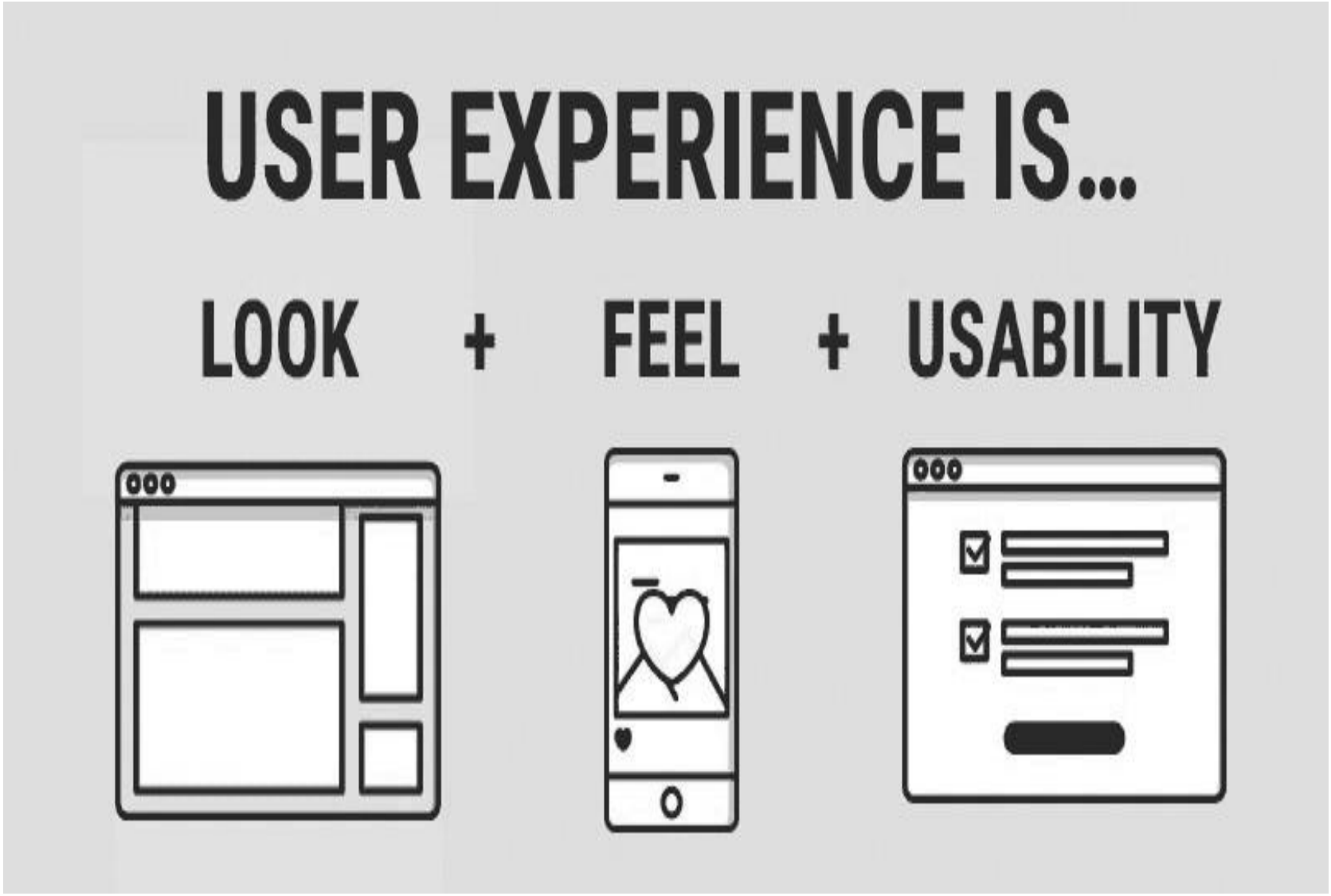
UNIT - 01
Introduction to UX Design

1. Introduction to UXD

What is User Experience?



1) Look :

The look of a product is all about creating a product that has **visual appeal** ,In other words, it has to not only look nice, but look right too.

In doing so, it establishes a bond of trust and credibility between the product and the user.

2) Feel :

It is really about developing products that are

—a joy to use‖.

That is, whether you're interacting with them

or

reacting to them, products should provide a pleasurable experience and not just a functional one.

3)Usability :

It is the cornerstone of user experience. If a product isn’t usable, the experience of using it can be never good.

And Also it cost the reputation of the brand.

What is User Experience Design(UXD)?

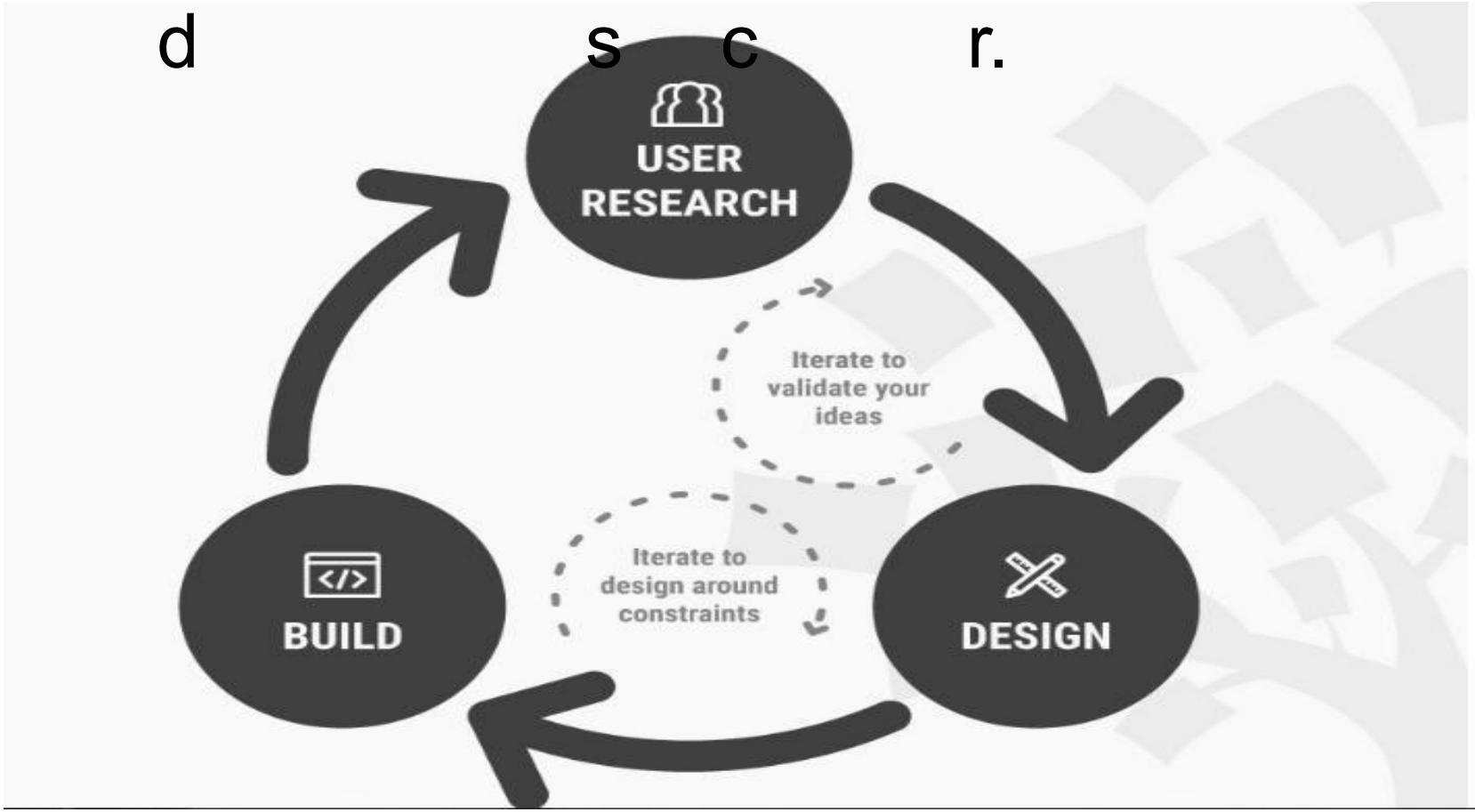
- UXD is the process of creating products that provide meaningful and relevant **experiences** to users.

- This involves the design of the entire process of acquiring and integrating the product, including aspects of branding, design, usability, and functionality.

- **Paul Rand** said that **Design is Everything !**

Iterative problem solving

UX design is very much an iterative problem solving process, and it can be very different from what you're using to doing as a graphic designer.



What is the Aim of UX Designs?

"It doesn't matter if you use a product Hundred Times – You will Remember the Unsuccessful Attempt"

Donald Norman

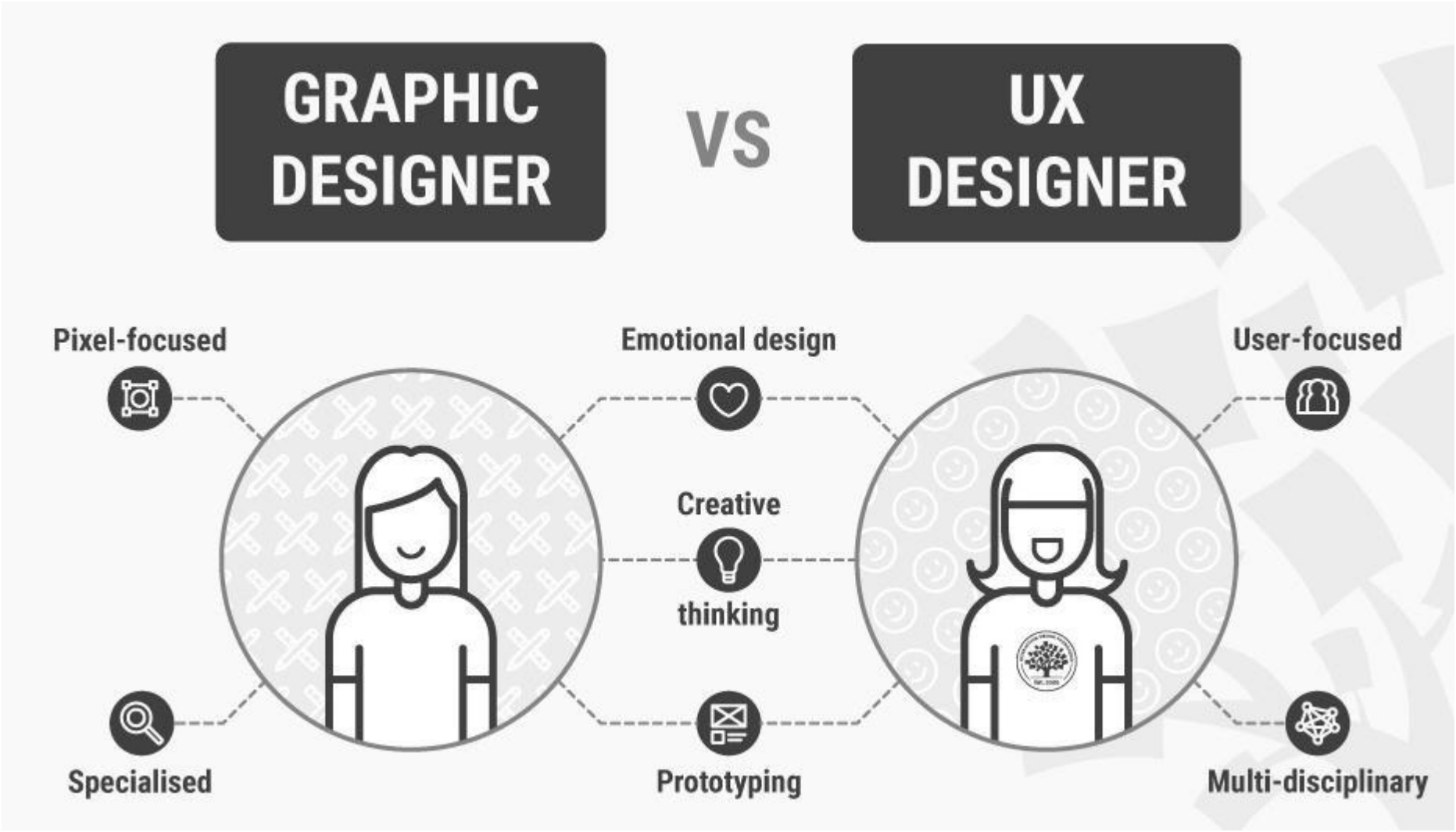
- The Aim is to design a product which we will be able to use not only with a success but with joy.
- To Design a product that a user will wish to use it again.

How Does It Relate to Graphic Design?

> *"A picture is worth a thousand words and an Interface is worth a thousand pictures"*
>
> Ben Shneiderman

- Graphic Design is an Integral Part of the concept of a product.
- Thus it is an integral part of the User Experience Design.

What Do Graphic Design and UX Design Have in Common?



What does make a Design Successful?

"Design is not just how it looks and how it feels But Design is how it works"

Steve Jobs

- In todays society good design is the Synonyms for Aesthetics.

  But Good design is actually about good user experience.

"Appearance has a strong impact on Functionality i.e An Application that appears cluttered or illogical is hard to understand and use"

iPhone Human Interface Guidelines

- Decisions leading to successful design are not accidental , they are a result of strategy planning ,careful research and user testing.

  Its very important to research who we design for – the users – what their needs and problems are and how the product is going to help them.

So is it just about users?

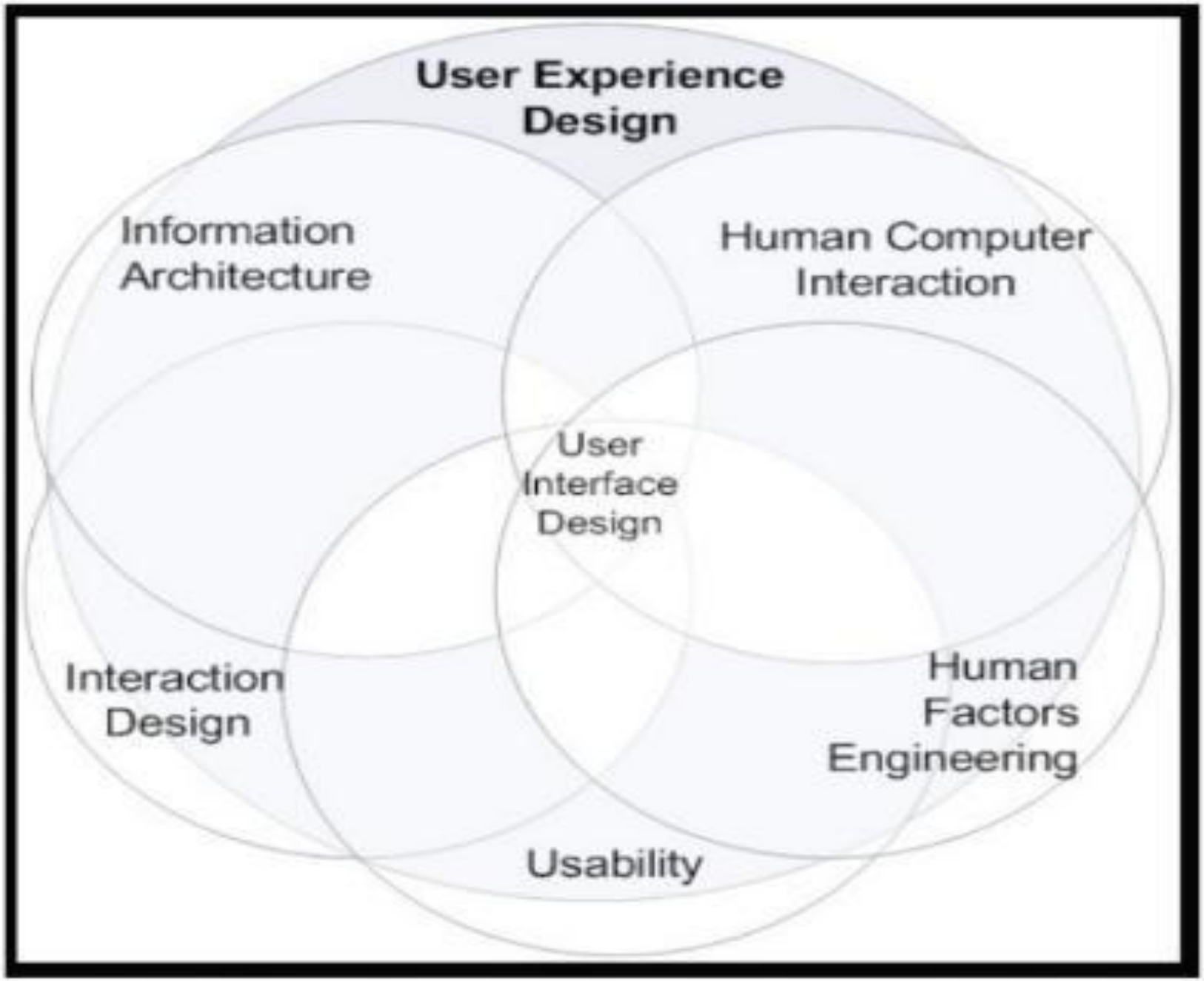
- We do not design only to satisfy users needs but to meet needs and goals of manufacturer as well.

What is UX Design About After All?

- UX is not about aesthetics – its about understanding users behavior and needs.

- UX Design is not UI – But UI is an Integral Part of the UX Design process.

- **It's a design process concentrating on finding a solution to make a product which people will enjoy using and won't struggle and will want to use it again.**

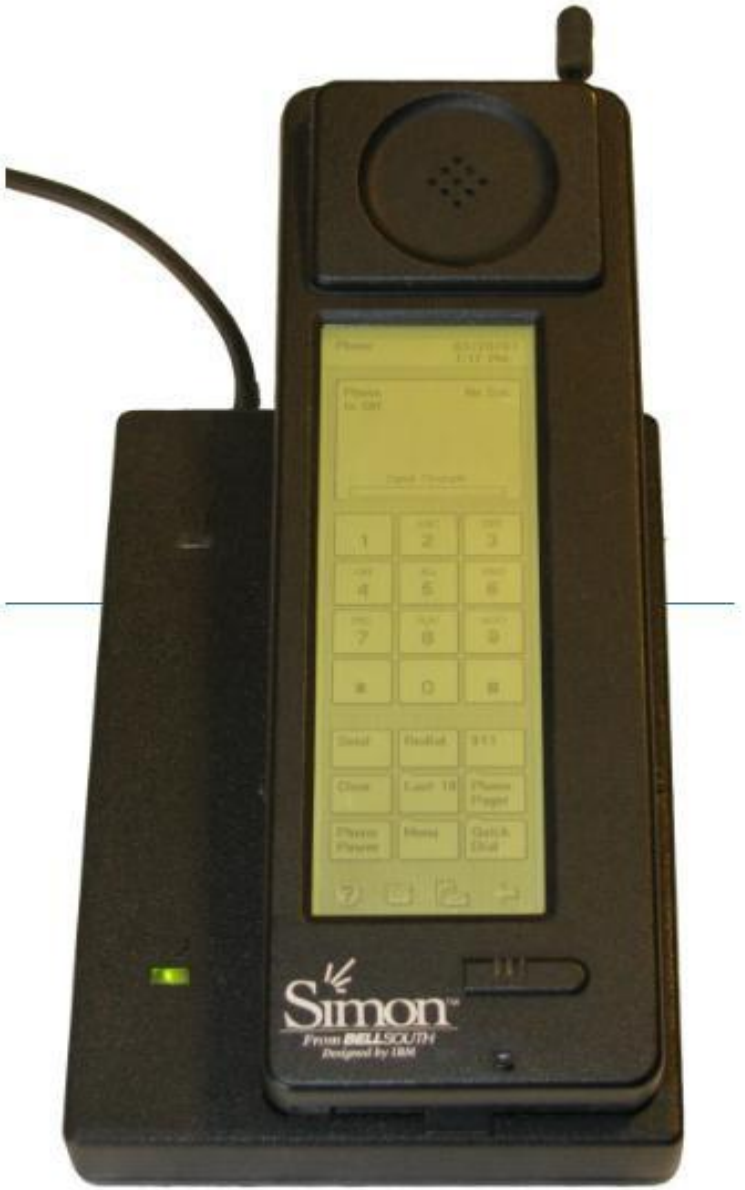

User Experience Design
Information Architecture
Human Computer Interaction
User Interface Design
Interaction Design
Human Factors Engineering
Usability

Evolution of Mobile Phones

The First Smartphone

- The tech company IBM is widely credited with developing the world's first smartphone – the bulky but rather cutely named Simon.
It went on sale in 1994 and featured a touchscreen, email capability and a handful of built-in apps, including a calculator and a sketch pad.

- Despite this, Simon suffered from a number of issues, such as reportedly having a battery life of just one hour.
It was also a bit of a flop, with various Reports pointing out that the device only spent six months on the shelves, shifting around 50,000 units.



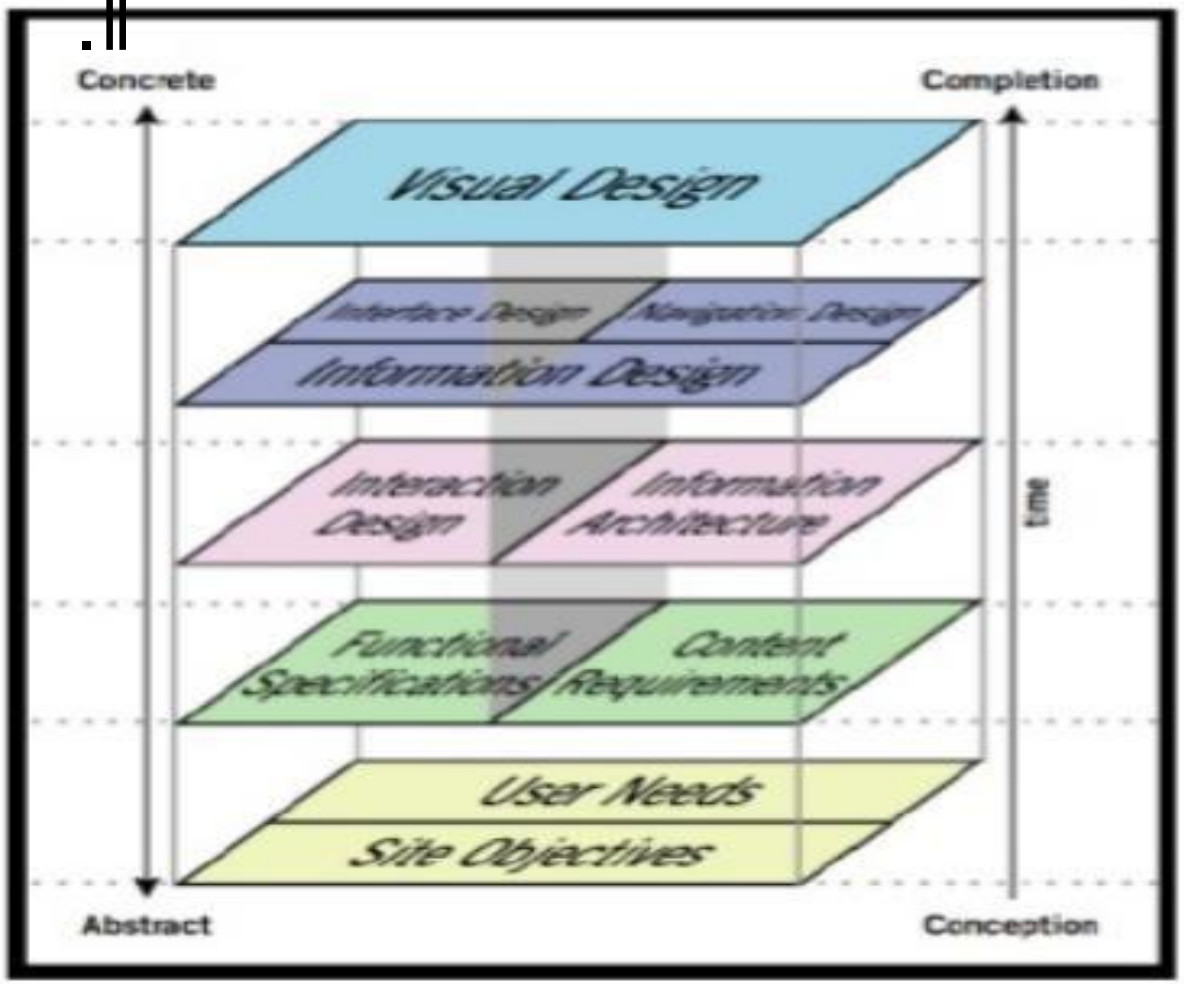
Evolution of Refrigerator

Lets Clear the Misconception about UXD….

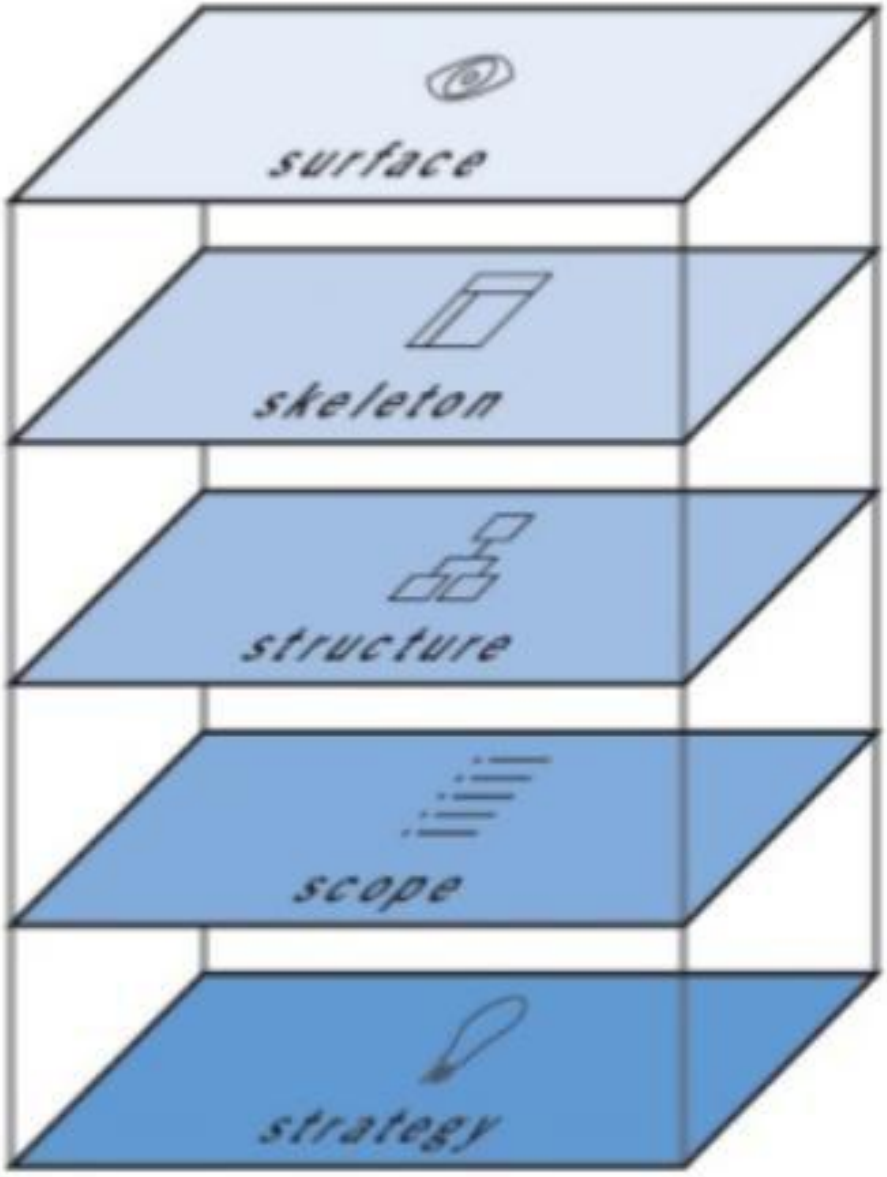
1. UXD is NOT User Interface Design.

UX	UI
UX Makes Interfaces Useful	UI Makes Interfaces Beautiful
UX Helps Users Accomplish Goals	UI Makes Emotional Connections
UX Design Is Done First	*UI Design Is Done Second…* (Sometimes)
UX Is Employed Across Products, Interfaces And Services	*UI Only Pertains To Interfaces*

—UXD is not a layer or component of a product, it's really about the design of whole system and their interconnections



2. UXD is not a single step in the process



Concrete

Abstract

Surface brings everything together visually: What will the finished product look like?

Skeleton makes structure concrete: What components will enable people to use the site?

Structure gives shape to scope: How will the pieces of the site fit together and behave?

Scope transforms strategy into requirements: What features will the site need to include?

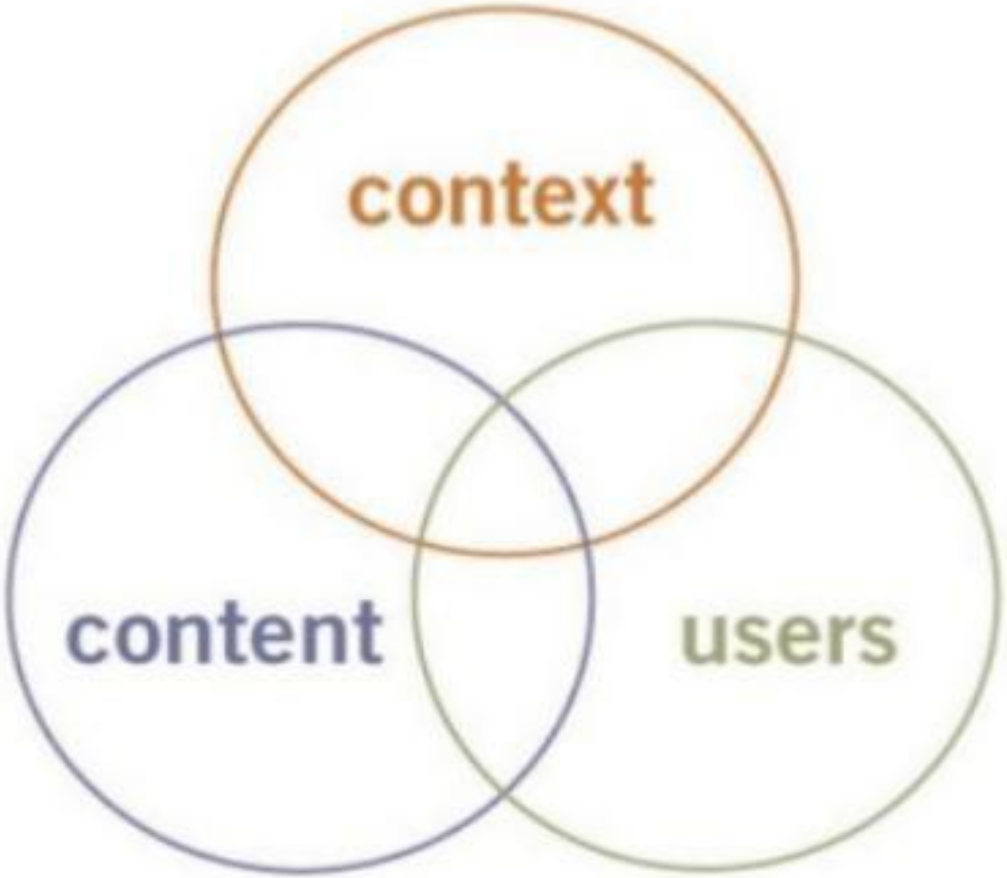
Strategy is where it all begins: What do we want to get out of the site? What do our users want?

3. UXD is not just about technology.

—UXD is not limited to the confines of computer, it doesn’t even need a screen . It is any interaction or service or artifact or system with any

4. UXD is not just about usability.

5. UXD is not just about the user.



6. UXD is Not easy.

7. UXD is not the role of one person or a department.

8.UXD is not a single discipline.

9.UXD is not a choice.

2.Ubiquitous Interaction

* Desktops, Graphical User Interfaces, and the Web Are Still Here and Growing

- The —old-fashioned‖ desktop, laptop, and network-

  based computing systems are alive and well and seem to be everywhere with an expanding presence
- in our lives.

  Also complex domain systems are still the bread and butter of many business, industry, and
- government operations.

  Web addresses are commonplace in advertisements
- on television and in magazines.

  The foreseeable future is still full of tasks associated with —doing computing‖.

—Although it is exciting to think about all the new computing systems and interaction styles, we will need to use processes for creating and refining basic computing applications and interaction styles for years to come.‖

Rex Hartson

* The Changing Concept of Computing

—Computing has now gone well beyond desktop and laptop computers, well beyond graphical user interfaces and the Web computing has become far mor ubiquitous e —

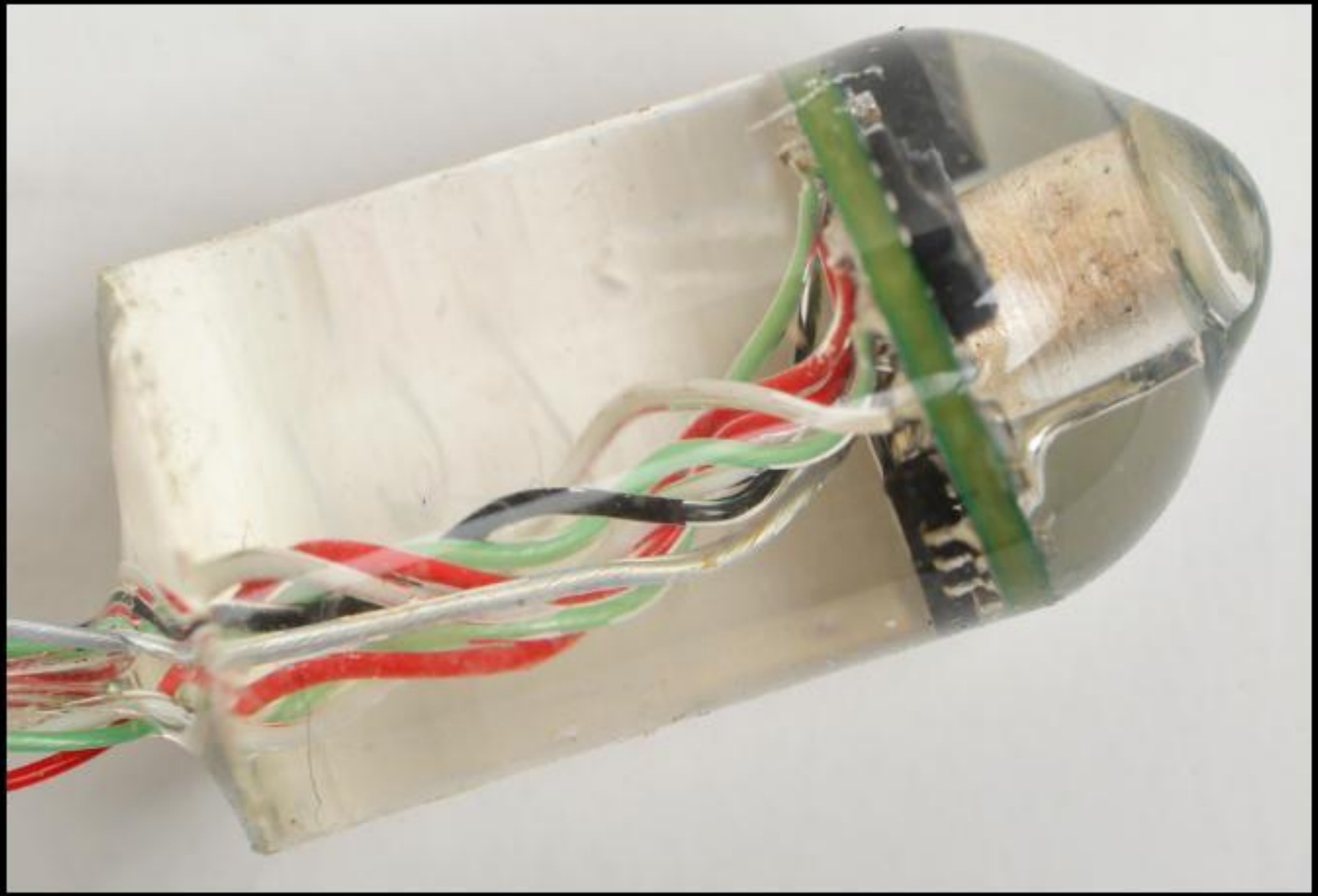
Weiser

Amazon Echo

- Amazon Echo is a hands-free smart speaker that you control using your voice. It connects to Alexa – a cloud based voice service to play music, make calls, check weather and news, set alarms, control smart home devices, and much more.
- Echo has powerful speakers that fill the room with immersive 360° omnidirectional audio, and deliver crisp vocals and dynamic bass response.
- Just ask for a song, artist, or genre from your favourite music services like Amazon Prime Music, Saavn, and TuneIn. Using multi-room music, you can even play music across multiple Echo devices at the same time.
- With seven microphones, beam-forming technology, and noise cancellation, Echo hears you from any direction-even in noisy environments or while playing music.
- Call or message anyone hands-free who also has an Echo device or the Alexa App. Simply ask "Alexa, how do I set up calling?" to get started.
- Controls lights, plugs, and more with compatible connected devices from Philips, Syska, TP-Link and Oakter.
- Alexa is always getting smarter and adding new features and skills. Just ask Alexa to order food from Zomato, request a ride from Ola, book a carpenter from Urbanclap, and more.

- The eGadget projects features self-reconfiguring artifacts , each with its own sensing, processing, and communication abilities.
- Sometimes, when these devices can be strapped on one's wrist or in some way attached to a person's clothing, for example, embedded in a shoe, they
- are called **wearable computers**.

  In a project at MIT, soldiers were instrumented with sensors that could be worn as part of their clothing, to monitor heart rate, body temperature, and other parameters, to detect the onset of hypothermia.



This ingestible electronic device invented at MIT can measure heart rate and respiratory rate from inside the gastrointestinal tract.

- More and more applications that were in research labs are now moving into commercial adoption. For example, robots in more specialized applications.
- There are robotic applications for healthcare rehabilitation including systems.
- Robot devices for urban search and rescue and of course, robotic rover vehicles for unmanned space missions.

* The Changing Concept of Interaction

- Sitting in front of a desktop or laptop usually conveys a feeling of —doing computing‖ to
- users.

  Users are aware of interacting with a computer and interaction is purposeful: for exchanging
- information, for getting work done, for learning, for play or entertainment, or just for exploring.

  When we drive a car we are using the car's built-in

  computer and maybe even a GPS, but we do not

- the most notable and most recognizable (by the public) example of interaction away from the desktop is seen in mobile communications.

- With an obviously enormous market potential, mobile communications are perhaps the fastest growing area of ubiquitous computing with personal devices.
- Also represent one of the most intense areas of designing for a quality **USER EXPERIENCE**.

3. EMERGING DESIRE FOR USABILITY

- In the distant past, computer usage was esoteric, conducted mostly by a core of technically oriented users who were willing to accept the challenge of overcoming poor usability.

- Usability and user experience relate to how well a product (or service) is designed, but there are subtle and important distinctions between them.

  - Usability is about ease of use: a highly usable product enables the user to achieve their goals quickly, with minimum frustration and without error

  - Usability is an integral part of User Experience

The First Electronic Device Ever Invented – Relay (1835)

- A relay is a remote switch controlled by current, magnetism, or temperature. The relay was invented in 1835 by Joseph Henry (1797-1878), an American scientist. It made modern telegraphy possible and evolved into the repeater- thus the relay- a remote controlled switch, was in effect the first (Electronic) device, though not anything involving crystals, diodes, vacuum tubes etc.

- The first invented Relay was used as part of his telegraph system circa 1844. It was used in long distance.telegraph circuits, repeating the signal coming in from one circuit and re-transmitting it to another. Since then, relays found extensive use in telephone exchanges and early computers to perform logical operations.

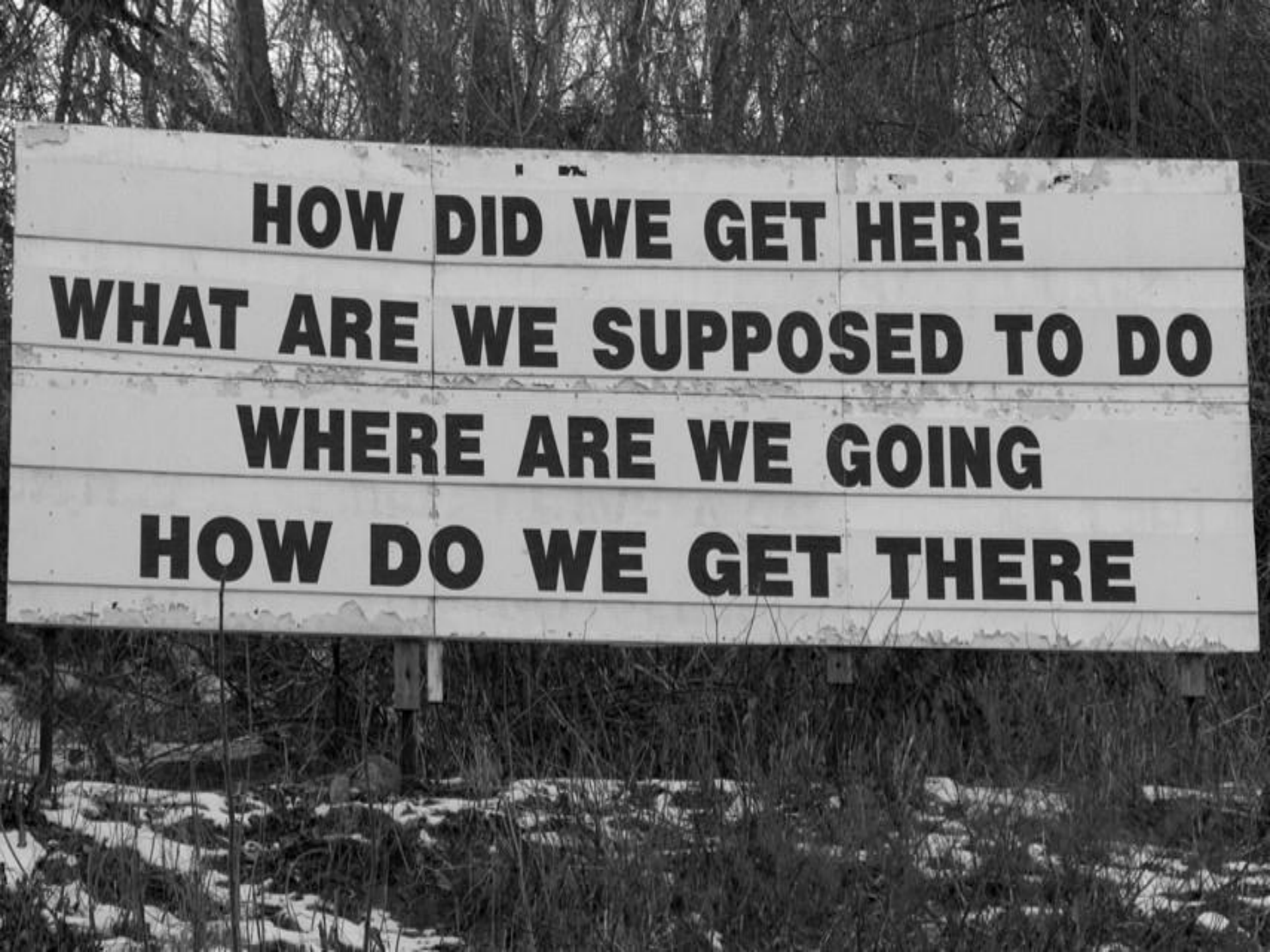
First Telephone

The First Telephone Call
March 10, 1876

What were the first words ever spoken on the telephone? They were spoken by Alexander Graham Bell, inventor of the telephone, when he made the first call on March 10, 1876, to his assistant, Thomas Watson: "Mr. Watson--come here--I want to see you."

Bell on the telephone in New York (calling Chicago) in 1892

4) FROM USABILITY TO USER EXPERIENCE


HOW DID WE GET HERE
WHAT ARE WE SUPPOSED TO DO
WHERE ARE WE GOING
HOW DO WE GET THERE

- # A Pre Recorded History

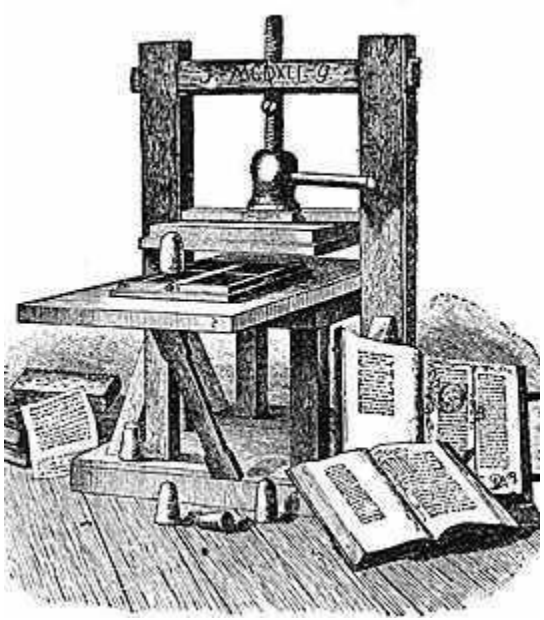
Pre-historic tools were designed, they were created and used.

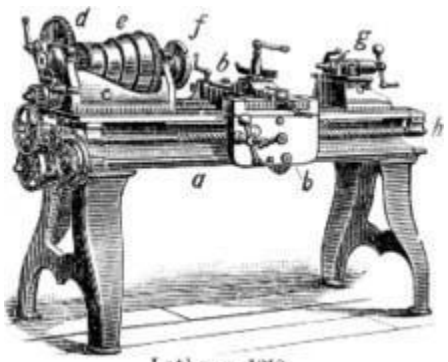
– If it worked, it worked. If it didn't, it was thrown out or tweaked until it did. Formal evaluation wasn't necessary because the user, designer and evaluator were the same person.

Medieval And Industrial Age

Technology became more complex and powerful, but evaluation stayed (roughly) the same.

For most of human history, evaluation wasn't necessary because people could shape and tweak technology to fit their needs

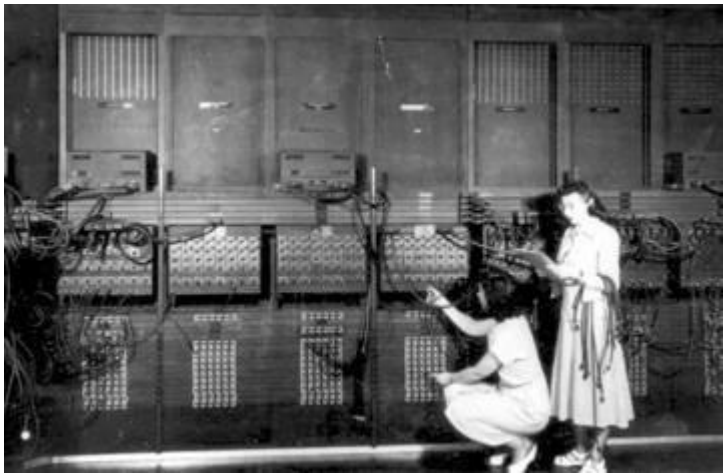


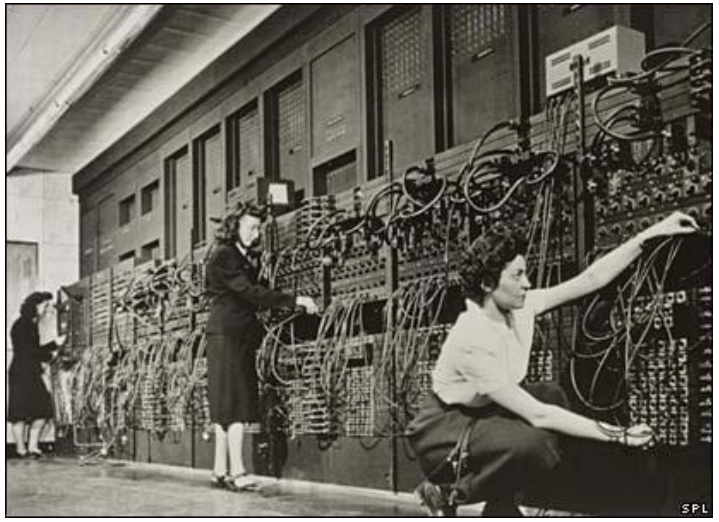


Lathe, p. 1218.

- 1940s to 1950s

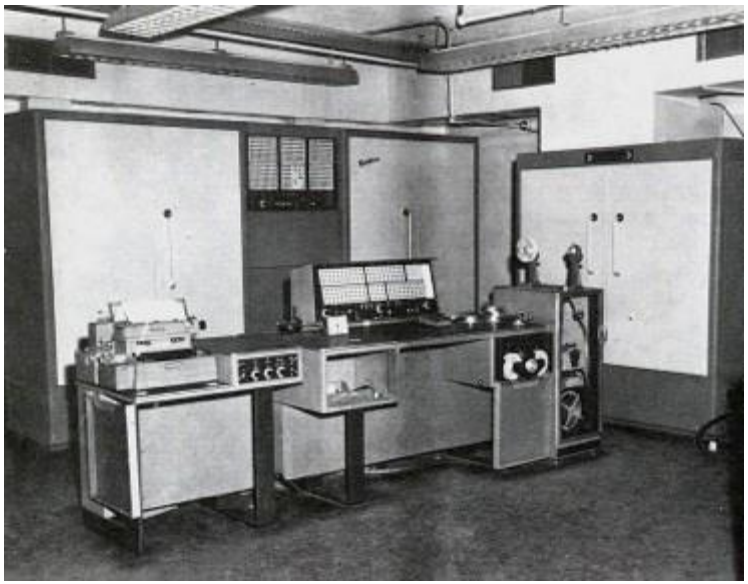
Early computers were incredibly complex to operate, users were highly trained engineers.
They were primarily used to perform large, complex calculations .
Since computers offered an alternative to hand calculations, they had to be evaluated to make sure they were functional.
Evaluation was about system reliability, how long it would function without failure.

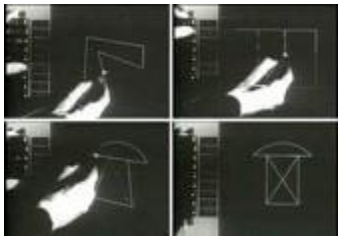




- # 1950s to 1960s(1)

Computers began to shrink and became slightly less complicated.
New input methods: magnetic tape, punch cards and eventually, keyboards.
The development of programming languages meant that computers were no longer just machines: you could tell them what you wanted to do.
User shifted from engineers to programmers and computer scientists





- # 1950s to 1960s (2)

Motivated by the economic impacts of using computers, evaluation was used to determine whether computers were actually providing a benefit.

Now, the focus of evaluation was system performance.

How quickly the system could process large amounts of data. Other variables: Processing speed, throughput, turnaround, availability.

- # 1960s to 1970s (1)

Large scale batch-processing machines were slowly replaced by time-sharing systems.

TSS were more expensive but also more efficient.

For the first time, people were using computers for non-programming tasks (e.g., text editing).
Thus, users were no longer trained experts, they were also non- specialist.

- 1970s to 1980s

With these users, evaluation became necessary to determine whether using a computer would actually save time.

Thus, evaluators began to focus on user performance, task completion time, error rate, ease of learning, etc.

- # 1980s to 2000s (1)

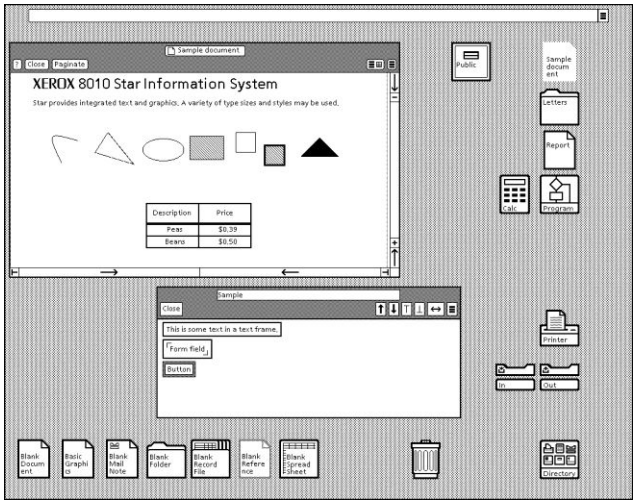
The GUI interface perfected and marketed by Apple, revolutionized the computer industry.
It led to an increase in the number of novice users who were using computers to complete everyday work tasks.
These users weren't willing to read user manuals or sit through training sessions.
Computer systems had to be used by anyone with minimal training and support.

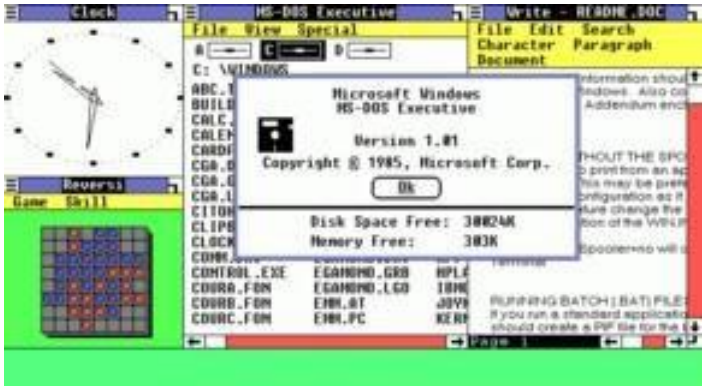
- 1980s to 2000s (2)

Evaluation efforts began to focus on usability.

Included learnability and ease of use in addition to speed and efficiency. The process of user centered design was developed as a way of engineering usability into computer systems.

Now Usability evaluation was a core feature of this process.





- 1980s to 2000s (3)

Formal methods of usability evaluation were created in the early 1980s.

E.g. usability testing with —think aloud‖

In the 1990s, the rise of the Web increased the visibility of usability testing but also added more challenges.

New —discount‖ methods: walkthroughs and expert reviews.

- 2000s to present(1)

Personal computing, social computing, mobile computing, and cloud computing have changed **how, where, and why** we use computers.

We're not just interested in task based performance issues anymore, the emotional side of using computers is paramount.

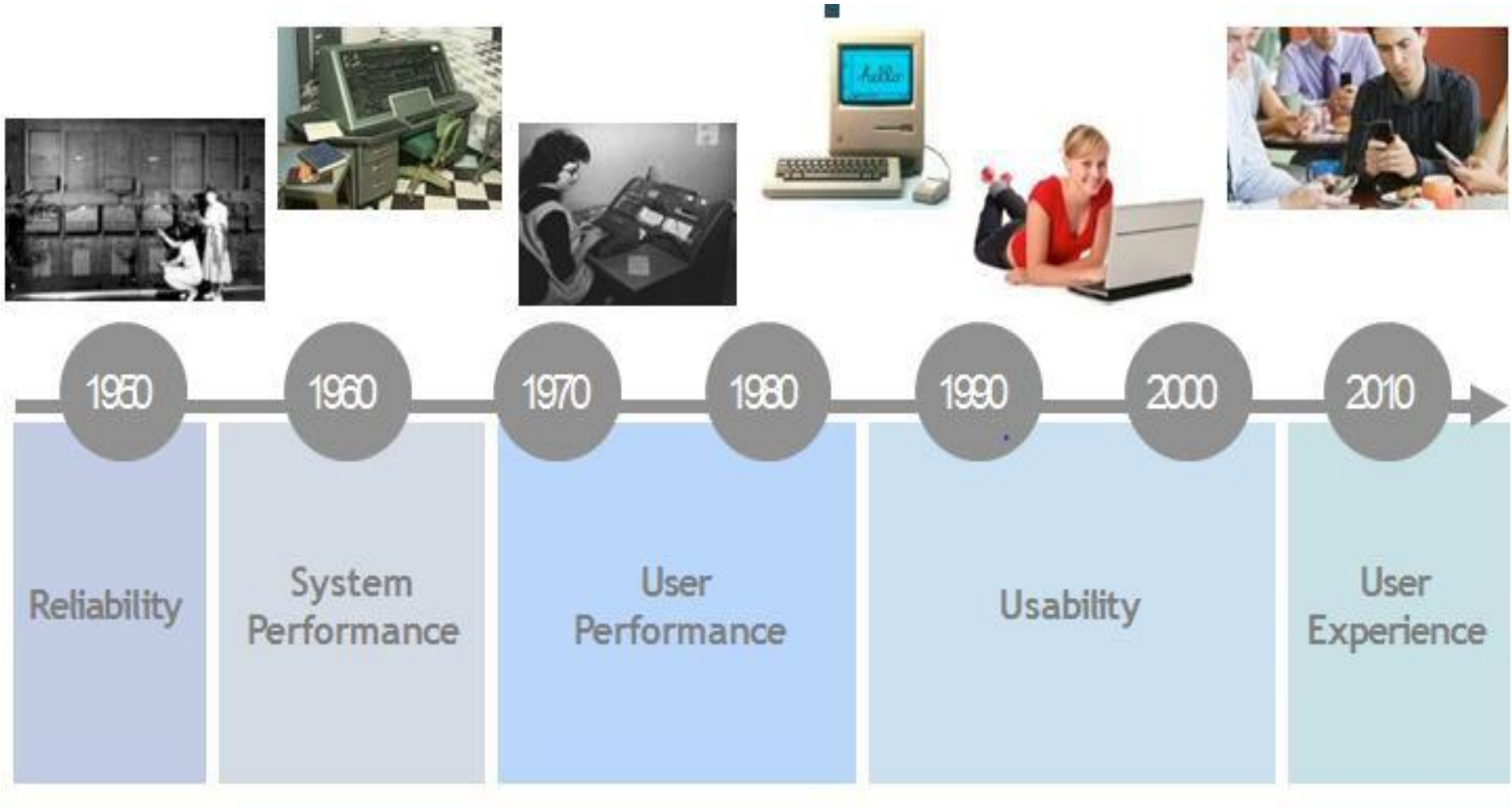
- 2000s to present(2)

Evaluation is slowly shifting from usability to user experience.

But, nobody really knows how to do UX evaluation well.

Many challenges of evaluating UX, but any evaluation is incomplete if it doesn't explore emotion in some way.

- **The Path to User Experience**



What this history tells us:

- UX is not just the new buzzword for usability , it represents a new design paradigm.

- As technology gets more complex, designing and evaluating also get more complex.

UX as a(n) product outcome

- UX is not technically a product it is an outcome.

- You can't design a user experience. You design for a user experience.

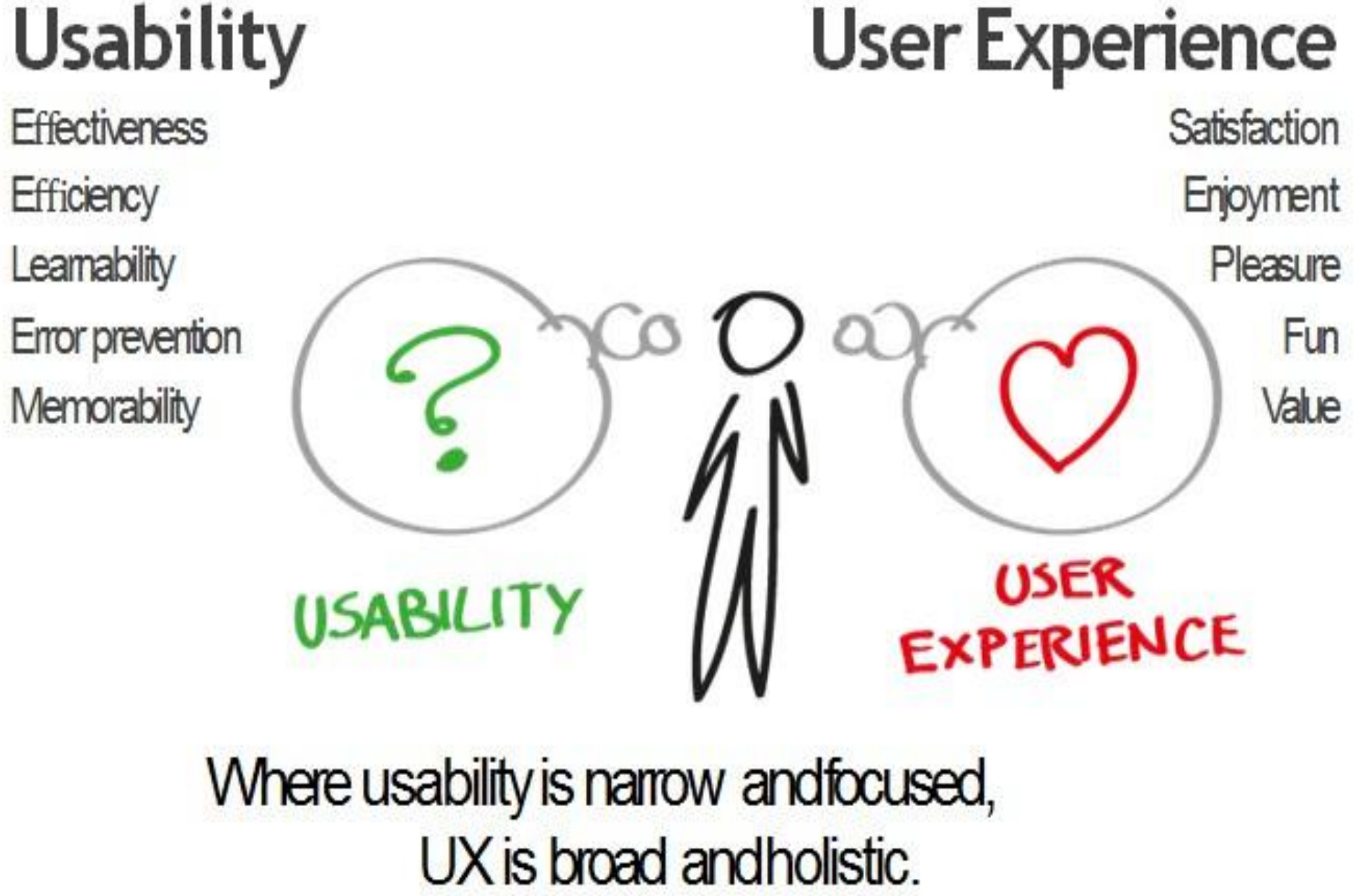
- This is a product

- This is an outcome

- This is a product

- This is an outcome

UX vs. Usability



4.1. The Traditional Concept of Usability

4.2. Misconceptions about Usability

4.3 The Expanding Concept of Quality

4.4 Functionality Is Important, but a Quality User Experience Can Be Even More So

4.5 A Good User Experience Does Not Necessarily Mean High-Tech or ―Cool‖

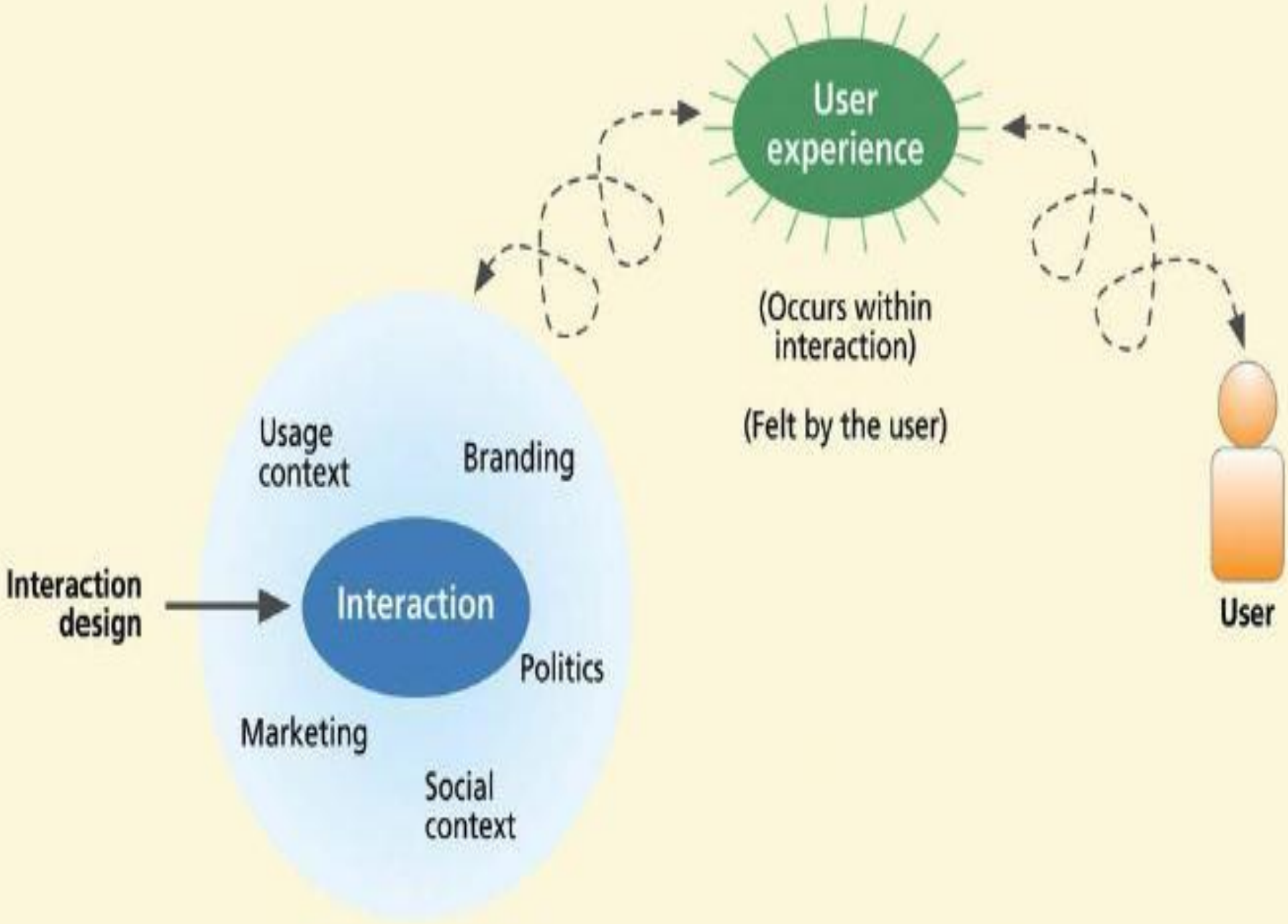
4.6 Design beyond Just Technology

4.7 Components of a User Experience

4.8 User Experience Is (Mostly) Felt Internally by the User

4.9 User Experience Cannot Be Designed

4.10 Role of Branding, Marketing, and Corporate Culture


User experience
(Occurs within interaction)
(Felt by the user)
User
Usage context
Branding
Interaction design
Interaction
Politics
Marketing
Social context

5) Emotional Impact as a part of User experience

On Designing for the "User Experience"

- **Utility**

The economic **utility** of a good or service is important to understand because it will directly influence the demand, and therefore price, of that good or service.

- **Functional integrity**

focuses on the interrelationship of structure and function

- **Usability**

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.

- **Graphic design**

combining text and pictures in advertisements, magazines, or books.

5.1 The Potential Breadth of Emotional Impact

- Sometimes a user's reaction to a system or product is extremely emotional, a user experience with a deep and personal emotional impact.

- ***Attractive things make people feel good***

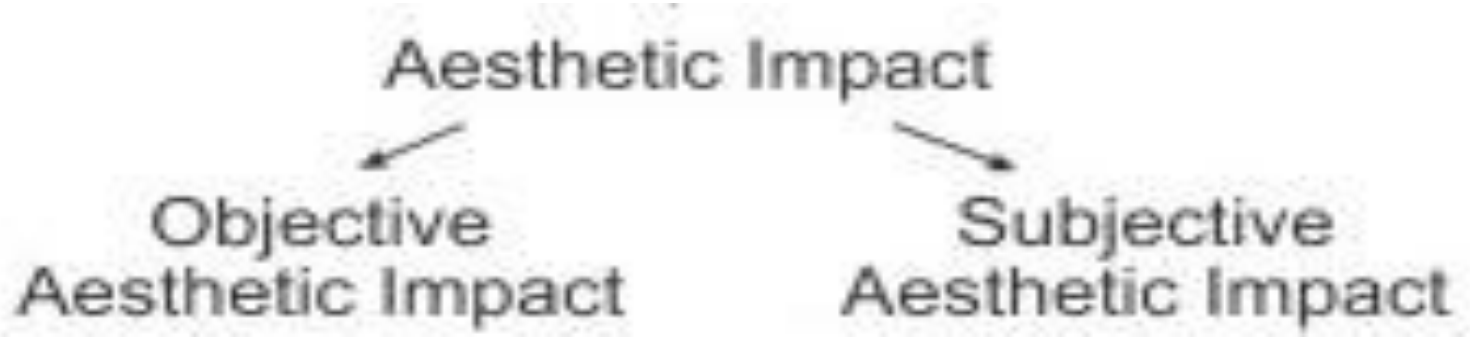
Orange juice

5.2 A Convincing Anecdote

- iPad turned the personal devices industry upside down and started a whole new class of devices.
- ***iPad is the most successful personal electronic device ever, selling 15 million in the first months.***

5.3 Aesthetics and Affect

- The movement from functionality and usability to aesthetics takes us from a utility to an experiential orientation, from a cognitive paradigm to an affective-centric paradigm.
- Interaction design can —touch humans in sensible and holistic ways‖ d .



innate in the object or the design and is known by certain features or characteristics regardless of how they are perceived

it depends on how they are perceived.

In particular how are the objective view and the subjective view connected with respect to design? How can the aesthetics of a product or system evoke a change in the person's/user's affect?

- Norman (2004) proposes a three-level processing model for emotional design, making connection between aesthetics and emotion explicitly:
- **Visceral processing** requires visceral design—about appearance and attractiveness, appeals to —gut feeling‖
- **Behavioral processing** requires behavioral design—about pleasure and effectiveness (usability and performance)

Reflective processing requires reflective design—

Kim and Moon (1998) describe emotions, the immediate affective feelings about a system, in seven dimensions:

- attractiveness
- symmetry
- sophistication
- trustworthiness
- awkwardness
- elegance
- simplicity

5.4 The Centrality of Context

- Context is even more important, essential and central to the meaning of emotional and phenomenological impact in situated usage.

- Because the resulting user experience for a product depends on how users view the product and strongly on the usage context, designers have to work hard.

6) User Experience Needs A Business Case

6.1 Is the Fuss over Usability or User Experience Real?

6.2 No One Is Complaining and It Is Selling Like Hotcakes

6.3 A Business Strategy: Training as a Substitute for Usability in Design

7) Roots Of Usability

7.1 A Discipline Coming of Age

7.2 Human Factors and Industrial and Systems Engineering

7.3 Psychology and Cognitive Science

7.4 Task Analysis

7.5 Theory

7.6 Formal Methods

7.7 Human Work Activity and Ethnography

7.8 Computer Science: Interactive Graphics, Devices, and Interaction Techniques

7.9 Software Engineering

Cockpit