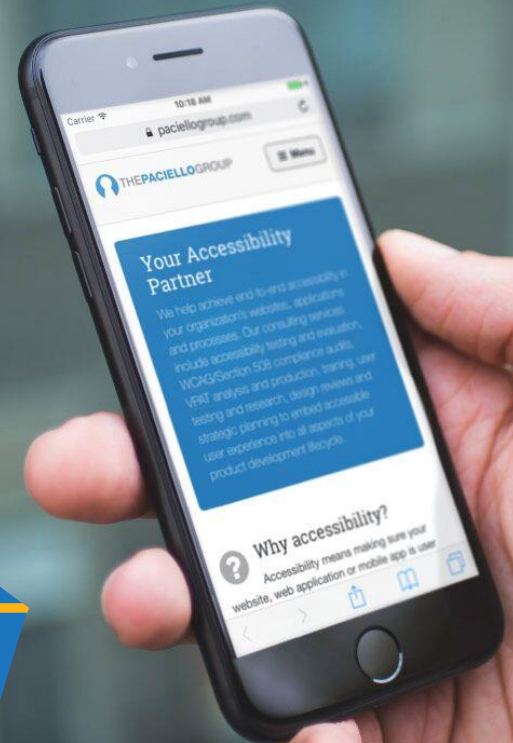


# Demystifying Mobile: Designing with Accessibility in Mind



**Kathy Wahlbin**

VP Enterprise Compliance & General Manager

# Mobile has changed the way people are consuming content

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In noisy, public spaces



Using touch screens



Using one handed



Out in bright light



Motion to perform actions



Voice interactions



Behind every great site or app lies thought, empathy and inclusion.

This doesn't happen by accident, it happens by design.

- Henny Swan

# Inclusive Design Principles

Contributors: Henny Swan, Ian Pouncey, Heydon Pickering, Léonie Watson

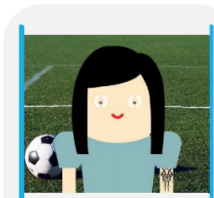


These Inclusive Design Principles are about putting people first. It's about designing for the needs of people with permanent, temporary, situational, or changing disabilities — all of us really.

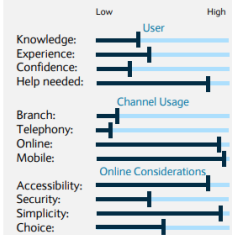
They are intended to give anyone involved in the design and development of websites and applications - designers, user experience professionals, developers, product owners, idea makers, innovators, artists and thinkers - a broad approach to inclusive design.



# Diverse Personas: People First, Disability Second



"I want websites to help me focus on the content, not detract from it."



Google HP Facebook  
Apple Spoken Word

## Top Tips

- Accessibility is really important for Mitsuko. Think about:
- Information should be clearly laid out, without distractions from the message being conveyed.
- Information should be concise – not an over abundance of text.
- Making use of good design practices such as colour, white space, headings and simple presentation to draw attention to where it is most important.
- Visual cues should be used to highlight/reinforce points/sections of the content.
- Provide information on workshops offered to young people e.g. Barclays Life Skills.
- Advising on the best way to save money, such as the various ISAs that Barclays offers.

## Mitsuko

Age: 20 | Sex: Female | Occupation: Piercer & Tattoo Artist | Marital status: Single

### Bio

Mitsuko has been a Barclays personal customer since she was 16 because she wanted her to begin managing her own money. Around the same time, Mitsuko's parents recognised that she had Attention Deficit Hyperactivity Disorder (AD) because she was struggling to revise for her exams, whereas before they thought she was going through a teenage rebellion phase. Mitsuko's constant fidgeting and concentration became an increasing challenge for her at school. After receiving exam results, she decided that further education was not for her, and so went into employment at a boutique tattoo/piercing studio in Camden Town.

Mitsuko prefers internet and mobile banking – especially the Pngli application because it is quick to transfer money between friends, and has a simple interface that is not distracting. She also has the whole suite of iBank contactless technology wristband, fob and sticker. This helps her to keep track of her impulsive spending habits because of the £30 limit on the devices. Mitsuko was also recently diagnosed with General Anxiety Disorder (GAD), leading to her often withdrawing herself from social contact with people she does not feel comfortable with. For this reason, she tends to avoid telephone banking and visiting the bank branch, and leans towards using the web chat service for her queries.

### Device Usage

Mitsuko is a poet – she does not go anywhere without her portable HP Chromebook laptop in case she has a flurry of inspiration. She randomly experiences hyperfocus which gives her the ability to block out her surroundings and become absorbed in writing abstract poetry. Mitsuko publicly shares her talent through the Poetry Club app on her iPhone, attends an open-mic night called "Spoken Word" every other Wednesday in London, where participants share their creative writing in a warehouse set-up. She created a "Spoken Word" page on Facebook so that she can meet up with everyone who shares the virtual company of like-minded individuals.

Mitsuko also uses her iPhone to help organise herself so that she does not miss appointments and social commitments. For example, she uses "Clear" for reminders and task management, and uses the "Day One" app to keep a visual diary.

### Lifestyle

Mitsuko rents a flat with her best friend, Sekai, who is in her final year studying Forensic Science at the University of Greenwich. They both play Futsal (5-a-side football played indoors) as part of a team every Saturday – this reduces Mitsuko's hyperactivity by helping to work off her excess energy. The team are planning to travel to Dubai in the new year for the novelty of playing a competitive match of futsal. However, Mitsuko is unsure if she will go because she also wants to visit the Joyce Centre in Dublin, Ireland, Joyce is her all-time favourite poet; her parent has a first edition copy of Pomes Penyeach for her 18th birthday, which is her proudest possession.

Mitsuko is sometimes envious of her friends that went to university, but she has the best of both worlds because she loves her job and also visits her friends scattered around the country. She is keen to start computer lessons to equip herself with the relevant knowledge to start and run her own business.

### Goals

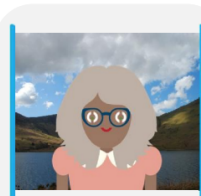
- Save up enough money to open up her own tattoo and piercing studio.
- Enter and win The Poetry Society's National Poetry Competition next year.
- For banks to make the transition into being purely digital and meet her expectations.

### Frustrations

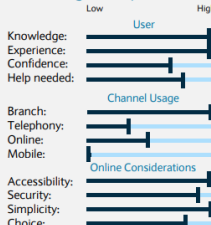
- Her tendency to "zone out" unexpectedly.
- Distractions such as scrolling text, blinking icons, and pop-up windows while surfing the internet.
- The long queues at bank branches because she is quite impatient.

### Current Banking Products

- Barclays Bank Account.
- Barclays Everyday Saver.



"I find it hard to keep up with websites that do not follow logical steps."



Black Sabbath YouTube  
Apple Skype Columbo

## Top Tips

- Accessibility is really important for Nola. Think about:
- Websites should express information using different mediums – text, graphics, video, audio etc.
- The text font should be of a reasonable size with enough white space.
- Information and instructions should be presented in a simple and concise way.
- Consistent navigation with help and support pages available.
- Clear guidance when errors are made in form fields.
- Think about what rewards can be offered to customers who have been loyal with Barclays for several years.
- Offer advice to customers like Nola on how they can manage their pension in order to achieve their goals.
- Research into producing a safe and secure way of accessing an ATM without the need for a PIN number.

## Nola

Age: 70 | Sex: Female | Occupation: Retired B&B Owner | Marital status: Widow

### Bio

Nola is a Barclays customer, and has been for the last 40 years. Nola was diagnosed with Alzheimer's disease 8 years ago which meant that she had to retire. She was initially affected by memory loss, however this recently extended to a decline in her language, orientation and problem-solving abilities.

As a child, Nola's parents used to take her camping in the Lake District every summer holiday. After completing a bachelor's degree at Bangor University in business and marketing, she ventured into the hospitality industry and eventually fulfilled her dream of opening up her very own B&B in Windermere in the 1970s. Barclays helped Nola to finance this by offering a business loan, and their newly launched Business Advisory Service at the time. Since retiring, she has passed the B&B on to her two sons, Sam and Connor, and remains a Barclays Personal customer.

Since her diagnosis, Nola is adapting to the accessible services offered by Barclays help with her banking requirements. She recently customised her debit card with a picture of her late pet alpaca that was gifted to her on her wedding day, to remind her that the card belongs to her. Nola also adopted chip-and-sign with a signature stamp for her debit card, as she finds it difficult to remember her PIN number. Nola is disorganised when it comes to paperwork, and so she uses Barclays Cloud it to electronically store important documents (including monthly bank statements) in her own peace of mind. She uses the PINentry device to access her online banking account, but has the instructions printed out and displayed on her wall to remind of the steps.

### Device Usage

Nola used to be very tech-savvy – for example she created a website in the mid-1990s for her B&B during the famous "Internet boom". She was recently bought an iPad Air by her son, Connor, to help exercise her mind with e-books, puzzles and brain training applications. However, her guilty pleasure is watching old concert videos of her all-time favourite band, Black Sabbath, on YouTube as it takes her back to a euphoric time of when she was a teenager. The band just announced their final world tour called "The End" which she is desperate to attend. She also uses the iPad to FaceTime Skype her close family and friends to reminisce about the past when they are unable to visit her. Nola has been encouraged by her sons to download a video-sharing app which supports general discussion amongst other sufferers of dementia.

### Lifestyle

Nola feels lucky to still be living with her two sons who look after her. They have installed various assistive technologies around the house to help with her memory and improve her quality of life. These include a digital photo frame displaying her fondest memories on a slideshow, automatic calendar clocks to help her keep track of the day, and electronic reminders based on motion sensors. Nola still likes to be traditional at times by keeping a daily diary, as well as overusing post-it notes to label items around the house.

Nola is an active member of an art therapy group with the purpose to promote social interaction, and enable the participants to creatively express themselves. They meet once a week and occasionally have trips e.g. to an art gallery. Nola has made some friends through this group including Agatha after discovering their mutual love for the TV series Columbo.

### Goals

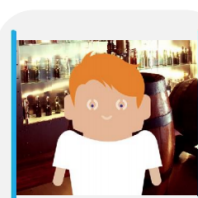
- To see Black Sabbath in the US in their final world tour.
- For her sons to expand the family business and open up a second B&B.
- For ATMS to have an alternative authorisation method to entering a PIN number because she has to go to a branch every time.

### Frustrations

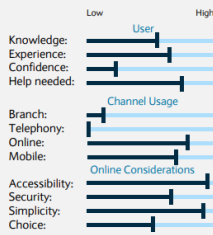
- Things not being broken down into simple steps or following a clear routine.
- A lot of text is difficult to remember, she prefers a mixture of text and visuals to help her remember.
- When there are no help and support options on websites.

### Current Banking Products

- Barclays Bank Account with Barclays Blue Rewards.
- Barclays Instant Cash ISA.



"I want to use technology confidently and independently."



Instagram Skype Apple  
TED Talks Facebook  
bebionic3 Twitter

## Top Tips

- Accessibility is important for Klaus. Think about:
- Websites should be fully navigable by keyboard.
- Ensure that skip navigation is allowed over long lists and navigation menus.
- Page elements such as form fields should be highlighted when selected.
- Think about how we can offer accessible services for people with extreme cases of amputation.
- Support that we can offer for customers, like Klaus, who are frequently travelling abroad e.g. foreign currency, cash withdrawal, air miles.
- Providing research of the latest accessibility technology available to keep our customers informed.

## Klaus

Age: 33 | Sex: Male | Occupation: Craft Brewery Owner | Marital status: Engaged

### Bio

Klaus recently migrated to the UK from his home town in Hamburg, Germany. In the early 2000s, Klaus opened up a microbrewery, Klasse Achtmist, which received great success around Europe. In order to grow the brand and his business further, he made the decision to relocate to London where his primary customer base was located.

When Klaus set up operations in Hamburg he opened up a corporate account with his local bank, Haspa (Hamburger Sparkasse). Since moving to the UK, he joined Barclays as he required a domestic bank account. Klaus had both of his arms amputated 10 years ago due to a motorcycle accident, and so he was particularly attracted by the accessibility services provided by Barclays when he was choosing a bank.

Klaus works from home, and has a personal assistant, Erika, who is also his fiancé after she agreed to his surprise proposal during a recent business trip to Gothenburg. Although Erika takes responsibility for most of the technology-related tasks concerning the business, Klaus is adamant in not letting his condition get the better of him. Therefore, he has tried the following assistive technologies: head-wand, trackball mouse to use with his feet, mouth-stick and voice-recognition software - he prefers the latter two.

### Device Usage

Klaus believes that technology is essential for the success of his business - he ensures that Erika frequently updates the Klasse Achtmist pages on Facebook, Twitter and Instagram so they have an active social media presence. In his home office, Klaus has a desktop computer which is used for managing the day-to-day running of the brewery such as marketing, finance, booking appointments and Skyping potential clients. He also uses his laptop to indulge in TED Talks videos, the most recent being "Bill Gross - The Single Biggest Reason Why Startups Succeed". He appreciates that the drop-down lists on the TED Talks website are keyboard-friendly, as it makes filtering out videos easy. Klaus recently purchased the iPhone 6S Plus which he operates using Siri and the Griffin MouthStick Stylus.

### Lifestyle

Klaus has basic prosthetic arms fitted which only offers limited functionality such as a gripping feature to pick up relatively small objects. Klaus decided to open a joint bank account with Erika following their engagement so that she could take responsibility for his banking arrangements. However, he does use the contactless iPay wristband for low-value payments. Keen to improve his dexterity, Klaus is looking to invest in myo-electric bebionic3 hands to replace his present cumbersome prostheses. He feels that money is no object if this piece of technology will make him able-bodied once again.

Currently, business is booming - Klaus is busy finalising the recipe for a new craft fruit beer he hopes to launch at the London Craft Beer Festival in 3 months. Also, after a successful trial period with The Craft Beer Co., they have invited Klasse Achtmist to feature in their German and Polish Tap Takeover later in the month in their Clerkenwell pub. Outside of work, Klaus is a motivational speaker for the Limbless Association for overcoming adversity, and looks forward to their annual general meeting in Chelmsford.

### Goals

- To get married to Erika in the new year in Hamburg.
- To expand Klasse Achtmist into a popular global brand.
- To be able to bank independently without assistance from Erika.

### Frustrations

- The frustration of other German craft brewers on the success of his business.
- Websites without skip navigation links (e.g. skip to main content) as it can be a burden to repeatedly press tab with a head wand or mouth stick.
- Websites that do not set focus to page elements when selected.

### Current Banking Products

- Haspa (Hamburger Sparkasse) corporate bank account.
- Joint Barclays Personal Account with an attached savings account.

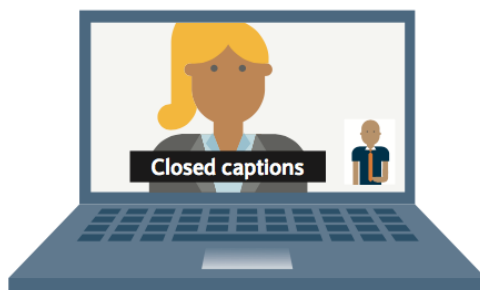


These Inclusive Design Principles are about putting people first. It's about designing for the needs of people with permanent, temporary, situational, or changing disabilities – all of us really.

Adapted from [inclusivedesignprinciples.org/](https://inclusivedesignprinciples.org/)

## 1 Provide comparable experience

Ensure your interface provides a comparable experience for all so people can accomplish tasks in a way that suits their needs without undermining the quality of the content.



## 2 Give control

People should be able to access and interact with content in their preferred way.



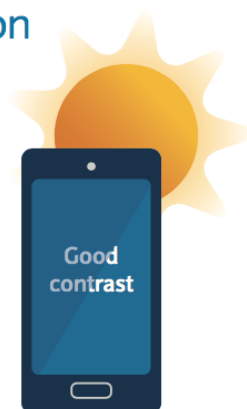
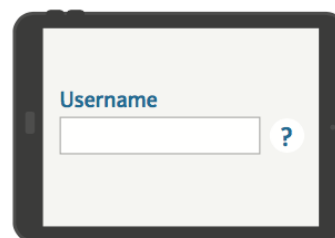
## 3 Offer choice

Consider providing different ways for people to complete tasks, especially those that are complex or non standard.



## 4 Consider situation

Make sure your interface delivers a valuable experience to people regardless of their circumstances.



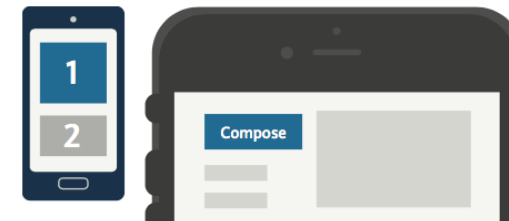
## 5 Be consistent

Use familiar conventions and apply them consistently.



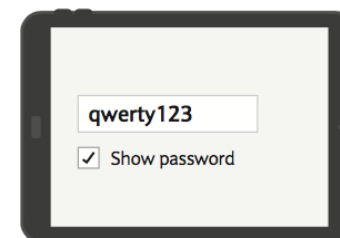
## 6 Prioritise content

Help users focus on core tasks, features and information by prioritising them within the content and layout.



## 7 Add value

Consider the value of features and how they improve the experience for different users.



For more information go to [barclayscorporate.com/accessibility](https://barclayscorporate.com/accessibility)

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 **BARCLAYS**

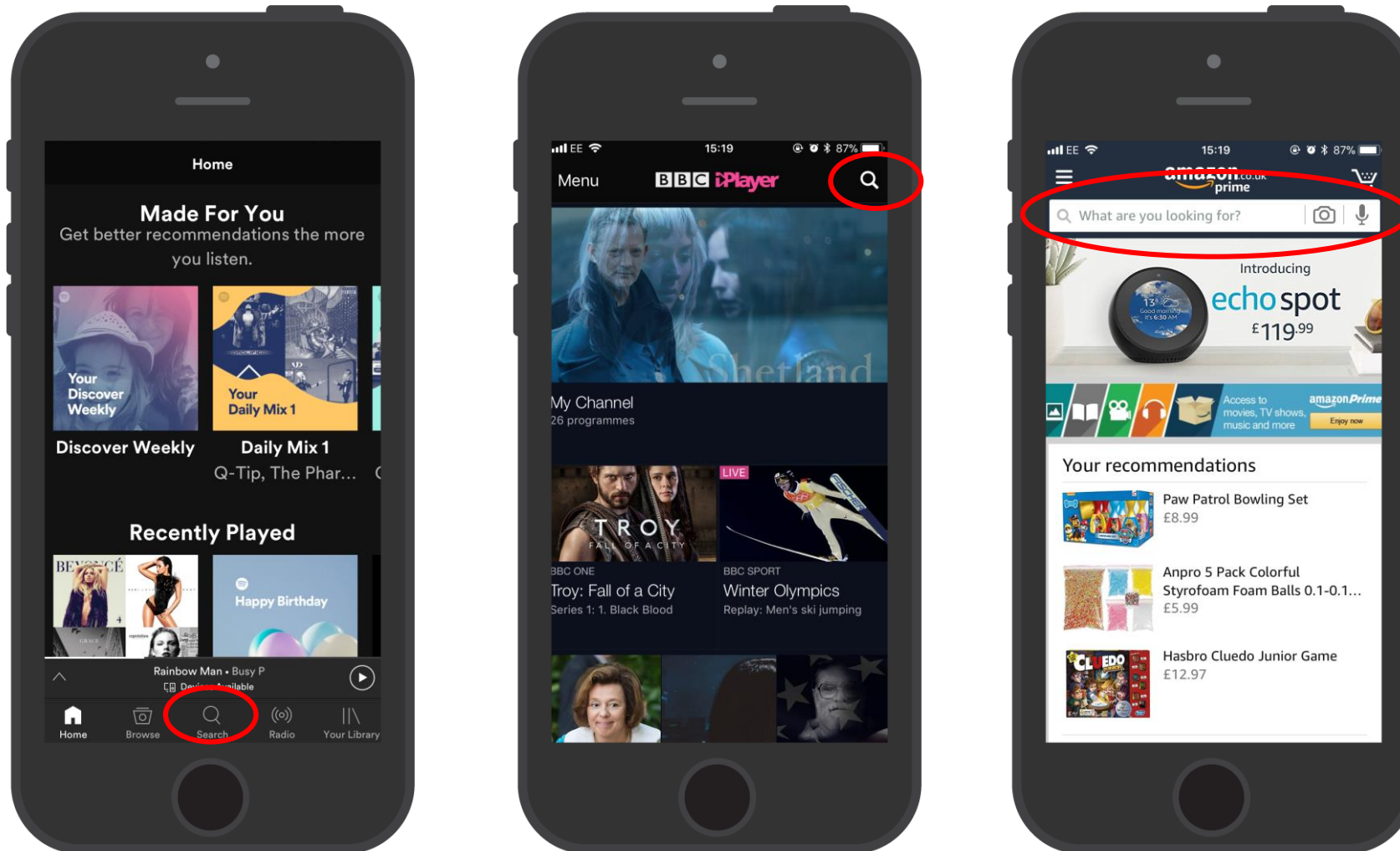


# Prioritize Content

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Help users focus on core tasks, features, and information by prioritizing them within the content and layout.

# Prioritize Core Tasks







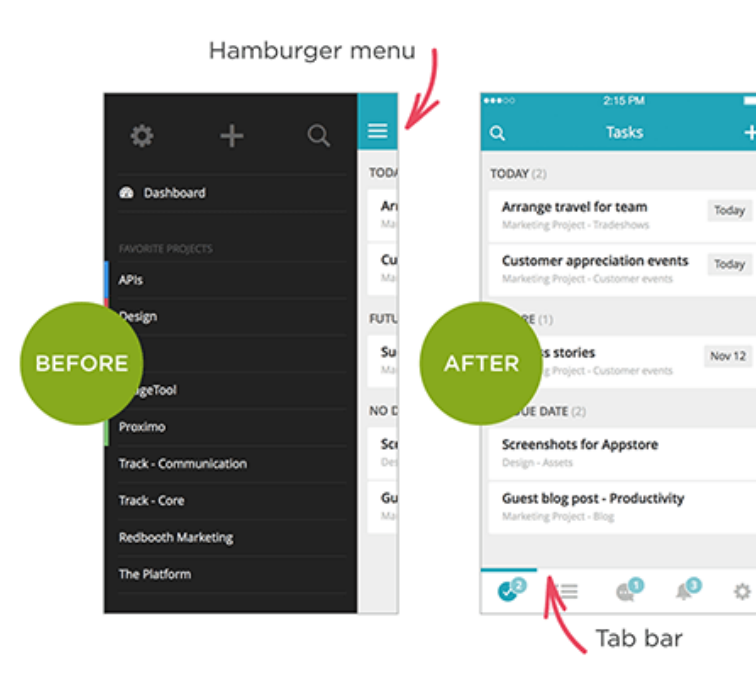
# Intuitive Navigation

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Help users navigate with clear pathways and without requiring explanations.

# Make Navigation Self-Evident

- Place in a consistent place
- Don't move the navigation controls to a new location or hide them on different pages
- Communicate the current location



number of sessions more than doubled; session time increased 70%; 65% increase in daily active users.

*Redbooth's move from a hamburger menu to a bottom tab bar resulted in increased user sessions. Image: LukeW*

# Be Finger Friendly

- Interface controls need to be big enough to capture actions on touch screens
- Controls that are 7–10 mm can be accurately tapped with a finger
- Provide spacing between controls to prevent accidental activation of the wrong control

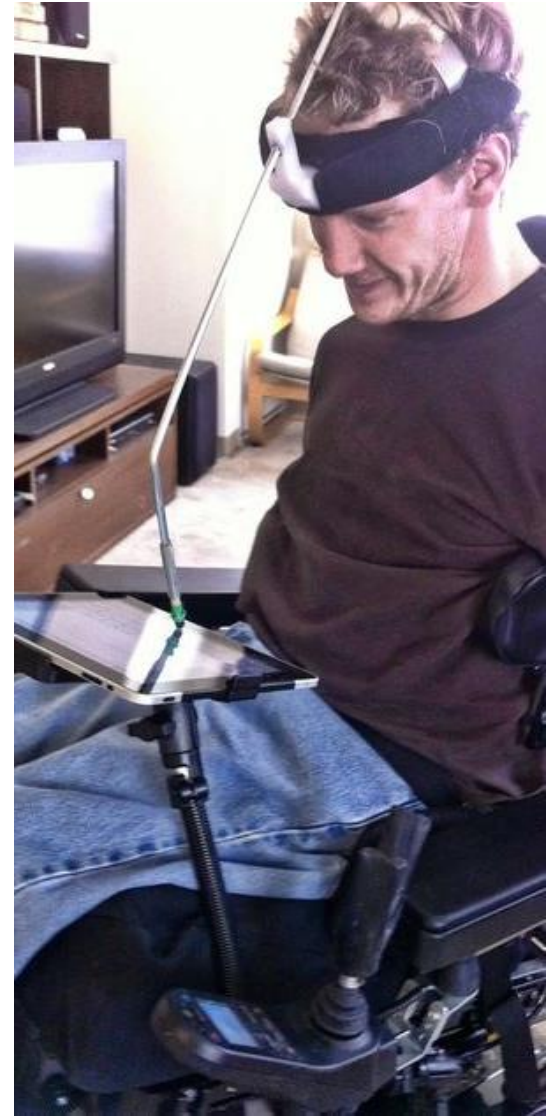
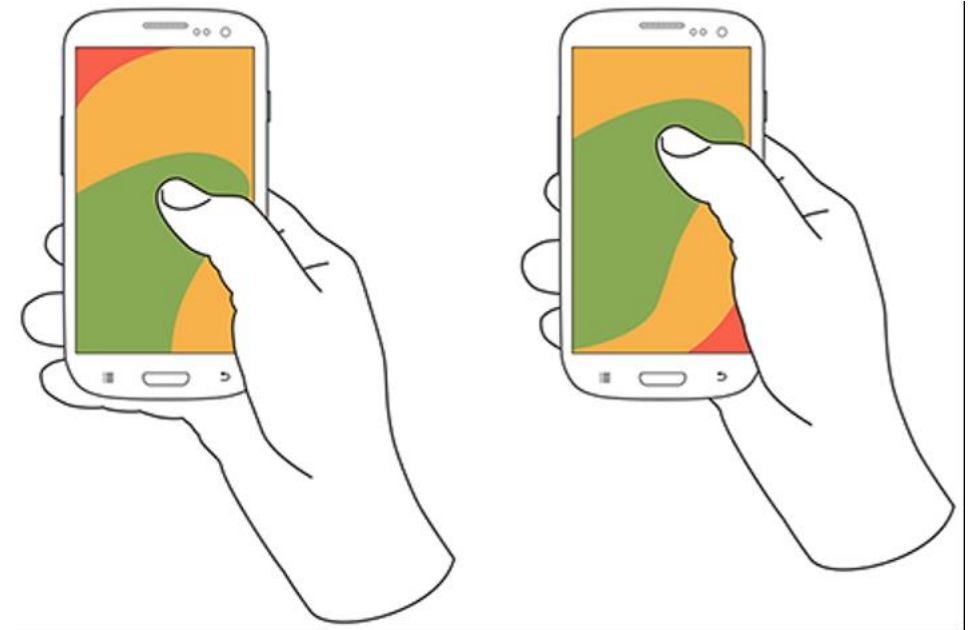


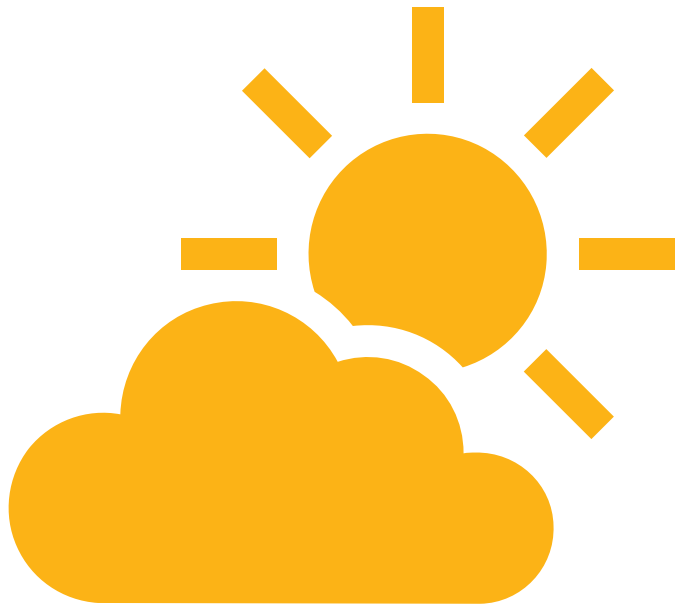
Image Source: <https://bit.ly/2uJOmiM>

# Create Reachable Controls

- Steven Hooper found that 49% of people rely on a one thumb to get things done on their phones
- Not all users will hold the device the same way or use their fingers



*Comfort zones for a person's one-handed reach on a smartphone. Source: [uxmatters](#)*



# Consider Situation

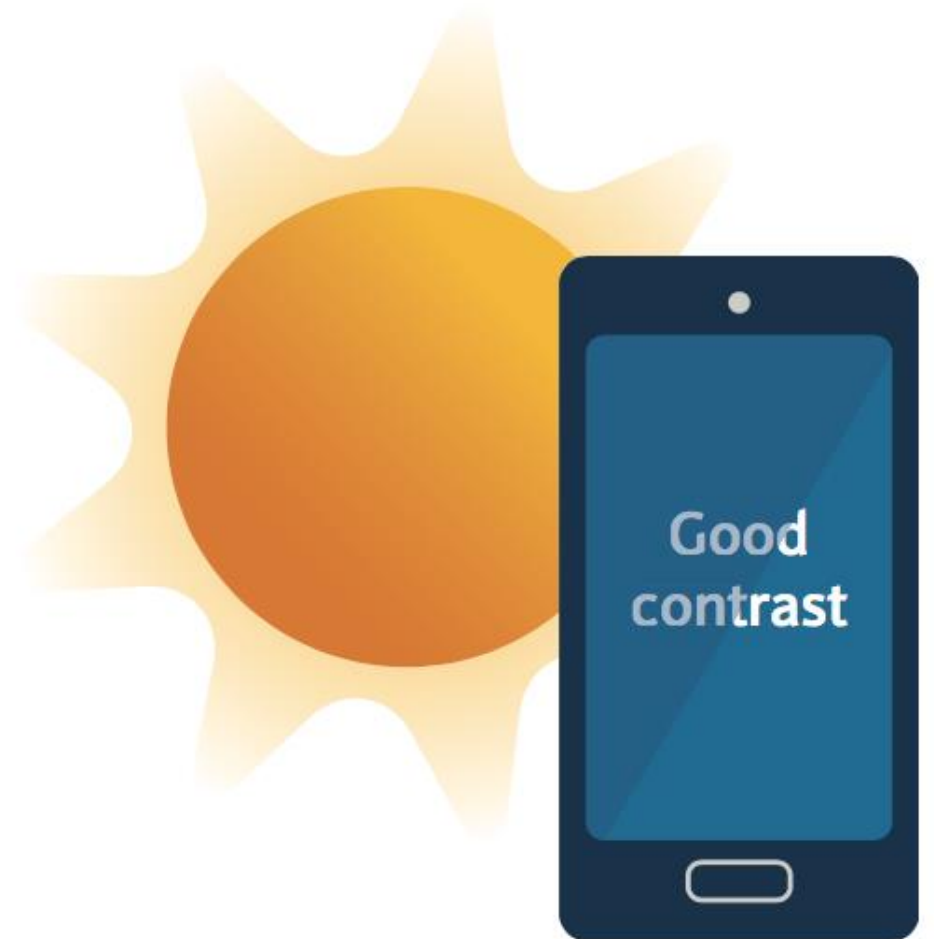
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People use your interface in different situations. Make sure your interface delivers a valuable experience to people regardless of their circumstances.



# Provide Sufficient Color Contrast

- The *minimum* color contrast is 4.5:
- Inclusive contrast ratios should comfortably *exceed* this.



# Make Text Legible

- Ensure users can read your content
- Text should be legible at a typical viewing distance without zooming

THE AVERAGE  
**MOBILE**  
.....  
FONT SIZE IS **17PX**



Source: <https://bit.ly/2Us905p>



# Be Consistent

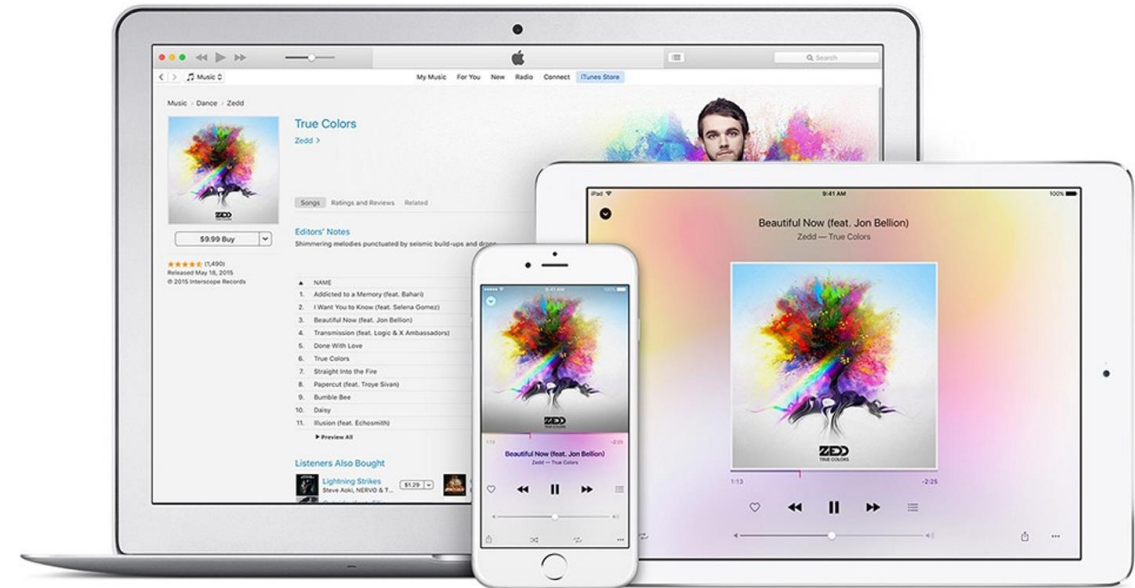
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Be consistent with conventions and with their application throughout your interface.

# Create a Seamless Experience

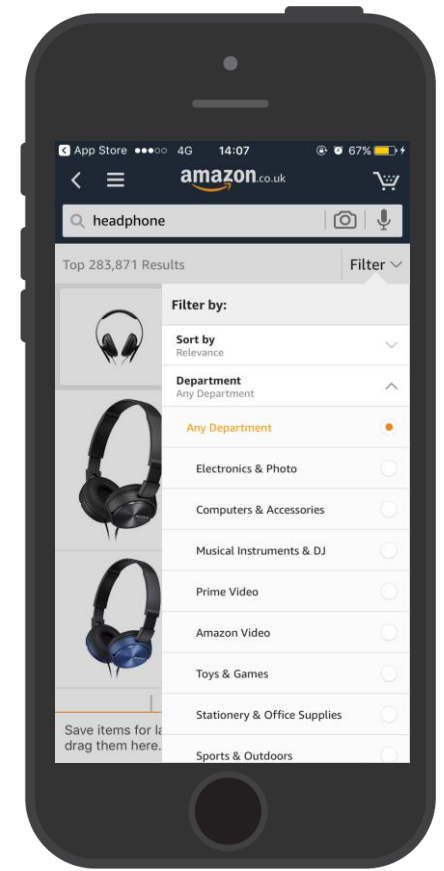
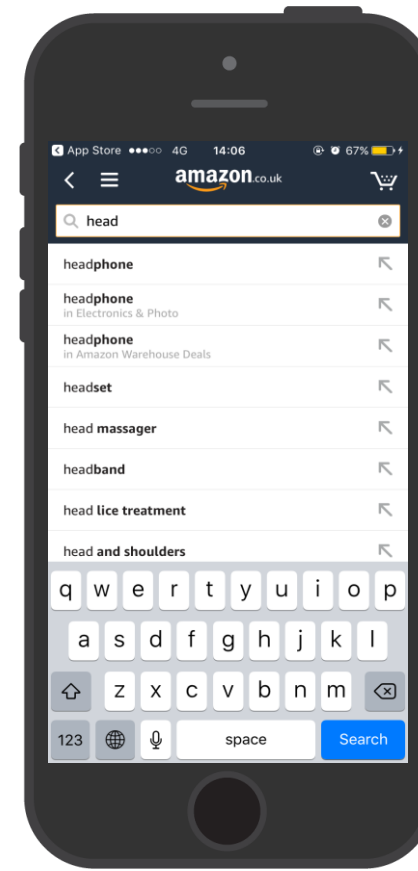
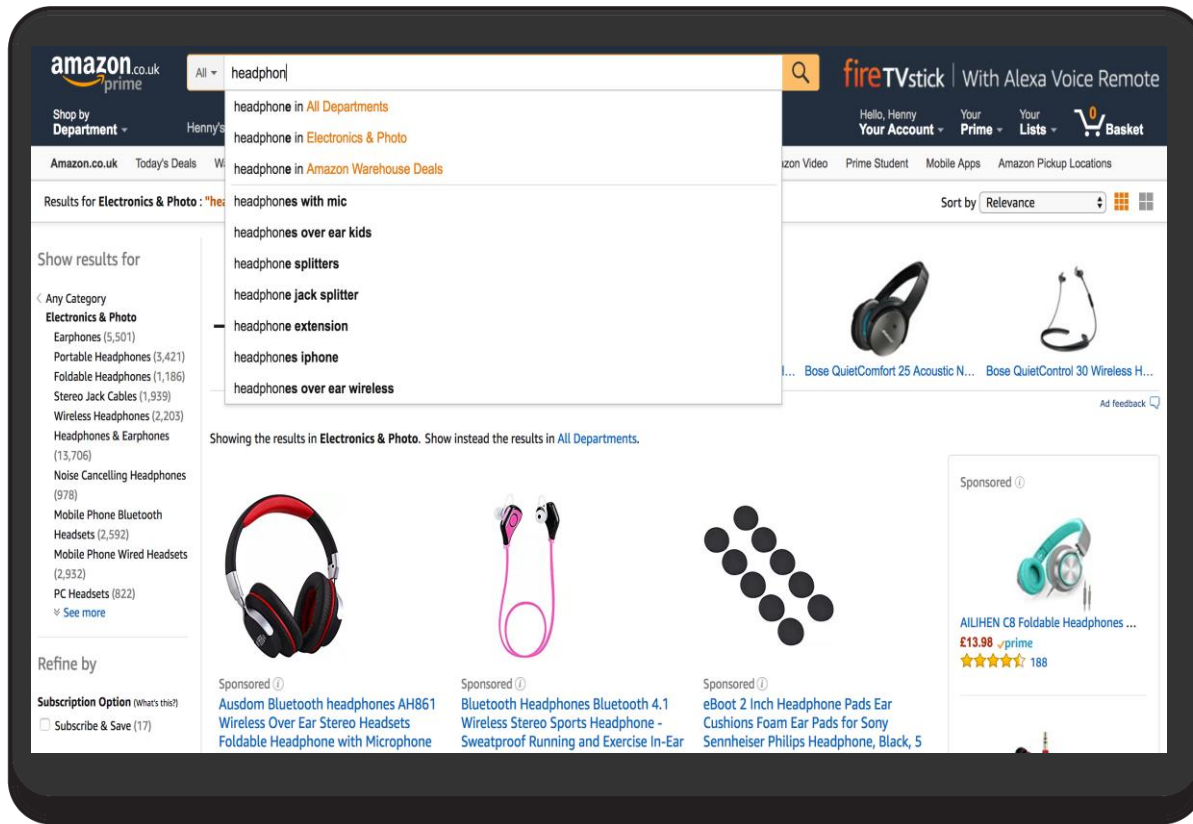
Ultimate goal is to create a seamless experience across desktop, tablet, mobile, and more

- Discrete interactions beginning and ending on single session
- Continuous interactions moving from one device to another
- Sequential interactions that evolve from one device to another



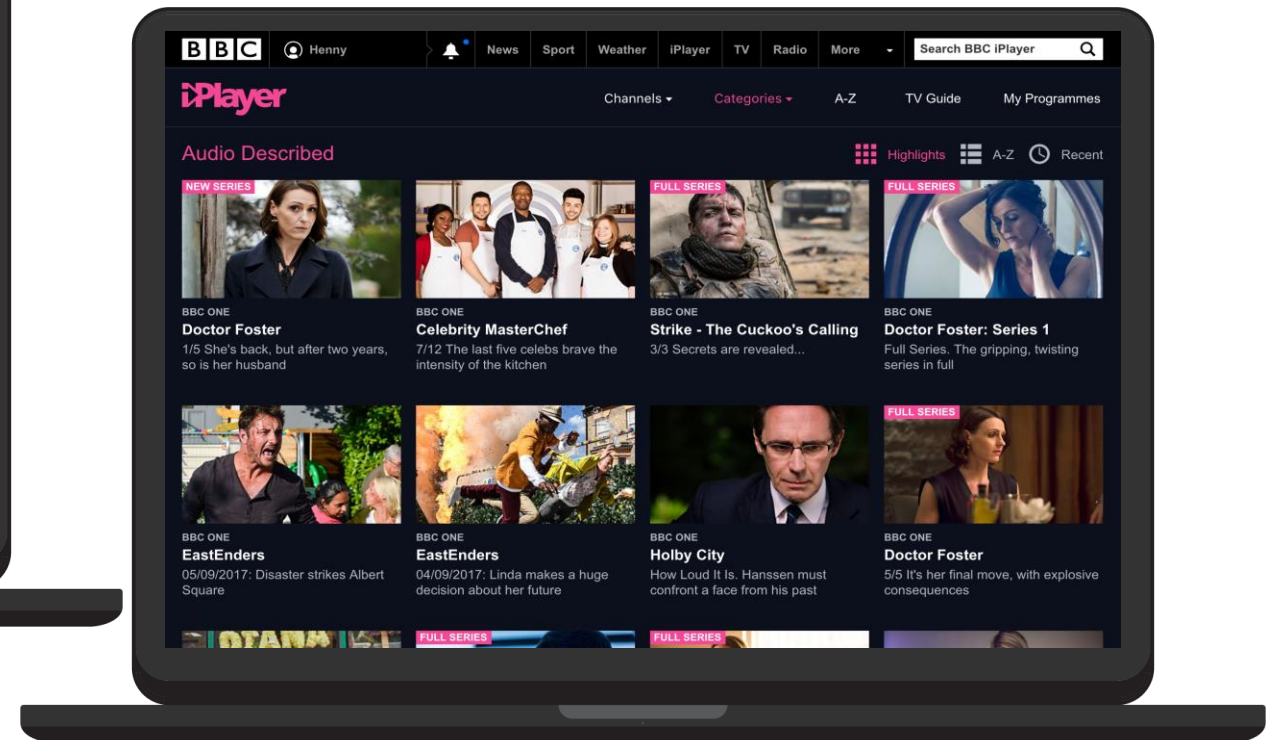
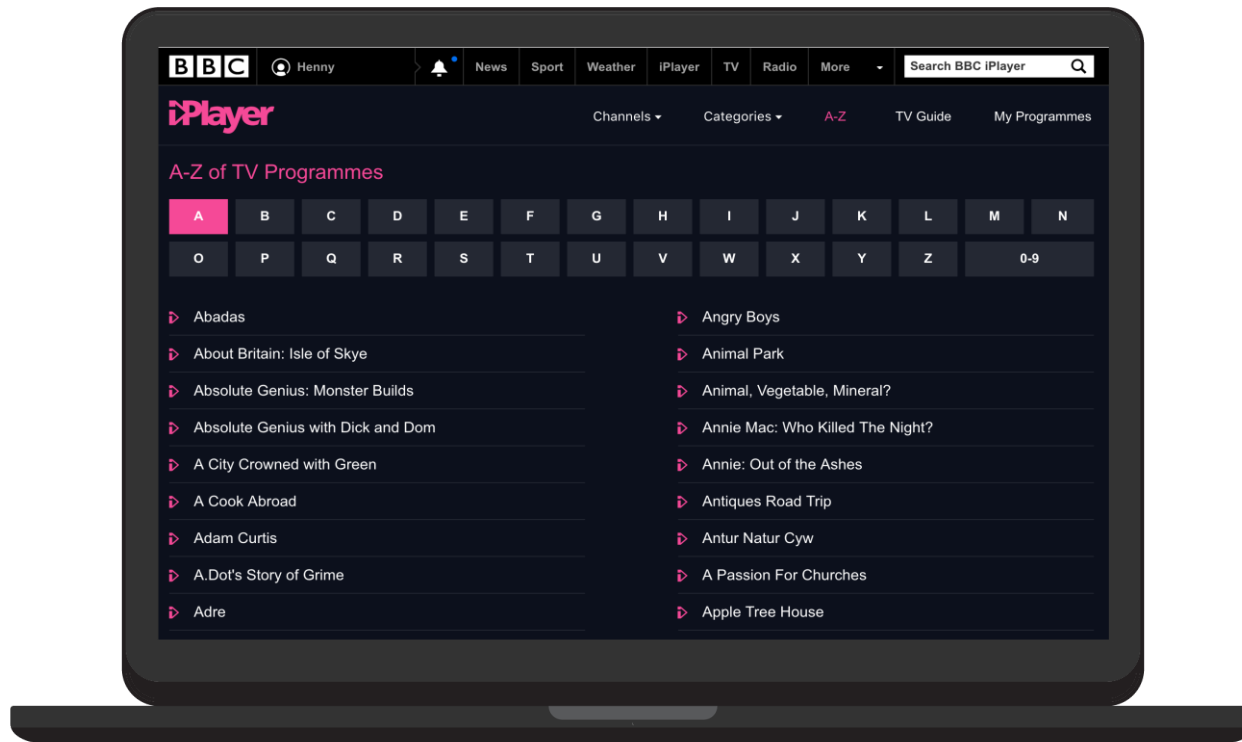
Source: <https://uxplanet.org/mobile-ux-design-key-principles-dee1a632f9e6>

# Consistency Across Platforms





# Consistent Structure Across Pages



# Consistent Editorial

- Link text
- Alternative text
- Headings

Make this consistent across platforms where appropriate

Sign in

That Microsoft account **doesn't exist**. Enter a different account or **get a new one.**

ihenix@gmail.com

Next

No account? **Create one!**



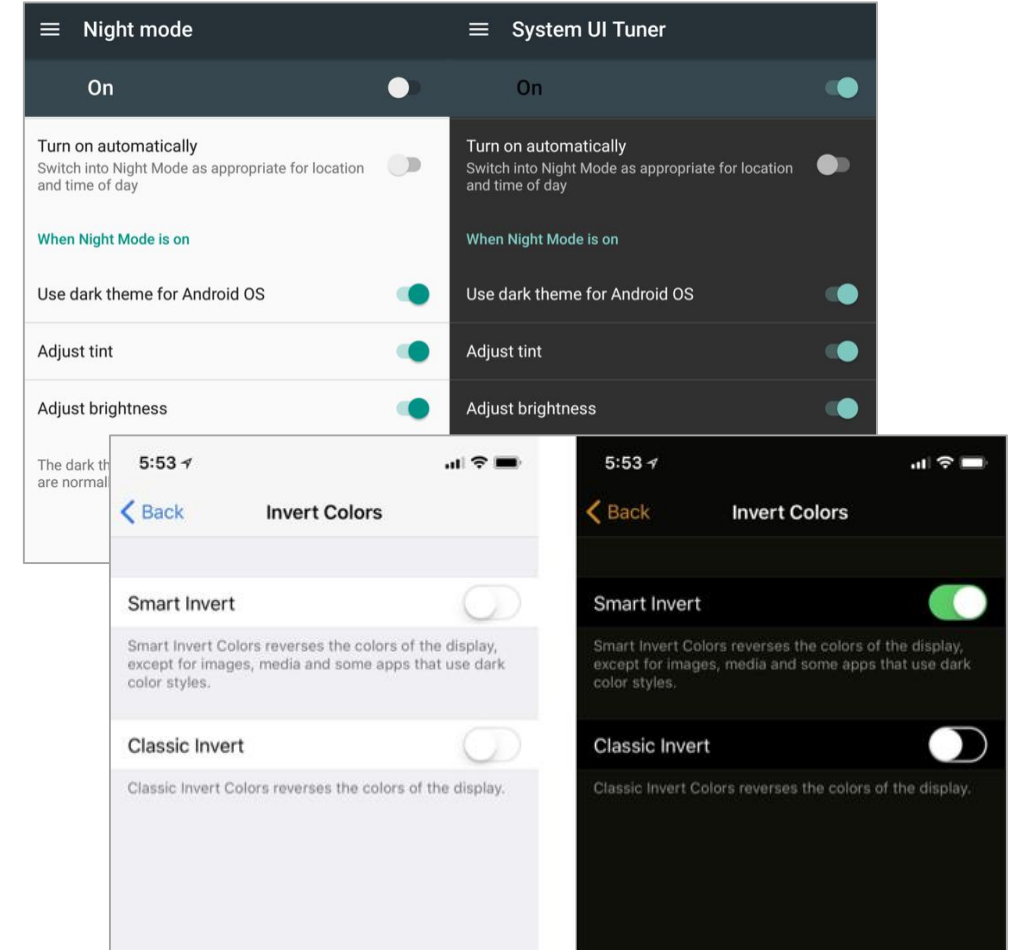
# Give control

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Ensure people always have control over content and presentation. People should be able to access and interact with content in their preferred way.

# Honor Device Settings

- Inverted colors
- Larger Text
- Bold Text
- Auto Play Audio Descriptions
- Subtitles & Captions





# Offer choice

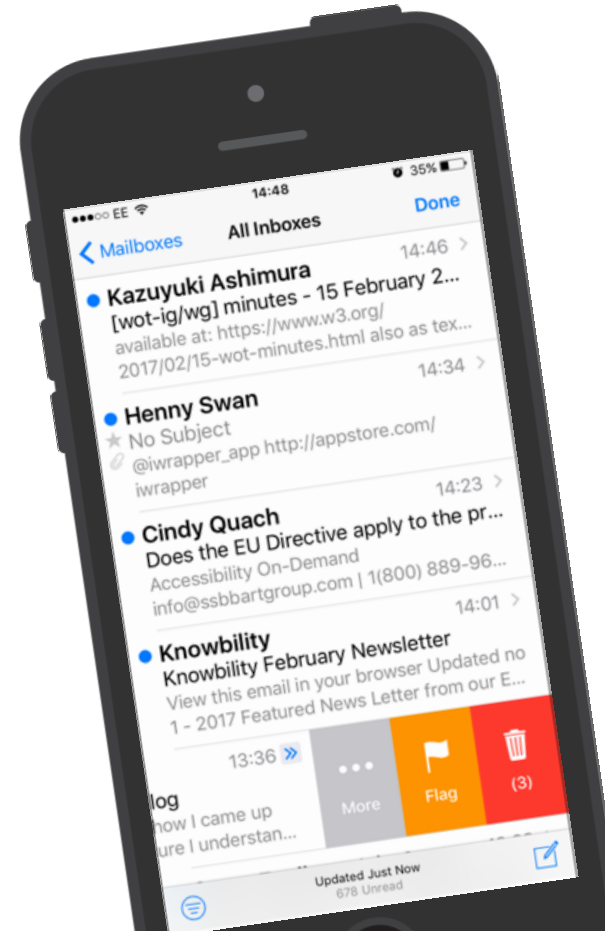
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Consider providing different ways for people to complete tasks, especially those that are complex or non standard.



# Multiple Ways to Complete an Action

- Swipe to delete
- Tap to delete
- Shake





# Comparable Experience

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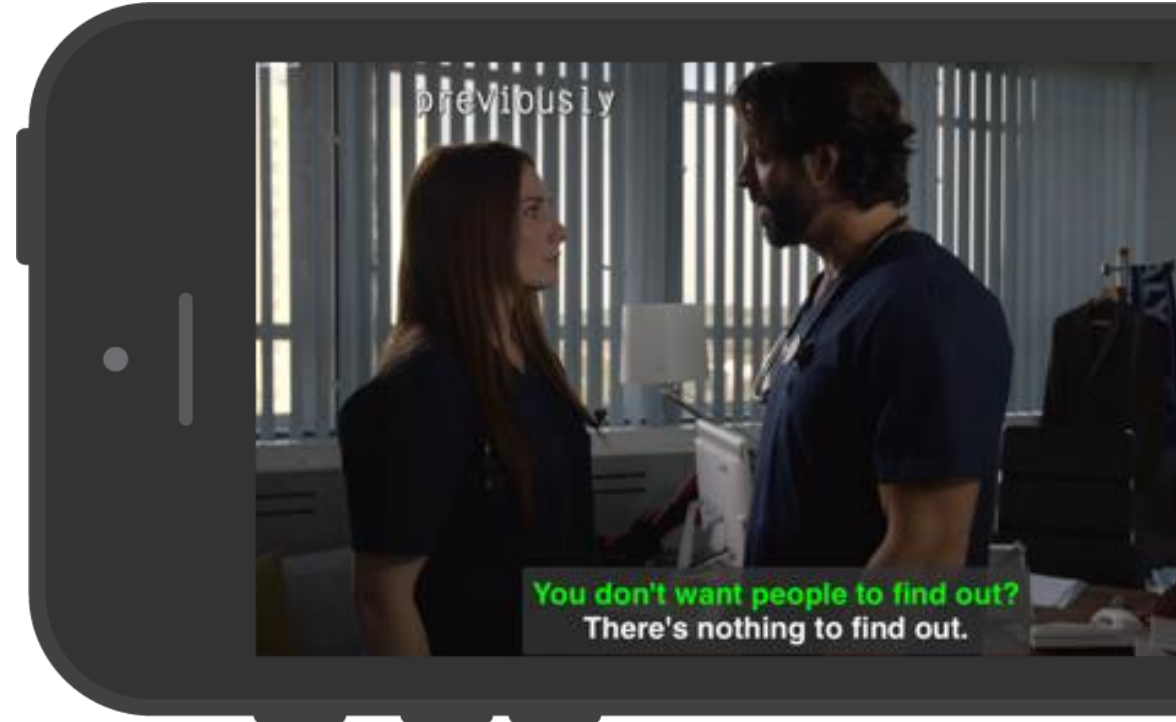
Ensure your interface provides a comparable experience for all users, so people can accomplish tasks in a way that suits their needs without undermining the quality of the content.

# Comparable Experience

WCAG compliance is providing synchronized closed captions.

A comparable experience is:

- Color coded speakers
- Readable fonts
- Sufficient contrast





# Add Value

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Consider the value of features and how they improve the experience for different users.

# Beyond Compliance

Even WCAG compliant forms are a challenge due to issues with:

- Dexterity
- Comprehension
- Recall
- Accuracy

Email or Username

Password

[Forgot password?](#)

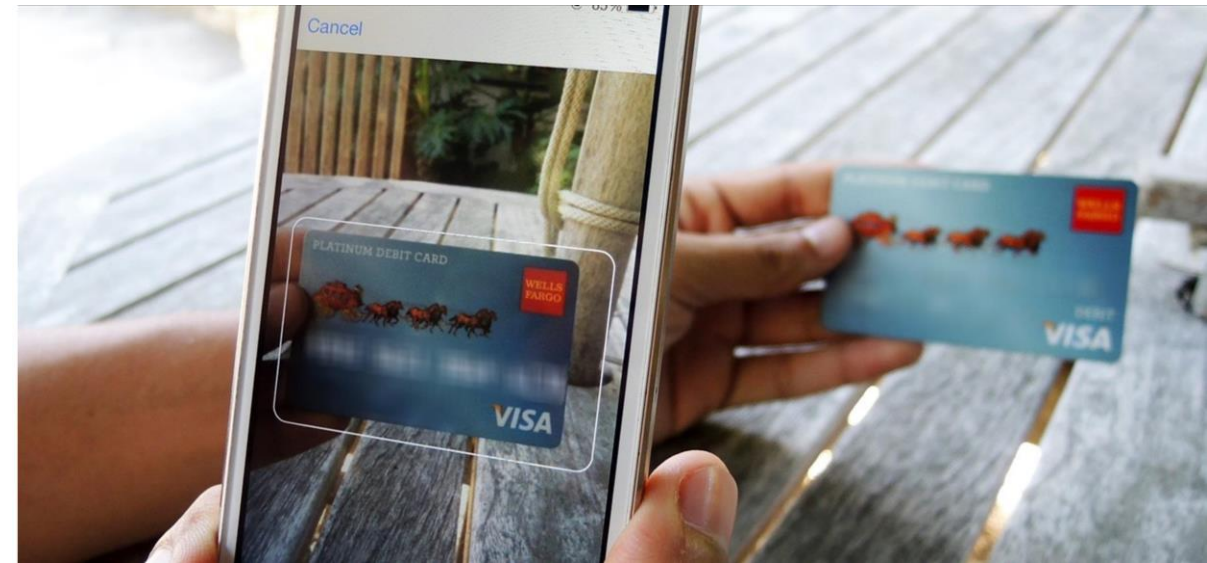
[Sign In](#)



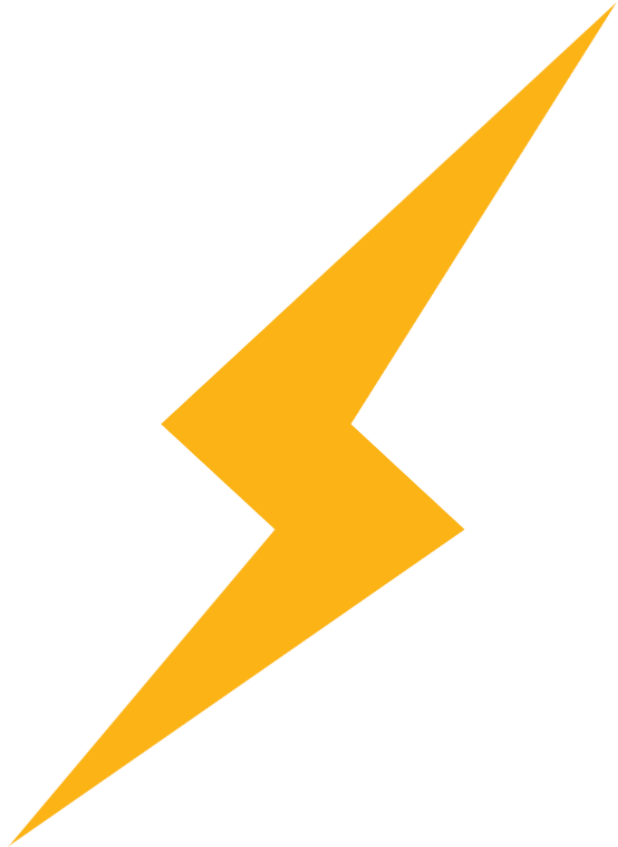
# Platform Settings

Use features and platform settings to add value:

- Autofill
- Voice search
- Camera integration
- Touch ID



# Accessible Design



Behind every great site or app lies thought, empathy and inclusion. This doesn't happen by accident, **it happens by design.**

- Visual design
- Interaction design
- Non visual design

# Thank You & Questions



Kathy Wahlbin

VP Enterprise Compliance &  
General Manager

✉ [Kathyw@ia11y.com](mailto:Kathyw@ia11y.com)