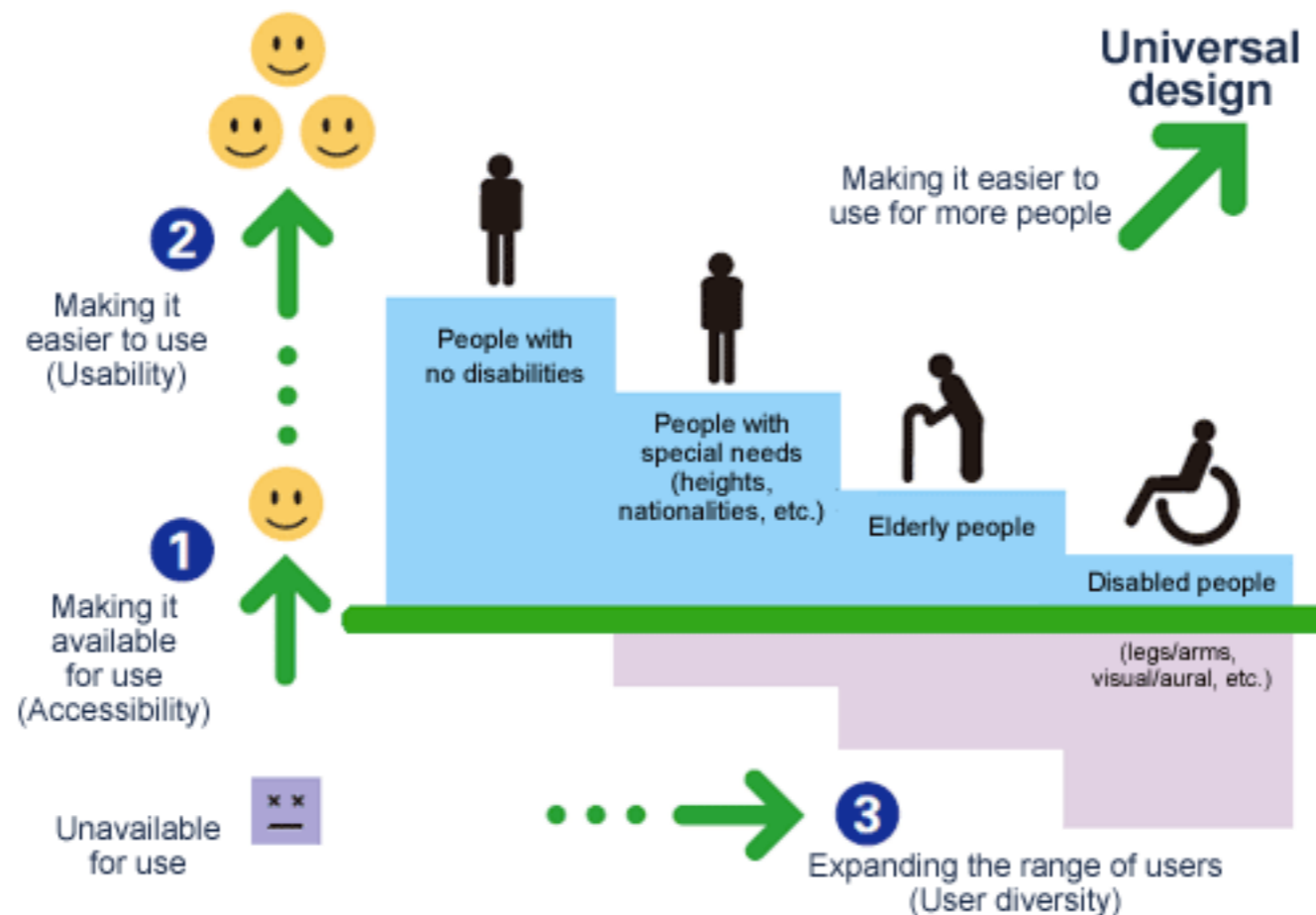


Universal Design of ICT

An Overview & Master's Thesis

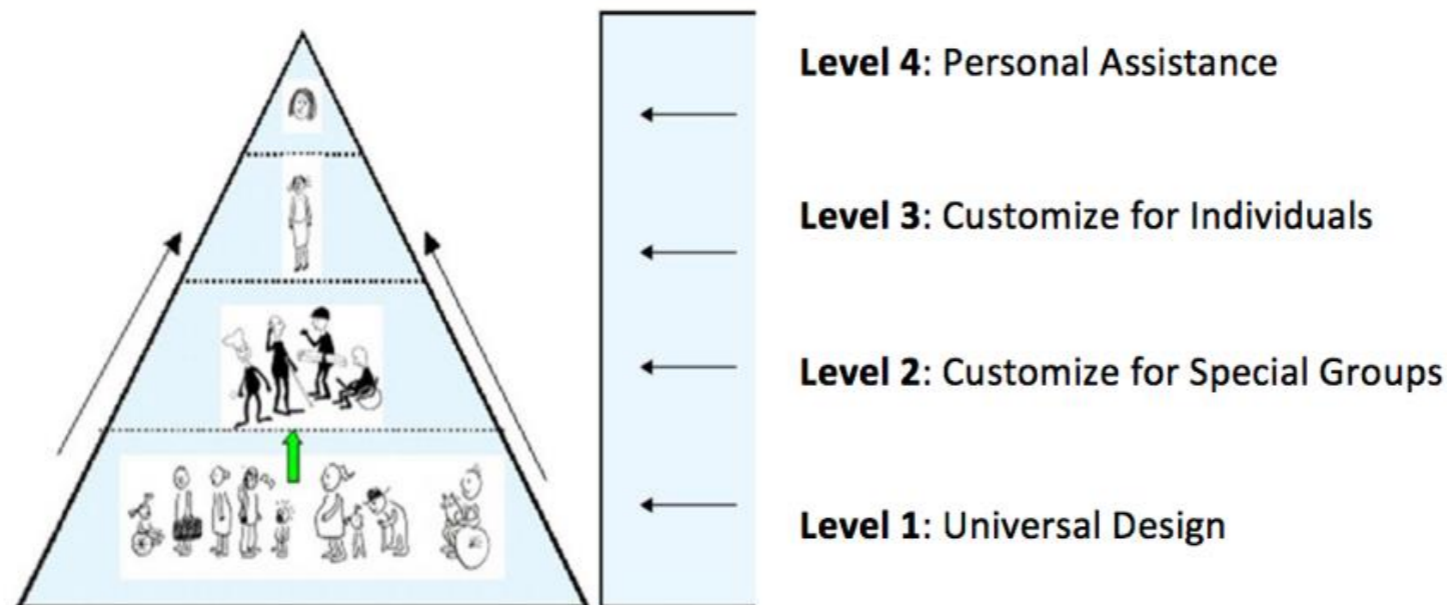
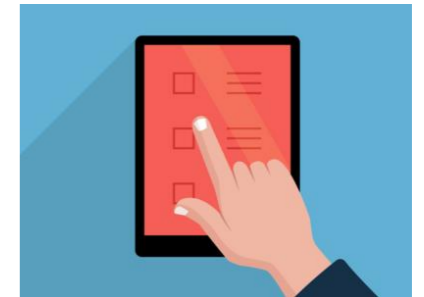
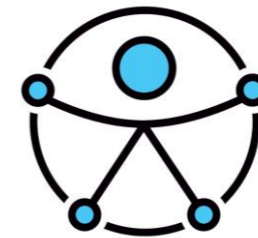
Universal Design (UD) - A Definition

“The design of products and environments to be usable by all the people, to the greatest extent possible, without the need for adaptation or specialized design” (Story, Mueller, & Mace 1998).



The Importance

- Diversity
- Usability
- Accessibility



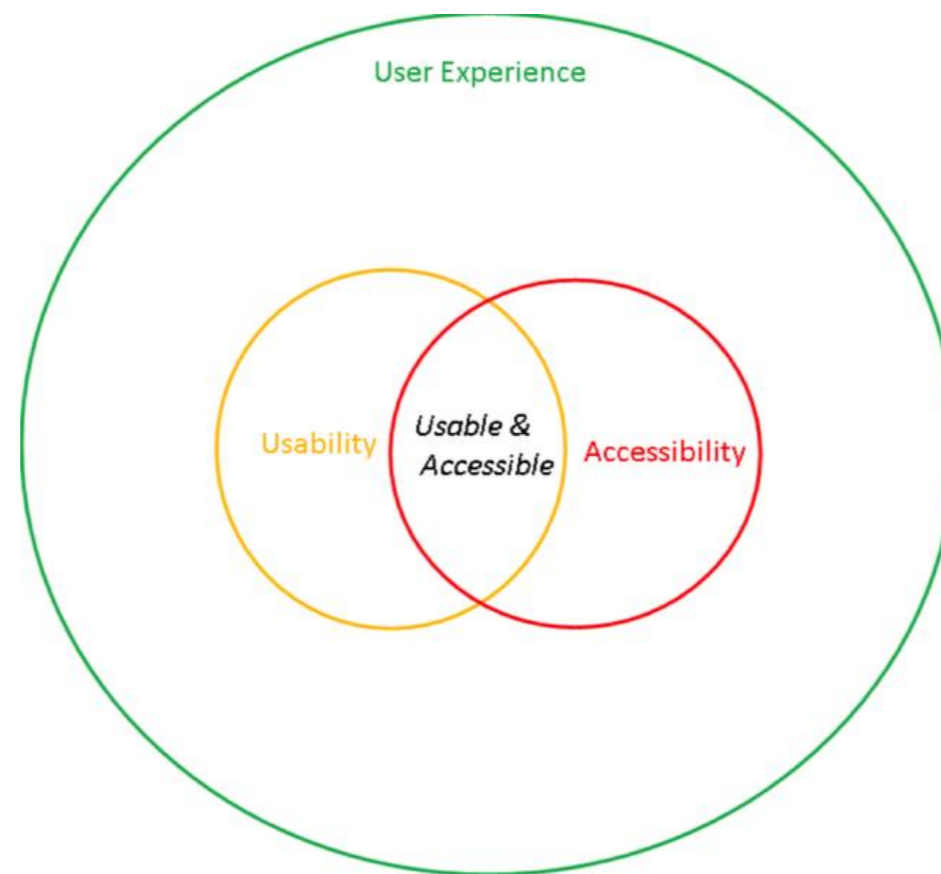
The Accessibility Pyramid (UDLL, 2016)

Why Should Organisations & Businesses Care?

1. The commercial element
2. The right thing to do
3. The legal argument

Legislations & Regulations

- Accessibility - it is illegal to disadvantage a disabled person.



Cont.

- Title
 - Law on Equality and Anti-Discrimination LOV-2017-06-16-51, § 2, 18, 36, 41.
- Purpose
 - Ensure Universal Design of ICT
- Deadlines
 - From 1.July.2014, all **new** technology should be UD.
 - **Existing** ICT solutions should comply with UD requirements by 1.January.2021

UD in Development of ICT

- A Tool

- W3c/WAI Guidelines
 - WCAG 2.0
 - ATAG 2.0
 - UAAG
 - WAI/ARIA



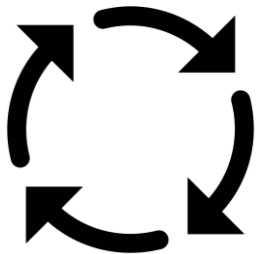
- A Goal



35 of 61 Success Criteria

- A Process

- Needs Analysis
- Design
- Prototyping
- User Testing
- User Experiments
- Implementation
- Documentation



Towards Universal Design

- The Nordic Model of Disabling Barriers (The GAP Model)



Universal design of ICT
– a better digital life

Implement Universal Design & Remove ICT Barriers

- Programmers
- Designers
- Procurement Requirements
- Quality Awards
- Anti-Discrimination Legislation
 - Inspection Authorities
 - Individual Right to Appeal

Organisations & Businesses

- Universal Design - a Philosophy
 - UI and UX Designers
 - Internal Specialists
 - Existing Technology
 - External Consultants

My Master's Thesis

- Researched the Accessibility & Usability of Intelligent Personal Assistants to Understand the Barriers that Blind and Non-Verbal People Experience.
- Motives
 - › The blind feel unequal with the sighted.
 - › In 2010, 32.4 million blind people and 191 million people with a severe vision impairment. Globally.
 - › In 2017, 36 million blind people and 253 million people with vision impairment. Growing.
 - › In Norway, more than 1,000 blind people and 180,000 people are regarded as visually impaired. Almost 4% of the population.

Cont.

- Method
 - Interviews & Observations with 7 blind people.
 - Usability Testing
 - Systematic Literature Review

Cont.

- Barriers Found
 - Voice Recognition when Dictating
 - Language
 - Search Online Information
 - 3rd Party Applications
 - General Issues/Bugs
 - Trust Issues
 - Confusion between the Assistant's UI and Voice Over/Screen Reader

Thank You!