POLISH-JAPANESE ACADEMY OF INFORMATION TECHNOLOGY

Content Management Systems (CMS)

Lecture 06: Usability of Content Management Systems

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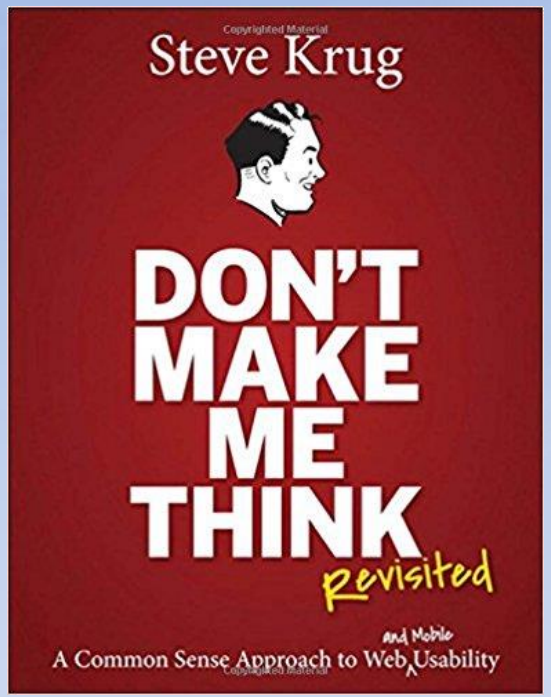
Materials used

- Steve Krug: Don't Make Me Think, Revisited: A Common Sense Approach to Web Usability (3rd Edition). ISBN-13: 978-0321965516



- http://www.useit.com/alertbox

Agenda

- Usability
- Introduction to website design
- Usability tests
- Common Mistakes
- Prototyping
- Research
- Summary

Usability

- Science about the ergonomics of interactive devices and applications (source: Wikipedia):
  - Intuitive navigation,
  - Facilitating access to the searched information,
  - Provide a user-friendly communication.
- Ergonomics (according to ISO 9241) - measure:
  - performance,
  - effectiveness,
  - user satisfaction,
  - how a product can be used to achieve specific goals by specific users.

Usability(2)

- Evaluation criteria:
  - Ease to use
  - Efficiency
  - Easy to remember
  - Errors:
    - How many?
    - How serious?
    - Did data loss occur?
    - Fixing
  - Pleasure/Satisfaction.
- Have we reached our goal?

Usability (3)

- Key feature for UI including GUI
- If:
  - a website is difficult to use,
  - it is unclear what it serves and what it offers,
  - the user „gets lost” while using the page,
  - it is difficult to find information,
- The user will turn to the competition! And the competition is big…

Usability (4)

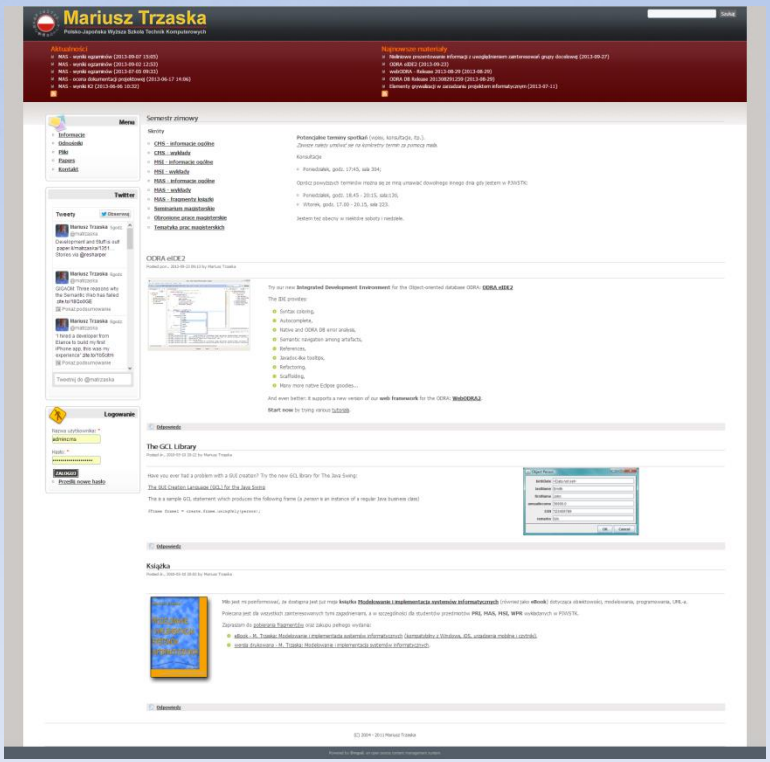
- E-commerce: If the customer is not able to find the goods that he/she wants, will not be able to buy it
- Intranet: Employees using low-cost sites are less efficient - they waste time (i.e. money) on "fighting" with poorly designed service.

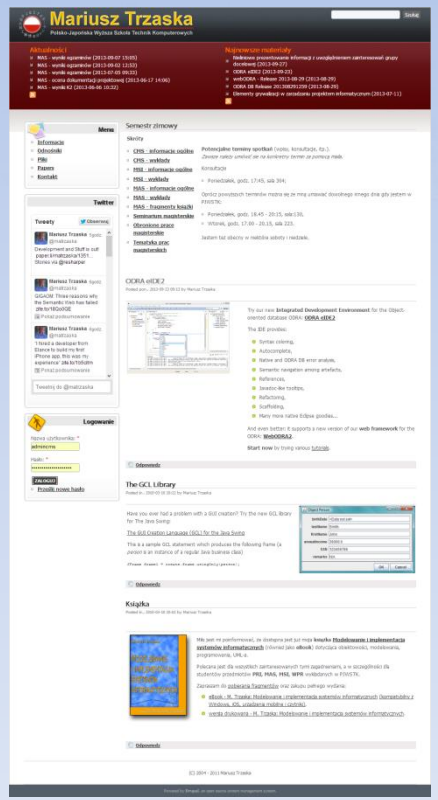
Page layout

- Vertical, e.g. articles.
- Horizontal, e.g. photos galery, portfolios.
- Central (no scroll bars), e.g. SPA (Single Page Application).
- Various content and menu locations
  - (multi) columns (asymmetric),
  - Constant/variable sizes (width).

Page layout (2)

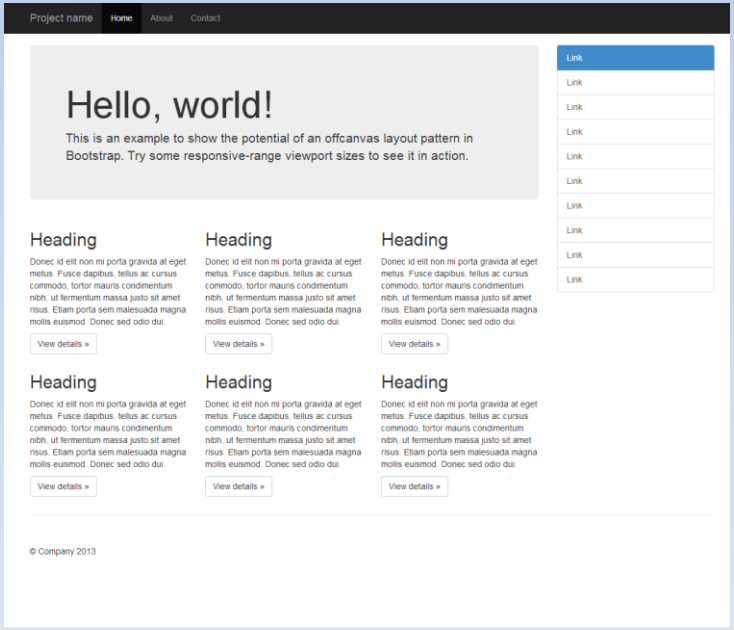
- Space management
  - Fixed width,
  - „Fluid”,

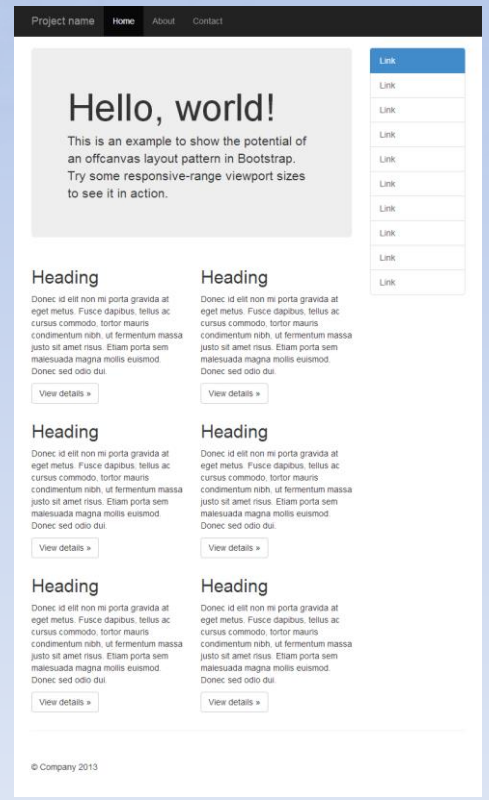




Page layout (3)

- Space management – *continued*
  - Responsive layout





Page layout(4)

- *Responsive layout – continued*
  - *HTML5*
  - *CSS3 (Media Queries)*
  - *More information on: https://www.w3schools.com/html/html_responsive.asp*

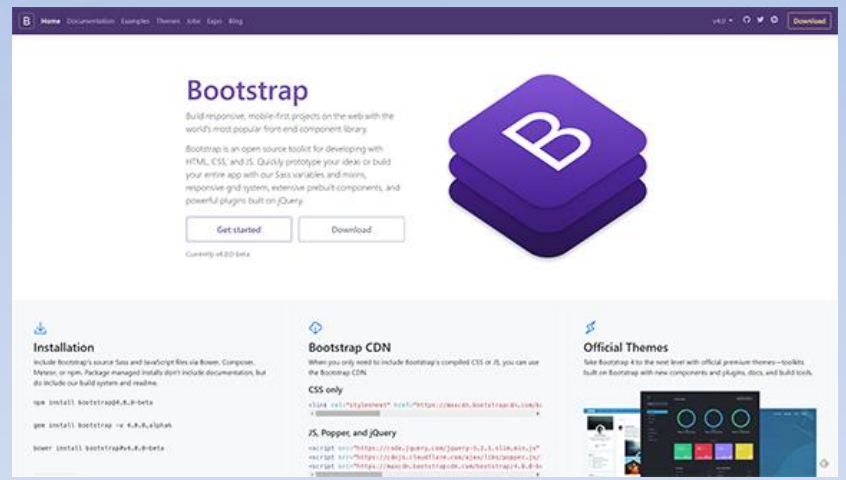
```
@media screen and (device-aspect-ratio: 16/9) { … }
@media screen and (device-aspect-ratio: 32/18) { … }
@media screen and (device-aspect-ratio: 1280/720) { … }

@media screen and (min-width: 500px) and (max-width:
800px) { ... }

@media all and (orientation: portrait) { ... }
```

Page layout (5)

- Space management– continued
  - *Responsive layout*, useful frameworks:
    - (Twitter) Bootstrap
    - Skeleton
    - HTML5 Boilerplate
    - Foundation
    - HTML KickStart



Page layout (6)

- Navigation
  - Where am I?
  - Where can I go?
  - How can I get there?
  - How can I go back?
  - Where have I been?

Page layout (7)

- Location of the main menu (by Jakob Nielsen):
  - Left navigation bar 30%
  - Tabs 30%
  - Links at the top of the page 18%
  - Categories in the middle of the page 12%
  - Cascading menu 10%
  - Other 6%
- Today it may look different (popular solutions with the right menu - blogs).

Page layout (8)

- Logo. Left, top corner linked to the home page.
- Search engine. Potential problems for some users in distinguishing between the site and the global search engine.
- Login / registration.

GUI elements

- Buttons
  - Form
  - Style
  - Colour
  - Fonts
  - Symbols
- Hyperlinks
  - The color of the visited links

GUI elements (2)

- Text field,
- Text area,
- Droplist/Combobox,
- Check box,
- Radio buton,
- Scroll bar,
- Progress indicator (spinner), e.g. http://www.ajaxload.info/
- Cursors,
- Icons and metaphors.

Advertisement

- Different forms of advertising
  - *Full banner*: 468 x 60
  - *Half Banner*: 234 x 60
  - *Button*: 120 x 90, 120 x 60
  - *Vertical Banner*: 120 x 240
  - *Square Banner*: 160 x 150, 180 x 200,
  - …
  - Full Screen/covering the content.
- Ads performance vs user annoyance

Advertisement (2)

- Important factors:
  - Readability (simplicity of the message)
  - Call to action ("click here")
  - Animation improves the effect (be careful not to exaggerate)
  - Be aware of tricks (advertisement looking like the content)
  - Matching to a target audience (contextual ad)
- Product placement
- Not observing the banners (banner’s blindness)

Fonts

- Serif
  - Times New Roman
  - Times
  - Georgia
  - Baskerville
  - Garamond
- Sans serif
  - Arial, Helvetica
  - Verdana

Fonts (2)

- The most popular fonts on the internet(according to J. Nielsen):
  - Arial (readable in size> 10),
  - Georgia (readable in size > 10),
  - Times New Roman (readable in size > 12),
  - Verdana (readable even in size < 10).
- Size
  - Pixels,
  - Points,
  - Em,
  - Percentages.

Fonts (3)

- Size - continued.
  - Approximate: 1em = 12pt = 16px = 100%
  - It is recommended to use Em or %.

	`body { font-size: 100%; }`	`body { font-size: 120%; }`
`font-size: 1em`	The quick brown fox	The quick brown
`font-size: 12pt`	The quick brown fox	The quick brown fox
`font-size: 16px`	The quick brown fox	The quick brown fox
`font-size: 100%`	The quick brown fox	The quick brown

© KyleSchaeffer.com

Source: *http://kyleschaeffer.com/best-practices/css-font-size-em-vs-px-vs-pt-vs/*

Fonts (4)

- Colours
  - Right contrast!
  - Dark color font on light background.
  - Be aware on negative contrast - reduces readability by 10% -40%.
  - Tools
    - http://etre.com/tools/colourcheck/
    - http://blackwidows.co.uk/resources/color-contrast-analyser.php
    - http://snook.ca/technical/colour_contrast/colour.html
    - http://www.accesskeys.org/tools/color-contrast.html

Fonts (5)

- Tools – continued
  - Lorem ipsum:
    - http://www.lipsum.com/, http://www.lipsum.pl/
  - Type tester: http://www.typetester.org/
  - http://colorschemer.com/
  - http://www.degraeve.com/color-palette/

Errors

- Origin:
  - a programming bug,
  - caused by a user, e.g. wrong url,
- Error messages
  - Technical
  - "Popular" / humorous
- Suggestion to solve the problem
- Visibility of the message
  - Colour
  - Font
  - Graphics
- Consistency of messages

Forms

- Form filling is one of the least favorite activities
- Proper motivation of the user
- Minimum / Required (!!!) number of mandatory fields
- Correct size of fields
- Easy to read layout

Forms (2)

- Optional descriptions,
- Grouped fields,
- Split into steps (with many fields),
- Possibility of returning to the entered data,
- Instant (AJAX) validation of fields,
- A clear message about the proces.

Usability tests

- Tests on users:
  - Representativeness of test users
  - Scenario - implementation of specific (typical) tasks
  - Observation:
    - What are the users doing?
    - Where do they encounter difficulties?
    - Recording, e.g. camera, special programms.

Usability tests (2)

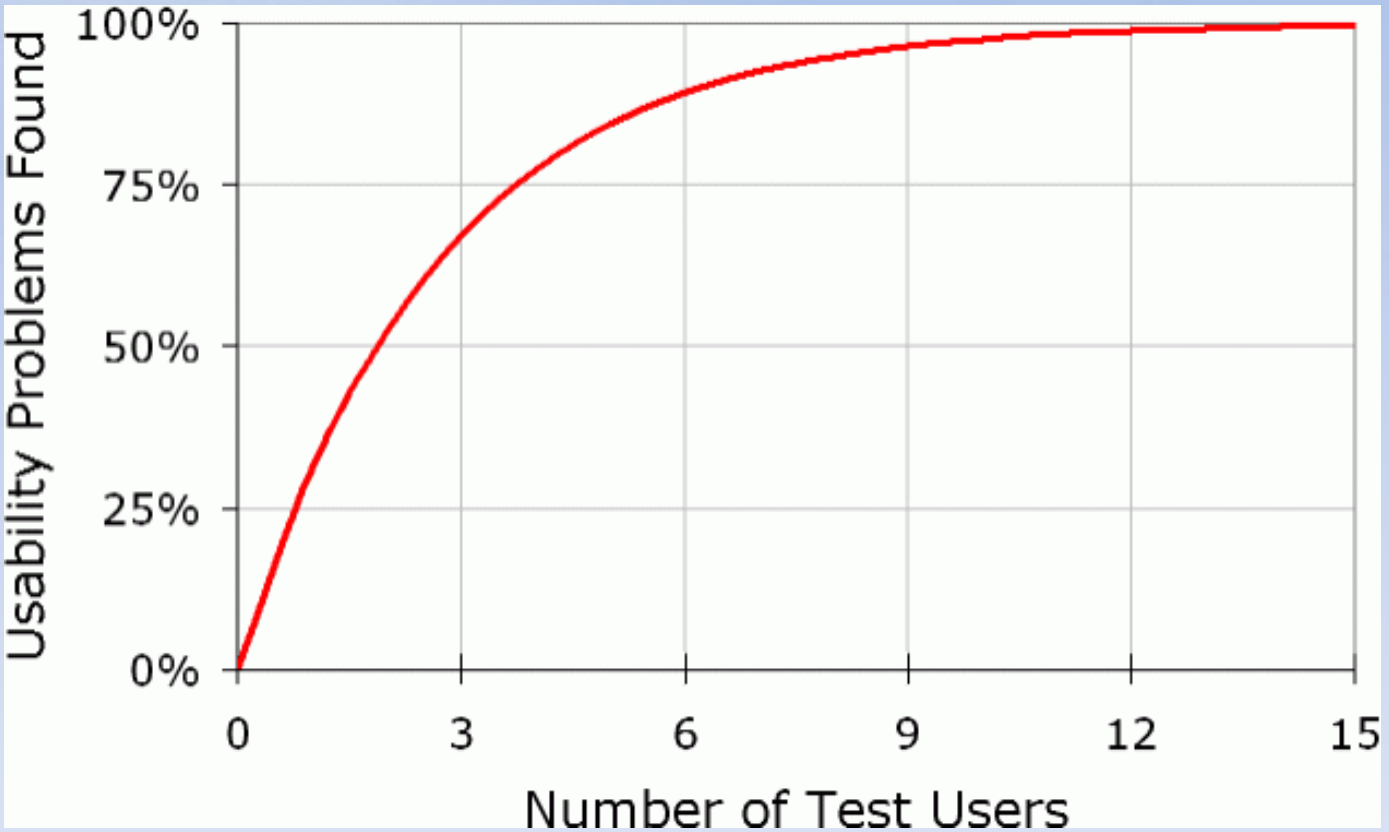
- Test users should only be allowed to count on themselves - a total ban for:
  - giving advice,
  - prompting,
  - help,
  - etc.

Usability tests (3)

- Number of test users:
  - Unlike statistical surveys, a large number of people is not always required,
  - Typically, a group of 5 people is able to capture the main problems of usability,
  - People in larger groups usually identify the same problems,
  - It is better to iteratively improve the design and test it in small groups.

Usability tests (4)

- Number of test users – continued



Source: [Jakob Nielsen, Why You Only Need to Test with 5 Users]

Usability tests (5)

- It is more important to observe what the test users do than to listen to their later comment (which, of course, may also be useful).
- Before we start a new project, let's test its previous version (of course, if there was one):
  - Identify positive and negative elements,
  - Let's build the first one and eliminate the other one.
- Test the solutions of the competition,

Usability tests (6)

- Use prototype:
  - Paper,
  - „Computer”
- Iteration work - each iteration ends with a test
- Check the design in the context of known usability recommendations.

Usability tests (7)

- Spending 10% of your budget on usability tests can double your quality of service:
  - Reduced training time by half and double the number of operations done by employee per hour
  - Duplication of sales, registered users, etc.

Usability - The most common errors on web pages

- Not using the entire window space (fixed page width).
- Overuse of PDFs:
  - Online information should not be displayed as PDF.
  - PDF files are convenient for distributing information and printing,
  - Navigation problems (inconsistency with web page)

Usability - The most common errors on web pages (2)

- No "colour" on visited links
- "Wall" of text, lack of using:
  - Headlines
  - Lists,
  - Short paragraphs
- Page construction that makes it impossible to change the fonts.

Usability - The most common errors on web pages (3)

- Inappropriate page titles/headers
  - User confusion,
  - Search engines errors,
  - Need to edit before adding to Favorites,
  - Important from SEO perspective,
  - Inappropriate window title in the system (because it usually comes from page title).

Usability - The most common errors on web pages (4)

- Resemble ads to content
  - Shape or location similar to a banner,
  - Intrusive animation,
  - Popping windows.

Usability - The most common errors on web pages(5)

- No consistency
  - Unexpected behavior, navigation, etc.
  - Users formulate their expectations based on what they have already seen
- Links open automatically in new windows

Usability - The most common errors on web pages (6)

- Failure to meet users expectations:
  - Most users use the web for a specific purpose
  - They have no desire / time to read "marketing" texts
  - They want to go straight to the purpose of their visit, such as getting to know the price

Work with users - testing

- Card sorting
- Mockups
  - Paper,
  - Paper-electronic,
  - Electronic.
- Persona

Card sorting

- Open sort
  - Participants receive cards with names (icons, photos, etc.) of the items tested;
  - Their task is to group the cards and name those created groups;
- closed/tree sort
  - In the same way as above, but the cards should be grouped according to the higher order category.

Card sorting (2)

- Free list
  - Participants will be explained what is involved in the study (subject matter, functionality, content);
  - Then they should prepare the cards themselves and group them.

Card sorting (3)

- Recommended number of participants: 5.
- Number of cards: 30 - 100. For larger projects, several tests are required.
- Consider using coloured cards.
- Appropriate names. It is best to avoid giving explanations on the other side of the card.
- Carry out a survey at the end.

Card sorting(4)

- Benefits of the study:
  - Knowledge of the perception of the content / portal by users (e.g. how the goods are grouped).
  - Low costs,
  - Easy to carry.
- Useful tools:
  - http://www.optimalworkshop.com
  - http://www.c-inspector.com
  - http://websort.net/

Card sorting (5)

- Data Analysis:
  - Proximity assessment. A matrix containing names elements in columns and rows. At their intersection there is an assessment of proximity.
  - Rating hierarchy: use of dendrograms (tree graphs).
- Human memory: 7 +/- 2 principle; particularly worth taking into account when grouping.

Paper mockups

- Purpose
- Taking into account:
  - Information architecture (site map, flow diagram)
  - Functional lists (with possible description eg "map animation"),
  - terminology,
  - Site content.

Paper mockups (2)

- Paper mockups
  - Drawn by hand,
  - Printed.

Paper mockups (3)

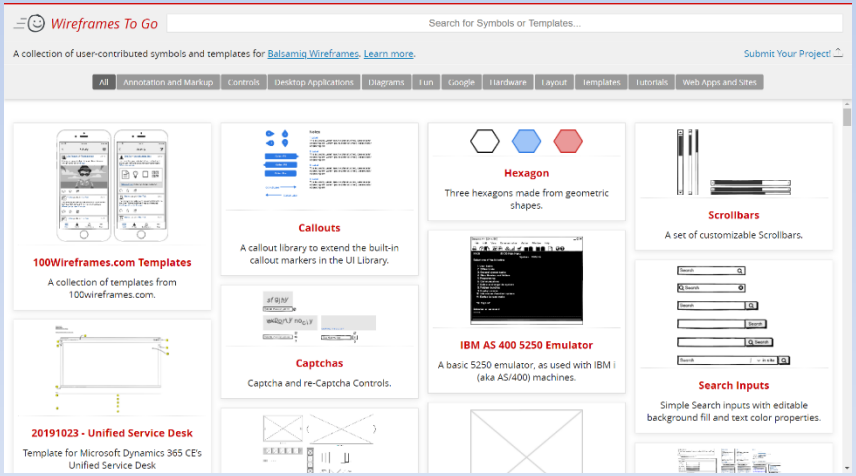
- When are they useful?
  - Little time,
  - Low budget
  - Working with people who do not do well with computers,
  - Illustration of some Ad-Hoc ideas,
  - Addition of card sorting method
  - Fieldwork ;)

Paper mockups (4)

- Using during the tests of:
  - Usability,
  - Functionality.
- Duration of the session: 30 - 60 minutes (with amendments up to 90 minutes).
- A / B tests.
- Disadvantages:
  - Failure to include technical capabilities / constraints,
  - They do not take into account the method and time of data collection,
  - Rather sketch than design.
- Are they still worth using?

Paper-electronic mockups

- Compared to paper prototypes, they differ in the way they are made. The rest remains the same.
- https://wireframestogo.com/



- MS Visio

Electronic mockups

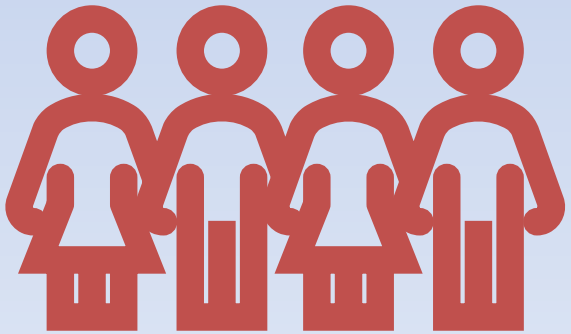
- Simulate your site's performance with other software, such as.
  - MS PowerPoint
    - Look,
    - Interaction.
  - MS Visio
    - Shape patterns (including additional ones, e.g. http://guuui.com/issues/02_07.php),
    - Use of D&D.

Electronic mockups(2)

- Other tools:
  - http://axure.com/
  - https://mockup.io/
  - https://balsamiq.com/
  - https://proto.io/
  - https://www.invisionapp.com/
  - https://www.figma.com/
- Advantages
  - More realistic application behavior,
  - Improved interaction,
  - Ability to simulate response time according to the data amount.

Personas

- Look at the site through the eyes of the user, not the designer.
- Specify the target audience for your site
- Persona - the image of a typical user
- They are based on research like:
  - Individual interviews,
  - Focused interviews,
  - Surveys / forms on-line
  - Statistics about the website.



Personas (2)

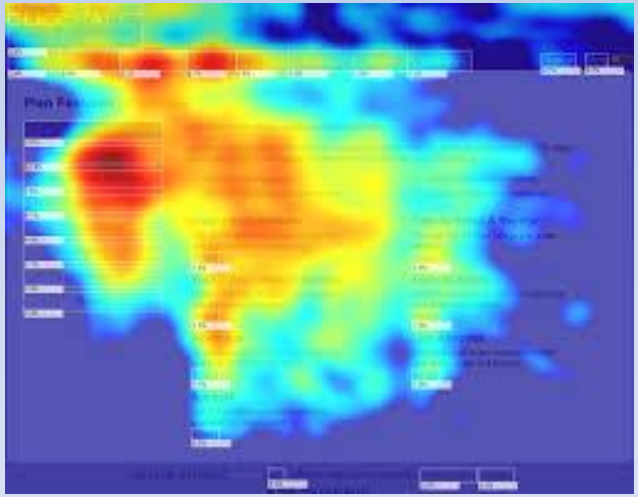
- We try to make the fictional person as real as possible:
  - Photo,
  - First name and surname,
  - Age, sex, education, marital status, occupation,
  - Character,
  - Life situation,
  - Material status,
  - Description of the environment.

Personas (3)

- We try to make the fictional person as real as possible -continued:
  - Motivation to use the site,
  - Aims,
  - Behavioral patterns associated with the page.
- Do not create too many of them

Types of research

- Qualitative research
  - Focused group interviews (focus studies),
  - Individual interviews,
- Tests of functionality and usability
- Click tracking
  - http://sitedoctor.pl/
  - http://clickdensity.com/
  - http://www.crazyegg.com/



Types of research (2)

- A/B tests
  - Two or more versions of the solution / site,
  - This way you can automatically research, e.g.:
    - Ad performance
    - Graphic elements,
    - Page layout,
    - Efficiency, such as shopping.
  - Connection with click tracking

Types of reaserach (3)

- Eyetracking
  - It measures the time by which eyeballs of people are focused on particular elements,
  - Requires specialized equipment,
  - Research: ergonomics, advertising, graphics, etc.

Types of research (4)

- Web statistics analysis:
  - Country,
  - Operating system,
  - Browser,
  - Input source
  - Screen resolution,
  - Color depth,
  - Availability of technology (e.g. plugins).

Summary

- Designing a content management system (website) is a complex, interdisciplinary process.
- Properly designed website must be of high usability.
- This is particularly important given the competition on the Internet and the ease of user migration.