

# E-Accessibility and Mainstream Technologies

## Universal Design Principles in Mainstream Products

# Disability

**Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which **in interaction** with various barriers may hinder their full and effective participation in society on an equal basis with others.**

[UN Convention on the Rights of Persons with Disabilities, Art. 1, Par 2]

- ▶ Dynamic vs static (medical-based) concept
- ▶ Big variety of disabilities and broad spectrum (from very severe to slighter disabilities)
- ▶ WHO (2011): 15% of the worlds population / Swiss Federal Statistical Office (estimation for 2013): 20% of the population in CH [6.9% with severe disabilities]
- ▶ **(Market-) relevant portions of the population (including old and very old persons) are affected**

# Accessibility and e-Accessibility

- ▶ **Accessibility** is a measure of the extent to which a product or service can be used by a person with a disability **as effectively as it can be used** by a person without that disability
- ▶ **E-Accessibility** is a measure of the extent to which information and communication technologies can be used by a person with a disability **as effectively as it can be used** by a person without that disability.

# Communication Technologies

## [Internet-based]

- ▶ Communication technologies have dramatically increasing impacts on **all aspects** of our lives... (as we know)
- ▶ 99% of them are **NOT effectively usable by / accessible for** persons with disabilities
- ▶ Those are therefore **frankly excluded** from education or formation, from vocational, social, cultural, and political life
- ▶ Access to information and knowledge is a **fundamental human right** [how to exercise it today, if the access to communication technologies is denied?]
- ▶ **How to ensure the right becomes a daily reality in the future?**

# A Few Questions

- ▶ Are websites of schools, universities, and other educational organizations accessible? – **Not many**
- ▶ Is e-Accessibility considered in the context of developing e-learning systems? – **Not that I knew**
- ▶ What about e-Accessibility of electronic documents (e-Books, enhanced e-Books, office documents, databases...)? – **Would be the moment to start thinking about**
- ▶ How many online shops are accessible? – **Very few**
- ▶ Are the needs of hard of hearing / deaf people considered? – **No**
- ▶ Are designers, software engineers, programmers, web developers, publishers, and others properly educated with respect to e-Accessibility techniques? - **No**

# Conclusion

Millions of persons are „naturally“ **excluded** from the „effective participation in society on an equal basis with others“.

How to remove the barriers?

How to make seamlessly work the **interaction** between a person and the communication technologies?

# Universal Design

## [Mainstream Products and Services]

"Universal design" means the design of **products, environments, programs, and services** to be usable **by all people**, to the greatest extent possible, without the need for adaptation or specialized design.

"Universal design" **shall not exclude** assistive devices for particular groups of persons with disabilities where this is needed

[UN Convention on the Rights of Persons with Disabilities, Art 2, Definitions]

- ▶ Low floor vehicles
- ▶ Screen Readers on Smart Phones
- ▶ Universally designed goods and services benefit **all people**, including those with disabilities

# Ways for Removing the Barriers

## ▶ **Universal Design!**

Following Universal Design principles **from the start** of a development

## ▶ **Standards!**

Following relevant mainstream / industry standards

## ▶ **Cooperation!**

Tech Companies – Disability Community [Communities] – Research

## ▶ **Research!**

Furthering e-accessibility relevant research

## ▶ **Routine!**

Making e-accessibility a routine when developing goods and services

## ▶ **Formation / Education!**

Seriously integrating e-accessibility techniques into curricula



# Digital Publishing

## Das gedruckte und das elektronische Buch

# Transformation – Anpassungsprozesse

## Druck- und Layout-Orientierung Anpassung an das mobile Zeitalter

statisch – dynamisch

langsam – schnell

Einfachverwertung – Vielfachverwertung

Print first – digital first

## Herausforderndes Change Management in der Verlagsindustrie

# Das „reichhaltige“ eBook

## ▶ Integration von Multimedia

Text, Ton, Bild, Video

## ▶ Interaktivität

Ermöglicht Interaktion zwischen dem Leser und dem Buch [Übungen, Prüfungen]

## ▶ Komplexe Strukturen

Sach- und Fachbücher, Lehr- und Lernmaterialien, wissenschaftliche Literatur

## ▶ Lektüre...

... auf dem PC, dem Notebook, dem Tablett, dem Smart Phone

## ▶ E-Accessibility

Bedienung der Wahrnehmungskanäle [visuell, akustisch, taktil lesen]

WCAG 2.0; Buchspezifisches, das von den WCAG 2.0 nicht abgedeckt wird

# Konvergenz der Standards

## Internet [W3C]

World Wide Web Consortium  
Basis: HTML 5, CSS, JavaScript

## EPUB 3. xx [IDPF]

### Industriestandard für elektronische Publikationen

International Digital Publishing Forum IDPF  
Basis: HTML 5, CSS, JavaScript und weitere W3C-Standards  
Zudem: Berücksichtigung von Eigenheiten der Form BUCH

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