



UNIVERSAL DESIGN - A TOOL TO USER-CENTERED TRANSPORT

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What is universal design (UD)?

„Universal design“ means the design of products, environments, programmes 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 CRPD, Art. 2.)



Standard

Design for All



Terminology

Universal design

- a method, a strategy
- responsibility of the manufacturer when designing a product, goods or services

Accessibility

- result of a universal design approach
- relates to groups and
- ex ante and social obligation as to UN CRPD

7 principles of universal design

1. Equitable
2. Flexible in use
3. Simple and intuitive to use
4. Perceptible information
5. Tolerances for error
6. Low physical effort
7. Size and space for approach and use





Global trends supporting UD

- ⦿ An ageing population
- ⦿ World Report on Disability (published by the WHO and the World Bank (15 % PWD))
- ⦿ Rates of disability are increasing due to ageing population , expected to increase to 120 million by 2020 in EU
- ⦿ Pwd and elderly are at risks of being digitally excluded
- ⦿ Global markets - users from different countries, regions, cultures and races - users' with different abilities, characteristics, knowledge
- ⦿ Human rights model of disability
- ⦿ UNCRPD, public procurement rules, standards
- ⦿ UD goes beyond concepts of barrier-free design, by removing differentiations between people (passengers) with and without disabilities and including all persons as potential users in the design process

Universal Design Information and Research Center

- In operation since 2013
- Run by a local DPO*
- Staff with different kinds and severity of disabilities
- Lead by a rehabilitation engineer
- Supported by architects, rehabilitation engineers
- Activities in cooperation with
 - Associations of Persons with Disabilities
 - Budapest Technical University
 - ELTE, Bárczi Gusztáv Faculty of Special Education
 - Budapest Transport Center



*Budapest Association of Persons with Disability

Universal Design Information and Research Center

Nothing about us without us!



Close co-operation between BTC and ETIKK

- ◎ In testing public transport vehicles (internal arrangements) and first electronic gate in Bp metro station (width of gates, contrast colors, tactility and easy reach of the ticketing machine)
- ◎ In developing solutions (safety belts installation on board, on designated places, door opening of metro trains, etc.)
- ◎ In disability awareness raising training for BTC staff
- ◎ In developing UD guidance for Budapest public transport infrastructure

How to reach transport for all

- ◎ Awareness-raising on universal design
 - to stress that the duty to observe accessibility standards applies equally to the public and to the private sector
 - designing and building, manufacturing following universal design from the earliest stages is cost-effective and economical
- ◎ Introduce training on UD for future and current professionals
- ◎ Involve users from the onset of the design
- ◎ Design and develop in cooperation with users (incl. persons with disabilities), their representative organizations and technical experts.

Economic benefits of UD

- ⦿ increase in potential customers gained by making a product more usable for diverse users
- ⦿ not only increases accessibility for persons with functional limitations but also make them convenient for everyone else
- ⦿ does not require a major change to the established design and/or manufacturing process
- ⦿ does not increase development time and cost, if diverse needs are considered in the initial design process
- ⦿ if diverse needs are incorporated into mainstream products, the cost will be shared among a larger market than if manufacturers must create special products e.g. for disabled people

Involvement of users in transport research and development

- ⦿ Users can offer a unique and complementary perspective in R&D of vehicles, infrastructure and transport services
- ⦿ Organizations of the users provide data relevant for the research on their members' needs.
- ⦿ Involvement of the users
 - to identify and prioritize the research/development agenda
 - from the onset to the end to ensure that results respond to their needs
 - with realistic timescales to have appropriate time for R&D to be completed in an inclusive way
 - Involvement also users whose voices are not often heard

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Thanks for your attention!