

Beyond compliance: Design for Extremes

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What is Accessibility?



**Physical
&
Digital**



Digital Accessibility

World Wide Web Consortium (W3C)



Web Accessibility Initiative (WAI)



Web Content Accessibility Guidelines (WCAG)

International Laws – e.g. EU 376, and EU Directive

Section 508 of Rehabilitation Act

Section 255 of Rehabilitation Act

ACS – Advanced Communications Services

CVAA – Communications and Video Accessibility Act

ADA – Americans with Disabilities Act*

LAWSUITS  X3 in 2018

Inclusion



Revenues



Opportunities

Inclusion



Visual Impairment

8%



Hearing Impairment

6.5%



Mobility Constraint

10%



Cognitive Constraint

5%



Age Related Constraints

9%

Global Records

Population Distribution for Angola in Year 2012

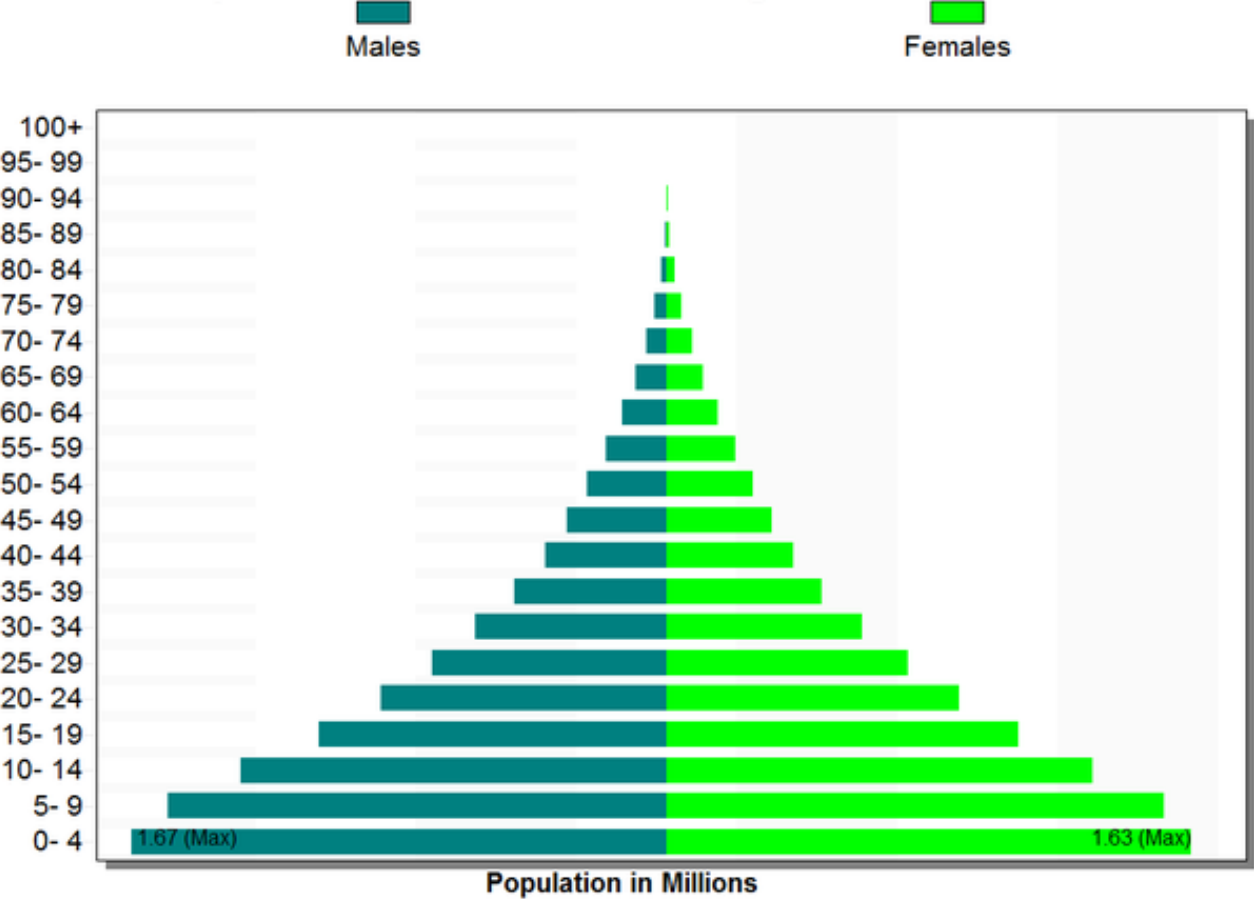
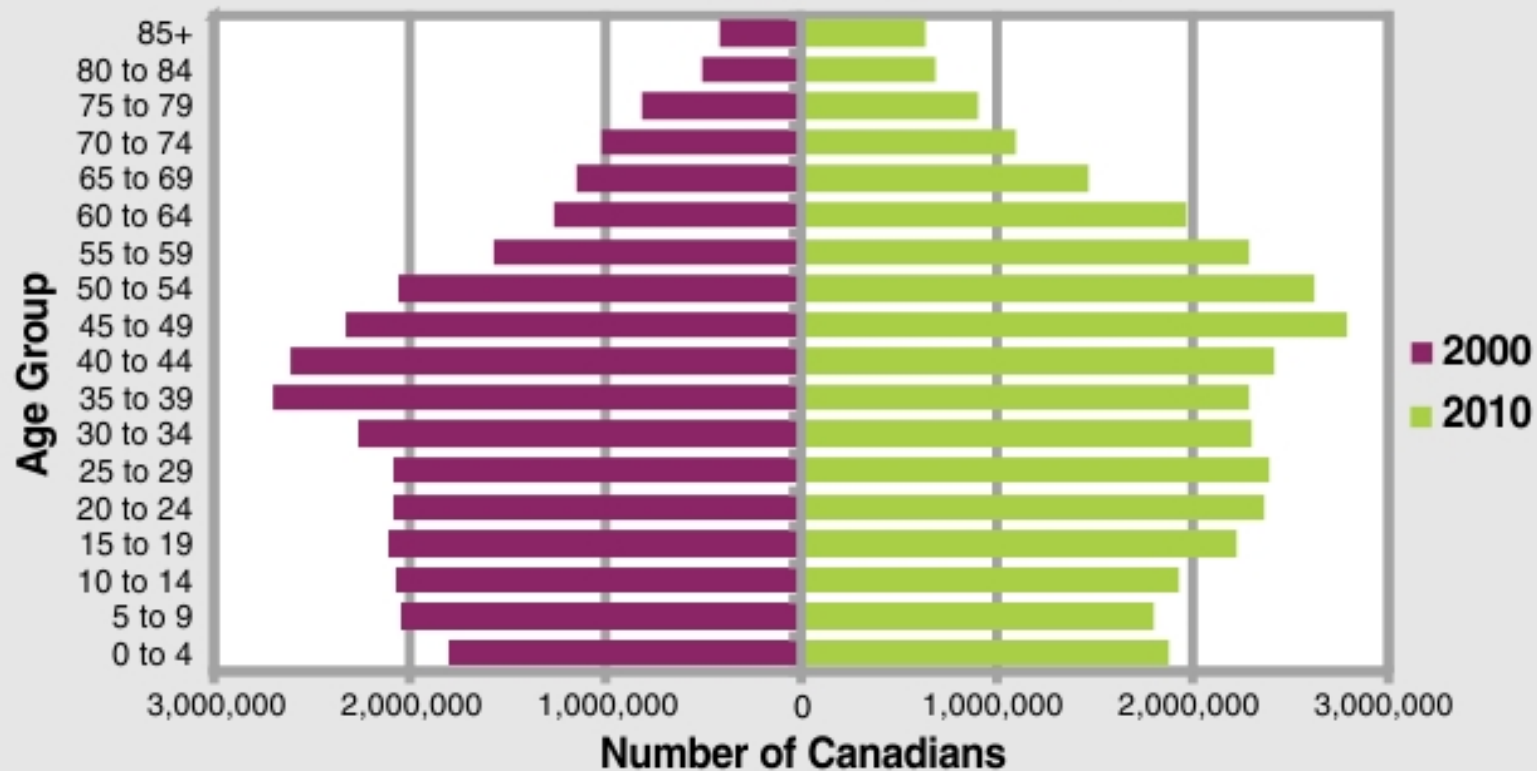
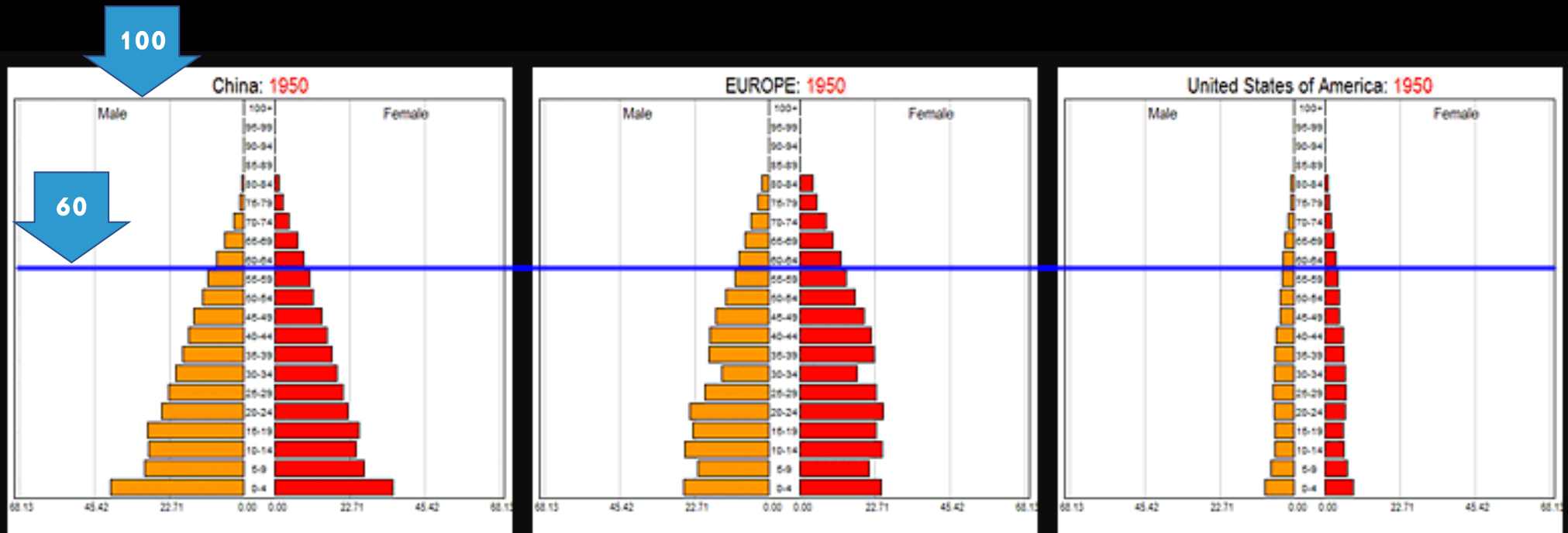


Fig. 1.1.4 Population pyramid, by age and sex, Canada, 2010



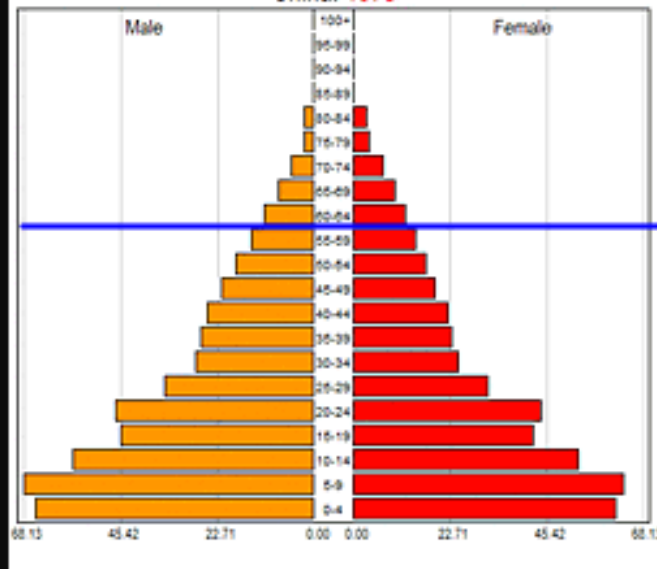
Adapted from the Statistics Canada CANSIM database <http://cansim2.statcan.gc.ca>, table no. 051-0001 accessed on July 8, 2011

1950

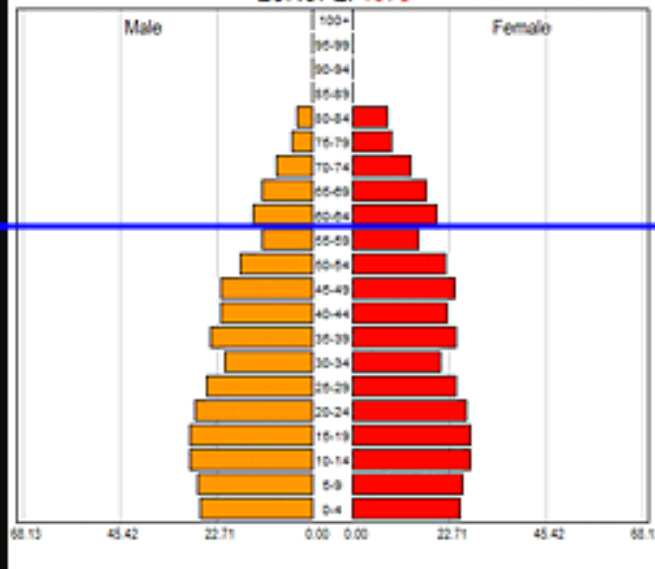


1975

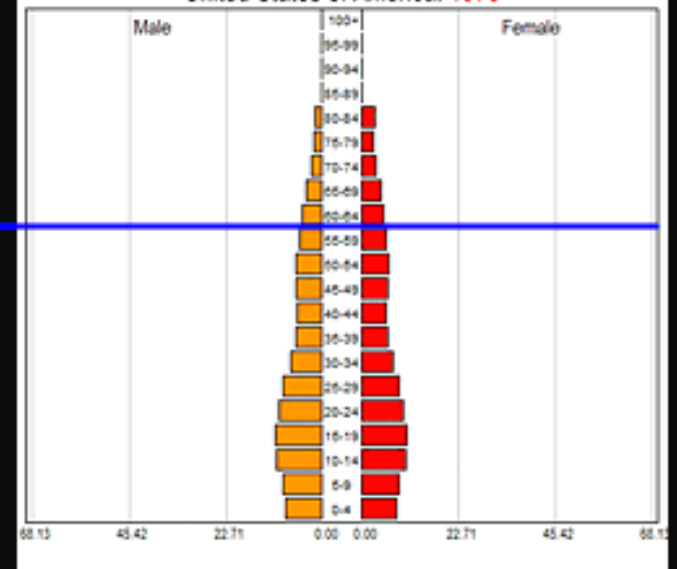
China: 1975



EUROPE: 1975

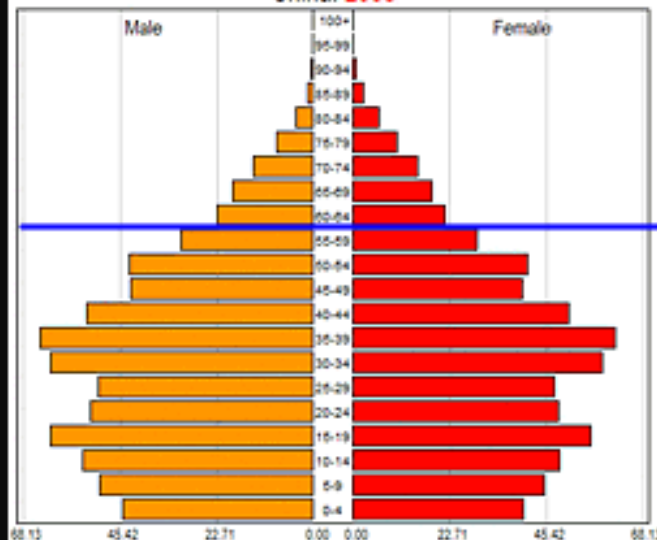


United States of America: 1975

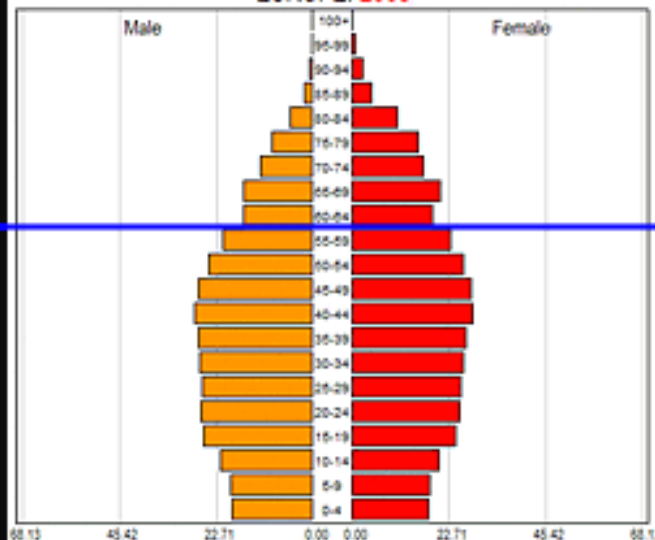


2005

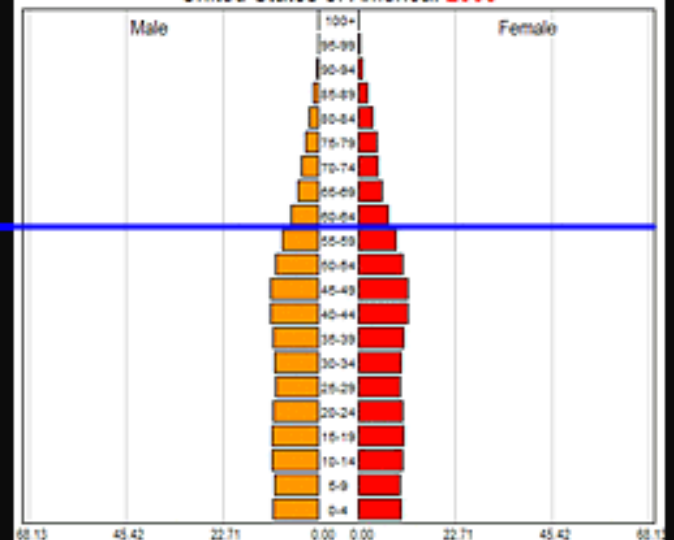
China: 2005



EUROPE: 2005

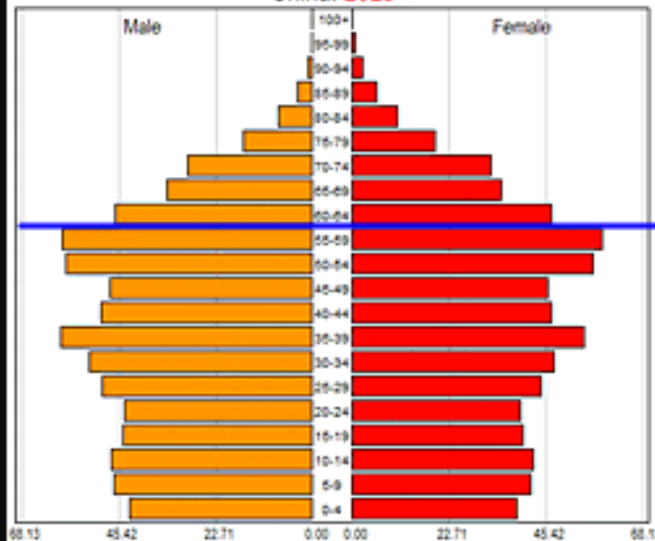


United States of America: 2005

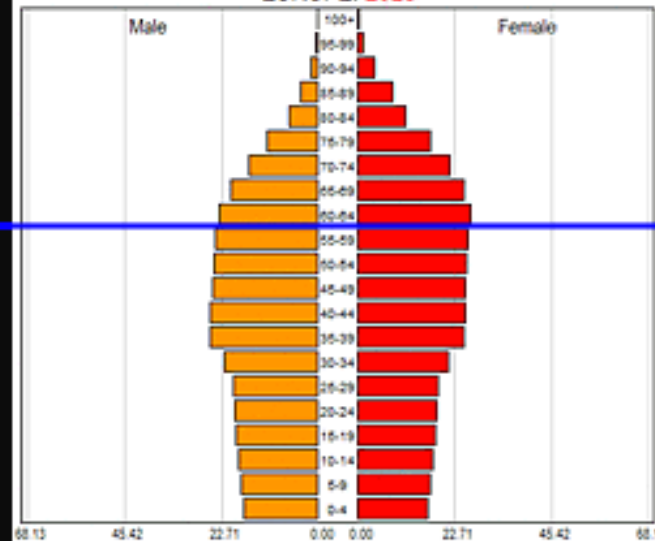


2025

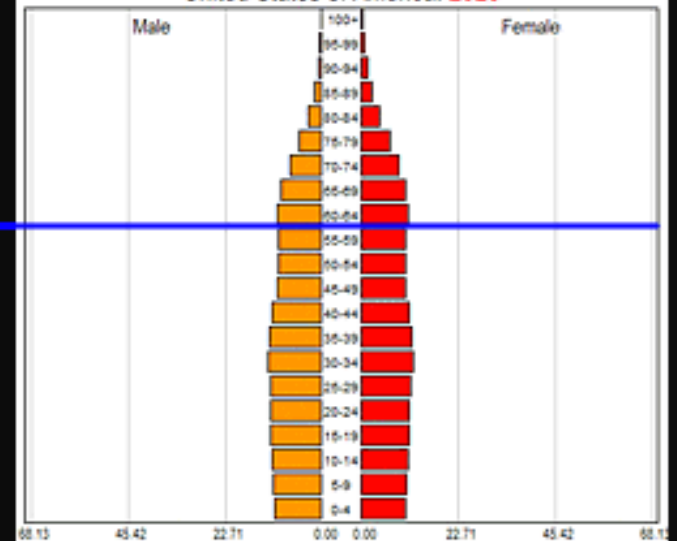
China: 2025



EUROPE: 2025

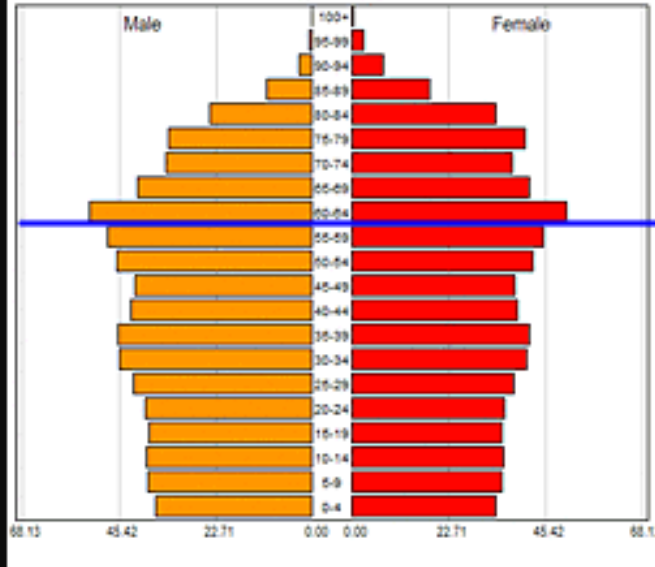


United States of America: 2025

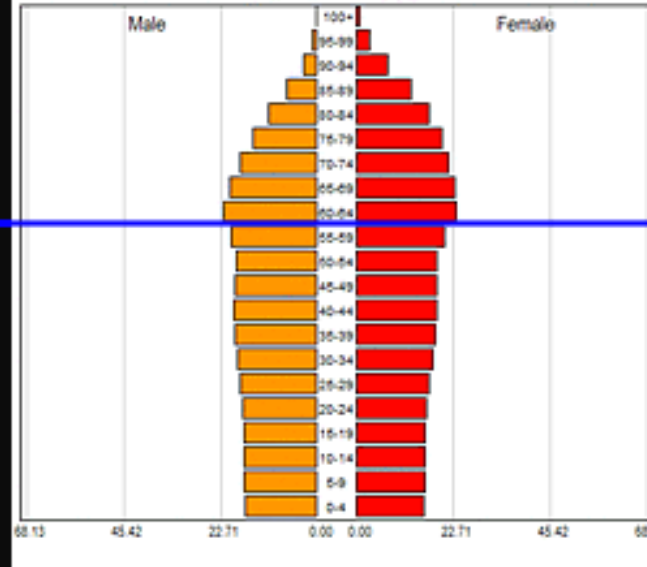


2050

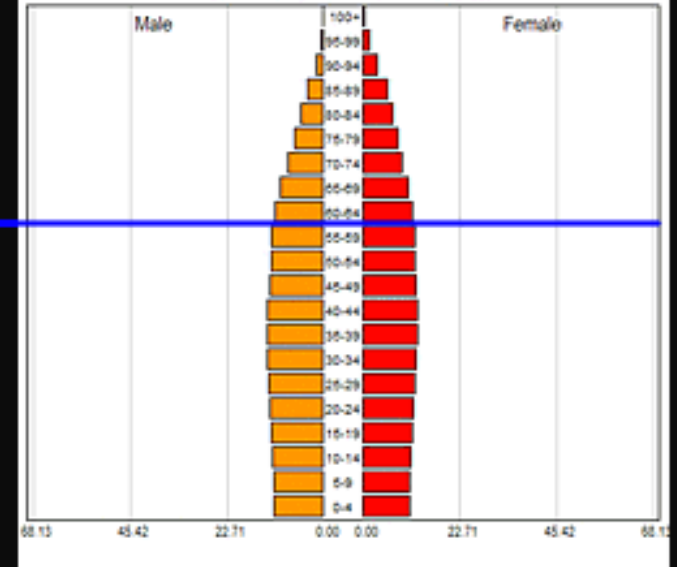
China: 2050



EUROPE: 2050



United States of America: 2050



**By 2035,
people 65 and older
will outnumber
children for the first time**

United States

Greece

Russia

Hungary

Japan

Why is Any of this Important

Poland

Denmark

Singapore

Italy

China

**People are living longer
Retiring later in life!**

Revenues

**By 2035,
people 65 and older
will outnumber
children for the first time**

**220 Billion Discretionary Spending
Available at US**

**33 Billion Discretionary Spending
Available for Travel Industry**

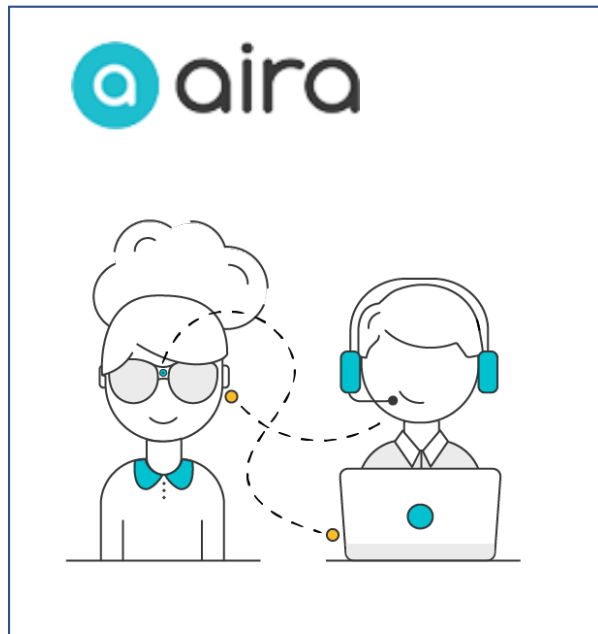
**Travelers with Disabilities Generate
17.3 Billion/year**

**Since they don't travel by themselves,
this figure can doubled or tripled
34.6 Billion**

(2015 - Open Doors Organization)

Travel and Hospitality Industries Are Already Changing How they treat People with Different Abilities

The New York Times:
More Benches, Special Goggles: Taking Steps to Assist Older Travelers



aira connects people who are blind or have low vision to a trained professional agent who is dedicated to further enhancing their everyday experience – completely hands-free assistance at the touch of a button.



Seattle airport has begun offering **electric cart service** between the airport's light rail station and the terminal, so passengers don't have to walk the few tenths of a mile..

A service for travelers arriving on **cruises from Alaska** lets them send their luggage directly from the ship to their departing flight.





Fantastic Flavours Ice Cream Parlour

Youghal, Ireland,

Worked with older people and architects to evaluate each aspect of his customers' experience and went beyond eliminating **tripping hazards** and installing **better lighting**.



“Studio Commons” later this year — units with four rooms positioned around a single common area.



Tampa airport worked with a design and a construction companies, to **minimize walking distances** and create an **open layout** so passengers could easily find their way to gates, restrooms and restaurants.

Additional staff members were stationed throughout the terminal.



A few airports have begun installing **special systems that transmit announcements directly to the telecoil receiver in a user's hearing device**, allowing those with hearing aids to more easily understand announcements at the gate. The airports in Detroit and Rochester are among those rolling out the system.

Opportunity

Why NOW?

A collage of white icons representing various technologies and household appliances on a blue grid background. The icons include a printer, airplane, lightbulb, mobile phone, desktop computer, game controller, camera, fan, lamp, microscope, television, refrigerator, clock, video camera, car, drill, power tool, clock, fan, washing machine, and telephone. The word "Technology" is written in red across the center of the collage.

Technology

What's Your Delight?



Internet



Music



Entertainment



Retail



Gaming



Hospitality



Banking



Health



Social Network



Food



Education



**Professional
Network**



Travel



Medicine

How Can We Understand What To Do?



Empathy



**Empathy
leads to
innovation.**



You cannot walk in another person's shoes until you take your own shoes off.

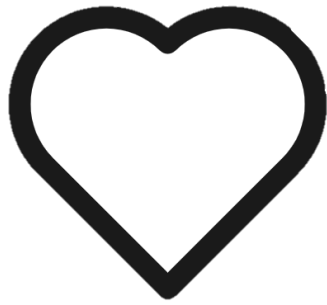
Scott Cook
(Founder, Intuit)

Empathy

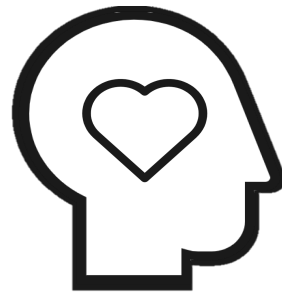
- **Feels** how another person feels
- **No judgment** about their feelings
- You just **listen** to another person
- Put yourself in their shoes
- Sensitive to **non-verbal** cues
- Searches for deeper meaning
- **Acknowledges feelings**

Sympathy

- Knows how another person feels
- Judgment about their feelings
- Give unasked for advice
- Look from your own perspective
- Overlooks non-verbal cues
- Sees only surface level meaning
- Suppresses feelings



**Emotional
Empathy**



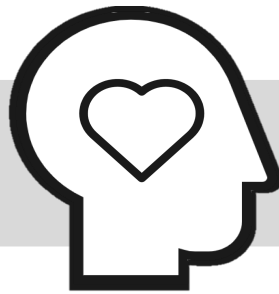
**Cognitive
Empathy**



**Compassionate
Empathy**



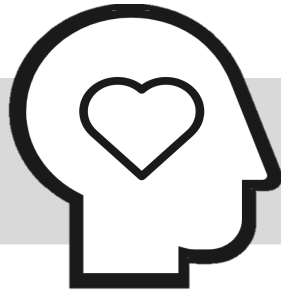
**Emotional
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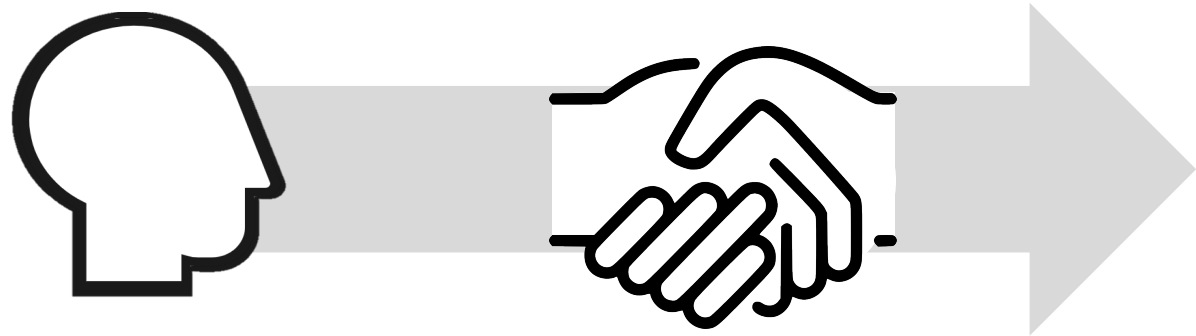


- Eliminate Empathy
- Don't Do Immersion
- Miss Out Insights





- Eliminate Empathy
- Don't Do Immersion
- Miss Out Insights



- Move to Mapping
- Skip to Sketching
- Sprint to Solutioning

Don't Focus on Typical Users



Typewriter



In 1802 Italian **Agostino Fantoni** developed a particular typewriter to enable his blind sister to write.

Typewriter



Alexander Graham Bell invented the telephone in 1876 to assist his mother who was hearing impaired.

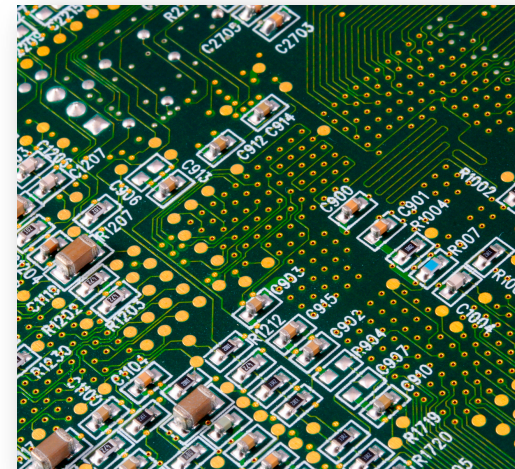
Transistors



Bell Labs invented the Transistors.



Akio Morita purchased it and created a complete technological evolution.



Every **SMART** device we know!

Voice Innovations



Google Home



Amazon Echo



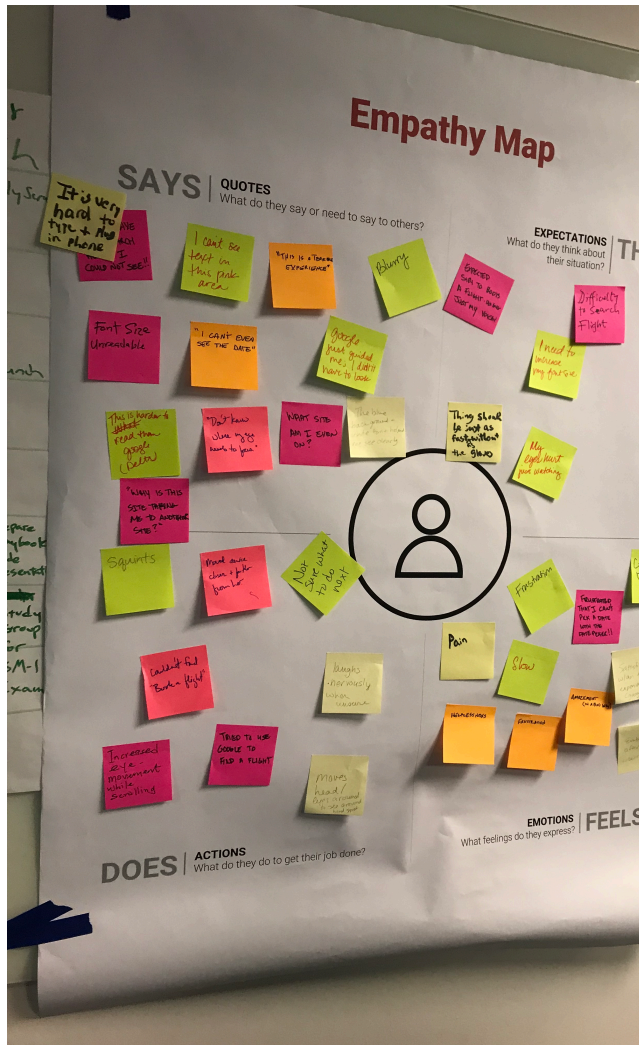
Apple Watch

Empathy Immersion Exercises







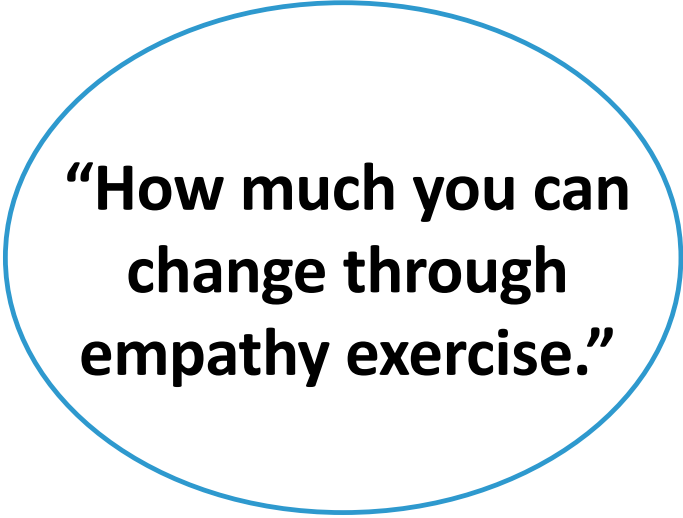


Feelings After the Experience

“Empathy for people who struggle with vision impairment.”

“Felt terrible for those that have to go through this everyday.”

“Empathy for people with impaired/ blurred vision, some frustration due to inability to access easily.”



“How much you can change through empathy exercise.”

“I had no idea how hard it could be to function with partial blindness.”

“What seems normal isn't normal for people with disabilities.”

“Difficult to watch users struggle with poor design. Feel embarrassed.”

Empathy Through Usability Testing with People with Disabilities



SYD ⇄ MEL

Select Flight

Mon, Feb 25

10 results

SORT BY ▲

SHOW FILTERS

2 filters

TIME

DURATION

AMENITIES

7:30 AM → 9:05 AM

1 hr 35 mins



+2

SYD

MEL

Non-stop

(Amenities may vary per flight)



VA 812 Boeing 737-800 (winglets)

DETAILS ▲



7:30 am Sydney

SYD Sydney, Kingsford Smith, Australia

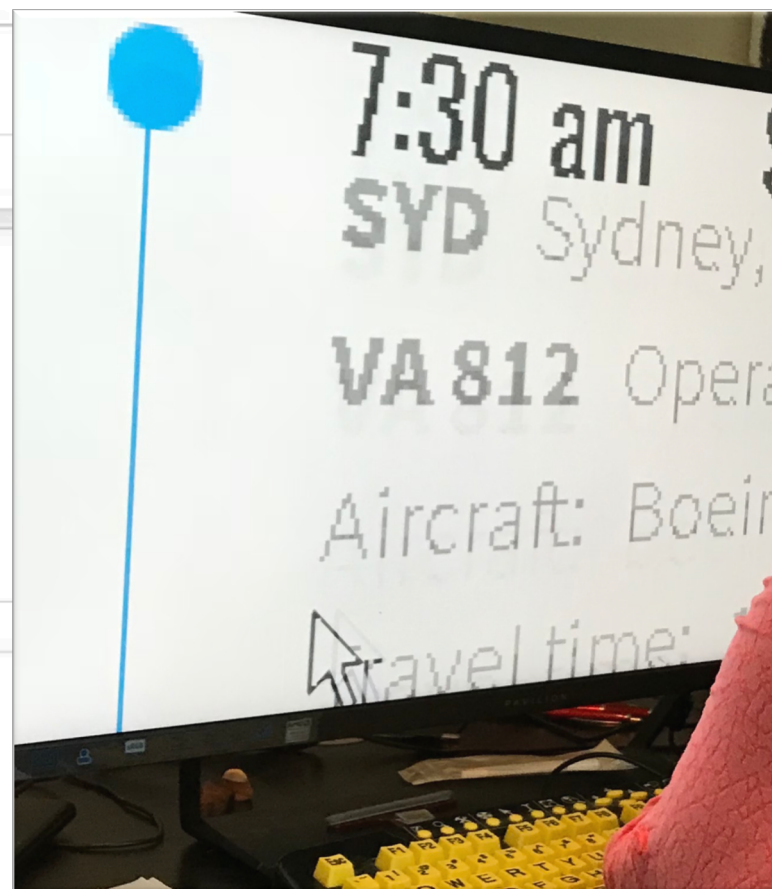
VA 812 Operated by Virgin Australia

Aircraft: Boeing 737-800 (winglets)

Travel time: 1 hr 35 mins

Departure terminal 2

Arrival terminal 3



luggage



Recharge stations at seat

SYD

MEL

Mon, Feb 2510 results

SORT BY▲

HIDE FILTERS

Departure Time

CLEAR

06:00 AM-10:00 PM

Arrival Time

07:35 AM-12:28 PM

Airports

CLEAR

☒

Canberra Airport, Australia3

Airlines

CLEAR

☒

Virgin Australia31

TIME

DURATION

AMENITIES



way

→ SYD ⇌ MEL \$264.76 ^

Departing 7:30 am, on 25 February 2019

Sydney(SYD) → Melbourne(MEL)

Duration: 1 hr 35 mins / **Non-stop**

✈ VA 812 Operated by Virgin Australia

Returning 7:45 am, on 01 March 2019

Melbourne(MEL) → Sydney(SYD)

Duration: 1 hr 25 mins / **Non-stop**

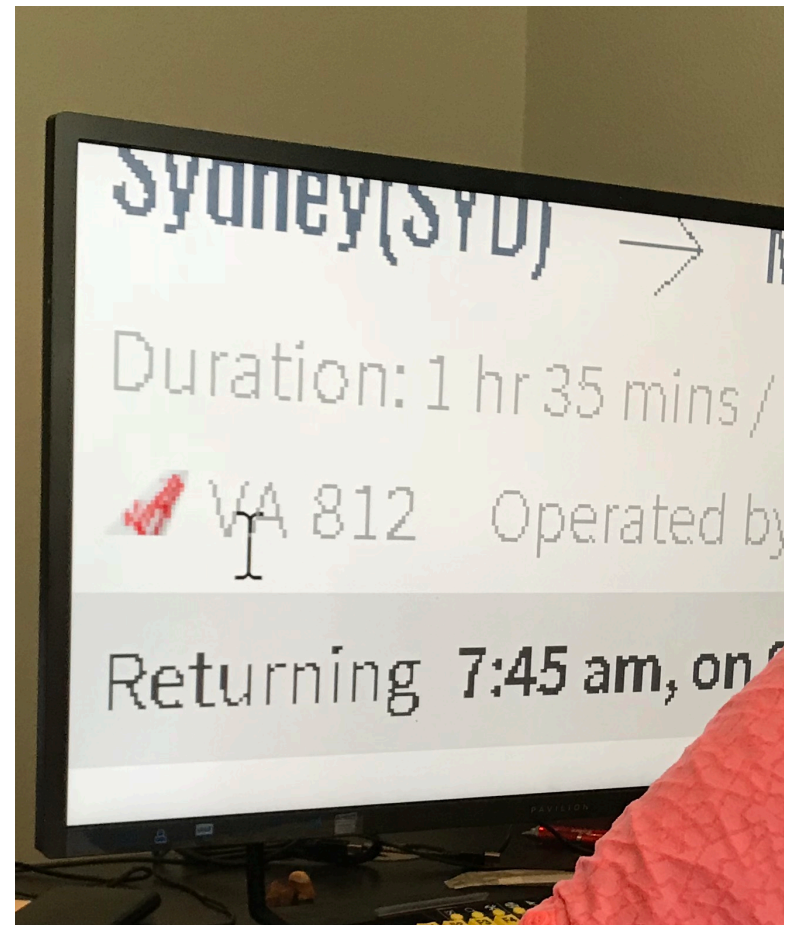
✈ VA 817 Operated by Virgin Australia

Adult x 1

\$264.76

HT

way



What do you feel now?

Empathize and Make the
Extreme
Mainstream

**Accessibility Compliance
is **NOT** an **OPTION** Anymore.**

It **IS a **REQUIREMENT!****



Resources:

- World Health Organization [<https://www.who.int/>]
- 2016 Disabilities Statistics Annual Report
[https://disabilitycompendium.org/sites/default/files/user-uploads/2016_AnnualReport.pdf]
- World Population Aging 2015_Report
[https://www.un.org/en/development/desa/population/publications/pdf/ageing/WPA2015_Report.pdf]
- Population Growth Animation [<https://giphy.com/gifs/united-states-iJPH7MhIdKCOI>]