FINAL REVIEW

# VOCABULARY & CONCEPTS

## INTERACTION DESIGN
Interaction design is the design of interactive products and systems to support the way people communicate and interact in their everyday lives.

## INTERACTIVE PRODUCTS VS SYSTEMS

## MASSIMO VIGNELLI NYC Subway Map, 1972

## USER CENTERED DESIGN (UCD)
User-centered design is a philosophy and a process in which the needs, wants and limitation of end users of a product or system are given extensive attention at each stage of the design process.
>       Who is this product for?
>       Why would they use it?
>       How will they use it?

## USABILITY
Ensuring that interactive products are easy to learn, effective to use, and enjoyable from the user's perspective.  "Can I use it?"

## USABILITY GOALS
effective, efficient, safe, utility, learnability, memorability

## USER EXPERIENCE
The user experience is how people feel about the product and their pleasure and satisfaction when using it.  "Do I want to use it?"

## USER EXPERIENCE GOALS
satisfaction, enjoyable, engaging, entertaining, motivating, challenging, rewarding, helpful

## INTERACTION TYPES
instructing, manipulating, conversing, exploring

## DIETER RAMS 10 PRINCIPLES OF GOOD DESIGN
innovative, useful, beautiful, understandable, unobtrusive, honest, long-lasting, thorough / detailed, environmentally friendly, simple

## REVOLUTIONARY VS EVOLUTIONARY
Be able to explain the difference between these concepts using an example product.

## INTERACTION DESIGN TEAM ROLES
human factors / research, engineering, design, business (refer back to slide for job roles within each of these fields)

## DEVELOPMENT CYCLES: WATERFALL, ITERATIVE (AGILE VS LEAN) + DESIGN PROCESS
Know the major steps for each of the development cycle types, as well as the four major phases of the design process.

## HUMAN-CENTERED DESIGN
"a human-centered approach fuels the creation of products that resonate more deeply with an audience" -Thomsen

## MVP (minimum viable product)
Be able to explain this concept using an example product.

## INDUSTRIAL VS INTERACTION VS EXPERIENCE DESIGN
Be able to describe the key differences between these three specialties.

## DISCOVERABILITY

Discoverability of a product means figuring out what it does, how it works, and what operations are possible.

## DON NORMAN'S
## 6 PSYCHOLOGICAL CONCEPTS

Affordances, signifiers, constraints, mappings, feedback, conceptual models (define these in terms of their psychological meaning and know an example for each).

## AFFORDANCES

the qualities or properties of an object that define its possible uses or make clear how it can or should be used.

## SIX PRINCIPLES OF UCD

Be able to explain the 6 principles.

## DESIGN HIERARCHY

Be able to draw and label the pyramid (including the three tiers to the side).

## COGNITIVE FRAMEWORKS

Explains and predicts user behavior based on theories of cognition.

## CONCEPTUAL MODEL

An abstraction outlining what people can do with a product and what concepts are needed to understand how to interact with it.

## COGNITIVE LOAD

The level of effort associated with thinking and reasoning (including perception, memory, language, etc.), thus potentially interfering with other thought processes.

## SCHEMAS

A mental structure of preconceived ideas, a framework representing some aspect of the world, or a system of organizing and perceiving new information.

## MENTAL MODELS

A mental model is what the user believes about the system at hand. A mental model is based on belief, not facts; and individual users each have their own mental model.
*Goes beyond schema theory to include perceptions of task demands and task performances.

## VISUAL PATTERNS & PERCEPTION

We store patterns that influence our expectations. What we see is strongly influenced by our expectations.
Perception is based on change. We scan, filter, and interpret differences. We use differences to create understanding.

## GESTALT PRINCIPLES

The whole is different than the sum of its parts.
Be able to define and explain how to apply similarity, proximity, closure, continuation, and common fate.

## FILM - OBJECTIFIED

Karim Rashid and David Kelley clip - "Why do we feel we need to keep revisiting the archetype over and over again?" Be able to explain why cameras are rectangle. 78% of the world is uncomfortable. The importance of demanding design to work for us instead of blaming ourselves. "Some things, like this briefcase, get better with use."

## BUSINESS REQUIREMENTS VS USER REQUIREMENTS

Be able to explain the difference between these including examples from the lists in the UX Research lecture.

## MARKET RESEARCH

Market research utilizes a collection of research methods to shed light on both consumer behavior and market competition.

## CONTEXTUAL RESEARCH

Contextual research involves conducting research in the real world, in the places where your users conduct their everyday tasks.
*Know the important tasks for conducting this type of research (from lecture).

## COMPETITOR BENCHMARKING

Compare competitors to each other and/or to your product using pre-established criteria.
*Know the important areas of analysis for this type of research (from lecture).

## BRAND MATRIX

Brand matrices allow designers and their clients to visualize a brand's values relative to its competition. Two important criteria are chosen for the axes of the matrix. Distinctiveness is the ideal quality -- those brands that are closely clustered in the same area of the matrix will be less distinct.
*Be able to draw a brand matrix.

## SURVEYS

Popular method of data collection that are used to collect information such as opinions, preferences and ideas both online and offline.
*Know the three different types of questions and why you would use one over another (from lecture).

## USER RESEARCH

User research methods give detailed insights into user needs and behaviors from both real and imagined users. The point of user research is to understand and incorporate the user's goals into your product or service.

## INTERVIEWS

Be able to explain the four different types of interviews and why you would choose one over another (pros & cons): unstructured, structured, semi-structured, focus groups.

## CONDUCTING AN INTERVIEW

Know the five key background details, as well as the four key steps for conducting a successful interview.

## WEB ANALYTICS

Web analytics is statistical information about user visits to websites that can tell us a range of information. It is important in helping to judge the effectiveness of any changes to a website. *Know the data this type of research can provide (from lecture).

## USABILITY TESTING

Usability testing involves asking people to use something and observing what problems arise from using it.
You can test information architecture, navigation, flows, prototypes, competitors, etc.
Note: This should be used throughout the entire UX process, but especially in the beginning stages.
*Know the five different methods discussed in lecture.

## PERSONAS

Personas are short, vivid descriptions of a fictional character that represents a group of a product's users.
Used in order to help clients and designers visualize their audience when making decisions about design features, user experience, or content.
Note: Personas are not based on stereotypes, rather are based on your research findings.
*Know the steps for constructing a persona and what to include in a persona.

## SCENARIOS

Scenarios are hypothetical stories about the use of a product or service, which are created in the initial research stage to inform your design.
A scenario is a specific task give to one or all of your personas, which details every step of their experience, providing insights into design requirements.

## PRODUCT ROADMAP

A product roadmap is a high-level plan that describes how the product is likely to grow.

## IDEATION & VISUAL RESEARCH

Visual research methods allow designers to source inspiration for their projects.
Know the different types: brainstorming, word lists, mind mapping, visual brain dump, and moodboards.

## TOOLS FOR WORKING IN TEAMS

Know at least three tools, and what they could be used for. Be able to describe the tools you used with your project team.

## WIREFRAMES

A visual guide that represents the skeletal framework of an interface. Explain low fidelity vs high fidelity.

## SIMPLICITY

Simple products are easy to use, so they find a popular audience.
Simple products are reliable, so people develop an attachment to them.
Simple products are adaptable, so they end up being used in surprising ways.
*Simple is not the same as usable.

## COMPLEXITY

The more features you add, the less chance a new feature will be of real value to anyone.
Increased complexity means users can't easily find the features that are important to them.

## JOHN MAEDA'S LAWS OF SIMPLICITY

Understand the 10 laws of simplicity.

## FOUR STRATEGIES FOR ACHIEVING SIMPLICITY

Be able to describe the value and benefits of each: remove, organize, hide, and displace.

## HISTORY OF IxD

Interaction design as a field didn't emerge until the mid-1980s. But, most of the qualities we seek have been
valued through the ages: useful, usable, complex, transparent, good fit, desirable, affordable, styled, and adaptable.
*Know the difference between single-part tools, multi-part tools, and mechanical motion devices.

## MODERN COMPUTER AGE

First modern programmable computers were built in the 1940s and used for military operations.
ENIAC, 1946 — 1st electric general-purpose computer
XEROX ALTO, 1973 — "desktop metaphor"
COMMODORE PET, 1977 — personal computer
1982 Machine of the year, Time magazine

## THE MOUSE

In the 1960s Doug Engelbart and Bill English invented the computer mouse.
*Be able to describe how the original mouse looked.

## THE DESKTOP METAPHOR

The desktop metaphor treats the computer monitor as if it is the user's desktop, upon which objects such as documents and folders of documents can be placed.
It was first introduced by Alan Kay at Xerox PARC in 1970.

## THE FIRST LAPTOP

In 1981, Bill Moggridge designed the first laptop, the GRiD compass. After playing with the GRiD Compass he realized that the interaction with the software was more important than the physical design.
In 1984, he coined the term "interaction design" when he realized he was doing a different type of design that combined product design, communication design, computer science, and human-computer interaction.

## APPLE MACINTOSH

Steve Jobs introduced the Macintosh in 1984 which popularized the desktop metaphor. This was the first mass-market personal computer featuring a graphical user interface and mouse.

## VIDEO GAMES

In 1972 Nolan Bushnell, co-founder of Atari, released the arcade version of Pong. Pong was the first arcade video game with widespread success and spawned the game industry.

## AUGMENTED REALITY

A live direct or indirect view of a physical, real-world environment whose elements are augmented by computer-generated sensory input such as sound, video, graphics or GPS data.

## THE INTERNET OF THINGS

The Internet of Things (IoT) is a computing concept that describes a future where everyday physical objects will be connected to the Internet and be able to identify themselves to other devices.

## SOCIAL MEDIA

Social interaction that relies on mobile and web-based technologies to create highly interactive platforms through which individuals and communities share, co-create, discuss, and modify user-generated content. 73% of online adults use social networking sites (2013).

## USER INTERFACE (UI)

The system with which people visually interact with machines and objects. UI represents the information and actions available to a user through organization, graphical icons and other visual cues, interactions, and branding.

## PHYSICAL VS PERCEIVED AFFORDANCES

Be able to explain the difference between physical and perceived affordances.

## METAPHORS

Provide a structure that is similar in some way to aspects of a familiar entity but also have their own behaviors and properties.

## SKEUOMORPHISM

A design feature that is carried forth from the original version of a product in order to make people more comfortable with the new device or interface. Skeuomorphism reached a peak in 2012, and its use has since been on the decline in favor of the flat aesthetic.

## FLAT DESIGN

Flat design refers to a style of interface design which removes any stylistic choices that give the illusion of three-dimensions — i.e. drop shadows, gradients, or textures — and is focused on a minimalist use of simple elements, typogrpahy and flat colors.
It is a reaction to skeuomorphism and is heavily influenced by the International Typographic Style of the 1950s which also sought simplicity, clarity, and the obsolescence of decoration.

## ICONS

Icons represent objects and operations on the interface using concrete objects and/or abstract symbols.
*Know the 11 tips for icon design.

## HIERARCHY

Emphasizes some elements more than others — contrast guides the audience to the most important information. Spatial cues: alignment, position, and leading. Graphic cues: size, shape, and color.

## STRUCTURE

Alignment is a key in helpful users experience a product in an organized, systematic way. A grid system is good not only for aesthetics, and efficiency, but also for usability. They divide the screen into horizontal and vertical units.
A good grid is modular, which is flexible enough to handle variation while maintaining consistency, symmetry, and balance.

## CONSISTENCY

Similar elements should share visual attributes — i.e. positioning, size, line weight, and style.

## PERSONALITY

Appropriate colors, images, and graphic elements create a positive first impression of the brand.
*Be able to explain why personality is important (refer back to the design for emotion lecture).

## VISUAL NOISE

Visual noise is caused by superfluous visual elements that distract from the primary objective.

## WAYFINDING

Wayfinding is comprised of the elements of the built environment that allow us to navigate through complex spaces.
*Know the core components and questions you should ask at each step, as well as how this applies to UI navigation.

## GAMIFICATION

Gamification is the use of game mechanics and game design techniques in non-game contexts. Game mechanics: points, badges, levels, leaderboards, challenges.
*Know the game mechanics and give an example for each.

## SUBCONSCIOUS VS CONSCIOUS SYSTEMS OF COGNITION

Be able to explain this concept as described by Don Norman.

## HUMAN ERROR

Be able to explain why we need to eliminate this phrase from our vocabulary.

## PRECISE BEHAVIOR FROM IMPRECISE KNOWLEDGE

Be able to explain this concept (including the four reasons).

## LONG TERM MEMORY VS SHORT TERM MEMORY

Be able to explain this concept by Don Norman.

## ROOT CAUSE ANALYSIS & THE FIVE WHYS

Be able to explain this concept of investigating causes (and how to best apply the five whys in this process).

## THE DOUBLE-DIAMOND MODEL OF DESIGN

Be able to explain this process model and describe how your team used it during the team project (if so).