"The crux of the whole method…"

"How we use this understanding of people to create design solutions that satisfy and inspire users."

Bridging the gap between research *and* design

Personas are the main characters… in this process

A four step process:

1. Developing stories or scenarios as a means of imagining ideal user interactions
2. Using those scenarios to extract design requirements
3. Using these requirements in turn to define the product's fundamental interaction framework
4. Filling in that framework with ever-increasing amounts of detail

Scenarios: the narrative

"… imagining a story about a person using our product leverages our creativity to a greater power than when we just imagine a better *form factor* * or configuration of screen elements"

"… experiences designed around a narrative (*a story*) tend to be more comprehensible and engaging for users…"

"Interaction design is first and foremost the design of behavior that occurs over time."

* *form factor* examples: web app viewed on a high-res computer screen, a phone that must be small; light, low-res in bright sunlight and dark; a kiosk…

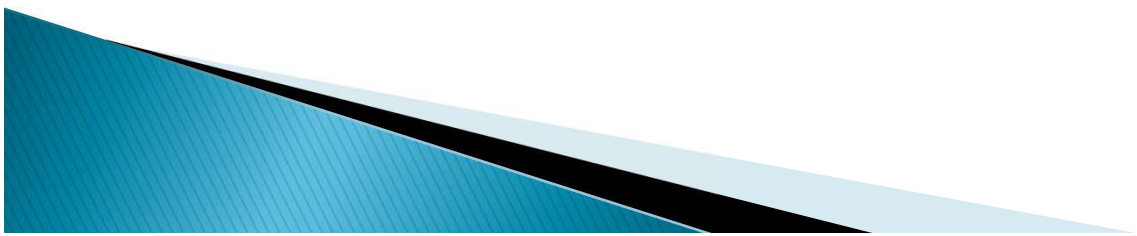
Scenarios *versus* (Use Cases & User Stories)

Use cases are a technique based on exhaustive descriptions of the system's functional requirements…

- Focus is on low-level user action and the accompanying system response.
  - … how the system responds
  - … nothing about how the user's tasks are to be presented to the user or how they should be prioritized in the interface.
- All possible user interactions are treated as equally important.

Usecases

- Use cases permit a complete cataloguing of user tasks for different classes of users
- This is indicative of their origin in software engineering rather than interaction design.
- They may be useful in identifying edge cases and for determining that a product is functionally complete, but they should be deployed only in the later stages of design validation.



User stories are short, simple descriptions of a feature told from the perspective of the person who desires the new capability, usually a user or customer of the system.

They typically follow a simple template:

As a <type of user>,
I want <some goal>

or

I need
so that <some reason>

Scenarios *versus* (Use Cases & User Stories)

User stories are not stories… but sentences.

"As a user, I would like to log in to my online banking account…"

Followed by a brief description of the necessary interface

These are "phrased requirements" … not scenarios.

Scenarios

are more like Epics…

Epics do not describe task-level interactions, but rather broader and more far reaching cluster of interactions that are intended to meet user goals.

… the function and presentation of user interfaces and interactions

Scenario-based design

John Carroll, *Making Use*

> "Scenarios are paradoxically concrete *but* rough, tangible *but* flexible …
>
> … they implicitly encourage "what-if?" thinking among all parties.
>
> They permit the articulation of design possibilities without undermining innovation …
>
> Scenarios compel attention to the use that will be made of the design product…
>
> They can describe situations at many levels of detail, for many different purposes, helping to coordinate various aspects of the design project."

Carroll's use of **Scenario-based design** describes how users accomplish tasks…

- … note: the missing ingredient is the use of personas

Personas are a tangible representation of the user that acts as a believable agent in the setting of a scenario

- Personas have goals… not simply tasks
- Personas provide the means to determine…
  - What the product should do and how the product should look and behave.
  - The design that starts with a story describing an ideal experience from the personas' perspective … how they think and behave, not focused on technology and business goals.

Scenarios capture the nonverbal dialogue between the user and a product, environment, or system over time

… as well as the structure and behavior of interactive functions

3 Types of Scenarios

Context Scenarios

High level description of how product serves the needs of users. The context scenarios are created before any design is performed and are written from the perspective of the persona, focused on human activities, perceptions, and desires

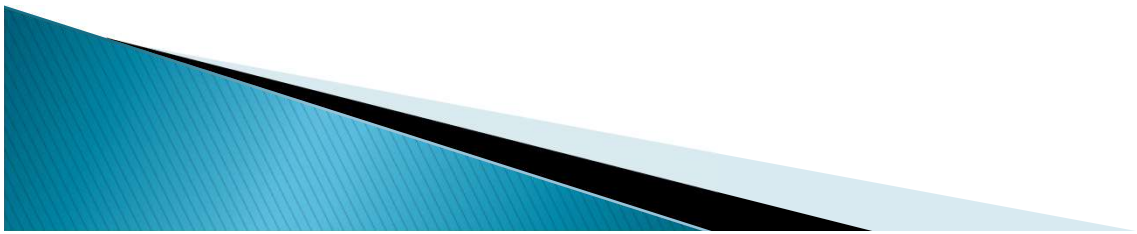
Key Path Scenarios

Revised Context Scenarios

Incorporates functional and data elements and the *Design Framework.* These scenarios tend to be less detailed and typically take the form of a number of "what if . . ." questions about the proposed solutions. More detail about development and use of key

Validation Scenarios

Used by the team to test the design solution



Persona-based scenarios versus use cases Scenarios

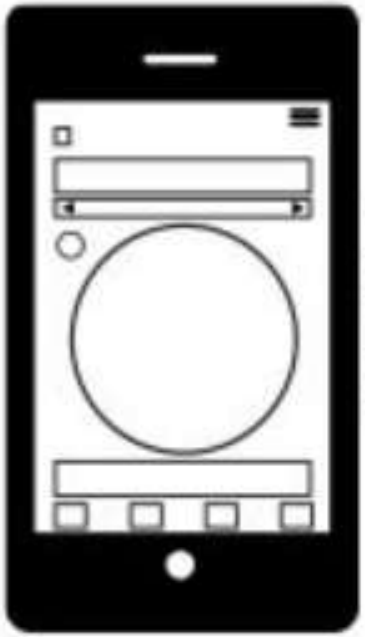
- These are both methods of describing a user's interaction with a system. However, they serve very different functions.
  - Goal-Directed scenarios are an iterative means of defining the behavior of a product from the standpoint of specific users (personas).
  - This includes not only the functionality of the system, but the priority of functions and the way those functions are expressed in terms of what the user sees and how she interacts with the system.
- Use cases, on the other hand, are a technique based on exhaustive descriptions of functional requirements of the system, often of a transactional nature, focusing on low-level user action and accompanying system response

Vivien's context scenario

1. While getting ready in the morning, Vivien uses her phone to check her e-mail. It has a large enough screen and quick connection time so that it's more convenient than booting up a computer as she rushes to make her daughter, Alice, a sandwich for school.

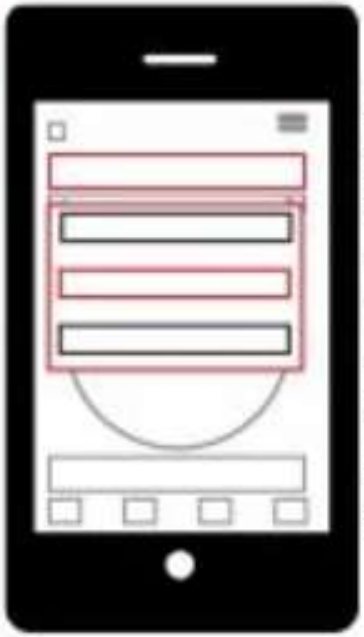
2. Vivien sees an e-mail from her newest client, Frank, who wants to see a house this afternoon. The device has his contact info, so now she can call him with a simple action right from the e-mail……

1



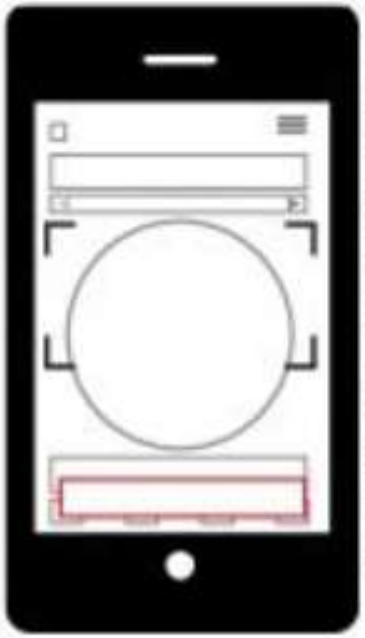
User clicks on the nutritional journal icon and enters the home screen of the nutritional journal.

2



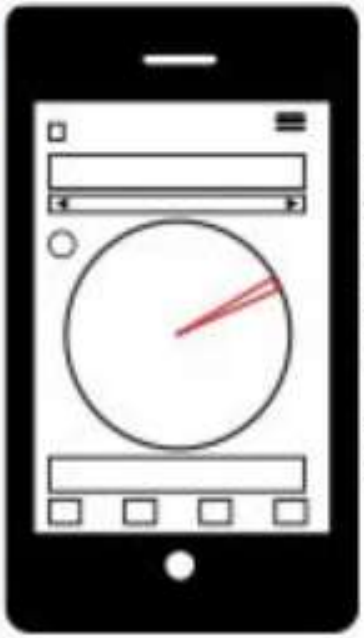
User clicks on the add item icon, and a pop up screen appears asking user which method of adding an item he/she would like to use. User selects scan item.

3



User positions item in front of mobile camera and allows it scan bar-code. The item is added to user's personal food database, and can be found in the future. User clicks add item.

4

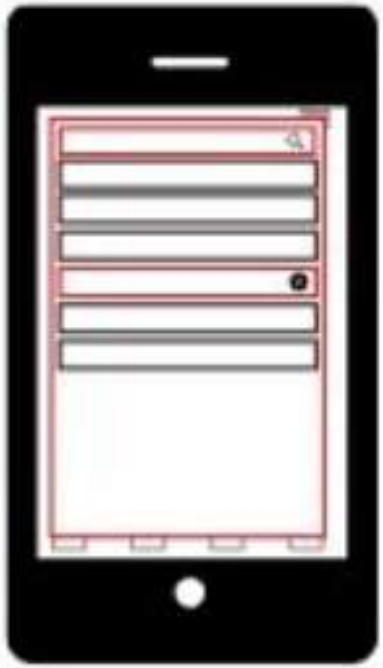


The item is added to the entries section. It is display at the current time it is added, allowing for user to track times he/she is eating.

5

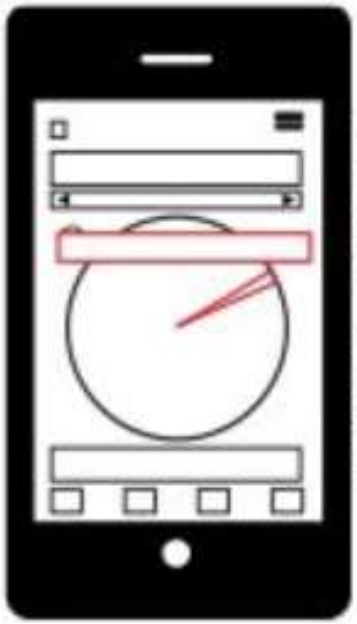
User adds his/her supplements by clicking on add item icon. User selects food database search.

6



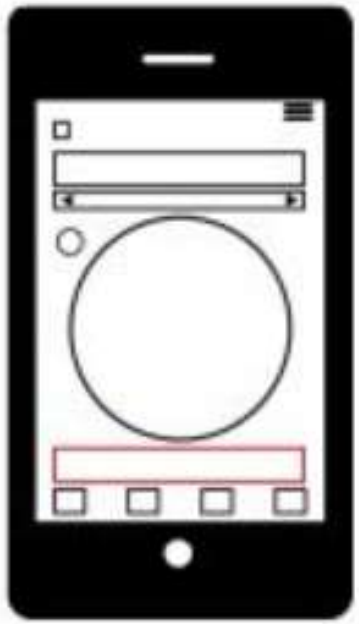
User searches protein in the search bar and finds his/her protein powder which he/she has already added on a previous day. User clicks on the (+) icon beside the item.

7



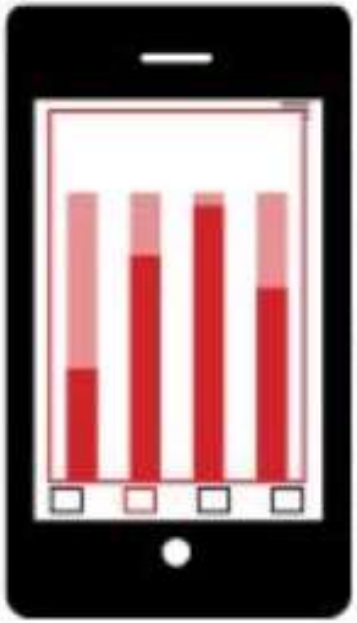
User clicks on the time position and the app displays a pop up of the nutritional information of the item for as long as he is pressing down.

8



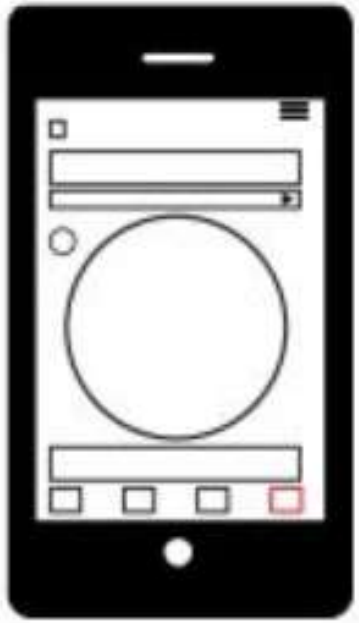
User looks at nutrition values underneath entries. Values will be in green if below or at desired level, orange if over by 10% and in red if over 25%.

9



User checks supplement supply by clicking on supplement supply icon on the bottom navbar. A pop up screen comes up on the screen with bars for each of his supplements. Each bar displays the current amount left

10



User will add more items throughout the day, and closes the app till he/she needs to add another one by clicking on the mobile's home button. If user is done with adding entries he/she can click on finish button.

Design Requirements

The "What" of Interaction Design

- Information and capabilities the personas require to accomplish their goals
- Design requirements are NOT features!
- "… think of design requirements as being synonymous with needs."

DESIGN PRINCIPLE

Define what the product will do before you design how the product wil do it.

Design Requirements are not specifications

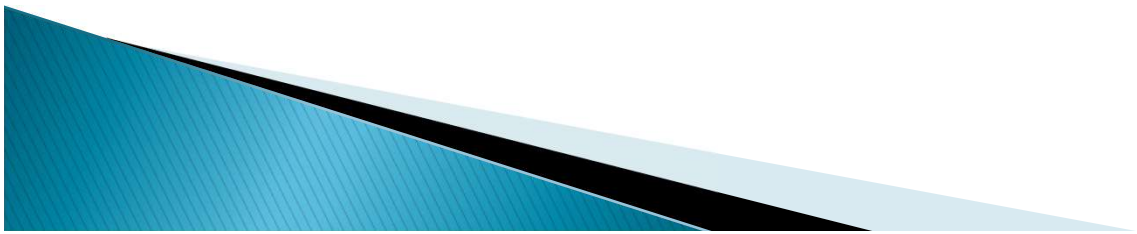
… not a list of capabilities generated by others rather than users!

Marketing Req'ts Docs (MRDs)

and

Product Req'ts Docs (PRDs)

confuse *what* the product should do with *how*



Example

Mandating solutions before the design… produces "clunky and disjointed interactions and products"

Data Analytics Tool design…

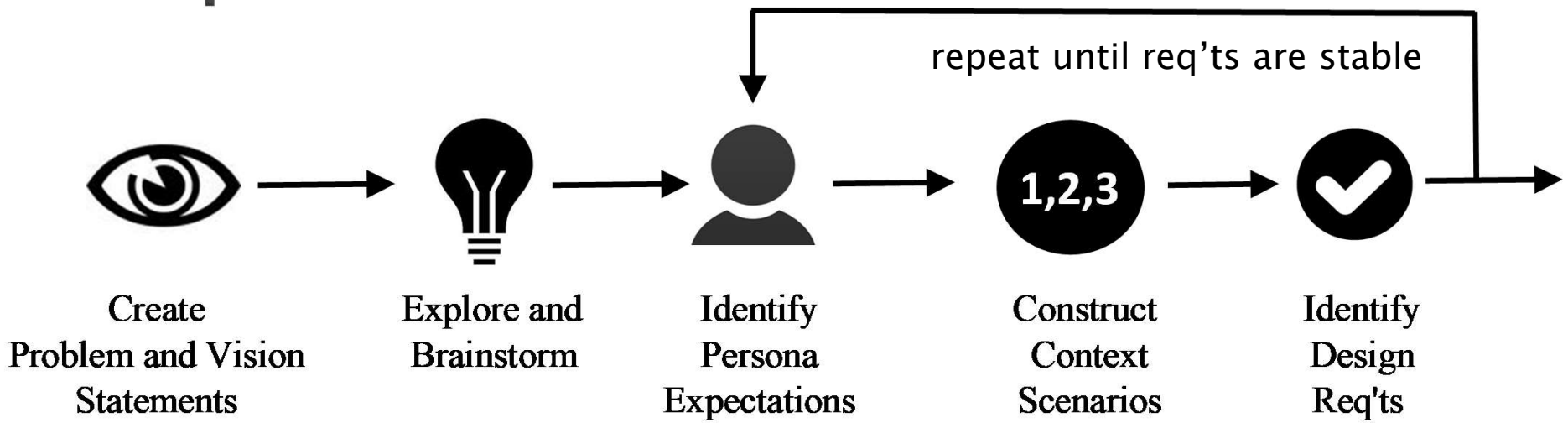
- Without understanding the **what**, the focus might be placed on just *generating reports* and *User research*, focused on identifying something tangible would uncover a multitude of reports.
- But… the real requirements might be providing a way to "recognize exceptional situations before opportunities are missed or problems arise."

Design req’ts are strategic

“ …starting with req’ts rather than solutions, allows interaction designers the ability to create powerful and compelling products.

By clearly defining user needs, designers can work with technologists to find the best viable and feasible solutions without compromising the product’s ability to help people achieve their goals.”

Requirements Definition Process



The process "Answers broad questions about what a product is and what it should do."

"The Framework Definition answers questions about how the product behaves and how it is structured to meet user needs."

Requirements Definition

Five steps:

1. Create problem and vision statements
2. Explore / brainstorm
3. Identify persona expectations
4. Construct context scenarios
5. Identify design requirements

Again… cycling through steps 3 through 5 until the requirements are stable.

1. Create problem and vision statements

- Problem and vision statements provide a clear mandate for moving forward… and are extremely helpful in building consensus among stakeholders before the design process moves forward
- Connecting business issues *to* usability issues is critical **to drive** stakeholders' buy-in to design efforts *and* **to frame** the design effort in terms of both user and business goals.
- Sample template

  The new design of Product *X* will help users achieve *G* by allowing them to do *X*, *Y* and *Z* with greater [accuracy, efficiency and so on], and without problems **A**, **B** and **C** that they currently experience.

  This will dramatically improve Company *X*'s customer satisfaction ratings and lead to increased market share.

User goals & needs should be derived from the primary & secondary personas… and business goal from stakeholder interviews

2. Explore / brainstorm

The primary purpose here is to eliminate as much preconception as possible.

- Doing so allows designers to be open-minded and flexible as they use their imagination to construct scenarios and to use their analytical skills to derive requirements from these scenarios.
- Focus is on how your personas would likely want to engage with the product.
- Brainstorming is used “to get these ideas out of our heads so that we can record them and thereby "let them go" for the time being.”
- A very, very collaborative process… by necessity!

3. Identify persona expectations

Important!

The represented model of the interfaces (how the
design behaves and presents itself) should match what the team understands about users' mental model *as much* as possible.

The represented model should not reflect the implementation model…

- That is, how the product will actually be constructed internally

Expectations

For each primary and secondary persona, identify the following:

- Attitudes, experiences, aspirations, and other social, cultural, environmental, and cognitive factors that influence the personas expectations
- General expectations and desires the persona may have about the experience of using the product
- Behaviors the persona will expect or want from the product
- How that persona thinks about basic elements or units of data (For example, in an e-mail application, the basic elements of data might be messages and people.)

Some of the things to look for

- What do the interview subjects mention first?
- Which action words (verbs) do they use? What nouns?
- Which intermediate steps, tasks, or objects in a process don't they mention?

(Hint: These might not be terribly important to how they think about things.)

4. Construct context scenarios

- Context scenarios tell the story of a particular user's persona, with various motivations, needs, and goals, using the future version of your product in the way that is most typical for that persona.

This is where design begins…

- Focus is on how the product being designed can best help personas achieve their goals.
- High level actions from the user's perspective

Context scenarios address questions…

- In what setting(s) will the product be used?
- Will it be used for extended amounts of time?
- Is the persona frequently interrupted?
- Do several people use a single workstation or device?
- With what other products will it be used?
- What primary activities does the persona need to perform to meet her goals?
- What is the expected end result of using the product?
- How much complexity is permissible, based on persona skill and frequency of use?
- Don't yet worry about exactly how things will get accomplished. Initially you should treat the design as a bit of a magic blackbox.

The *good* sample context scenario

Vivien's context scenario

Primary persona for a personal digital device (PDA)

(*last paragraph*)

Good suggestion:

"Also notice how the activities in the scenario tie back to Vivien's goals and try to eliminate as many tasks as possible."

DESIGN PRINCIPLE

In the early stages of design, pretend the interface is magic

Do not get side-tracked by thinking about the coding or the d

5. Identify design requirements

- After the initial draft of the context scenario is approved, analyze it to extract the personas' needs or design requirements.
- These design requirements consist of *objects*, *actions*, and *contexts*
- … requirements that are identical to features or tasks

Referring to Vivien's context scenario
a requirement might read as

Call (*action*) a person (*object*) directly for an appointment (*context*).

… or separate the requirements

Data
Functional

Contextual
Other

- *Business requirements* can include stakeholder priorities, development timelines, budgetary and resource constraints, regulations and legal considerations, pricing structures, and business models.
- *Brand and experience requirements* reflect attributes of the experience you want users and customers to associate with your product, company, or organization.
- *Technical requirements* can include weight, size, form factor, display, power constraints, and software platform choices.
- *Customer and partner requirements* can include ease of installation