

Chapter 1

What is Interaction Design?

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- Keterlambatan 15 Menit
- Pakaian rapi dan sopan
- Tidak boleh memakai sandal jepit atau kaos oblong
- Handphone modus silence,getar atau dimatikan
- Pengumpulan Tugas email :
rahmatfauzi9013@gmail.com atau ke ruangan saya c202

Introduction

- Think about the cellphone, ATM, soft drink machine, watch, printer, remote control, search engine, console game, ... the list is endless.
- How much time did you waste trying to get it work?
- Are you satisfying with the features?

Introduction

- Penilaian Mata Kuliah :
- Tugas
- Quiz
- UTS
- UAS
- Mock Up

Aims

1. Understand the concepts underlying the interaction design.
2. Understand the skills and knowledge that the designer of interactive systems needs to draw upon.
3. Understand the historical background of the subject.
4. Describe what is key concern in the process of interaction design.
5. Outline the lesson learn from good and bad design example.

The Key Concerns

1. Design – how should you do it? affordance, signifier, model, etc.
2. Technologies – what do you have? software, platforms, tools, devices, components, etc.
3. People – who will use the system? human errors, physical, psychology, cognitive, etc.
4. Activities – how to help? complex, cooperative, temporal aspect, safety, etc.
5. Contexts – in which situation/condition? social, cultural, organizational, political, health, etc.

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What is Design? (source: driveTV)



Definition

- Interaction Design (IxD) defines the structure and behavior of interactive systems, to create meaningful relationships between people and the products and services that they use, from computers to mobile devices to appliances and beyond (IxD Association, 2003).
- A process in which designers focus on creating engaging web interfaces with logical and thought out behaviors and actions (Carrie Cousins, 2016).
- Achieving goals within constraints by choosing most appropriate trade-off (Alan Dix et.al, 2003).

More on Design

So, for example, to design a website a designer will produce and evaluate various designs such as a design of the page layout, a design of the color scheme, a design for the graphics and a design of the overall structure.

In a different field of design, an architect produces sketches and outlines and discusses these with the client before formalizing a design in the form of a blueprint.

Design is rarely a straightforward process and typically involves much iteration and exploration of both requirements (what the system is meant to do and the qualities it should have) and design solutions.

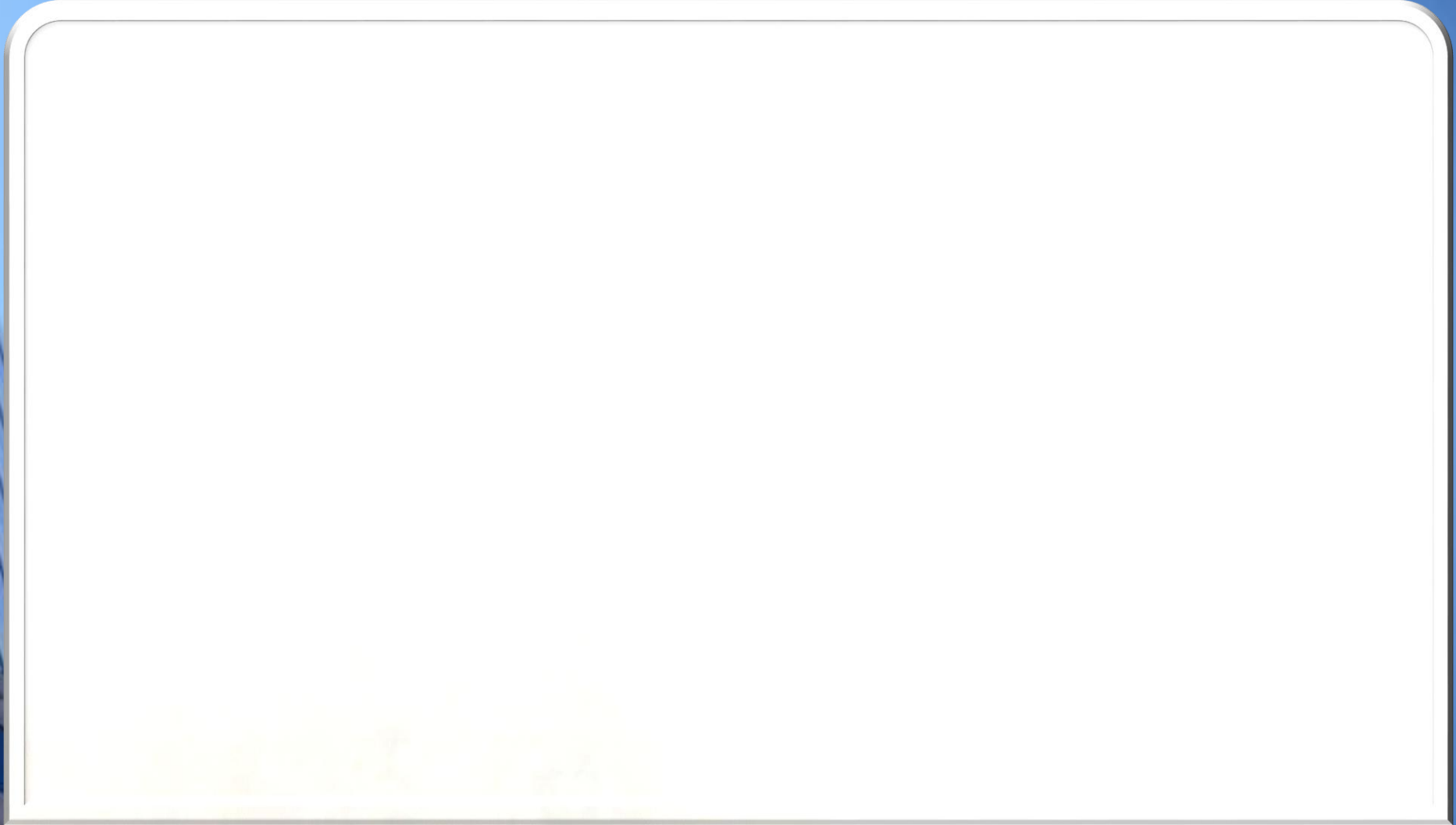
Common Methodologies

1. Personas/User Experience (Angus Jenkinson, 1993).
2. Goal-Driven Design (Alan Cooper, 1999).
3. Cognitive Design (Don Norman, 2002).
4. Pleasure Model (Patrick Jordan, 2002).
5. Usability Compliance (Alan Dix, Janet E. Finlay, Gregory D. Abowd and Russell Beale, 2003).
6. The Five Dimension (Bill Moggridge and Gillian C. Smith, 2007).

1. Personas/User Experience

- Archetypes that describe the various goals and observed behavior patterns among users (Godwin, 2009).
- Fictional characters created to represent the different user types that might use a site, brand, or product in a similar way.
- Benefit: market segmentation, feature definition, brainstorming, design pitfall prevention, self-referential avoidance and use case specification.
- Criticism: no clear relationship with customer, distance the team to engage targeted user, hypothetical user and there is no standard procedure.

How? (source: UX Mastery)



2. Goal-Driven Design

- Design that holds problem solving as a highest priority, which focuses on satisfying specific needs and desires of the end-user, as opposed to older methods of design, which focused on what capabilities were available on the technology side of things.
- Create a simple tool that enables us to make decisions on any level in the process, however, designers rarely select interactions based solely on development constraints
- Why does your site or interaction exist? Figure it out and make sure your application does this one thing exceptionally well.

5 Tenets of Goal Driven Design

- 1** Design first; program second.
- 2** Separate responsibility for design from responsibility for programming.
- 3** Hold designers responsible for product quality and user satisfaction.
- 4** Define one specific user for your product.
- 5** Work in teams of two.

3. Cognitive/Emotional Design

- Study of how the mind works, and what mental processes that take place there.
- According to the American Psychological Association (2013), these processes include “attention, language use, memory, perception, problem solving, creativity, and thinking.”
- Examples: *consistency, error-proneness, hard mental operations, viscosity and premature commitment.*

3. Cognitive/Emotional Design (cont.)

- **Mental models** are the images in a user's mind that inform their expectation of a certain interaction or system (intuitive).
- **Interface metaphors** make use of known actions to lead users to new actions. (ex: trash icon to delete files, magnifying glass to zoom in, etc.)
- **Affordances** are things that are not only designed to do something, but that are designed to *look* like they are designed to do something.
- **Signifiers** are a sign's physical form (such as a sound, printed word, or image) as distinct from its meaning.

4. Pleasure Model

- Physical (through stimulation of the five senses)
- Social (comes from belonging to groups and strengthening or improving one's social position)
- Psychological (created the person thinks about situation, consciously or unconsciously)
- Ideological (related to values and beliefs or right and wrong)

5. Usability Compliances

- Designers are simply asking “can someone easily use this?” (Alan Dix, et. Al, 2003)
 - **Learnability:** how easily can a new user learn to navigate the interface?
 - **Flexibility:** how many ways can a user interact with the system?
 - **Robustness:** how well are we supporting users when they face errors?
- Clearly, there are common themes that make up what it means for an interface to be “usable.” Previously, Jacob Nielsen (1995) defined usability goals:
 - **Learnability:** how easily can a new user learn to navigate the interface?
 - **Efficiency:** how quickly can users perform tasks?
 - **Memorability:** if a user hasn’t visited the system in a while, how well will they remember the interface?
 - **Errors:** how many errors do users make, and how quickly can they recover from errors?
 - **Satisfaction:** do users enjoy using the interface, and are they pleased with the results?

5. Usability Compliances (cont.)

- ISO 9241 (2002) defines usability as "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."
 - Learnability: How easy is it for users to accomplish basic tasks the first time they encounter the design?
 - Efficiency: Once users have learned the design, how quickly can they perform tasks?
 - Memorability: When users return to the design after a period of not using it, how easily can they re-establish proficiency?
 - Errors: How many errors do users make, how severe are these errors, and how easily can they recover from the errors?
 - Satisfaction: How pleasant is it to use the design?

5. Usability Compliances (cont.)

- Shneiderman (1986) proposed this collection of principles that are derived heuristically, known as “**Eight Golden Rules of Interface Design**”.
 - 1 Strive for consistency.
 - 2 Enable frequent users to use shortcuts.
 - 3 Offer informative feedback.
 - 4 Design dialog to yield closure.
 - 5 Offer simple error handling.
 - 6 Permit easy reversal of actions.
 - 7 Support internal locus of control.
 - 8 Reduce short-term memory load.

6. The Five Dimensions

- **1D: words** should be simple to understand, and written in such a way that they communicate information easily to the end user.
- **2D: visual representations** are all graphics or images, essentially everything that is not text. They should be used in moderation, so as to not overwhelm.
- **3D: physical objects or space** refers to the physical hardware, whether it's a mouse and keyboard, or a mobile device a user interacts with.
- **4D: time** is the length that the user spends interacting with the first three dimensions. It includes the ways in which the user might measure progress, as well as sound and animation.
- **5D: behavior** was added by Kevin Silver in his article, It is the emotions and reactions that the user has when interacting with the system.

Good and Bad Design

- A good design has the right balance of pleasures, such as the sights, sounds and smells of the racetrack that combine to create memorable excitement.
- A bad design puts people off, such as toilet smells in a restaurant.
- A good design is careful while a bad design is careless.
- *Good design, when it's done well, becomes invisible. It's only when it's done poorly that we notice it (Jared Spool, 2009).*

Good and Bad Design: Information Overload

Parking Signs in Los Angeles (Bad)



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PARKING SCHEDULE

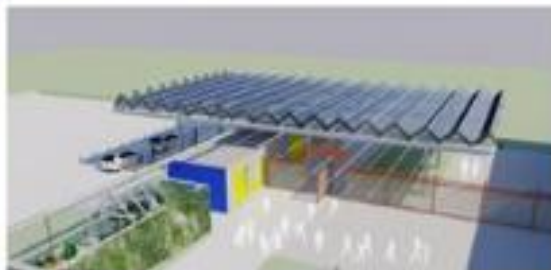
	M-F	SAT	SUN
7am	(P) FREE	(P) FREE	(P) FREE
8am	(R) [Red diagonal stripes]	(P) 1 HR	
8 ³⁰ am	(R) [Red diagonal stripes]	(R) [Red diagonal stripes]	
4pm	(P) 1 HR	(P) 1 HR	
7pm	(P) FREE	(P) FREE	

Nikki Sylianteng's Parking Sign (Good)

Good and Bad Design: Mystery Meat Navigation (MMN)

- Refers to cases where the destination of a link is not visible until the user clicks on it or points the cursor at it.
- MMN is bad because it reduces the discoverability of navigation elements. This adds cognitive load to users, because they now have to guess how to navigate or what clicking something does.

LazorOffice.com (Bad)



Course Cards on Interaction Design Foundation Website (Good)

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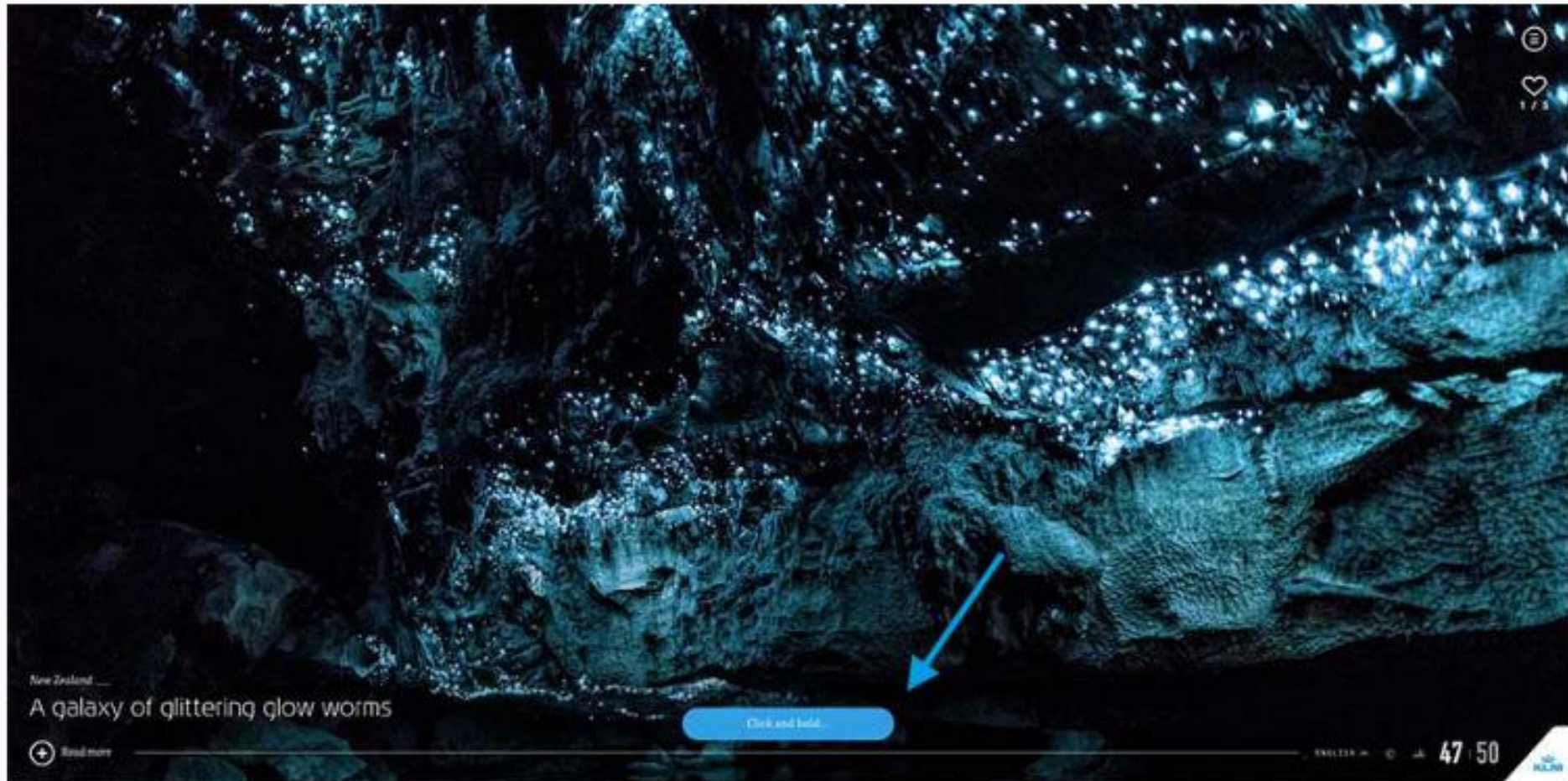
VIEW COURSE

Good and Bad Design:

Adding Friction to User Action

As designers, we should add friction to user actions with extreme caution, unless the point is to *dissuade* users from performing that action. Sometimes, however, we might even unintentionally *add* friction to user actions (mostly due to aesthetic or novelty reasons) that result in detrimental UX.

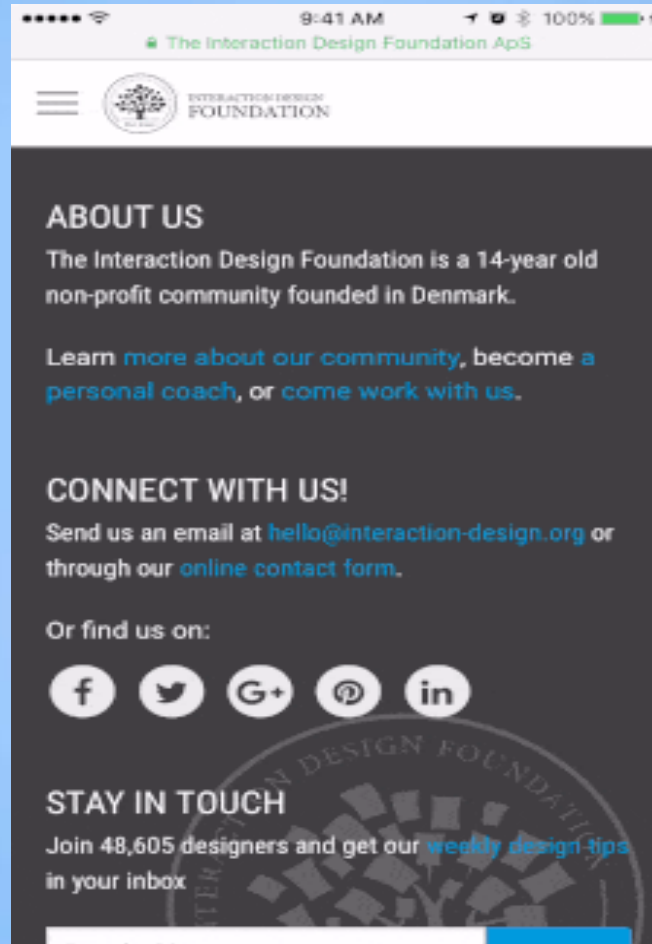
iFly50.com (Bad)



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iFly50 expects its users to click and hold for a few seconds every time they want to see more photos.

Elastic Scrolling in iOS (Good)



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Good and Bad Design:

“Clever” Design that Ignores Usability

What makes this mistake more dangerous is that we designers love clever designs. They're tiny graphical wonders that bring a smile to our faces. Sadly, the majority of humans are *not* designers. Even sadder, not all clever designs are good designs, especially when they create accessibility, discoverability or usability problems.

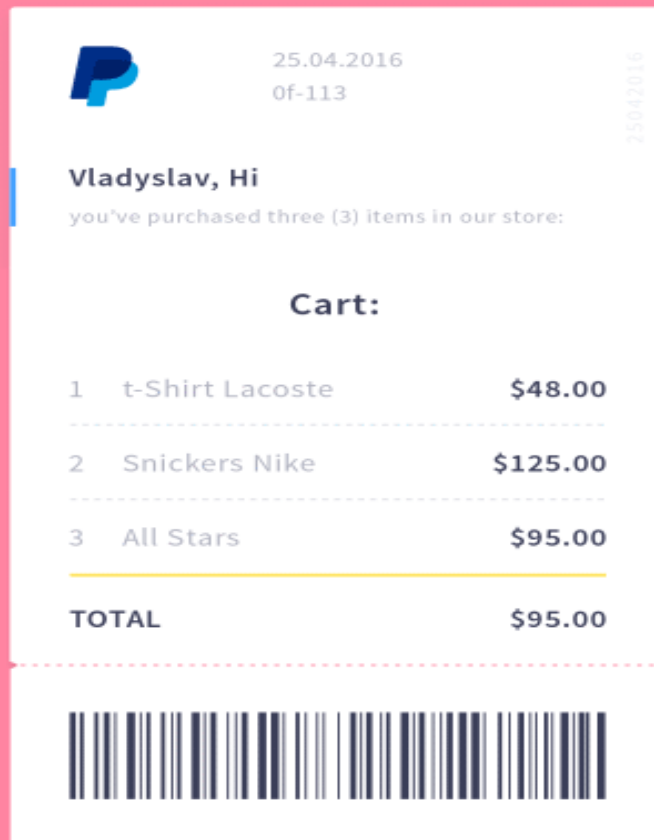
Ex: bolden.nl (Bad) and cultivatedwit.com (Good)

Good and Bad Design:

Superfluous Animation

Animations are a crucial element of interaction design, but they should always serve a purpose. Unfortunately, designers tend to have a love affair with animations, partly because animations are so fun to create that we might not know when to stop.

PayPal Receipt Concept on Dribbble (Bad)



The animation is pretty, but superfluous. In total, it takes a whopping 3.5 seconds to see the transaction details. A simple fade-in of the receipt would be more elegant, and because it takes up less time, better for the user as well.

Material Design Blog Animation (Good)



Stripe uses animations to make things seem faster than they are: it provides users with updates (like “Sent”) even though they might not have received the Message yet. This prevents users from feeling frustrated at having to wait, and provides assurance that an SMS is on its way right now.

Lesson Learnt!

- Understand what your users need, then design based on that. This helps reduce information overload.
- Have lots of information to convey to your users? Try using visuals instead of text.
- Always label your links! You wouldn't like to eat mystery meat—and similarly, your users wouldn't like to click on mystery links.
- Avoid adding any kind of friction to user actions as far as you can—and carefully implement it when you have no alternative.
- Clever designs should always be made as foolproof as possible, and/or tested on actual users. Sometimes, clever designs can backfire and hurt usability.
- Always make your animation purposeful: too much can kill the UX of a product. Beauty has to pull its weight and be functional.

Usability Misconceptions

- Usability is not equivalent to being “user-friendly.” This is a misdirected term; to say that it is about friendliness trivializes the scope of the interaction design process and discounts the importance of user performance in terms of user productivity, etc.
- Usability is not what some people used to call “dummy proofing.” While it might have been mildly cute the first time it was used, this term is insulting and demeaning to users and designers alike.
- To many not familiar with the field, “doing usability” is sometimes thought of as equivalent to usability testing, it is by no means all there is in the interaction design creation and refinement process.
- Usability has to do with visual appeal while visual design is an integral and important part of usability, it is not the only part of interaction design.

Skill and Knowledge

Designers of interactive systems need a variety of skills and need to understand a variety of disciplines if they are to be able to do their jobs well. They need the mixture of skills that allows them to be able to:

- study and understand the activities and aspirations of people and the contexts within which some technology might prove useful and hence generate requirements for technologies,
- know the possibilities offered by technologies,
- research and design technological solutions that fit in with people, the activities they want to undertake and the contexts in which those activities occur,
- evaluate alternative designs and iterate (do more research and more design) until a solution is arrived at.

User Experience (UX)

- Quality of UX: Utility, Functional Integrity, Usability, Persuasiveness and Graphic Design.
- UX mostly felt internally by the user.
- UX cannot be designed.
- In some cases, the user experience goes even beyond the response to usability, usefulness, and joy of use.

What is User Experience (UX)?

source: Grovo

How to Optimize User Experience?

- Taking into account what people are good and bad at.
- Considering what might help people with the way they currently do things.
- Thinking through what might provide quality user experiences.
- Listening to what people want and getting them involved in the design.
- Using "tried and tested" user-based techniques during the design process.

Summary

- There is a huge variety of interactive systems and products, from business applications of computers to websites to dedicated information appliances to whole information spaces.
- Designing interactive systems is a challenging and fascinating discipline because it draws upon and affects so many features of people's lives.
- Designing interactive systems is concerned with designing for people using technologies to undertake activities in contexts.

Reference Books

- David Benyon. Designing Interactive Systems: A Comprehensive Guide to HCI, UX and Interaction Design. Addison-Wesley, Pearson 2013.
- Rex Hartson and Pardha S. Pyla. The UX Book: Process and Guidelines for Ensuring a Quality User Experience. Elsevier 2012.
- Donald A. Norman. The Design of Everyday Things. Basic Books 2002.
- Alan Dix, Janet Finlay, Gregory D. Abowd and Russell Beale. Human-Computer Interaction. Prentice Hall, Pearson 2003.