Design Guidelines

PRIME
Protecting Minority Ethnic Communities Online

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UKRI Engineering and Physical Sciences Research Council

Working Document:

Design Guidelines for Enabling Equitable Digital Services (With Examples & Resources)

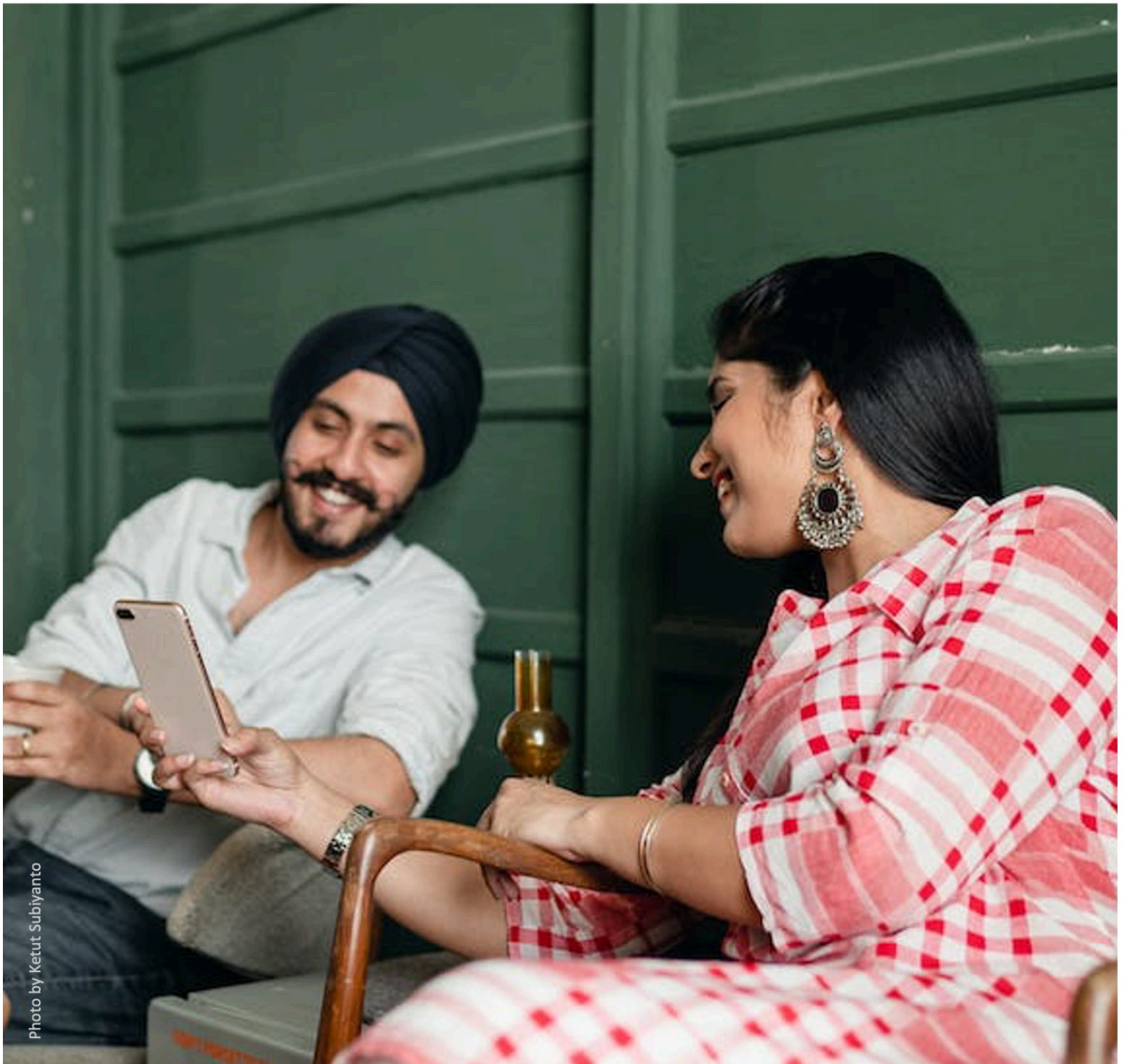

Photo by Ketut Subiyanto

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Design Guidelines for Enabling Equitable Digital Services

(With Examples and Resources)

This document builds up from the UKRI-funded (EP/W03235X/1, EP/W032333/1, EP/W032341/1, EP/W032058/1, EP/W032082/1) project (2022-2025) called **PRIME (Protecting Minority Ethnic Communities Online).** The project aims to improve understanding of Minority Ethnic (ME) communities' online experiences, particularly in accessing key services related to, but not limited to, **health, social housing, and energy**. It seeks to identify the types and nature of **online harms** these individuals may face and recommend solutions to mitigate them.

Target audience for these design guidelines are the people designing, managing, or improving any public-facing digital services.

These guidelines are informed by extensive evidence generated from the PRIME project on experiences of accessing and using digital social housing services by minoritised ethnic (ME) individuals. This evidence was collected via an online survey, 1-to-1 interviews of ME individuals, and exploratory workshops. We also organised co-design workshops with stakeholders and ME individuals, resulting in design concepts for reducing online harm and bias. Prototype apps were then developed from these design concepts and evaluated with users, providing further feedback. Design guidelines build up from the cybersecurity and privacy, machine learning and human computer interaction analysis of this evidence and activities, and are presented below.

The design guidelines are grouped into 4 overarching sections, with further guidelines within each section. Guidelines are accompanied with resources and examples guiding how to fulfil these design guidelines. This is envisioned as a working document in which more resources and examples will be added. We welcome comments and suggestions for adding such resources/examples.

Contribute !

Help us add more examples and resources. You can contribute by contacting Mehdi Rizvi (s.rizvi@hw.ac.uk | sy.mehdi.rizvi@gmail.com)

1. Tackle intersectionality of disadvantages

Minority Ethnic users may face an intersectionality of disadvantages such as language barriers, culture barriers, and socio-economic disadvantages manifesting in the form of device poverty and data poverty, along with general accessibility requirements.

Ensure that you…

- ☐ **Design for Device Poverty and Data Poverty:**
  - ☐ Provide "lite" or browser-based version of mobile apps
  - ☐ Design for mobile-first, and optimise web-apps and websites for mobile phone use
  - ☐ Don't limit access to certain devices, operating systems, app stores or browsers

  ➡️Resources/examples:
  - PRIMR's IRESHA Sharecode app has both a web-app for laptop/desktop use as well as a web-app optimised for mobile phone use which doesn't need installation. [primetoolkit.co.uk]
  - Shelter prioritises mobile-first approach for its website, and uses it as the main point of contact instead of a dedicated app [www.shelter.org.uk/]
  - NHS app provides access via browser as well as dedicated apps on the phone [www.nhsapp.service.nhs.uk/login]
- ☐ **Design for Language Barriers:**
  - ☐ Ensure that multiple languages are supported, if needed by end users
  - ☐ Ensure that the scripts used for those languages match those actually used by the intended end users.
  - ☐ Use simple English, shorter and to-the-point sentences, and avoid jargons,

  ➡️Resources/examples:
  - UK Home Office - Readability offers guidelines for improving readability [design.homeoffice.gov.uk/accessibility/readability]
  - Content design - planning, writing and managing content, Gov Digital services [www.gov.uk/guidance/content-design/writing-for-gov-uk]
  - Check Flesch Reading Ease and the Flesch Kincaid Grade Level for simpler language [readable.com/readability/flesch-reading-ease-flesch-kincaid-grade-level/]
- ☐ **Design for Accessibility**
  - ☐ Make it screen-readable
  - ☐ Make it translatable
  - ☐ Check for general accessibility issues

  ➡️Resources/examples:
  - PRIME's Code of Practice [www.primecommunities.online/code-of-practice] lists do's and dont's for accessible digital services
  - Google Lighthouse for accessibility testing [github.com/GoogleChrome/lighthouse]
  - UK Gov: Understanding WCAG standard: [gov.uk/service-manual/helping-people-to-use-your-service/understanding-wcag]
  - Easy Checks - A First Review of Web Accessibility [www.w3.org/WAI/test-evaluate/preliminary/]

2. Build using components which are transparent, unbiased, and secure

Vulnerable users with past experiences of online harm, bias and discrimination often face the dilemma of trading personal information in exchange for vital digital services. This can result in self-exclusion from digital services. Use components which are unbiased, transparent, and secure in

order to gain users' trust in using your services.

Ensure that…

- ☐ **3rd Party tools, APIs & Libraries** which you use are
  - ☐ trustworthy
  - ☐ transparent about their data collection/management
  - ☐ transparent about their automated decision making
  - ☐ secure in managing users' personal data.

    Also keep track of changes in Terms of Service of 3rd party tools

  ➡️Resources/examples:
  - Privacy Not Included, Mozilla Foundation [foundation.mozilla.org/en/privacynotincluded/]
  - OpenAPI Initiative's specifications (OAS) [spec.openapis.org/]
  - Open Worldwide Application Security Project (OWASP)'s Web Application Security Risks [owasp.org/www-project-top-ten/]
  - UK Gov's Guidance on API Technical and Data Standards www.gov.uk/guidance/gds-api-technical-and-data-standards
- ☐ **Datasets** which you use are
  - ☐ unbiased
  - ☐ representative of populations for which they are being used for
  - ☐ transparent about who contributed to these datasets
  - ☐ ethically collected

  ➡️Resources/examples:
  - Quantifying Cross-sectoral discrepancies [arxiv.org/abs/2407.03133]
  - Algorithm Audit's bias detection tool [algorithmaudit.eu/technical-tools/bdt/]
  - AWS SageMaker Clarify [aws.amazon.com/sagemaker-ai/clarify/]
- ☐ **Algorithms, chatbots, and models** which you use are
  - ☐ transparent about which datasets they were trained or fine-tuned on
  - ☐ trained on unbiased and representative datasets
  - ☐ do not prefer one group of users over the other
  - ☐ open source

  ➡️Resources/examples:
  - Quantifying Cross-sectoral discrepancies [arxiv.org/abs/2407.03133]
  - Algorithm Audit's Unsupervised bias detection tool for binary AI classifiers [github.com/NGO-Algorithm-Audit/unsupervised-bias-detection]
  - PRIME's Persona Creator app uses local large language models (LLMs) instead of commercial ones. [primetoolkit.co.uk]
  - PRIME's Persona Creator app finetunes local large language models (LLMs) to get more representative outcomes matching the input data [primetoolkit.co.uk]
  - FairML auditing for predictive models [github.com/adebayoj/fairml]
  - HateXplain's model card on HuggingFace lists what data was used to train it, along with link to a paper, and a link to Github repo with the model and dataset [huggingface.co/Hate-speech-CNERG/bert-base-uncased-hatexplain]
- ☐ **Interfaces** which you provide
  - ☐ do not use deceptive patterns to gain user data
  - ☐ do not trick users into making certain decisions
  - ☐ do not hide vital information from users, limiting user's agency
  - ☐ clearly state the purpose of data collection and use

  ➡️Resources/examples:

- PRIME's Code of Practice [www.primecommunities.online/code-of-practice] lists do's and dont's for plain and clear communication, easy to use interfaces,
- Mobile health app trustworthiness checklist [mhealth.jmir.org/2020/7/e16844/]
- Thomas' Dark Pattern Cheat Sheet [thomasmildner.me/darkpatterns.html]
- Online Choice Architecture: How digital design can harm competition and consumers [www.gov.uk/government/publications/online-choice-architecture-how-digital-design-can-harm-competition-and-consumers]

3. Ensure secure data collection, analysis, sharing and management

Users may want to share their personal data more if they know why it's needed, how it will be used and managed, and who will access it.

☐ **Collect minimum amount of personal data** needed to keep your digital service functional

➡️Resources/examples:

- Right to Work Share code allows employers to know if a person has the right to work in UK, without seeing their visa and passport directly [www.gov.uk/prove-right-to-work/get-a-share-code-online]
- PRIMR's IRESHA Sharecode app minimises the amount of personal data to be collected while still allowing social housing providers to assess eligibility of applicants [primetoolkit.co.uk]
- Tell Us Once, allows one time reporting of a death, and is conveyed to other public services, avoiding the need to submit such information multiple time by the family [www.gov.uk/after-a-death/organisations-you-need-to-contact-and-tell-us-once]

☐ **Collect, analyse, and share data securely**

➡️Resources/examples:

- ICO's Records management checklist [ico.org.uk/for-organisations/advice-for-small-organisations/checklists/data-protection-self-assessment/records-management-checklist/]
- NHS Data Security and Protection Toolkit - Self Assessment [www.dsptoolkit.nhs.uk/]
- PRIME Dataset Sharing Guidelines [primetoolkit.co.uk] recommend solutions for realising datasets without compromising the privacy of participants who contributed
- ISO/IEC 27001:2022 Information security, cybersecurity and privacy protection standard [www.iso.org/standard/27001]
- ICO's Information Security Checklist [ico.org.uk/for-organisations/advice-for-small-organisations/checklists/data-protection-self-assessment/information-security-checklist/]
- ICO Data Sharing Code of Practice [ico.org.uk/for-organisations/uk-gdpr-guidance-and-resources/data-sharing/]

☐ **Use privacy enhancing technologies** to manage collected data

➡️Resources/examples:

- Tell Us Once, allows one time reporting of a death, and is conveyed to other public services, avoiding the need to submit such information multiple time by the family [www.gov.uk/after-a-death/organisations-you-need-to-contact-and-tell-us-once]
- PRIME Dataset Sharing Guidelines [primetoolkit.co.uk] recommend solutions for realising datasets without compromising the privacy of participants who contributed PRIME's Code of Practice [www.primecommunities.online/code-of-practice] lists do's and dont's for creating secure and private digital services

- ☐ **Provide users tools to manage personal data:** allow users to manage their own personal data within systems.
  - ➡️Resources/examples:
    - Ofgem's upcoming Consumer Consent Solution would allow users to better manage their energy data: [www.ofgem.gov.uk/consultation/consumer-consent-solution-consultation]
    - Ada Lovelace Institute's Participatory Data Stewardship [www.adalovelaceinstitute.org/report/participatory-data-stewardship/]
    - NHS's service for managing health data sharing and use in research [www.nhs.uk/your-nhs-data-matters/manage-your-choice/]

4. Clarify what is expected from the user

Right from the start, inform the user about what you expect from the user, instead of asking later in the process. Inform the user if, when and why they need

- ☐ **Documentation:**
  - ☐ If certain documentation such as ID, proof of address, immigration status etc are needed, clarify right from the start.
  - ☐ Clarify which format the documentation is needed in, so that they can have it ready beforehand.
- ☐ **Devices & Connectivity:**
  - ☐ If a phone is required to get a one-time code, or an email address is needed to verify their account with a link or pin, warn the user beforehand, instead of telling them in the middle of the process.
- ☐ **Time:** inform users about
  - ☐ time needed to complete a registration or to access a service;
  - ☐ time it will take to complete a form
  - ☐ how long it will take for it to be processed
  - ☐ when the user will know of the outcome
  - ☐ if the service they are accessing is time limited

➡️Resources/examples:

- IRESHA Sharecode app [http://primetoolkit.co.uk] lists what is needed documentation is needed in the start, and what the user should expect to be doing while using the app
- Right to work Sharecode explains what documentation is needed to proceed and alternate ways if that documentation is not at hand [www.gov.uk/prove-right-to-work/get-a-share-code-online]

CALL TO ACTION

- ➔ We encourage the people designing, mananaging, or improving any public-facing digital services to adopt these design guidelines to ensure that their digital services are more equitable for all.
- ➔ These guidelines can be used as a checklist for digital services and the examples and resources can be used to solve issues and align better with the guidelines.
- ➔ We also welcome suggestions and comments and appreciate help in adding more examples and resources.

FOR MORE INFO & CONTRIBUTING TO THIS LIST:

- For information about PRIME activities and other research outputs, please visit our project website: **www.primecommunities.online**
- For details of the PRIME Toolkit containing our design guidelines and prototypes, please scan this QR code or visit our toolkit website: **www.primetoolkit.co.uk**
- For any comments or for contributing to the list, please contact: Mehdi Rizvi (**s.rizvi@hw.ac.uk**)

ACKNOWLEDGEMENTS

We thank our funder UKRI, the wider research team of the project, partner community organisations (BEAP Community Partnership, Caribbean and African Health Network, CEMVO Scotland, East London Mosque, Hindu Forum of Britain and Chinese Association of Tower Hamlets), our advisory board members, ME participants, and stakeholder participants of our activities.

We specially thank our contributors who have directly suggested examples and resources, as well as other participants of PRIME project activities whose comments and suggestions were incorporated in these design guidelines.