

# & Interfaces Accessibility Innovative UX

**Keywords:** [Accessibility](#), [Interfaces](#), [User Experience](#), [Design](#), [Innovation](#)

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The World Health Organization and the World Bank report that nearly 1 out of 7 of the world's population has some form of disability.

Creating products and services that don't include alternate interaction models is a failure on a global scale. Designers and engineers are the middlemen between disability and accessibility, and it's our duty to help break interface barriers.

# disability n.

“...is a complex phenomenon, reflecting an interaction between features of a person’s body and features of the society in which he or she lives.”

*“Disabilities”. World Health Organization. Retrieved 11 August, 2012.*

## Disability Affects All Of Us

Many times, when we hear or talk about accessibility, we think of this model: There’s “us” and there’s “them.” It’s important to remember that disability is defined only by the society a person lives in, and the term “disability” is simply a description of an established norm.

With nearly 1 of 7 of the world’s population has some form of disability. This means that each of us will encounter some form of “disability” in our lives.



## 1 Out Of 7

Important variables to consider are physical, sensorial, cognitive disabilities, and how their abilities affect daily functions as well as the growing number of people over the age of 65 losing abilities as they age.

As new technologies are becoming more ubiquitous and necessary for communication, creating products and services that don't include alternate interaction models is a failure on a global scale. It is our duty as designers and engineers to create, understand and practice accessible design.

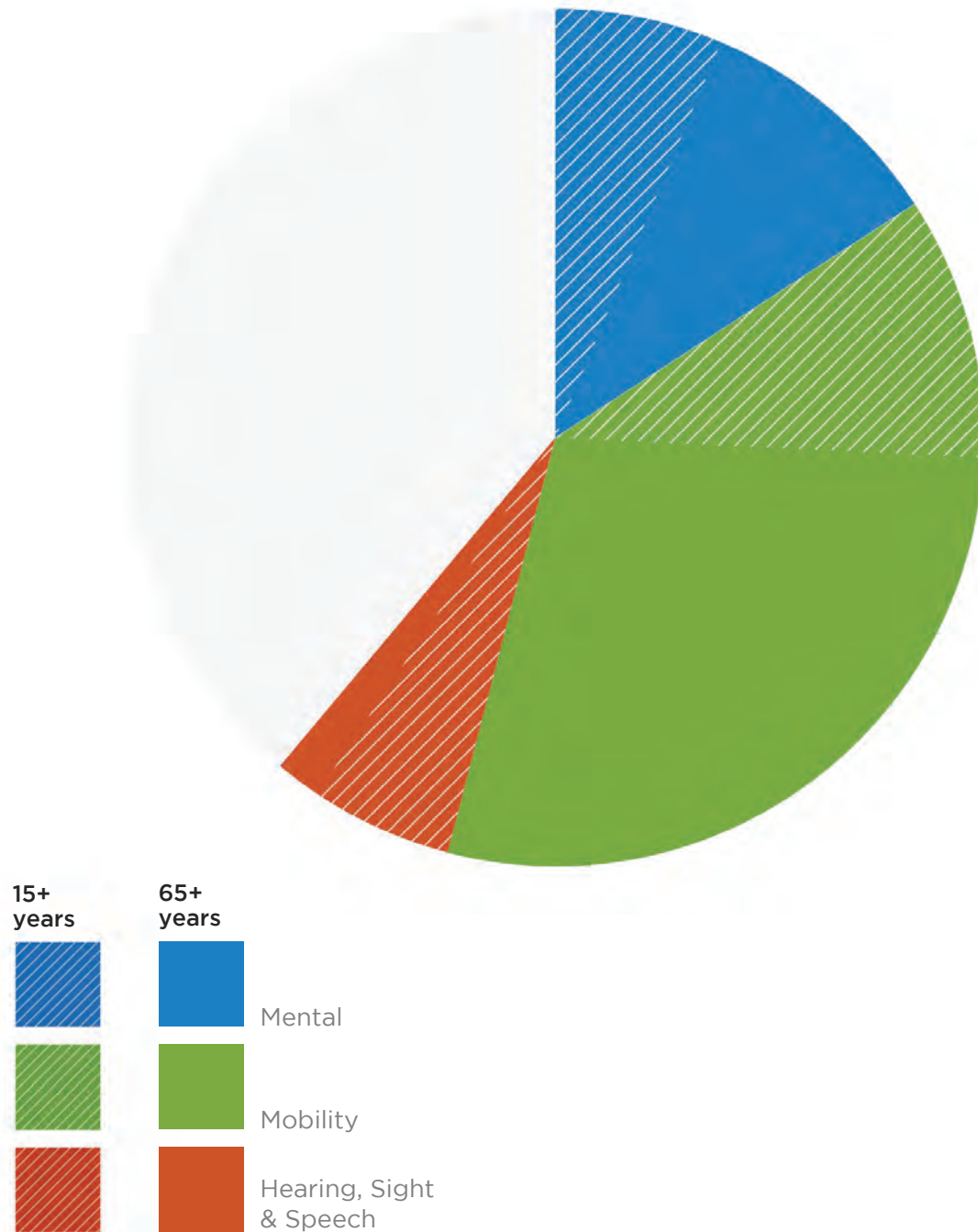
## Prevalence of Disability in the U.S.

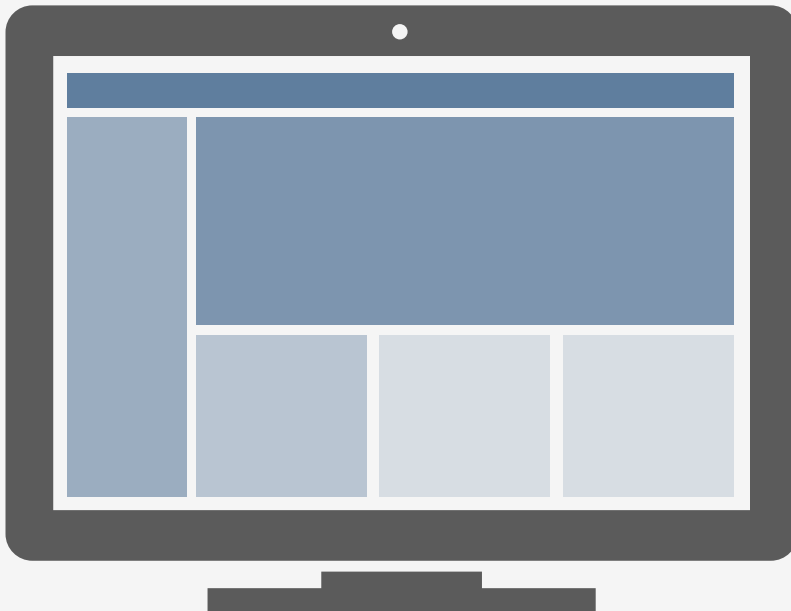
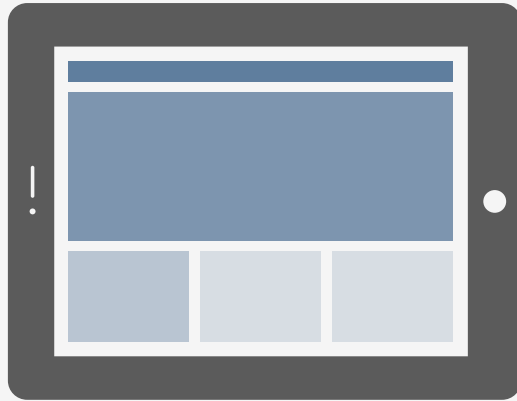
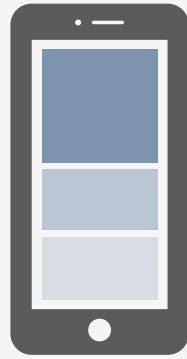
The 2010 US Census outlines the number of people with disabilities by age and by disability classification.

12.8% of children from ages 5-15 have some form of disability.

12.6% of people ages 15+ have an impairment in mobility, 6.3% cognitive impairment, and 6.2% vision or hearing. When we get to the aging population of people 65+, we see 39.4% mobility, 17.9% seeing and hearing, and 7.8% cognitive.

**Overall, over 21.3% of people over 15 years and over 49.8% of people over the age of 65 have some form of disability,** keeping in mind that individuals can have one or more types of disability.





## Four Principles of Accessible Design

**PERCEIVABLE** The user must be able to perceive information being presented.

**OPERABLE** Can the user interact with all controls?

**UNDERSTANDABLE** Is the information presented easy to understand?

**ROBUST** Can the interface and content be easily interpreted on all platforms and operating systems?



## **Taking A New Perspective On Existing Technologies**

Reconsidering the same tools that are available on existing devices can yeild a useful new way of performing the same task.

BrailleTouch is an app that allows users to type in Braille. Users that know the Braille alphabet system can potentially type faster than using regular iPhone keyboard.



## **Problem Solving That Opens Doors For Everyone**

New ways of looking at everyday experiences can be useful for everyone without creating design “band-aids” for broken interactions.

Google, Audi and Toyota have been introducing self driving cars. These vehicles offer an innovative solution for the blind and visually impaired as they can be driven where they need to go by giving commands.



## **Bridging The Human-Computer Interface**

As devices become an extension of our lives in an emotional way, they can also transform our physical selves.

Born with achromatopsia (complete color blindness) Neil Harbisson, founder of the Cyborg Foundation, developed a device that translates colors into sounds called the Eyeborg.





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