Building a culture to support inclusive design

Nithya Sambasivan, UX Researcher, Google AI
Jen Devins, Lead of Google Accessibility UX
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
The last three days there has been a concerted effort in the form of multiple fake tweets, photoshopped tweets, morphed videos on twitter / fb that even the most sensible have fallen for and have gone viral. Those asking me to clarify, please use your own discretion.

I hate India and Indians!
2:48 PM · 20 Apr 18

24 Retweets 569 Likes

Air India @airindia: · 2d
Replying to @RanaAyyub
Your one way flight to Pakistan is ready.

Opinion

In India, Journalists Face Slut-Shaming and Rape Threats

By Rana Ayyub
Ms. Ayyub is an Indian journalist.

May 22, 2018
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

Photo source: Google UX
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
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
Making the case for gender equity
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.

Sources:
GSMA, 2015
GSMA, 2018
Photo source: Google UX
Making the case for accessibility

Photo source: Photo by Soukup / CC BY 2.0
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

Photo source: Photo by Soukup / CC BY 2.0
Eyes-free, hands-free

Partially audible
2. Creating the foundation
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
Create a knowledge foundation of a deep understanding of people’s needs and practices
Start with existing external resources & find collaborators

“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

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

<table>
<thead>
<tr>
<th>Success Criteria</th>
<th>WebAIM's Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1.1 Non-text Content Phr. (Level A)</td>
<td></td>
</tr>
<tr>
<td>☐ All images, form image buttons, and image map hot spots have appropriate, equivalent alternative text.</td>
<td></td>
</tr>
<tr>
<td>☐ Images that do not convey content, are decorative, or contain content that is already conveyed in text are given null alt text (alt=&quot;&quot;) or implemented as CSS backgrounds. All linked images have descriptive alternative text.</td>
<td></td>
</tr>
<tr>
<td>☐ Equivalent alternatives to complex images are provided in context or on a separate linked page.</td>
<td></td>
</tr>
<tr>
<td>☐ Form buttons have a descriptive value.</td>
<td></td>
</tr>
<tr>
<td>☐ Form inputs have associated text labels.</td>
<td></td>
</tr>
<tr>
<td>☐ Embedded multimedia is identified via accessible text.</td>
<td></td>
</tr>
<tr>
<td>☐ Frames and iframes are appropriately titled.</td>
<td></td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Success Criteria</th>
<th>WebAIM's Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2.1 Prerecorded Audio-only and Video-only Phr.</td>
<td></td>
</tr>
<tr>
<td>☐ A descriptive text transcript that includes relevant auditory content is provided for non-live audio-only (audio podcasts, MPS files, etc.).</td>
<td></td>
</tr>
<tr>
<td>☐ A descriptive text transcript or audio description is provided for non-live video-only.</td>
<td></td>
</tr>
</tbody>
</table>
Creating a foundation for gender equity online
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

Photo source: The Hindu, 2017
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
Creating a foundation for accessible products

Photo source: Robbie’s Voice Activated Room - YouTube
From foundational research develop useful resources for teams to utilize

Accessibility design guidelines

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

Photo source: Google UX
Establish top-level formal goals and points of contacts within teams

OKRs
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
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

True or false

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?

Neema...
... a friend told her she needed help and referred her to a clinic.
... primary care provider told her to seek help.
... a friend told her she needed help and referred her to another women’s group.
... people of her age found a support group online.
... primary care provider told her to seek help.
... people of her age found an online support group.
... a friend told her she needed help and referred her to a social worker.
... primary care provider told her to seek help.
... people of her age found support group on social media.
... primary care provider told her to seek help.
... a friend told her she needed help and referred her to an online support group.
... primary care provider told her to seek help.

Scenario:
Fortify against Ebola Virus (NG)

Challenge
Which of the following are true?

- A. Primary healthcare workers are the first line of defense against Ebola.
- B. People in high-risk areas should avoid leaving their homes.
- C. There is no vaccine for Ebola.
- D. Primary healthcare workers are at risk of getting Ebola.
- E. People in high-risk areas should wash their hands frequently.

True or False:
- A. True
- B. False
- C. True
- D. False
- E. True
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
Accessibility Playbook
Accessibility Week
Accessibility Champs program

Photo source: Google UX
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
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
Question the positive and negative impacts

Ask the tough questions
Appendix
Use metrics and user demographic data to help teams know where they are and where to go.
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.

Use multiple methods for depth and breadth