

Human-Computer Interaction (HCI)

DECO2500/7250

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Room 78-305

07

Tasks and user goals
UX Goals and Metrics

In this session...

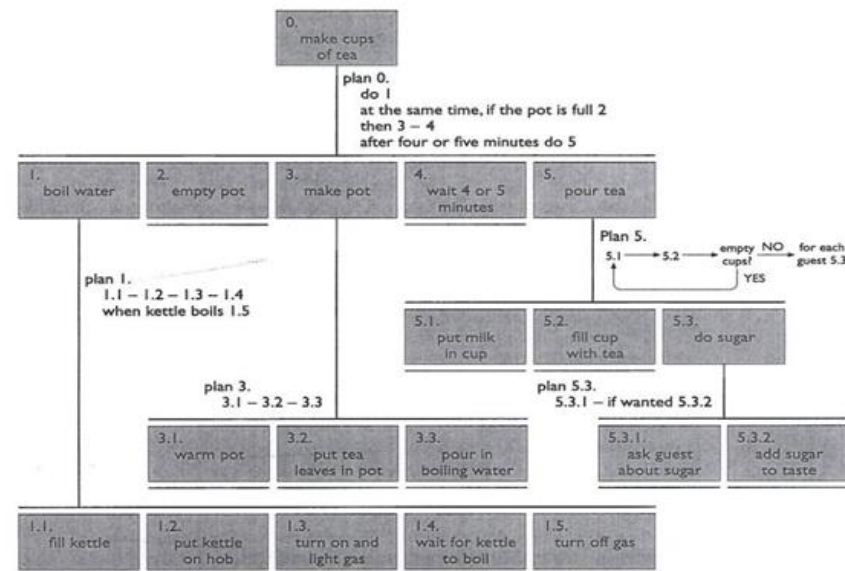
- Hierarchical Tasks Analysis
- UX Goals
- SMART User Experience Strategy
- Role and key issues of data gathering
- User Evaluations

Task Analysis

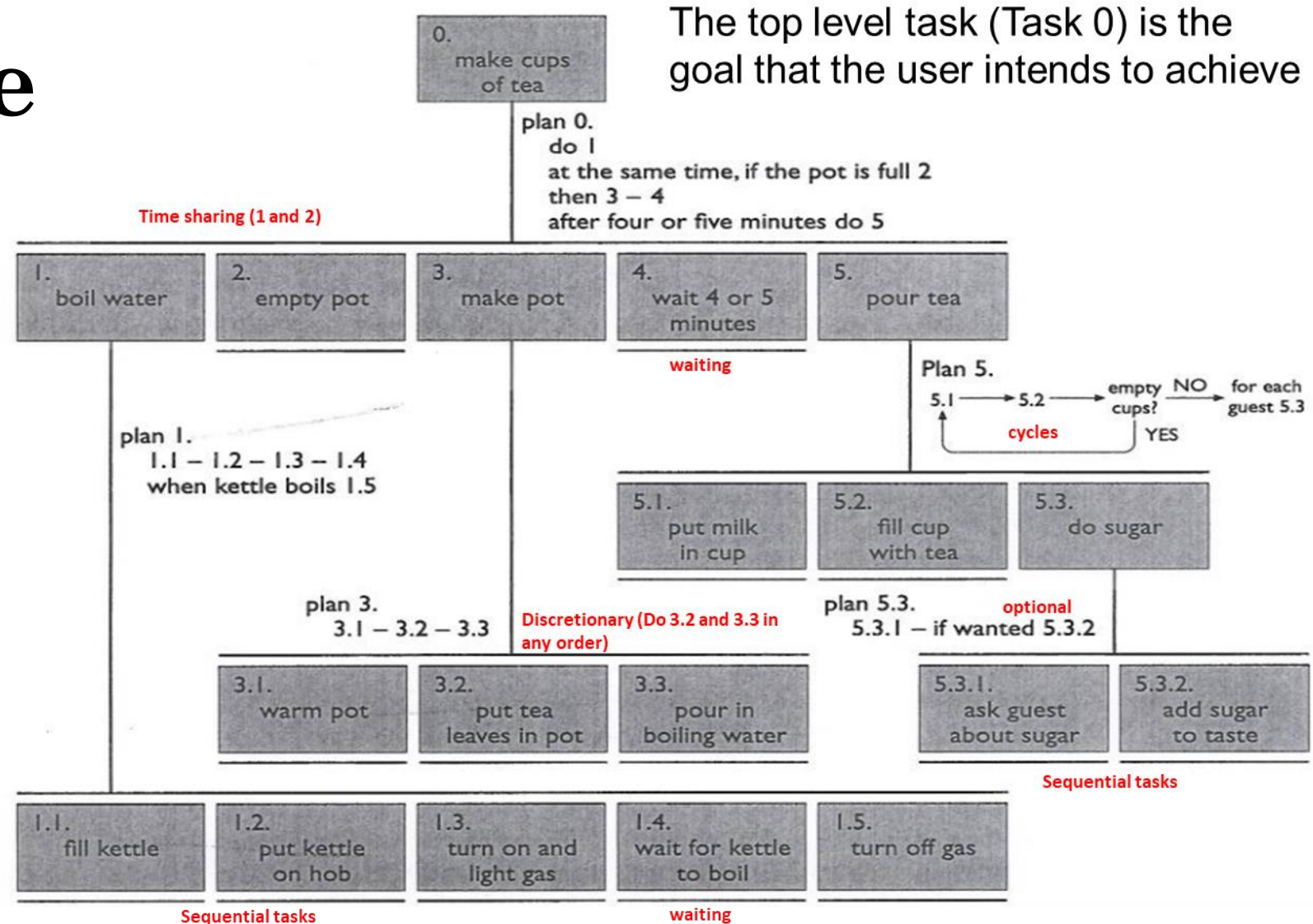
- After knowing the users and their goals, tasks should be identified
- Tasks need to be performed by the user to achieve the goal (the desired final result)
- Task analysis helps us with better understanding of:
 - goals
 - what users actually do step by step to achieve the goal
 - how people perform their tasks
 - their priorities, preferences and intentions
 - task flow, frequencies and sequences
- Task analysis is not just a pre-design process and can be done for an existing system

Hierarchical Task Analysis

- Hierarchical Task Analysis is a popular task analysis technique
- It is used to represent decomposition of tasks and subtasks
- Tasks are clustered into plans and each plan groups the subtasks
- The diagram includes the hierarchy, subtasks, and the plans
- Plans describe the order and constraints, and the type of plan



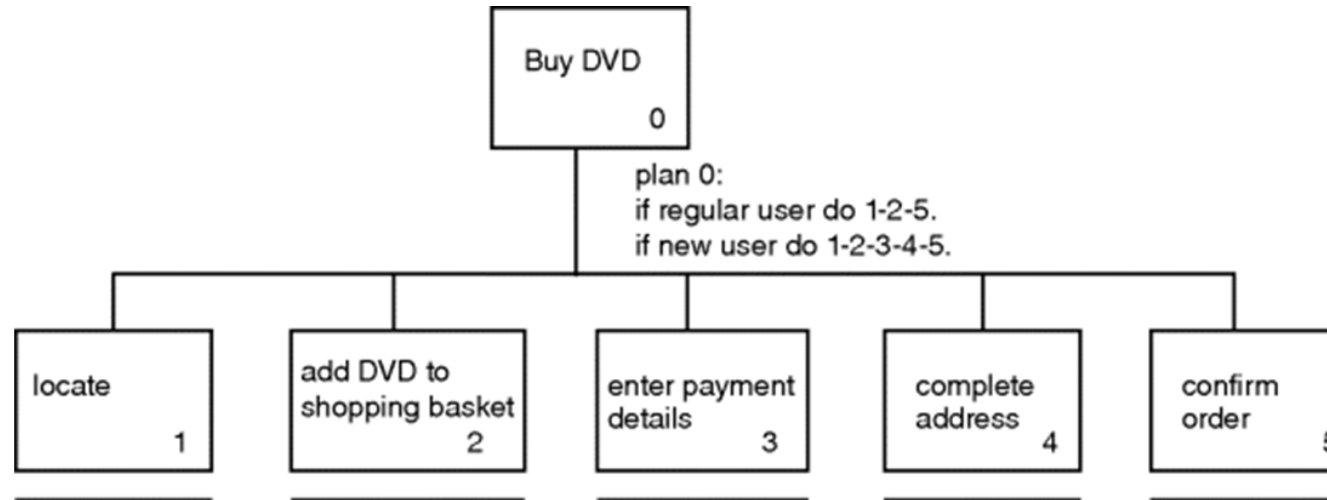
Example



Plans in HTA

- Plans are important to explain the hierarchy, flow and relationships
- Different types of plans:
 - Fixed sequence
 - E.g. do 1.1 then 1.2 then 1.3
 - Optional tasks
 - E.g if the pot is full, do 2
 - Wait for events
 - E.g. wait for the kettle to boil 1.4
 - Cycles
 - E.g. do 5.1 - 5.3 for each guest
 - Time-sharing
 - E.g. do 1; at the same time if the pot is full do 2
 - Discretionary
 - E.g. do 3.2 and 3.3 in any order
- Mixtures combine several of the above

DVD Example



0. buy a DVD
 1. Locate and find DVD
 2. add DVD to the shopping basket
 3. enter payment details
 4. complete address
 5. confirm order
- plan 0: If a regular user, do 1-2-5. If a new user, do 1-2-3-4-5.

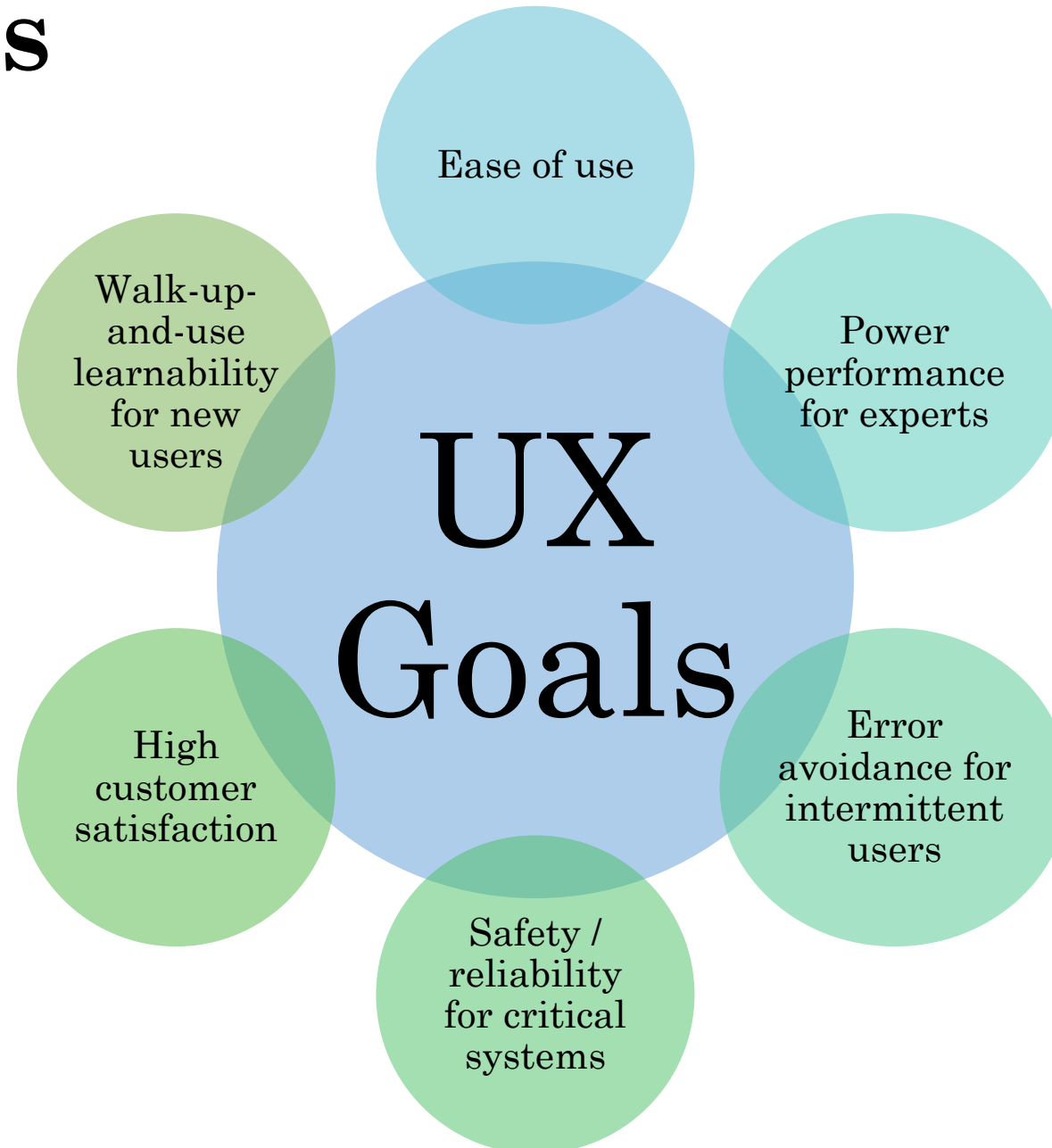
(source Preece et al, 2015, pg 375)

UX Goals

- High-level objectives, in terms of anticipated user experience
- Can be driven by business goals
 - Reflect real use of a product
 - Identify what is important to an organisation, its customers, and its users
- Expressed as desired effects to be experienced in use



UX Goals



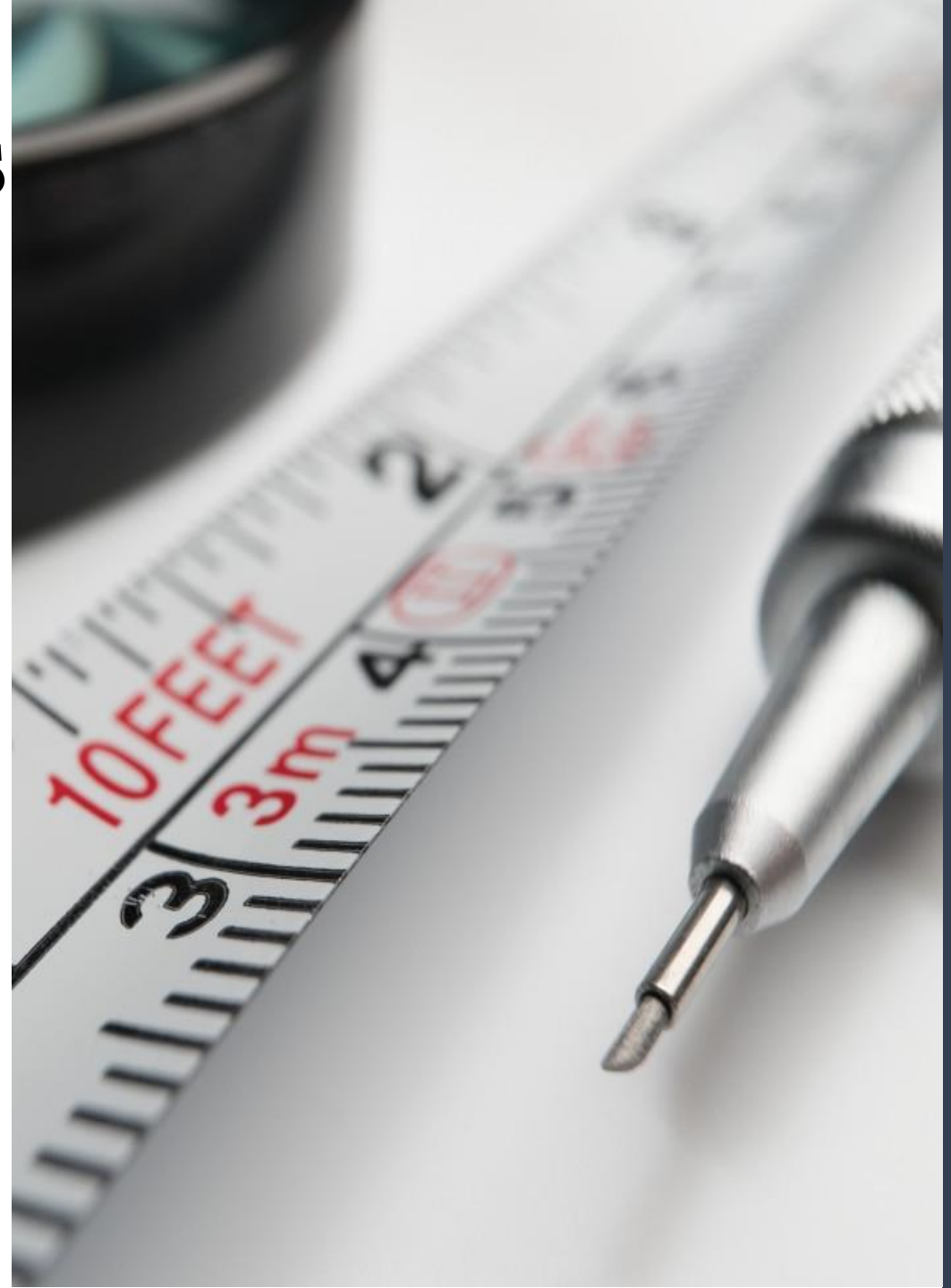
Measuring UX Goals

- What is it you are going to measure?
 - Objective (directly measurable)
 - Initial performance
 - Long-term performance
 - Learnability
 - Retainability
 - Advanced feature usage
 - Subjective (based on opinions)
 - First impression
 - Long-term satisfaction



Measuring UX Goals

- How are you going to measure it?
 - ‘Measuring instruments’
 - Benchmark tests
 - User satisfaction questionnaires
 - Many guidelines in UX Book §10.6



UX Metrics

- Metrics are indicators that show whether your UX strategy is working
- Objective/performance-oriented
 - Taken while participants are doing a benchmark task
- Subjective
 - Based on a rating or score from questionnaire results

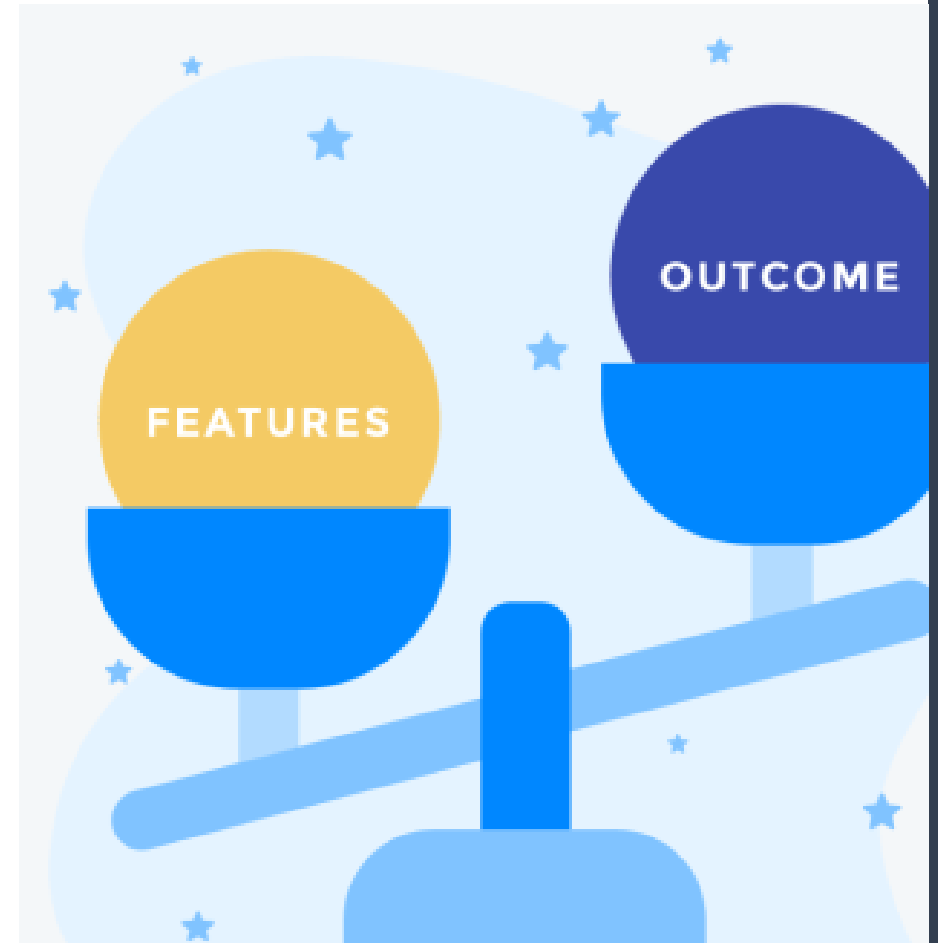


Examples of UX Metrics

- Percentage of task completed in a timed task
- Ratio of successes to failures
- Time spent moving cursor
- Fixations on the screen to assess cognitive load

Focus on Outcomes not Features

- An **output** is a product or service that you create
- An **outcome** is the problem that you solve with that product
- A **feature** is something a product or service offers
- A **benefit** is what customers actually want



“Creating a good user experience”

S.M.A.R.T. User Goals

Specific

- Precisely states what needs to be accomplished

Measurable

- Qualitatively or quantitatively

Actionable

- Specific goal leads to identification of content or functionality that satisfies it

Relevant

- Appropriate for the level of interaction being focused on

Trackable

- Over time in order to evaluate immediate and longer term success

Let's think about measuring experience:

<https://www.menti.com>

Go to menti.com and enter 4644 2901

Imagine a government wants to know which of its hospitals achieve the best patient health outcomes, so it can study their practices, reward them, give those hospitals more money and resources, and create better standards for best practice.

What simple metric can it collect to get this information?

A DUMB User Goal

“I want a web page that’s easy to use. (i.e. I want a good user experience.)”



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Applying UX Goals

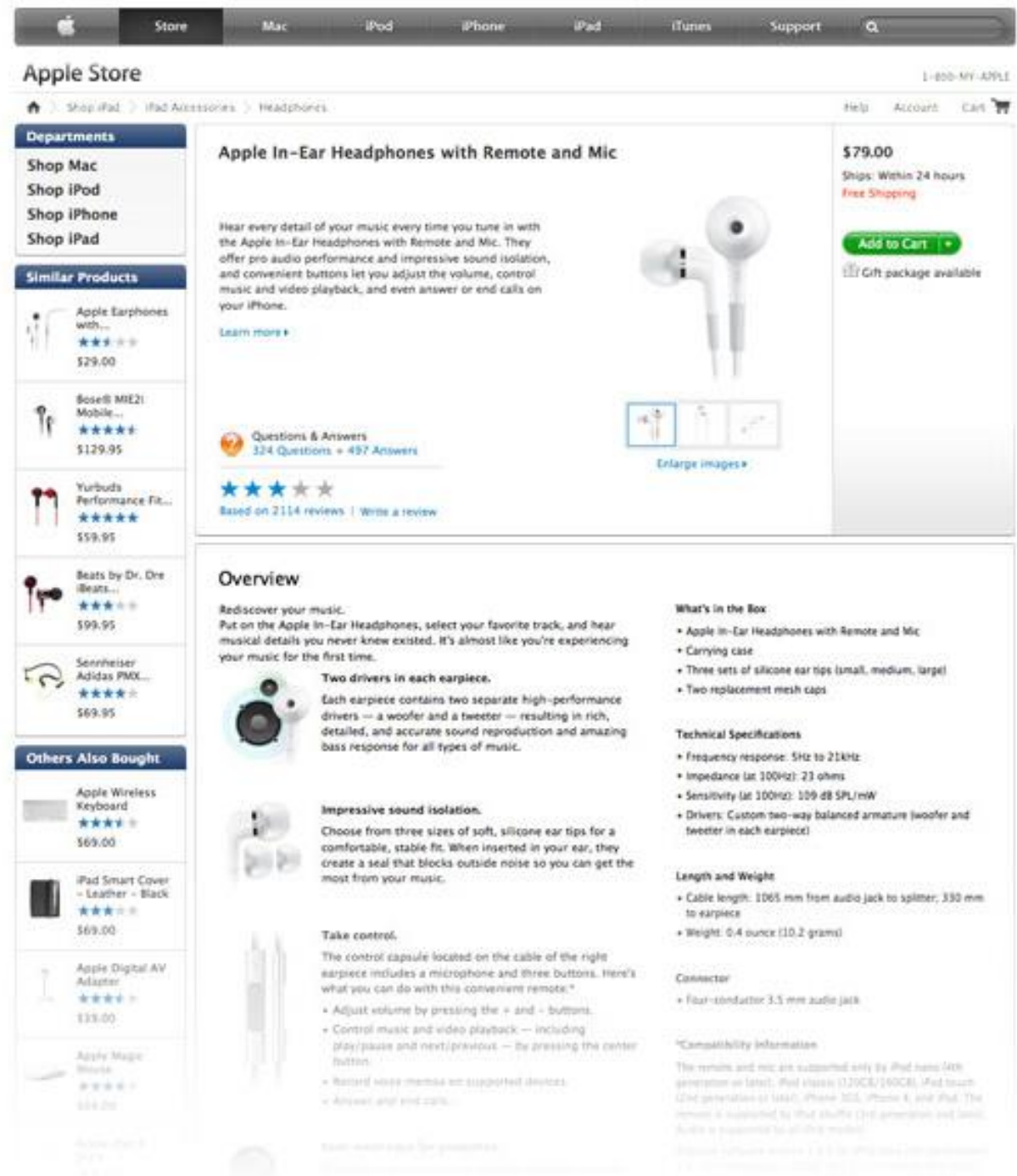
UX Goal	Content & Features/Functionality
I want to learn more about this product's design, features and specifications to determine whether it fits my budget, needs and preferences.	<ul style="list-style-type: none">• Relevant images that represent the product as a whole;• Relevant images (such as enlarged views and alternate angles) that show the product in detail;• General description that provides a brief overview of the product's purpose and benefits;• Specifications that are relevant to consumers of this product type;• Product variations or options (such as color, size);• Selling price.
I want to purchase this product.	<ul style="list-style-type: none">• Selector for product variations or options;• Customer satisfaction guarantee (such as return policy, privacy policy);• Quantity selector;• "Add to Cart" function.

Linking Back to Requirements

Source	UX Goal	Measures	Requirements
Interview Participant 01 <i>"When I look at this page, I always look for some kind of description so I can check that it's what I really want ... and I always want to see the price otherwise I think it must be too expensive and they are hiding the price."</i>	I want to learn more about this product's design, features and specifications to determine whether it fits my budget, needs and preferences.	Number of clicks on links for: <ol style="list-style-type: none">1. More details option2. Product specifications Survey questions: <ol style="list-style-type: none">1. "this page contained all of the information I was looking for"2. "This page did not have sufficient information about the product for my needs" (negative scoring) Customer interviews	<ul style="list-style-type: none">• Relevant images that represent the product as a whole;• Relevant images (such as enlarged views and alternate angles) that show the product in detail;• General description that provides a brief overview of the product's purpose and benefits;• Specifications that are relevant to consumers of this product type;• Product variations or options (such as color, size);• Selling price.

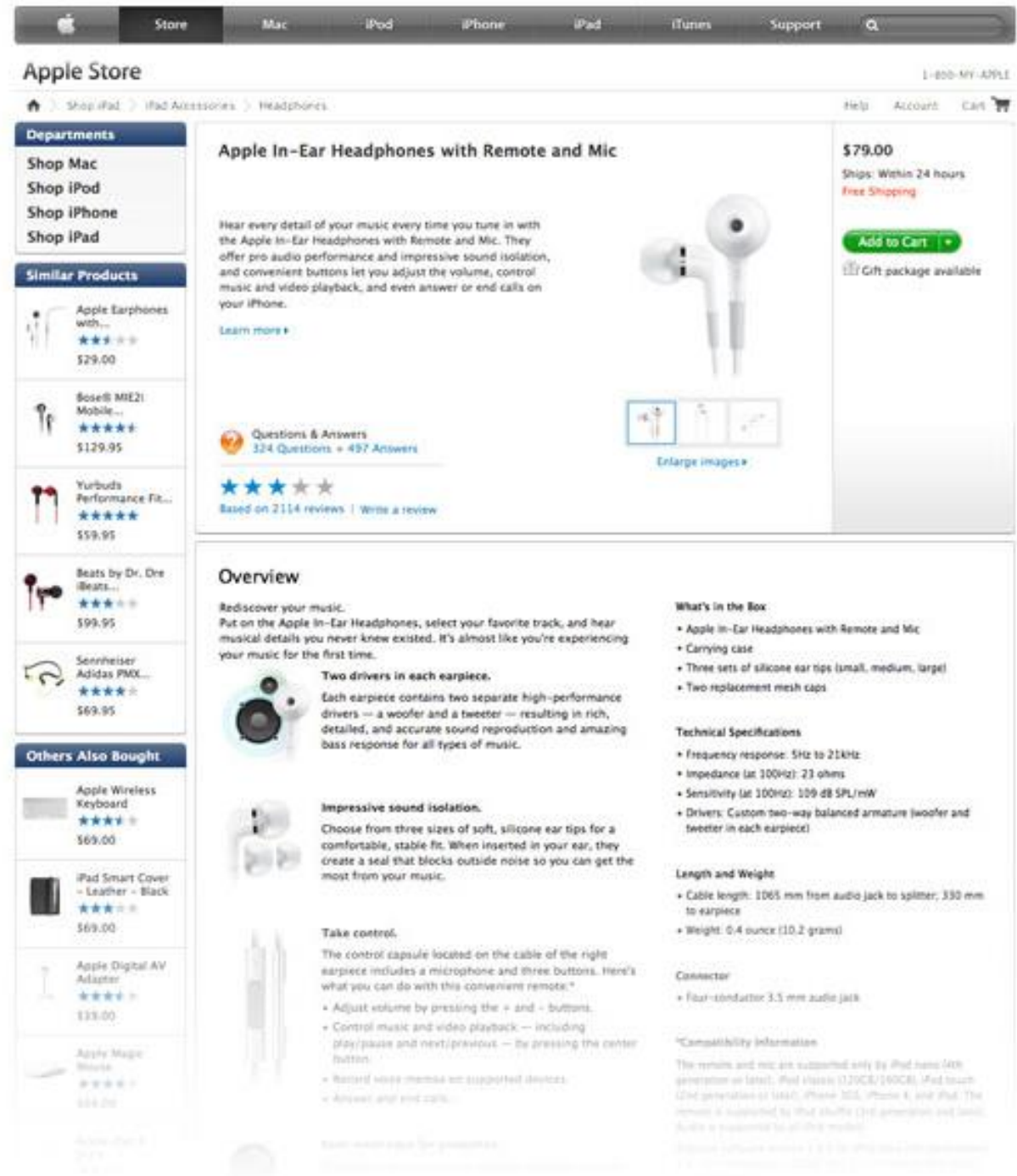
Example UX Goal

- UG1: *“I want to learn more about this product’s design, features and specifications to determine whether it fits my budget, needs and preferences”*
- UG2: *“I want to purchase this product”*



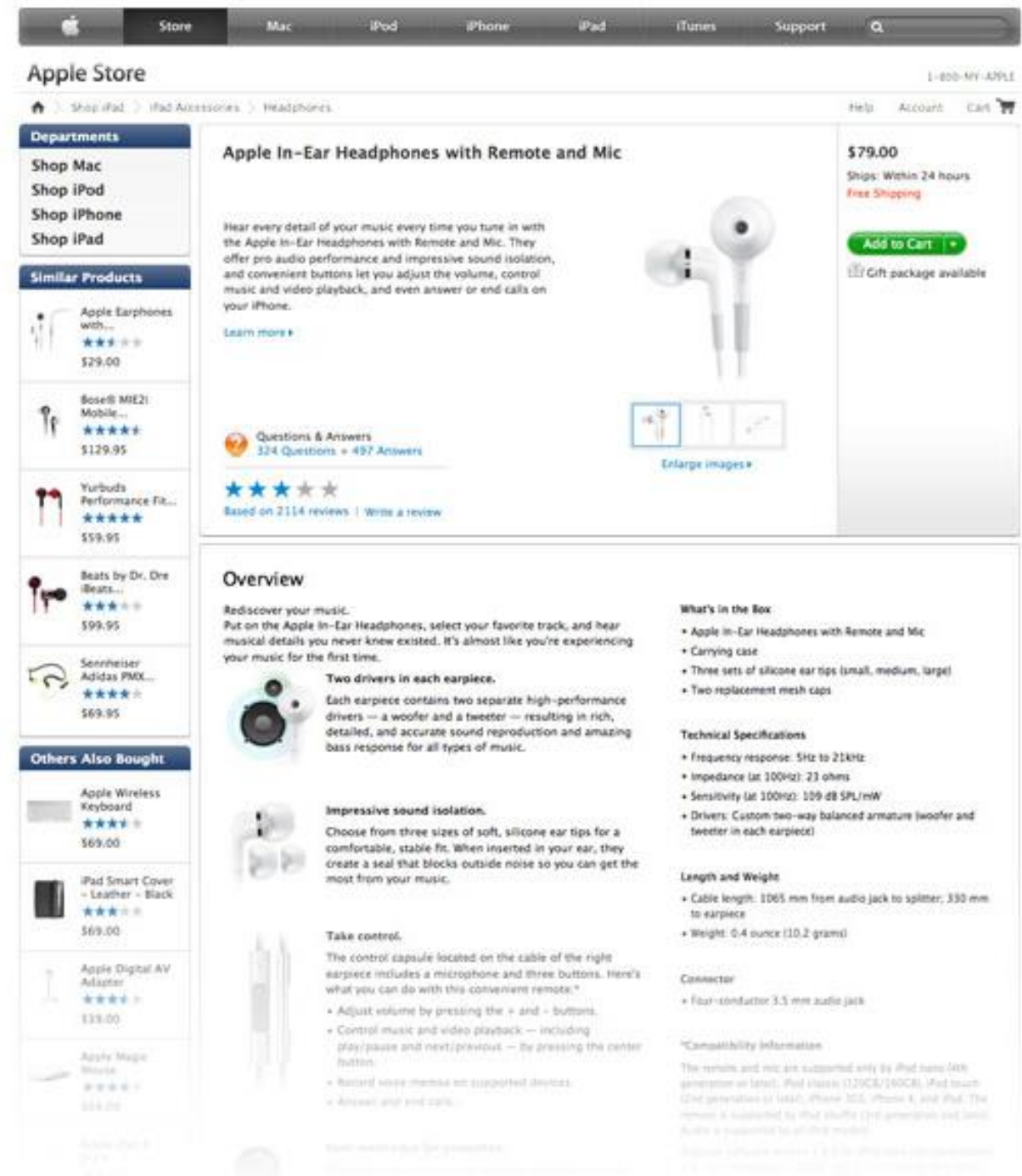
Example UX Goal

- **Specific:** State exactly what the user needs to accomplish.
- UG1: A user wants to learn more about this product's design, features and specifications to determine whether it fits my budget, needs and preferences
- UG2: A user wants to purchase this product



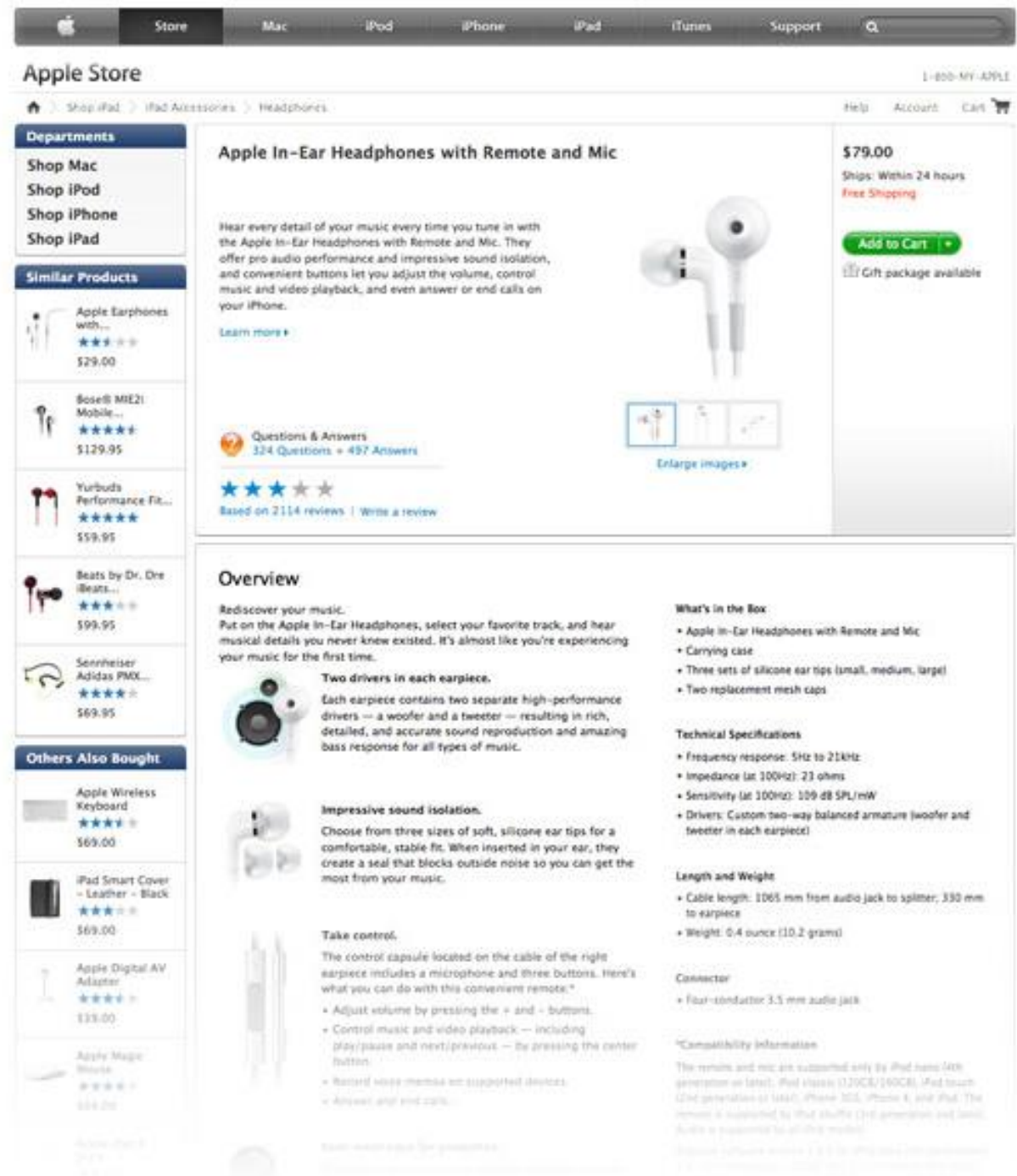
Example UX Goal

- **Measurable:** What can be qualitatively or quantitatively measured?
- UG1
 - Clicks to see how users engage with content
 - Interviews/surveys to check relevance of content
- UG2
 - Percentage of visitors who clicked “add to cart”



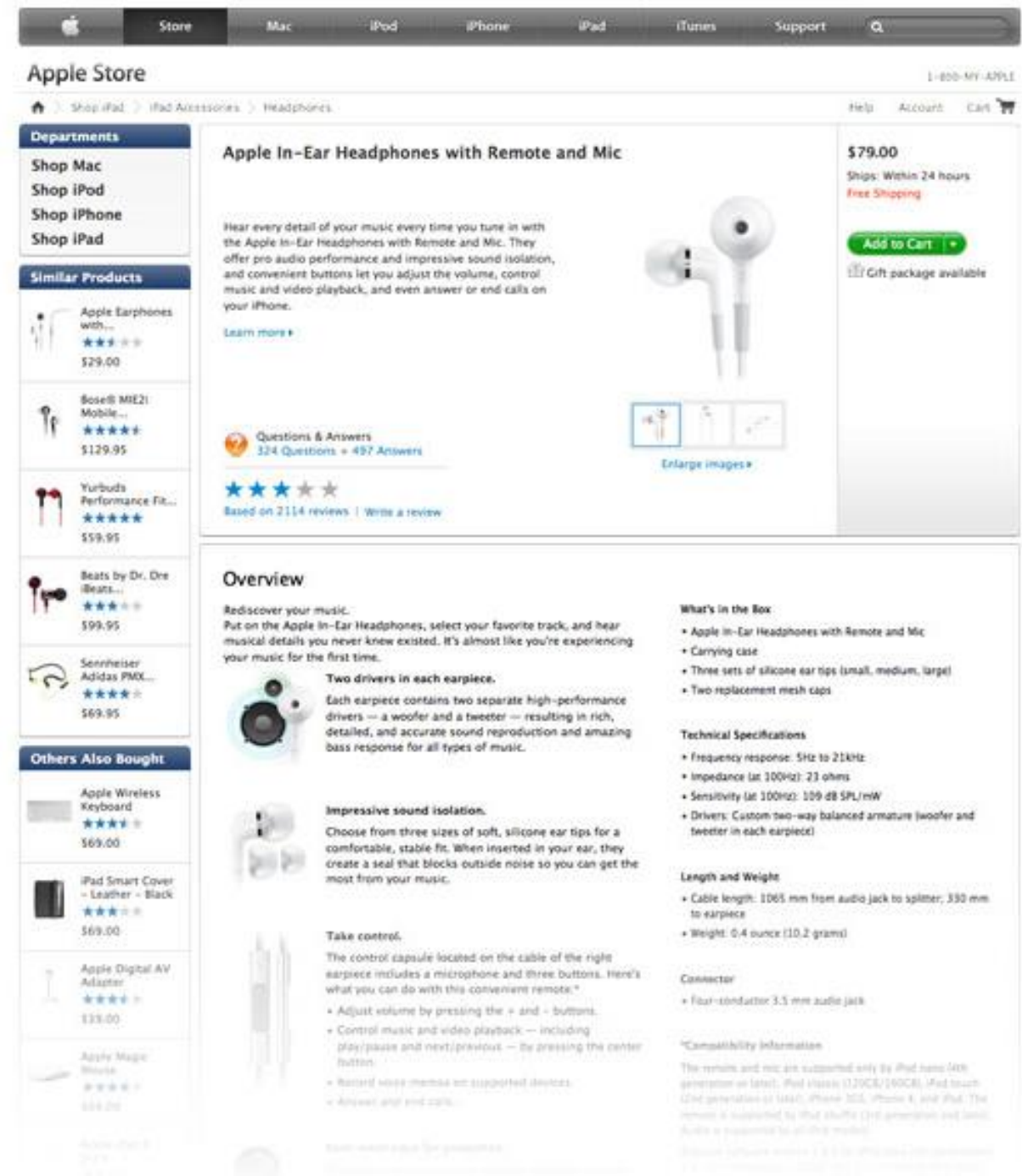
Example UX Goal

- **Actionable:** What specific goal allows us to identify content and functionality to meet the user's goals?
- Need for large product images would address both goals



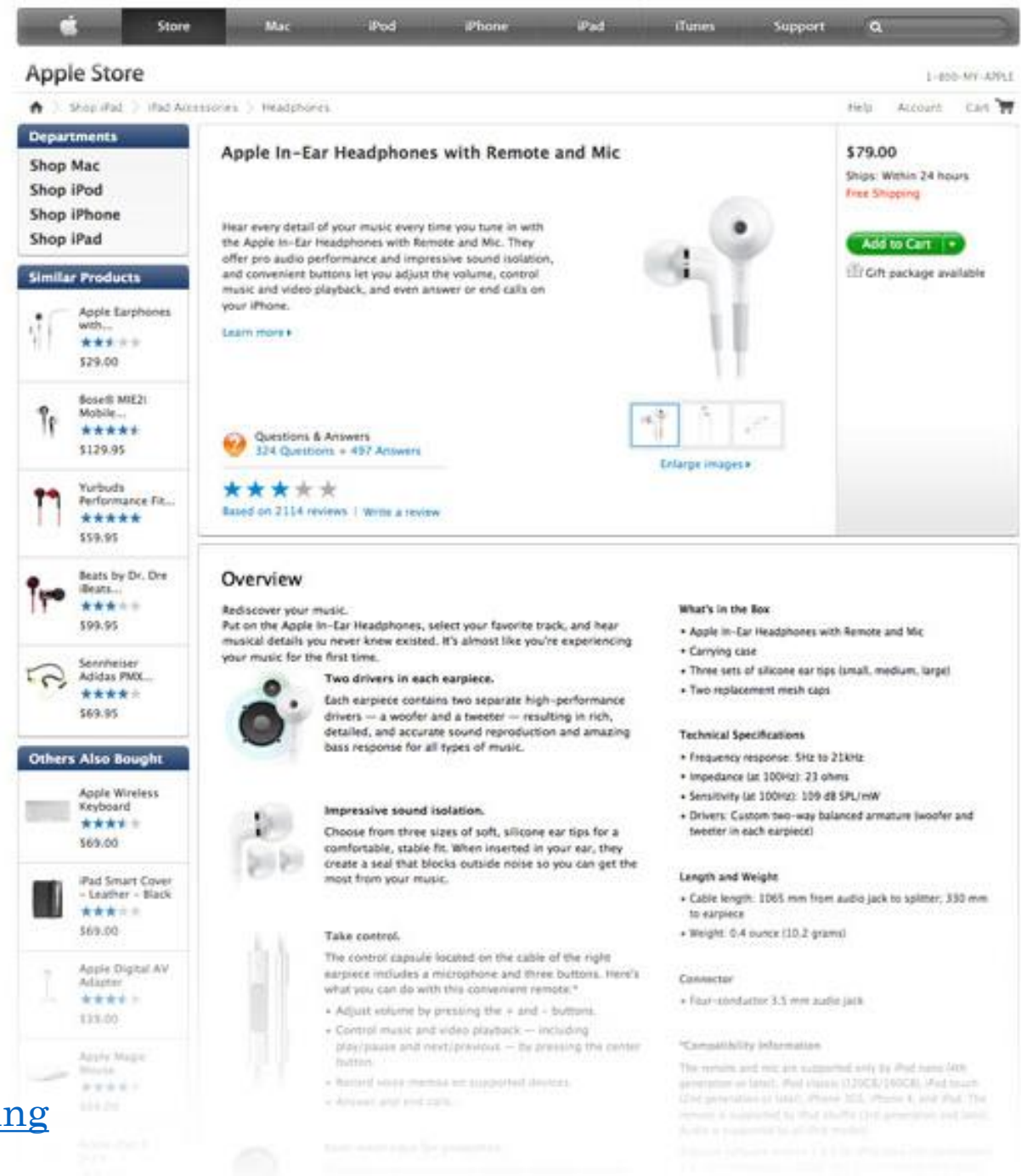
Example UX Goal

- **Relevant:** What information is appropriate for a product detail page (but not for pages on returns policy or terms & conditions)?
- UG1
 - More concise description of features and specifications
- UG2
 - Price and Shipping Cost larger size



Example UX Goal

- **Trackable:** What measures can be tracked over time to determine immediate, short-term and long-term success of design?
- UG1
 - Clicks on the content
- UG2
 - Sales of the product over extended periods of time



User Stories

- In UX industry, “user stories” are simple grammatical sentences that encapsulate UX goals in the following format:
- As a [type of user]
- I want to [take an action]
- So that [a positive outcome]

User Stories

- In UX industry, “user stories” are simple grammatical sentences that encapsulate UX goals in the following format:

As a [type of user]...

I want to [take an action]...

so that [a positive outcome]...

User Stories

As a...

user

I want...

mandatory multi-factor authentication

So that...

I am protected from a seamless experience



@ShitUserStory

Guiding Principles

Be goal-directed

Don't be
inflexible; use
your common
sense

Context is
everything

The answer to
most questions
is “it depends”

It's all about the
people

Everything
should be
evaluated in its
own way

Improvise,
adapt, and
overcome

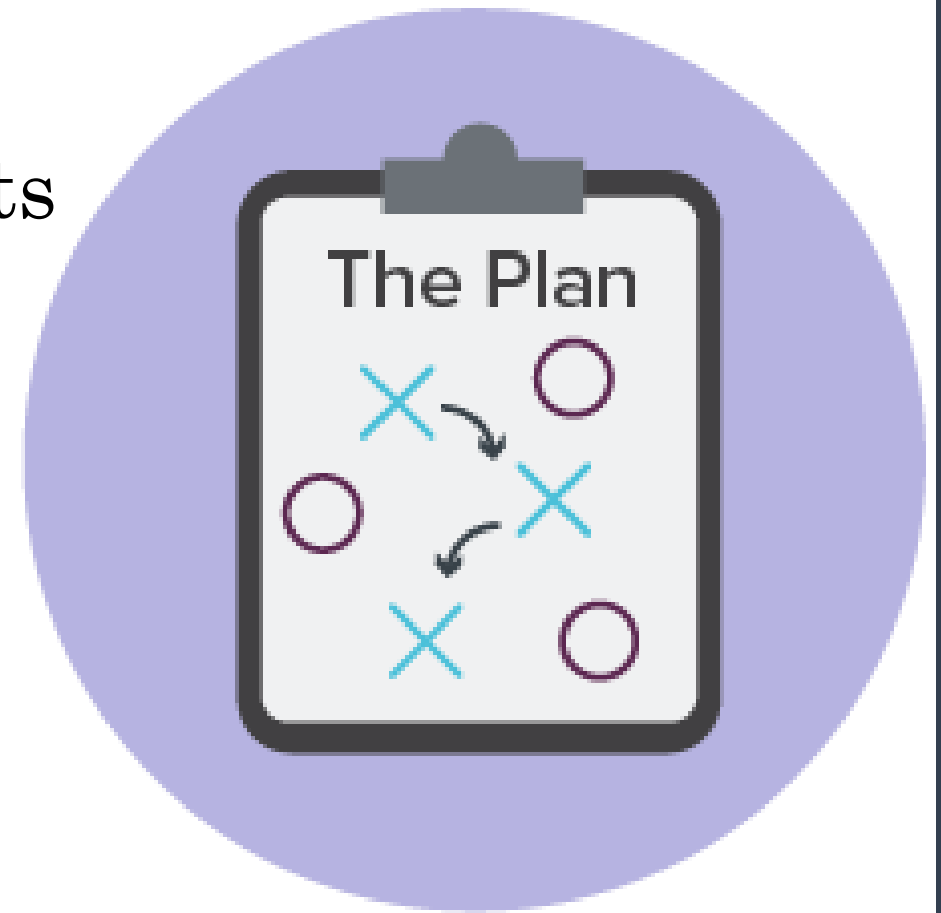
Role of Data Gathering

- Early focus on users and tasks
- Develop specific usability/user experience criteria
- Use empirical measurement.
- Iteration



Key Data Gathering Issues

- Setting goals for data gathering
- Identifying potential participants
- Relationship with participants
- Triangulation
- Pilot studies



Ethical Treatment of Participants

- Institutional approval from independent body representing scientific and community standards (can be waived for low risk educational projects).
- (In an organisation) Agreements about who gets to see employee data and when, and who does not.
- Informed consent read and signed before data collected
- Participants have a right to know:
 - The goals of the study
 - What they will be asked to do and how long their involvement will last
 - The possible risks (aim for minimal risk)
 - What will happen to the research findings and who will see them
 - How their personal information and data will be stored and who has access (privacy concerns)
 - That they will not be quoted without their agreement
 - That they can leave when they wish without hindrance or questioning
 - That they will be treated politely and with respect...
- Focus:
 - “We’re understanding the world you work/play/live in”
 - “The software is being tested, not you!”



Data-Gathering Techniques

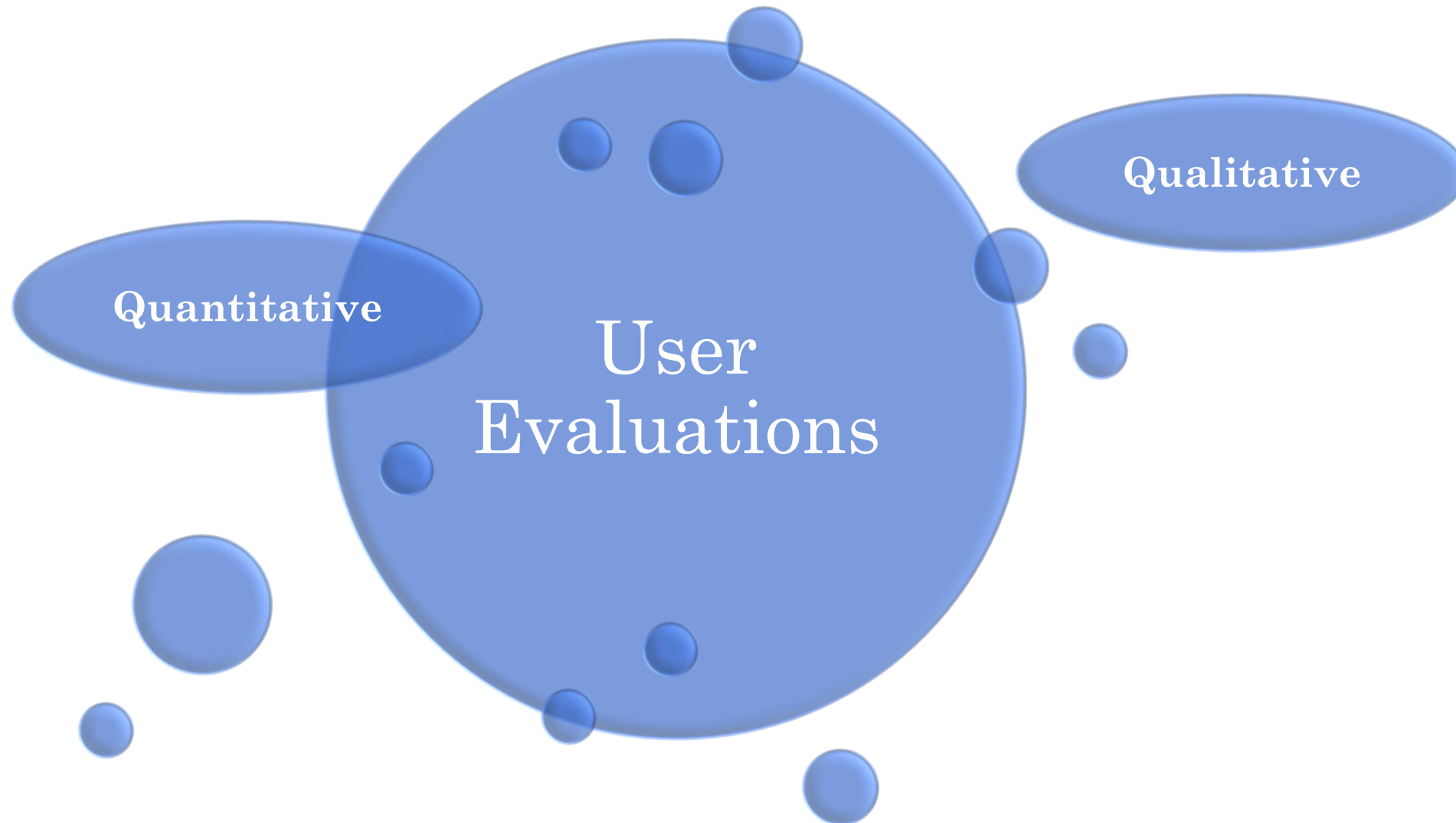
Technique	Good for	Kind of data	Advantages	Disadvantages
Interviews	Exploring issues	Some quantitative but mostly qualitative	Interviewer can guide interviewee if necessary. Encourages contact between developers and users	Time-consuming. Artificial environment may intimidate interviewee
Focus groups	Collecting multiple viewpoints	Some quantitative but mostly qualitative	Highlights areas of consensus and conflict. Encourages contact between developers and users	Possibility of dominant characters
Questionnaires	Answering specific questions	Quantitative and qualitative	Can reach many people with low resource	The design is crucial. Response rates may be low. Unless carefully designed, the responses may not provide suitable data
Direct observation in the field	Understanding context of user activity	Mostly qualitative	Observing gives insights that other techniques don't give	Very time-consuming. Huge amounts of data are produced
Direct observation in a controlled environment	Capturing the detail of what individuals do	Quantitative and qualitative	Can focus on the details of a task without interruption	Results may have limited use in the normal environment because the conditions were artificial
Indirect observation	Observing users without disturbing their activity; data captured automatically	Quantitative (logging) and qualitative (diary)	User doesn't get distracted by the data gathering; automatic recording means that it can extend over long periods of time	A large amount of quantitative data needs tool support to analyze (logging); participants' memories may exaggerate (diary)

User Evaluations

- User evaluations can help designers uncover how users perceive a system before, during and after interacting with it
- Evaluations often only give you part of the story.
 - They give you the “what” but NOT the “why”



User Evaluations



Quantitative and Qualitative

	Usual raw data	Sample qualitative data	Sample quantitative data	Initial processing
Interviews	Audio recordings.	Responses to open questions.	Age, job role, years of experience.	Transcription of recordings.
	Interviewer notes.	Video pictures.	Responses to closed questions	Expansion of notes
	Video recordings	Respondent's opinions		
Questionnaires	Written responses.	Responses to open questions.	Age, job role, years of experience.	Clean up data.
	Online database	Responses in 'further comments' fields.	Responses to closed questions	Filter into different data sets
		Respondent's opinions		
Observation	Observer's notes.	Records of behavior.	Demographics of participants.	Expansion of notes.
	Photographs.	Description of a task as it is undertaken.	Time spent on a task.	Transcription of recordings.
	Audio and video recordings.	Copies of informal procedures	The number of people involved in an activity	Synchronization between data recordings
	Data logs.			
	Think-aloud			

No studio this week!

- But you've got some homework...
 - HTA diagrams
 - UX Goals
- Check out the blackboard site

Summary

- UX Goals provide concrete targets for your design that relate back to requirements gathered from your users
- They need to be SMART
- They keep your design and engineering effort grounded in what is important for success
- User evaluations should be completed multiple times throughout the development process

Next Time...

- In our next session, we will look at **User-Based Evaluations and Data Analysis**