



Accessible by Design

INCLUSIVE FOR YOU, INCLUSIVE FOR EVERYONE

Digital Experience Design & Research IBIOL



Accessible by Design

The **Accessibility by Design** framework unites **five complementary initiatives** developed by NTT DATA IBIOL.

It integrates:

- maturity models,
- automated verification tools, manual validation and technical remediation,
- inclusive research with people with disabilities,
- accessibility-by-design practices,
- awareness and technical training.

Together, they embed accessibility across digital ecosystems, ensuring compliance with the European Accessibility Act and promoting inclusive innovation, **social impact**, and **equal participation** in life.

A Challenging Worldwide

IT Communications

86% of people in the world have no access to a broadband connection.

[Our World in Data](#)

Age

Among the 60% of people between 65 - 75 years old access the Internet daily.

[Our World in Data](#)

Culture & Language

Among the 56% of migrants in Spain, their mother tongue is not Spanish.

[Instituto Cervantes](#)

Ability

101 million people, 1 in 4 adults, have a disability in the EU.

[The Council of the European Union](#)

15% of the world's population, that is, 1 billion people, suffer from some type of disability (i), and the prevalence of disability is higher in developing countries.

[World Health Organization.](#)

Education

781 million adults in the world cannot read or write.

[UNESCO](#)



Opportunities

- Inclusive and Accessible E-commerce & Fintech
- Easy to Read and Plain Content
- Accessible Digital Documents
- Accessibility Regulations
- Diversity, Equity, and Inclusion strategies
- Explore other dimensions such as Gender Diversity, Race & Ethnicity Equity, and Digital Divide

A Challenging Society

Gen Z

Gen Z demands diversity and inclusion in the workplace.

World Economic forum

Gen Alpha

The first generation to grow up with full internet. Passionate for inclusion.

Gen Millennial

By 2050, there will be 2000 million people over 65 years demanding digital products accessible.

Who Disability Data

Gen X

Embracing technology and social media. Taking care of their Mental health.

Gen Silver

A diverse group of individuals is hoping for the beneficial use of technology to enhance quality of life.

Society is demanding to recognize diversity and their right to participate in all areas of life.



Opportunities

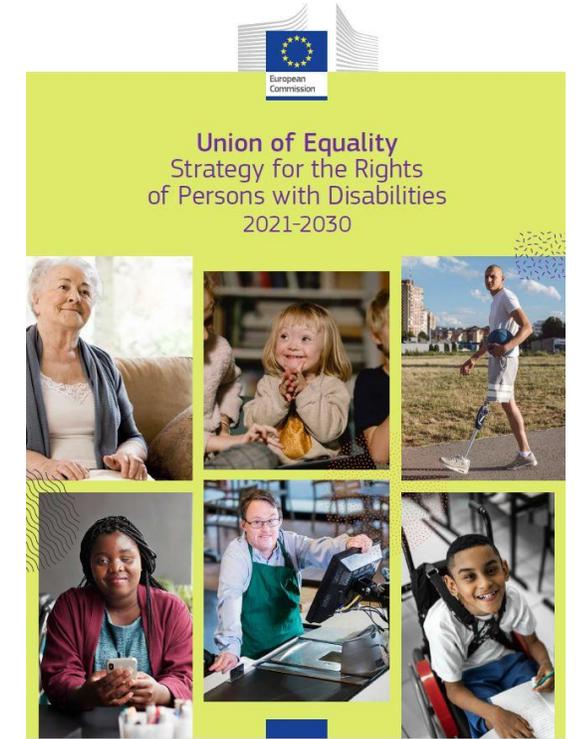
- Inclusive Workplaces
- Responsible & Ethic AI
- Building for inclusion
- Inclusion is part of Sustainability Design

A New-Old Legislation Landscape in the EU

The European Union's Commitment to People with Disabilities

In 2021, The Public Sector must comply with the Web Accessibility Directive (WAD). In 2025, the Private Sector must comply with the European Accessibility Act (EAA).

Europa wants to ensure a Europe for all with the Disability Rights Strategy for 2021-2030 and the Europe Action Plan on Web Accessibility.



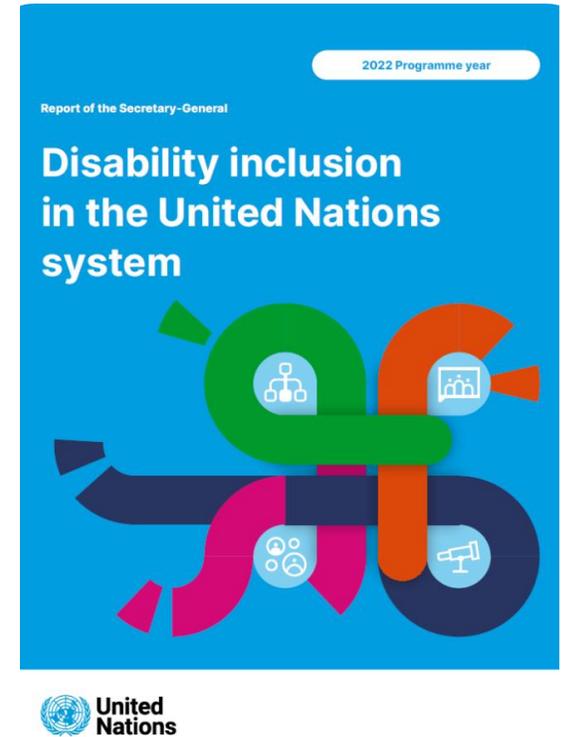
Opportunities

- Services to help DGs comply with the European Commission's web presence accessible (websites, apps, and social media content)
- Services to help DGs comply with Accessibility Europe Web Guidelines
- Services for member states to comply with the Web Accessibility Directive for Public Services in all of Europe
- Services for the private sector in Europe, Banking, E-commerce, and Transportation, to help compliance with the European Accessibility Act
- Accreditation for local Legislations

The UNDIS, a global strategy for the Rights of People with Disabilities

UNDIS Indicator 6: Accessibility

55 UN entities, 21 of which are under the Mutual Recognition Agreement, are required to report annually to the UN Secretariat on their progress in digital accessibility.



Opportunities

- DI services for Communication and IT Divisions to help them achieve indicator 6 objectives
- Explore services from other indicators
- Become the strategic ally for their interagency group objectives, reaching the whole UN system through collaborations with this group
- Become the strategic digital accessibility business ally, leveraging their MRA piggybacking practices to expand our services in the whole MRA group of 21 entities reporting to UNDIS

Inclusion at AI Era

Responsible AI: Trust & Ethics

Generative AI is a **powerful tool for creativity and innovation**, but we need to ensure that it is **used ethically and responsibly**.



Samuel Altman, OpenAI CEO

Opportunities

- Integrate guidelines to help guide Design and Development to building trusting AI solutions and Inclusive AI Coding
- AI products for Persons with Disabilities and Inclusive AI products
- Reduce bias in GenAI Content
- Enhancing Human-Computer Interaction
- Explore AI Cognitive products
- Create Inclusive AI Agents
- Accessible Training Materials with AI

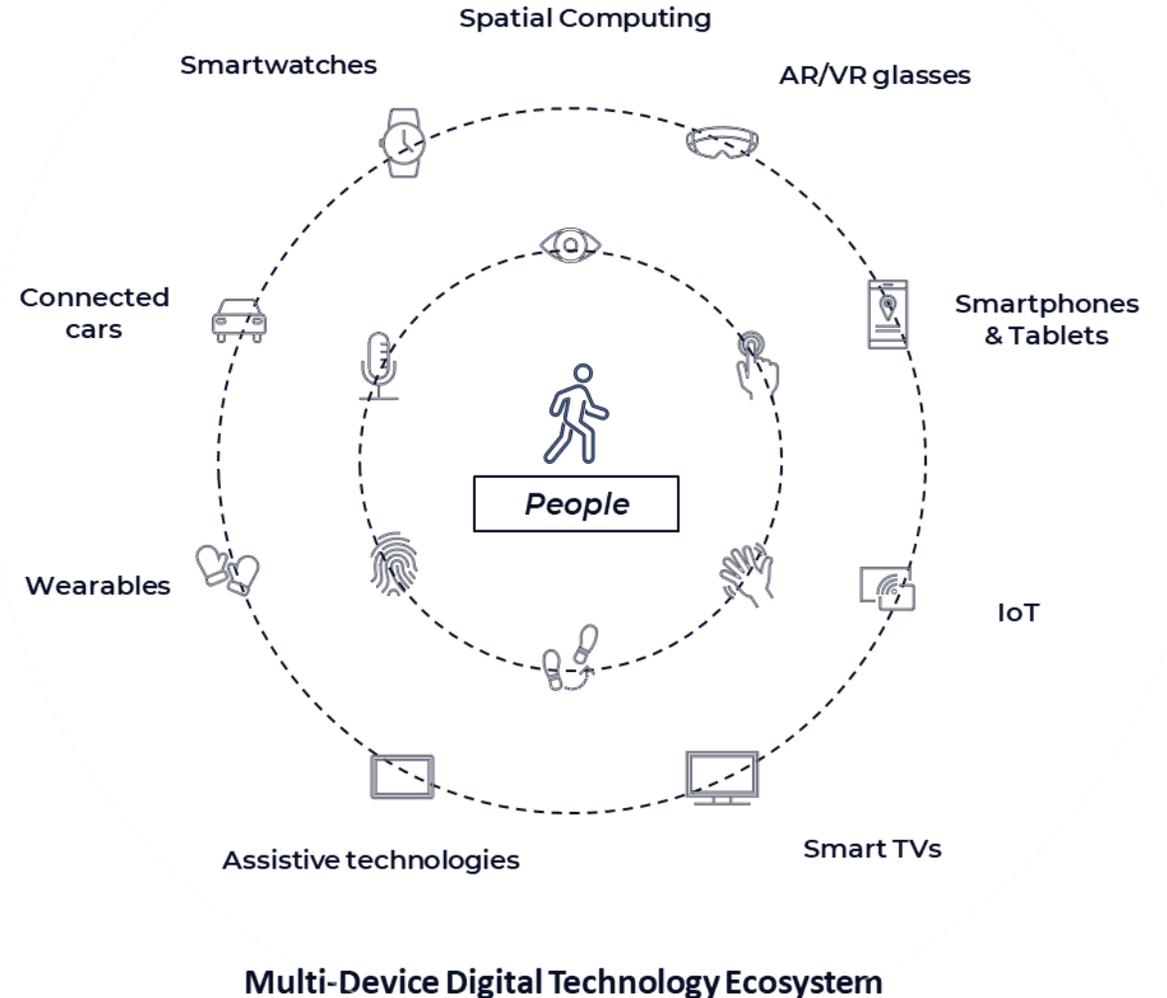
New ways of User Interface Interaction

Welcome to the Era of Spatial Computing

A new way of human-computer interaction techniques that are **perceived by users as taking place in the real world**, in and **around their natural bodies and physical environments**, instead of constrained to and perceptually behind computer screens such as **Apple Vision Pro**.

Opportunities

- Create accessible and inclusive patterns for Spatial Computer
- Integrate accessibility requirements in webs and apps for Spatial Computer
- Accessible and Inclusive XR, metaverse, and conversational experiences
- Inclusive AI Conversational



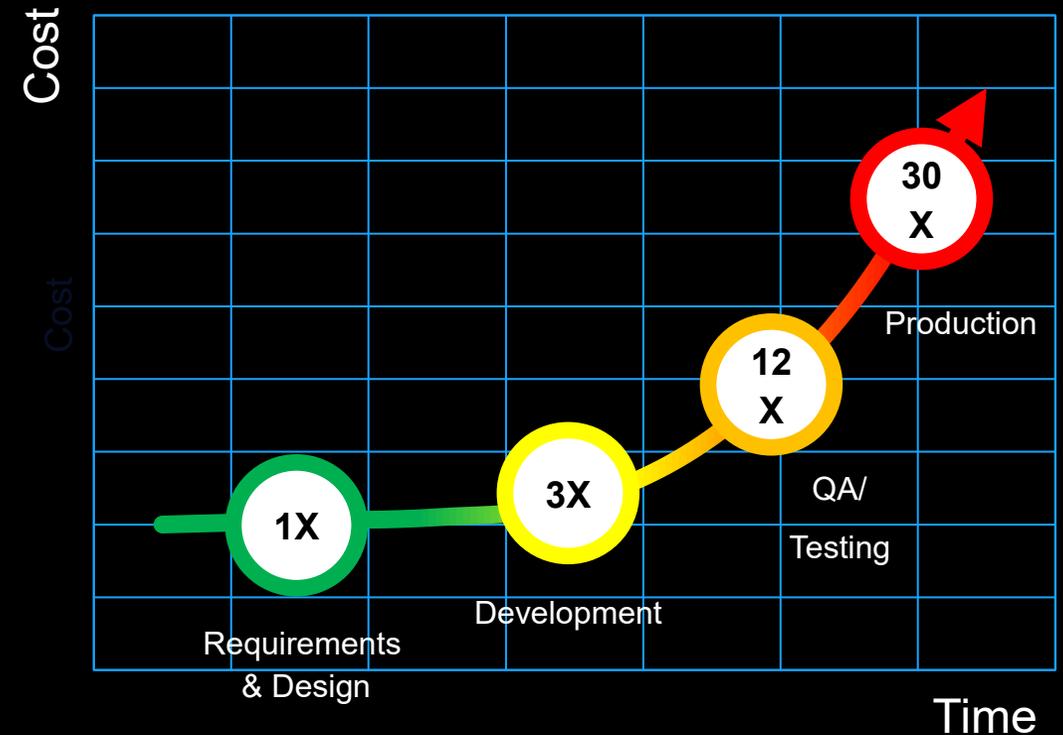
Low Clients' Maturity in the Digital Inclusion Market

Most clients are **not aware of the need to include accessibility requirements** throughout the digital development lifecycle. They are still asking for them prior to the launch.

The **cost of discovering errors after launch** is significant: up to 30 times more than if you detect them in the design phase.

Opportunities

- Integrate accessibility requirements from the planning to the maintenance phase of digital products.
- Monitoring accessibility after launching
- Accessibility Programs to keep accessible a huge volume of digital products
- Awareness training in Accessibility Regulations for our clients and their teams



Source: Deque Systems

Digital Inclusion Team

NTT DATA's Global Digital Inclusion Team is **committed to ensuring that disability inclusion is embedded in our culture, teams, and technologies' DNA**. Our mission is to create digital experiences that ensure everyone can participate on an equal basis in society.

+150 Professionals dedicated to accessibility

+50 Professionals with DEI roles

32 % Professionals with disabilities

15 Countries
 Spain / Belgium / Germany / Portugal / Italy / Brazil / México / Colombia / Perú / Argentina / Chile / UK / France / Switzerland



The Digital Inclusion Team Roles

Ensuring inclusion is in the DNA of the teams and knowledge areas of Experience Design at DEX.

INCLUSIVE RESEARCHER	INCLUSIVE STRATEGIST	UX/UI INCLUSIVE EXPERT	INCLUSIVE UX WRITER
Field Studies User Research Benchmarking Personas Desk research User testing	Digital Strategy Customer journeys Inclusive Scenarios Design Assessment Co-creation Policy Design	User flows & stories Concept models Information architecture Content strategy Prototyping Inclusive annotations Inclusive Art Design Design Systems	Inclusive communication Content creation Easy to Read & Plain English Conversational Experience Inclusive Copy
ACCESSIBILITY CONSULTANT & QA	ACCESSIBILITY ENGINEERS	ACCESSIBILITY CONVERSATIONAL	DIGITAL ERGONOMICS EXPERT
Automated and manual accessibility reviews Tests with people with disabilities Remediation plans Integration of accessibility in projects Awareness, Advanced, and Role-based training	Accessible programming Support development teams in accessible coding Front-tech (Angular, React...) Mobile, native, and hybrid Adobe Experience Manager Drupal and Liferay Design systems	VUI/GUI Co-creation Decision trees Conversational flows UI Design (APLs, webchats...) AI Agents	Digital ergonomics Workspace safety Keyboard strategies Hardware accommodation

Sustain Digital Accessibility with AI & Automated Tools

Our services combine the **knowledge of our human experts and certified in accessibility** with **AI-powered automated tools** to help our clients make data-driven decisions and maintain accessibility over time.

Accessibility Quick Audit Checks

- **High-level** compliance status digital products: websites, apps, IT tools, PDFs, digital kiosks software, etc
- **Detecting audits of low-hanging fruit** accessibility issues **to create data-driven remediation plans.**
- Automated and manual accessibility audit testing.

Accessibility Expert Audits

- **Conducting full accessibility maturity audits**
- **Perform regular audit checks** of digital products against accessibility standards such as WCAG 2.X, EN 301 549 via automated and manual audit tests **before and after going live.**

Accessible by Design

- **Detecting current and potential accessibility barriers** from the **early stages of design phases** reduces your technical debt and documents for development, thanks to optimal auditing services.
- **Accessibility checkpoints in the design and development stages**

Audits with persons with disabilities

Detecting current accessibility barriers from the **usage of a digital product for persons with disabilities** to enhance their experience.

Monitoring Dashboard

- **Tracking status and progress over time** to help sustain digital accessibility over time.
- **Reporting audit status** as digital content evolves.
- **Supporting UX,** development, content, and QA knowledge **Teams.**

NTT DATA Alliances and Partnerships for Effective Accessibility Audits with automated tools & AI



Acquia Optimize



DevTools



Monitor



Microsoft

all/yant

sharing real histories

Uniqueness



Día Internacional de las Personas con Discapacidad



No todas las discapacidades son visibles



Sustainability month



We collaborate with people. We raise awareness and share true stories.

Addressing accessibility and inclusion needs requires the ongoing participation of diverse people.

We have **agreements with organizations of people with physical, visual, mental, or hearing disabilities**, as well as with **neurodivergent organizations**, disadvantaged groups or immigrant communities, among others.

We promote hiring and inclusion practices for people with disabilities and organize and run bootcamps to train and offer job opportunities both within and outside of NTT DATA.



Our firm commitment to a more disability-inclusive world leads us to actively participate in community events and conferences, such as GAAD and IDPD, among others.



We promote and actively participate in NTT DATA's Culture & DEI initiatives in our region.

Digital experience research center

NTT DATA Barcelona has a **research center focused on user experience and design**, where we conduct research on the motivations and barriers people face when interacting with emerging technologies.

We also collaborate with our clients and partners to deeply understand their expectations when creating and optimizing digital solutions, always **prioritizing people and the inclusion** of their diversity. Furthermore, we partner with **inclusive social organizations**, involving them and considering their experiences and needs.

Our digital inclusive design methodology



EXPLORE

A space designed to connect with end users, start conversations, and let them interact with digital products.



ANALYZE

A comfortable room where you can spend hours observing your users to understand their behavior with your products.



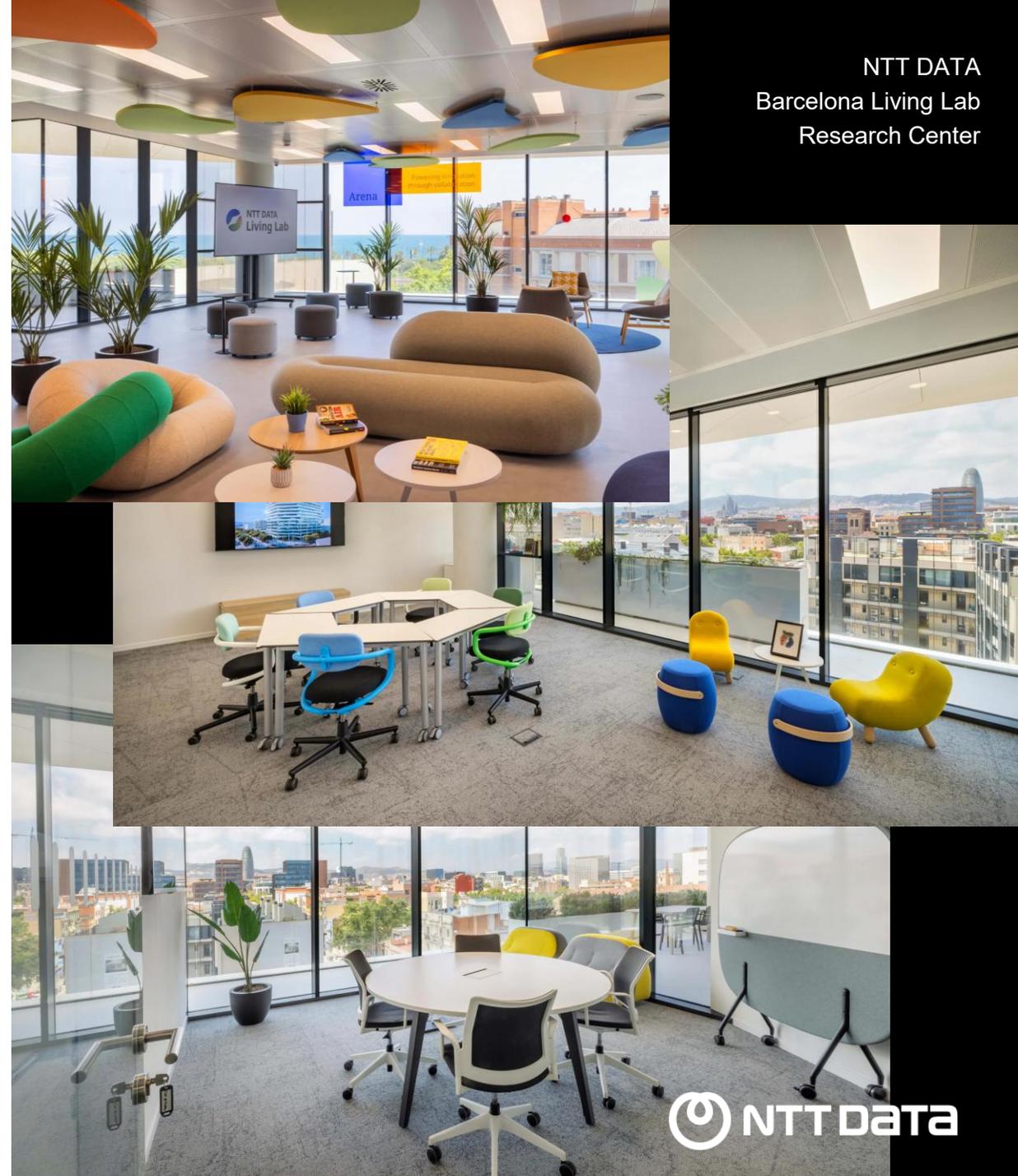
CREATE

Users and businesses can work hand in hand and generate great ideas. Having the right space allows you to unleash your creativity.



SHARE

An invention becomes real when you share it with the world. Why not do it in a multipurpose space that adapts to each audience?



Our Killer Services and Success Cases -1



Automated and Manual Testing. IRA & Accessibility Statements

- Since 2011, accessibility barriers have been addressed against current standards and legislation from the international and public sectors, banking, insurance, and industry sectors.
- Since 2018, inclusive remediation in the public sector has been addressed.
- Created a tailored methodology for addressing remediation from high to deep levels at digital products.

Inclusive Workplaces & Multi-year digital strategy

- Since 2021, we have been working with UNHCR on the definition and activation of the digital strategy for the inclusion of employees with disabilities.
- Preparatory study on exclusion and accessibility maturity in more than 20 offices around the world.
- Defining an inclusive strategy with the Disability Inclusion Resource Group and the International Disability Alliance (IDA)
- Diagnosis of accessibility in IT portfolio and corrective action plans.
- From 2019-2022, we help The Council of EU to provide better employment tools

Inclusive UX Writing

Providing Easy to read, plain language, and gender-neutral language into digital content for DGCOMM, Spain Justice Ministry.

Accessibility CoEs for an Inclusive Banking

- Since 2021, supporting Banking toward more inclusive end-to-end digital products in CaixaBank and Openbank.
- We help them address digital accessibility and current legislation.



Research with people with disabilities

Validating the user experience considering the spectrum of disability in Spain Justice Ministry, Junta Andalucía, DGCOMM & Council.

Training Services

Providing on-site and off-site training from awareness to technical aspects of inclusion: Council, UNFCC, Good Job Foundation.



Accessible by Design & Inclusive Design Systems

From requirements to DS foundations of user interfaces in the Public and Private Sector: Junta Andalucía, Gencat, Carpeta Ciudadana, Council, EPO, UNFCCC, Mapfre, CaixaBank, Openbank, and Santander.

Monitoring Strategies

- Providing a continuous monitoring service through automated tools such as AXE Monitor with manual validation.
- The results of this analysis help identify problems and barriers that users currently encounter and make data-driven decisions.

Our Killer Services and Success Cases - 2



Supporting UNHCR Digital Inclusive Strategy

We have been providing strategic advice on digital accessibility to UNHCR for years.

Roadmap and Deliverables

The Need

UNHCR needed a comprehensive understanding of the state of digital accessibility within the organization to define a strategic improvement plan and prioritize key initiatives to meet the requirements of UNDIS 6 goals.



Embedding accessibility into the UNFCCC development life cycle

Increased awareness and integration of accessibility throughout the design and development workflow.

The Need

The UNFCCC needed to develop 3 reporting tools for Parties to report their progress towards the Paris agreement commitments and targets. Those tools needed to be inclusive and sustainable, enabling people from various countries around the world to use it effectively.

The Benefit

The UNFCCC increased awareness and integration of accessibility throughout the workflow, from BA/BOs requirements to design, development, and quality assurance.

Roadmap and Deliverables

Deliverables:

- Accessibility requirements discovery and prioritization Workshop
- Accessibility confluence repository
- Accessibility training sessions for the design and development team
- Accessibility acceptance criteria in Jira tickets

Our Killer Services and Success Cases - 3



Improving the digital experience with persons with disabilities at DGACM

A practical assessment of the digital accessibility of the language-translation tool of the General Assembly.

📌 The Need

Colleagues with visual disabilities, such as blindness and low vision, reported significant barriers when using the translation module of the gDoc tool. The UN DGACM asked for an expert assessment, as this tool is essential for managing UN meeting translations.

📌 Main Activities

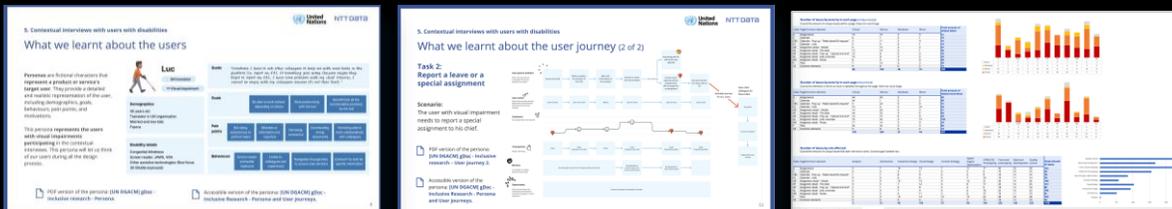
- Carry out an accessibility maturity assessment of the tool, team, and users' main activities workflow.
- Engagement meetings with key stakeholders, including decision-makers, technical leads, and users with disabilities.
- Conduct contextual interviews with tool users with disabilities to identify their real needs, in combination with an automated and manual accessibility audit.

📌 The Benefit

Integrated feedback from colleagues with disabilities within an automated and manual accessibility expert evaluation helped UN DGACM fully understand how critical the barriers were and how important it is to work towards a shift-left approach in the following developments.

📌 Deliverables

- Overall results of the contextual interviews, including the critical user journey and the top 5 main barriers to fix.
- Accessibility Audit report
- Quick wins for remediation
- Strategic Executive report with an action plan and strategic recommendations



From prioritizing accessibility to enhancing inclusivity

A comprehensive approach to assess the accessibility of a complex website while providing improvement action points.

📌 The Need

The Germany-based international NGO's preparedness to comply with the European Accessibility Act by 2025. In response, the NGO is proactively implementing measures to further enhance accessibility on their website.

📌 Main Activities

- Conduct a four-week assessment to ensure adherence to the Web Content Accessibility Guidelines (WCAG 2.1, level AA).
- 50+ assessed WCAG Criteria
 - 75+ components analyse via automated testing
 - 8+ pages analyses via manual expert testing

📌 The Benefit

Through a comprehensive accessibility audit, we helped the NGO gain transparency on their website accessibility status, including the actionable steps for resolution and prevention of each accessibility issue.

📌 Deliverables

The Accessibility Audit Report provided both visual representations and detailed textual explanations of each issue, organized by component. For each issue, the report highlighted its impact on users, the effort required to resolve it and identified solutions to address the issues effectively.



Our Killer Services and Success Cases - 4



Monitoring the European Website Domain

CHALLENGES

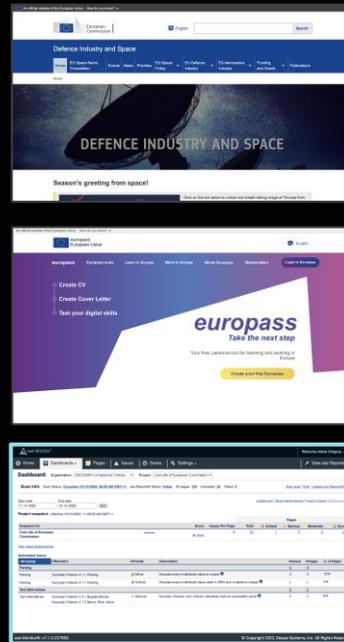
The European Commission wants to **improve the digital accessibility of EU websites and prevent citizens' digital exclusion**, thereby ensuring that the Commission fulfills its obligations in these areas.

GOALS

- ✓ Establish a continuous monitoring service using automated tools and manual website audits by our Accessibility Experts
- ✓ Provide data-driven decisions to help the Commission solve current problems and barriers and prevent them in relation to citizens' data protection and accessibility in the EU web presence.

OUR SERVICES

- Perform + 1000 automated accessibility audits to ensure compliance with WCAG 2.1, levels A and AA, by scanning each site using Axe Monitor and Axe DevTools, web accessibility assessment tools.
- Complement automatic tests with accessibility manual audits on a representative sample per website by our accessibility experts.
- Provide a quantitative assessment of each website's compliance level (compliance score, KPIs) at a global and individual level.



Name	DG/Executive Agency	# visits/year	Accessibility manual check	Accessibility score	No. of analysed pages	No. of pages with issues	No. of pages with critical issues	No. of pages with serious issues	No. of pages with moderate issues	No. of pages with minor issues	No. of issues flagged	Average no. of issues per page
Your Europe	GROW	5830000	Yes	93,60%	25	2	1	1	0	0	2	0
Press Corner	COMM	33117687	Yes	86,6%	24	4	2	2	0	0	17	1
Re-open EU web portal	JRC	27000000	Yes	20,00%	10	8	8	0	0	1	57	6
Audiovisual Portal	COMM	20107262	Yes	27,20%	25	25	8	17	0	3	96	4
Corporate Commission website (operated by DG COMM)	TARGD	12878204	Yes	96,00%	25	1	1	0	0	0	5	0
EESU - Clerk Access Interface	EMPL	10825421	Yes	8,00%	5	5	4	1	0	2	61	12
DG GROW main website	GROW	10237263	Yes	66,40%	25	10	6	4	0	6	53	2
European Youth Portal	EAC	8473439	Yes	96,00%	25	1	1	0	0	22	59	2
EMPS	EMPL	8170997	Yes	81,60%	25	5	4	1	0	3	27	1
European Union	COMM	5906254	Yes	84,80%	25	5	2	3	0	0	29	1
EURAKISS	RTD	3703000	Yes	87,83%	23	4	1	3	0	2	23	1
Regulated professions database	GROW	5550352	Yes	4,80%	25	25	22	3	0	0	145	6
Road Safety	SANTE	5500000	Yes	93,60%	25	2	1	1	0	0	20	1
Online Dispute Resolution	JUST	5360318	Yes	85,60%	25	6	0	6	0	0	14	1
The European Personnel Selection Office	EPSC	5336881	Yes	30,40%	25	23	9	14	0	2	85	3
Next Generation EU	COMM	4932983	No	55,00%	4	3	0	3	0	3	46	13



Assess the compliance of web portals against WCAG Guidelines 2.1, AA

CHALLENGES

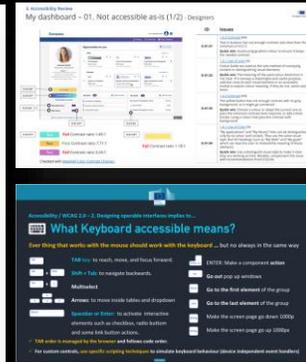
The European Commission is committed to digital accessibility and wants to ensure that its portfolio of web portals and IT applications complies with the requirements of the European Union according to the Web Directive 2016/2102.

GOALS

- ✓ Analyze the current state of accessibility maturity of public web portals and internal applications.
- ✓ Conduct + 100 regular accessibility audits and iterative checkpoints during the software development lifecycle to ensure compliance with accessibility requirements.
- ✓ Conduct usability testing with people with disabilities to assess the current user experience.
- ✓ Provide technical and awareness training on digital accessibility to the different team members.

OUR SERVICES

- Digital accessibility audits and usability analysis.
- Validation of the experience with usability tests with people with disabilities.
- Technical reports for the resolution of barriers. Executive reports for non-technical profiles.
- Training and support services to help technical teams fix accessibility barriers.



Our Killer Services and Success Cases - 5



Telefónica O2 Germany

Working on Accessibility Assurance beyond the European Accessibility Act

CHALLENGE

Telefonica O2 in Germany is committed to its customers in ensuring the long-term digital accessibility of their digital brands and ecommerce on the web and app as part of the new German legislation "Barrierefreiheitsstärkungsgesetz" that will come into force on June 28, 2025 complying with the WCAG 2.2 standard.

GOALS

- ✓ Analyze the current state of maturity in digital accessibility of its different brands (AS IS) to provide a long-term accessibility assurance and sustainability strategy by brand (TO BE).
- ✓ Evaluate digital accessibility automatically, manually and with audits with people with disabilities of their digital channels (+ 10 brands).
- ✓ Train all brand teams with training paths created specifically for their roles, processes and methodologies.
- ✓ Co-define the remediation process, drafting of JIRA tickets for design and development, retesting and subsequent monitoring of the accessibility achieved.

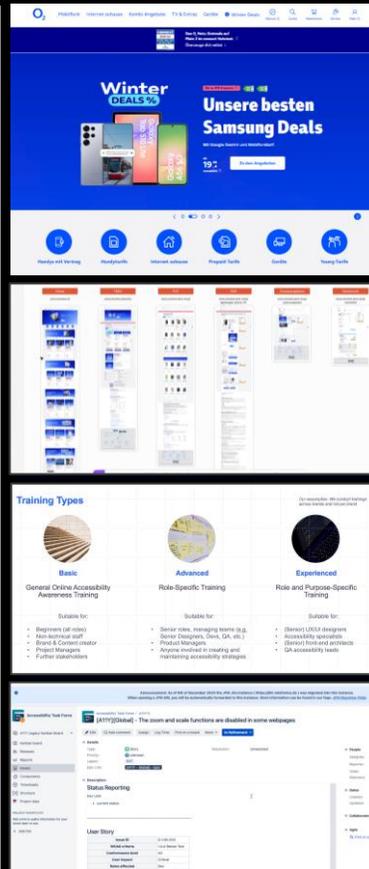
OFFERED SERVICES

Creation of an ad-hoc team made up of digital accessibility experts with visual, hearing and cognitive disabilities.

Accompaniment and strategic support to the Digital Accessibility Program of Telefónica O2 Germany.

Definition of the artifacts and validation flow for the remediation of the barriers found adapted to Telefónica's Agile methodology.

Support for the work teams of the different brands and Design Systems to integrate good accessibility practices into their day-to-day work.



SIEMENS Siemens UX Quality Check

Health Accessibility and usability audit checks to measure the quality of the digital user experience

CHALLENGE

Siemens IT has launched a new UX QA service within Software Development Quality Management with the aim of ensuring that applications that enter service take into account user needs for usability, accessibility and branding in both new and existing products.

GOALS

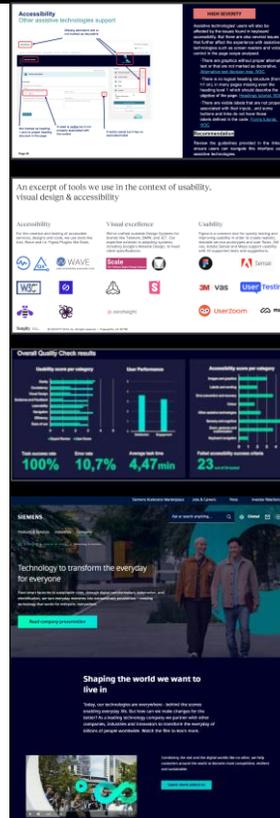
- ✓ Define a scalable and agile methodology of the UX Quality Checks service, work framework, monitoring of results in 1-week sprints.
- ✓ Address the expert review on usability, quick accessibility audits, and alignment with the Siemens visual brand (UX Health Checks) for a volume of +150 applications per year according to user volume, impact and capacity of the teams both before and after the product launch.
- ✓ Inventory and analyze the AS IS state of UX of all digital products to work on strategic and tactical recommendations, TO BE, UX improvement and compliance with WCAG 2.1, AA accessibility standards in products.

Combined team of expert product design and digital accessibility people with more than 5 years of experience

Automatic and manual accessibility audits to ensure compliance with WCAG 2.1, AA, and inclusive design standards

Preparation of different service artifacts such as usability and accessibility checklists to perform a homogeneous analysis of applications

UX Health Check's agile process, from kick-off to results presentation in 1/2-week sprints



Our Killer Services and Success Cases - 6

Openbank  **Leading banking**

Boost digital accessibility across your banking operations and services teams

CHALLENGE

Since 2021, we have been providing consultancy support in accessibility to design and development teams to ensure that their online and mobile banking services in all countries around the world comply with applicable accessibility legislation, integrating it as a requirement from the beginning within their processes.

GOALS

- ✓ Detect potential accessibility barriers and provide solutions to UX/UI and development teams. More +500 pages and 100 components audited.
- ✓ Document accessibility requirements for design and development teams and design system components.
- ✓ Raise awareness, provide guidelines, and train UX/UI teams to understand the importance of incorporating accessible design practices in their day-to-day work.

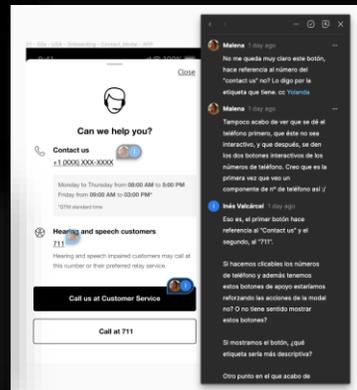
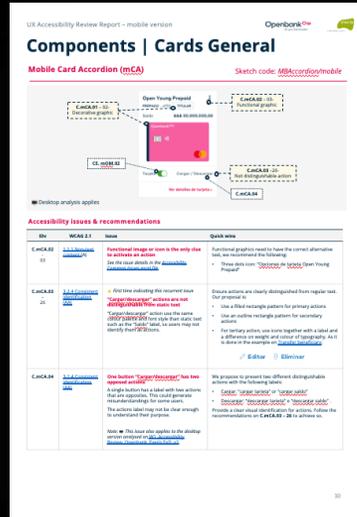
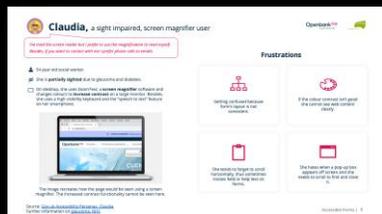
OUR SERVICES

 Inclusive design and accessibility reviews for mobile, hybrid, desktop and call center applications

 Accessibility notes for the development team

 Accessibility awareness and technical training for large teams

 Accessibility Checkpoints



Grupo Santander  **Leading banking**

Health Accessibility and usability audit checks to measure the quality of the digital user experience

CHALLENGE

Standardizing all of their digital products where AA accessibility and a strong inclusive approach were crucial to leave no customer behind. Digital Accessibility and Financial Inclusion become part of the pillars of its brand.

GOALS

- ✓ Integrate accessibility and inclusive design into the core of your Design System (SD) as it will be the foundation for building any digital product, across all channels and countries.
- ✓ Review the accessibility of SD elements and provide recommendations on how to make them fully accessible with WCAG 2.1, AA.

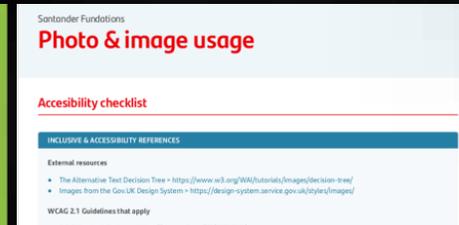
OUR SERVICES

 Accessibility revisions to DS fundamentals, components, and templates

 Assistance to Santander in international standards and legislation

 Documentation of accessibility requirements in the DS

 Inclusive design reviews of DS fundamentals, components, and templates





Accessible by Design

Digital Experience Design & Research IBIOL