Introduction to UI Design & User Experience

28.09.2011

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Agenda for today

- What does usability means? What is the difference to User Experience (UX)?
- Create the concept / Generate ideas
- Perform the conceptual design
  - Perform paper prototyping
  - Perform digital prototyping
- Perform the screen design
- Evaluate your designs iteratively
- Next steps to be performed


“
As far as the customer is concerned, the interface is the product.
”
Jef Rasl

“**Features are meaningless.**

They mean nothing t *A coherent product*

user interface is the product”

Kim Goodwin

“Designing for the Digital Age”

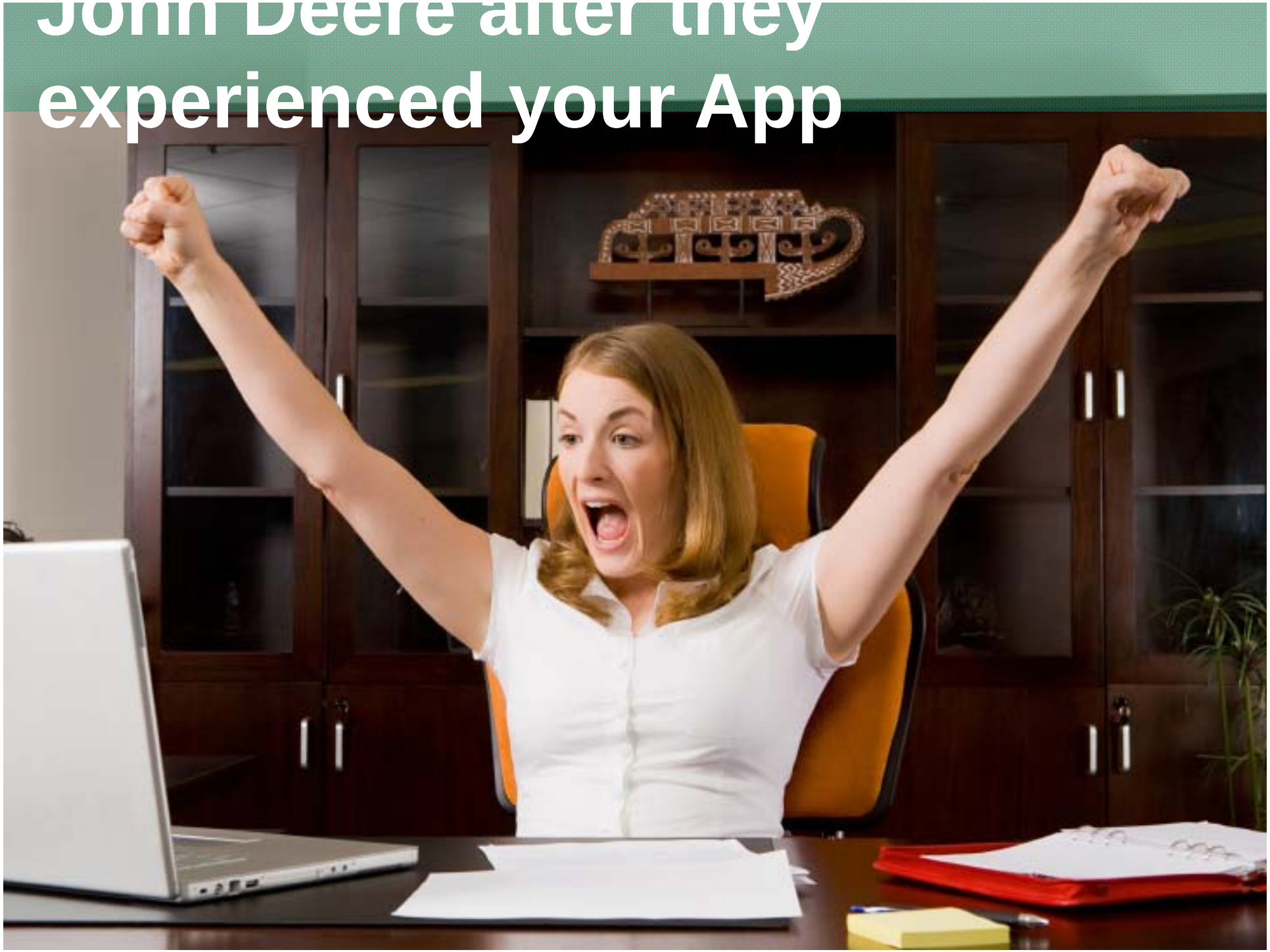
Usability & User Experience

A common Software Product

A usable Software Product

A positive User Experience

John Deere after they experienced your App



Defining Usability
DIN EN ISO 9241-11

„**Usability is** the extent to which a product can be used by specified users **to achieve** specified **goals with effectiveness, efficiency and satisfaction** in a specified context of use.“

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Fulfilling ISO 9241-11 leads to

- products that do not prevent users from performing their tasks.
- products that can be used effectively and efficiently.
- products that do not annoy users.

Is this really sufficient to build great products that users enjoy to use?

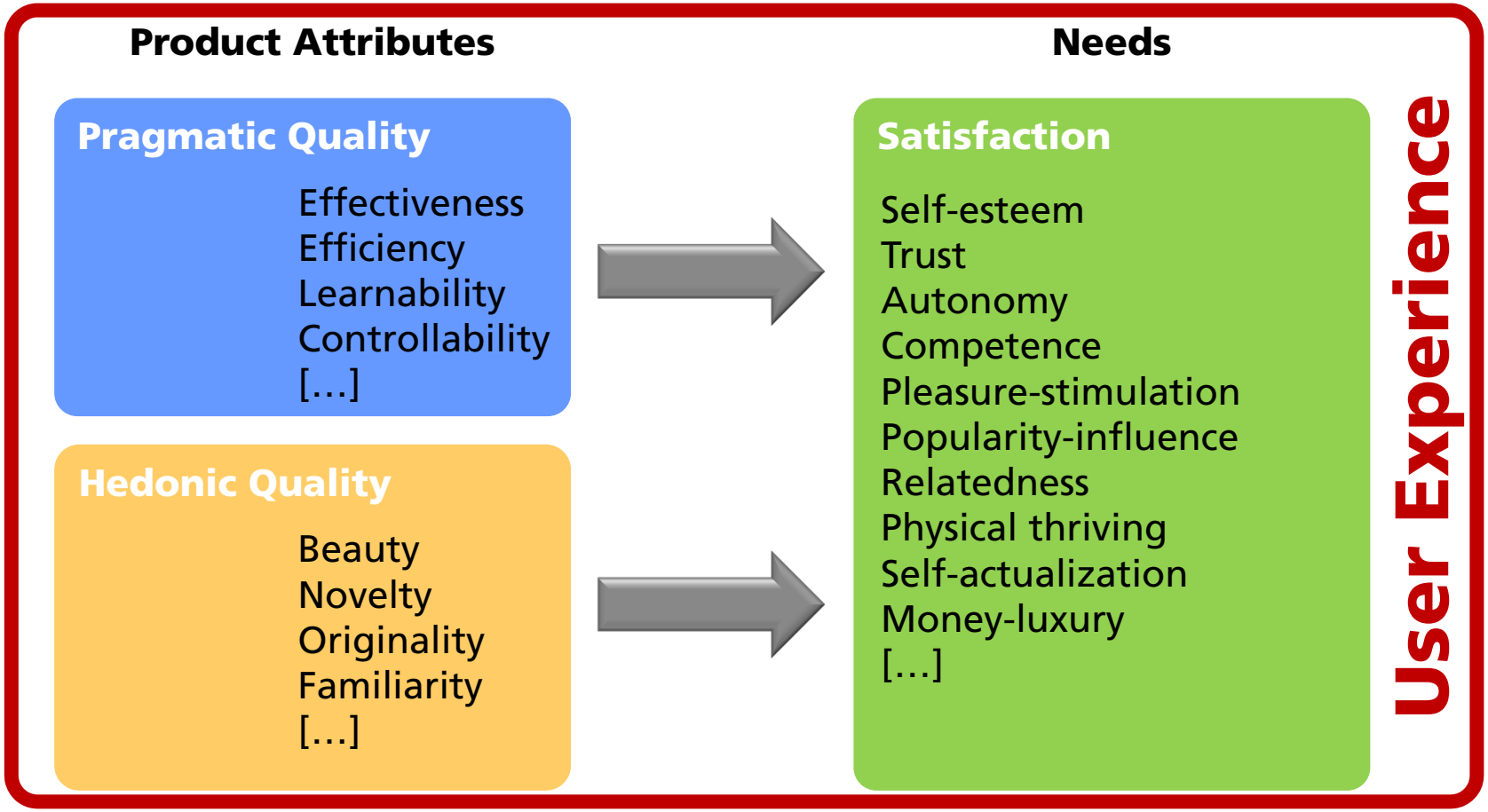
User Experience is more than just Usability!

- To provide a positive user experience, **products have to be more than just effective and efficient.** Satisfaction is more than the "absence of discomfort" [ISO 9141-11].
- Nowadays, **usability factors are hygienic factors:**
  Users are annoyed if a product is not usable, but
  if a product is "just usable" it does not necessary provide a positive user experience.
- What other factors contribute to user experience**?**

Trust



Defining User Experience



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Product related User Experience Factors

- **User Experience is influenced by a lot of different factors.**
  - Some of them are actual product related factors like
    - features or
    - quality attributes.
  - Other factors concern
    - the brand,
    - the image,
    - the packaging,
    - marketing,
    - …
- As many factors can not be influenced by software engineering methods, **we concentrate on product related user experience factors.**
- It may happen, that even the product related user experience factors alone would provide a positive user experience, the influence of the other factors may prevent a positive user experience.

Defining User Experience
ISO 9241-210

"**User experience includes all aspects of the user's experience when interacting with the product, service, environment or facility.**

It is a consequence of the presentation, functionality, system performance, interactive behavior, and assistive capabilities of the interactive system. **It includes all aspects of usability** and desirability of a product, system or service from the user's perspective."

Generating Ideas

Creativity Techniques

Perform a creativity workshop

Explore ideas

Derive further ideas and concepts

Examples of Creativity Techniques

- There exist many creativity techniques for elicitating ideas
  - http://www.diegm.uniud.it/create/Handbook/techniques/techniques.htm
- Examples: Brainstorming, Mindmapping, Brainwriting, Lotus Blossum, etc.

Phases	1 Predisposition (41)	2 External mapping (23)	3 Internal mapping (16)	4 Idea generation (121)	5 Evaluation (27)
Techniques (228)	Class A (2)	Class A (4)	Class A (3)	Class A (11)	Class A (3)
	Class B (10)	Class B (5)	Class B (7)	Class B (34)	Class B (11)
	Class C (11)	Class C (10)	Class C (4)	Class C (27)	Class C (4)
	Class D (18)	Class D (4)	Class D (2)	Class D (49)	Class D (9)

Example Technique – Brainwriting

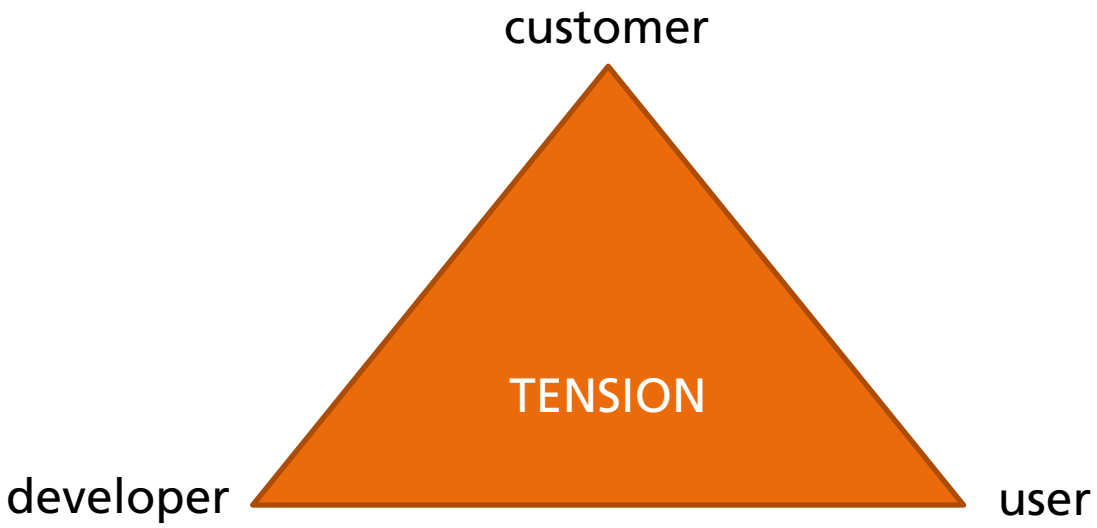
- http://www.diegm.uniud.it/create/Handbook/techniques/List/Brainwriting.php
- The name “Brainwriting 6-3-5” comes from the process of having 6 people write 3 ideas in 5 minutes

Problem Statement: How to...			
	Idea 1	Idea 2	Idea 3
1			
2			
3			
4			
5			
6			

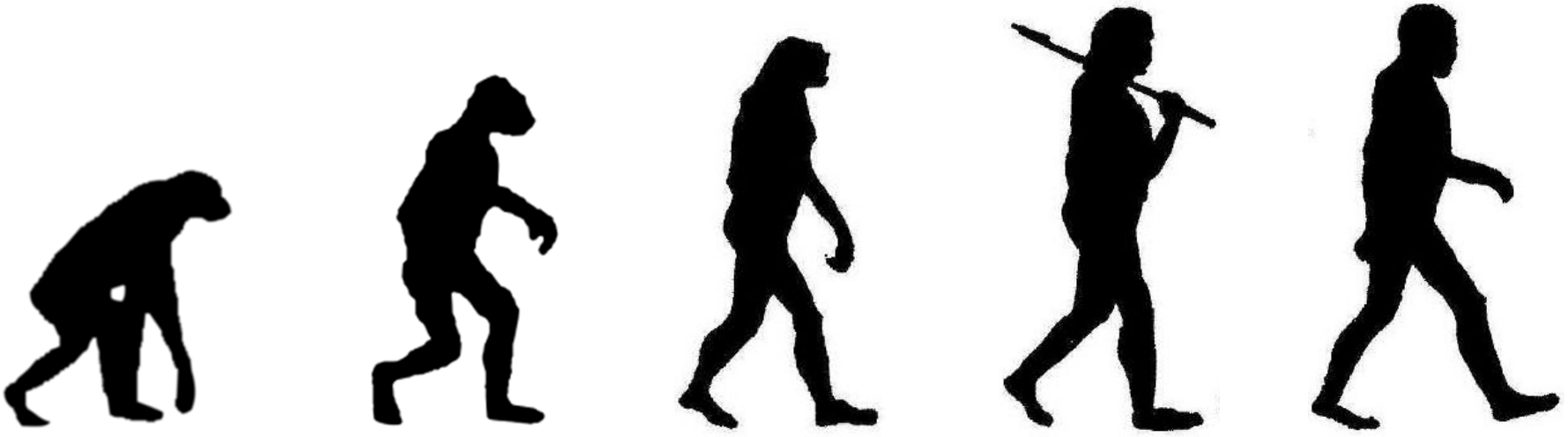
Prototyping

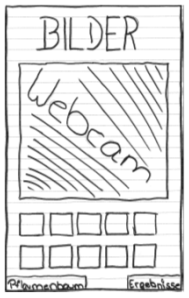
Communicating Ideas and Gaining Feedback

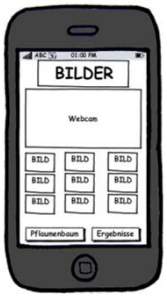
- Naturally, there exist different expectations and views between developers, customers, and users
- Prototyping through evolutionary steps helps to overcome this tension and establishes a common vision of the software to be developed



Software Prototyping – Evolution

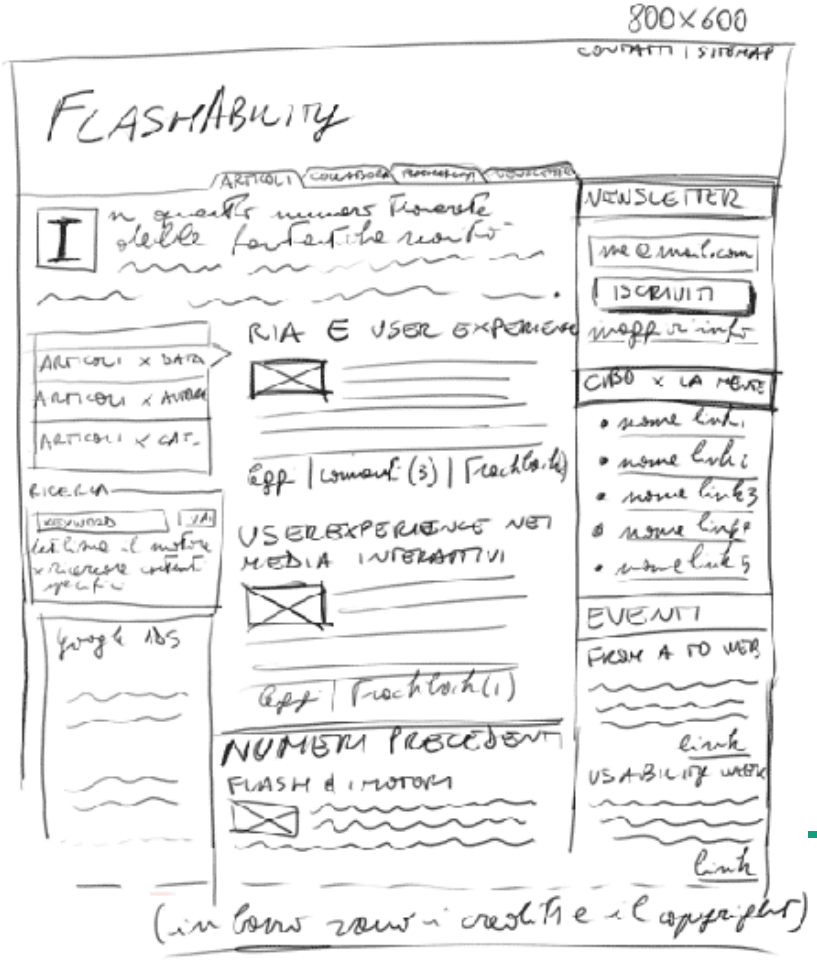


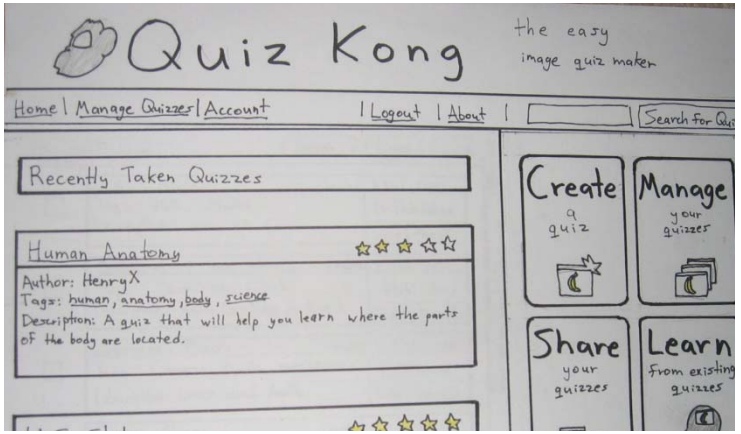


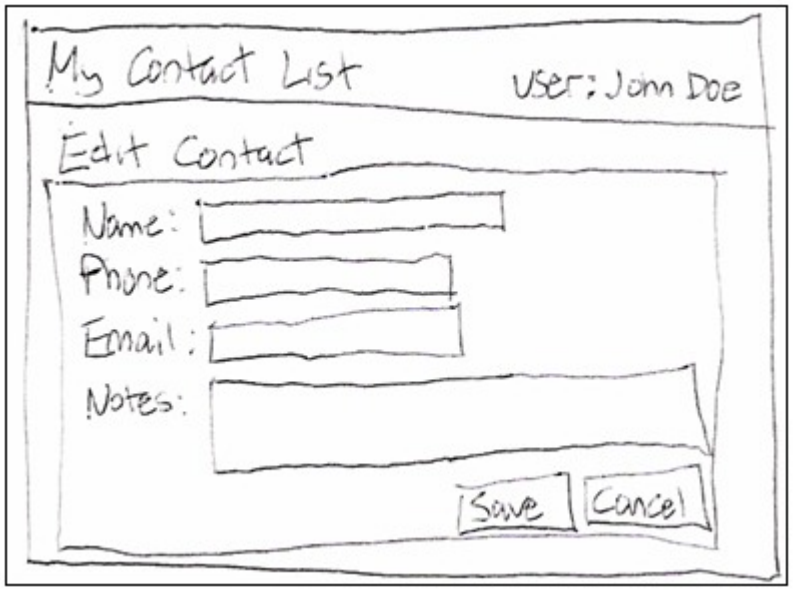


Low-fidelity Prototyping – Paper Prototypes / Sketching

- In this early phase, it is important to communicate the idea and abstract from details (layout, color, etc.)

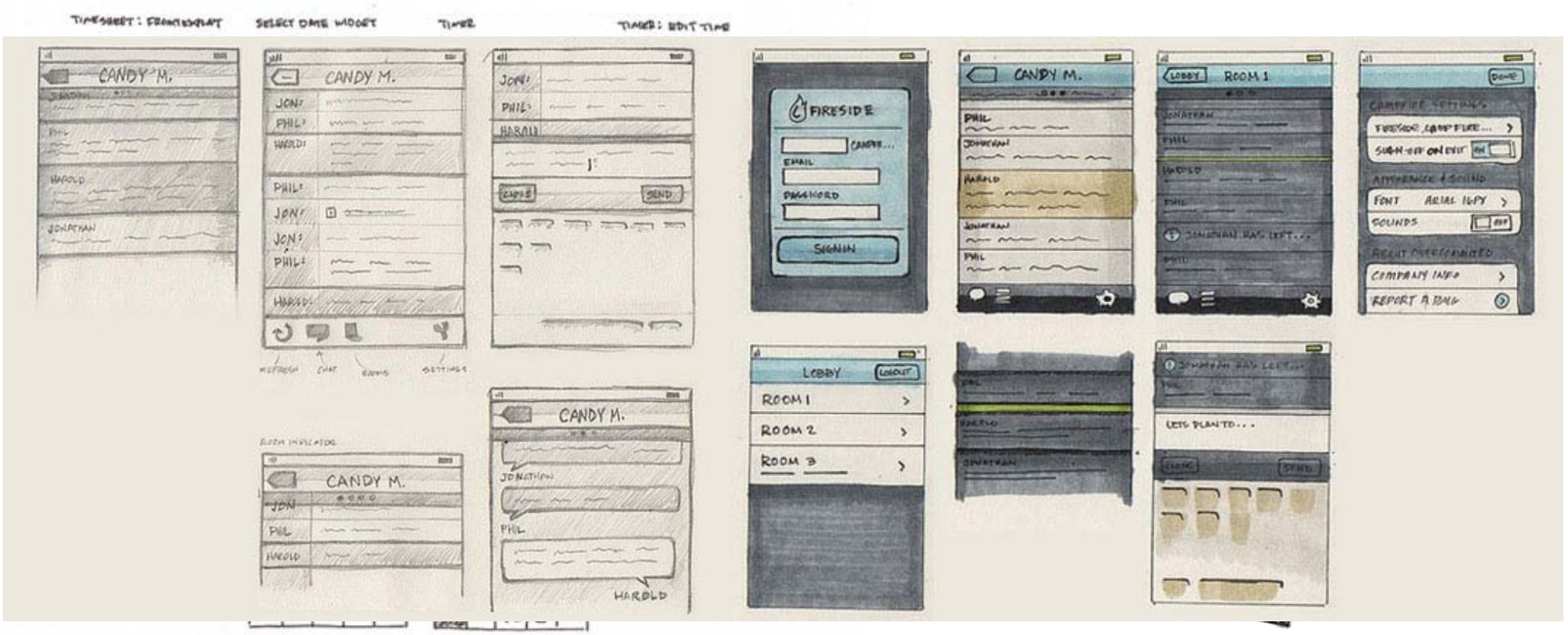






Low-fidelity Prototyping – Interaction Design

- Statechart of wireframes useful for the basic interaction design / story-boarding



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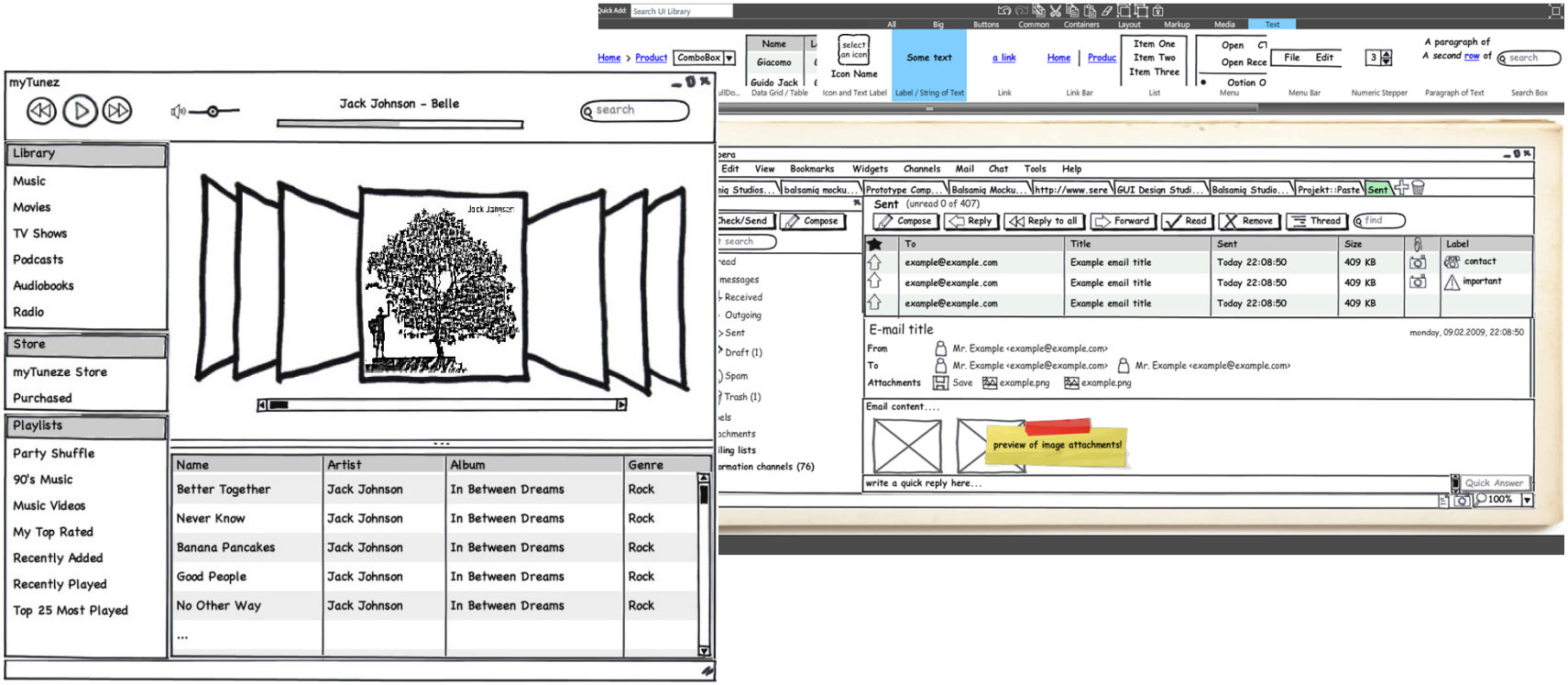
Digital Prototyping – Balsamiq Mockups

- Bring life into your prototype by digital interaction design
- Easy and cheap to create
- Communicate the general concept and the ideas



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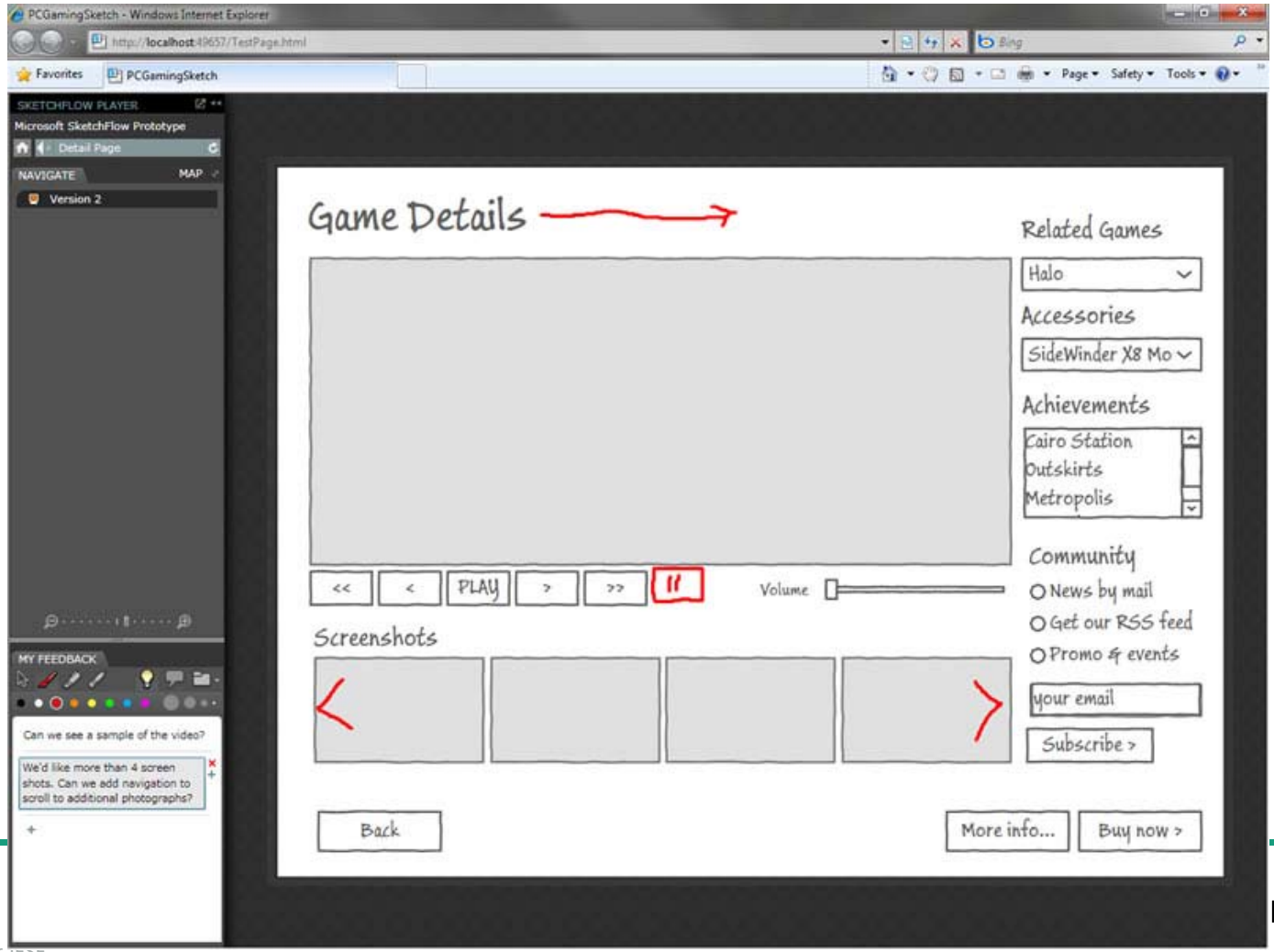
Digital Prototyping – Microsoft SketchFlow

- Very handy for getting feedback from users and other developers



Screen Design

Brief Overview of Screen Design Principles

- Color
  - One of first things perceived by users
  - Put dark foregrounds agains light backgrounds, or vice versa
  - Never use red versus green as a critical color distinction
  - Never put bright blue small text on a bright red / orange background, or vice versa
  - Things to have in mind: dark versus light background, high versus low contrast, warm (e.g. red) versus cool (e.g., blue)
- Typography
  - sans-serif fonts often work better at small sizes on computer displays

Brief Overview of Screen Design Principles (II)

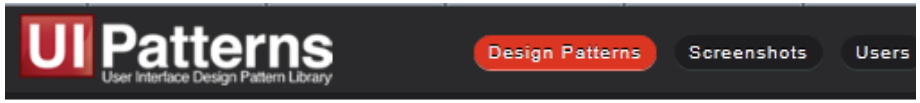
- Spaciousness and crowding
  - Crowded designs can evoke visual tension (text/graphic elements need to „breathe“)
    - Our eyes want to see margins around „things“
    - Too much vertical lines cause visual tension
  - Spaciousness gives an impression of airiness, openness, quiet, calmness, freedom, etc. depending on other design factors
    - Can be reached by using plenty of whithespace
- Angles and curves
  - designs composed of straight up-and-down lines & right angles generally looks calmer than designs containing diagonal lines & non-rectangular shapes
  - Design with many different angles has more apparent motion and can create an interessting impression

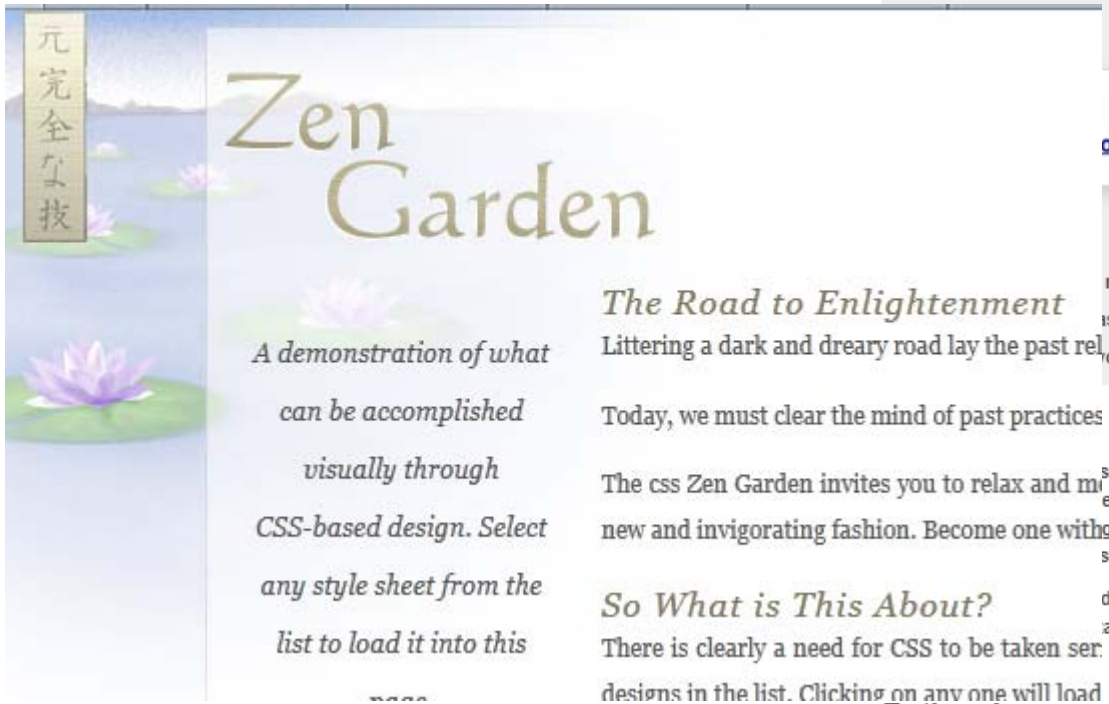
Design Patterns

- Use familiar solutions while creating the visual design
- Usability gets improved since users most likely know the concept / mental model behind the UI element
- Collection of design patterns in the Web
  - http://ui-patterns.com/
  - http://patterns.endeca.com/content/library/en/home/patterns.html
  - http://patternry.com/p=refining-search/

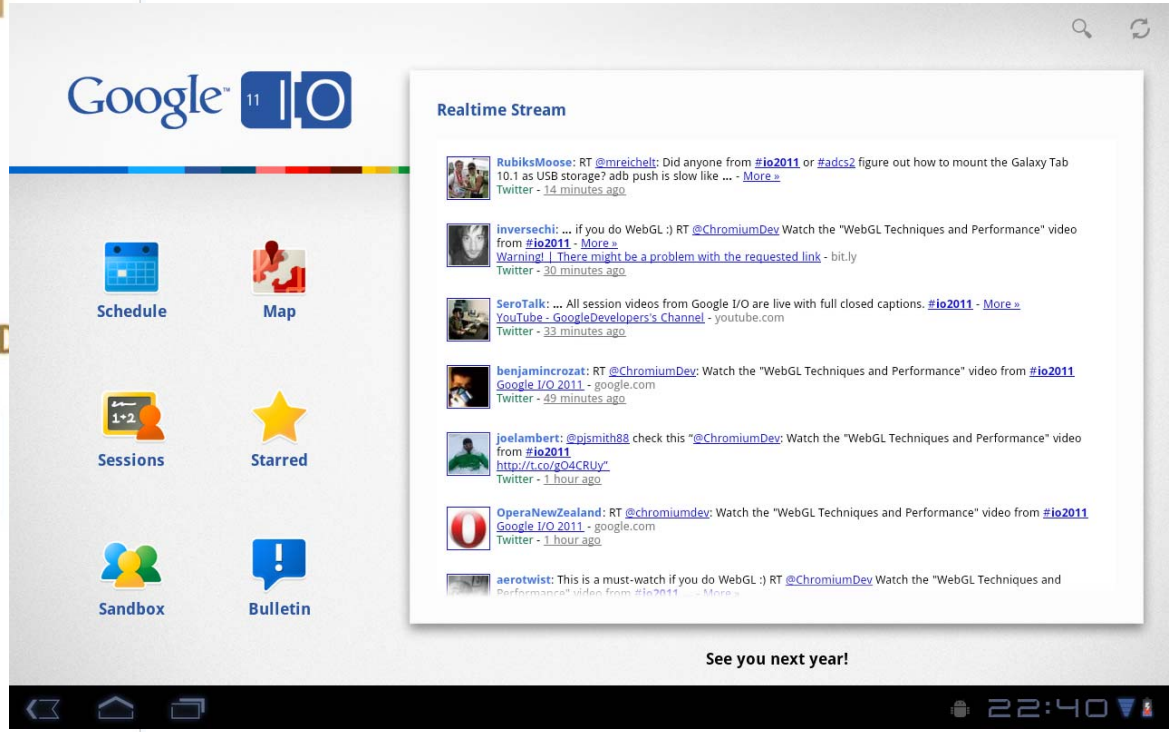
Get Inspired – learn from others

- http://csszengarden.com/
- http://ui-patterns.com/





Dashboard Design



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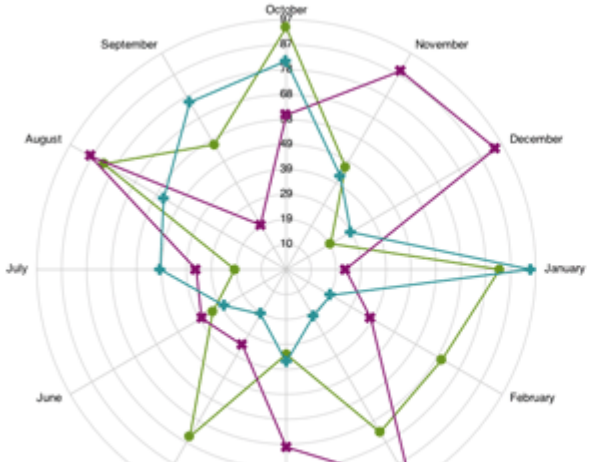
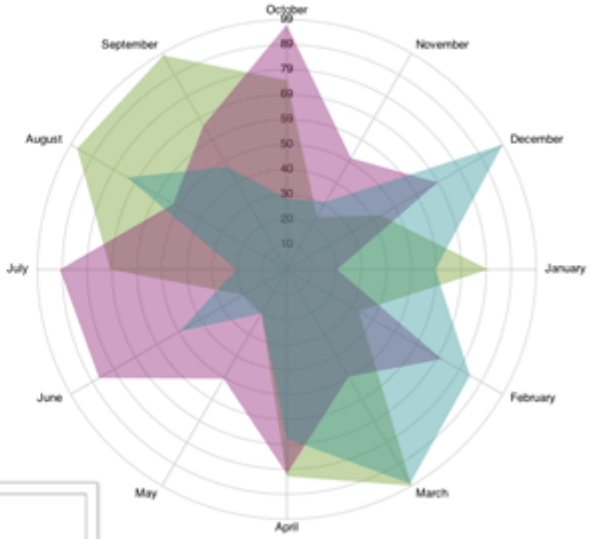
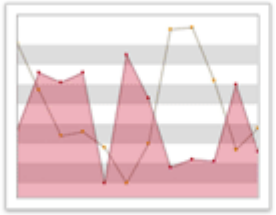
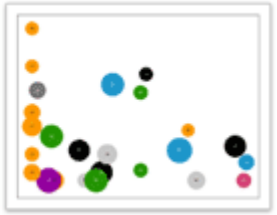
Data Visualization

- It‘s crucial to select the right charting types for visualizing data
- Think carefully about type, size, color, labels, interaction, etc.
- The most important aspect
  - **Which rationale is communicated by the particular chart?**
  - **What information need to be aggregated?**









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Design Evaluations

Why is it necessary?

- It‘s important to evaluate your designs in an early stage
  - It‘s cheap and with low effort
  - Provides you with early feedback that can be incorporated more easy than in later stages
- Perform tests for concept design and screen design iteratively
  - Every test at itself is something that can be conducted with less effort
- Perform usability tests with the users
  - Main goal: Find critical problems to be solved
- Perform usability expert walkthroughs with people from the UI team and RE team
  - Main goal: Find usability issues

Usability Walkthrough

- Use the personas and scenarios and go through the activities
- Evaluate the static views, the interaction, the UI elements, etc. with respect of the personas
- Write down the found issues in a list

Nr.	Task	Screen	Description
1	Offering Dates	Doodle Homescreen	Inconsistent Naming - The short introduction on how to schedule a event is named "1 - create, 2 - invite, 3 - confirm" but I have to pres button labeled "Schedule an event".
2	Offering Dates	Doodle Homescreen	To many options like "Premium Doodle", "My Doodle", etc. availabl at the start page. Novice users don't need it.
3	Offering Dates	Doodle Homescreen	"Schedule an Event Button" is not prominent enough, because it is the only call-to-action-button.
4	Offering Dates	Doodle Homescreen	"Create" button is not looking like a button. It is not obvious that yo can click on it.
5	Offering Dates	Doodle Homescreen	The visualization for the steps create (calander sheet), invite (envelope) and confirm are to far away from the commands. They lo like ornaments.
6	Offering Dates	Doodle Homescreen	The visualization for the steps create (calander sheet), invite

Usability Test

- Perform it with 3 – 6 real users
- Define typical tasks that have to be performed by the users
- Let them perform the tasks
  - Video capture the users
- Evaluate the data and derive issues to be changed in order to reduce problems / improve usability

Next steps

- Let‘s meet at the end of this week …
- In the mean time …
  - Make yourselves familiar with the concepts described in this presentation
  - Sharpen your pencils and get ready for some cool paper prototyping :-)

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Q&A

Sebastian Weber