INFO2222

Computing 2
Usability & Security

Lecture 4: The Users You Forgot

Presented by

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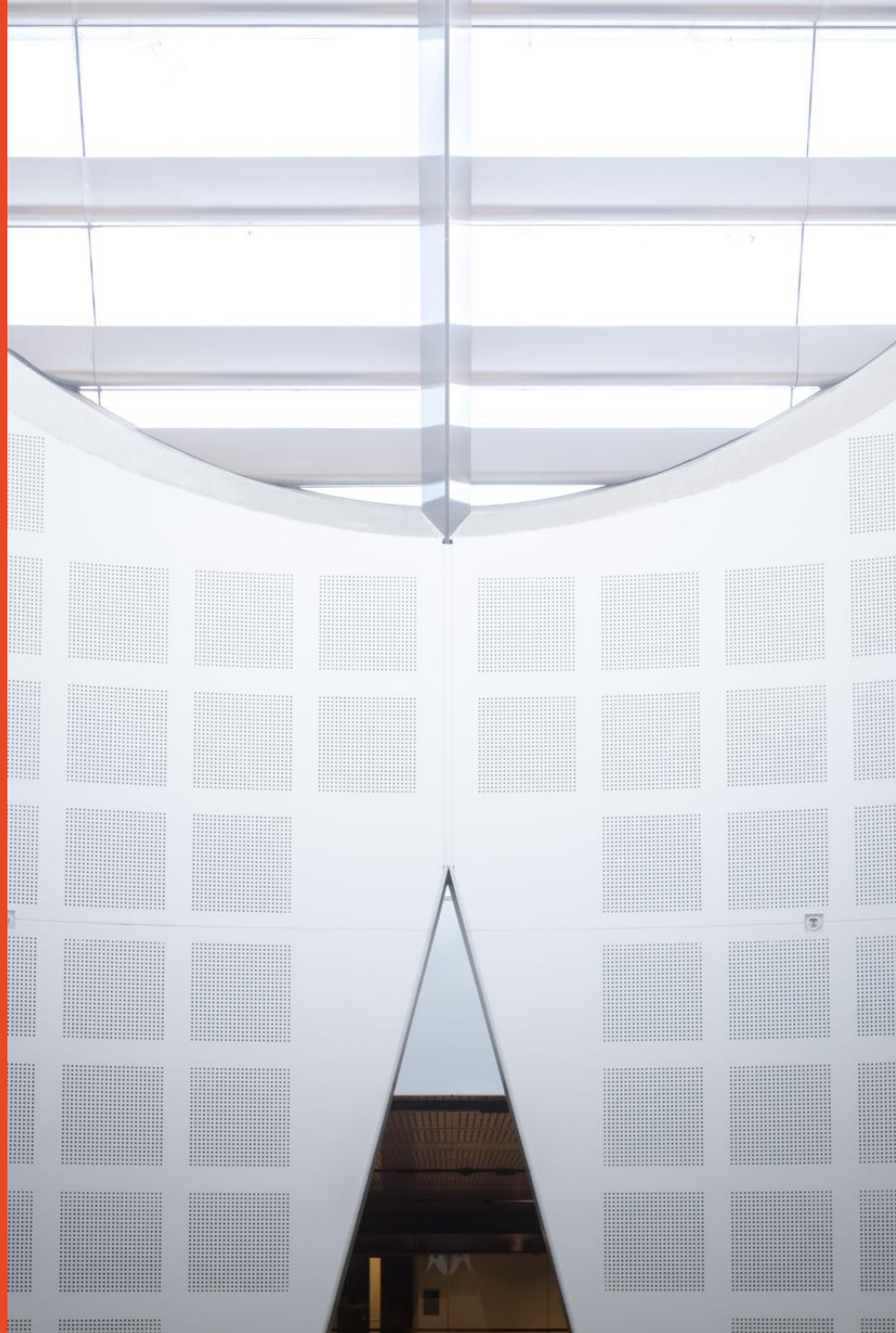
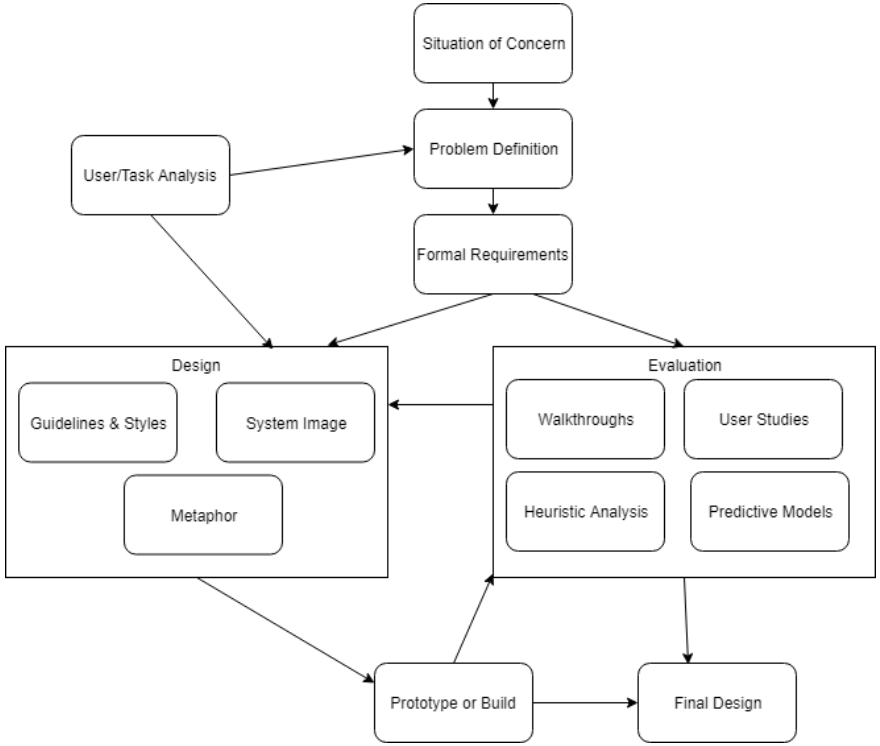


The Users You Forgot – Feedback

- How do we count iterative processes?
- Slide 24: 'this' = the hypermedia structure (this has a 'conceptual model' overlaid upon it to turn a set of random links into something a user can understand more intuitively
- Schemes and structures (covered in recap)
- Methods available in each phase (covered in recap)
- What does card sorting actually provide?

The Users You Forgot – Recap (Lecture)

- Usability engineering uses the ***iterative*** approach to achieve the best possible outcomes
- Analysis, Design, Implementation, Evaluation



The Users You Forgot – Recap (Lecture)

- Information architecture is the discipline of organising and structuring data and functions in a system to support usability
- It is the choices and designs involved in the organisation, processing, or structuring of data to turn it into information
- Organisational schemes: what data should I put with what data?
  - Exact, Ambiguous, Hybrid
- Organisational structures: how should my groups of data be accessed?
  - Hierarchy, Database-Oriented, Hypermedia
- Navigational context: Where am I? Where can I go?

The Users You Forgot – Recap (Lecture)

- Card Sorting
  - Open, closed, hybrid
- Prototypes
  - Low fidelity: quick to construct, limited functionality, good for early and frequent testing
  - High fidelity: expensive (time & cost), approaching full functionality, good for near-final testing

The Users You Forgot – Recap (Tutorial)

- You should have run your first card sorting user studies, and used the results to generate your first prototypes
- You then used your prototypes to run testing without needing to produce a working product at that point – this is how you identify issues before you spend months developing a system!
- At this stage you have practiced all the necessary usability skills to (almost) complete your first major assignment – you all should have done a significant amount of this by now.
  - You have your first in-tutorial demo due in the next tutorial.
  - What this will involve we will cover at the end.

The Users You Forgot – Learning Outcomes

By the end of today's lecture, you should be able to:

- Define ethical usability and accessibility
- List and explain motivations for ethical usability
- Describe techniques for ensuring systems and products you design are accessible
- Explain the issues present in usability in an international context
- Describe guides, styles, and conventions; their sources, purposes and methods of use

The Users You Forgot – Ethical & Legal Usability

- Over the last few decades good usability has become recognised as more than simply something 'nice to have'
- The ability for people to use products and systems efficiently and effectively has a direct and substantial impact on their quality of life
- As such there are requirements placed on the people involved in the development of such products and services
- Usability must be embedded as a goal of what they produce
- That usability must be inclusive of certain groups of people

The Users You Forgot – Ethical & Legal Usability

- Some of this requirement is driven by profit – the more users your product or service works well for, the more you will sell
- Some of this is driven by ethics – taking into account the needs of others improves their experiences and is generally a 'good thing'
- As a result, some of this has been included in legal requirements on products and services we create, to limit unethical behaviour and ensure specific categories of users are not 'left out'
- So long as you follow the need for ethics, the legal requirements are not onerous – and the profit motive is a good argument if your superiors ever need one

The Users You Forgot – Ethical & Legal Usability

- Most of these requirements are grouped into a topic called ***accessibility***
- For some, accessibility = usability (e.g. Google's Material Design) – remember our definition of usability is wider than this
- We will also cover the concept of ***localisation*** / ***globalisation***
- These can sound rather complex – however they are nothing more than what we have already been doing:
  - Understand your users (they are *all* different from you in different ways)
  - Design your system images with them in mind
  - Test your product/system with actual users
- The only addition is making sure you take into account particular users with additional requirements

The Users You Forgot – Ethical & Legal Usability

- This is just one type and severity of physical difference
- There are many others, and accessibility also encompasses mental differences as well, for example dyslexia
- As well as this there are differences in the temporal (time-based) nature of these differences which also impact what accessibility needs a person might have
- The type of testing we have covered so far is not viable on a small scale to ensure our products and systems are accessible to any user in our target persona *plus* each particular type and severity

The Users You Forgot – Ethical & Legal Usability

	Permanent	Temporary	Situational
Touch	 One arm	 Arm injury	 New parent
See	 Blind	 Cataract	 Distracted driver
Hear	 Deaf	 Ear infection	 Bartender
Speak	 Non-verbal	 Laryngitis	 Heavy accent

Inclusive
A Microsoft Design Toolkit

The Users You Forgot – Ethical & Legal Usability

- Thankfully there are guidelines available for us to follow – especially in web design
- The W3C's Web Content Accessibility Guidelines (WCAG) are the foremost standards for web accessibility
- They have been used in combination with the Australian Disability Discrimination Act 1992 to ensure equal access
- Maguire v Sydney Organising Committee for the Olympic Games (2000) was a lawsuit filed a person with blindness who could not access information regarding the Sydney Olympics
- SOCOG was ordered to conform to several WCAG requirements
- All commercial or public websites should be considered legally required to conform to WCAG (at least 2.0 level A)

The Users You Forgot – Ethical & Legal Usability

- However (and this is also important for the second primary topic today): the guidelines are *universal*, and do not take into account the specific context of your system or its users
- This means in order to ensure your system is actually accessible, ticking boxes is not enough – you still need to test with users

Important & useful resources:

- https://www.w3.org/WAI/standards-guidelines/wcag/
- https://www.w3.org/WAI/WCAG21/quickref/
- https://www.microsoft.com/design/inclusive/
- https://developers.google.com/web/tools/lighthouse/
- https://www.experiencedynamics.com/approach/ui-style-guides

The Users You Forgot – Ethical & Legal Usability

– Do you remember the case study with the detergent company?



The Users You Forgot – Ethical & Legal Usability

- This is one example of assumptions about users leading to usability issues
- In this case the assumption isn't to do with desires, needs, or goals, nor is it to do with differences in physical or mental ability
- The assumption is that the things we know, say, think and do are the same in other places and cultures
- Many of you here today will have far more personal experience with this than I do: diverse backgrounds at home, international students

The Users You Forgot – Ethical & Legal Usability

- The name for designing to take these differences into account is ***localisation***.
- Making a product or service (especially a website) available and usable across many diverse locations and cultures is called ***globalisation***.
- There are some obvious elements to this:
  - Language
  - Date format (21/3/19 vs 3/21/19 – what about the Hijri Calendar?)
  - Directionality (e.g. the shirts example)
  - System of measurements (kilometres vs miles, Celsius vs Fahrenheit)

The Users You Forgot – Ethical & Legal Usability

- However there are many, many more *less* obvious elements
  - References to:
    - Pop culture
    - Politics
    - History
    - Geographical features and places
  - Analogies
  - Idioms
- And the really hard ones – things that only make sense when you share a cultural reality
  - Almost impossible to even describe
  - Users may not even know why they resonate with or reject something

The Users You Forgot – Ethical & Legal Usability

- When it comes to usability, we already know there is more to it than just making sure the words say what you want them to say
- The visual layout directing people to particular things, the combination with the user's context: information architecture & system image. All are required to make a usable product or system
- However, the vast majority of 'localisation' is string replacement – that is the swapping out of text strings to a different language depending on what is required
- This is done for websites, software, hardware manuals, even educational material

The Users You Forgot – Ethical & Legal Usability

The details of how to properly run a localisation or globalisation project is beyond the scope of this unit, but you already have the foundation:

- Study your target users in detail
- Incorporate your analysis into your design methods
- Use real users to gain input on prototypes and to perform testing

The Users You Forgot – Guides, Styles, Conventions

- WCAG is an example of a 'guide'
- Over the years usability, and web design in particular, has seen the development of various guides, styles, and conventions
- ***Guides***: lists or frameworks you are told to follow in order to make something 'good'
- ***Styles***: typography, colour schemes, interactivity designs you are told to follow in order to make something 'aesthetic'
- ***Conventions***: ways of doing things that multiple different system/product designs copy or conform to

The Users You Forgot – Guides, Styles, Conventions

- ***Guides***: lists or frameworks you are told to follow in order to make something 'good'
- First the same questions we always ask: good for who? Good for who when?
- Blindly following guides is a major source of usability issues
- Not following guides at all is not the answer though
- High quality guides represent a large investment of user research – usually targeted at 'all users'.
- Your job as usability engineers is to find out the difference between 'all users' and 'your users'
- A quick and easy way to do this is to follow guides to start, but be willing to break from the guide if user tests reveal issues

The Users You Forgot – Guides, Styles, Conventions

- Probably the most widely used example: WCAG
- Usability.gov's guide (getting old now but still followed) https://www.usability.gov/sites/default/files/documents/guidelines_book.pdf
- Google's Material Design & Android design https://material.io/ https://developer.android.com/design/
- Apple's design guidelines https://developer.apple.com/design/human-interface-guidelines/
- Many others for 'xyz platform/company' 'Human Interface Guidelines' or HIG's
- Academic and corporate research, blogs, etc. Be careful with unknown sources – there are as many terrible guides as good

The Users You Forgot – Guides, Styles, Conventions

- ***Styles***: typography, colour schemes, interactivity designs you are told to follow in order to make something 'aesthetic'
- Aesthetic is part of the 'satisfaction' component of LMEES. We will look at the LMEES framework in more theoretical detail in the next module
- For now, it is important to understand that the aesthetics of a product or system are related to usability, but there is more to usability *and* more to aesthetics – we are only interested in the overlap here
- Some of the example guides previously listed incorporate some elements more to do with style, especially to do with navigational context

The Users You Forgot – Guides, Styles, Conventions

- Corporate style guides are the most common, including logos, colour schemes, image sets, document templates, and font choices
- Also known as 'look & feel'
- https://blog.hubspot.com/marketing/examples-brand-style-guides
- Like guides, do not take into account your product or system's users, which may differ from your entire organisation's users
- Much more difficult to break from than general guides – you may face significant organisational resistance
- Best way to handle this is with evidence – if you can show users have issues with something, it is more likely to be changed

The Users You Forgot – Guides, Styles, Conventions

- Good style make interfaces look 'nice' or 'attractive'
- In combination with good usability overall, it is what makes users experience 'joy', and can help mitigate areas where a user experiences 'frustration'
- A user is (probably: not all users behave the same way) more likely to spend time learning a system which looks attractive
- A user is more likely to blame themselves rather than a system for errors when that system looks attractive (this can be a bad thing when you are trying to reduce those errors)
- The other key aspect of style for us is ***consistency*** – this has to do with alignment with the user's mental models, and is closely related to the next idea

The Users You Forgot – Guides, Styles, Conventions

- ***Conventions***: ways of doing things that multiple different system/product designs copy or conform to
- Very closely related to the alignment of a user's mental model and the reality of a system image
- Users get 'used to things' – they expect things to happen in a certain way (this is often influenced by the guides and styles the user has been exposed to in the past)
- If you follow what has been done before – if you follow the 'conventions', then what the user expects to happen will happen, and you will have a usable interface
- If you break from the convention, the user will be surprised (almost always a bad thing) – you had best have a very good reason for surprising them

The Users You Forgot – Guides, Styles, Conventions

- Conventions tend to grow out of what came before: what does this mean?

- They can be visual like an icon or colours (red = bad), they can be behavioural, such as clicking an icon to open an app, they can be audio-based
- Conventions allow rapid, deep communication between the designer and the user, because they represent ***shared mental models***

The Users You Forgot – Guides, Styles, Conventions

- However this requires the users to learn the conventions!
- One of the groups with the biggest misalignments in usability with computer interfaces are older people
- This is because they do not already know the conventions, and interface designs do not simply use them, they *rely* on them
- Anyone who does not know the convention cannot use the interface properly
- This does not mean don't use conventions – they are fantastic for Memorability and Efficiency
- You also need to make sure you take into account Learnability for people who don't already know them

The Users You Forgot – Case Study

- A warning on conventions: just because everybody is doing something doesn't make it right
- A recent usability mantra is "Just copy Amazon"
- Now we already know this is not a good idea – Amazon's users and functions/goals are Amazon's, not yours
- It also causes issues when conventions spring up simply because a key player starts things off
- One of the more famous examples in web design history is captured by "zombo.com" (now https://html5zombo.com/)
- ZomboCom is a representation of what the web was like in the late 90s, with Flash introduction videos and long loading screens being the 'convention' – a convention we now know to be awful for usability and accessibility

The Users You Forgot – Learning Outcome Reflection

You should be able to:

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