Human-Computer Interaction

**User stories**
Have you done personas yet? If not DO IT NOW. Ok, now use them to write down user stories and scenarios. Read more

**User flows**
Create your user’s flow based on the scenarios you created, you can use it later to review the journey and create wireframes on top of each step. Read more

**Red routes**
Define red routes for your product and you’ll be able to identify, prioritise and eliminate any usability obstacles on key user journeys. Read more

**Brainstorm & sketch**
Find a war room, fill it with markers and drinks, get together and sketch, discuss, vote, disrupt, have fun! Read more

**Wireframe**
Add some details and structure to your ideas, reuse patterns and create pages on top of your user flows so you’ll not leave anything behind. Read more

**Prototype**
You can start creating paper prototypes and continuously iterate to more functional ones. Use sketches, HTML pages or static images, then just get some people and test. Read more

**IA**
Understand your users, your data structure and your channels. How can you organise your navigation and content in a clear and consistent way? Read more

**Language**
Follow your brand personality, keep in mind users’ culture and language, the context of your product and make sure they understand you. Read more

**Accessibility**
You don’t need to add extra functionality or to duplicate any content. The key is simply to assess the requirements of those with different skills and limited devices. Read more

uxchecklist.github.io

design models & methodologies
“Machines certainly can solve problems, store information, correlate, and play games – but not with pleasure.”

Leo Rosten
Goal

Developing digital products
Goal

Developing digital products

product as functionality  
versus

product as information  

mainly in the Web context
Building successful digital products

main actors: designers, technologists, management

Alan Cooper et al., About Face (4th Edition), 2014
Reality

Software engineering is mainly focused on the communication between applications and developers or between teams of developers.
Reality

Human-Computer Interaction considers the communication with the user
Reality

Interface design requires an important development effort
Reality

Interface design represents 50% of...

design time
implementation time
maintenance time
code volume
Necessity

Within the design processes, we should consider...

theories
models
frameworks

Rogers, 2007
Necessity

Theory

gives a (rigorous, formal) clarification of certain aspects regarding a phenomenon
Necessity

Model

simplifies a given aspect about interaction in order to facilitate choosing and/or evaluating alternatives of design
Necessity

Framework

denotes a set of interconnected concepts and/or a set of specific problems regarding HCI
Aspects concerning the UI design

blog.invisionapp.com/insights-on-ux-design/
involved disciplines & roles (Challis Hodge)

Creative Director, Information Architect, Interaction Designer, Visual Designer, User Researcher, Usability Engineer, etc.
Aspects concerning design

Interaction Design

story creating
story telling
example

story creating & telling used in the prototyping context
Aspects concerning design

Sensorial Design

conventional interaction
Aspects concerning design

Sensorial Design

conventional interaction

graphic design, illustration & photography

sound design, musical performance, vocal talents

videography, cinema
cinematic design for electronic games
Aspects concerning design

Sensorial Design

natural interaction
Aspects concerning design

Sensorial Design

natural interaction
tactile design
olfactory design
kinesthetic design
...

Dr. Sabin-Corneliu Buraga – profs.info.uaic.ro/~busaco/
Aspects concerning design

Sensorial Design

natural interaction

new paradigms & expectations
augmented and virtual reality, physical computing, etc.
case study

sensorial design for automotive industry

initiatives: **CarPlay** (iOS) and **Android Auto** + **MirrorLink** (Android devices)
Aspects concerning design

Task-centered interface design

focused on the developer’s (producer’s) goals: easiness of implementation, the use of technology,...
Aspects concerning design

Task-centered interface design

ignores the user – e.g., usability
Aspects concerning design

Task-centered interface design

creating a feature-centric software: many – never used – features

mammoth applications
Aspects concerning design

Task-centered interface design

countaged by the classical software engineering methodologies
Aspects concerning design

User-centered interface design

software must please, help, protect the user
Aspects concerning design

User-centered interface design

design must consider the user expectations
Aspects concerning design

User-centered interface design

applications must simplify the humans’ tasks
the user is automatically “opted in”
courtesy of Patricia Saravesi (2014)
Aspects concerning design

“User experience and interface design in the context of creating software represents an approach that puts the user, rather than the system, at the center of the process. This philosophy, called user-centered design, incorporates user concerns and advocacy from the beginning of the design process and dictates the needs of the user should be foremost in any design decisions.”

MSDN, User Interface Design & Development section
User model versus implementation model
User model *versus* implementation model

the most simple model must be adopted

Alan Cooper *et al.*, 2014
Aspects concerning design

When a model is adopted, a certain perspective is considered

perspectives:
  system
  dialogue (interaction)
  tools (computer as a tool)
  environment (computer as a partner)
Aspects concerning design

System perspective

a Gestalt view of the whole application
Aspects concerning design

System perspective

interaction is taking place in a standard, pre-defined (sometimes rigid) format
“I am thinking about something much more important than bombs. I am thinking about computers.” – John von Neumann (1946)
Aspects concerning design

System perspective

too often, user mental model is ignored
“Demanding that users register or log in before they can use an app or see Website information has high interaction cost.” – Raluca Budiu (2014)

www.nngroup.com/articles/login-walls/
Aspects concerning design

Dialogue perspective

both user and computer are seen as partners of a certain conversation
Aspects concerning design

Dialogue perspective

communicative behavior similar to the human one
Connetti il tuo iPod touch.

Grazie. To download your update, connect your iPod touch and click Download and Install. Il download può impiegare 30 minuti o più su una normale connessione a banda larga.

Se non si vede Download e Installa, fai clic su Verifica gli aggiornamenti nella scheda Riepilogo di iPod touch.

Completato

tinyurl.com/8xz8prs
Facebook Error!
We are having a problem reading your Facebook stream. Please try to logout and connect again. System error message: Incorrect signature | 635070774 |
0e968e322e6b5984a89ace9-635070774 | FB: 635070774

53 Friends

reported by @johnbreslin
Aspects concerning design

Dialogue perspective

- text
- hypertext
- direct manipulation
- pictures & illustrations
- gestures
- emotional factors
- ...

Dr. Sabin-Corneliu Buraga – profs.info.uaic.ro/~busaco/
Aspects concerning design

Dialogue perspective

factors concerning the choose of a dialogue type (Stefan Trausan-Matu, 2000):

information category
images, numbers, names, relationships,...
for other examples, visit firsttimeux.tumblr.com

category: data visualization
Aspects concerning design

Dialogue perspective

factors concerning the choose of a dialogue type
(Stefan Trausan-Matu, 2000):

information structure
limited set of values, lists of pairs (name, value), graphs,...
Register
First Name: Last Name:

Email: Telephone:

Website:

Password

Age: Date Of Birth:

Favorite Browser Your Options

Your Skills (1-10)

Which one?

- Just Glad to Pass
- Easy Way
- Difficult Way

Message:

Your message ...

I read the grading rules for Web Technologies Course: □

Send

designed by Dr. Stefan Negru (2014)
Aspects concerning design

Dialogue perspective

factors concerning the choose of a dialogue type (Stefan Trausan-Matu, 2000):

information structure

data ➔ information ➔ knowledge
Aspects concerning design

Dialogue perspective

factors concerning the choose of a dialogue type
(Stefan Trausan-Matu, 2000):

user profile and preferences
age, abilities, ethnicity, social aspects, etc.
Aspects concerning design

Dialogue perspective

factors concerning the choose of a dialogue type
(Stefan Trausan-Matu, 2000):

user profile and preferences
age, abilities, ethnicity, social aspects, etc.

remember personas?
Aspects concerning design

Dialogue perspective

factors concerning the choose of a dialogue type (Stefan Trausan-Matu, 2000):

activity type + concurrency
(collaborative) work, leisure, real-time task,...
Aspects concerning design

Dialogue perspective

factors concerning the choose of a dialogue type (Stefan Trausan-Matu, 2000):

context
spatial, temporal
Touch-based interaction

hand obstruction
inaccuracy of tapping
lack of haptic feedback
multi-touch issues
etc.

www.slideshare.net/pankorho/touch-uis-are-quite-different
perceptual blindness
“How do I close this pop-up?”
Aspects concerning design

Tools perspective

users (need to) have full and continuous control over all tools provided by the computer and with their help want to accomplish their goals

software as a tool
Bill Atkinson: documenting the interaction design of Apple Lisa, a computer designed for an office worker (1984)

Aspects concerning design

Environment perspective

computer is considered as a communication environment between persons
(e.g., via e-mail, chat, social applications,...)
Aspects concerning design

Environment perspective

the process of communication is the same, even if software and/or types of interaction are different
Aspects concerning design

Environment perspective

the process of communication is the same, even if software and/or types of interaction are different

proliferation of multi-platform (mobile) Web applications able to integrate social networks
How about design values?

Typical Apple Product...

A Google Product...

Your Company's App...

noisydecentgraphics.typepad.com/design/images/2008/03/11/yourproduct.jpg
Design values

Ethical
Purposeful
Pragmatic
Elegant

Alan Cooper et al., 2014
Design values

**Ethical** (helpful)

do no harm, improve human situations
There has been an error transferring your mail. I said:

MAIL FROM: <mmccinnc@vt.edu>
and then the SMTP server said:
503 Polite people say HELO first
You are about to delete 1 record(s).

**Solution**
Click Yes to permanently delete these records. You won't be able to Undo this change.
Design values

**Purposeful** (useful, usable)

help users achieve their goals and aspirations

accommodate user contexts & capacities
Design values

valuable
useful
usable
desirable
findable
accessible
credible

user expectations regarding the interface (Peter Morville)
1. Click the arrow button to begin, then type one or more words to look for:

2. Click Search:
This function is available only with Internet Explorer.
Design values

Pragmatic (viable, feasible)

help organizations achieve their goals

accommodate business and technical requirements
Design values

**Elegant** (efficient, artful, affective)

represent the simplest complete solution

possess internal
(self-revealing, understandable) coherence

appropriately accommodate/stimulate cognition and emotion
skeuomorphism **versus** flat design


[androidniceties.tumblr.com](http://androidniceties.tumblr.com)
Design values

“A visual bug seen by all your customers might do more damage to your program’s reputation than a rarely occurring crashing bug.”

Windows UX Guidelines, MSDN
Design values

“An application is powerful when it enables its target users to realize their full potential efficiently.”

Windows UX Guidelines, MSDN
Design models and methodologies
Models & Methodologies

Using “classical” software engineering methodologies
Models & Methodologies

Using “classical” software engineering methodologies

cascade
spiral
RAD – Rapid Application Development
...

Dr. Sabin-Corneliu Buraga – profs.info.uaic.ro/~busaco/
Models & Methodologies

User-centered design methodologies

LUCID (Logical User-Centered Interaction Design)

six iterative stages (Cognetics, 1998):

  envision ▶ analyze ▶ design ▶
  ▶ refine ▶ implement ▶ support

ftp.cs.umanitoba.ca/pub/cs371/Readings/Lucid2a-overview.pdf
Models & Methodologies

User-centered design methodologies

ISO 9241-2010 (2010)

a standard concerning the ergonomics of human-system interaction
iterative design methods are preferred

**lean startup** method (Eric Ries, 2011)
scenario-based iterative design
(Alistair G. Sutcliffe, 2014)
bottom to top conceptual framework

surface
skeleton
structure
scope
strategy

each plane is dependent on the planes below it

Models & Methodologies

Agile design methodologies

many factors of uncertainty

work is organized into the smallest possible batch size in order to quickly launch the product
<table>
<thead>
<tr>
<th>UX Activities &amp; Focus During Sprint</th>
<th>Sprint 1</th>
<th>Sprint 2</th>
<th>Sprint 3</th>
<th>Sprint 4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Definition</strong> (Product Mgt)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Implementation</strong> (One of many Dev Activities)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Future Designs &amp; IA</strong> (Working with Product Mgt)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>On Deck Designs</strong> (Finalizing for Future Sprint)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Decomposition</strong> (Designs into User Stories)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>User Research</strong> (Testing, Observation, etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Design QA</strong> (Quality of Current Sprint)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

UX activities occurring during the course of a single sprint

Lynn Pausic (2012)
Models & Methodologies

Agile development & Lean UX shared goals

shorten the time to market
working software over comprehensive documentation
collaboration over negotiation
responding to change over following a plan
Models & Methodologies

Lean UX
Application of User Experience Design methods into product development, tailored to fit Build-Measure-Learn cycles.

Methods
Inspired by startup development and The Lean Startup Methodology.

Lean UX vs. Agile UX (Marcin Treder, 2013)
<table>
<thead>
<tr>
<th>Figure out:</th>
<th>interviews, personas, design target</th>
</tr>
</thead>
<tbody>
<tr>
<td>who it’s for?</td>
<td></td>
</tr>
<tr>
<td>What can the user do that wasn’t possible before?</td>
<td>activity map, concept drawing, storyboards</td>
</tr>
<tr>
<td>What features does the user need for that?</td>
<td>sticky notes, sketches, creating whiteboards</td>
</tr>
<tr>
<td>Sketch it, (prototype it), then build it</td>
<td>“fake it, then make it”</td>
</tr>
</tbody>
</table>

**Lean UX processes**

[www.slideshare.net/jacklynburgan/intro-leanux-turnerfinal](http://www.slideshare.net/jacklynburgan/intro-leanux-turnerfinal)

[www.slideshare.net/johnwhalen/uxpa-2013-implementing-lean-ux](http://www.slideshare.net/johnwhalen/uxpa-2013-implementing-lean-ux)
Just the UX process

Concept → Validate Internally → Prototype → Test Externally → Learn from user behavior → Iterate

usability testing

Lean UX

also, consider **UX Recipe** (Alecsandru Grigoriu)

uxrecipe.github.io
Models & Methodologies

Lean UX

design thinking + agile + lean startup principles

for details, see Amrita Aviyente,
*Agile + Lean Startup principles + Lean UX* (2013)

www.slideshare.net/amritacaviyente/agile-lean-uxfinal
# Models & Methodologies

<table>
<thead>
<tr>
<th>UCD</th>
<th>Lean UX</th>
</tr>
</thead>
<tbody>
<tr>
<td>(user-centered design)</td>
<td></td>
</tr>
<tr>
<td>learn from users</td>
<td>learn from users</td>
</tr>
<tr>
<td>no agile concepts</td>
<td>uses agile concepts</td>
</tr>
<tr>
<td>no validating hypothesis</td>
<td>validating hypothesis</td>
</tr>
<tr>
<td>no way to measure design outcomes</td>
<td>measure design outcomes</td>
</tr>
</tbody>
</table>
Models & Methodologies

Methodologies could be based on certain models
conceptual models for designing a Web interface
Robert Baxley, 2003
Models & Methodologies

QOC (Questions, Options, Criteria)
Maclean et al., 1991
Models & Methodologies

QOC (Questions, Options, Criteria)
Maclean et al., 1991

questions regarding design key issues
Models & Methodologies

QOC (Questions, Options, Criteria)
Maclean et al., 1991

questions regarding design key issues

possible options to response to each question
Models & Methodologies

QOC (Questions, Options, Criteria)
Maclean et al., 1991

questions regarding design key issues

possible options to response to each question

evaluation criteria – e.g., ergonomics, accessibility, preferred interaction method,... – concerning every option
QOC

question:
How user could choose a location for flower delivery?
QOC

question:
How user could choose a location for flower delivery?

options:
listbox, combobox, textfield, using a map,...
QOC

question:
How user could choose a location for flower delivery?

options:
listbox, combobox, textfield, using a map, ...

criteria:
efficiency, keyboard-only interaction, using gestures, etc.
## International Flower Delivery

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Algeria</td>
<td>Bahamas</td>
<td>Cambodia</td>
<td>Denmark</td>
</tr>
<tr>
<td>Angola</td>
<td>Bahrain</td>
<td>Canada</td>
<td>Dominican Republic</td>
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<tr>
<td>Antigua</td>
<td>Barbados</td>
<td>Cayman Islands</td>
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<tr>
<td>Argentina</td>
<td>Belarus</td>
<td>Chile</td>
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<tr>
<td>Armenia</td>
<td>Belgium</td>
<td>Colombia</td>
<td></td>
</tr>
<tr>
<td>Aruba</td>
<td>Benin</td>
<td>Cook Islands</td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>Bermuda</td>
<td>Costa Rica</td>
<td></td>
</tr>
<tr>
<td>Austria</td>
<td>Bolivia</td>
<td>Croatia</td>
<td></td>
</tr>
<tr>
<td>Azerbaijan</td>
<td>Bonaire</td>
<td>Cuba</td>
<td></td>
</tr>
<tr>
<td>Azores</td>
<td>Bosnia-Herzegovina</td>
<td>Curacao</td>
<td></td>
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<tr>
<td></td>
<td>Botswana</td>
<td>Cyprus</td>
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<tr>
<td>E</td>
<td>Brazil</td>
<td>Czech-Republic</td>
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<tr>
<td>Ecuador</td>
<td>Brunei</td>
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<td></td>
<td>Bulgaria</td>
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<td>F</td>
<td>Fiji</td>
<td></td>
<td></td>
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<tr>
<td>G</td>
<td>Gabon</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

![Flower delivery interface](image)

- **Country Selection:**
  - **United Kingdom**
  - **USA**
  - **France**
  - **Germany**
  - **Italy**
  - **Switzerland**
  - **Austria**
  - **Spain**
  - **Australia**
  - **Argentina**
  - **Armenia**
  - **Azerbaijan**
  - **Bahamas**
  - **Bahrain**
  - **Barbados**
  - **Belarus**
  - **Belgium**
  - **Benin**
  - **Bermuda**
  - **Bolivia**
  - **Bosnia-Herzegovina**
  - **Botswana**
  - **Brazil**
  - **Brunei**
  - **Bulgaria**
  - **Cambodia**

- **Flower Occasions:**
  - Birth
  - Birthday
  - Anniversary
  - Marriage
  - Sympathy/Funeral
  - Special Offers

- **Product Types:**
  - Roses
  - Seasonal Gifts
  - Budget Gifts
  - Plants

- **Sentiments:**
  - Congratulations
  - Love & Romance
  - Thank-you
  - Get well
  - Just because
  - Zodiac

- **Search Function:**

- **Special Offer:**
  - Basket of Cheer
  - Priced from €40.00

- **Buy now**
Q: How to view a patient’s details from the patients list?

Tap on the list item.

Tap on a button from the list item.

One tap on the list item to select followed by a tap of a button outside the list.

Easy to interact; a tap everywhere on the list item will open the details view.

One button for the entire list placed on a fixed location.

Open the details view accidentally while exploring the list.

Safe; does not allow to open the details view accidentally while exploring the list.

One action required to open the view (a tap)

Precision; One button for each list item.

element: QOC for touch-based interaction with a patient monitoring application

A. Berila, A. Bulai, C. Chiric & M. Plesca, 2012
each option could have associated a score per criterion

<table>
<thead>
<tr>
<th></th>
<th>Responsive grid display</th>
<th>Accordion UI control</th>
<th>Single image per row</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responsive</td>
<td>10</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>UX</td>
<td>10</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Ease of</td>
<td>8</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Implementation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Functionality</td>
<td>10</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>38</strong></td>
<td><strong>36</strong></td>
<td><strong>26</strong></td>
</tr>
</tbody>
</table>

example: displaying most recent images
context: graphical content management application
A. Boicu, S. Boghiu, B. Aciobanitei (2015)
Models & Methodologies

Iterative design may involve users in the different phases of the project.
Models & Methodologies

Iterative design may involve users in the different phases of the project; these persons could evaluate UI in early stages of development.
from idea to the final software product
User Requirements Engineering

- scoping
- fact gathering
- analysis
- modelling
- validation
- trade-off analysis
- negotiation

sketch ➔ wireframe ➔ mockup ➔ develop
Models & Methodologies

Prototyping

overall view of the user interface
Models & Methodologies

Prototyping

proposes a design solution

no full functionality required
Models & Methodologies

Prototyping

could be dynamic • interactivity

provides ways for experimentation
Models & Methodologies

Prototyping attracts users in the development process might have an important role in testing
## Prototyping

<table>
<thead>
<tr>
<th>fidelity</th>
<th>tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>paper prototype</td>
<td>paper + pencil</td>
</tr>
<tr>
<td>low – clickable wireframe</td>
<td>Framebox, Gliffy, MS Visio, OmniGraffle, UXPin</td>
</tr>
<tr>
<td>medium</td>
<td>Axure, Adobe Illustrator, FlairBuilder, ForeUI, InVision, Moqups</td>
</tr>
<tr>
<td>high</td>
<td>code (e.g., HTML + CSS + JS) usually, by using a specific framework</td>
</tr>
</tbody>
</table>

For various resources, visit [blog.prototypr.io](http://blog.prototypr.io)
paper prototype of main page for www.info.uaic.ro
(Sergiu Dumitriu, Marta Gârdea, Sabin Buraga, 2006)
Original Twitter Concept

www.flickr.com/photos/jackdorsey/182613360/
Prototyping for virtual reality (Sampathi, 2018)

using high-fidelity prototyping tools:

A-Frame – a Web framework for building VR experiences

Framer – based on CoffeeScript
case study

UI prototype – flight augmented reality app (Jacobs, 2018)

tools: Sketch + Origami Studio
Models & Methodologies

Storyboard

describing the manner of presenting information,
without any functionality

Storyboardcentral.blogspot.com
SocialSpeed
Social Web application for suggesting chat topics for two persons that don't know each other.

Models & Methodologies
A. Stanciu, I. Schiopu, A. Grigoriu, I. Lazar (2011) – aisquared.wordpress.com
1. Alex wants to paint a flower. He is going to use only his voice.

2. He can move the cursor without changing the color.

3. He wants to change the color to red and paint one pixel on the right.

4. Alex is happy with the picture he made.

Models & Methodologies

Storyboard

in the Web context, it usually consists of wireframes
Models & Methodologies

Wireframe

provides a general view of the structure of interface and relationships between pages

wireframe-based design
Models & Methodologies

Wireframe

created in the first stage of the project

gives instructions to both designers and programmers regarding the interface look & behavior

conceptual page layouts
Asian Language Learning Web Tool

Progress

Overall stats for module 1

Streak

Graph

Overall stats for module 2

Streak

Graph

Ioana Sitaru, Ștefan Matcovici, Bogdan Lupu (2018) – github.com/ioanasitaru/CLIW
Wireframes – pitfalls (Helena van Nues & Lennart Overkamp, 2018):

can provide the illusion that a design is final

tend to reduce creativity & engagement

undermining user-centricity

can’t capture the responsive behavior of actual sites/apps

alistapart.com/article/priority-guides-a-content-first-alternative-to-wireframes
Models & Methodologies

Priority Guide

“a single deliverable that provides direction for content-focused design and mobile-first development in something resembling a wireframe”

(Drew Clemens, 2012)

www.smashingmagazine.com/2012/05/design-process-responsive-age/
Priority Guide

covers content + interactive elements for a mobile screen, sorted by hierarchy – based on relevance to users – from top to bottom, with no layout specifications

available as a digital document (e.g., using Sketch) or in physical form (paper, post-its)
Models & Methodologies

Mockup

provides a *low-fidelity* – full-size or scaled – prototype: paper illustration, screenshot,...
Models & Methodologies

Mockup

provides a low-fidelity – full-size or scaled – prototype:
paper illustration, screenshot,...

used for demonstration, teaching, evaluation
UI mockup for a travelling Web application  
B. Rotariu et al. (2017) – tras.bogdanrotariu.ro
Models & Methodologies

Mockup

several examples of available software tools:

Balsamiq Mockups – www.balsamiq.com
HotGloo – www.hotgloo.com
MockFlow – mockflow.com
Mocking Bird – gomockingbird.com/mockingbird/
Moqups – moqups.com
Proto.io – proto.io
<table>
<thead>
<tr>
<th></th>
<th>Key aspects</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wireframe</td>
<td>Basic representation of design elements</td>
<td>Communication, documentation</td>
</tr>
<tr>
<td>Prototype</td>
<td>Interactivity</td>
<td>Interactive user testing, UI design</td>
</tr>
<tr>
<td>Mockup</td>
<td>Static visualization, branding</td>
<td>Stakeholder design buy-in</td>
</tr>
</tbody>
</table>

speckyboy.com/wireframing-prototyping-mockuping-whats-the-difference/
Models & Methodologies

Interface assistants (wizards)

help users to dynamically create the interface

interactive prototyping
Real-life design processes – examples:

**Thinking Design** (Adobe)
medium.com/thinking-design

**Product Development Process** (Apple)
tinyurl.com/j676epe

**Facebook Design**
medium.com/facebook-design

**Design Research** (IBM)
www.ibm.com/design/research/

**Microsoft Design**
medium.com/microsoft-design

**Practicing Collaborative UX Design** (Hive)
blog.prototypr.io/practicing-collaborative-ux-design-in-a-large-organization-9ffec182b4d7
Case study #1:

designing a Web interface for Apricado Music (Jeff Ward)
Step 1: paper prototype (sketch)

1. Upload your first song
2. Give it a name
3. What is your band's name?
4. Pick your store's URL
5. Set up e-mail
   Set up My Store
step 2: wireframe
Step 3: design mockup
real Web interface (HTML+CSS)

step 4: implementation
Case study #2:

5 hour prototype challenge: BBC iPlayer Radio App using Origami Studio (Chris Jacobs, 2018)
remember Fitts’ law?
5-hour prototype challenge - BBC iPlayer Radio App using Origami Studio

blog.prototypr.io/5-hour-prototype-challenge-bbc-iplayer-radio-app-using-origami-studio-c7c6702c12e6
Other use cases:

*Best HCI 2015 & 2017 projects* of students enrolled at Faculty of Computer Science, UAIC Iasi, Romania

pxdotpt.com/blog/2015/6/19/human-computer-interaction-best-in-class-2015

*Secrets behind the success of Monument Valley (2015)*

blog.invisionapp.com/secrets-behind-the-success-of-monument-valley/

*DigitalLabs Design Experiments (2019)*

medium.com/cbc-digital-labs
Models & Methodologies

Necessity of specific HCI guidelines and standards
Models & Methodologies

Necessity of specific HCI guidelines and standards to guarantee the UI quality
Models & Methodologies

- Increasing authority
- Increasing generality

Guidelines
Standards
Standards

Imposed by (inter)national organisms

examples:

ISO 9241:210 (Ergonomics of human-system interaction)

W3C Recommendations

plan the human-centered design process

① understand & describe the context of use

② specify the usage requirements

③ develop design solution

④ evaluate solution against usage req.

iterate

⑦ design solution meets usage requirements

www.uxbooth.com/articles/designing-usability-standards/
Guidelines

Provides details and design suggestions

Could list abstract principles to be used in early stages of UI development

May resolve certain design conflicts
Guidelines: examples

Android Wear Design Principles
BBC GEL (Global Experience Language)
GNOME HIG – Human Interface Guidelines
iOS Human Interface Guidelines
Samsung Smart TV UX Guideline
Universal Windows Platform (UWP) UX Guidelines
Web Content Accessibility Guidelines
ARIA (Accessible Rich Internet Applications)

case study: Web Accessibility Initiative – www.w3.org/WAI/
GNOME HIG: usability principles

Design for people
Don’t limit your user base
Create a match between your application & the real world
Make your application consistent
Keep the user informed
Keep it simple and pretty
Put the user in control
Forgive the user
Provide direct manipulation

for details, read developer.gnome.org/hig-book/
Principles for Designing Apps for Samsung TV

Simplicity
Clarity
User Control
Consistency: controls, screen layout, navigation
Feedback
Aesthetic Considerations

see also developer.samsung.com/tv/design
How Are Tablets Used?

In contrast to the desktop or television platforms, the consumption of content and services on tablet devices is similar to mobile in that it doesn't always happen in ideal viewing circumstances.

Tablets can be used whilst commuting, at home watching television (second screening), or in social situations. This means that variations in contextual behaviour can affect the types of content consumed and the device distance from the viewer (Close, Medium & Far).

As a result, users demand the flexibility to modify content presentation should their viewing context change, by changing device orientation or increasing font sizes for example. See Font Size & Reading Distance.

Tablets are most commonly used for playing games, checking email & social networking sites, watching videos/films and reading news.

aspects regarding the UI design from methodologies to guidelines
FIELD GUIDE to WEB APPLICATIONS

The demand for apps is strong, and it’s coming from everywhere! This comprehensive guide provides an introduction to many of the skills and best practices you need to build modern web apps. This field guide is designed to help you create great user experiences in your web apps. Whether you’re building your first web app, or are just looking for ways to improve existing experiences, there’s something here for you!

Best wishes and good luck in all your endeavors. Appward, to the Future!

Bert

next lecture:
information architecture & design patterns