

Course : ISYS6537 – User Experience
Year : 2019

The process of Human-Centred UX Design

Session 03 - 04

Learning Outcomes

- LO 1: Explain the essentials of designing user experience

References

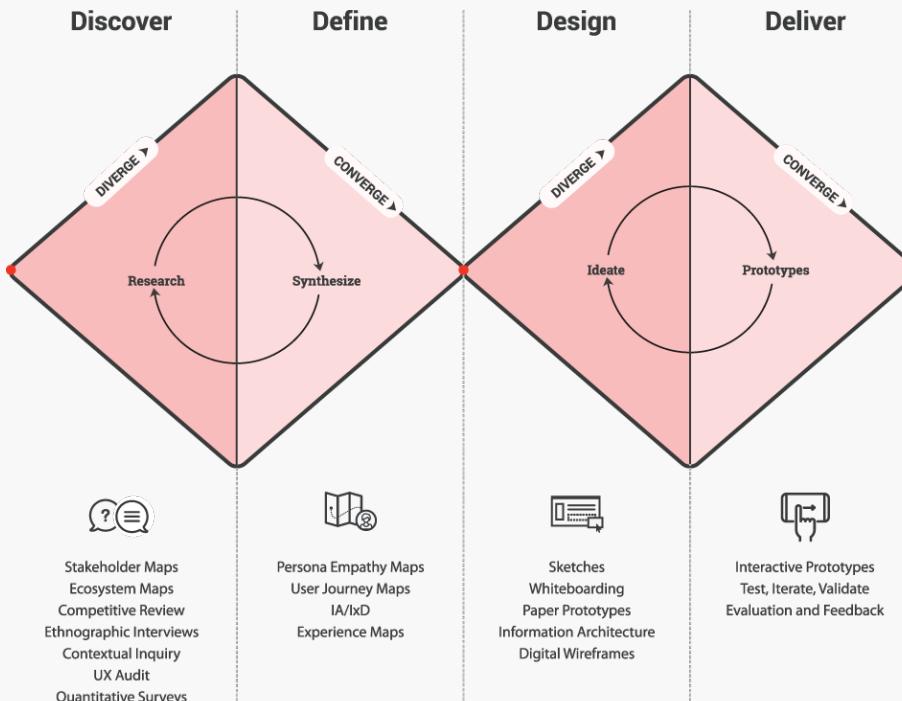
- Benyon, David. (2019). ***Designing User Experience: A guide to HCI, UX and interaction design (4th Edition)***. 04. Pearson. United Kingdom. ISBN-13: 978-1292155517

Sub Topics

- Introduction
- The process of UX Design
- Developing personas
- Developing scenarios
- Using scenarios throughout design
- A scenario-based UX design method

Introduction

- There are many different ways of characterizing the activities involved in the design process.
 - For David Kelley, design has three activities: understand, observe, and visualize.
- Another popular charaterisation of UX Design process is double diamond model developed by the Design Council (UK) in 2005 (discover, define, design, adeliver).



The Process of UX Design

- Evaluation is central to delivering a good UX. Everything gets evaluated at every step of the process.
- The process can start at any point, sometimes there is a design in place, sometimes we start with a form of envisionment, such as prototype, sometimes we start with understanding.
- The activities can happen in any order. For example understanding might be evaluated and a prototype built and evaluated and some aspect of a physical design might then be identified.

The Process of UX Design

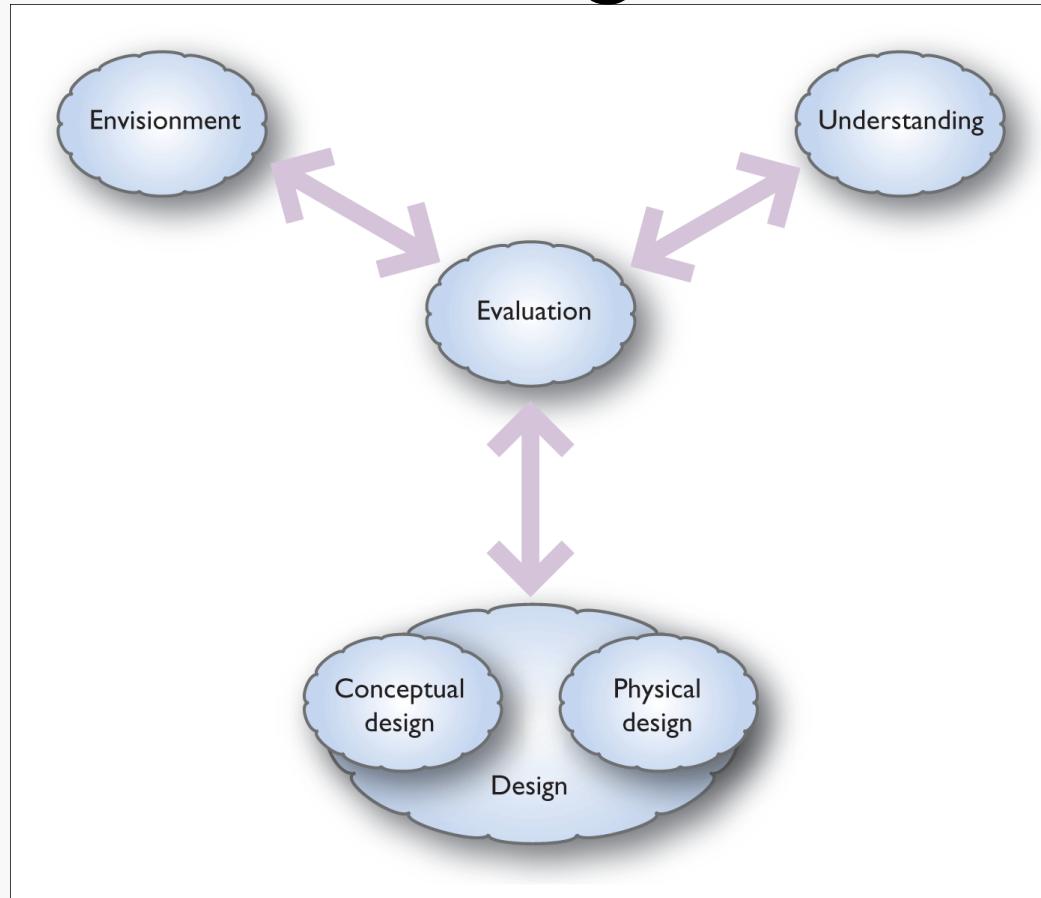


Figure 3.1 Understanding, design, evaluation, envisionment

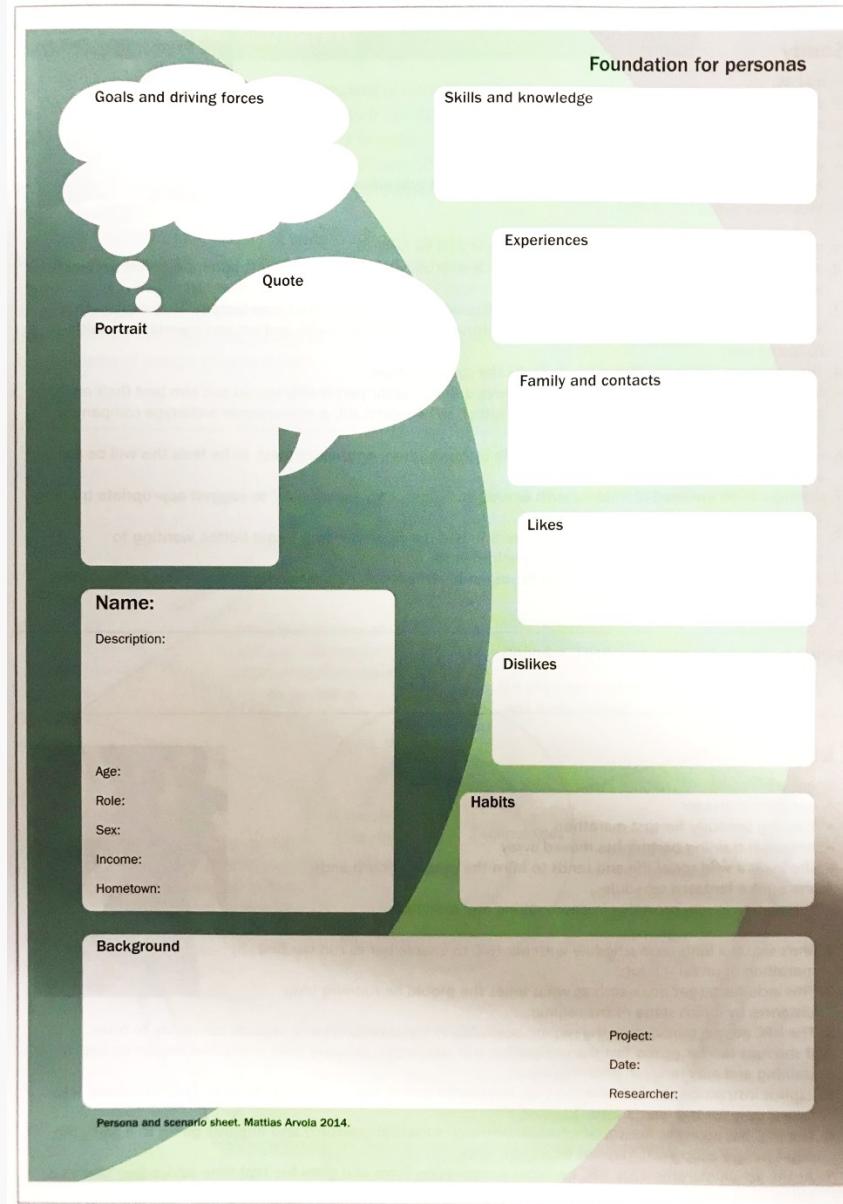
The Process of UX Design

- Understanding
- Design
 - Conceptual Design
 - Physical Design
- Envisionment
- Implementation and Project Management

Developing Personas

- Personas are concrete representations of the different types of people that the system or service is being designed for.
- Designers also need to recognize that they are not designing for them selves.
- Designers create personas so that they can envisage the people they are designing for; they create personas so that they can put themselves in other people's shoes.
- As any new system is likely to be used by different types of people, it's important to develop several different personas.
- There's no agreed standard for defining and documenting personas.

Developing Personas



Developing Personas

Sandy

- age 46
- drives a lot
- drinks and eats too much
- recently divorced
- children in early 20s
- had recent health scare (suspected heart attack which was actually angina)
- kids have bought him a HFC

1. We meet Sandy in a hospital room, he's being visited by his kids.
2. They are worried about his health, he does little exercise and since his wife left him his diet has become appalling.
3. They give him a HFC (what is this?!) which will combine with his current home system. They explain that it's intended to help raise his general level of fitness, monitor his health and set and maintain a healthy balanced diet.
4. They all leave the hospital and Sandy starts the configuration.
5. Being ex-army Sandy decides that a tough-love drill instructor personality would suit him best (he's on board with the fact that he needs to get healthy), so he selects Alf, a no-nonsense archetype companion character.
6. He opens his exercise regime to be accessible by his children, on their request, as he feels this will be an added incentive for him to exercise.
7. Configuration involved biometrics such as weight, height, etc., allowing Alf to suggest appropriate training and diet.
8. Its aim is to understand whether the owner is in bad condition needing to get better, wanting to maintain current health or aim for high performance.
9. Alf reprimands bad behaviour (such as buying unhealthy food), nags when he doesn't exercise, but offers positive motivation when he does.

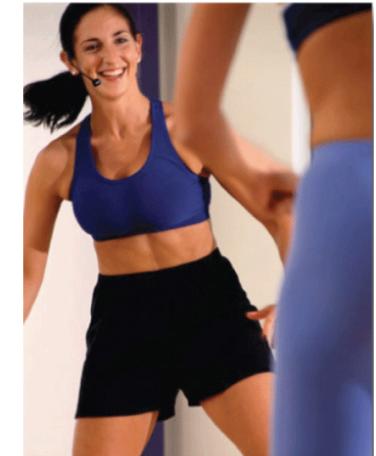


Developing Personas

Mari

- age 23
- aerobics instructor
- training seriously for first marathon
- her usual training partner has moved away
- she leads a wild social life and tends to burn the candle at both ends
- she's got a targeted schedule
- companion is very proactive in pace making and motivation

1. She's set up a long-term schedule with her HFC to enable her to run her first marathon in under 4 hours.
2. This includes target goals such as what times she should be running long distances by which stage of the regime.
3. The HFC adapts to maintain the regime when Mari's social circumstance impacts her ability to train.
4. If she runs too far or too fast the companion will advise that this may have a negative impact on her training and may result in potential injury.
5. Explicit instructions in real time run ('ok, now we're gonna push hard for 2 minutes....ok, well done, let's take it easy for the next 5....etc.').
6. The HFC has access to her social schedule (through social companion?) and suggests going to a party the night before a long run may not be a great idea.
7. At the actual marathon her HFC becomes a motivating force and gives her real-time advice (eg, 'there's a hill coming up, pace yourself', it knows this from a run plug-in she bought for the HFC).



Developing Personas

Bjorn

- Age 32
 - Office worker (ad account manager)
 - No children, lives alone
 - Dog died (used to walk it for exercise)
 - Starting to put on weight
 - Used to play football at university, much less active now
 - Active social life
 - 'I want to stay fit, but on my own time and fitting in to my own schedule'
1. Home from work, he was meant to go out the previous evening but got invited out to a dinner party instead. This evening is now free, so he decides to go for a run.
 2. He's in his living room and sets up for his run. This involves:
 - route choice
 - exercise level, eg easy jog or hard run (specific pacing feedback choice, eg within PB)
 - music choice
 - disturbability status (eg, open to contact/running partner)
 - weather
 - (warm up/stretching?)
 3. He gets changed and leaves the house, the handover is transparent from living room companion to mobile device-based companion and is aware of all Bjorn's choices regarding run setup.
 4. Just as he's about to begin, the sun breaks through the clouds and Bjorn decides he'd rather go for a longer run than initially selected in his living room; this change must be facilitated through his mobile companion device. Selective rather than creative process (eg, chose run three on route 2).
 5. He starts running hard.
 6. Asked whether he's warmed up as he's running above a warm-up rate.
 7. He slows down to a more gentle jog and reaches his start point.
 8. A touch of the device indicates he's starting his run.
 9. Music begins.
 10. Pace-setting tactile feedback begins.
 11. Midway through run he's informed that Julie is also running in the woods and has set her HFC at open to running partners (this is a closed list of the pre-set social network that Bjorn belongs to).
 12. He slows down and runs on the spot and sends her a greeting, asking if she'd like to join him; she says yes.
 13. She catches up and the companion automatically reconfigures his pacing settings to match hers.
 14. After a circuit they part ways and Bjorn heads home.
 15. On entering the house Bjorn warms down and stretches which induces a brief summary on his mobile device whilst the detailed data from his run is transparently transferred to his home network.
 16. He walks into the kitchen to grab a glass of water and plan what to make for dinner. His home companion notes that he went for a long run today so he must be hungry, and suggests some recipes based on what he has in his fridge: 'how about the steak, it goes out of date tomorrow'. Nothing takes his fancy so he asks the companion to search online whilst he has a shower. Takes shower, comes down and is presented with some new recipes and the fact that Julie called and asked him for a drink that night.
 17. At a later time he asks for an overview of his past three months' exercise. His companion notes that his heart rate is recovering quicker which suggests he's getting fitter, but for the past two weeks he's not been running for as long.



Developing Scenarios

- Scenarios are stories about people undertaking activities in contexts using technologies.
- They appear in a variety of forms throughout UX design and are a key component of many approaches to design.
- John Carroll remains an excellent introduction to the philosophy underlying the approach. In it, he illustrates how scenarios are used to deal with the inherent difficulty of doing design.

Developing Scenarios

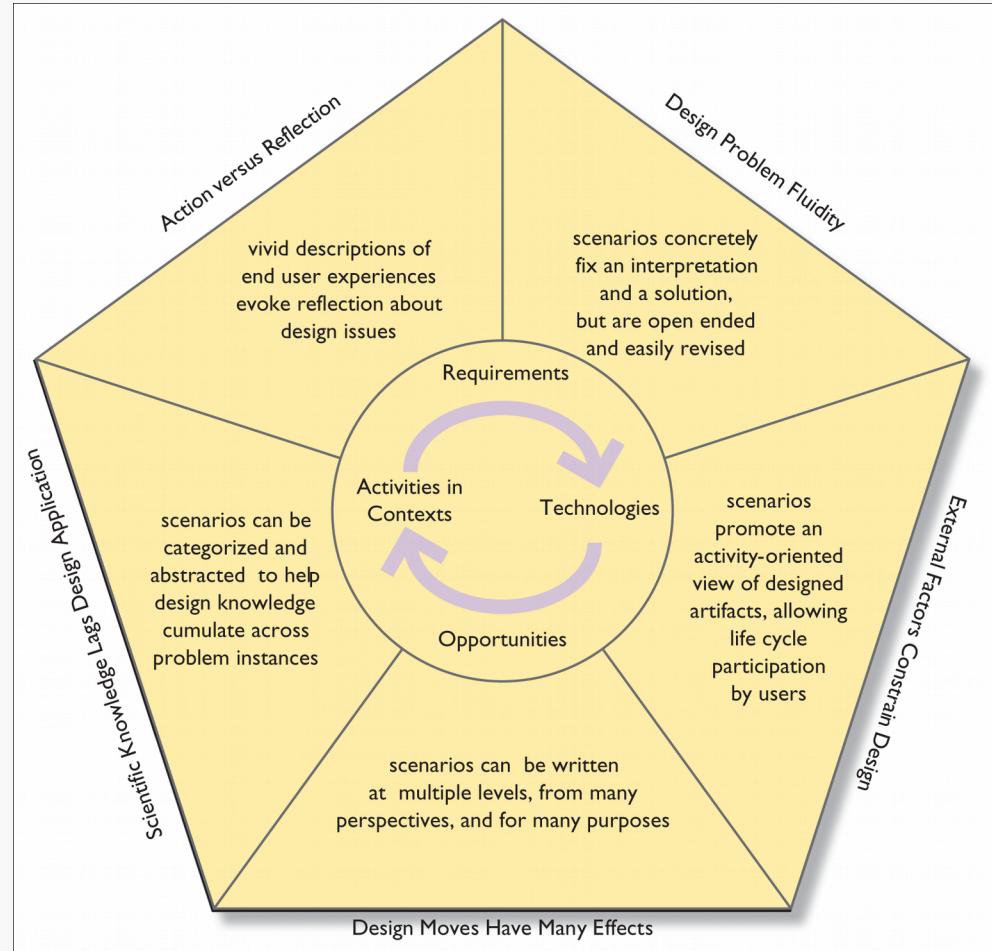


Figure 3.3 Challenges and approaches in scenario-based design

Source: After John M. Carroll. *Making Use: Scenario-based Design of Human-Computer Interactions*. Fig. 3.2, p. 69 © 2000 Massachusetts Institute of Technology, by permission of the MIT Press

Using Scenarios Throughout Design

- Scenarios are a core technique for UX design.
- They are useful in understanding, envisioning, evaluation, and both conceptual and physical design.
- We distinguish four different types of scenario :
 - Stories (real-world experiences of people)
 - Conceptual scenarios (more abstract descriptions in which some details have been stripped away)
 - Concrete Scenarios (generated from abstract scenarios by adding specific design decisions and technologies and once completed, these can be represented as use cases)
 - Use Cases (formal descriptions that can be given to programmers)

1. The user is moving from a standard view of their photos to a search mode. This is a voice driven function.

2. Here the user narrows down the field by establishing a search parameter again by voice. Note that the user could search for any metadata parameter or combination of parameters that the system has established. Indeed the system could proactively suggest additional ones.

3. Having used voice to establish the smaller field, the user now applies **touch** to quickly flick through the pictures. Additional touch functionality could include scaling, cropping or editing.

4. Having found the photo they want to send, the user now combines speech with touch to indicate that the gesture of flicking to the left means email that specific image to the user's uncle.

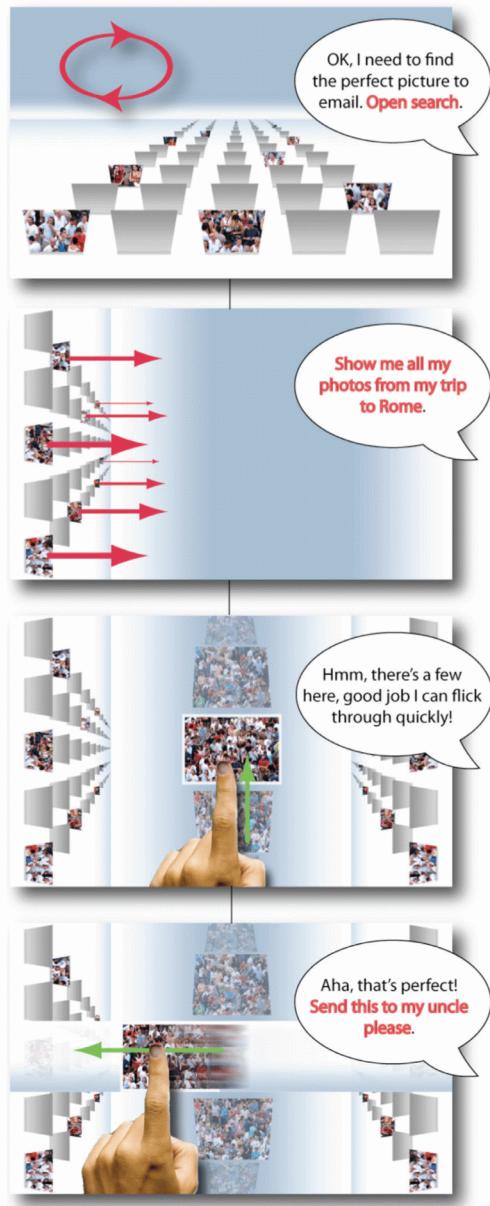


Figure 3.7 An scenario of multimodal interaction with a photo companion

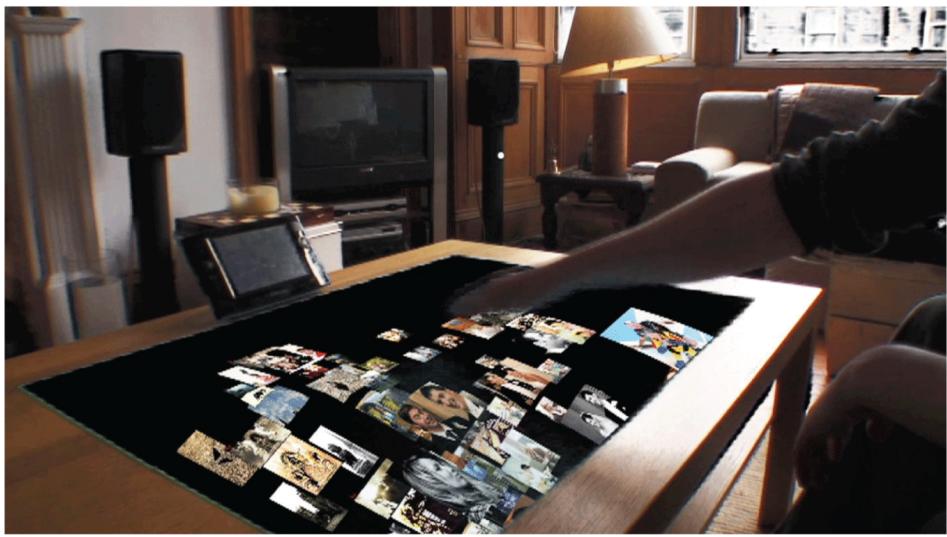


Figure 3.8 An example of a multimodal interaction moving between displays from a digital photoframe to a smart coffee table

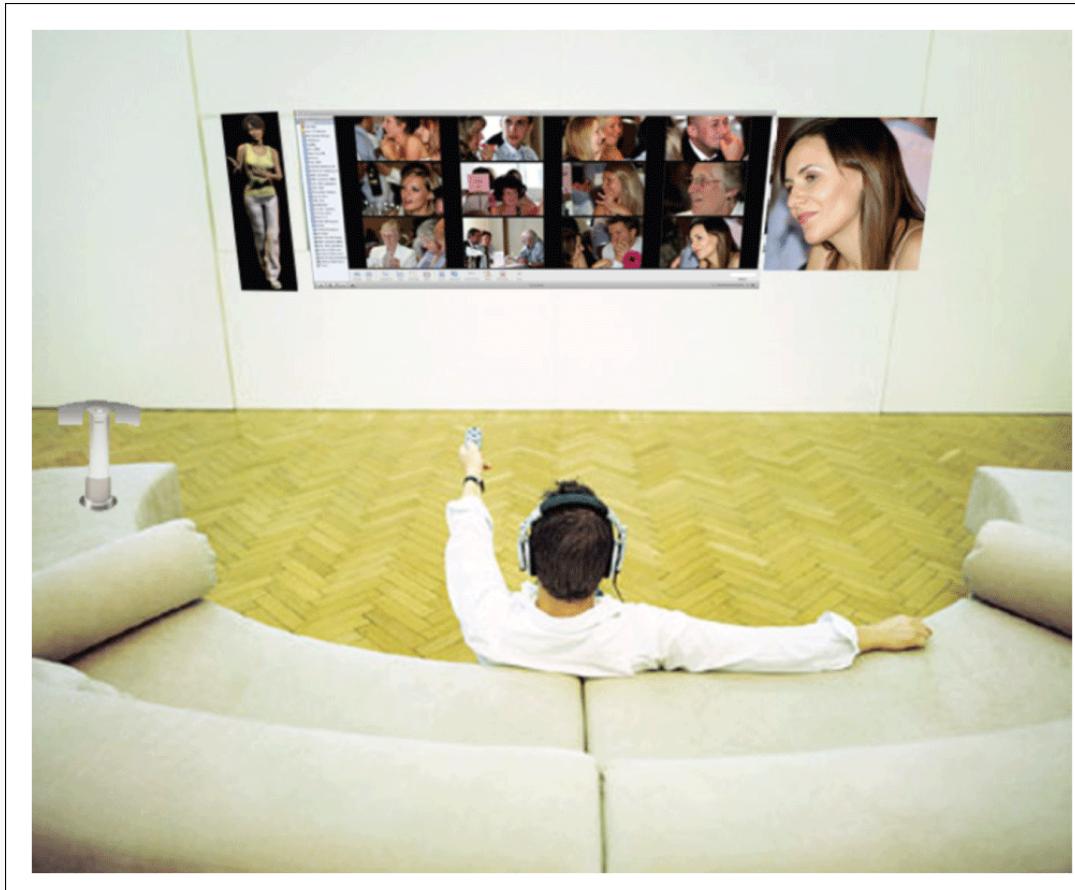


Figure 3.9 An example of a gesture-based multimodal interaction with a remote screen

Using Scenarios Throughout Design

- Three critical processes involved in design and how they interact with the different scenarios type.

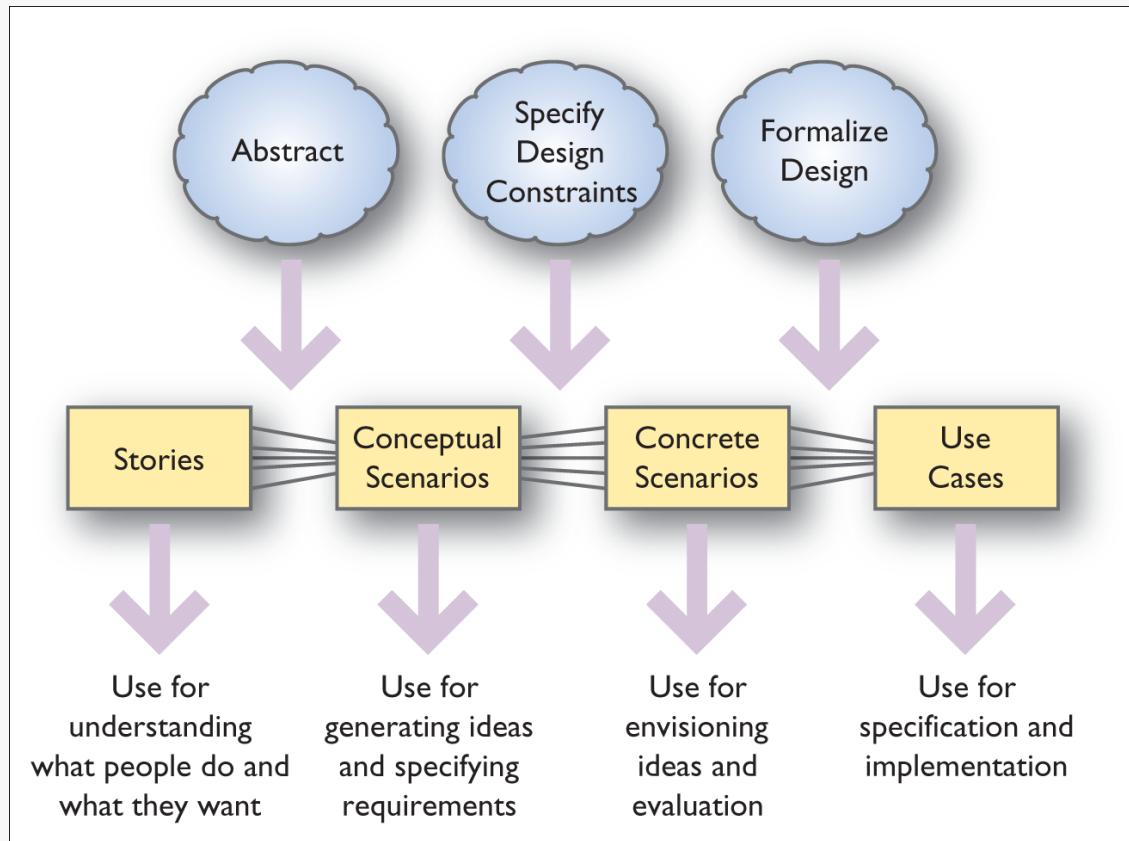


Figure 3.10 Scenarios throughout design

Use Cases

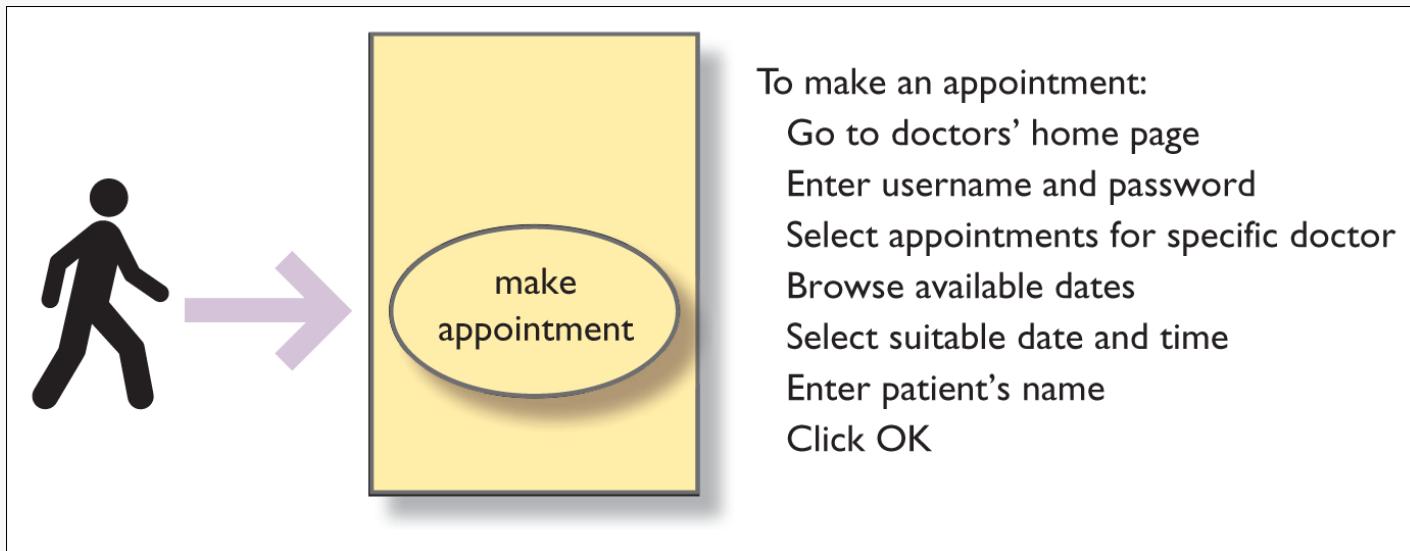


Figure 3.11 Use case for booking an appointment

A Scenario-based UX Design Method

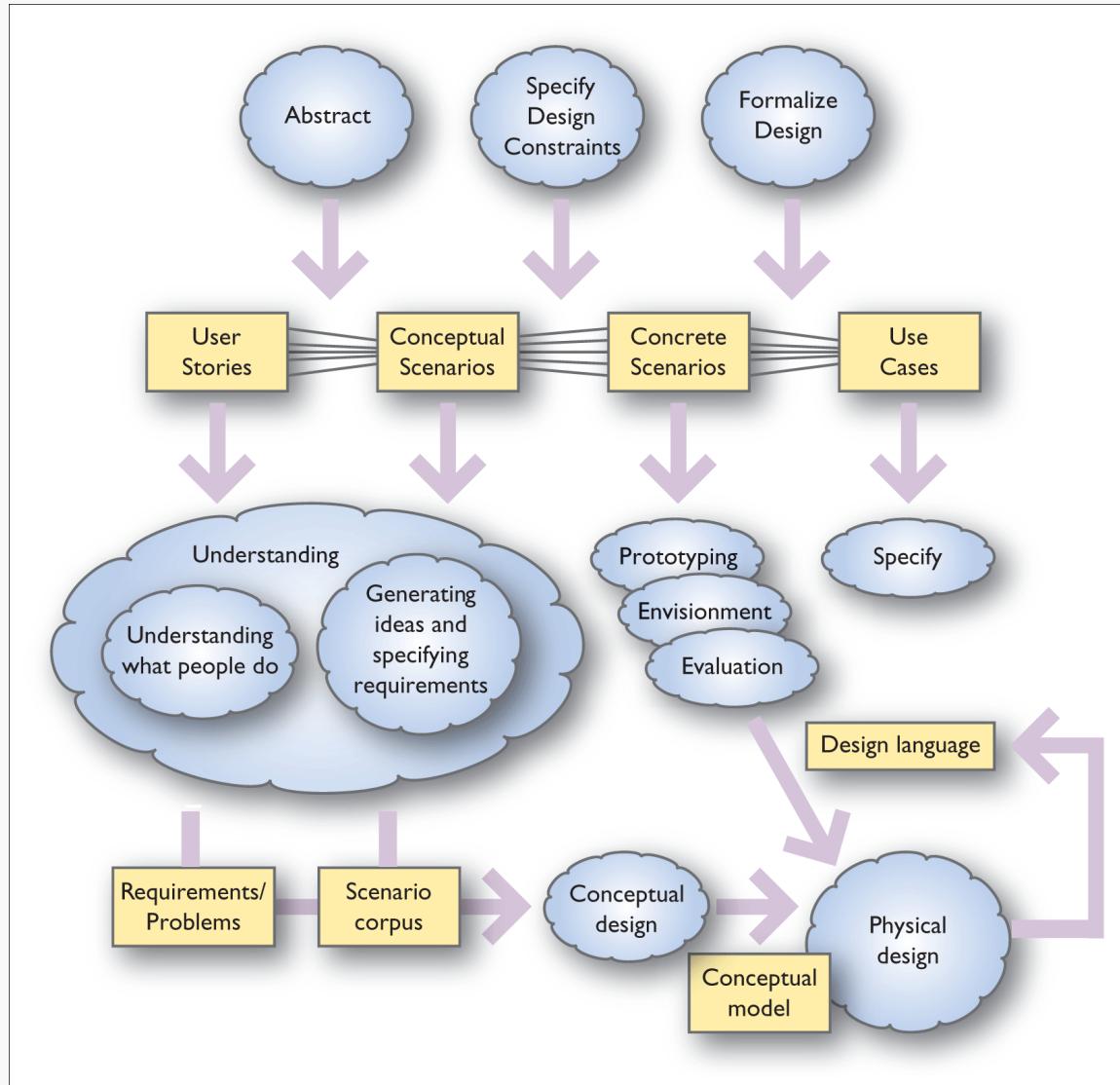


Figure 3.12 Overall scenario-based design method

How to indicate when a track is 'selected'

The selected track stays in the display list, but is highlighted to show it has been 'activated' and is ready to have actions (e.g. play) performed on it

Another, separate object displays the track, indicating its status as 'selected and ready to be played'

Simplicity

Straightforward. Reduces the need for more than one action.

Reduced screen clutter

No other display objects required on screen to indicate selection.

Clarity

The user can infer from the visual appearance the state of the system. The item is unambiguously selected and is ready to have actions performed on it.

Flexibility of screen use

The solution addresses the issue of limited screen space caused by competition from other interface elements from the same or different domains.

Figure 3.13 An example of the QOC (questions, options, criteria) claims method

Scenario 99/01 - What shall we have for dinner?

[Overview](#) [Rationale](#) [History](#) [Appendices](#)

Scenario Type	Activity Scenario
Elaboration Scenarios	E99/01-1 , E99/01-2 , E99/01-3 , E99/01-4
Overview	Users = Adult user, older adult user/household guest user

P1. Pia lives with her 8 year old son Patrick in a small town in rural Scotland, Kirkdean. She teaches French at the local school, and although not originally from the area has become very involved in local activities since moving there 3 years ago. Tonight after work the four other committee members of the local amateur dramatic society Pia attends are coming round for a meal to celebrate their success in securing a grant from the local government authority to put on a summer open-air theatre festival.

P2. Pia's 76 year old father David, who lives in London, is visiting[\[1\]](#) for a few weeks. David recently spent several days in hospital being treated for the worsening arthritis in his hands. Pia invited him to stay in the hope that she can persuade him to make it a more permanent arrangement, since she is worried that his limited movements in his hands will make life very difficult on his own.

P3. It is 07:00. Pia had hoped to sort out arrangements for this evening's meal before now. However her son was unwell last night so she didn't get time to do it when she planned. She must now decide what she is cooking and ensure she has the necessary provisions while getting ready to leave for work at 08:15[\[2\]](#). While she makes some toast she activates the HIC[\[3\]](#).

1 - Catriona Macaulay - 04-MAY-09
What access/ 'rights' to the HIC will visitors/guests have?

2 - Catriona Macaulay - 04-MAY-09
Kitchen use of the HIC is likely to take place while the user is engaged in a number of other activities, or in the morning

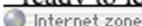


Figure 3.14 The scenario web

User Journey

- The design of moments of interaction is one aspect of providing a good UX, but it is also important to consider how the moments link together into meaningful strings of interactions (services) that will allow users to achieve their goals. This bigger picture of interaction design is concerned with the whole user journey, or customer journey.
- The idea of a user journey is to map out all the various ways in which users will access a service, taking time to design these service touchpoints in order to provide a coherent and consistent UX. For example, someone wishing to rent a car will somehow become aware that there is a car hire service available (perhaps through TV advertising, or Googling ‘car hire’), go online using their laptop computer to browse the options available, make a reservation through their phone, pick up the car from the depot and use a tablet device to provide feedback once they have finished with the car hire.

User Journey

- The design of the touchpoints – both the digital ones and the physical ones (such as the visit to the depot) – and how they come together into a consistent and engaging UX is a real challenge for UX designers. The design of touchpoints can be critical for UX. For example, a large online retailer found that many customers were dropping out of the online shopping journey when they reached the delivery request process.
- When they investigated they found that the ‘Proceed with order’ button would not work if the value of the order was less than £10. An error message was displayed, but it was in a small typeface near the bottom of the screen. To the users it appeared as if nothing was happening so they would give up. Once a wobble to the ‘Proceed with order’ button was introduced when it was clicked and the value of the order was less than £10, users understood that something was wrong and many more orders were converted into sales.

User Journey

- Advice for how to design these services comes from a variety of perspectives, including operations management, innovation management, service science, marketing, business studies and interaction design. Bloomberg and Darrah (2015) provide an in-depth analysis. These different perspectives on service design produce interesting tensions in the subject. For sales people the emphasis tends to be on how to convert browsing into buying behaviour and for them a successful service design produces sales.
- From an interaction design perspective, the focus of design is on providing a good experience as measured in terms such as enjoyment, engagement and satisfaction. Dubberly and Evenson (2008) distinguish the sales cycle from the experience cycle. Whereas the sales cycle is intended to push people towards a purchase, the experience cycle considers products in the wider context and aims to deliver experiences that are compelling, and reverberating.

User Journey

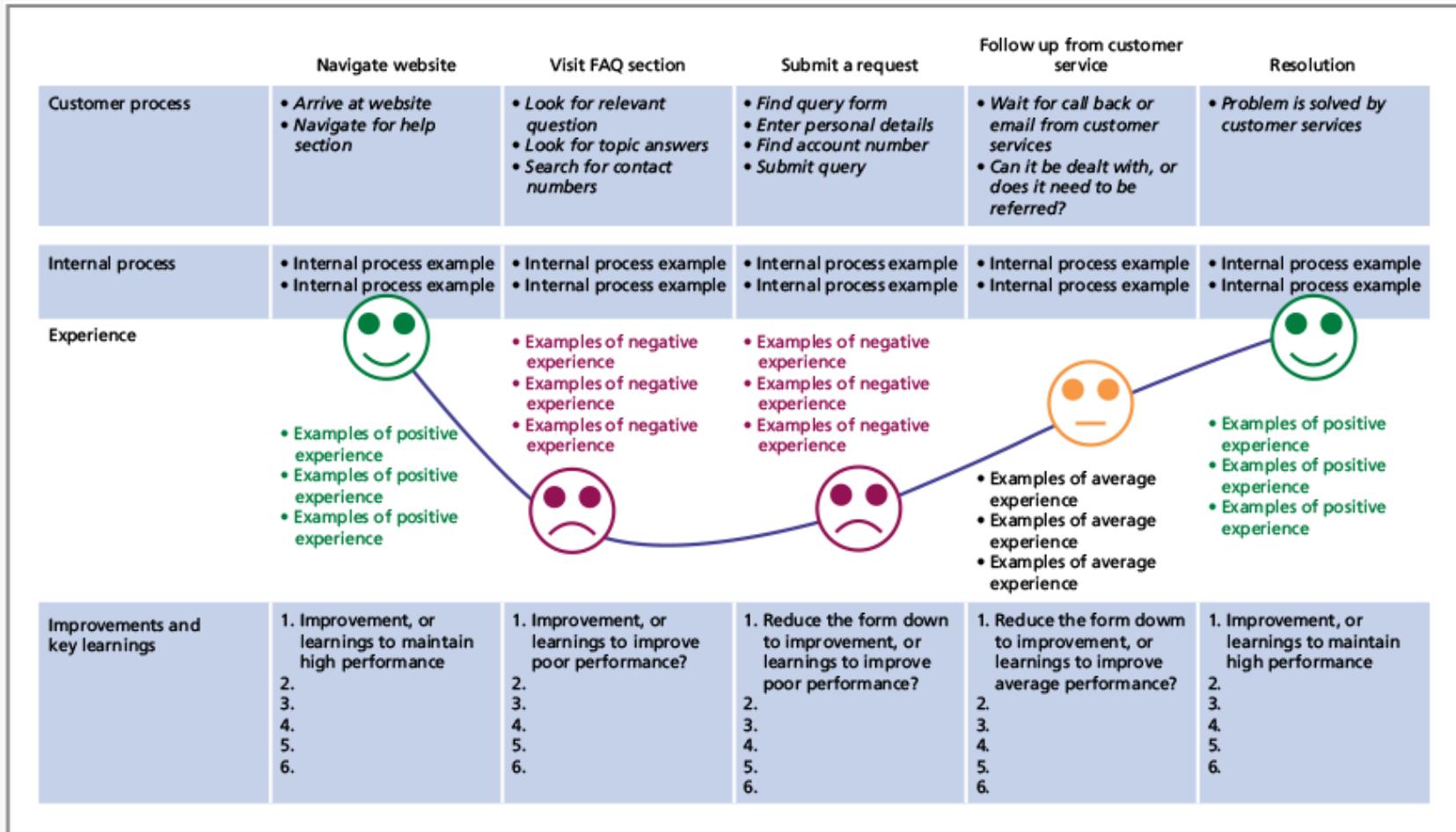


Figure 4.8 User journey mapping

User Journey

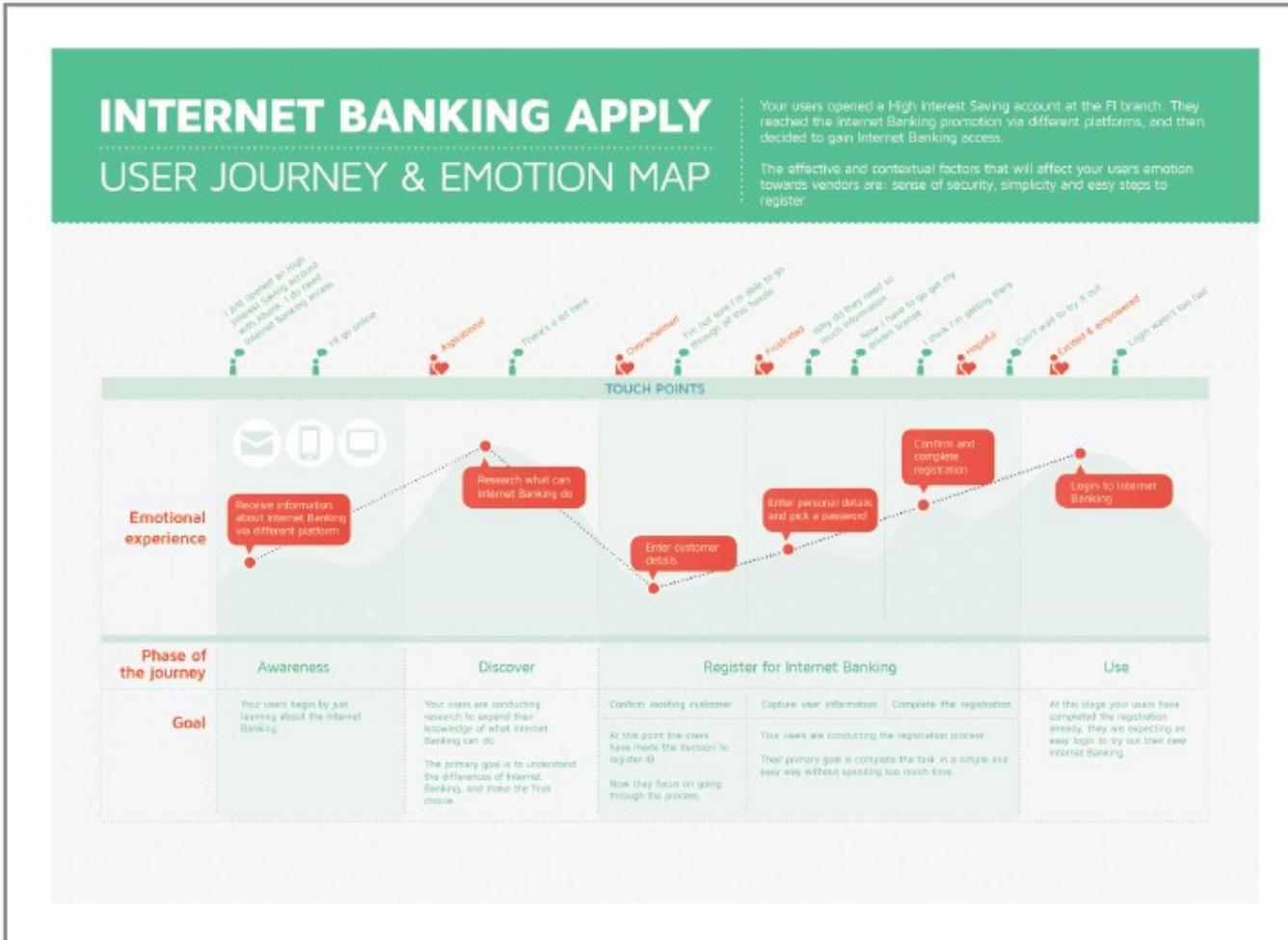


Figure 4.9 User journey mapping

User Journey

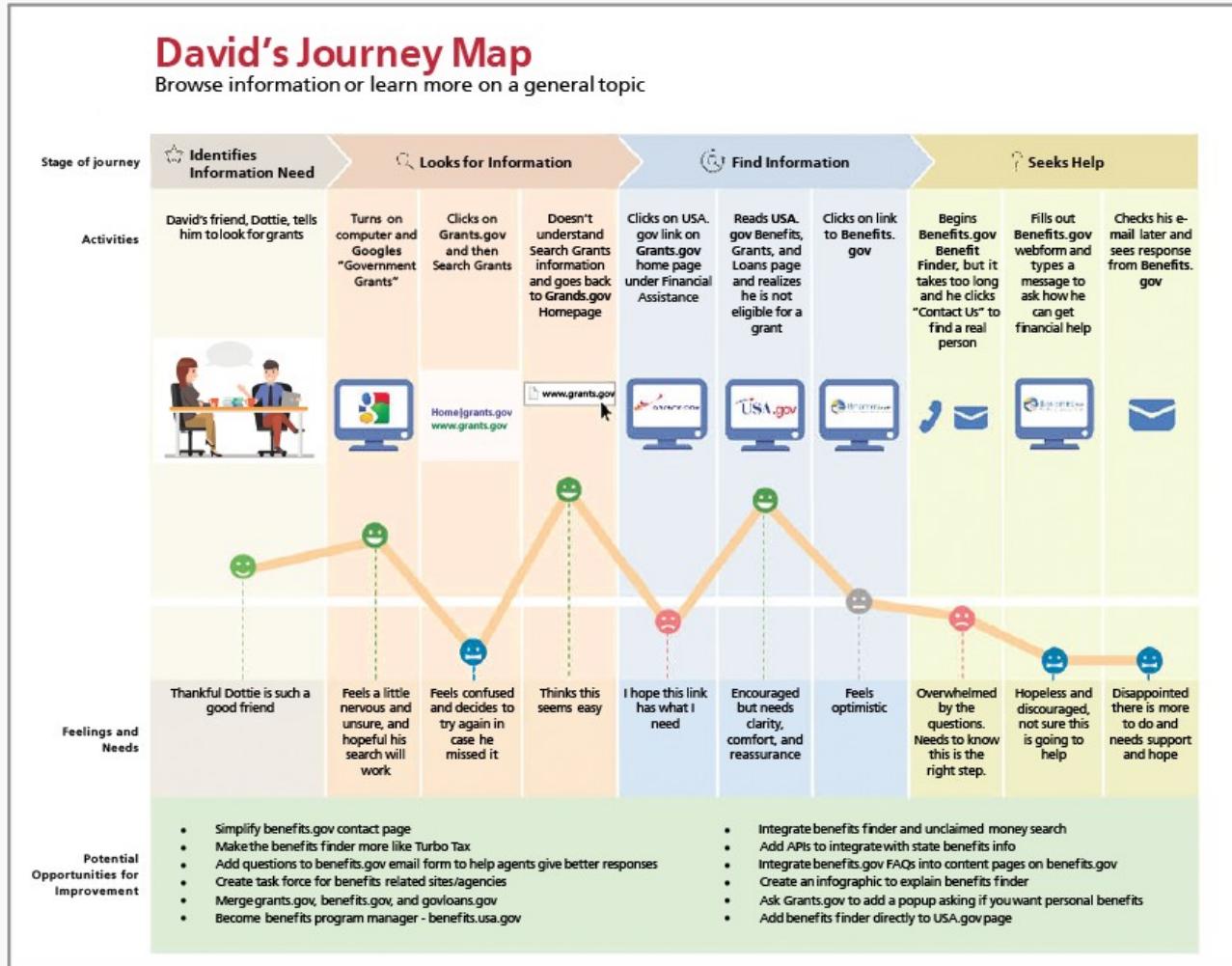


Figure 4.10 User journey mapping

Exercises

- If you were to have a new room built onto your house, or have a room converted from one use to another, consider the processes that you would have to go through, starting with:
 - A conceptual design
 - A physical design
 - Some requirements
 - A prototype or other envisioned solution.
- Find a vending machine or other relatively simple device and observe people using it. Write down their stories. Produce one or more conceptual scenarios from the stories.

**Thank
You**