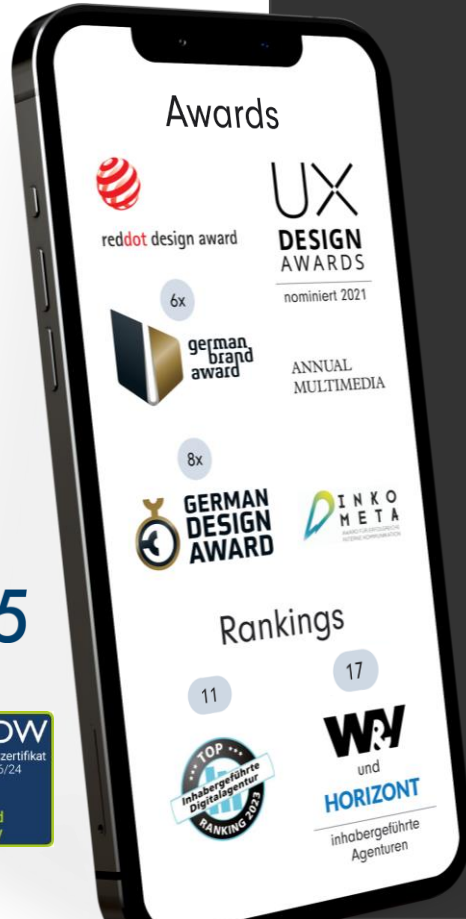
TYPO3 Developer Days 2024

Karlsruhe, August 1st



WHAT DRIVES US

We accelerate & grow your business



160

Employees

in 17 interdisciplinary teams

2

Managing Directors

Georges Wolff (Founder)
Alex Gruhler (since 2007)

16

million € Group Turnover

In the year 2023

11.

largest owner-managed
agency in Germany

ibusiness-Ranking

25

Years of experience

since 1999

7

Locations

Cologne (HQ), Hamburg, Frankfurt,
Stuttgart, Gdansk, Poznan, Innsbruck

TYPO3 SOLUTION PARTNER

Our TYPO3 expertise

- Over 20 years of experience
- 20+ TYPO3 experts
- 100+ successfully completed TYPO3 projects



TYPO3 CMS
Certified editors



TYPO3 CMS
Certified integrators



TYPO3 CMS
Certified developers



TYPO3 CMS
Certified consultants

LET'S BEGIN

*„Beauty is only beautiful
if it's for everyone.“*

... and everyone can have or get a barrier.
The spectrum is diverse:

- Physical (blindness, arthritis, etc.)
- Cognitive (learning disability, etc.)

But also simply not understanding a language in a foreign country or being injured for life in an accident can present you with a barrier at any time.



**1 billion
people with
disabilities =
approx. 15 %**

LET'S BEGIN

„Beauty is only beautiful if it's for everyone.“

The paradigm „form follows function“ has never been more important than in the context of Accessible Web Design.

Nevertheless, the necessity of following accessibility requirements – now and even more in the future – does not mean that Accessible Web Design can't be beautiful.

Let's see how – in the following case of the „berufswahlapp“...



**1 billion
people with
disabilities =
approx. 15 %**

A young man with short hair, wearing a light green sweater over a dark blue t-shirt, is looking down at a tablet computer. The tablet screen shows a purple icon with a white silhouette of a person's head and shoulders. In the background, other students are blurred, suggesting a classroom setting.

CASE STUDY

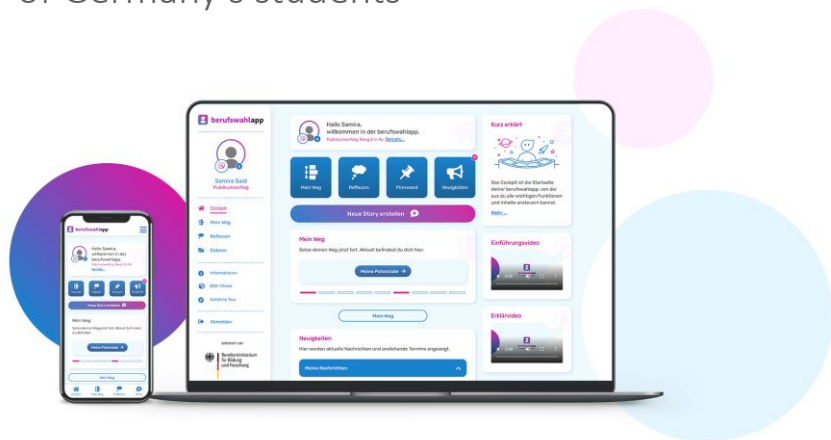
berufswahlapp
(„Career Choice App“)



„Career Choice App“

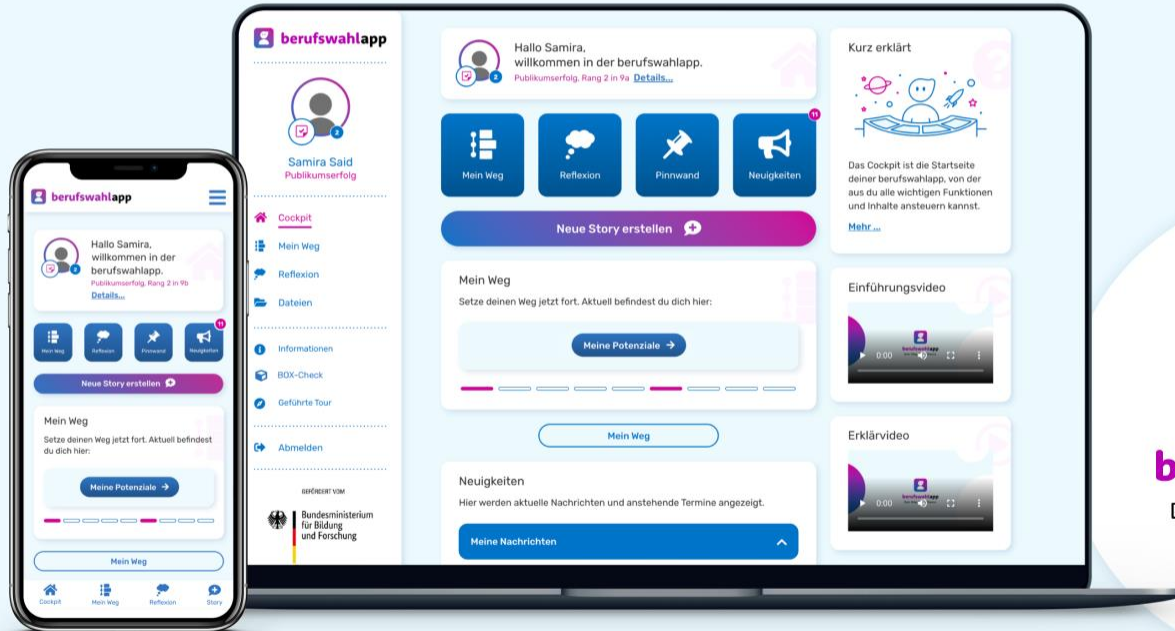
App and Brand Development

Nationwide usable e-portfolio
for the professional orientation
of Germany's students



Screenshots from layout phase – current state may differ. Confidential case, please do not share publicly!

Professional Orientation in Pocket Format



berufswahlapp

Dein Weg. Deine Chance.

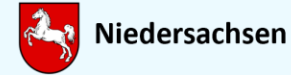


berufswahlapp

- Ongoing development project of a nationwide consortium since 2018
- Scientifically based pedagogical concept
- From impractical analog “Berufswahlpass“ („career choice pass“) folder with low usage to fully digitalized, accessible solution (PWA)
- High level of data protection, scalability and accessibility
- Target group oriented User Experience and Brand development (incl. brand sound effect for the visually impaired!) tested and continuously optimized in 3 phases with over 6,000 students and teachers
- Advantages of the digital app medium such as interactive task types (with particular focus on accessibility!) and gamification



Participating Federal States



Die Landesregierung
Nordrhein-Westfalen



In cooperation with



With financial support from the state of North Rhine-Westphalia and the European Union



Die Landesregierung
Nordrhein-Westfalen



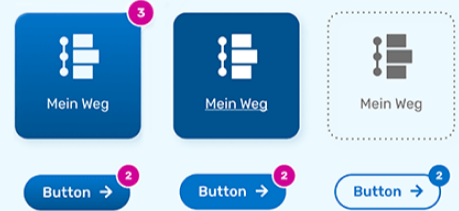
Students & Teachers in Focus



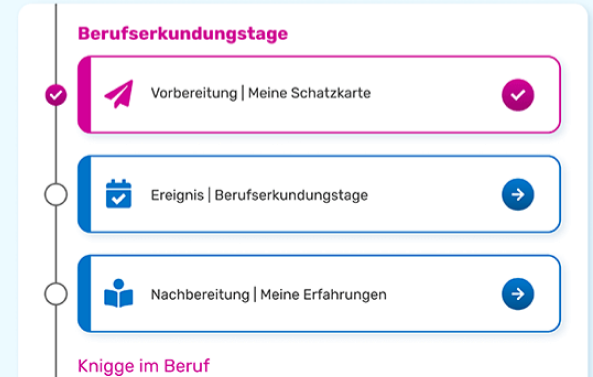
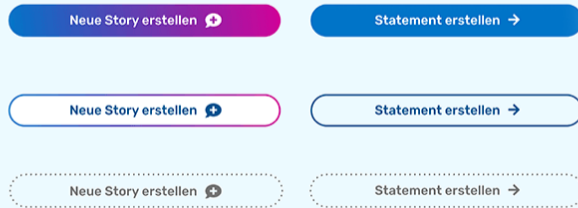
holistic
stereotype-free
inclusive
culturally sensitive



The Design of the berufswahlapp



Rubik Light
Rubik Regular
Rubik Bold



The UX & UI of the berufswahlapp



The Interactive Tasks & Accessibility



Like-/Dislike-Liste

Welche Berufe gefallen mir?



Bald gest du ins Praktikum, um erste Erfahrungen in der Praxis zu machen. Schau dir die folgenden Bilder an und like die Berufe, die dich ansprechen. Gehe dann weiter mit der Aufgabe Berufe sortieren.



Künstler*in



Like Dislike

Fragebogen

Berufe Quiz



Du sollst ein Praktikum machen. Weißt aber noch nicht wo? Durch unser Quiz lernst du verschiedene Ausbildungsberufe kennen. Welcher verbirgt sich hinter diesem Quiz?



Welchen Beruf stellen wir hier da?

Was weißt du über den Beruf?

Wie lang dauert die Ausbildung?

- 1 Jahr
- 2 Jahre
- 3 Jahre

Wie gefällt dir der Beruf?

Lückentext

Lückentext



Beschreibung/Aufgabenstellung

Die Fortbildung

Eine Fortbildung ist Teil der

Bitte auswählen

und beinhaltet

Bitte auswählen

oder neue

Bitte auswählen

Eine Fortbildung ermöglicht es zum Beispiel, sich an

Bitte auswählen

Entwicklungen der Berufsweit anzupassen. Sie findet

teils in der

Bitte auswählen

Doch Fortbildung ist nicht gleich Fortbildung. Es gibt

verschiedene Arten der beruflichen Qualifikation, die sich

an verschiedene

Bitte auswählen

richten und somit unterschiedliche

Bitte auswählen

aufweisen. Es gibt Fortbildungen mit den Schwerpunkten

Bitte auswählen

Bitte auswählen

Bitte auswählen

Bitte auswählen

Bitte auswählen

und



Tasks

Barrierefreiheit

Hoher Kontrast


Aus Ein

Leichte Sprache

Aus Ein

BITV

WCAG

 Hi Kim,
willkommen in deiner berufswahlapp!
387 Punkte



Mein Weg



Reflexion



Dateien



Hilfe

Neue Story erstellen 

Mein Weg

Setze deinen Weg jetzt fort. Aktuell befindest du dich hier:

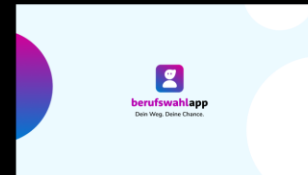
Potentiale erkennen 

Kurz erklärt

Das Cockpit ist die Startseite deiner Berufswahlapp, von der aus du alle wichtigen Funktionen und Inhalte ansteuern kannst.

[Mehr Infos](#)

Einführungsvideo



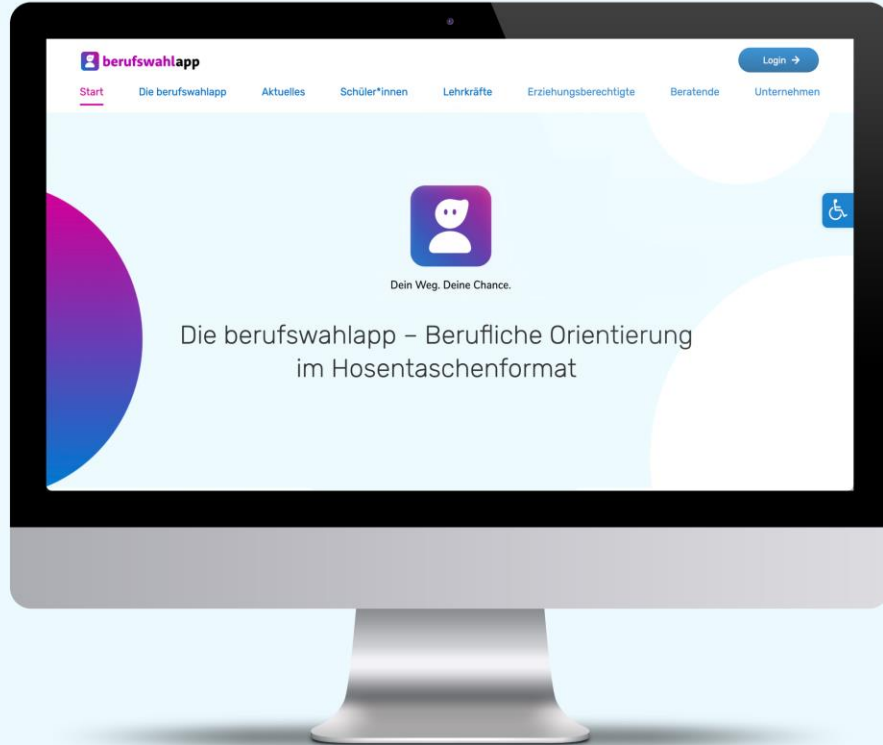
Best color for
contrast mode (not white!):

#F8D648

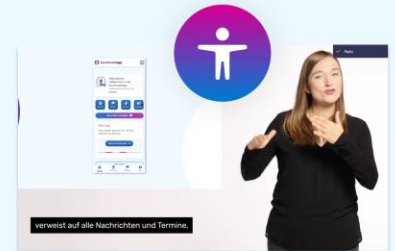
The Contrast
Mode of the
berufswahlapp:

Tested by
a class of students
with visual
impairments

Landingpage & Accessible Videos in the App



Subtitles



Sign language

... + versions in easy language and with individualized descriptions for visually impaired students and teachers

Most Important Learnings



Highly prioritise
stakeholder
management



Never lose absolute target
group focus (especially in
relation to stakeholders)



Test, verify
assumptions
and correct



View accessibility not
as an obstacle but as a
central topic for the future

OVERVIEW ACCESSIBILITY

How to Make Screen Design Work for Everyone



Summary of General Regulations (WCAG)



Structure, Links & Navigation

Descriptions & alt-tags

2 ways of access to content
(eg. via search and navigation)

Forms, Inputs & Feedback

Permanently visible
description of input fields

Fail/success and status
messages with clear
descriptions

Non-text, Audio & Video

Alt-tags for all images to be
read out by screenreader

Audio files with transcripts
Video files with subtitles

Information & Context

Headlines h1-h6
Interactive texts need to be
declared, eg. underlined
Responsive Design
Simple Language

Keyboard Navigation

Entire page is usable via
keyboard navigation without
mouse (test it yourself with
eyes closed!)

Touch & Sensory Navigation

Swipe and other sensory
gestures with alternative
possibilities to navigate,
eg. arrows

Animations

No flashy animations
(epilepsy!)
Length max. 5 seconds or
deactivatable

Syntax & Code

Perfect HTML-markup with
correct labels throughout
the code
Perfectly logical order of
elements

How do I make Forms, Inputs & Feedback Accessible?

Forms, Inputs & Feedback

- Respect the **Accessibility Tree** and follow the semantic rules.
- Make sure your custom form and input templates **show the description permanently**.
 - *aria-describedby*
- Give literal feedback. **Place the error message inline and make it literal**.
 - *aria-invalid*, *aria-errormessage*
- Enrich feedback not only by pointing out mistakes, but **give advise** on how to resolve the error.
- **Use *tabindex*** if the layout and the intended fill out sequence interfere.

```
<!-- ContactForm.html -->
<form action="{f:uri.action(action: 'submitForm')}}" method="post" class="contact-form">
  <div>
    <label for="name">Name:</label>
    <p id="input-name">
      Please enter your last name.
    </p>
    <input type="text" name="name" id="name" required
      aria-describedby="input-name"
      aria-invalid="{f:if(condition: validationResult.properties.name, then: 'true', else:
        'false')}}"
      aria-errormessage="name-error"
    >
    <f:if condition="{validationResults.properties.name}">
      <div class="error-message" id="name-error" role="alert">
        {validationResults.properties.name.0.message}
      </div>
    </f:if>
  </div>

  <!-- Repeat the same for other form fields -->
  <!-- ... -->

  <div>
    <input type="submit" value="Submit">
  </div>
</form>
```

How do I make Non-text, Audio & Video Accessible?

Non-text, Audio & Video

- For images always provide the **alt tag**, a **title** as well as a connection to the description with the **aria-describedby tag**
- **The only exception** to this is graphical content that has **no informative function**
- For video always provide the **aria-label**, **aria-describedby** and **subtitles** with a track element
- Custom controls have to be added to ensure cross browser compatibility

```
<!-- _MediaItem.html -->

<f:if condition="{mediaItem}">
  <f:switch expression="{mediaItem.type}">
    <f:case value="image">
      
    </f:case>
    <f:case value="video">
      <video aria-label="Video Player" aria-describedby="description-{contentObjectData.uid}">
        <source src="{mediaItem.url}" type="{mediaItem.mime_type}">
        <track kind="subtitles" src="subtitles.vtt" srclang="mediaItem.lang"
          label="Subtitles" default />
        Your browser does not support the video tag.
      </video>
      <div class="controls">
        <button class="playpause" aria-label="Play/Pause" title="Play/Pause">
          <!-- SVG icons for Play and Pause -->
        </button>
        <button class="stop" aria-label="Stop" title="Stop">
          <!-- SVG icons for Stop -->
        </button>
        <div class="time" aria-live="polite" aria-label="Current Time">00:00</div>
      </div>
    </f:case>
    <f:defaultCase>
      <a href="{mediaItem.url}" target="_blank">{mediaItem.originalResourceIdentifier}</a>
    </f:defaultCase>
  </f:switch>
  <div id="description-{contentObjectData.uid}" class="visually-hidden">
    {mediaItem.description}
  </div>
</f:if>
```

User Experience Best Practices



Colors

Clarify standard, AA or AAA.



Use sufficient contrast for texts 4,5:1.

Decorative elements may be lighter, but must never contain critical information.

Think black & white first!

Typography

Use **non-serif fonts**, not geometric fonts eg. with constructed „a“ of Futura.



System fonts are not mandatory anymore, clarify possibility of eg. Google Fonts (data security!).

Use sufficient **line-height**, at least 120% (**133%**< better).

Styling

Shadows can be used additionally, but **clear outlines** are recommended.



Remember to design an active element state!

For animations think **microanimations** with additional navigation elements, eg. slider arrows.

Functional

Interactive elements need **clear indication**, eg. arrow or underline.

Icons, if not widely known (eg. cart), must be described with additional text.

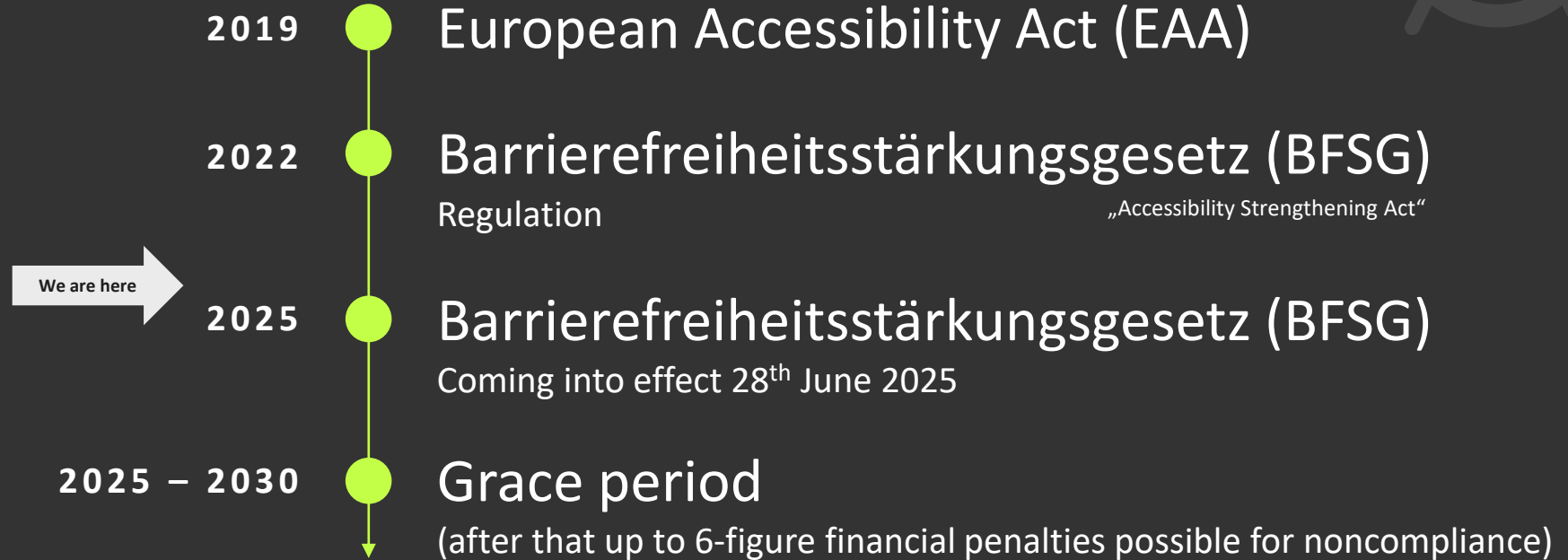
Clarify if „adjusting text-size“ is possible via browser-function.

Contrast function recommended; not black & white, but **black & yellow** according to test group.



Why is this so important?

There's a tight timeline, in EU & Germany!



Let's start preparing – today!

Shift from public to private sector

The following services are to be offered barrier-free from 2025:

- *Telephone services*
- *E-books*
- *Messenger services*
- *Services offered on mobile devices (including apps) in inter-regional passenger traffic*
- *Banking services*
- *Electronic commerce, including business initiation, e.g. via contact form on a website!*
- *Passenger transportation services (with regional restrictions)*

SEO relevant!

Readable for
screenreaders
& bots alike



Let's start preparing – today!

Taking accessibility on in new projects, at the latest

Failure to comply with the accessibility obligation may have consequences that may include termination of service.

*We can only advise not to wait within the available scope until there is no other way, but to **proactively remove existing barriers** or to **provide for accessibility from the outset** in new developments that are taking place anyway, e.g., a website relaunch.*

*Some may consider it a truism, but nevertheless: **Everyone benefits from barrier-free access!***



How to Make Accessibility Work in Projects

COMPROMISE

By making **solutions** for a **minority of users**, we must not forget the **requirements of the majority** (eg. good **User Experience & Design**)!

ANTICIPATE

Although making accessible projects will be more expensive at first, **in the long run** there will be a **cost reduction**, if we start today (no double costs/fines later)!

BALANCE

We will need to excel in the art of creating a **good balance** between uniting **business requirements** of our customers with the requirements of **accessibility**!



How to Make Screen Design Work for Everyone

FUTURE

Accessibility is mandatory for the **public sector today**, but will become **increasingly relevant** in the **private sector** in the **future!**

TEAMWORK

Teams working on accessibility projects need to work **seamlessly**: managers, information architects, designers and developers as „**one brain!**“!

MINDSET

Don't think like a manager, information architect, designer or developer, think like a person with impairments first and then **act accordingly!**



Mindset: Inclusion!



Exclusion



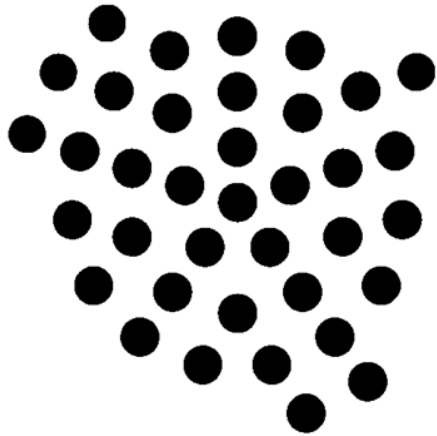
Integration



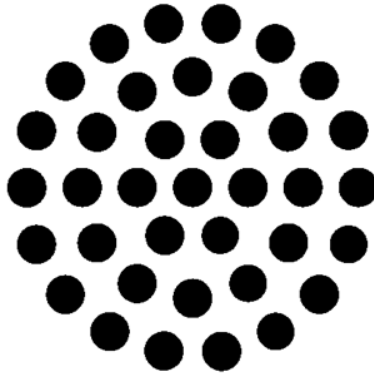
Inclusion

Test: find the mistake ;) ... (solution: see next slide)

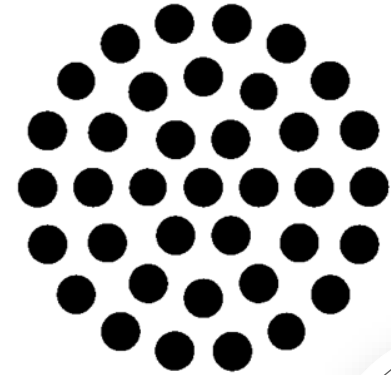
Mindset: Inclusion!



Exclusion



Integration



Inclusion

Possible solution:
Add eg. structure, outline...

(middle and right graphic look exactly the same to someone not being able to differentiate colors!)

Look & Feel

Example from Linnea's hometown: Blind persons can read this sign, while persons without an impairment can't really ;)

Kanzlei Weiler

Fachanwalt für Arbeitsrecht

Fachanwalt für Insolvenzrecht

Termine nach Vereinbarung



What role is AI going to play?

Semantic Search

By enhancing the quality of search results and turning the traditional list of results in to one correct answer makes information retrieval less of a challenge.

Speech-to-Text

AI supported tools to transform speech to text are already on the market. Use them to take away the need to type with your hands when asked for input.

Image-to-Text

AI supported alt- and description texts enhance accessibility for website users and reduce work for your editors.

Automated Translation

Translate user generated content with AI to display it in the current locale or even transform it to an easy language format.

My prediction ...



LINNEA ERLICH

As seen many times before, legal regulation is usually far behind actual reality.

Taking into account the rapid development of AI we are witnessing today, my guess is:

Once the Accessibility Strengthening Act comes into effect in June 2025 (not even one year anymore from now, which is an eternity in the digital arena), people with impairments will probably have far more sophisticated AI tools to aid them, than the project work we as human digital specialists are doing today for accessibility.

Nevertheless, the topic will stay as urgently relevant as it is today and we should still be prepared for the time to come. A time, which at least I hope will be a more, if not entirely, inclusive one, where we can all – despite our backgrounds and (dis-)abilities – access and experience the information and beauty of our world without barriers.

Sources

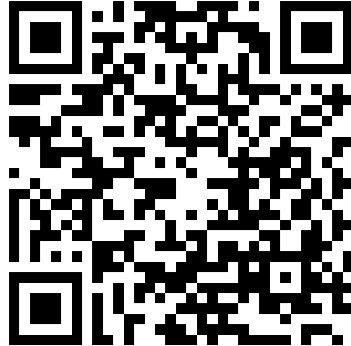
Our Favourite Overview

by the German Federation of the
Blind and Partially Sighted



[www.leserlich.info/
index-en.php](http://www.leserlich.info/index-en.php)

Color Contrast Tool incl. AA / AAA



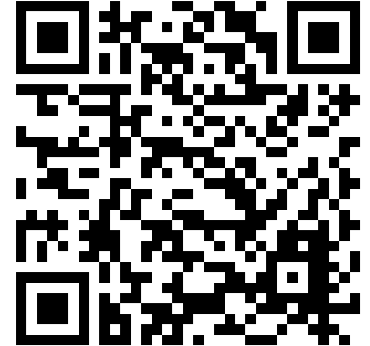
[https://snook.ca/
technical/
colour_contrast/
colour.html](https://snook.ca/technical/colour_contrast/colour.html)

Best „Best Practice“ we ever found ;)



[https://www.einfach-
teilhaben.de/](https://www.einfach-teilhaben.de/)

Our article about Accessible Apps



[https://www.omt.de/
digital-marketing/
barrierefreie-apps/](https://www.omt.de/digital-marketing/barrierefreie-apps/)

GET IN TOUCH =)

Creative Consultant & Senior UX Designer



LINNEA ERLICH

- Design Diploma (h_da Darmstadt), Creative Strategy Diploma (Miami Ad School EU)
- 13+ Years Agency Experience
- Creative Consulting, Branding & Strategy
- UX, UI & Mobile App Design
- Visual Concepts & Social Media
- Change Communication & Print Design
- 9-time Design Award Winner



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GET IN TOUCH =)

Chief Technology Officer



SEBASTIAN SPILL

- IT Specialist for Application Development
- Customer Advice & Leadership Skills
- 17+ Years of Digital Agency Experience
- Software & Architecture Consultant
- TYPO3 and other CMS (e.g. Storyblok, Contentful)
- E-Commerce (Shopware & Magento)
- Individual Web Applications
- JavaScript, PHP, SQL & NoSQL Databases



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