Design of Interactive Systems (DIS)
Lecture 4: Experience Design

Dr. Kalpana Shankhwar, *kalpana@iiitd.ac.in*

Assistant Professor

Department of Human Centered Design,
IIIT Delhi

1

Design principles

- Design principles can be very broad or they can be more specific. There are also good design principles that derive from psychology, such as 'minimize memory load',

- Apple, Microsoft and Google all provide user interface design guidelines for the development of products that run on their platforms.

- The application of design principles has led to established design guidelines and patterns of interaction in certain circumstances such as the 'Undo' command in a Windows application, the 'Back' button on a website

- Design principles can guide the designer during the design process and can be used to evaluate and critique prototype design ideas.

- All the principles interact in complex ways, affecting each other, sometimes conflicting with each other and sometimes enhancing each other.

- They help to orientate the designer to key features of good design

Design principles

- Design principles are grouped into three main categories - learnability, effectiveness and accommodation

- Principles 1-4 are concerned with access, ease of learning and remembering (learnability).

- Principles 5-7 are concerned with ease of use, and principles 8 and 9 with safety (effectiveness).

- Principles 10-12 are concerned with accommodating differences between people and respecting those differences (accommodation).

Design principles

Helping people access, learn and remember the system

1. ***Visibility.*** Try to ensure that things are visible so that people can see what functions are available and what the system is currently doing.

2. ***Consistency.*** Be consistent in the use of design features and be consistent with similar systems and standard ways of working.

3. ***Familiarity.*** Use language and symbols that the intended audience will be familiar with.

4. ***Affordance.*** Design things so it is clear what they are for; for example, make buttons look like push buttons so people will press them.

Design principles

Giving them the seme of being in control, knowing what to do and how to do it

- ***Navigation.*** Provide support to enable people to move around the parts of the system: maps, directional signs and information signs.

- ***Control.*** Make it clear who or what is in control and allow people to take control. Also make clear the relationship between what the system does and what will happen in the world outside the system.

- ***Feedback.*** Rapidly feed back information from the system to people so that they know what effect their actions have had. Constant and consistent feedback will enhance the feeling of control.

Design principles

Safely and securely

- ***Recovery.*** Enable recovery from actions, particularly mistakes and errors, quickly and effectively.

- ***Constraints.*** Provide constraints so that people do not try to do things that are inappropriate.

In a way that suits them

- ***Flexibility.*** Allow multiple ways of doing things so as to accommodate people with different levels of experience and interest in the system.

- ***Style.*** Designs should be stylish and attractive.

- ***Conviviality.*** Interactive systems should be polite, friendly and generally pleasant. Nothing ruins the experience of using an interactive system more than an aggressive message or an abrupt interruption.

Summary

- Paying attention to design principles can help sensitize the designer to key aspects of good design.
  - Access to interactive systems for all people is an important right.
  - Usability is concerned with balancing the PACT elements in a domain.
  - Acceptability is concerned with ensuring that designs are appropriate to contexts of use.
  - Twelve design principles are particularly important. They can be grouped into three main design issues of learnability, effectiveness and accommodation.

Overview

Experience design

- Designers of interactive systems are increasingly finding themselves going beyond the design of usable systems and are instead expected to design systems that provide people with great experiences.

- A shopping list application on the iPhone, for example, needs to be much more than functional; it needs to be fun to use, engaging and enjoyable.

- Websites have to attract and keep customers if they are to be profitable and, once they provide appropriate functionality and content, they will do that only if people enjoy using them.

- we explore the factors that contribute to creating high- quality experiences for people using interactive systems.

- This area of HCI and interaction design is often called user experience (UX), though terms such as customer experience (CX) are also used

Aims

- Discuss ideas of experience and the different traditions from which concepts come
- Understand Nathan Shredroff's model of experience
- Understand 'designing for pleasure'
- Understand the importance of aesthetics
- Understand service design.

Experience Design

- Importance of designing for **pleasure**

- Researchers talk about *ludic*, *hedonomics* and *funology* in design

- Homo Ludens explores the concept of *play* in different cultures

- 'play' something more **fluid and self-motivate**

- Experience design is about recognizing that interactive products and services do not just exist in the world, they affect who we are.

(a)

(b)

Experience Design

- Experience is concerned with **all the qualities of an activity that really pull people in**
  - whether this is a sense of immersion that one feels when reading a good book, or a challenge one feels when playing a good game, or the fascinating unfolding of a drama.
- It is concerned with all the qualities of the interactive experience that make it **memorable, satisfying, enjoyable** and **rewarding**.
- **Emotion** is a very important part of experience as *experience is about feeling*.
- Experiences, therefore, **cannot** really be designed.
- Designers can design *for* experience, but it is individuals and groups who have the experience.

Engagement

- Engagement is about ensuring that the **interaction flows.**

- If **usability** is concerned with optimizing or balancing the PACT elements in some domain, **engagement** is when the PACT elements are truly harmonized.

- Nathan Shedroff identify following as the key elements
  - *Identity, Adaptivity, Narrative, Immersion, Flow*

Engagement

- **Identity**
  - A sense of authenticity is needed for identity and expression of the self. The sense of authenticity is often only noticed when it breaks down. (Are you a Mac or a Windows person or don't you care?)

- **Adaptivity**
  - *Adaptivity* is to do with change and personalization, with changing levels of difficulty, pace and movement.

- **Narrative**
  - *Narrative* is to do with telling a good story, with convincing characters, plot and suspense.

Engagement

- **Immersion**
  - *Immersion* is the feeling of being wholly involved within something, with being taken over and transported somewhere else.

- **Flow**
  - *Flow* is the sense of smooth movement, the gradual change from one state to another.

Medium

- A medium is engaging if it draws the person in, if it seems to surround the activity, if it stimulates the imagination.

- An engaging medium allows for continuity and variety, for 'flow' and movement between many subtle differentiations of conditions.

Gamification

Gaming Experience

- Lazzaro, 2012 draws the **link between fun and emotion** in her contribution to understanding what makes interactive activities engaging.
- Five ways that emotions impact the gaming experience:
  - *Enjoy.* Emotions create strong shifts in internal sensations.
  - *Focus.* Emotions help gamers to focus effort and attention.
  - *Decide.* Emotions are central to decision making in games.
  - *Perform.* Emotions increase appeal to enhance performance.
  - *Learn.* Emotions are important for motivation and attention.
- Four Fun Key model
  - hard fun, easy fun, serious fun and people fun
  - unlock emotions such as curiosity, relaxation, excitement and amusement

Fun Model

- *Hard fun* is concerned with **overcoming adversity**, the emotion that Lazzaro calls Fiero.

- *Easy fun* evokes the key emotion of **curiosity**.

- *Serious fun* is about **relaxation**.

- *People fun* concerns the emotion of **amusement**. It arises when people are connected to one another in cooperative or competitive activities

Create Engaging Experience

- Using these four fun keys helps the interaction designer to produce a UX that moves the user through different emotions, helping to create engaging experiences
  - Deciding what challenges to include in the product and whether these are short-term challenges or longer-term 'quests'
  - Deciding how to deal with the different skill levels of different users and how to accommodate changing skill levels

Create Engaging Experience

- Deciding what rewards to provide people with and how rewards relate to challenges and skill levels
- Deciding if people can collect things, or complete things like puzzles, and if they do collect things how they relate to rewards, abilities and skills
- Deciding how people will relate to other people through competition such as league tables and posting achievements or through cooperation and working with others to achieve a common goal.

Designing for Pleasure

- Product designers have long been concerned with building in pleasure as a key marketing point.

- Designing for pleasure can be as important as ensuring that an interactive device is usable.

- In the context of interactive devices or products, designing for pleasure contributes to 'emotional, hedonistic and practical benefits'

Aspects of Pleasure

- Tiger, 1992 has argued that there are four dimensions or aspects of pleasure.
  - **physio-pleasure:** This is concerned with the body and the senses.
  - **socio-pleasure**: Socio-pleasure arises from relationships with others.
  - **psycho-pleasure**: It refers to cognitive or emotional pleasure in Tiger's framework.
  - **ideo-pleasure**: It concerns people's values - things one holds dear or meaningful - and aspirations.

Aspects of Pleasure in Practice

Let's see how they work by returning to the example of the MacBook Air laptop and analysing it against Tiger's four pleasures.

- *Physio-pleasure.* The machine is light, the texture of the titanium shell is pleasing and the keyboard is responsive.

- *Socio-pleasure.* Certainly when first released, owning a MacBook Air might be thought to enhance image as it distinguishes the owner as someone with the discernment to adopt a stylish remodelling of the laptop. There is also a certain socio-pleasure in being part of a small group of Apple devotees among a much larger community of PC users in our particular workplace.

- *Psycho-pleasure.* The MacBook Air provides relatively seamless integration between different media and so generates satisfaction from streamlining many work tasks.

- *Ideo-pleasure.* For some consumers, Apple products remain an embodiment of independence, creativity and free-thinking - attributes inherited from the early image of the corporation. Whether this is still an accurate perception is not the point: it is enough that people feel that it is so.

Product Attachment

Six 'framing constructs' that captured important elements of product attachment:

- Role engagement concerned support for the different roles that people play in their lives. It arises from the observation that people have to switch roles depending on the context, such as the time of day, or relationship required for a particular activity.

- Control concerned empowering people, giving them control over the product. This could be control over the 'look and feel' of the product, personalizing it to their tastes, or it could be control over the functionality of the product.

- Affiliation concerns how people develop feelings for a product by ensuring that the product meets a real need for them.

- Ability and bad habit is a construct concerned with enhancing people's abilities and preventing them making mistakes or engaging in their bad habit. The smart bag, for example, stopped people forgetting things.

- Long-term goals need supporting as well as short-term functions. People build their attachment by recognizing that the product supports their long-term goals.

- Ritual concerns how the product fits in with important ritual aspects of the person's life.

Aesthetics

- Aesthetics is a large area of study concerned with human appreciation of beauty and how things are sensed, felt and judged
- Norman's book *Emotional Design* (2004) discusses people's experiences in terms of
    - Visceral elements
    - Behavioural elements
    - Reflective elements

Aesthetics

- **Visceral elements**: At the visceral level lies the perceptual aesthetics of an experience.

- **Behavioural elements**: At the behavioural level a positive emotional response will come from feeling in control and from the understanding that comes through use.

- **Reflective elements**: At the reflective level are issues of personal values and self-worth.

Product Emotions

- The product and emotion navigator and a non-verbal method for measuring people's response to product features, called PrEmo.
- It consists of fourteen animations of a cartoon character, each expressing an emotion.
  - **Positive**: inspiration, desire, satisfaction, pleasant surprise, fascination, amusement, admiration
  - **Negative**: disgust, indignation, contempt, disappointment, dissatisfaction, boredom and unpleasant surprise
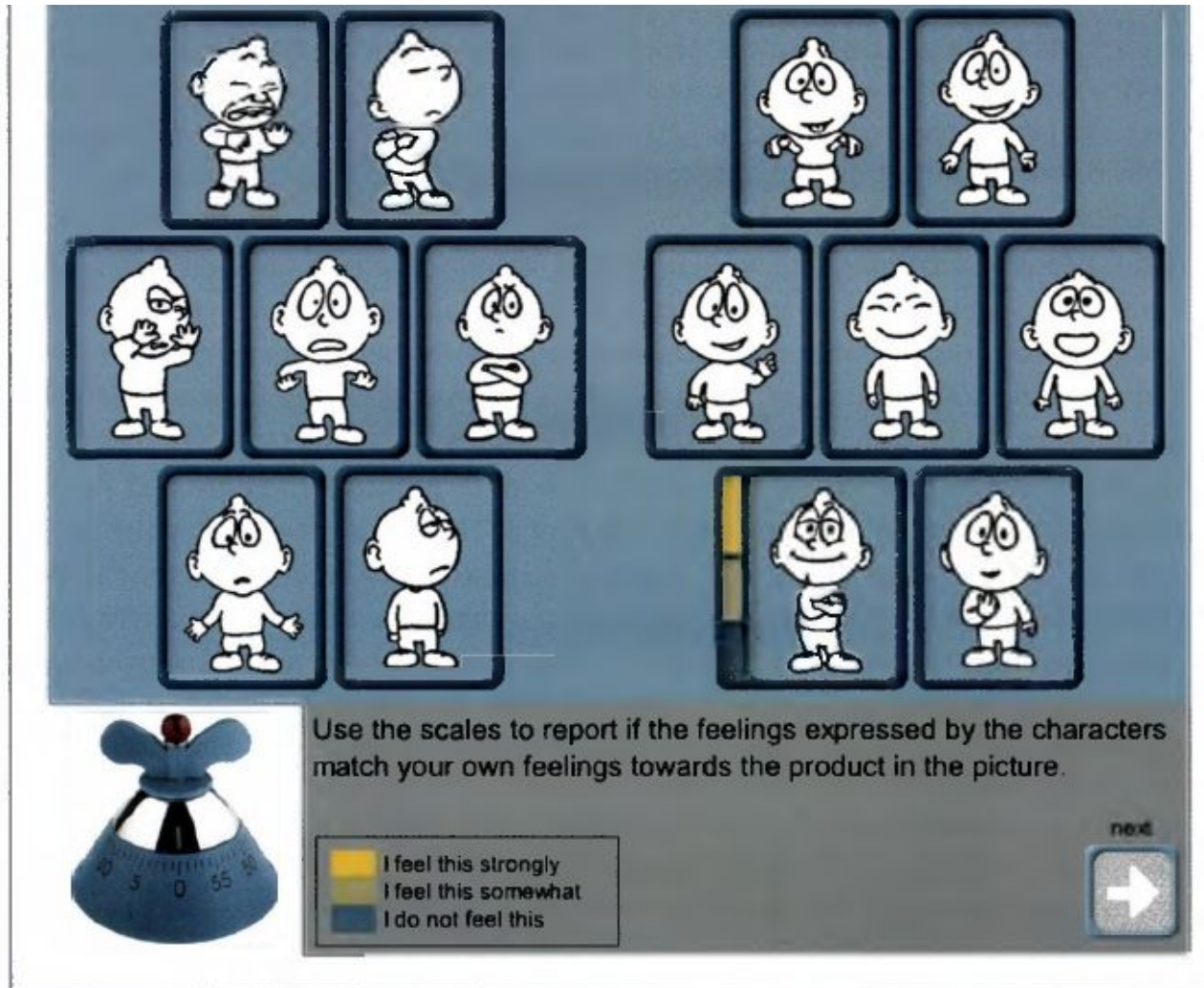
Product Emotions

Figure 5.5 PrEmo

(Source: Desmet, P.M.A. (2003), pp. 111-23)

Aesthetics of Interactive Systems Lavie and Tractinsky (2004)

- Classical aesthetics
  - clean, clear, pleasant, aesthetic, symmetrical
- Expressive aesthetics
  - original, sophisticated, fascinating, special effects, creative
- They assert that "*what is beautiful is useable*'
- For Boehner *et al.* (2008) the issue is to make products not just right, but meaningful.

Service Design

- The job of the designer is now not just to design the device, the software, and the way you interact with it, **but to design the whole experience of the service** so it is coherent and satisfying.

- Dan Saffer (2008) defines a service as **a chain of activities that form a process and have value**.

- Key thing about service design is that there are **multiple 'touch points'** where people encounter a service and the interactions with services happen over time

- To be well designed these touch points need to demonstrate a consistent look and feel, and present consistent values

Service Design

- A consistent and engaging service must fit in with people's lifestyles.

- There are both short-term and long-term interactions and the service needs to know what is mine, what I am interested in and who I am willing to share what with; and how this changes depending on how I am feeling.
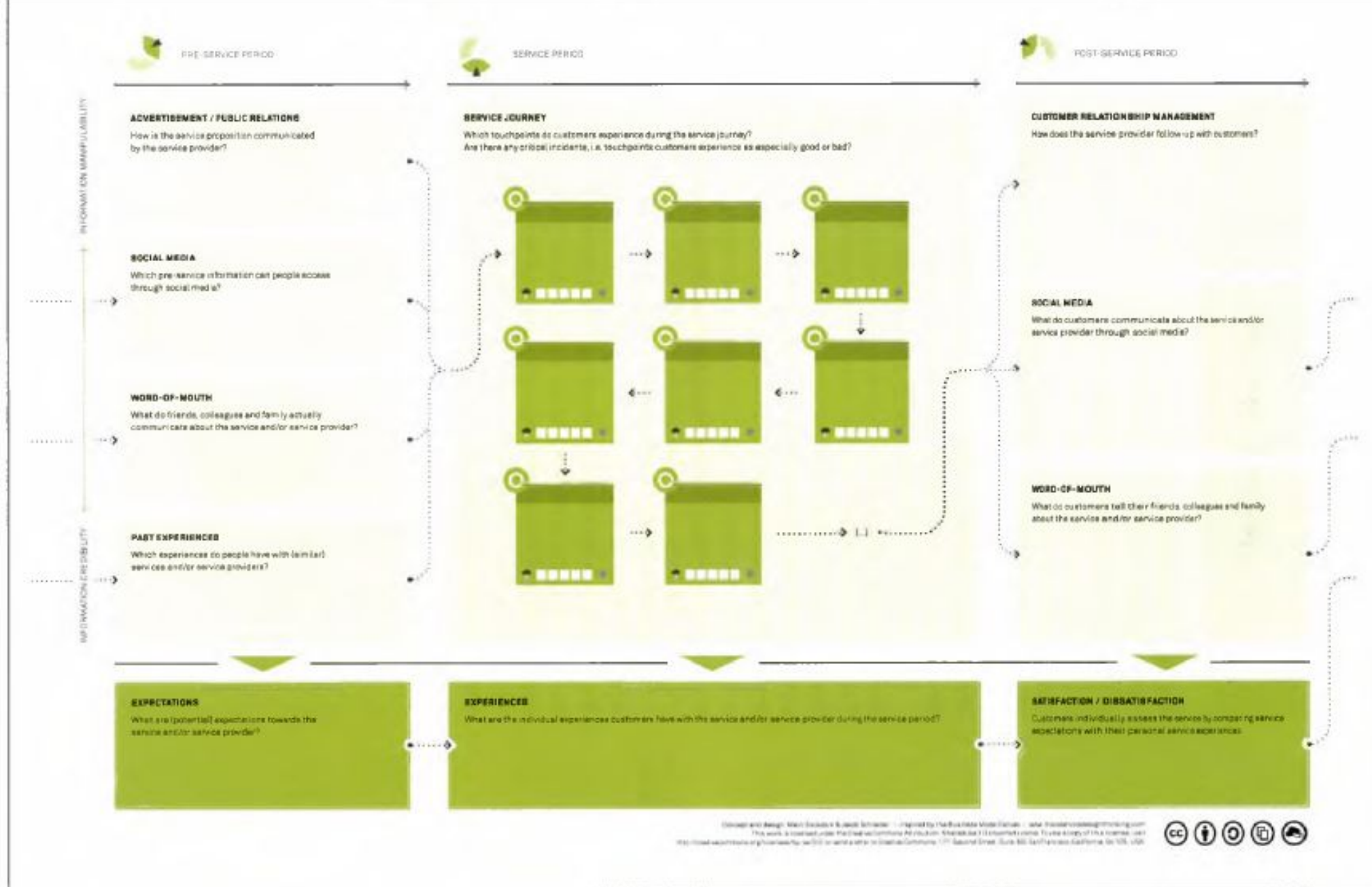
Figure 5.6 The customer journey canvas

Designing by Lifestyles (DbL)

- One key design ambition of service design is to achieve a recognizable consistency and branding across experiences.

- Experiences between people and technology need to develop over time, and move from interactions to relationships.

- The notion of a 'lifestyle' is deliberately constructed to be more abstract than personas and scenarios.
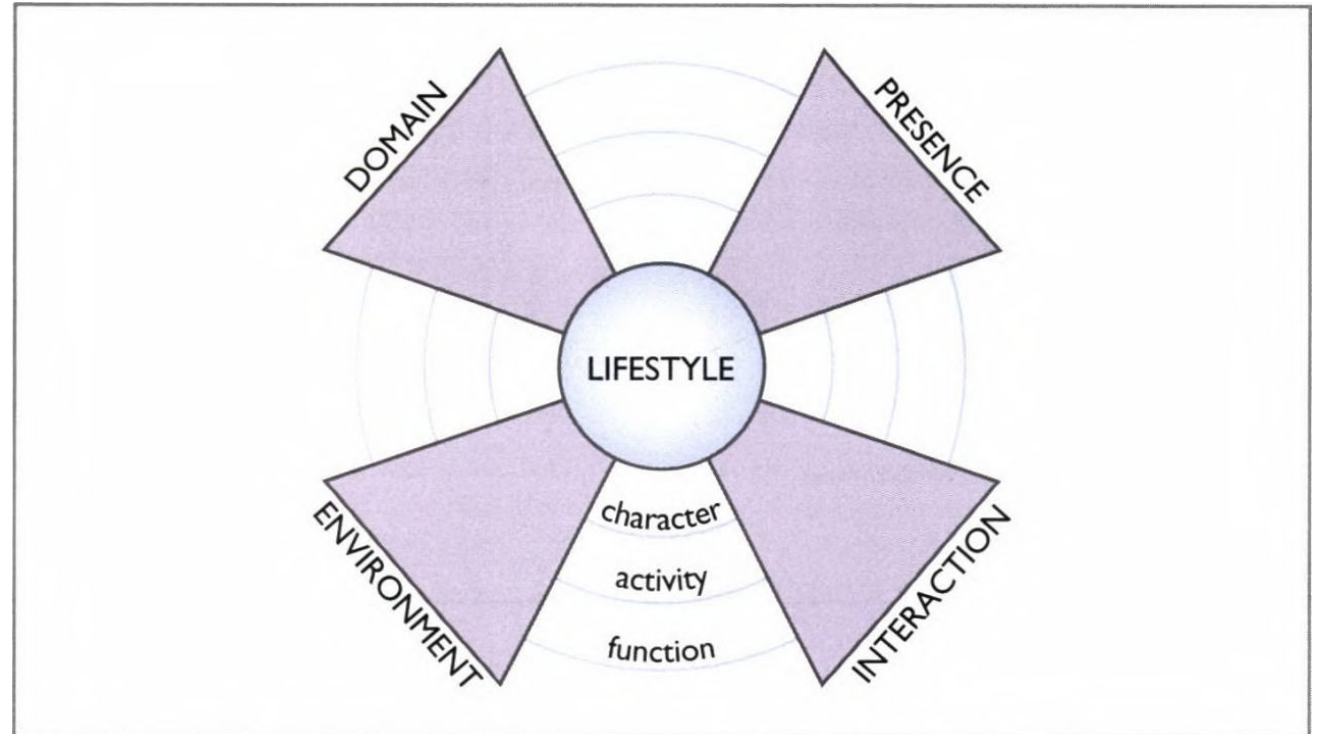
Summary

- Experience design is concerned with all the issues that go into providing an engaging and enjoyable experience for people in both the short and longer term.

- This includes aesthetics, pleasure and emotional engagement in terms of both the product and the service provided.

- It is important to consider experiences at a physical, behavioural and social level and in terms of the meanings people derive from their experiences.

- Experience design draws on:
    - Theories of experience, emotion, aesthetics, and games.