

# Who needs accessibility?

## HEARING

Deaf: can't hear

Hard-of-hearing or hearing-impaired: can hear only with amplification or can hear in one ear only

## VISION

Blind: can't see

Visually-impaired: can't read small type or distinguish certain colors

Color-blind: can't distinguish certain colors

## MOBILITY

Physical disability: unable to move one or more limbs, fingers, or toes

Motor skills impairment: unable to press one key at a time, unable to press a key without duplicate keystrokes, unable to use a mouse

## LEARNING

Dyslexia: difficulty with reading

## **HOW MANY PEOPLE IS THIS?**

It's estimated at 15%

U.S. population  $\cong$  290 million people (15% = 43.5 million)

World population  $\cong$  6 billion people (15% = 900 million)

## **ARE THESE PEOPLE PART OF YOUR AUDIENCE?**

Do men visit your site? About 8% of them are color-blind.

In the U.S., over 19 million adults reported having trouble with vision in a 1997 CDC survey.

In the same survey, over 28.7 million reported “a little trouble” with hearing and over 5.9 million reported “a lot of trouble or deaf.”

# What is Accessibility?

## **IN REAL LIFE**

### **HEARING**

closed captioning for films, sign language interpreters  
for live events

### **MOBILITY**

ramps, elevators, kneeling busses

### **VISION**

large print books, elevator buttons with braille

### **LEARNING**

special learning approaches/techniques

# ON THE WEB

## HEARING

Deaf: visual cues in addition to audio cues, captioning for multimedia (Flash animation, audio, video with sound)

Hard-of-hearing: amplified headphones

Relevant only when your Web site contains sound

## MOBILITY

Navigation

Fitt's Law

# ON THE WEB

## VISION

**Blind:** screen readers, dynamic braille printers

**Visually-impaired:** use browser features to make font sizes larger or use screen magnification tools

**Color-blind:** use stylesheets to force usable color preferences for text colors and page backgrounds

## LEARNING

**Extremely difficult to address properly, even for today's Web experts in the field**

# Why Accessibility?

## **THE GOAL**

To provide equivalent access of effective communication to everyone without imposing undue hardship and without fundamentally altering the program or service.

## **UNDERSTANDING THE GOAL**

What is “equivalent access”?

Wheelchair access to a building

“equivalent dignity”

What is “effective communication”?

Equally effective as with non-disabled visitors

## **THE GOAL**

To provide equivalent access of effective communication to everyone without imposing undue hardship and without fundamentally altering the program or service.

## **UNDERSTANDING THE GOAL**

What is “undue hardship”?

Company would go bankrupt

What is “fundamentally altering the program or service”?

Elevators in the Leaning Tower of Pisa

## **PUBLICITY REASONS**

If UCSF is a medical sciences campus, why isn't it a leader in this health-related issue?

Can you afford to lose or annoy 15% of your audience?

If a disabled person has a bad experience with a UCSF Web site, what will he or she think of the people who run UCSF? What would you say if he or she were waiting to see you in your office?

The potential for bad publicity is real.

## **LEGAL REASONS**

### **1973: United States Section 504 (Rehabilitation Act)**

**Bans discrimination based on disability in any program or activity that receives financial assistance from any federal agency**

### **1990: United States Americans with Disabilities Act (ADA)**

**Extends Section 504 to include places of public accommodation**

## **LEGAL REASONS**

**1998: United States Section 508 (Rehabilitation Act amendments)**

**Extends Section 504 to include information technology**

**2002: California Senate Bill 105**

**Affirms that United States Section 508 applies to California governmental entities using information technology**

## **FINANCIAL REASONS**

Do you budget for the costs of a disability lawsuit?

Can you afford to risk losing a federal grant because your site is not accessible?

## **ETHICAL REASONS**

Web accessibility is an issue of equal opportunity and discrimination.

## **TECHNICAL REASONS**

Standards and guidelines for the Web let disabled and non-disabled users benefit from the same data sources.

The Web makes accessible communication very inexpensive and relatively easy.

# How do we make accessible Web sites?

# **EDUCATE PEOPLE**

## **MORE EFFECTIVE**

Explain who, what, why, and how, then ask people to agree—and commit—to these changes.

Provide resources to help people make the changes.

## **LESS EFFECTIVE**

Impose mandates or legislation, then have people defend why they can't or won't change.

# **EDUCATE PEOPLE**

**WEB SITE SPONSORS**

**WEB DEVELOPERS**

**Web Accessibility Initiative (WAI) Guidelines**

**Section 508**

**How to use color-blind simulators**

**How to make technology choices, design choices**

**How to use accessibility-focused development tools**

**How to find more information (widely available on the Web and in bookstores)**

# **INCLUDE ACCESSIBILITY IN YOUR BUDGET**

Hardware and software tools

Education and training

Additional Web developers to balance the load

Just like wheelchair ramps, it's smarter and less expensive to build in with a new project than it is to retrofit at a later date.

# EXPOSE WEB DEVELOPERS TO ACCESS TOOLS

## Software

Code validators

Accessibility checkers

Screen readers

Screen enlargement tools

Optical character recognition (OCR)

Voice recognition

# **EXPOSE WEB DEVELOPERS TO ACCESS TOOLS**

## Hardware

Document scanners

Large monitors

Braille printer

# **TEST YOUR SITES WITH DISABLED PEOPLE**

Rose Resnick LightHouse for the Blind and Visually Impaired

Peninsula Center for the Blind and Visually Impaired

Recording for the Blind & Dyslexic

American Foundation for the Blind

San Francisco Public Library

## **BEST FIXES TO IMPLEMENT FIRST**

Create valid code

Use ALT tags for all images (except spacer-GIFs and other meaningless graphics)

Use “skip navigation” links before all navigation bars

# Recommended Reading

# NON-TECHNICAL

Introduction to the Screen Reader (12 MB Apple QuickTime movie)

<http://www.doit.wisc.edu/accessibility/video/intro.asp>

Access: Everybody Wins

<http://www.alistapart.com/stories/access/>

Beyond Accessibility: Treating Users with Disabilities as People <http://www.useit.com/alertbox/20011111.html>

## TECHNICAL

Joe Clark's Answers – In Valid HTML

<http://interviews.slashdot.org/interviews/02/12/09/1446221.shtml>

Accessibility and Authoring Tools

<http://www.alistapart.com/stories/tools/>

## NON-TECHNICAL AND TECHNICAL

Mark Pilgrim: Dive into Accessibility

<http://diveintoaccessibility.org/>

## MORE INFORMATION

There are too many other excellent sources to list concisely and representatively.

Google is your friend! <http://www.google.com/>

[Web accessibility](#)

[Section 508](#)

[color-blind Web development](#)

[screen readers](#)

## ABOUT THIS PRESENTATION

This presentation is available on the Web at:

<http://pharmacy.ucsf.edu/go/access/>

PDF, 26 pages, 84 KB

Requires [Adobe Reader](#) 5.0 or later