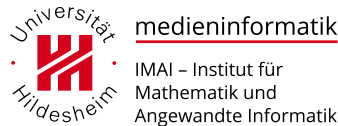


# Goal-Directed Design: Design

## Framework and Refinement

Jörg Cassens

## Contextual Design of Interactive Systems



## 1 Introduction

### Assignment 8.1: Sauer & Sonderegger

- Required reading for week 4
  - Sauer, Juergen, and Andreas Sonderegger. "The influence of prototype fidelity and aesthetics of design in usability tests: Effects on user behaviour, subjective evaluation and emotion." *Applied ergonomics* 40, no. 4 (2009): 670-677.
- The texts will be discussed in the tutorial 28.05.2019
- Course readings can be downloaded in the learnweb
- Every text has a wiki-page in the learnweb
  - Use it to describe the text
  - Use it to link the text to the course
- Results of the discussion may also be written up

### Assignment 5.2: Contextual Inquiry

- Form pairs of 2 who do not know each other well
- Use a system you are acquainted with and research your use of it
  - You actually have to do the task
  - You would actually do the task on campus on the device you're using
- The other person conducts a contextual inquiry on their task:
  - Focus. Decide what to pay attention to.
  - Partnership. You act as an interested learner, they act like a knowledgeable expert.
  - Perform the inquiry. Ask probing questions. Have them teach you. Don't generate questions in advance; think of them as you observe. Focus questions on what you see happening in context.
- Document your findings
- Present your findings in the course
  - Due date: 07.05.2019

## Assignment 6.2: Persona Construction

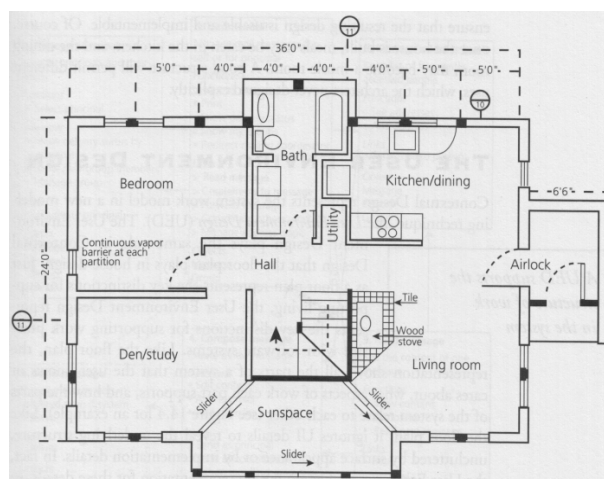
- Form groups of 4 out of the pairs from Assignment 5.2
- Imagine you are re-designing the system used in the previous assignment
- Create at least two different personas
  - For example a primary and a negative
- Focus on
  - Characteristics
  - Experiences
  - Motivations
  - Goals
- Feel free to use a templates
- Present your findings in the course
  - Due date: 21.05.2019

## Assignment 7.3: Scenario

- Form groups of 4 out of the pairs from Assignment 6.2
- Create a context scenario for each of your personas
- Make sure you cover the typical aspects
  - Setting
  - Actors (Personas)
  - Task goals
  - Plans
  - Evaluation
  - Actions
  - Events
- Present your findings in the course
  - Due date: 28.05.2019

## 2 Design

### Floor Plan



Beyer and Holtzblatt (1997)

## Creating the Design Framework

- Rather than jump into the nuts and bolts, we want to stay at a high level
- Concern ourselves with the overall structure of the user interface and associated behaviours
- If we were designing a house, at this point we would be concerned with what rooms the house should have, where they should be positioned, and roughly how big they should be
- We would not be worried about the precise measurements of each room or things like the doorknobs, taps, and counter-tops
- The Design Framework defines the overall structure of the users' experience
  - Underlying organizing principles and the arrangement of functional elements on the screen, work flows, interactive behaviours and the visual and form languages used to express information, functionality, and brand identity

## Form and Behaviour

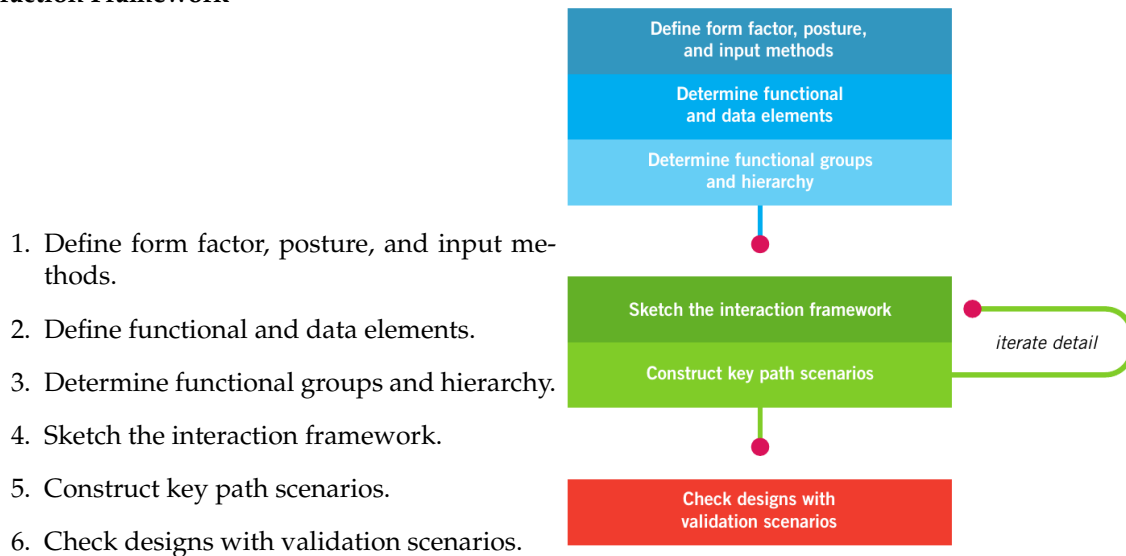
- Form and behaviour must be designed in concert; the Design Framework is made up of
  - Interaction framework
    - \* use scenarios and requirements to create rough sketches of screens and behaviours that make up the interaction
  - Visual design framework
    - \* use visual language studies to develop a visual design framework, commonly expressed as a detailed rendering of a single screen archetype
  - Industrial design framework
    - \* Industrial designers execute form language studies to work toward a rough physical model and industrial design framework
  - Service frameworks
    - \* Service designers build models of the information exchange for each touch point in a service framework

## Too early, too detailed

- Focusing too early on pixel pushing, widget design, and specific interactions can get in the way of effectively designing a comprehensive framework
- Top-down approach, first the big picture, rendering our solutions without specific detail in a low-fidelity manner
- Ensures that we and our stakeholders focus initially on the fundamentals: serving the personas' goals and requirements
- Typically, the process of representing and presenting design solutions helps designers and stakeholders refine their vision and understanding of how the product can best serve human needs
- Tricky part: render the solution in only enough detail to provoke engaged consideration, without spending too much time or effort elaborating details that are certain to be modified or abandoned
- Sketch-like storyboards of context and screens, accompanied by narrative in the form of scenarios, are a highly effective way to explore and discuss design solutions without creating undue overhead and inertia

## 2.1 Interaction Framework

### Interaction Framework



#### Step 1: Define form factor, posture, and input methods

- Web application that will be viewed on a high-resolution computer screen?
- Phone that must be small, light, low-resolution, and visible in both bright sunlight and the dark?
- Kiosk that must be rugged to withstand a public environment while accommodating thousands of distracted novice users?
- What constraints does each of these **form factors** imply for any design?
- Each has clear implications for the product's design, and answering this question sets the stage for all subsequent design efforts
- Look to your personas and scenarios to better understand the ideal usage context and environment
- **Posture** is related to how much attention the user will devote to interacting with the product
- The **input method** is how users will interact with the product

#### Step 2: Define functional and data elements

- Functional and data elements represent functionality and information that are revealed to the user in the interface
- concrete manifestations of the functional and data requirements identified during the Requirements Definition phase
- functional and data elements are now described in the language of user-interface representations
- Each element must be defined in response to specific requirements defined earlier
- Every aspect of the product we are designing has a clear purpose that can be traced back to a usage scenario or business goal

#### Step 2.1: Data elements

- Data elements typically are the fundamental subjects of interactive products
  - photos, e-mail messages, customer records, or orders
  - basic units to be referred to, responded to, and acted on by the people using the product
  - Ideally they should fit with the personas' mental models

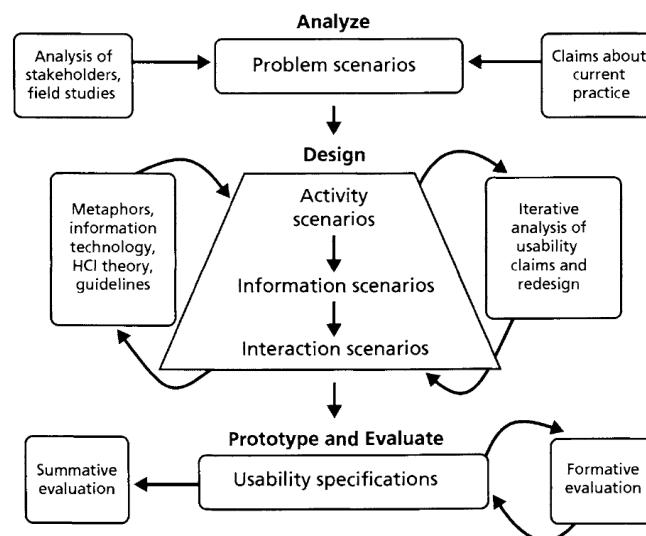
- Critical to comprehensively catalogue the data objects, because the product's functionality is commonly defined in relation to them
- attributes, such as the sender of an e-mail message or the date a photo was taken
- less important to be comprehensive about the attributes at this point, as long as you have an idea whether the personas care about a few attributes or a lot
- It is useful to consider the relationships between data elements

### Step 2.2: Functional elements

- Functional elements are the operations that can be done to the data elements and their representations in the interface
- Generally speaking, they include tools to act on and ways to visually and structurally manage data elements
- The translation of functional requirements into functional elements is where we start making the design concrete
- While the context scenario is the vehicle to imagine the overall experience we will create for our users, this is where we begin to make that experience real

### Design Principles

- Pretend the product is human
- Apply principles and patterns



(Rosson and Carroll, 2002)

### Step 3: Determine functional groups and hierarchy

- After you have a good list of top-level functional and data elements, you can begin to group them into functional units and determine their hierarchy
- Because these elements facilitate specific tasks, the idea is to group elements to best facilitate the persona's flow
- Some issues to consider:
  - Which elements need a large amount of screen real estate, and which do not?
  - Which elements are containers for other elements?

- How should containers be arranged to optimize flow?
- Which elements are used together, and which are not?
- In what sequence will a set of related elements be used?
- What data elements would be useful for the persona to know or reference at each decision?
- What interaction patterns and principles apply?
- How do the personas' mental models affect organization?

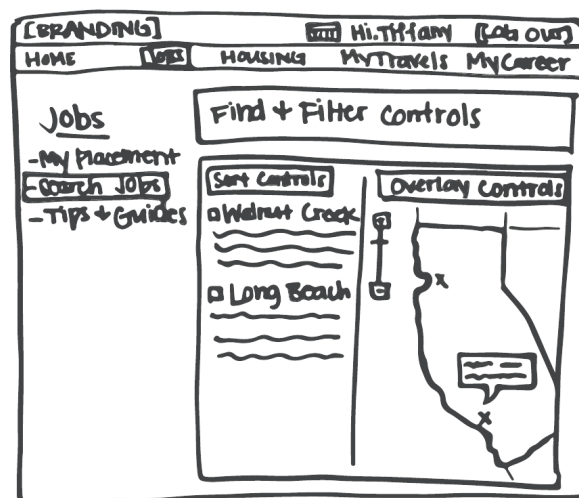
### Step 3: Top-level container elements

- Important to organize data and functions into top-level container elements
  - screens, frames, and panes
- These groupings may change somewhat as the design evolves (particularly as you sketch the interface), but it's still useful to provisionally sort elements into groups
- speeds up the process of creating initial sketches
  - indented lists or simple Venn diagrams
- Consider which primary screens or states (*views*) the product requires
- If you know that the user has several end goals where data and functionality do not overlap, it might be reasonable to define separate views to address them
- On the other hand, if you see a cluster of related needs, you might consider defining a view that incorporates all these

### Step 4: Sketch the interaction framework

- We are ready to sketch the interface
- This visualization of the interface should be simple at first
- Start for example by subdividing each view into rough rectangular areas corresponding to panes, control components (such as toolbars), and other top-level containers
- Label the rectangles, and illustrate and describe how one grouping or element affects others
- Draw arrows from one set of rectangles to others to represent flows or state changes

### Step 4: Example



Cooper et al. (2014)

#### **Step 4: Concerns**

- Be sure to look at the entire top-level framework first
- Do not become distracted by the details of a particular area of the interface
- Often useful to try several arrangements, running through validation scenarios
- Spending too much time and effort on intricate details early in the design process discourages designers from changing course
- Sketching the framework is an iterative process that is best performed with a small, collaborative group
- Tool choices depend on context
  - whiteboard promotes collaboration and discussion and, of course, everything is easy to erase and redraw
  - A digital camera provides a quick and easy means to capture ideas for later reference
  - Tablet computers with a sketch program connected to a shared monitor
- Whatever tool you use, it needs to be fast, collaborative, visible to everyone on the team, and easy to iterate and share.

#### **Step 5: Construct key path scenarios**

- A key path scenario describes how the persona interacts with the product, using the vocabulary of the interaction framework
- depict the primary pathways through the interface that the persona takes with the greatest frequency
  - In an e-mail application, key path activities include viewing and composing mail, not configuring a new mail server
- Typically evolve from the context scenarios, but here we specifically describe the persona's interaction with the various functional and data elements
- As we add more and more detail to the interaction framework, we iterate the key path scenarios

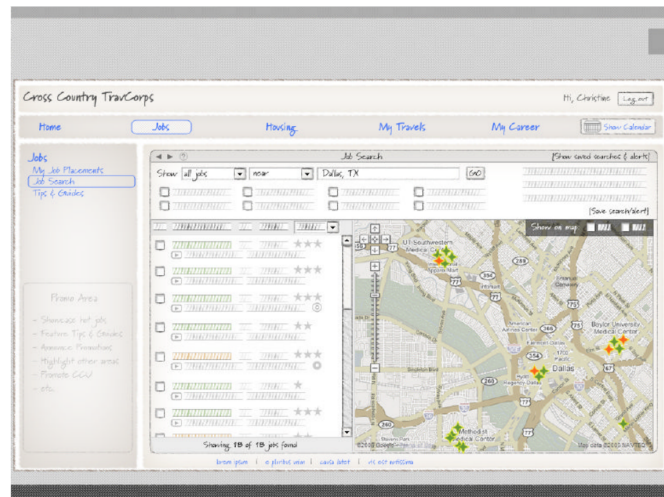
#### **Context vs. Key Path Scenarios**

Unlike the goal-oriented context scenarios, key path scenarios are more task-oriented, focusing on task details broadly described and hinted at in the context scenarios

#### **Step 5.1: Storyboarding**

- By using a sequence of low-fidelity sketches accompanied by the narrative of the key path scenario, you can richly portray how a proposed design solution helps personas accomplish their goals
- Storyboarding is borrowed from film-making and cartooning, where a similar process is used to plan and evaluate ideas without having to deal with the cost and labour of shooting actual film
- Each interaction between the user and the product can be portrayed on one or more frames or slides
- Advancing through them provides a reality check of the interactions' coherence and flow

#### **Step 5.1: Example**



Cooper et al. (2014)

## Step 5.2: Iterations

- The steps in the Framework phase should not be thought of as a simple sequence
- common to move back and forth between steps and to iterate the whole process several times until you have a solid design solution
- You can work focussed on visuals or texts

### Textual

1. Key path scenarios
2. Work out the groupings verbally
3. Sketching

### Visual

1. Sketching
2. Key path scenarios
3. Check groupings with scenarios

## Step 6: Check designs with validation scenarios

- After you have storyboarded your key path scenarios and adjusted the interaction framework until the scenario flows smoothly and you are confident that you are headed in the right direction, it is time to shift focus to less frequent or less important interactions
- These *validation scenarios* typically are not developed in as much detail as *key path scenarios*
- Rather, this phase consists of asking a series of what-if questions
- The goal is to poke holes in the design and adjust it as needed (or throw it out and start over)

### Step 6.1: Alternative scenarios

- Alternative scenarios are alternative or less-travelled interactions that split off from key pathways at some point along the persona's decision tree
- could include commonly encountered exceptions, less frequently used tools and views, and variations or additional scenarios based on the goals and needs of secondary personas
- An example of a key path variant would be if Vivien decided to respond to Frank by e-mail instead of calling him



### Step 6.2: Necessary-use scenarios

- Necessary-use scenarios include actions that must be performed, but only infrequently
- Purging databases, upgrading a device, configuring, and making other exceptional requests might fall into this category
- Necessary-use interactions demand pedagogy because they are seldom encountered: Users may forget how to access the function or how to perform tasks related to it
- However, this rare use means that user will not require parallel interaction idioms such as keyboard equivalents—nor do such functions need to be user-customizable
- An example of a necessary-use scenario for the design of a smartphone is if the phone was sold second-hand, requiring the removal of all personal information associated with the original owner

### Step 6.3: Edge-case use scenarios

- Edge-case use scenarios, as the name implies, describe atypical situations that the product must nevertheless be able to handle, albeit infrequently
- Developers focus on edge cases because they often represent sources of system instability and bugs and typically require significant attention and effort
- Edge cases should never be the focus of the design effort
- Returning again to Vivien's smartphone, an example of an edge-case scenario would be if Vivien tried to add two different contacts who have the same name
- This is not something she is likely to do, but it is something the phone should handle if she does

## 2.2 Visual Framework

### Defining the visual design framework

- This process follows a trajectory similar to the interaction framework, in that the solution is first considered at a high level and then narrows to an increasingly granular focus
- The visual design framework typically follows this process:
  1. Develop experience attributes.
  2. Develop visual language studies.
  3. Apply the chosen visual style to the screen archetype.

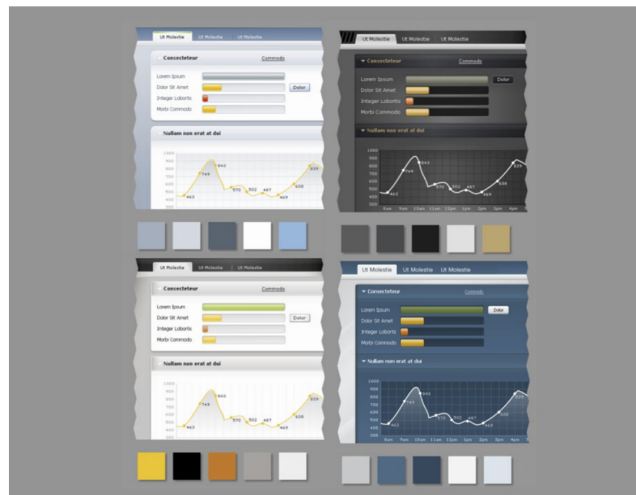
### Step 1: Develop experience attributes

- Three to five adjectives that will be used to help define the tone, voice, and brand promise of the product
  - This set of descriptive keywords are collectively called experience attributes
1. Gather any existing brand guidelines
  2. Gather examples of branded products, interfaces, objects, and services
  3. Work with stakeholders to identify direct and indirect competition
  4. Pull relevant terms mentioned by interviewees from your qualitative research
  5. Have a discussion with stakeholders about the sub-brand of the product
  6. From the outcomes of this discussion, identify the minimum number of adjectives that define and distinguish the product.
  7. If any of the words have multiple meanings, document the exact sense intended
  8. Consider competitors
  9. Check back with the stakeholders

## Step 2: Develop visual language studies

- The next step is to explore a variety of visual treatments through visual language studies
- Based on the experience attributes and include colour, type, and widget treatments
- Also include the overall dimensionality and any “material” properties of the interface
  - For example, does it feel like glass or paper?
- These studies should show these aspects abstractly and independent of the interaction design, because our goal is to assess the overall tone and suitability for general interactions

## Step 2: Example



Cooper et al. (2014)

## Step 3: Apply the chosen visual style to the screen archetype

- The final step is to apply one or two selected visual styles to key screens
- The design should have begun to stabilize, and sufficient specific detail reflects the visual style
- By making the design more concrete, you can better assess the feasibility of the proposed solution without the overhead of updating numerous screens for each minor change
- Additionally, it is easier to elicit feedback from stakeholders

## Design Principle

Never show a design approach you are unhappy with; stakeholders just might like it.

## 2.3 Industrial Design Framework

### Industrial Design Framework

- The industrial design framework typically follows this process:
  1. Collaborate with interaction designers about form factor and input methods.
  2. Develop rough prototypes.
  3. Develop form language studies.

### **Step 1: Collaborate with interaction designers**

- Collaborate with interaction designers about form factor and input methods
- If the product you are designing relies on custom hardware (as with a cell phone or medical device), it is important for interaction designers and industrial designers to agree on a general physical form and input methods
- While the course of the design framework will certainly help refine the design, decisions need to be made at this point
  - The product's general size and shape; the screen size (if any); the number and general orientation of hard and soft buttons; and whether the product has a touch or multitouch screen, keyboard, voice recognition, motion/position tracking, and so on.
- This collaboration typically starts with a couple of days at the whiteboard and a condensed set of scenarios

### **Design Principle**

There is only one user experience: Form and behaviour must be designed in concert.

### **Step 2: Develop rough prototypes**

- It is often the case that even after the overall form and input methods are defined, the industrial designer still can take a variety of approaches
- For example, when designing office phones and medical devices, it might be asked whether the screen angle should be fixed or if it should be adjustable and, if so, how that will be accomplished
- Industrial designers sketch and create rough prototypes from foam board and other materials
- In many cases, we will show several to stakeholders because each one has different cost and ergonomic considerations

### **Step 3: Develop form language studies**

- In a fashion similar to the visual language studies described earlier, the next step is to explore a variety of physical styles
- Unlike the visual language studies, these are not abstract composites
- Instead, they represent various looks applied to the specific form factors and input mechanisms determined in Steps 1 and 2
- Such studies include shape, dimensionality, materials, colour, and finish
- As with visual style studies, form language studies should be informed by persona goals, attitudes, aptitudes, experience keywords, environmental factors, and manufacturing and pricing constraints

## **2.4 Service Design Framework**

### **Defining the service design framework**

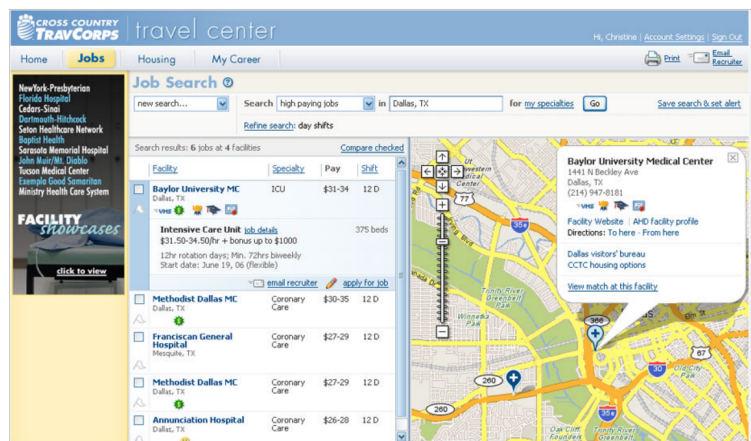
- Because service design often affects organizations' business models, the service design framework may be conducted before other areas of design
- The service design framework typically follows this process:
  1. Describe customer journeys.
  2. Create a service blueprint.
  3. Create experience prototypes.

### 3 Refining

#### Refining the Form and Behaviour

- Each iteration of the key path scenarios adds detail that strengthens the product's overall coherence and flow
- At this stage, a transition is made into the Refinement phase, where the design is translated into a final, concrete form
- In this phase, principles and patterns remain important in giving the design a fine formal and behavioural finish
- Critical for the programming team to be intimately involved throughout the Refinement phase
- Now that the design has a solid conceptual and behavioural basis, developer input is critical to creating a finished design that can and will be built, while remaining true to concept
- The Refinement phase is marked by the translation of the sketched storyboards into full-resolution screens that depict the user interface at the pixel level

#### Refinement: Example



Cooper et al. (2014)

#### Basic process

- The basic process of design refinement follows the same steps we used to develop the design framework, this time at deeper and deeper levels of detail
- After following Steps 2 through 6 at the view and pane levels, while incorporating the increasingly refined visual and industrial designs, use scenarios to motivate and address the product's more granular components
- During this phase, you should address every primary view and dialogue possible
- Throughout the refinement phase, visual designers should develop and maintain a visual style guide
- Developers use this guide to apply visual design elements consistently when they create low-priority parts of the interface that the designers typically do not have the time and resources to complete themselves
- At the same time, industrial designers work with mechanical engineers to finalize components and assembly

## Results

- While the end product of the design process can be any one of a variety of outputs, a suggestion would be a printable Form and Behaviour Specification
- This document includes screen renderings with call-outs sufficiently detailed for a developer to code from, as well as detailed storyboards to illustrate behaviours over time
- It can also be valuable to produce an interactive prototype, e.g. in HTML, that can augment the documentation
- Prototypes alone are rarely sufficient to communicate underlying patterns, principles, and rationale, which are vital concepts to communicate to developers

## 4 Validation and Testing

### Motivations

- Desirable to evaluate how well you have hit the mark by going beyond your personas and validation scenarios to put your solutions in front of actual users
- You should do this after the solution is detailed enough to give users something concrete to respond to, and with enough time allotted to make alterations to the design based on your findings
- User feedback sessions and usability tests are good at identifying major problems with the interaction framework and at refining things like button labels and activity order and priority
- They are also essential for fine-tuning such behaviours as how quickly a screen scrolls in response to turning a hardware knob
- Difficult to craft a test that assesses anything beyond first-time ease of learning

### Forms of Tests

- There are a variety of ways to validate design with users
- Informal feedback sessions where you explain your ideas and drawings and see what the user thinks
- Or you can give a more rigorous usability test, in which users are asked to complete a predetermined set of tasks
- The more informal style can be done spontaneously and requires less preparation
- It can still be a useful alternative to usability testing when the design team doesn't have time to prepare for formal usability testing

### Design Principle

Almost any test is better than no test.

### Usability test

- Given sufficient time, more formal usability testing has some advantages
- Because the findings are often quantitative, usability research is especially useful in comparing specific design variants
- Feedback gathered from usability testing is most useful when you need to validate or refine particular interaction mechanisms or the form and expression of specific design elements
- **Naming** — Do section/button labels make sense? Do certain words resonate better than others?
- **Organization** — Is information grouped into meaningful categories? Are items located in the places customers might look for them?
- First-time use and **discoverability** — Are common items easy for new users to find? Are instructions clear? Are instructions necessary?
- **Effectiveness** — Can customers efficiently complete specific tasks? Are they making missteps? Where? How often?

## Don't Listen to Users – Experience Sampling

- Traditional usability tests often focus on first-time use
- A systematic way of having participants provide samples of their ongoing behaviour
- Participants record the behaviour of interest (e.g., activity, location, mood, thoughts)
- Dependent on either
  - **Signal:** signalled with a beeper, cell phone call, or similar at random times within a fixed time period
  - **Interval:** pre-set intervals for reporting events
  - **Event:** whenever a key event occurs
- Advantages and disadvantages
  - reports are personal and subjective
  - data are similar to those obtained by diaries, but less dependent on memory
  - less intrusive than direct observation
  - data tend to not have the richness of ethnography

## Usability Prozesse: Google



Don't Listen to Users

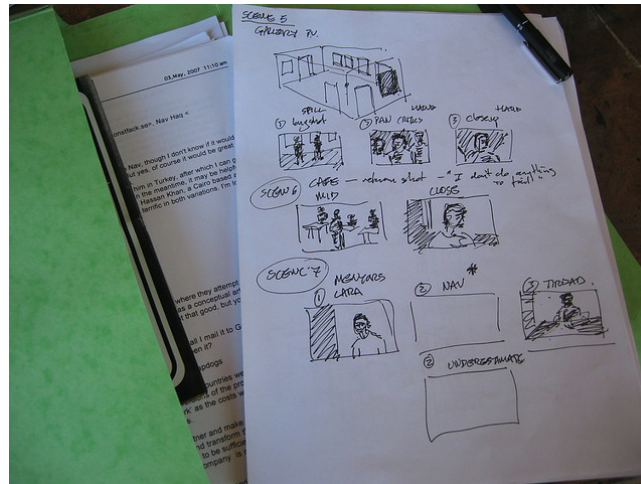
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## Conducting formative usability tests

- Test late enough in the process that there is a substantially concrete design to test, and early enough to allow adjustments in the design and implementation
- Test tasks and aspects of the user experience appropriate to the product
- Recruit participants from the target population, using your personas as a guide
- Ask participants to perform explicitly defined tasks while thinking aloud
- Have participants interact directly with a low-tech prototype (except when testing specialized hardware where a paper prototype cannot reflect nuanced interactions)
- Moderate the sessions to identify issues and explore their causes
- Minimize bias by using a moderator who has not previously been involved in the project
- Focus on participant behaviours and their rationale
- Debrief observers after tests are conducted to identify the reasons behind observed issues
- Involve designers throughout the study process.

## 5 Storyboarding

### Storyboards



cc by-sa Neil Cummings

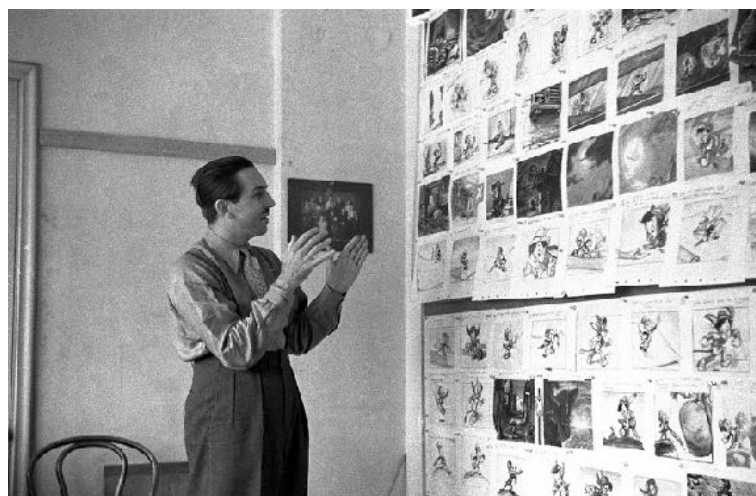
### Storyboarding

- Storyboards are illustrations that represent a story
- Images are arranged together to visualize the story
- Invented by Walt Disney in the 1920s
- Visual storytelling with rough sketches/cartoons/comics
- A great way to bring a story to life!

### Storyboards can be used to:

- Describe a user's current situation (pre or post design).
- Describe a user's hypothetical experience using a new technology/design.

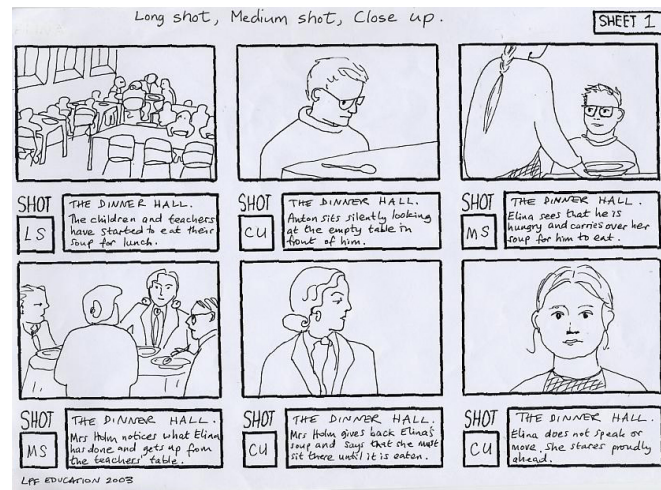
### How it began



Walt Disney (Dell, 2018)



## Film Industry



Use in the film industry ([eastendtalking.org.uk](http://eastendtalking.org.uk))

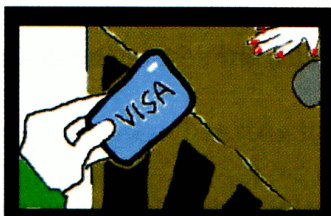
## Storytelling



1) On arrival at the hotel, the guest goes straight to the Reception desk.



2) At the Reception desk, the receptionist types details of the guest into the computer and checks the guest in.



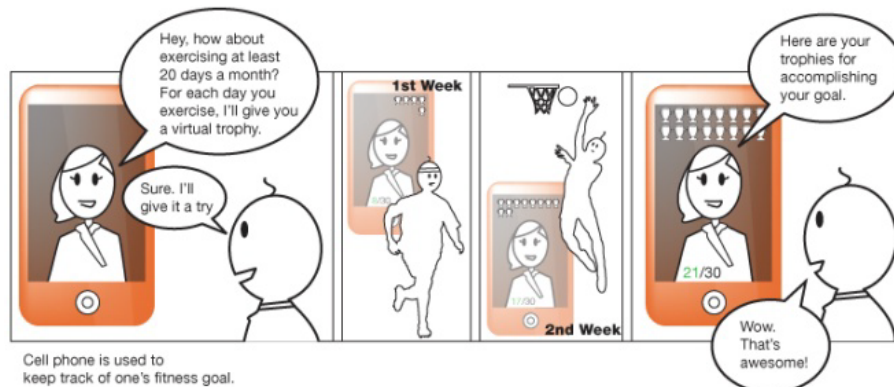
3) The receptionist asks for a credit card from the guest as a deposit.



4) The receptionist then gives the guest the key to their room.

Storyboards tell a story ([Benyon et al., 2005](#))

Storyboarding is *not* the same as Paper Prototyping



Dell (2018)



## Challenges & Usefulness

- Challenges:
  - Determining *what* to draw is often hard
  - Drawing the wrong thing puts the focus on the wrong thing
  - Can be challenging to represent some things e.g., time, attention
- Usefulness:
  - If done right, storyboards can give you quick, valuable feedback on early ideas
  - *Much* quicker/easier than building the whole app, system, or prototype

## Goal

- Goal: Understand how your product or application fits into a larger context.
- Show a single scenario / tell a single story
- Use different storyboards to tell different stories
- Start by setting the stage:  
Who? What? Where? Why? When?
- Then show key interactions
- Zoom back out and show the consequences of using the system/design/application
- Could be satisfaction, but also think about errors

## Process

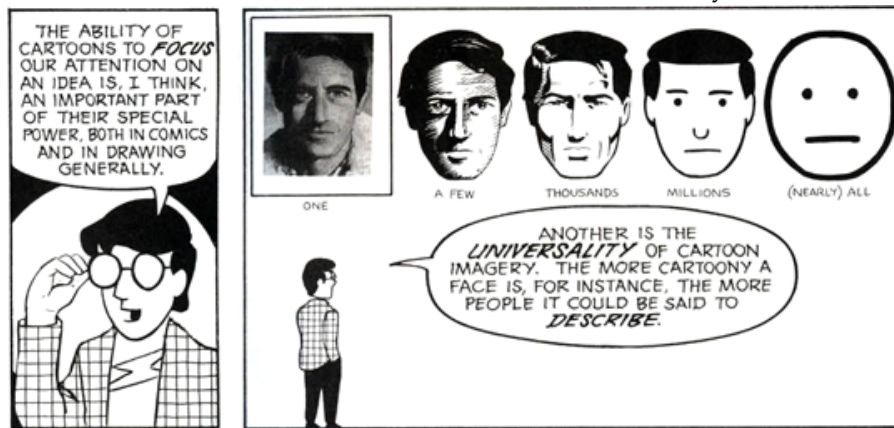
1. *First!* Figure out the story you want to tell!
  - Iterative process with lots of drafts
  - Do a lot of brainstorming
2. Define a specific scenario
  - Set the stage: Who? What? Where? Why? When?
3. Break it into segments
  - a) Start with simple text (captions) and arrows
  - b) Add emotions
  - c) THEN sketch visuals on paper
4. Generate more polished versions only when you have refined/ finalized the story!

## Elements of a Storyboard

- Five key elements:
  1. Level of detail
  2. Inclusion of text
  3. Inclusion of people (personas!) and emotions
  4. Number of frames
  5. Portrayal of time

## 1 – Level of Detail

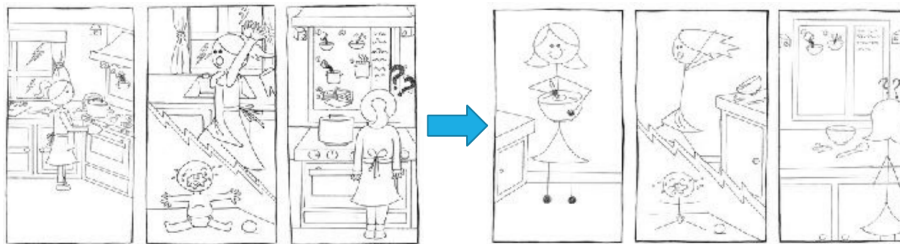
Caution: Too much detail can lose universality!



Dell (2018)

## 1 – Level of Detail

- I cannot draw!!
- Drawing is hard... But this is not an exercise in arts & crafts
- Spending too much time drawing details is unnecessary!



Dell (2018)

## 2 – Use of Text

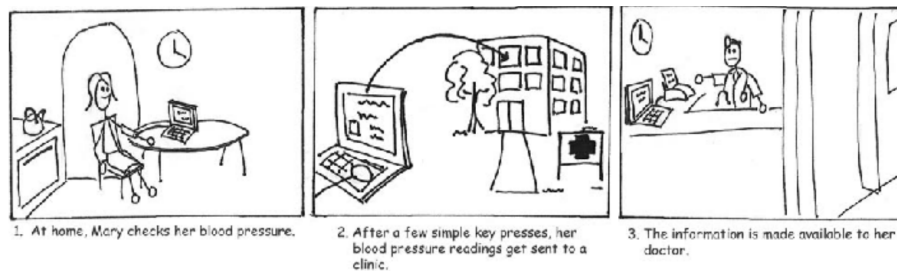
- It is often necessary, and captions help
- BUT... keep it short!
  - Single phrase or sentence



Dell (2018)

## 3 – Inclusion of People

- The point of storyboards is to convey the experience of using the system!
- Include people experiencing the task/situation/design and their reactions to it.... Both good and bad!
- Use your personas!



Dell (2018)

#### 4 – How many frames?

- Generally speaking, try to use fewer frames (e.g., 4-6 per story)
- More is not always better
  - May lose focus of the story
  - May lose reader's attention
- Limit it to the important steps
- Other advantages of short storyboards:
  - Less work on the designer
  - Forces you to succinctly tell the story
  - Focus on what really matters

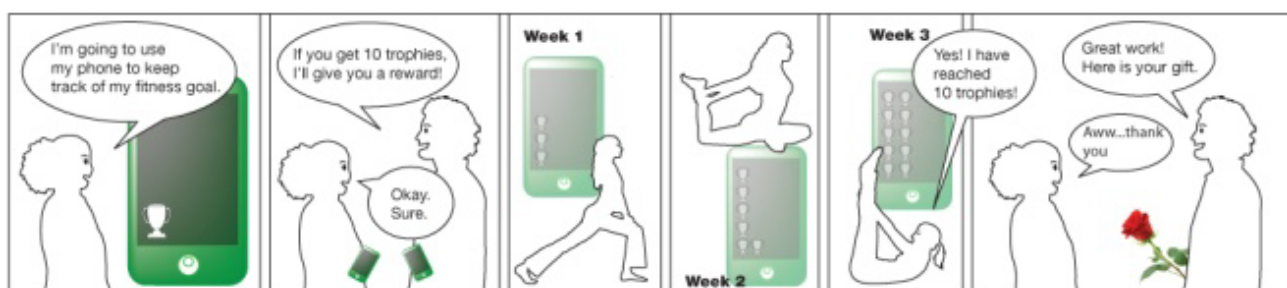
#### 4 – How many frames?



Dell (2018)

#### 5 – Passage of Time

- Only include it if it is a necessary part of the story!



Dell (2018)

## Photos

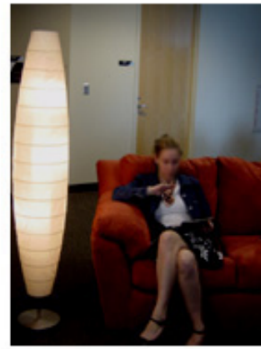
- It does not (always) have to be a drawing



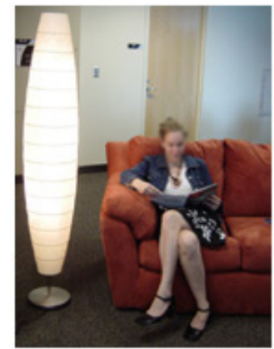
IT IS SO DARK JANE CAN  
HARDLY READ HER BOOK



SHE GESTURES IN FRONT OF HER  
SPECIAL PENDANT TO TURN ON  
THE LIGHTS



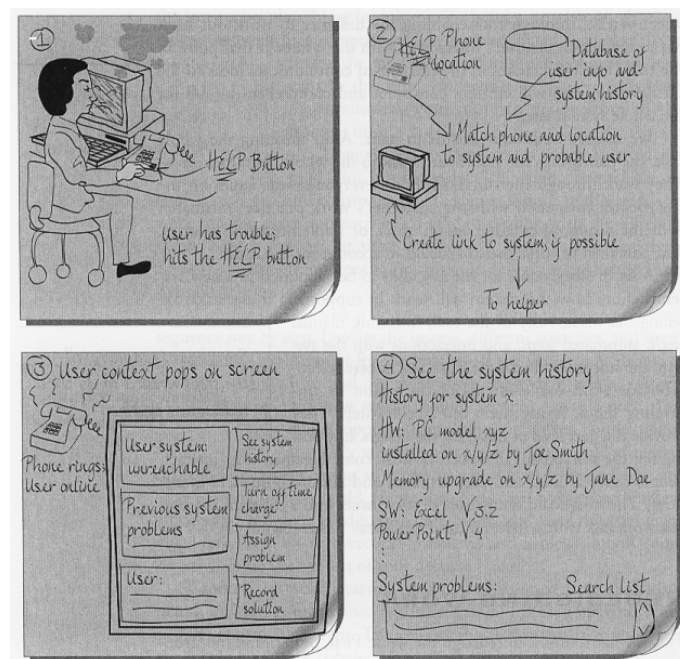
THE LIGHTS TURN ON!



FINALLY, SHE CAN  
READ HAPPILY.

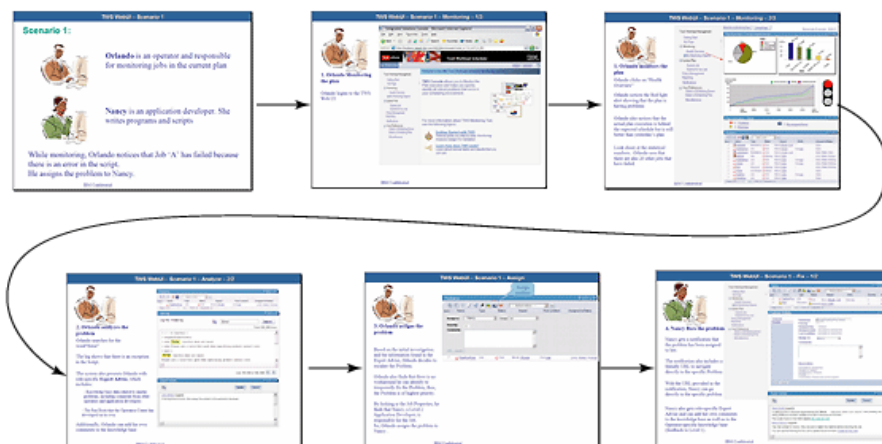
Dell (2018)

## Post-It



Help desk (Beyer and Holtzblatt, 1997)

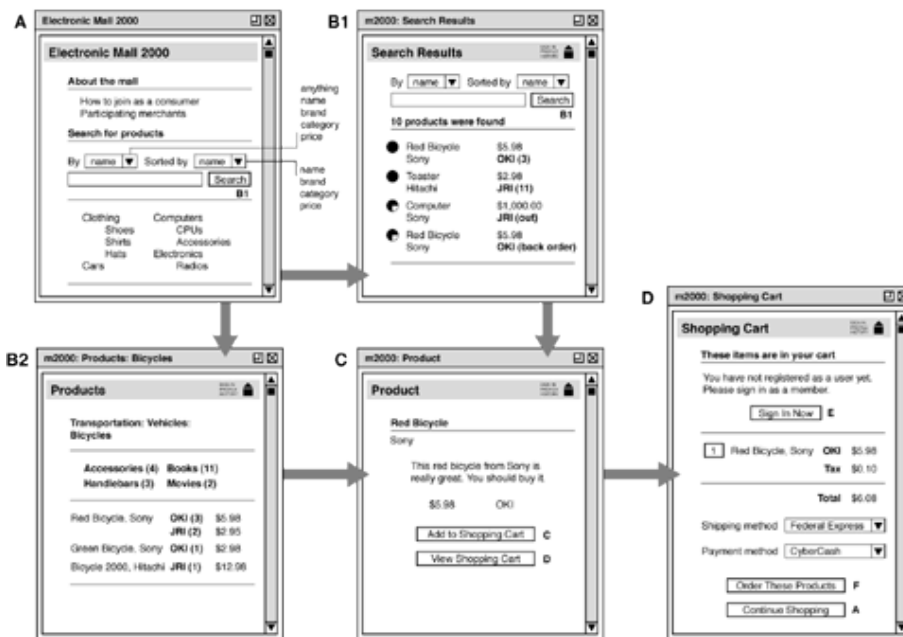
## Story with Screenshots



Person, Situation, Screenshot IBM

## Screenshots

### Seitai Function Specifications: User Interface Draft (Consumer Side)



Screenshots only Kevcom

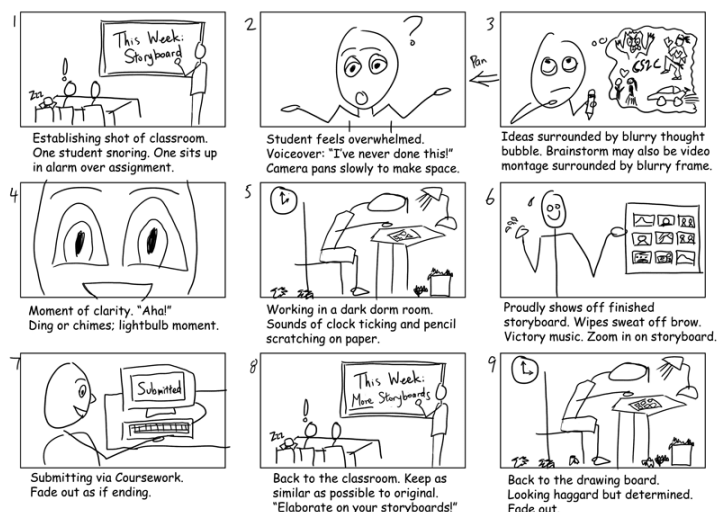
## Summary

- Storyboards are a great way to bring a story to life.
  - Good for pitching/communicating ideas
  - Describe a user's current situation.
  - Describe a user's hypothetical experience using a new technology / design.
- Make different versions of your storyboards
- Explore different options for presenting sequences of drawings
- Think carefully about what you want to tell / achieve

## Design Principle

The wrong storyboard puts the focus on the wrong thing!

"CS2C: Fun with Storyboards" by Kenneth Chan



Archie Clarke: Storyboarding

## Assignment 8.2: Storyboards

- Consider the following design concepts
  - A navigation system that helps long-distance cyclists find restaurants and other services
  - Alternatively, use the situation you have been analysed so far
- Create storyboard solution(s):
  - Write a short narrative scenario.
  - Create a storyboard for this design concept (stick figures are fine).
    - \* Start with text and arrows
    - \* Add emotions
    - \* Then draw pictures to create the storyboard
- Keep in mind:
  - Use of personas and emotions, Passage of time
  - Usage of text captions, Level of detail
  - Number of frames (4-6 per storyboard)
- Present your findings in the course

## References

## Literatur

- Benyon, D., Turner, P., and Turner, S. (2005). *Designing interactive systems: People, activities, contexts, technologies*. Pearson Education.
- Beyer, H. and Holtzblatt, K. (1997). *Contextual design: defining customer-centered systems*. Elsevier.
- Cooper, A., Reimann, R., Cronin, D., and Noessel, C. (2014). *About Face (fourth edition): the essentials of interaction design*. John Wiley & Sons.
- Dell, N. (2018). Hci and design. Course material, Cornell University.
- Rosson, M. B. and Carroll, J. M. (2002). *Usability Engineering: Scenario-Based Development of Human-Computer Interaction*. Morgan Kaufmann/Academic Press.
- Sauer, J. and Sonderegger, A. (2009). The influence of prototype fidelity and aesthetics of design in usability tests: Effects on user behaviour, subjective evaluation and emotion. *Applied ergonomics*, 40(4):670–677.