



It won't be "smart" until it is inclusive

**Evert-Jan Hoogerwerf**

Association for the Advancement of Assistive Technology in Europe

# My affiliations



Past President and project manager  
**ASSOCIATION FOR THE ADVANCEMENT OF ASSISTIVE  
TECHNOLOGY IN EUROPE**

Sector organisation

Members in 24 countries. Office: Linz Austria

[www.aaate.net](http://www.aaate.net)



Head of Sector Projects & Innovation

**AIAS BOLOGNA Onlus**

Emilia Romagna's Regional Centre for Assistive Technology

Independent Assistive Technology Centre in Bologna, Italy

[www.ausilioteca.org](http://www.ausilioteca.org)



# AAATE and assistive solutions



European Association of Assistive Technology (AT) Professionals and their Organisations

Assistive technology (tecnologie assistive) =

- an umbrella term
- embraces mainstream and specially designed products and services
- enabling technology: it allows activities and participation for people that are disabled in and by their environment

AT + accessible environments + human intervention

=

Technology based assistive solutions



The background of the slide is a reproduction of the painting 'The Starry Night' by the Dutch Impressionist painter J.M.W. Turner. The painting depicts a turbulent, swirling night sky with bright, glowing stars and a crescent moon. In the foreground, a dark, silhouetted cypress tree stands on the left, and a small village with a prominent church spire is visible in the distance. The overall mood is one of awe and wonder.

# Access to AT solutions allows people with disabilities ...

To make choices

To gain control

To be economically active

To find employment

To access rights

To be successful in education

To realise ambitions and dreams

# The concept of inclusion

**Active inclusion** means enabling every citizen, notably the most disadvantaged, to fully participate in society, including having a job.

*European Commission DG EMPLOYMENT, SOCIAL AFFAIRS, INCLUSION*

## Inclusion vs. exclusion



# The concept of smart

## Smart City - definition

A developed urban area that creates sustainable economic development and **high quality of life** by excelling in multiple key areas; economy, mobility, environment, **people, living**, and government. Excelling in these key areas can be done so through strong **human capital, social capital, and/or ICT infrastructure**.

*[www.businessdictionary.com](http://www.businessdictionary.com)*

Smart cities are by definition Inclusive. They leave no one behind!

They are participated and democratic

Have accessible infrastructures

Create «usable» environments

# The Risewise project

Aims: To identify the **barriers** that **women with disabilities** meet regarding different aspects of their lives, and to promote **solutions** and best practices for their participation and empowerment in **society**.



HORIZON2020  
Marie Skłodowska-  
Curie actions

Main activities:

- Research into barriers
- Identification of Best Practice
- Dissemination
- Training and conceptualisation of solutions

Main tool:

Exchange/secondments programme of staff between universities and civil society organisations



UNIVERSITÀ DEGLI STUDI  
DI GENOVA



- Department of Educational Sciences DISFOR
  - Department of Law DDG
- Department Architecture and Design DAD
- Department of Informatics, Bioengineering, Robotics and Systems Engineering DIBRIS

**Technology is an  
important focal point of  
Risewise**





Access to enabling technology = rights based issue

Action is needed:  
Breaking through barriers





# Policy drivers supporting accessibility and AT



## The UN Convention on the Rights of Persons with Disabilities (2006)

The Convention completes the shift in the perception of disability: from medical view to citizenship/rights based view

Universal Design, Accessibility and Assistive Technologies are repeatedly mentioned and are interrelated areas of concern.

### Convention

Article 4H. To provide accessible information to persons with disabilities about mobility aids, devices and assistive technologies, including new technologies, as well as other forms of assistance, support services and facilities.

### Preamble

N. Recognising the importance for persons with disabilities of their individual autonomy and independence, including the **freedom to make their own choices**.

O. Considering that persons with disabilities should have the opportunity to be **actively involved in decision-making processes** about policies and programmes, including those directly concerning them.

# Policy drivers supporting accessibility and AT



## European disability strategy 2010-2020

Commitment to the implementation of the UN Convention on the Rights of Persons with Disabilities

**Overall aim: empowerment of persons with disabilities and removal of barriers for inclusion and participation.**

### ***8 Areas of Action***

#### **1. Accessibility**

**“Ensure accessibility to goods, services including public services and assistive devices for people with disabilities.”**

**“EU action will support and supplement national activities for implementing accessibility and removing existing barriers, and improving the availability and choice of assistive technologies.”**

Ref. <http://ec.europa.eu/social/main.jsp?catId=1137&langId=en>

**See: The European Accessibility ACT + Directive (2016)**



# The Digital agenda



DIGITAL AGENDA FOR EUROPE  
A Europe 2020 Initiative

“Women’s digital inclusion is an empowering process, giving women a voice and enabling them to effectively participate in governance processes and innovate to build and shape the future they want.”

# Gender differences in digital literacy

## Research shows:

- Boys are more self-confident regarding the performance of tasks in a digital environment compared to girls.
- Boys have a higher interest in hardware and programming than girls.
- Girls have a higher interest in using standard software applications and the Internet.

*SOURCE: BERNHARD ERTL & KATHRIN HELLING. PROMOTING GENDER EQUALITY IN DIGITAL LITERACY. J. EDUCATIONAL COMPUTING RESEARCH, Vol. 45(4) 477-503, 2011*

# Technology, education and gender

Only 9.6 % of women students in third-level education study ICT-related degrees, compared to 30.6 % of men.

This difference leads to a considerable waste of women's talent in maths, science and technology (MST) and ICT.

This is an important issue to acknowledge in light of the European Commission's estimations that there will not be enough ICT specialists to cover the number of jobs forecast for the digital sector.



*Study: Women active in the ICT sector (2013)*

Source: <http://eige.europa.eu/gender-mainstreaming/policy-areas/digital-agenda>





# Digital divide in Internet use

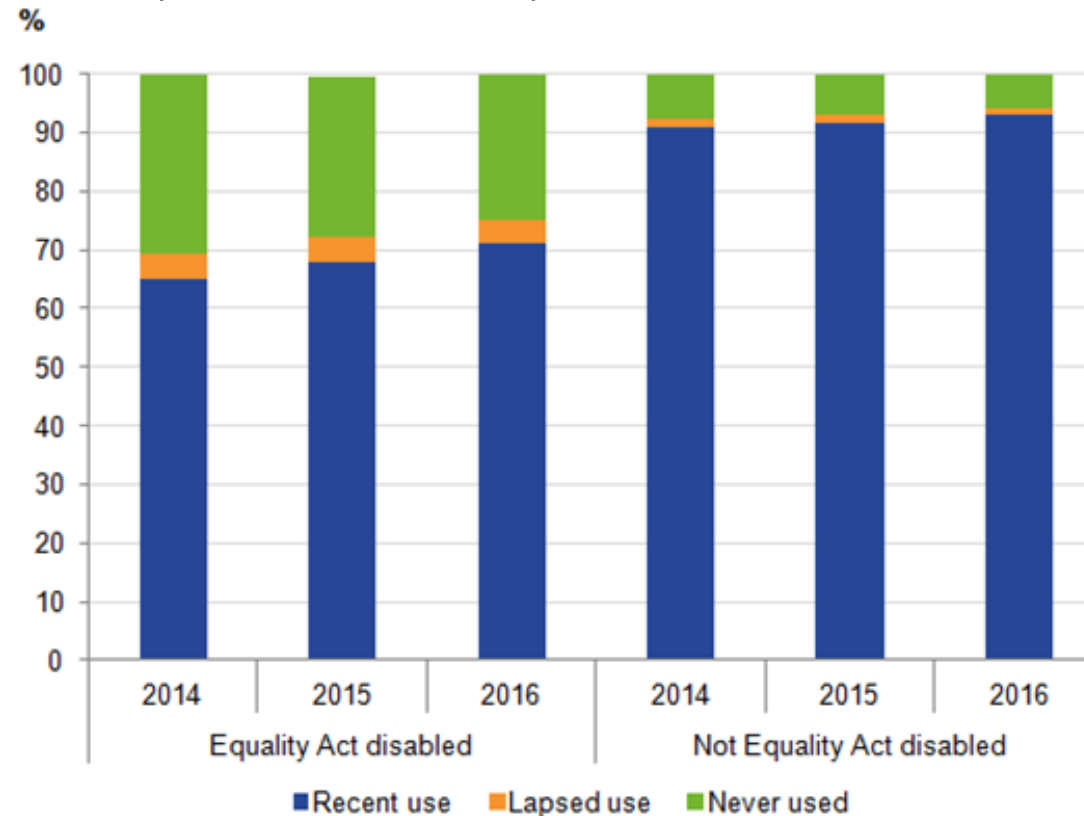
Households in Europe with access to the Internet

2015: 83%

2006: 50%

Source: Eurostat. Digital economy and society statistics - households and individuals.  
<http://ec.europa.eu/eurostat>

Internet use and non-use by disability status, 2014 to 2016, UK



Source: Office for National Statistics (UK)

# Disability, gender and technology

Generally speaking there is a **lack of data on gender differences** among disabled people in ICT use.

Some disabled young people are definitely interested in technology but often **lack the stimulation** of their environment, including parents, teachers, peers.

As a matter of fact identity development, including dreams about the future, starts early and is strongly determined by what happens **outside formal education**.

Many institutions in formal education have difficulties in coping with rapid changes in society and with a more personalised approach, leaving behind those students that do not respond to the “standards of normality”.

Importance of family and **informal education**

# Barriers to full digital inclusion - Society level



Area of interest	Barriers
Politics and policy	<ul style="list-style-type: none"><li>● Lack of an inclusive mainstream approach at all policy levels and in many policy fields.</li><li>● Lack of collaboration and coordination among public institutions.</li><li>● Lack of innovative approaches encouraging independence. AT as a compensation for an impairment without changing a reality (thus as a cost) and not as an investment in personal life goals or projects.</li><li>● Failure of existing legislation to effectively cover essential aspects of ICT/ICT-AT for persons with disabilities</li></ul>
Culture	<ul style="list-style-type: none"><li>● Society, including media, often reproduces a stereotyped view of disability.</li></ul>
Usability and accessibility	<ul style="list-style-type: none"><li>● Non accessible mainstream technology.</li><li>● Complex and challenging interfaces and user experience.</li></ul>
Financial, economic	<ul style="list-style-type: none"><li>● The cost of the technology for the end user and/or for the provider, especially where public funding is not sufficient.</li><li>● Limitations in the provision of additional resources to AT (e.g. training, support, add-ons, etc.)</li></ul>

# Risewise – Technology group

Embraces different research labs, companies and associations.....

University of Genova

University of Stockholm

Universidad Complutense Madrid

Middle East Technical University (Turkey)

Universidade do Minho (Portugal)

Funka

AIAS Bologna onlus

Association for the Advancement of Assistive Technology in Europe

..... will

Investigate the specific barriers for women with disabilities to live more fulfilled lives and their relation with technology.

Conceptualise innovative solutions

Develop projects together  
(Risewise as a Project incubator )



# Thank you!

[hoogerwerf@ausilioteca.org](mailto:hoogerwerf@ausilioteca.org)



Main reference: Hoogerwerf et. al. (2016). Digital inclusion. A white paper. [www.entelis.net](http://www.entelis.net)

