

Building a culture to support inclusive design

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THE BLOG

Seventy Percent of Websites Are Breaking the Law on Accessibility - Here's How and Why That Needs to Change

15/05/2016 14:50 BST | Updated 16/05/2017 06:12 BST



Machine Bias

There's software used across the country to predict future criminals. And it's biased against blacks.

by Julia Angwin, Jeff Larson, Surya Mattu and Lauren Kirchner, ProPublica
May 23, 2016

Are technology makers
intentionally...

discriminatory?

racist?

misogynist?

Missing entire
populations and
contexts can lead to
**unintended
consequences.**

At scale, this can be a
really big problem.

Unintentional exclusion
has the **same impact**
as intentional exclusion.

Our talk is about
making
equitable choices
in our design and
research.

A Framework for Equity in Design



Making the **case** for
equity

Creating a knowledge
foundation

Achieving and
sustaining impact

Gender Equity Online

Method

Interviews and focus groups (n=363)

Large-scale survey (n=3,500)

Countries

Bangladesh, Brazil, India, Indonesia,
Mexico, Nigeria, and Pakistan

Approach

Internal partnerships

External sharing



Accessibility

Understanding the product end users

Conducted field, diary, and usability studies of users with vision impairments, deaf and hard of hearing, motor impairments and learning disabilities to understand their daily life and unmet needs.

Learning how teams and organizations work

Analyzed similarities of how teams work to identify common opportunities to bake accessibility into their workflow and optimize when possible.


1. Making the case for equity

Common challenges

Unclear about **fit with
business goals**

Unable to get **prioritized over
competing interests**

Uncomfortable with implications
of being asked to focus on
equity



Illustrate how equity supports organizational goals

The ethical case

Do the right thing.

The technical case

Equity creates new technical opportunities.

The business case


Inclusive design drives product growth.



Partner with other
teams to align on
similar goals

A photograph of a crowded indoor event, possibly a fair or festival, with many people of various ages and backgrounds. The image is overlaid with a semi-transparent dark layer. In the center, the text "Consider all the stakeholders" is written in a white, serif font. In the foreground, a man with glasses and a light blue t-shirt is looking down at a small object in his hands. To his right, a woman with long dark hair is looking towards the camera. In the background, there are various stalls and signs, including one that says "PARK HILL BAPTIST" and another that says "BY RS eyes".

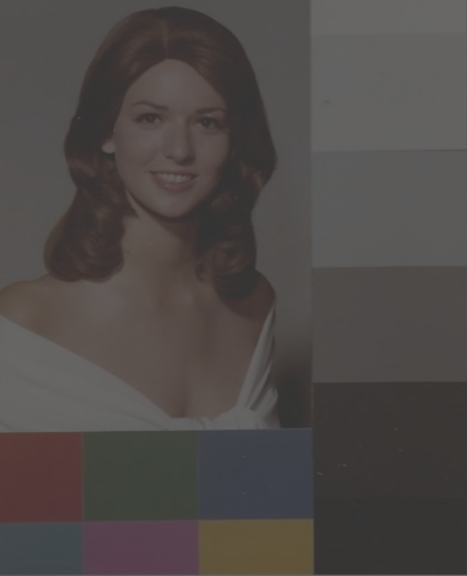
Consider all the stakeholders



Make it a collective effort;
don't make it personal

Slide content credit: Shannon Vallor

Photo source: Pixabay



Provide concrete examples

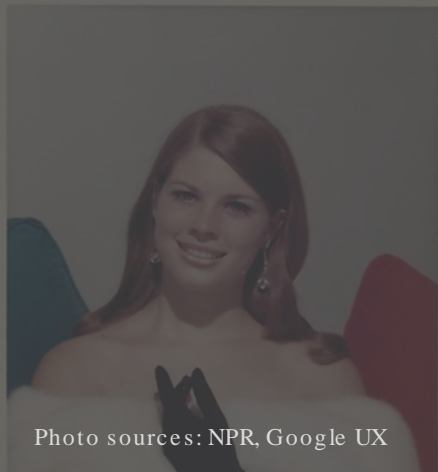


Photo sources: NPR, Google UX



A photograph of two women wearing black niqabs. The woman on the left is holding a dark-colored smartphone in her right hand, looking at the screen. The woman on the right is standing next to her, also looking towards the phone. They are in front of a building with a series of arches and a decorative roofline. The image has a semi-transparent dark overlay.

Making the case for gender equity

Photo source: Google UX

Gender equity as core, not periphery

The business case

Between 2015-18,
the gender deficit in
owning phones
decreased by 8%

The ethical case

Building for gender
equity advances
human rights and
promotes socio-
economic progress

The technical case

Gender equity
opens new technical
challenges in ML,
device privacy,
online safety, and
equitable access

A photograph of a woman in a white sleeveless top and red shorts pushing a person in a red wheelchair. The person in the wheelchair is wearing a red shirt and grey pants. They are outdoors on a grassy area with a large pile of brush in the background. The text "Making the case for accessibility" is overlaid in green.

Making the case for accessibility

A photograph of a woman in a red shirt sitting in a wheelchair, being pushed by another woman in a white top and red shorts. They are outdoors on a grassy area with trees in the background. The image is semi-transparent with text overlaid.

Creating the ally business case

\$8T

Collective disposable income
people with disabilities and
their friends & families
worldwide

\$21B

Discretionary income
working-aged people with
disabilities in the United
States



Permanent



Temporary



Situational



Photo source: Getty images





Eyes-free, hands-free



Partially audible

2. Creating the foundation


A photograph of two people, a man and a woman, sitting at a table and working together. The man is on the left, wearing a white shirt with red stripes on the sleeve, and is looking at a laptop. The woman is on the right, wearing a light blue shirt, and is writing on a piece of paper. There are other papers and a pen on the table. The background is slightly blurred.

Common Challenges

Unsure **what to include** in
the foundation

Unclear on **when foundation
is solid** and ready to use

Not enough **resources** to build
the foundation

A group of people, mostly men, are gathered in a room, viewed from behind. They are looking at a wall covered with various posters and notices. One prominent poster features the word 'DEV' and the word 'Artist'. The room appears to be a workshop or a community center. The text 'Create a knowledge foundation of a deep understanding of people's needs and practices' is overlaid in white on the image.

Create a knowledge
foundation of a deep
understanding of
people's needs and
practices

Start with existing external resources & find collaborators

6 Principles for Inclusive Design – UX Planet

<https://uxplanet.org/6-principles-for-inclusive-design-3e9867f7f63e> ▼

Jun 21, 2018 - It enables people with diverse characteristics to use your product in a variety of different environments. It's important — especially when you're designing for millions of people — to create different ways for people to participate in an experience. **Inclusive design** is a win-win for customers and businesses.

What You're Getting Wrong About Inclusive Design - Fast Company

<https://www.fastcompany.com/.../what-youre-getting-wrong-about-inclusive-design> ▼

Apr 4, 2018 - The tension with universal design is how you design something that works for everyone in all scenarios, with every contingency. That's one of the challenges of understanding **inclusive design** when we look at the object, saying, "This design is **inclusive design**." In those cases, often what we mean is **universal design**.

You visited this page on 10/9/18.

Definitions - Inclusive Design

inclusivedesign.no/practical-tools/definitions-article56-127.html ▼

Inclusive Design is sometimes used interchangeably with two other terms, Universal Design and Design for All. All three have a similar purpose but have ...

The Difference Between Inclusive Design and Accessibility - Eone

<https://www.eone-time.com/.../the-difference-between-inclusive-design-and-accessibili...> ▼

May 30, 2017 - If you're familiar with what we do here at Eone, you probably know that we're an **inclusive design** company, known for our feature product, the ...

You've visited this page 5 times. Last visit: 3/24/18

Inclusive Design Research Centre

<https://idrc.ocadu.ca/about-the-idrc/49-resources/.../443-whatisinclusivedesign> ▼

We have defined **Inclusive Design** as: design that considers the full range of human diversity with respect to ability, language, culture, gender, age and other ...

You've visited this page 2 times. Last visit: 4/26/18

“University collaborations are valuable for innovation, and significant benefits come from businesses building relationships with universities beyond their local area.”

– Economic & Social Research Council

Audit existing product to identify gaps

WebAIM's WCAG 2 Checklist

[Home](#) > [Articles](#) > [WCAG](#) > WCAG 2 Checklist

Perceivable

Web content is made available to the senses - sight, hearing, and/or touch

Guideline 1.1

Text Alternatives: Provide text alternatives for any non-text content

Success Criteria	WebAIM's Recommendations
1.1.1 Non-text Content (Level A)	<ul style="list-style-type: none"><input type="checkbox"/> All images, form image buttons, and image map hot spots have appropriate, equivalent alternative text.<input type="checkbox"/> Images that do not convey content, are decorative, or contain content that is already conveyed in text are given null alt text (alt="") or implemented as CSS backgrounds. All linked images have descriptive alternative text.<input type="checkbox"/> Equivalent alternatives to complex images are provided in context or on a separate linked page.<input type="checkbox"/> Form buttons have a descriptive value.<input type="checkbox"/> Form inputs have associated text labels.<input type="checkbox"/> Embedded multimedia is identified via accessible text.<input type="checkbox"/> Frames and iframes are appropriately titled.

Guideline 1.2

Time-based Media: Provide alternatives for time-based media

NOTE: If the audio or video is designated as an alternative to web content (e.g., an audio or sign language version of a web page, for example), then the web content itself serves as the alternative.

Success Criteria	WebAIM's Recommendations
1.2.1 Prerecorded Audio-only and Video-only	<ul style="list-style-type: none"><input type="checkbox"/> A descriptive text transcript that includes relevant auditory content is provided for non-live audio-only (audio podcasts, MP3 files, etc.).<input type="checkbox"/> A descriptive text transcript or audio description is provided for non-



Creating a foundation for gender equity online


A vibrant crowd of people at a Pride parade. In the foreground, a person in a purple and gold costume is dancing. To their right, a person in a white tank top and denim overalls is also dancing. Further right, a person in a blue t-shirt and patterned shorts is visible. The background is filled with many other people, some wearing rainbow wigs and holding rainbow flags. The overall atmosphere is festive and colorful.

Diverse samples and mixed methods for a foundation

Sampled across various jobs, ages, incomes, physical abilities, location, and gender identities

Work with NGOs, universities, or local partners for underrepresented populations

Care in research is important, especially for sensitive topics



Partner inside and outside the organization

Work with universities and NGOs to
scale up and build rigor

Partner with universities to scale, build
HCI capacity, and leverage local
expertise

Find like-minded researchers to support
you in achieving scale

Create accessible, intelligent vocabularies

ACCESS

*Can women go
online on their own
terms?*

Limited agency
Limited time
Limited mobility

CONTENT & COMMUNITY

*Is the content
relevant to
women?*

Relevant content
Community as content
Limited content
creation

PRIVACY


*Do women feel in
control of their
privacy?*

Device privacy
Online privacy

SAFETY

*Do women feel
safe online and
offline?*

Online abuse
Physical safety

A young man is seated in a motorized wheelchair, facing right. He is wearing a dark long-sleeved shirt, dark shorts, and blue sneakers. The wheelchair is black with large rear wheels and smaller front wheels. The background is a brick wall with the words 'OAKLAND UNIVERSITY CENTER' and a logo visible. There are wooden benches and a trash can in the background. The text 'Creating a foundation for accessible products' is overlaid in the center in a bright green color.

Creating a foundation for accessible products

Photo source: Robbie's Voice Activated Room - YouTube

From foundational
research develop
useful resources for
teams to utilize




A Day with Jeff—
Technology and Essential Tremor
Length of video: 12 minutes 50 seconds

[Open in new window](#) 
[Hear audio described version](#)



A Day with Danny—
Technology and Cerebral Palsy
Length of video: 11 minutes 32 seconds


[Open in new window](#) 
[Hear audio described version](#)

Accessibility design guidelines

Accessible design allows users of all abilities to navigate, understand, and use your UI successfully.

CONTENTS

Understanding accessibility



Observe
teams' workflows to
identify gaps and
opportunities to
integrate accessibility

3. Drive sustainable impact

Common Challenges


Efforts **lose momentum**
due to personnel changes
or new priorities

Teams are **unclear**
on how to do equitable
design and development

Teams feel **overwhelmed**
or discouraged

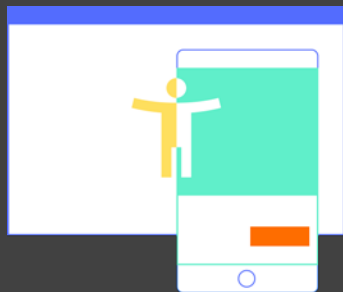
Establish top-level formal goals and
points of contacts within teams

OKRs

A dimly lit conference room with people seated around a long table, looking at a large screen displaying a presentation. The room has large windows on the right side, and the table is cluttered with papers, laptops, and snacks. The text is overlaid in the center of the image.

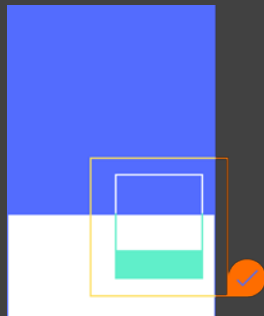
Establish clear success
metrics and frequently
communicate impact of
work

Provide a toolkit to apply to actual workflows and call out 1 thing to start with



DEFINE VISION

Go talk to people with disabilities.



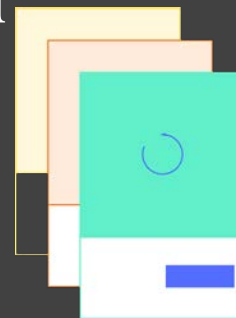
DESIGN

Design a great keyboard navigation interaction model.




DEVELOPMENT

Use standard components that have been stress-tested and that users are familiar with.



POST DEVELOPMENT


Provide accessible help content and onboarding.



Workshop with teams to co- create solutions

A group of people are working on a table, likely in a workshop or meeting. They are using sticky notes and a laptop. The text "Driving sustainable impact with gender equity" is overlaid on the image.

Driving sustainable impact with gender equity



Move from sharing to applying insights

Conduct workshops and audits to
move from discourse to action

Make research insights the foundation
of these engagements

Example workshop activities

'How to talk about gender' videos



Scenario cards

DESIGN: PRIVACY DESIGN CHALLENGE
ONLINE: 2018-2019-2020

Scenario

Neema recently got married, and has left her parents and moved in with her husband and his mother. The house is small and she barely gets any private time given that her in-laws are always at home.

Neema isn't adjusting to the change well, and wants to see if she might be depressed.

Challenge

How might Neema discover resources on depression without anyone in her family noticing?

Assume ...

- ... limited tech familiarity and english fluency
- ... privacy institutions are less useful than compromise/affordances
- ... a range of privacy solutions will work best
- ... people will not modify their privacy settings unless bad incidents happen
- ... privacy solutions should work in the presence of others

True or false

Fortify against Ebola Virus (NG)

True or False? #3

The images show a smartphone screen displaying a health app with a 'BLESSED ANTI-EBOLA SALT' logo, a packet of 'BLESSED ANTI-EBOLA SALT', and a larger bag of 'BLESSED ANTI-EBOLA SALT' with a 'BUY 3 GET 1 FREE' sticker.



Share widely to various communities to effect change

Amplify the key insights, frameworks, and vocabulary from your projects.

Sharing insights leads to broader impact in tackling the problem, hiring or getting partners



Driving sustainable impact in accessibility

Photo source: Getty Images

A large group of people, mostly young adults, are gathered in a conference hall. Many are wearing Google-branded shirts, including one with a large 'A' logo. They are all waving their hands towards the camera. The background shows other conference attendees and booths. The text is overlaid in a white serif font on a dark, semi-transparent background.

Accessibility Playbook

Accessibility Week

Accessibility Champs
program

Coda

A Framework for Equity in Design

Making the case for equity

Create a business, technical or ethical case

Partner with teams with similar goals

Remove biases by shifting perspective

Don't make it personal

Provide examples

Creating a knowledge foundation

Talk to diverse people to understand needs and practices

Start with existing external resources & find partners

Audit existing product(s) to identify gaps

Achieving and sustaining impact

Establish formal goals and points of contacts within teams

Establish clear success metrics and frequently communicate impact

Provide a toolkit for teams to apply to their actual workflow

Workshop with teams

A background illustration featuring stylized, flat-design figures of diverse people. On the left, a person with glasses and a red shirt holds up a yellow smartphone. In the center, a person with long red hair and a striped dress is seen from the back, holding a black bag. To the right, a person wearing a yellow hijab and a purple long-sleeved shirt holds up a blue smartphone. In the bottom right corner, a person with dark skin and short hair, wearing a blue jacket, holds up a red smartphone. The entire scene is set against a dark grey background.

Resources

Accessibility

Material Design - Accessibility

[design.google/NBU - global Accessibility](#)

Gender Equity Online


Gender equity - ACM interactions, CHI '18, SOUPS '18

[design.google/NBU](#)

Equitable Design

Fast Company - Inclusive design

Tarot Cards of Tech

A woman with dark hair tied back, wearing a black top with red floral patterns and a red skirt, is seen from behind. She is holding a smartphone up to take a photo of four children. The children are sitting on a stone bridge or railing, posing with their arms outstretched. They are wearing casual clothing like denim jackets and jeans. The background shows a stone wall and trees, suggesting an outdoor setting like a park or historical site.

Question the
positive and
negative impacts

Ask the tough
questions

The background features a stylized illustration of three people. On the left, a man in a green plaid shirt and dark pants holds a suitcase. In the center, a woman in a red top and pink skirt holds a smartphone and a blue bag. On the right, a woman in a yellow top and purple skirt waves. Above them are four speech bubbles: a purple one with two small red circles, a yellow one with three small circles, a grey one with a circle, square, and triangle, and a red one with two globe icons.

Write to us

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Thanks to

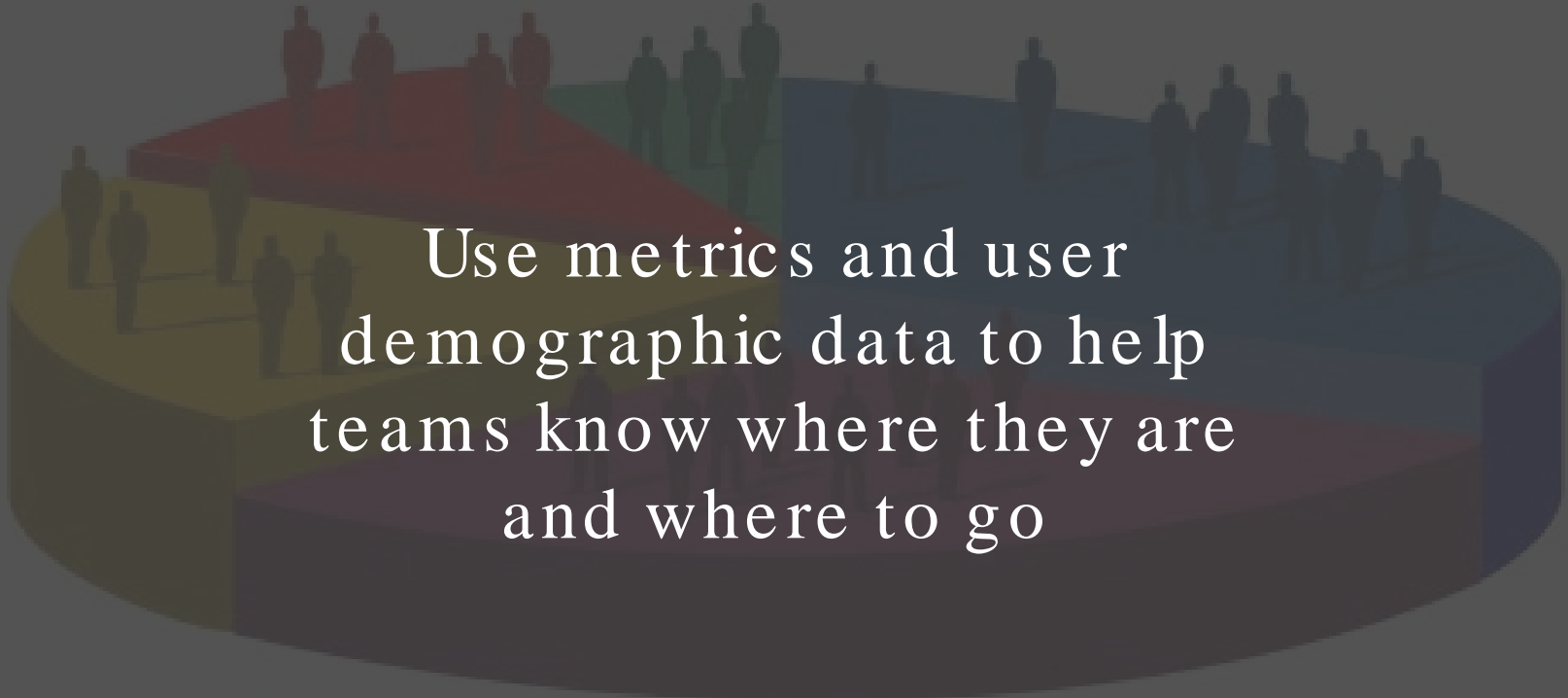
Garen Checkley

Taylor Marable

Astrid Weber

Andrea Wong

Appendix

A 3D pie chart is shown, divided into several slices of different colors including red, green, blue, yellow, and purple. On top of each slice, there are silhouettes of people, suggesting a distribution of a group or population across different categories. The chart is set against a dark grey background.


Use metrics and user
demographic data to help
teams know where they are
and where to go



Usability

Inclusive design

Accessibility



Use multiple methods for depth and breadth

Problems need an understanding of
why's, how's, and how many's

Logs speak the language of products.

Experiment with different methods for
data capture.