

# IMPORTANT: Instructions

Please read carefully the *Instructions for the "Web Accessibility for Older Users" Presentation* at [www.w3.org/WAI/presentations/ageing/](http://www.w3.org/WAI/presentations/ageing/) for an introduction, tips, and permission to use.

The Notes section for each slide contains important information. Make sure you can read the Notes. On this slide, the notes start with "[NOTES SECTION: This is where the important information is...]"

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# Web Accessibility for Older Users

**\*DRAFT\***

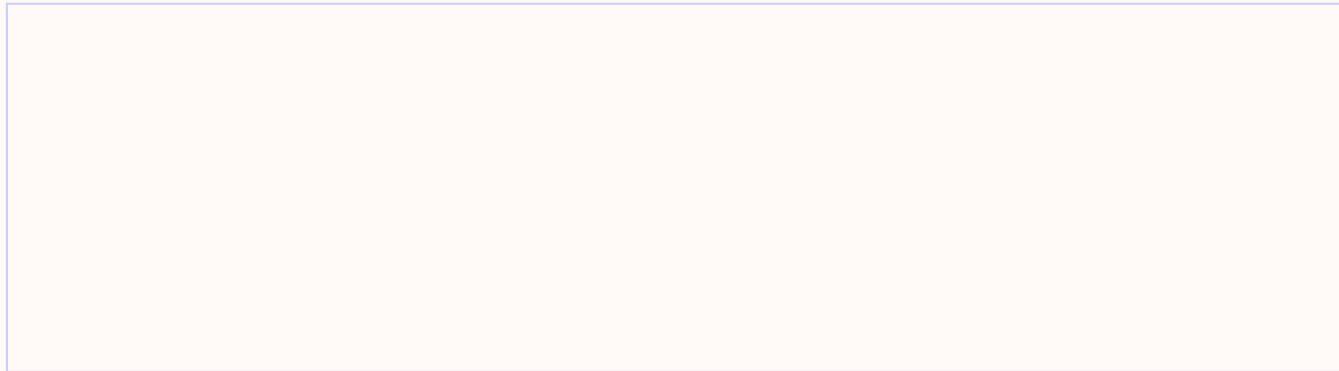
Last Updated 22 September 2010

# Presentation overview

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- Introducing WAI-AGE
- Demographic changes
- Changing abilities
- Use of the Web
- Understanding older people's needs
- Role of WAI guidelines
- Project outcomes

# Introducing WAI-AGE



# WAI-AGE Project (IST 355015)

## (WAI Ageing, Education and Harmonisation)

- European Commission funded project focused on:
  - Better understanding the needs of older web users
  - Participation of older users in W3C standardization
  - Development of educational materials
  - Pursuit of standards harmonization

[www.w3.org/WAI/WAI-AGE/](http://www.w3.org/WAI/WAI-AGE/)

# World Wide Web Consortium (W3C)

- **Leading the Web to Its Full Potential:**
  - International vendor-neutral consortium
  - Evolution and interoperability of the Web *for everyone, everywhere on everything*
  - Operates from: [MIT](#), [ERCIM](#), and [Keio](#)
  - Multi-stakeholder, consensus process
  - Open and royalty-free Web standards:
    - HTML, CSS, XML, SVG, SMIL, ...

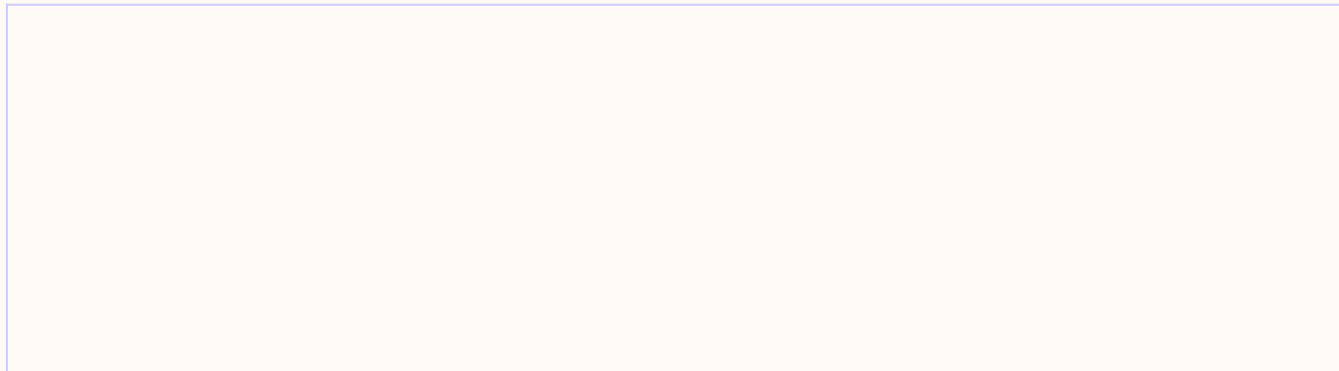
[www.w3.org](http://www.w3.org)

# Web Accessibility Initiative (WAI)

- Works to help make the Web accessible to people with disabilities through:
  - Accessibility support in W3C technologies
  - Guidelines for implementing accessibility
  - Methods for evaluating accessibility
  - Conducting education and outreach
  - Coordinating with R&D world-wide

[www.w3.org/WAI/](http://www.w3.org/WAI/)

# Changing demographics

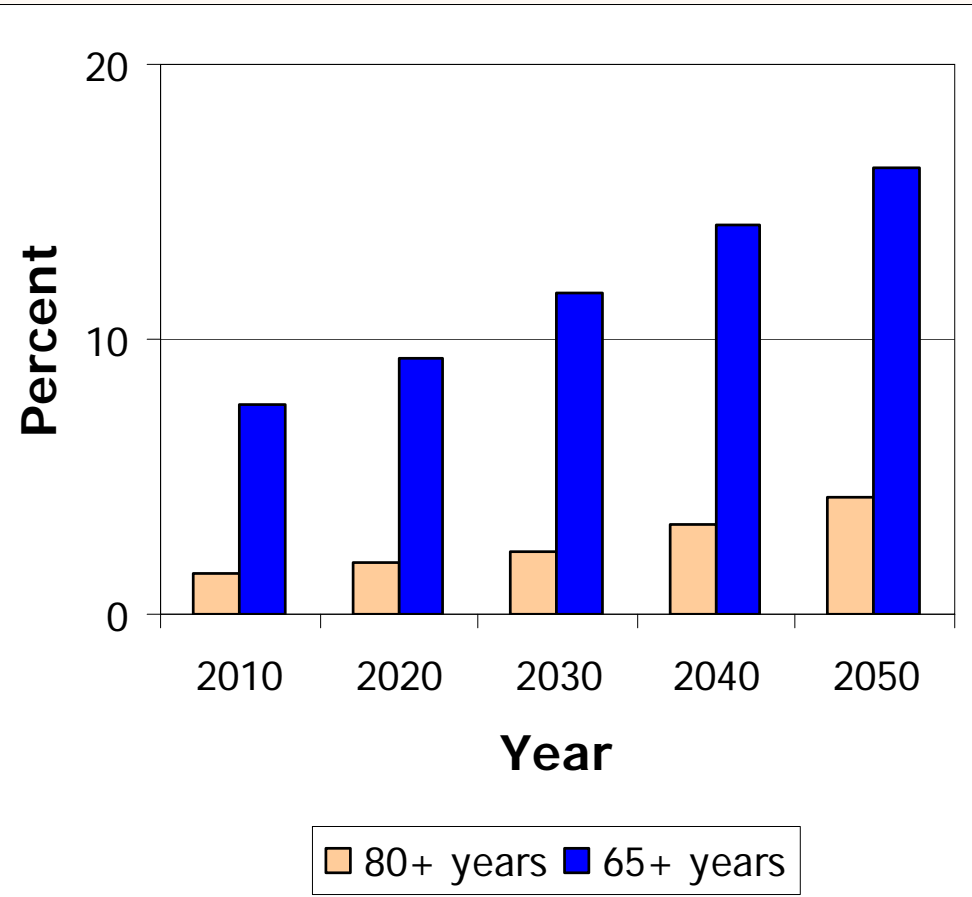




# Global demographic changes

## United Nations global demographic forecast

| Year | 65+ years | 80+ years |
|------|-----------|-----------|
| 2010 | 7.6%      | 1.5%      |
| 2020 | 9.3%      | 1.9%      |
| 2030 | 11.7%     | 2.3%      |
| 2040 | 14.2%     | 3.3%      |
| 2050 | 16.2%     | 4.3%      |

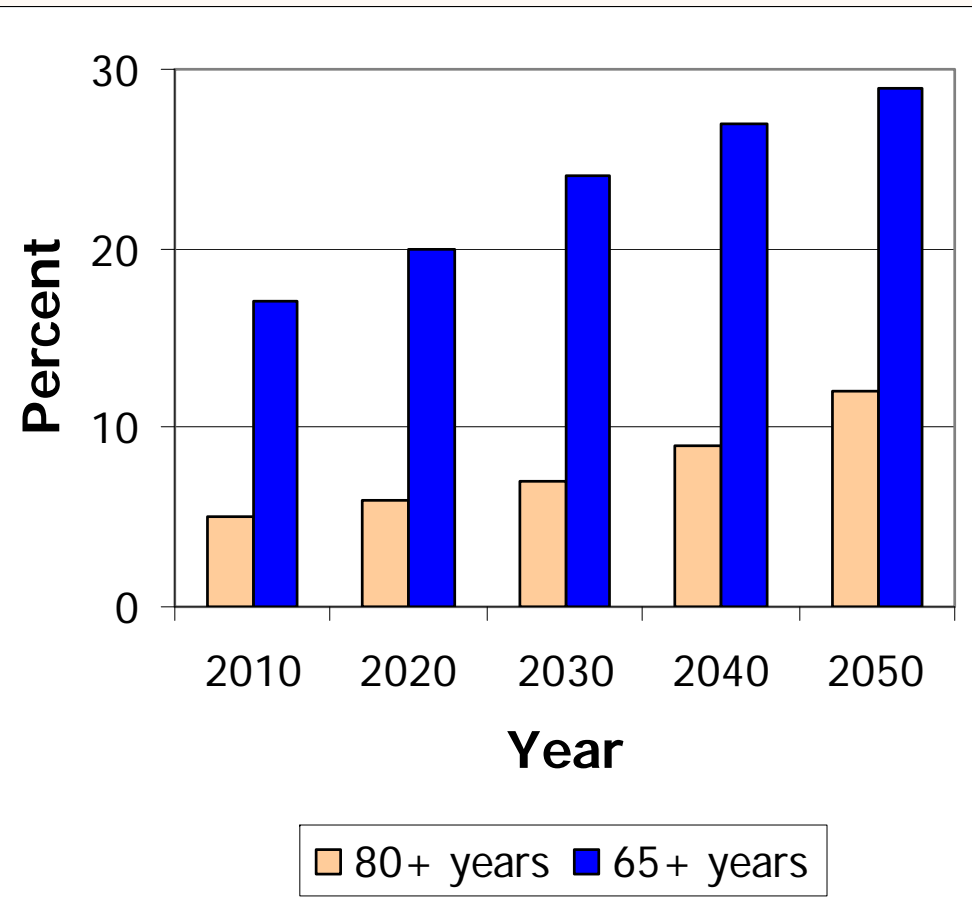


Source: UN World Population Prospects

# European situation

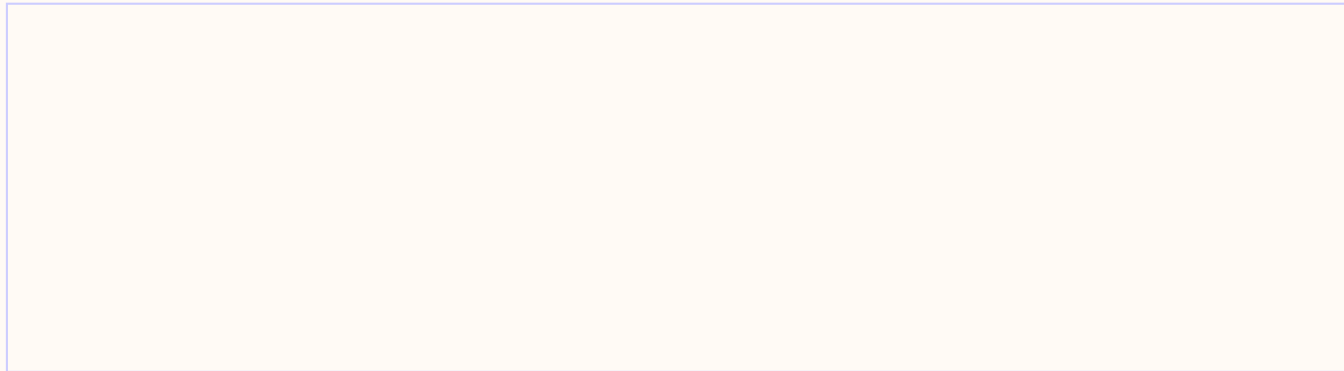
## Demographic forecast for the EU

| Year | 65+ years | 80+ years |
|------|-----------|-----------|
| 2010 | 17%       | 5%        |
| 2020 | 20%       | 6%        |
| 2030 | 24%       | 7%        |
| 2040 | 27%       | 8%        |
| 2050 | 29%       | 12%       |



Source: EuroStat

# Changing abilities



# Ageing and hearing loss

## ▪ Impact:

- Audio can be difficult to discern
- Higher pitch sounds can be missed

## ▪ Prevalence:

- 47% of people 61 to 80 years
- 93% of people 81+ years

# Ageing and vision decline

## ▪ Impact:

- Decreasing ability to focus on near tasks
- Changing color perception and sensitivity
- Decreasing contrast sensitivity

## ▪ Prevalence:

(significant vision loss)

- 16% of people 65 - 74 years
- 19% of people 75 – 84 years
- 46% of people 85+ years

# Ageing and physical decline

## ▪ **Impact:**

(Motor skill decline can result from many conditions including arthritis and Parkinson's Disease)

- Difficulty using mouse or keyboard
- Difficult to click small areas
- Strain from non-ergonomic tasks

## ▪ **Prevalence:**

(Conditions most commonly reported)

### • Arthritis

- At least 50% of people over 65 affected

### • Essential tremor

- Affects up to 20% of people over 65

### • Parkinson's Disease

- Approximately 4% of people over 85 affected

# Ageing and cognitive decline

## ▪ **Impact:**

Navigation, comprehension, and task completion can be affected by:

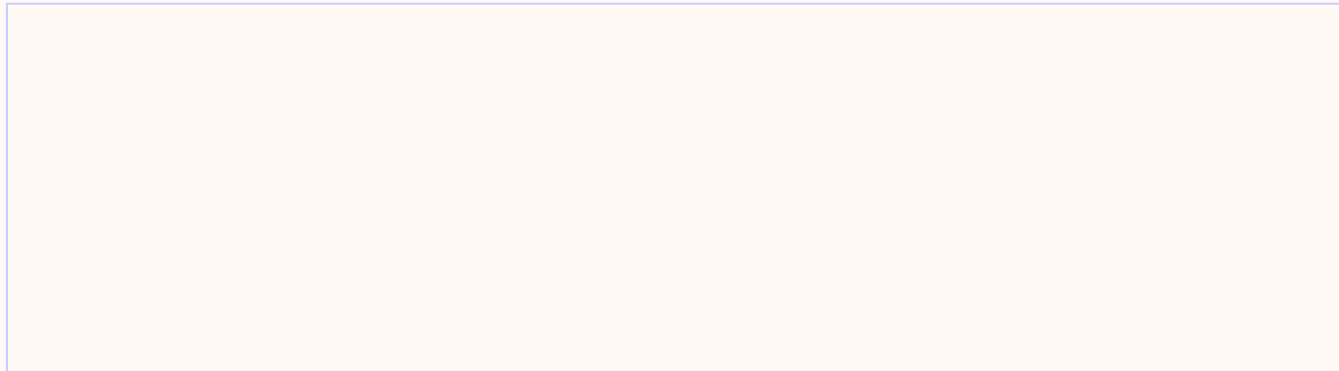
- Short term memory problems
- Difficulty with concentration
- Distraction from movement or irrelevant material
- Difficulty coping with information overload

## ▪ **Prevalence:**

(Conditions most commonly reported)

- Dementia:
  - 1.4% of people 65-69 yrs
  - 24% of people 85+ yrs
- Mild cognitive impairment (MCI) is more common:
  - Around 20% of people over 70 years are estimated to experience MCI

# Use of the Web





# Older people online

The Web provides older people with unprecedented opportunities for:

- social interaction and communication
- access to information
- access to eCommerce
- access to government services and civic participation
- training and learning opportunities
- employment, research, and access to workplace applications

# Barriers to web use

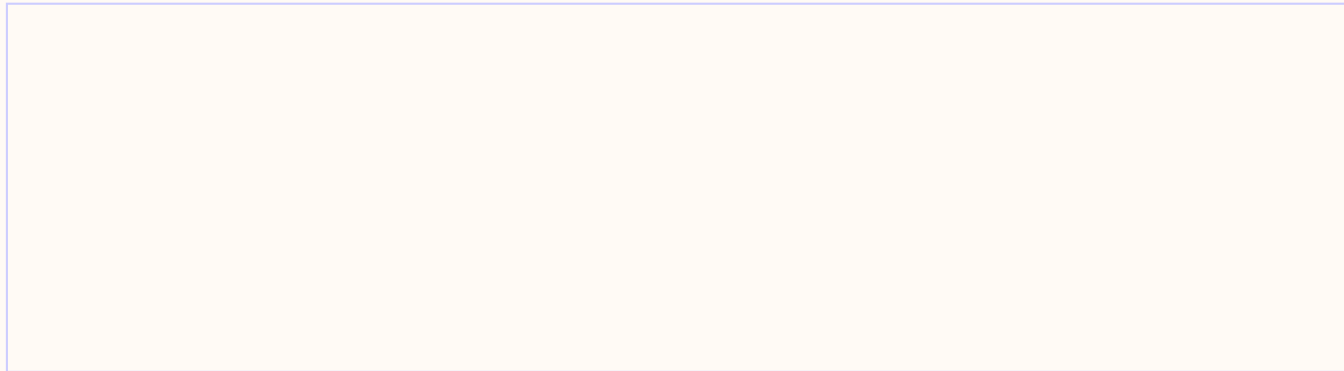
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Older people are experiencing web accessibility barriers due to:

- poor design and poor coding of websites
- complex software and assistive technologies
- little or no prior experience with computers

Web accessibility is an imperative.

# Accessibility for older web users



# Understanding older peoples' needs

WAI-AGE literature review included material about:

- Impairments associated with ageing
- Web site design requirements for older people
- Implications of particular impairments on Web use
- Older users' interaction with particular aspects of Web sites

See "[Web Accessibility for Older Users: A Literature Review](#)" for details

# Observations from the literature review

WAI-AGE analysis showed a significant overlap with W3C/WAI recommendations.

It was also observed that:

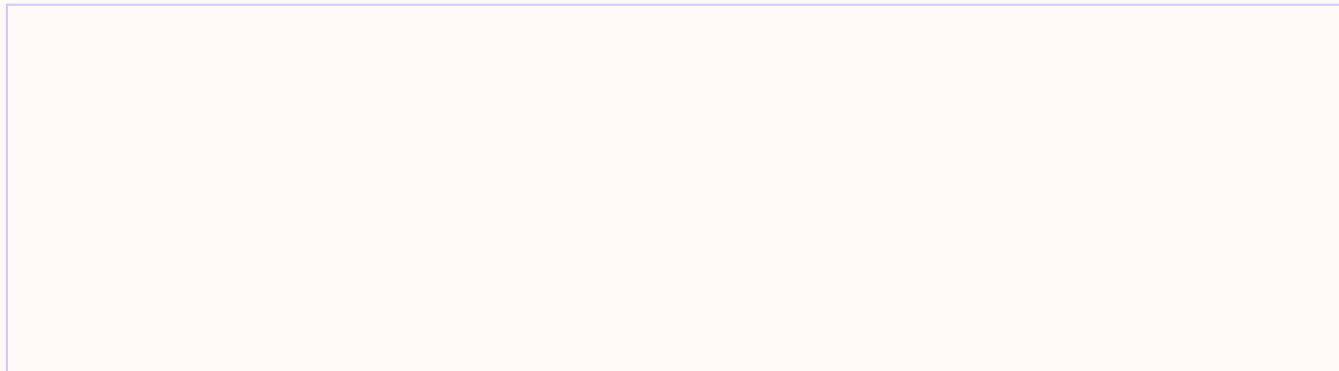
- Many studies seemed unaware of the W3C/WAI work
- Studies often seemed not to build on previous work
- Web inexperience is an influencing factor
- Information overload was commonly identified
- Less technical, more usability, requirements predominated
- Usability features of forms were highlighted

# Observations from the literature review - continued

Additional observations include:

- The accessibility requirements of older users did not seem well understood by industry
- Accessibility options were not appreciated by users
- Adaptive strategies were seldom considered
- Assistive technology was not discussed
- Some recommendations reflected a lack of technical knowledge
- Hearing as an impairment was ignored

# Role of WAI Guidelines



# W3C/WAI guidelines

## W3C/WAI guidelines help older Web users

- Web Content Accessibility Guidelines (WCAG)
- User Agent Accessibility Guidelines (UAAG)
- Authoring Tool Accessibility Guidelines (ATAG)

See [Essential Components of Web Accessibility](#)



# Accessible Web content

- **Requirements include:**
  - Readable and understandable text
  - Identifiable and understandable links
  - Clear and identifiable headings
  - Good orientation and navigation

WAI's Web Content Accessibility Guidelines ([WCAG](#)) 2.0 addresses these

# Usability improvements

## Usability improvements especially help older people and people with disabilities:

- Page layout and design - provide consistency and avoid overload
- Text presentation - use left justification, increase line spacing & margins, avoid italics and underlining
- Forms - avoid complexity and provide clear guidance
- Menus and links - provide predictability and consistency

# Role of Web browsers

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## **Browsers are the entry-point to the Web:**

- many older users are overwhelmed by the functionality
- accessibility features are often not easy to configure
- some browsers do not work with assistive technology
- people who are new to the Web are especially affected

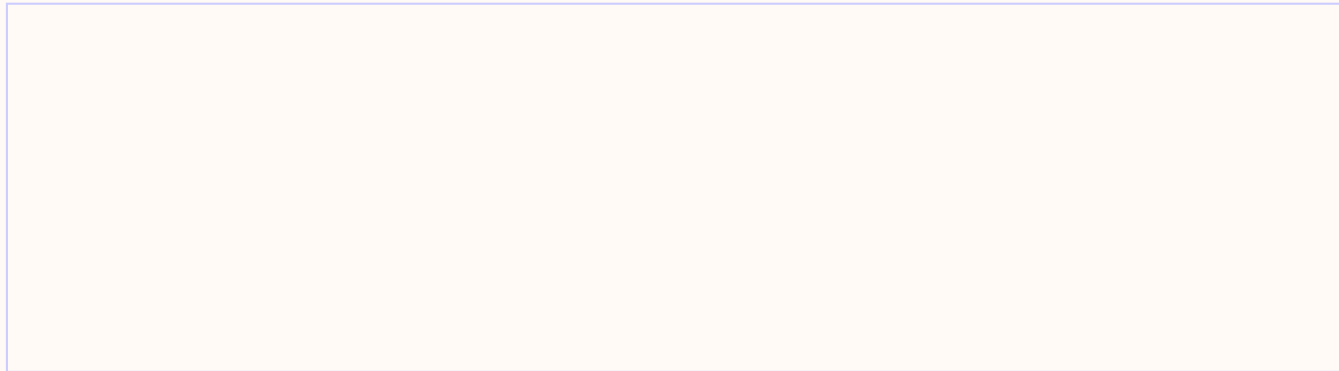
# Web authoring

## Older people contribute to the Web:

- using content management systems such as on a corporate intranet
- using social media applications such as wikis, blogs, and forums
- developing Web sites professionally or for leisure

WAI's Authoring Tool Guidelines ([ATAG](#)) help address these issues.

# Project outcomes



# Ongoing WAI-AGE work

- Raising awareness of Web accessibility for older people
- Better explaining the applicability of the WAI guidelines for older people
- Avoiding potential fragmentation through reinvention of requirements
- Encouraging participation of older people in W3C/WAI standardization

# Educational resources - industry

## **WAI-AGE is developing resources to inform developers and help them:**

- Understand the benefits of developing accessible sites for older users
- Understand the accessibility requirements of older people
- Understand how the WAI guidelines apply to the needs of older users
- Include older people throughout the design and development process

# Educational resources - users

## **WAI-AGE is developing resources for older users and their supporting organizations:**

- Increase users' awareness of the benefits of Web accessibility
- Guidance on using accessibility features
- Identifying and reporting Web accessibility problems
- Providing information on the findings of the WAI-AGE Project



# Summary of WAI-AGE resources

WAI-AGE is revising existing WAI resources, including:

- [Developing a Web Accessibility Business Case for Your Organization](#)
- [Before and After Demonstration \(BAD\) website](#)
- [Involving Users in Web Projects for Better, Easier Accessibility](#)
- [Developing Web Accessibility Presentations and Training](#)

WAI-AGE is developing new WAI resources, including:

- [Better Web Browsing - Tips to customize your computer \(draft\)](#)
- [Contacting Organizations about Inaccessible Websites](#)
- [Developing Websites for Older People](#)
- The Relationship between Web Accessibility and Usability

# Standards harmonisation

## Working together to avoid fragmentation through:

- Ongoing dialogue with different standards organizations
- Ongoing dialogue with user organizations
- Promoting a better understanding of Web accessibility
- Promoting an understanding of the needs of all users
- Encouraging the participation of all users in standardization

# Research opportunities

## Some gaps that need investigation:

- Impact of hearing loss on multimedia use
- Cognitive decline and page comprehension
- Use of social networking sites and applications
- Use of assistive technologies by older people

# Become involved

People are invited to participate by:

- Following the project updates on [www.w3.org/WAI/WAI-AGE](http://www.w3.org/WAI/WAI-AGE)
- Participating actively or monitoring the [WAI-AGE mailing list](#)
- Commenting on the [WAI-AGE deliverables](#) as they develop
- Participating in [WAI Working Groups](#)
- Contributing relevant research findings

# Thank you

- WAI home page:
  - [www.w3.org/WAI/](http://www.w3.org/WAI/)
- WAI-AGE project page:
  - [www.w3.org/WAI/WAI-AGE/](http://www.w3.org/WAI/WAI-AGE/)
- Additional reference material available:
  - [www.w3.org/WAI/presentations/ageing/](http://www.w3.org/WAI/presentations/ageing/)

The WAI-AGE Project is supported by:



# Appendix (not for display)

Additional material that can be used depending on the audience.

- W3C and WAI
  - an abbreviated W3C & WAI overview slide follows if time doesn't permit the 2 slides currently included
  
- Demographics - you may like to select from among the following slides for your own country:
  - United Kingdom
  - Australia
  - United States
  - Spain
  - Japan

# World Wide Web Consortium (W3C)

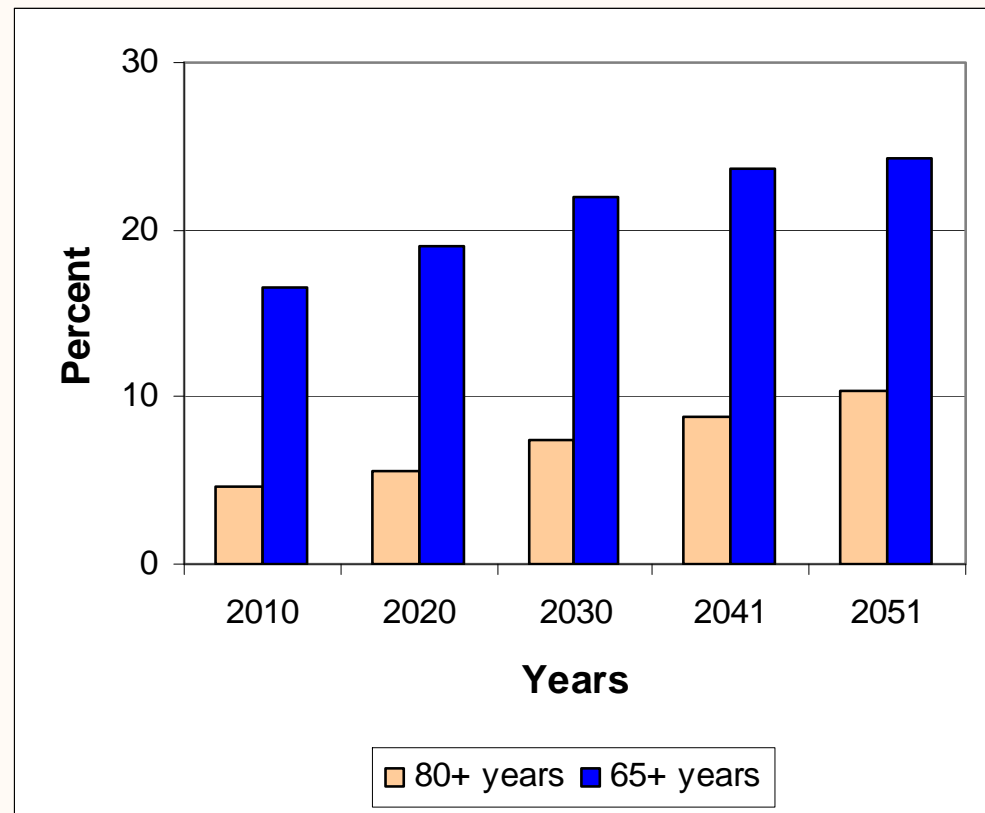
- International vendor-neutral consortium developing key standards for the Web
- Within the W3C, the Web Accessibility Initiative (WAI) works to help ensure the Web is accessible to people with disabilities through:
  - Technology support
  - Guidelines development
  - Evaluation tools
  - Education and outreach
  - Coordinating with research and development

[www.w3.org/WAI/](http://www.w3.org/WAI/)

# UK situation

## Demographic forecast for the UK

| Year | 65+ years | 80+ years |
|------|-----------|-----------|
| 2010 | 16%       | 5%        |
| 2020 | 19%       | 6%        |
| 2030 | 22%       | 8%        |
| 2041 | 24%       | 9%        |
| 2051 | 24%       | 10%       |



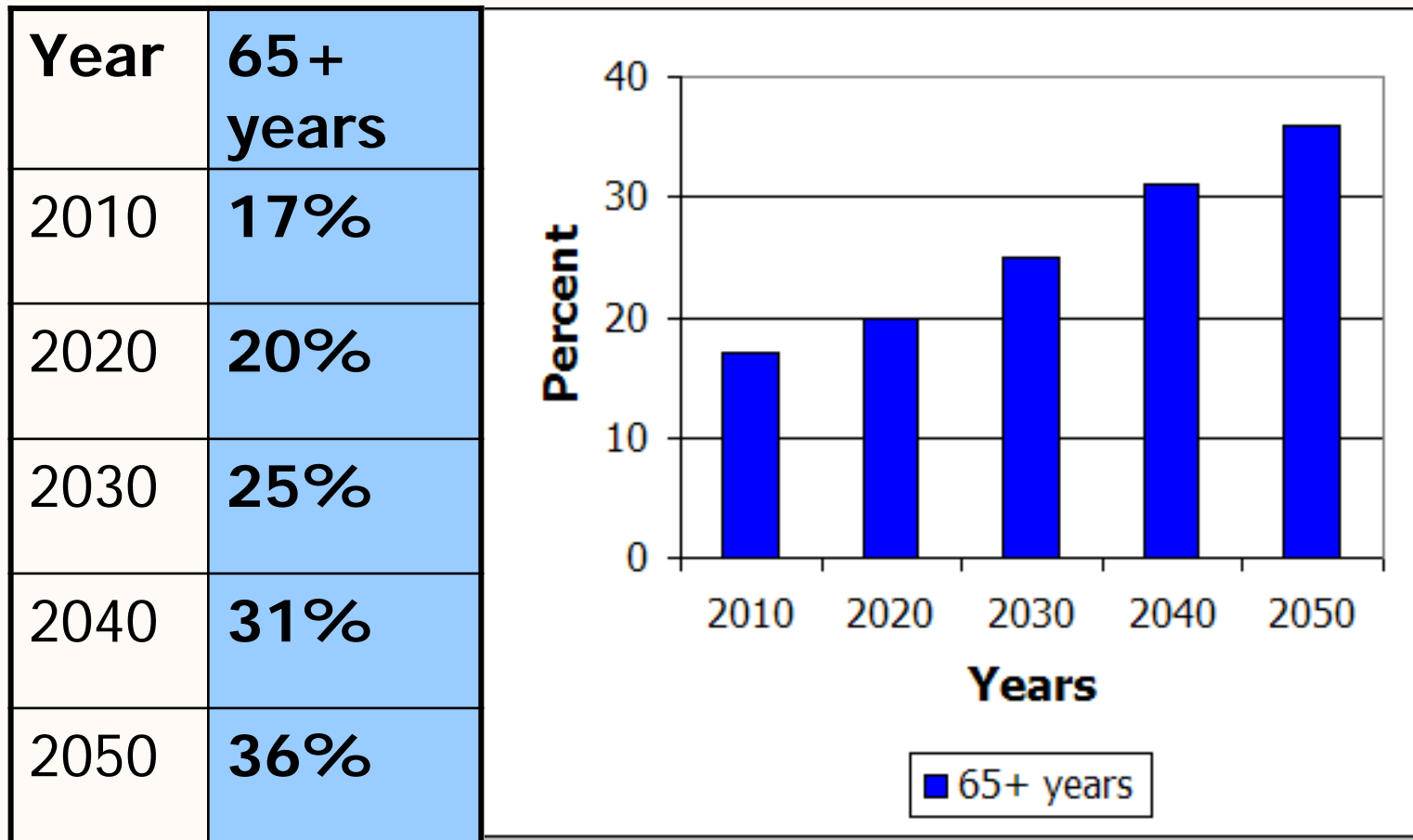
Source: UK Office of National Statistics

Developed with material from W3C Web Accessibility Initiative (WAI) [www.w3.org/WAI/](http://www.w3.org/WAI/)



# Spanish situation

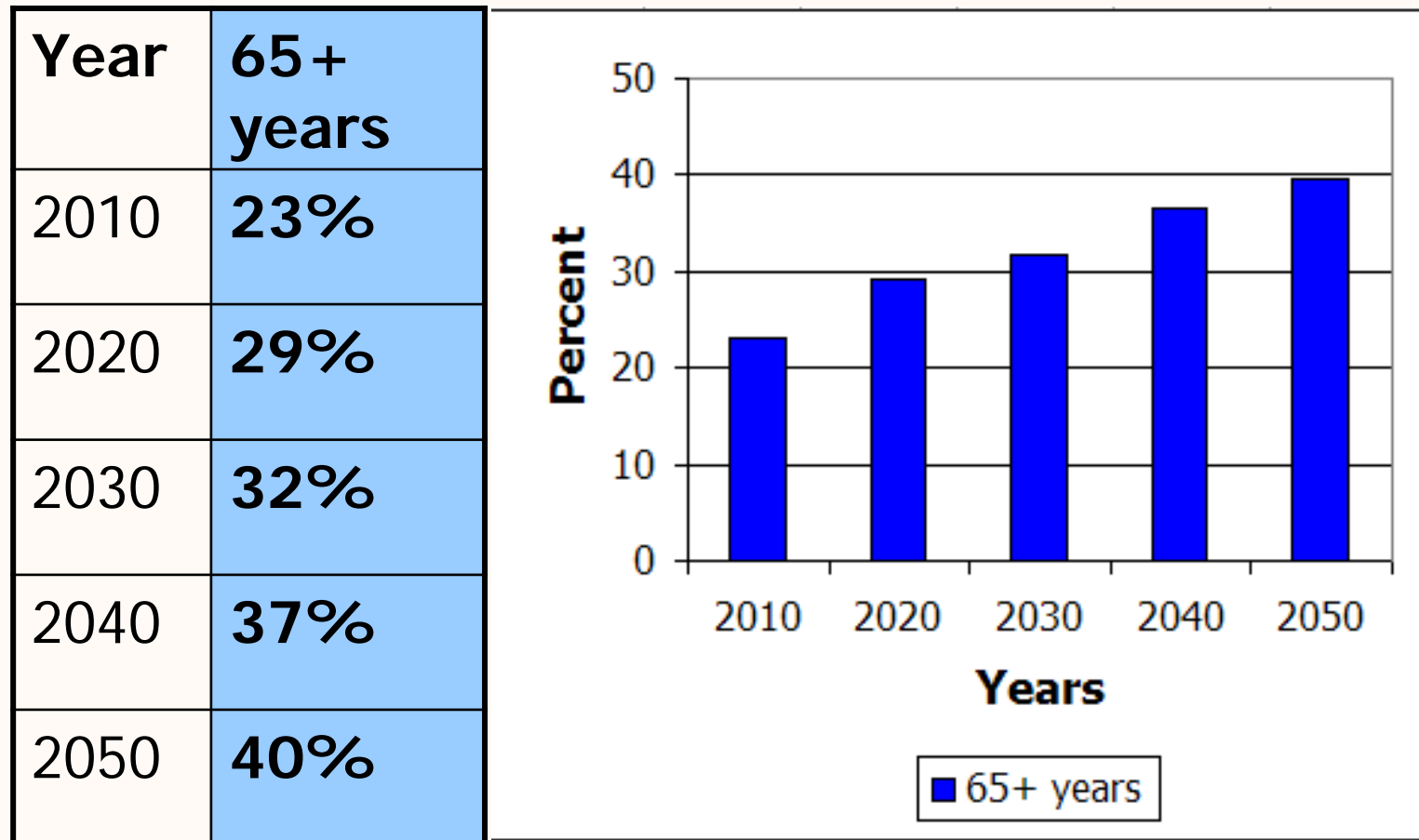
## Demographic forecast for Spain



Source: EuroStat

# Japanese situation

## Demographic forecast for Japan

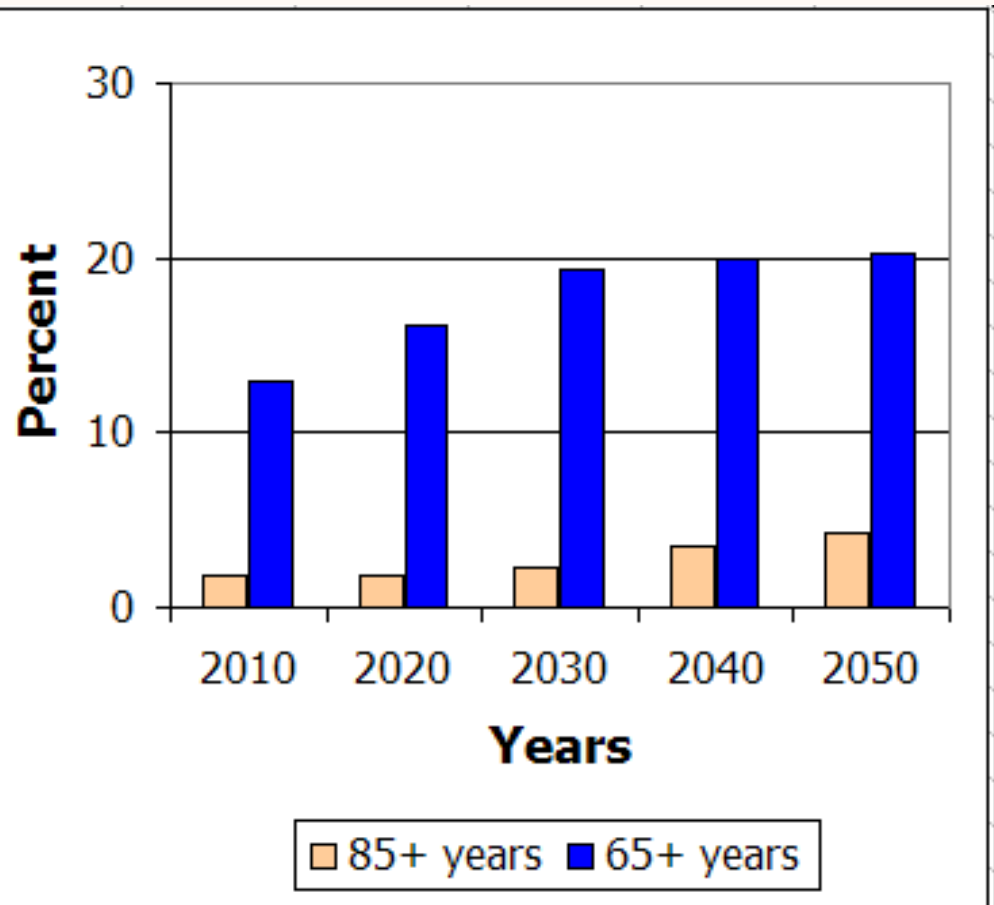


Source: Japanese Statistics Bureau

# United States' situation

## Demographic forecast for the USA

| Year | 65+ years | 85+ years |
|------|-----------|-----------|
| 2010 | 13%       | 1.8%      |
| 2020 | 16%       | 1.8%      |
| 2030 | 19%       | 2.3%      |
| 2040 | 20%       | 3.5%      |
| 2050 | 20%       | 4.3%      |

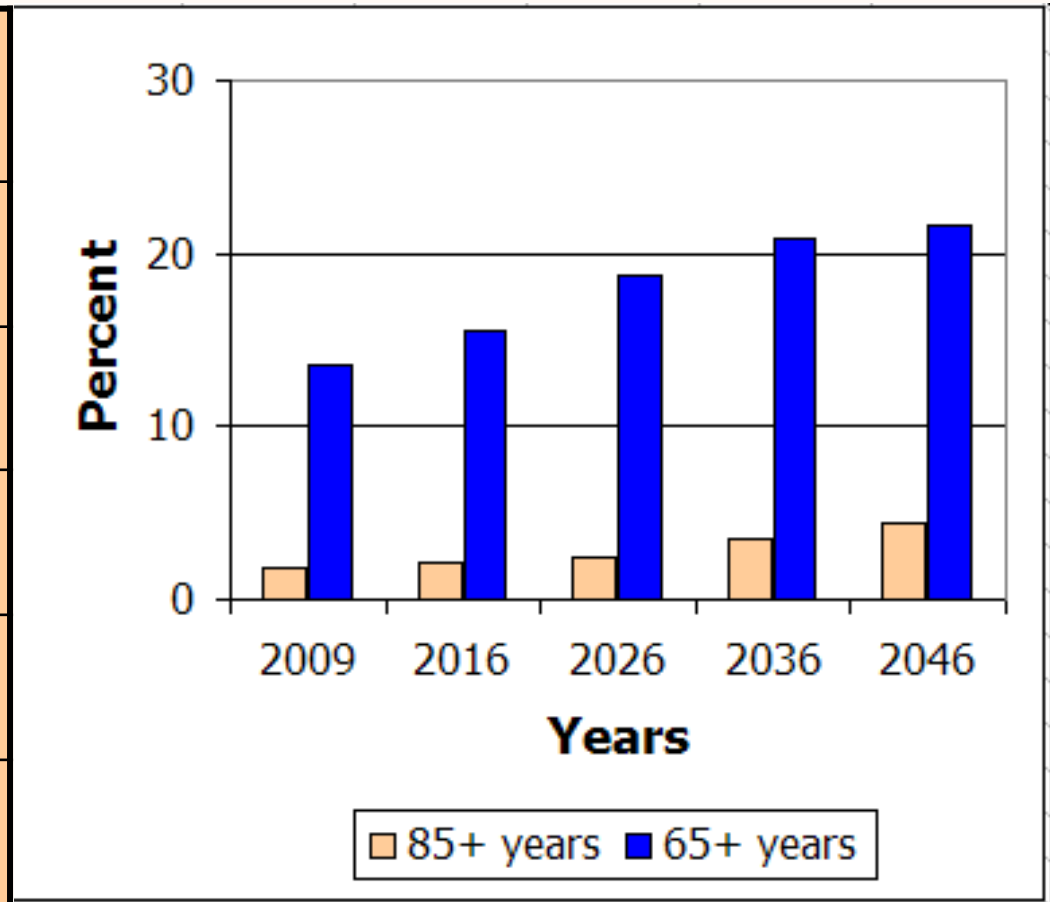


Source: US Census

# Australia's situation

## Demographic forecast for Australia

| Year | 65+ years | 80+ years |
|------|-----------|-----------|
| 2010 | 14%       | 1.8%      |
| 2020 | 16%       | 2.1%      |
| 2030 | 19%       | 2.4%      |
| 2040 | 21%       | 3.5%      |
| 2050 | 22%       | 4.4%      |



Source: ABS Population Projections