



PROTOTYPE FOR RAPID MARKET VALIDATION

Bernard Suen
Center for Entrepreneurship
Chinese University of Hong Kong



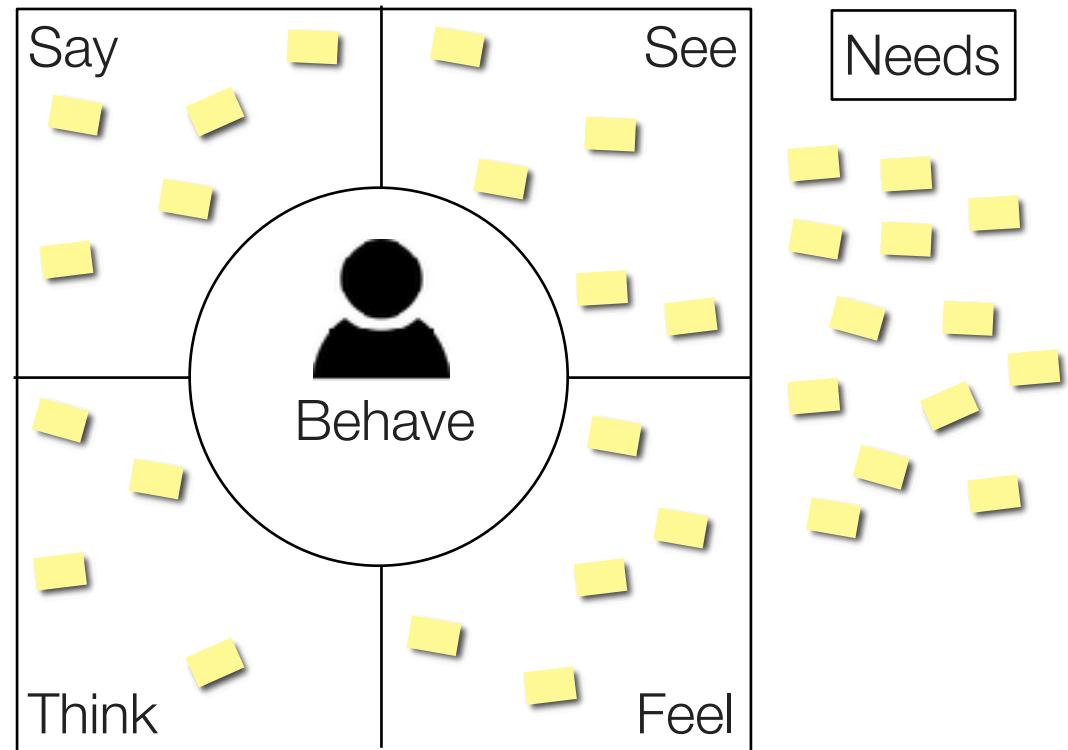
Center for
Entrepreneurship

PROBLEM DISCOVERY ON GROUP PROJECT

Empathy Map

Please note: You cannot directly observe thoughts and feelings. It must be inferred by paying careful attention to body language, tone, and choice of words.

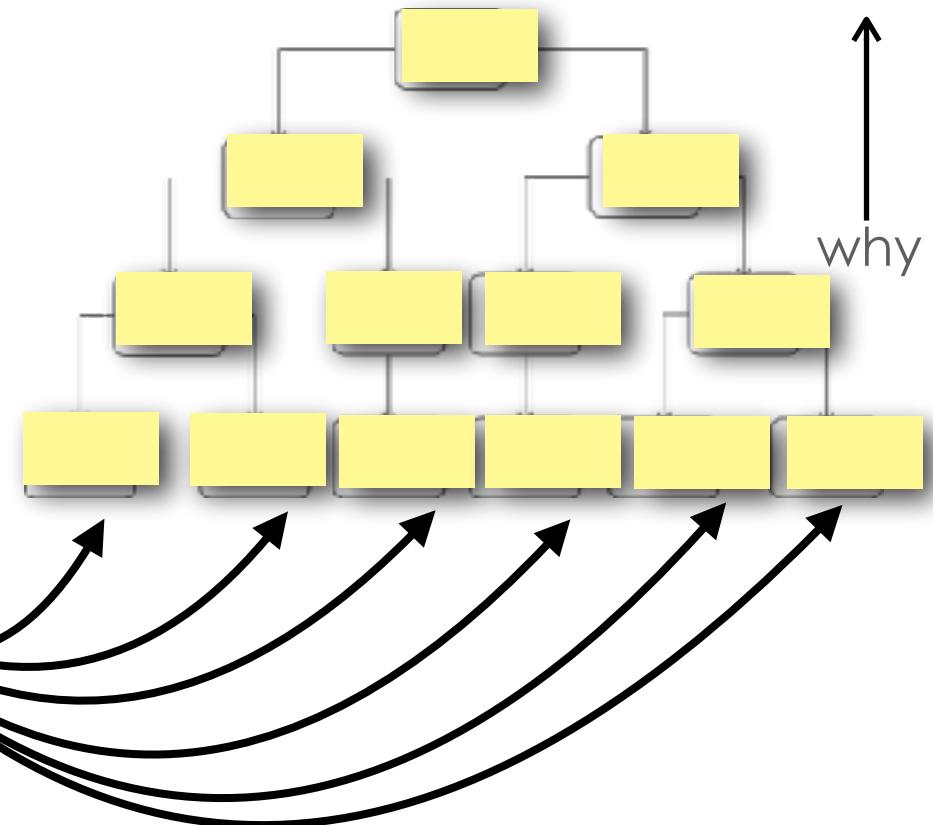
Source: Interaction Design Foundation



How/Why Laddering

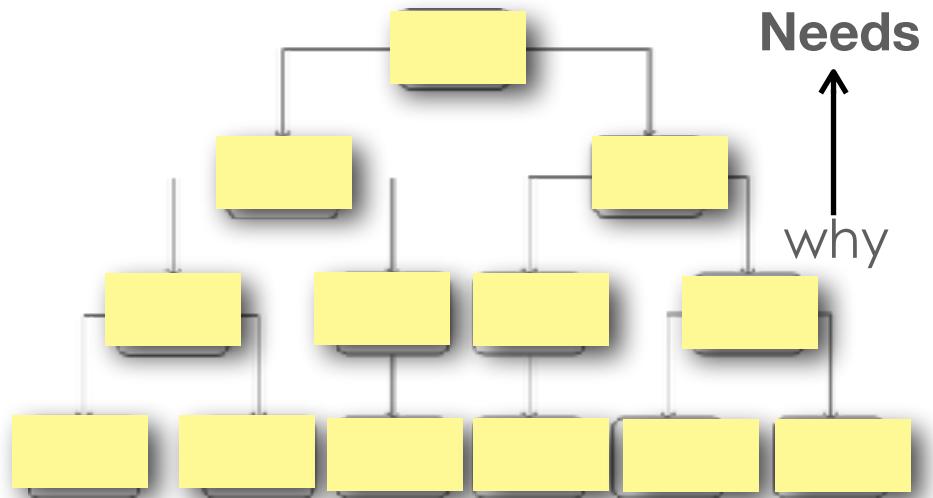


Source: Interaction Design Foundation



How/Why Laddering

How/Why Laddering decomposes complex, abstract needs into simpler, more specific tasks, or conversely keep asking why (e.g. 3 times) to find out the underlying needs that compel people to perform certain tasks.



Source: Interaction Design Foundation

QUICK RECAP

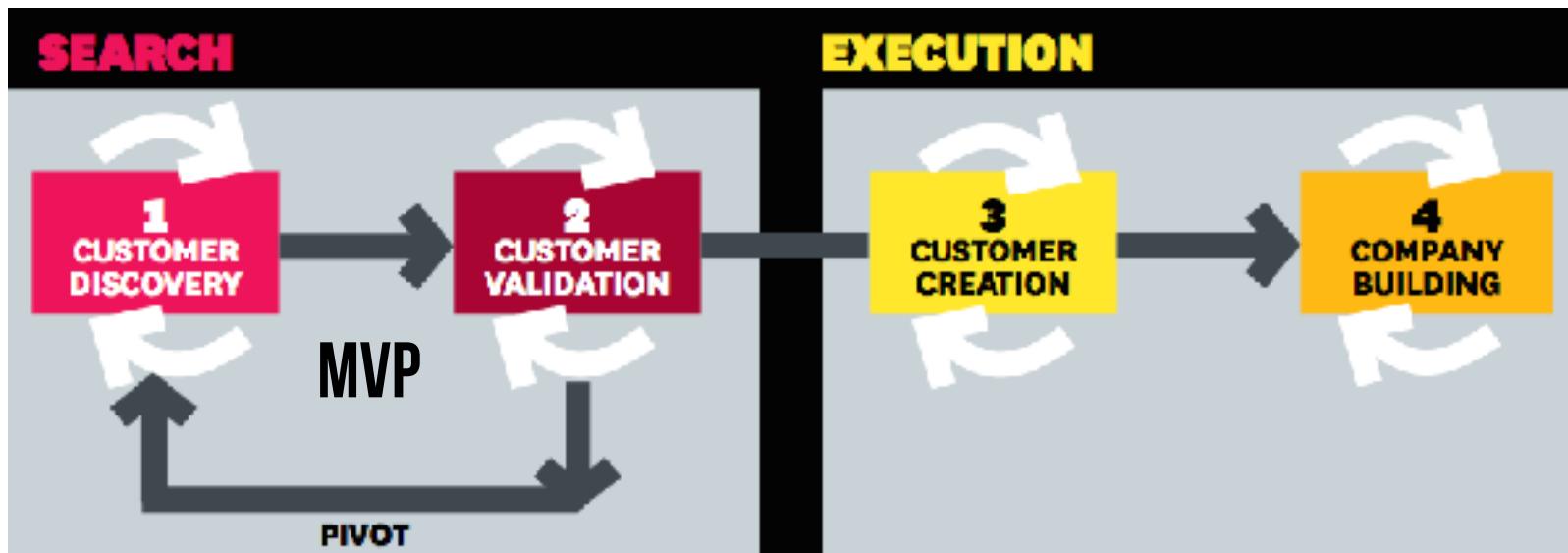


THE LEAN STARTUP APPROACH

MINIMUM VIABLE PRODUCT AS A VERSIONING STRATEGY



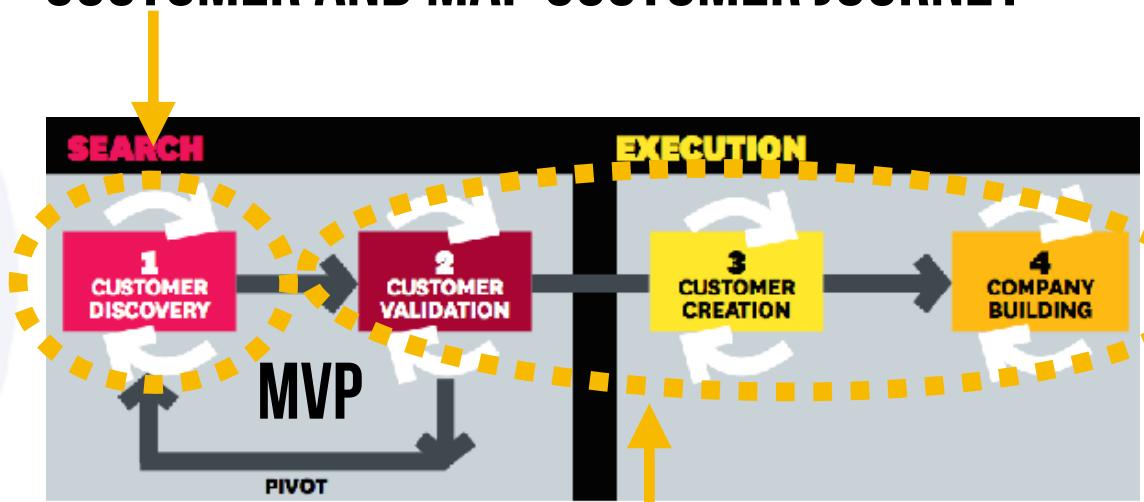
BUILD-MEASURE-LEARN CYCLE IN SEARCH OF PRODUCT-MARKET FIT



Source: "Why Lean Start-up Changes Everything" by Steve Blank, Harvard Business Review May 2013



USE DESIGN THINKING TO DISCOVER CUSTOMER AND MAP CUSTOMER JOURNEY

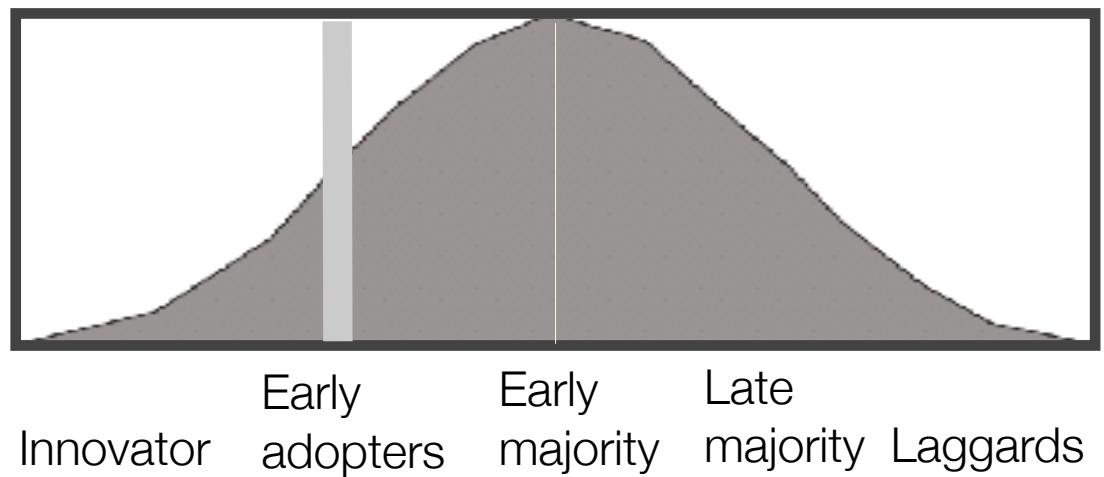


Source: "Why Lean Start-up Changes Everything" by Steve Blank, Harvard Business Review May 2013

USE LEAN STARTUP TO VALIDATE AND SCALE CUSTOMER BASE

How to find an early adopter?

Crossing the Chasm



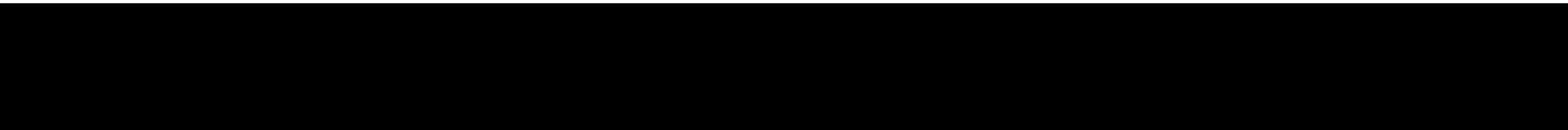
Adapted from Diffusion of Innovation Model
by Everett Rogers



Source: Flickr



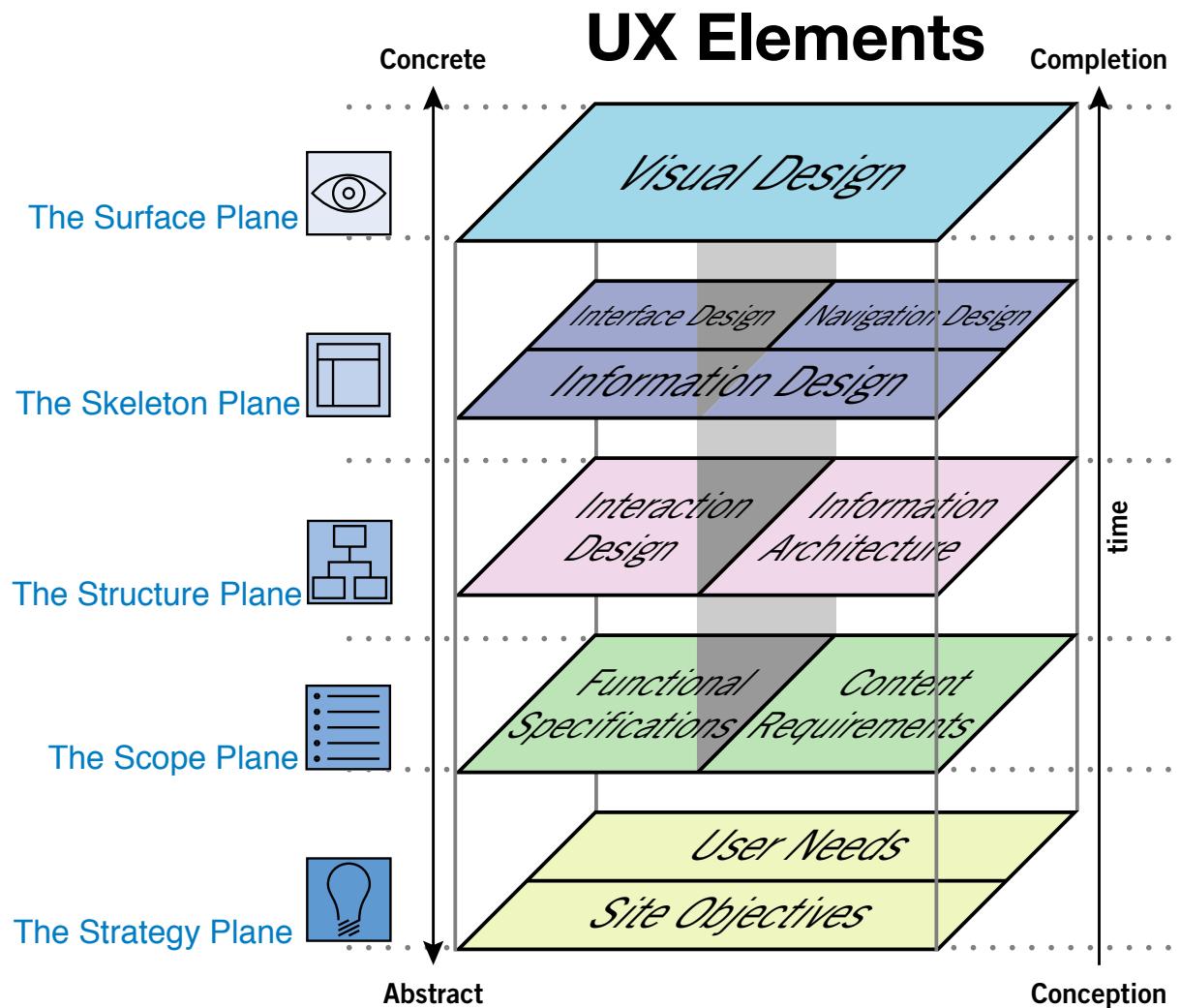
THE AIRBNB STORY



FOCUS TODAY: CUSTOMER VALIDATION

ELEMENTS OF USER EXPERIENCE

Source: Elements of User Experience
by Jesse James Garrett



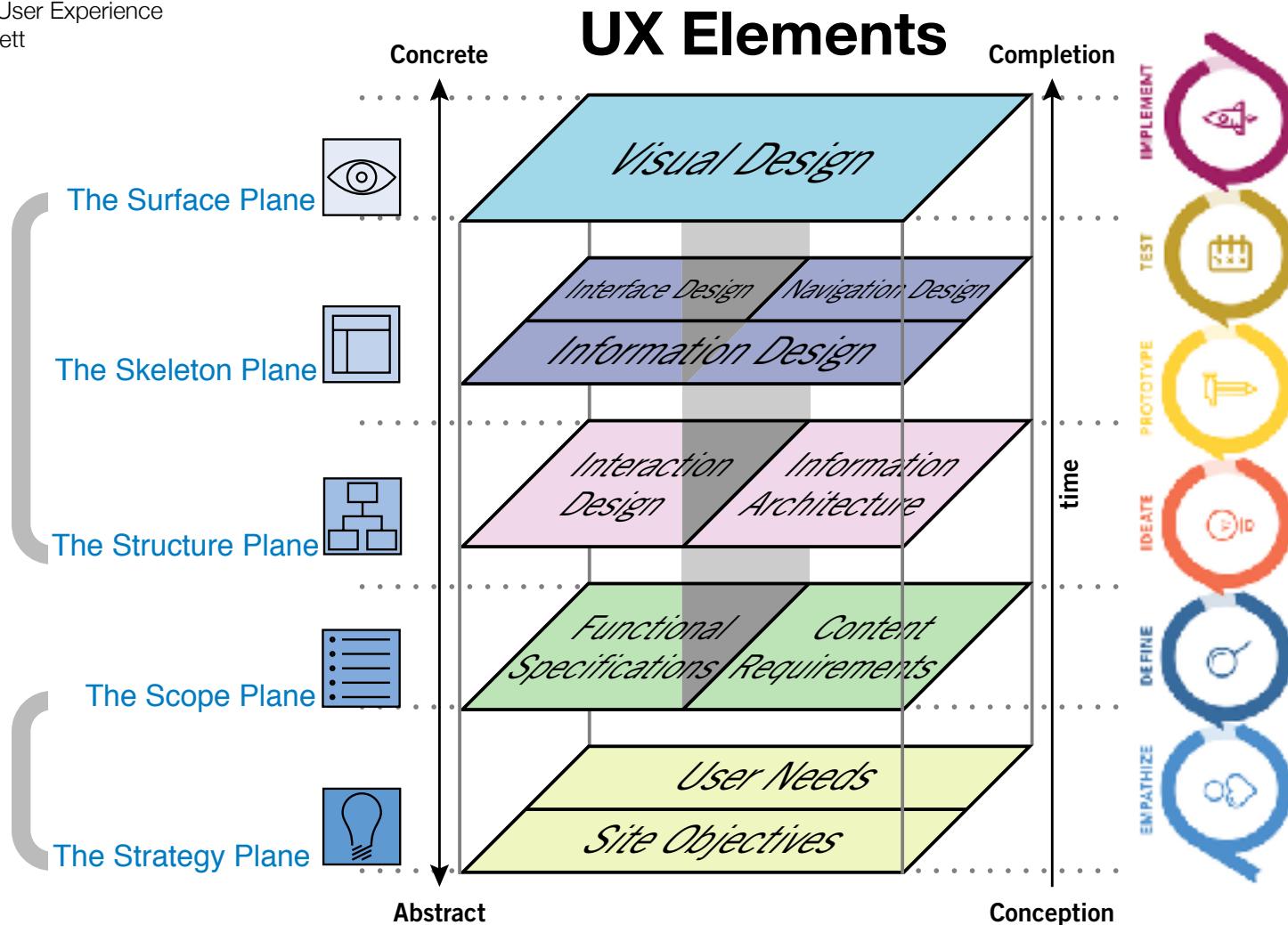
Source: Elements of User Experience
by Jesse James Garrett

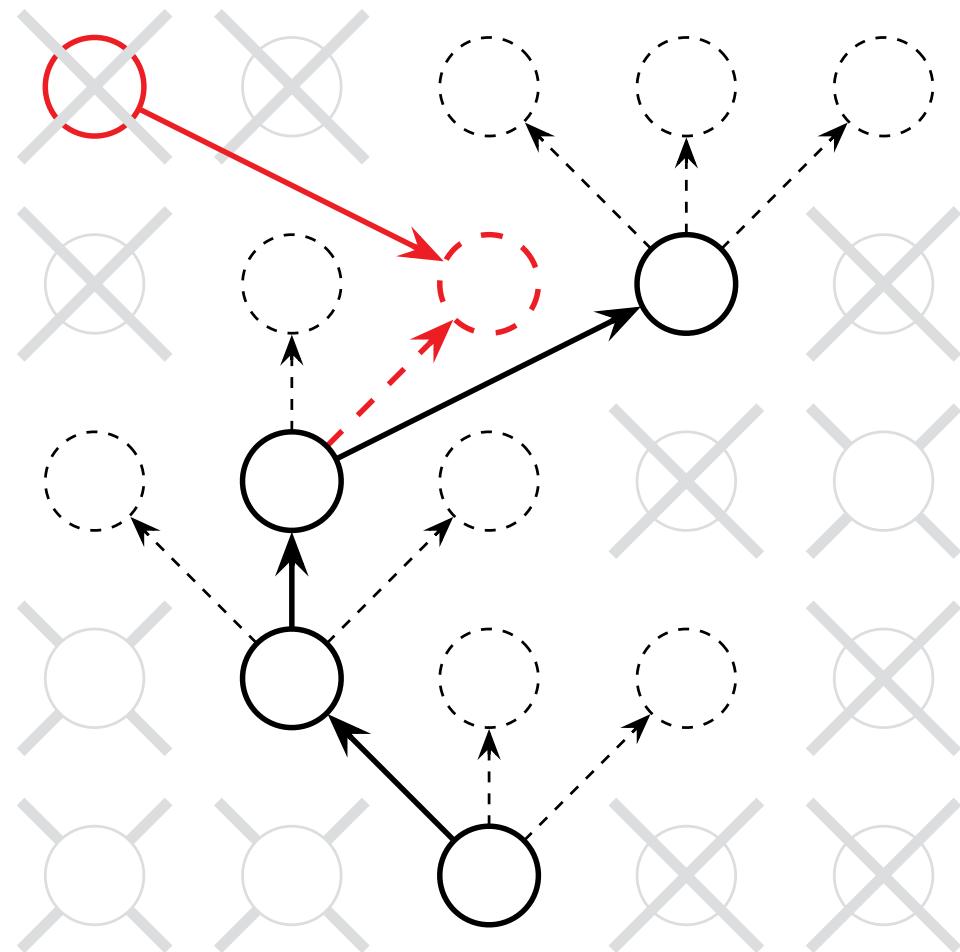
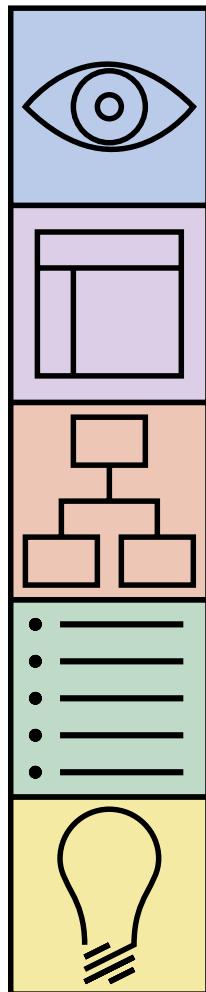
Problem Solution

how and
how much

Problem Definition

who, what,
and why





This ripple effect means that choosing an “out of bounds” option on an upper plane will require rethinking decisions on lower planes.

Setting the right Direction. But pivot to get to the end.

Adapted from Jesse James Garrett, “The Elements of User Experience”

USING CUHK ADMISSION SITE AS AN EXAMPLE



About CUHK



Welcome Message

I am delighted that you are considering The Chinese University of Hong Kong for your undergraduate studies.

Founded in 1963 with a mission "to combine tradition with modernity, and to bring together China and the West", the University has, since its founding, developed into an academic institution of international standing, well-known for its excellence in both teaching and research.

Welcome Message

Explore CUHK

- [Explore CUHK](#)
- [Distinguished Scholars](#)
- [Facts & Figures](#)
- [Virtual Campus Tour](#)

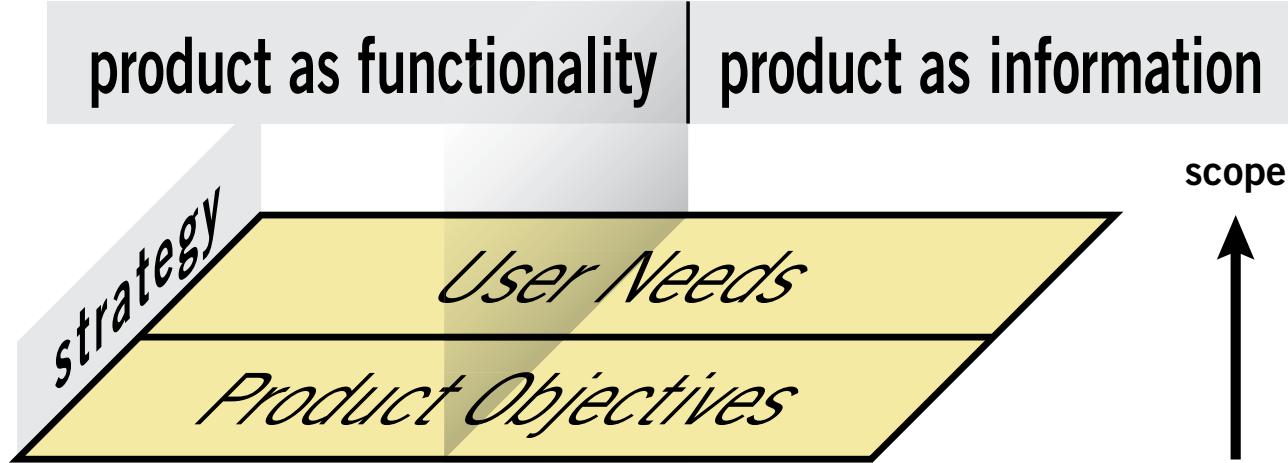
Student Life

- [Campus & Accommodation](#)
- [Student Exchange Programme](#)
- [HCARE Programme](#)
- [Student Support](#)
- [Voices of Students](#)

Colleges

- [A Unique College System](#)
- [College Assignment](#)

CUHK Through the Lens



Adapted from Jesse James Garrett, “The Elements of User Experience”

Empathise
身同感受

Define
界定问题

Ideate
創意發想

Prototype
開展原型

**Test &
Implement**
測試執行

THE 5 STEP DESIGN THINKING JOURNEY

Source: Stanford D.School



OBSERVATION AND UNDERSTANDING



LOCAL APPLICANTS

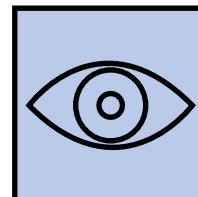
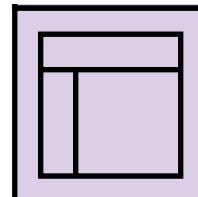
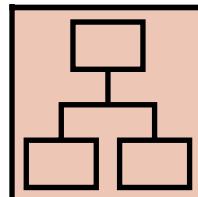
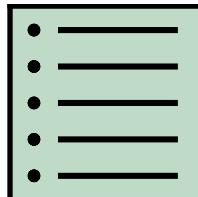
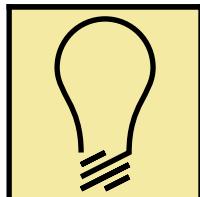


FOREIGN APPLICANTS

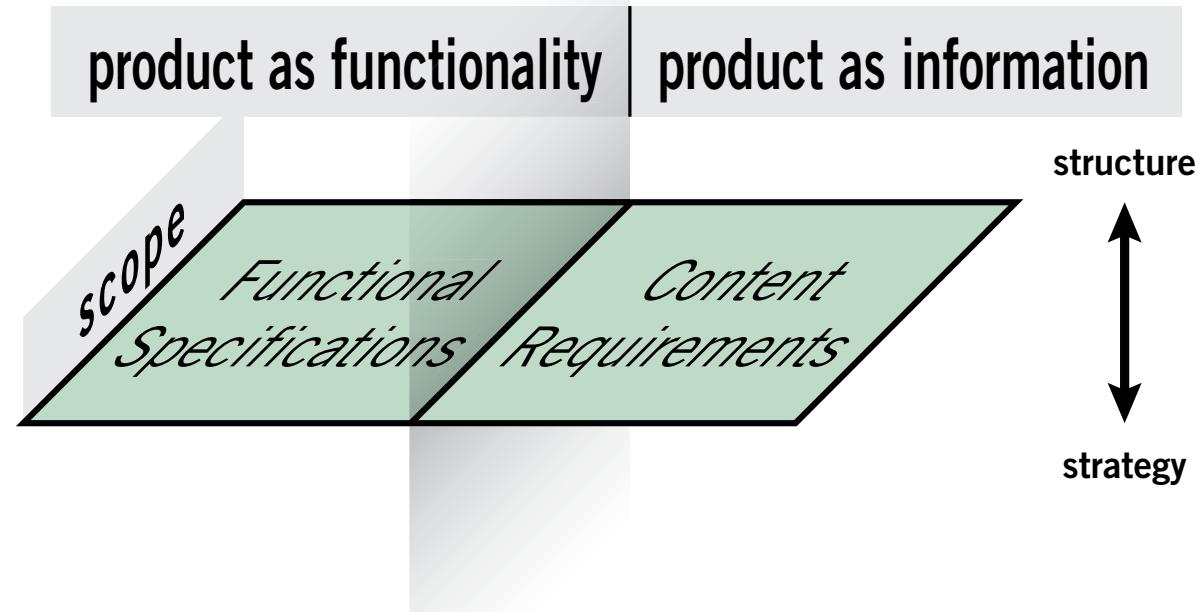


MAINLAND APPLICANTS

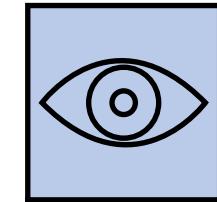
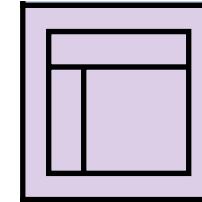
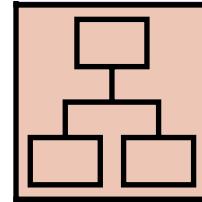
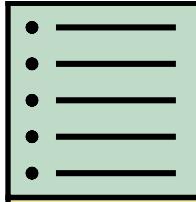
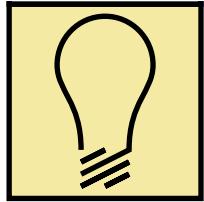
SITE OBJECTIVES		TARGET USERS		USER NEEDS
Primary goal	Become top tier university in the world.	Primary User	Top local students and world-class academics	Apply for degree enrollment and job vacancies.
Additional goal	Increase research output.	Secondary User	Chinese students interested in the west	Interested to come to CUHK to study.
Additional goal	Build strong alumni network.	Secondary User	Foreign students interested in PRC	Will consider CUHK for full-degree and exchange program.



STRATEGY PLANE



Adapted from Jesse James Garrett, “The Elements of User Experience”



SCOPE PLANE

Source: Elements of User Experience
by Jesse James Garrett

Empathise
身同感受

Define
界定问题

Ideate
創意發想

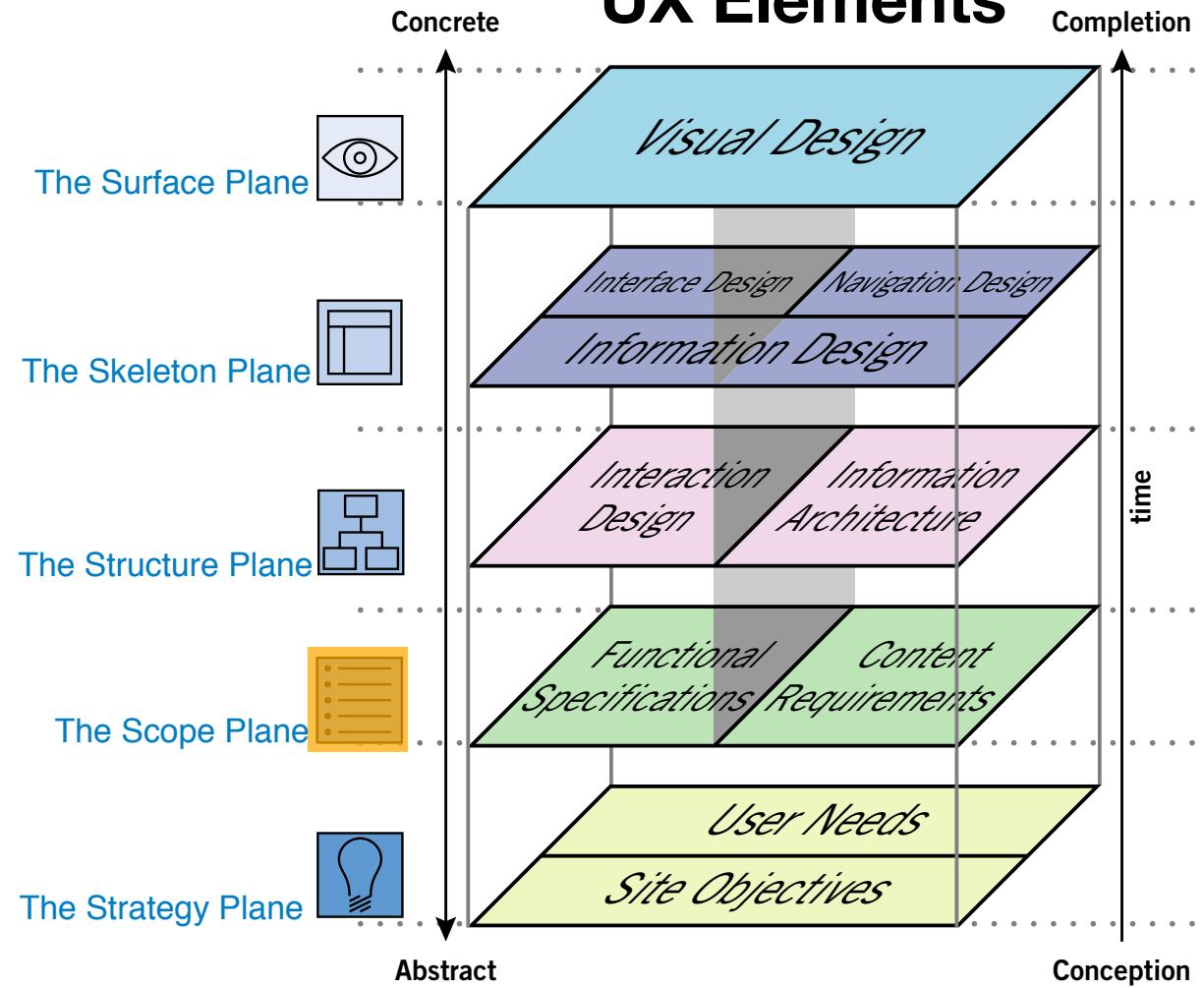
Prototype
開展原型

**Test &
Implement**
測試執行

THE 5 STEP DESIGN THINKING JOURNEY

Source: Stanford D.School

UX Elements



Source: Elements of User Experience
by Jesse James Garrett

Current Journey Map

	BEGIN	CHALLENGE	RESPONSE	RESULT
PERSONA				
CONTEXT				
ARTEFACTS				
SCENARIO				

	BEGIN	CHALLENGE	RESPONSE	RESULT	
PERSONA	- Local - PRC/ International	Curious about the school and program	Getting serious and anxious	Excitement	
CONTEXT	online promotion	school recruitment	CUHK	online/email	
ARTEFACTS	website	brochure/ presentation	- campus map - hk map - application form	letter of acceptance	
SCENARIO	online research Persona wants to filter program	staff roadshow Persona meets professor and CUHK staff	school visit Check out the school	application Finalize options Accept offer	admission

例子



THE PROBLEM STATEMENT (focusing on who, what and why only):

- How can CUHK's website help new student and staff applicants **pursue their career objectives** over the alternatives out there while at the same time **communicate** the school's brand to continue attracting the best?

**USE JOURNEY MAPPING TO DEFINE FUNCTIONAL/
SPECIFICATION AND CONTENT REQUIREMENT**

HOME

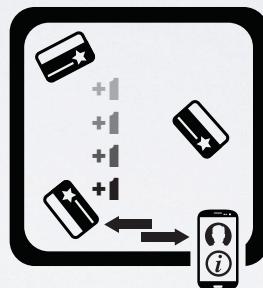


Joins loyalty program, creates a profile & installs phone app.

LOBBY



Given physical loyalty card on check-in — stores profile info, points & doubles as room key.



(Can be done in lobby or room)
Set availability via orientation of card. (Lobby only) Loyalty points awarded to cards at the same table. Table lights up to show activity, interests shown on table & lobby display map. Profiles added to app network.

ROOM

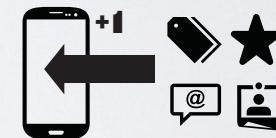
BOOKING

CHECK-IN

MEETUP

RETURN

INTERACTIONS OUTSIDE HOTEL



Prompted by app to tag places visited, ratings & social media for points — added to in-app database of recommendations.

Source: MIT Mobile Experience Lab

HOME

LOBBY

ROOM

BOOKING

CHECK-IN

MEETUP

Source: MIT Mobile
Experience Lab

USER JOURNEY MAP

profile, activity, points

Booking
Data

Check-in
Data

Interact-
ion Data

Review
Data

Give
check
in point



profile, activity, points

Profile, activity, points
of other guests at the
same table. Table lights up
to show activity, interests shown
on table & lobby display map.
Profiles added to app network.

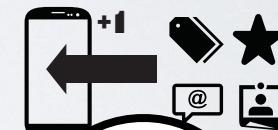
INTERACTIONS

INTER-
OUTSI-
ERNS



Data-
base

profile, activity,
points



Places
Media
Group
Actions.

avid social explorer

Gen Y travelers seeking personalized yet serendipitous experiences, good company to share them with, and the ability to capture and celebrate them.

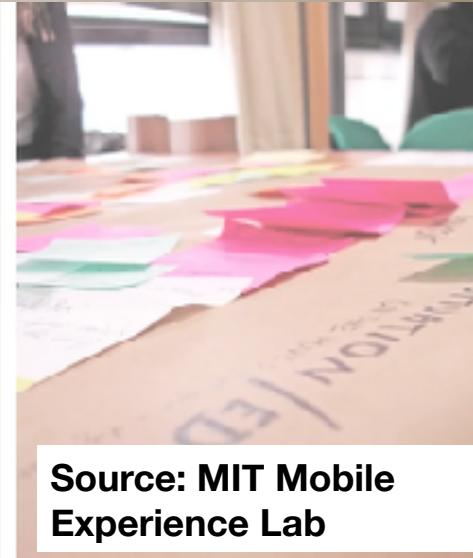


bored lobbygoer in transition

Anyone using the lobby as a meeting place or gathering point, looking to pass the time and avoid awkwardness.



PERSONA



Source: MIT Mobile Experience Lab



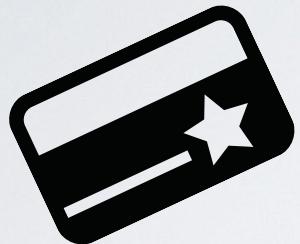
CONTEXTS



Source: MIT Mobile Experience Lab

ARTEFACTS

THE CARD



room key
point counter
status symbol

THE TABLE



THE APP



shared memory
social networks
recommendations

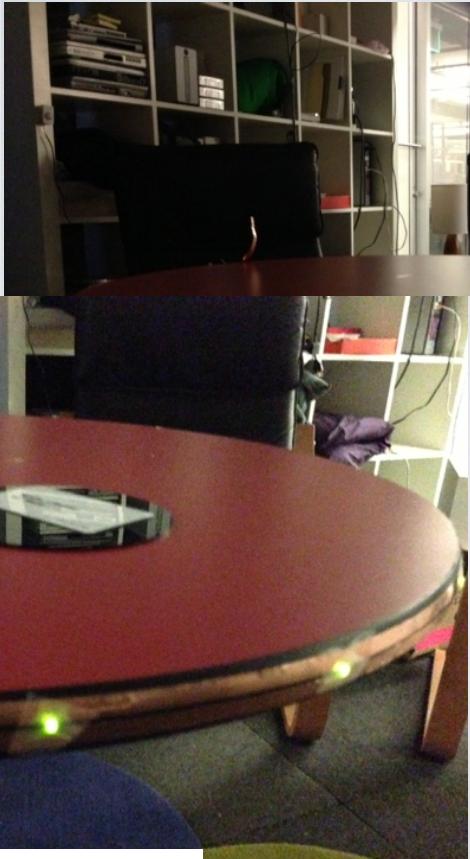
LOYALTY

INTERACTION

DATA

Source: MIT Mobile
Experience Lab

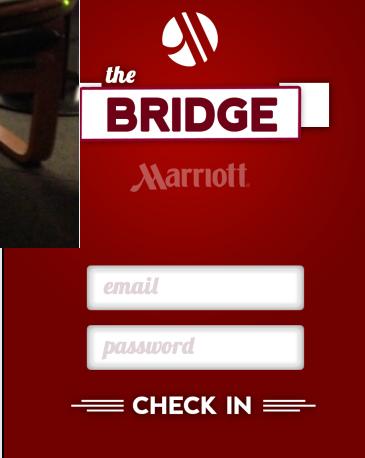
TABLE



ARTEFACTS



APP



CARD



Source: MIT Mobile Experience Lab



ROLE PLAY PHYSICAL EXPERIENCE

SCENARIOS

Source: MIT Mobile Experience Lab



THE SOLUTION (focusing on how, and how much):

The Chinese University of Hong Kong

About CUHK Admissions Scholarships & Financial Aid News and Events Visit Us

Search... Search

Welcome Message

I am delighted that you are considering The Chinese University of Hong Kong for your Undergraduate studies.

Founded in 1963 with a mission "to combine tradition with modernity, and to bring together China and the West", the University has, since its founding, developed into an academic institution of international standing, well-known for its excellence in both teaching and research.

Student Life

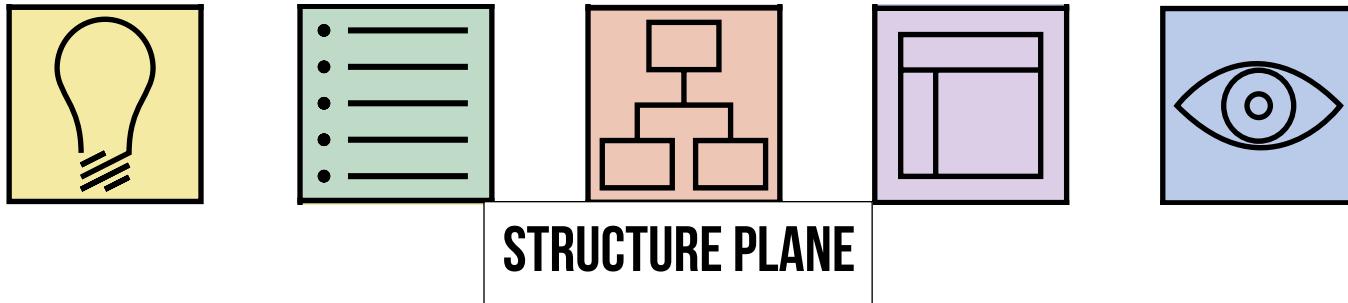
Campus & Accommodation Student Exchange Programme I-CARE Programme Student Support Voices of Students

Colleges

A Unique College System College Assignment

CUHK Through the Lens





Source: Elements of User Experience
by Jesse James Garrett

Future Journey Map

	BEGIN	CHALLENGE	RESPONSE	RESULT
PERSONA				
CONTEXT				
ARTEFACTS				
SCENARIO				

HOME

LOBBY

ROOM

BOOKING

CHECK-IN

MEETUP

Source: MIT Mobile
Experience Lab

USER JOURNEY MAP

profile, activity, points

Booking
Data

Check-in
Data

Interact-
ion Data

Review
Data

Give
check
in point



profile, activity, points

Profile, activity, points
of other guests at the
same table. Table lights up
to show activity, interests shown
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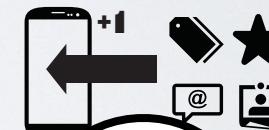
INTERACTIONS

INTERACTIONS

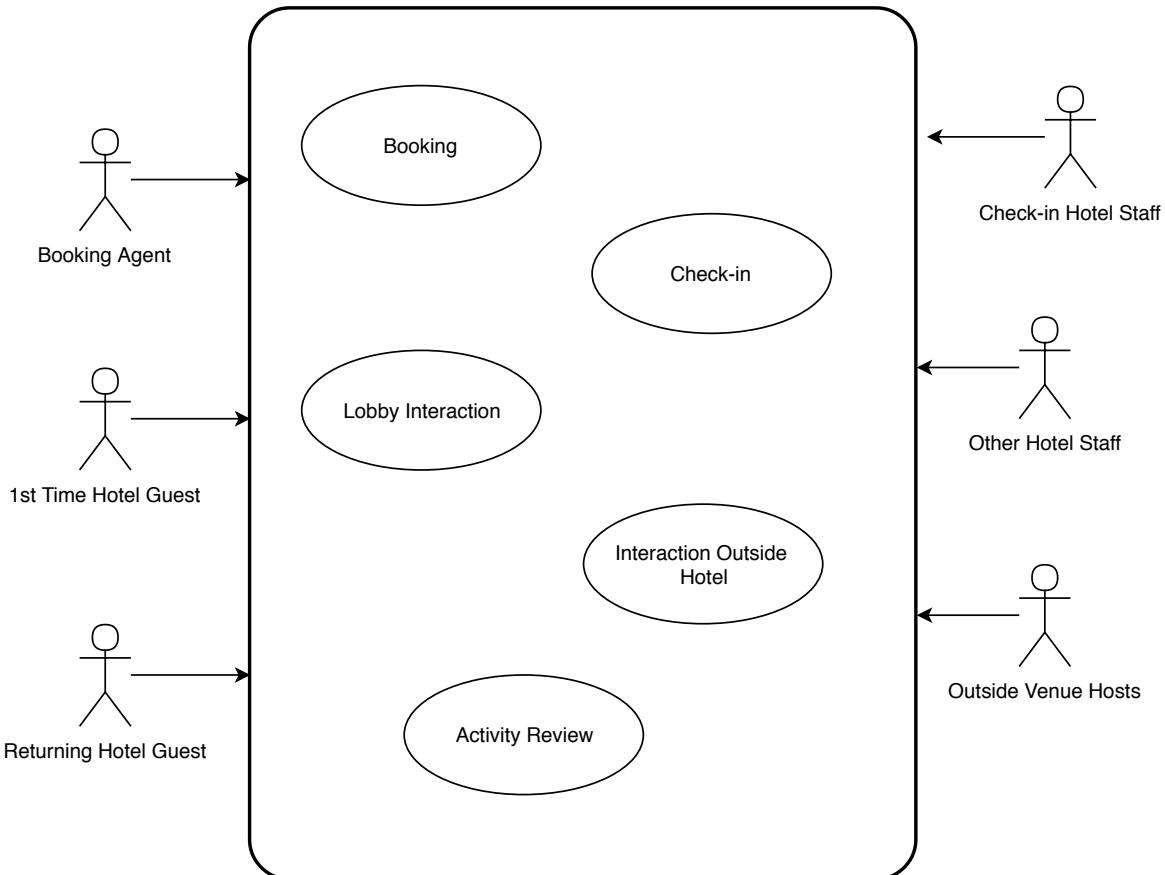


Data-
base

profile, activity,
points

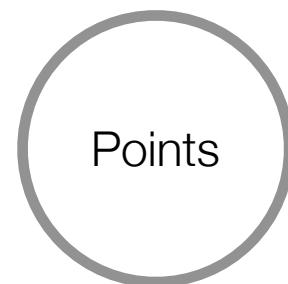
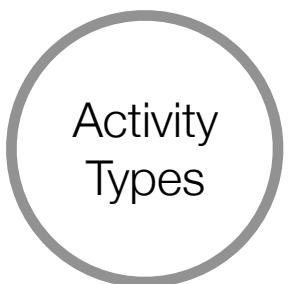
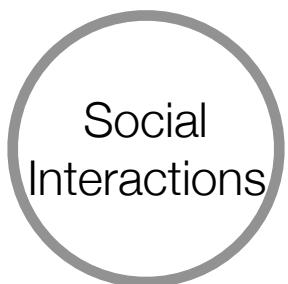
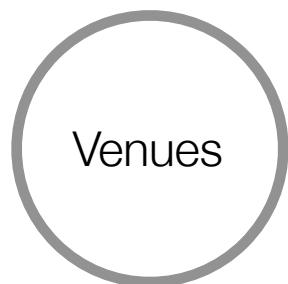
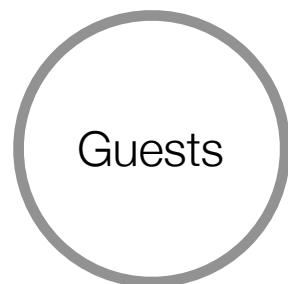


Places
Media
Group
Actions.



Use Cases of a system

Data Entities to be Tracked

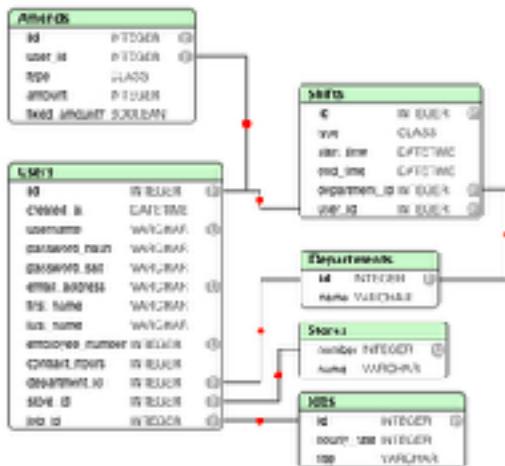


- e.g.
 - 1st time guests
 - Returning guests
- e.g.
 - Starbuck
 - Bar inside hotel
 - Boston Metropolitan Museum
- e.g.
 - Add friends
 - Take pictures
 - Share rides
 - Split bills
- e.g.
 - Museum tour
 - Bar hopping
 - Scenic picture taking
 - Business meeting
- e.g.
 - Revisit
 - Dine in hotel
 - Shop in hotel
 - Initiate contact
 - Give reviews

Source: commons.wikimedia.org



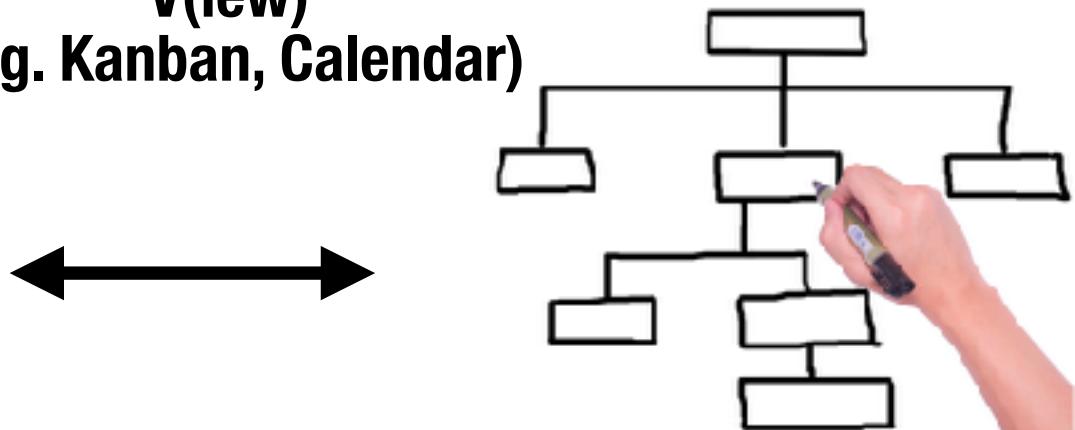
Source: [Caius Durling \(Flickr\)](https://flickr.com/photos/caiusdurling/)



M(odel)
(e.g. table and relations)

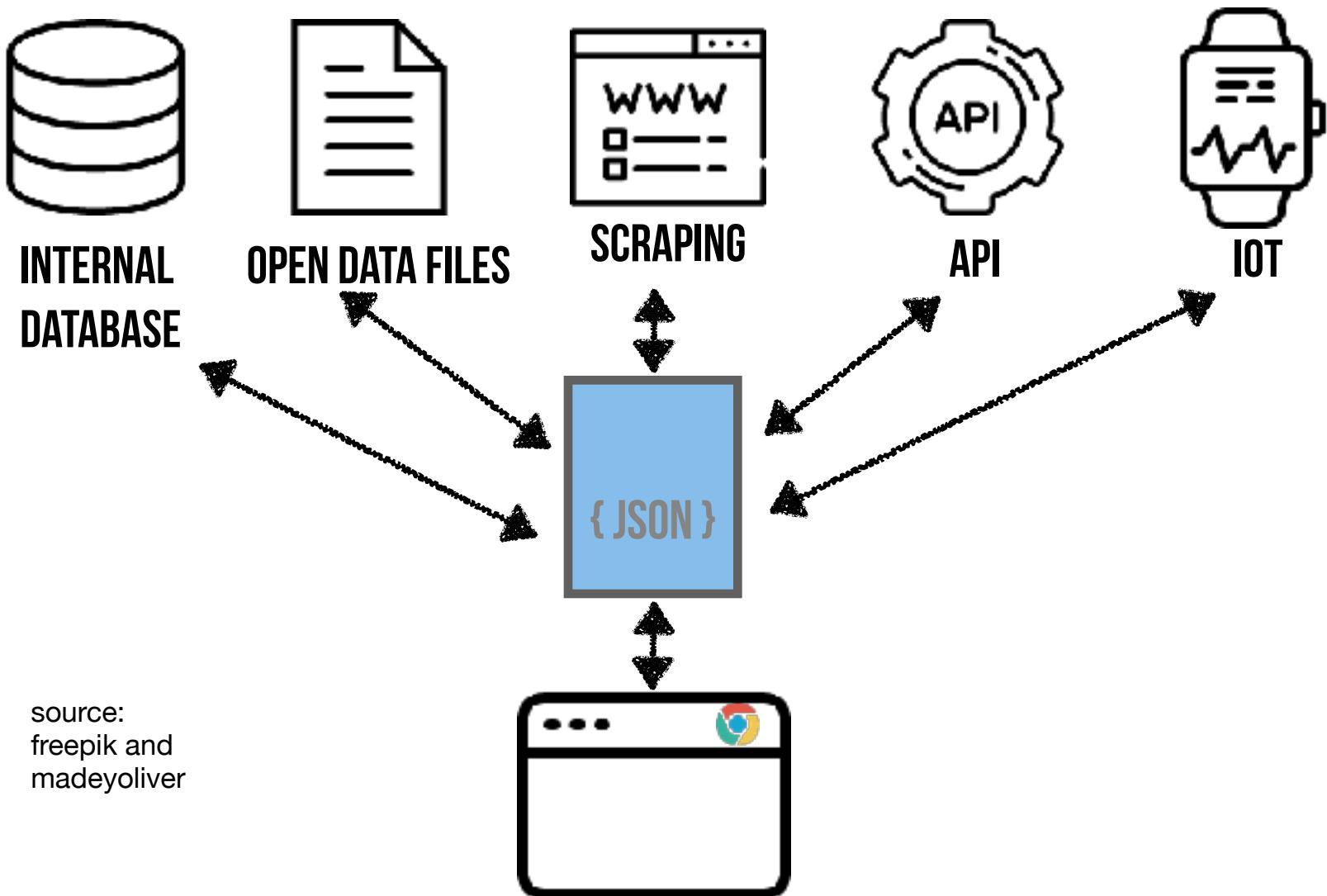
V(iew) (e.g. Kanban, Calendar)

Source: pexels.com



C(ontroller)
(e.g. Sitemap, menu, navbar)

DATA SOURCES





ARTWORK: CHANDRAKIRAN PAUL, DISTER

COMPETITION

How Smart, Connected Products Are Transforming Competition

by Michael E. Porter and James E. Heppelman

FROM THE NOVEMBER 2014 ISSUE

Source: Harvard Business Review



HARVARD | BUSINESS | SCHOOL



FACULTY & RESEARCH



FACULTY

RESEARCH

FEATURED TOPICS

ACADEMIC UNITS

FIND

Faculty, publications, topics



ARTICLE | HARVARD BUSINESS REVIEW

How Smart, Connected Products Are Transforming Competition

by Michael E. Porter and James E. Heppelman

PRINT SHARE EMAIL

About the Author



Michael E. Porter
Strategy

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The Human Perspective (e.g. Kanban, Calendar, Gallery views — visual grouping)



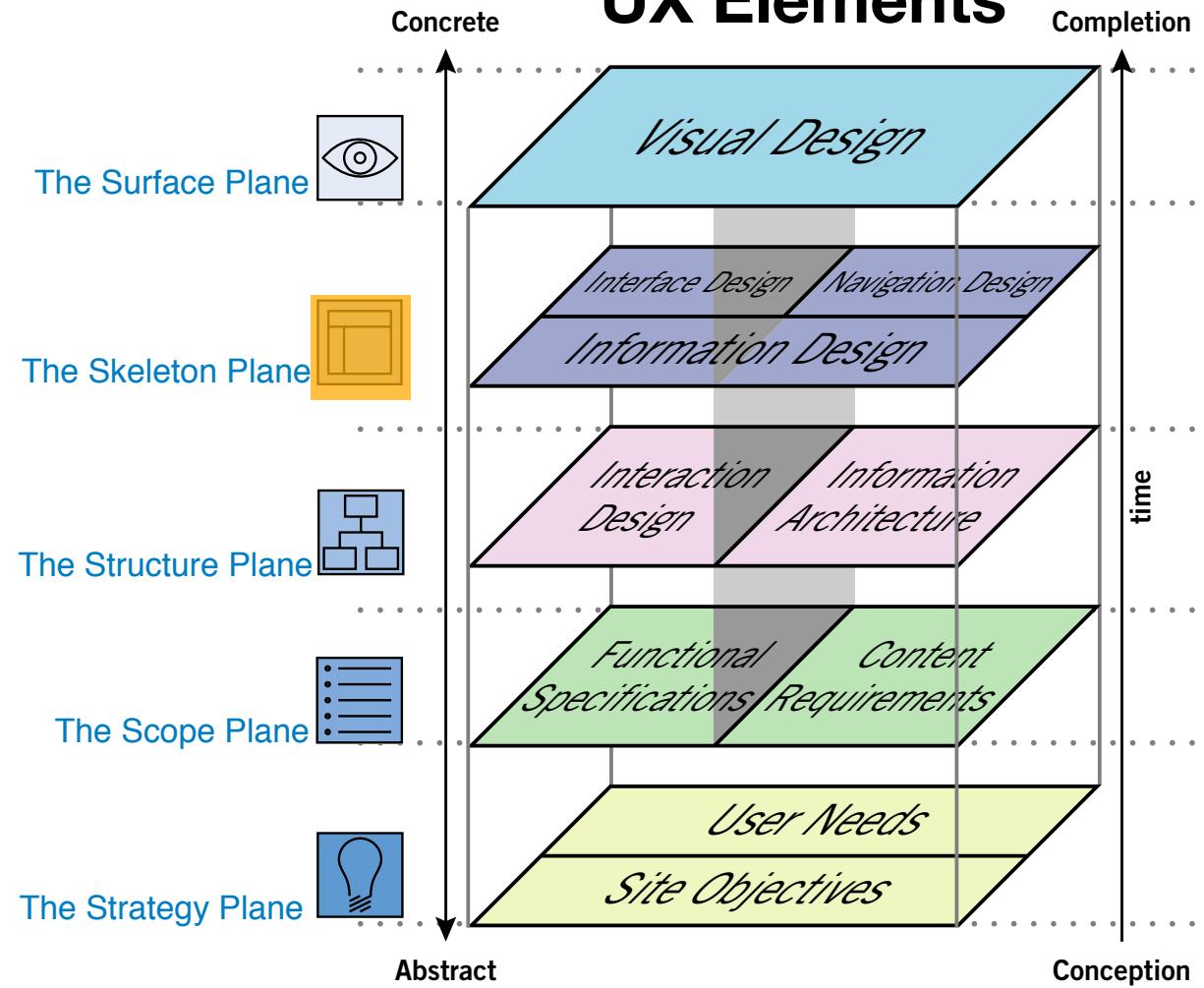
M(odel), V(iew), C(ontroller) Framework



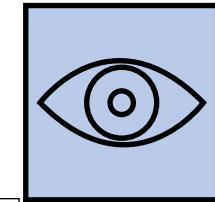
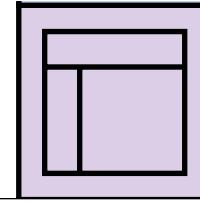
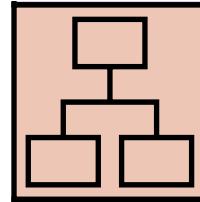
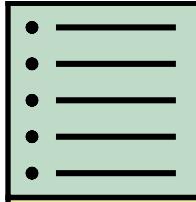
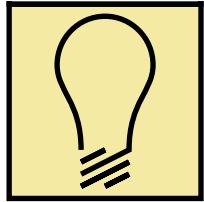
**The System Perspective
(e.g. Tables, fields, and relationships — logical grouping)**

Sitemap/Menu/Navigation Sidebar

UX Elements



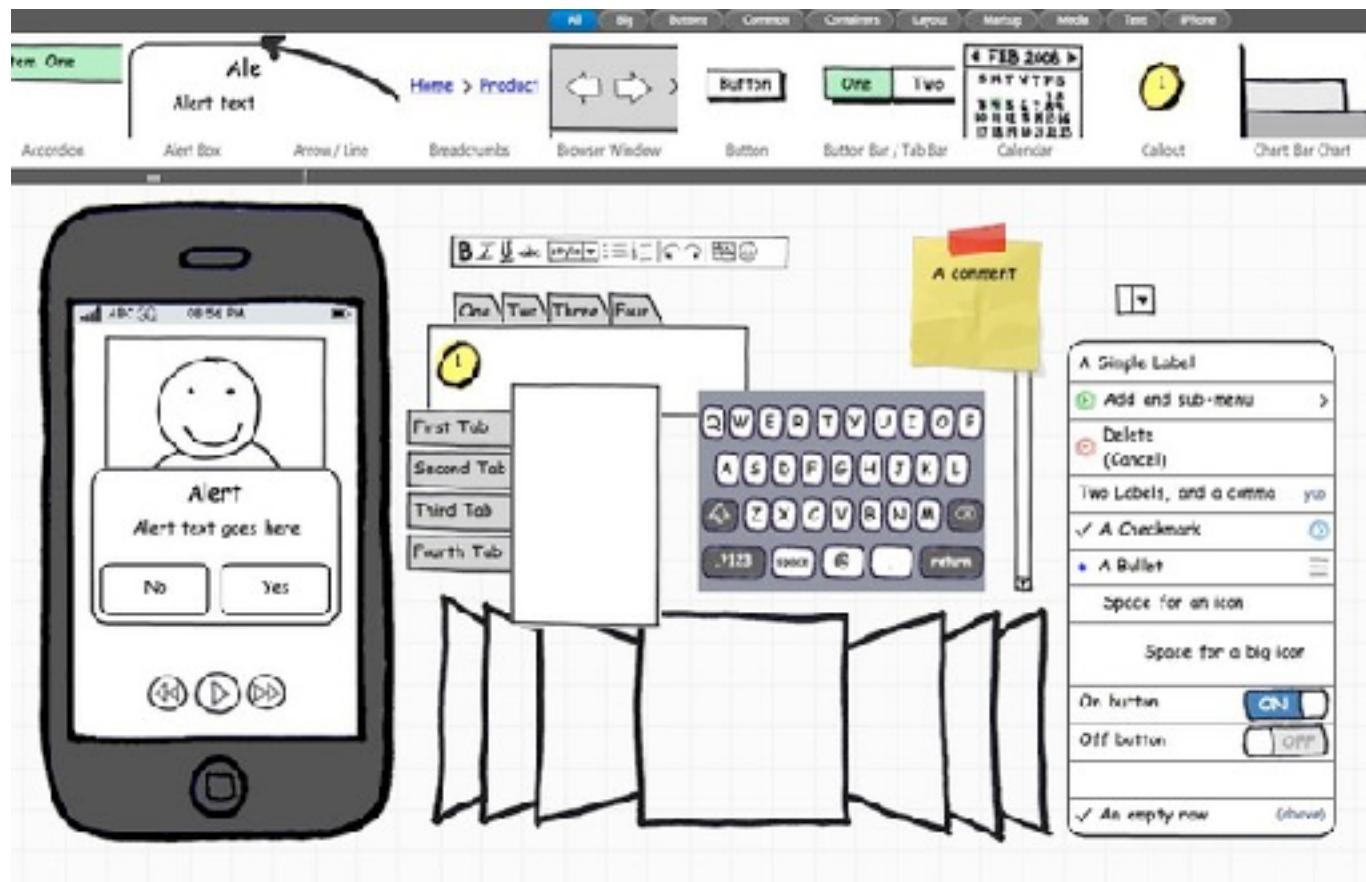
Source: Elements of User Experience
by Jesse James Garrett

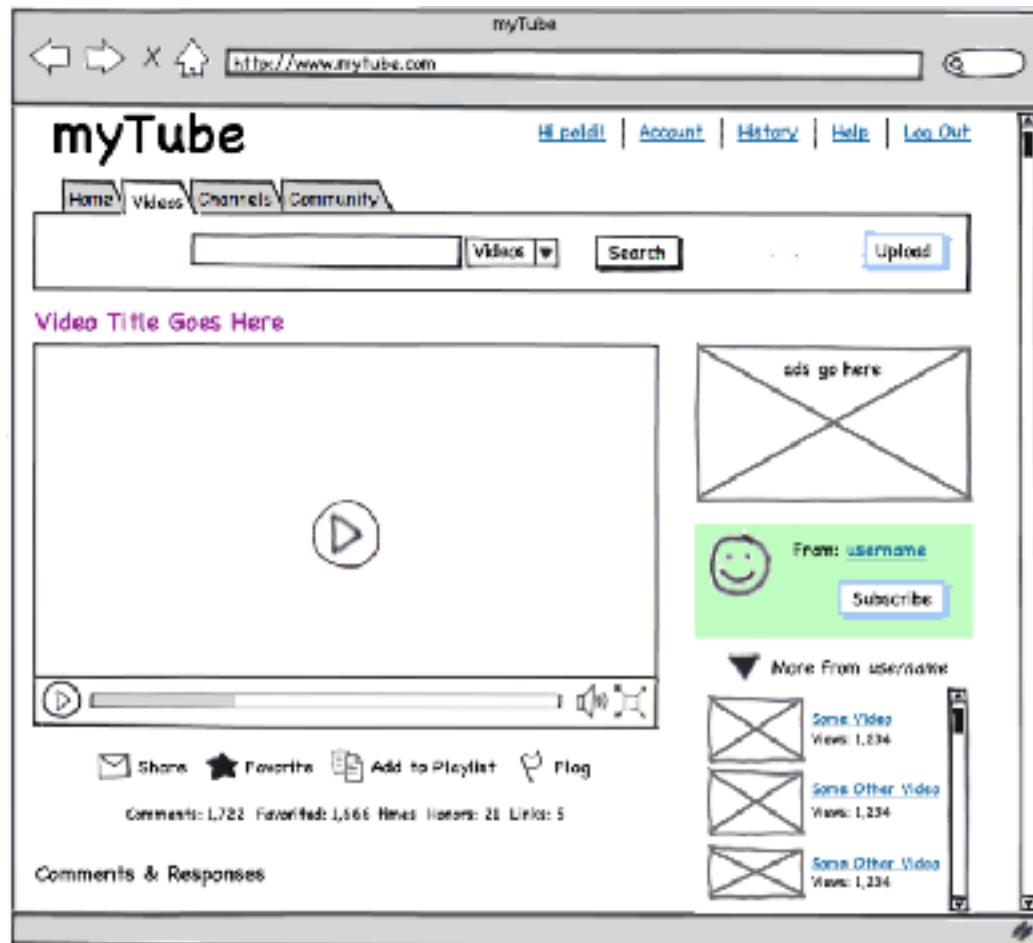


SKELETON PLANE

Source: Elements of User Experience
by Jesse James Garrett

SKELETON PLANE

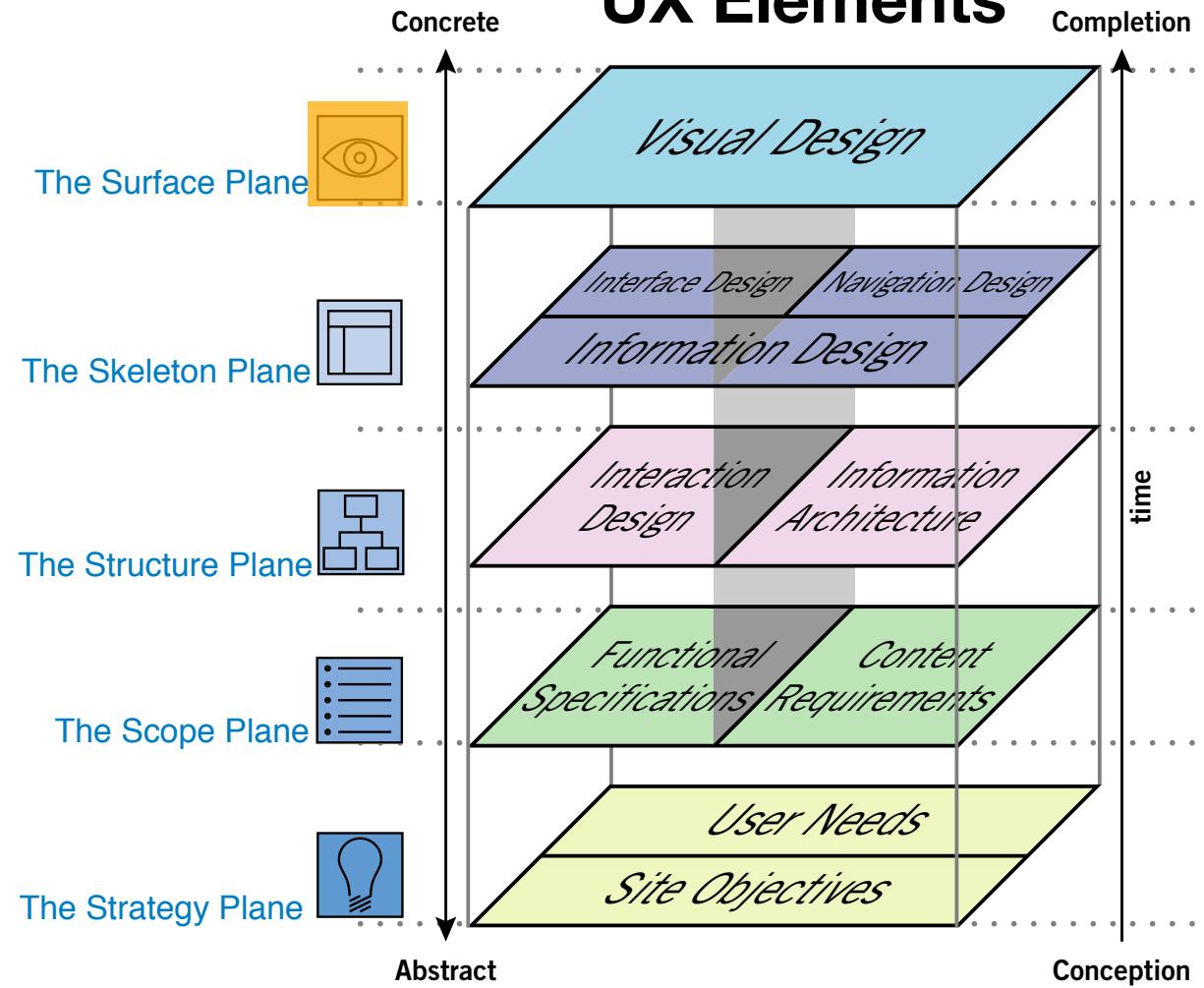




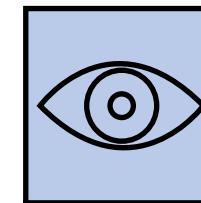
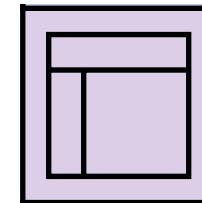
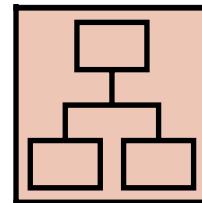
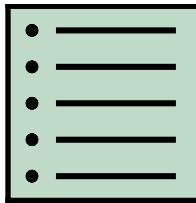
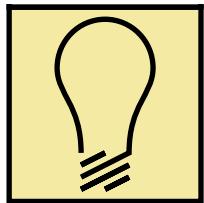
SKELETON PLANE

WIREFRAME

UX Elements



Source: Elements of User Experience
by Jesse James Garrett



SURFACE PLANE

Source: Elements of User Experience
by Jesse James Garrett

SURFACE PLANE

iPod

2001 Apple design team

Initially, when the digerati heard Apple wanted to launch a digital music player they were puzzled.

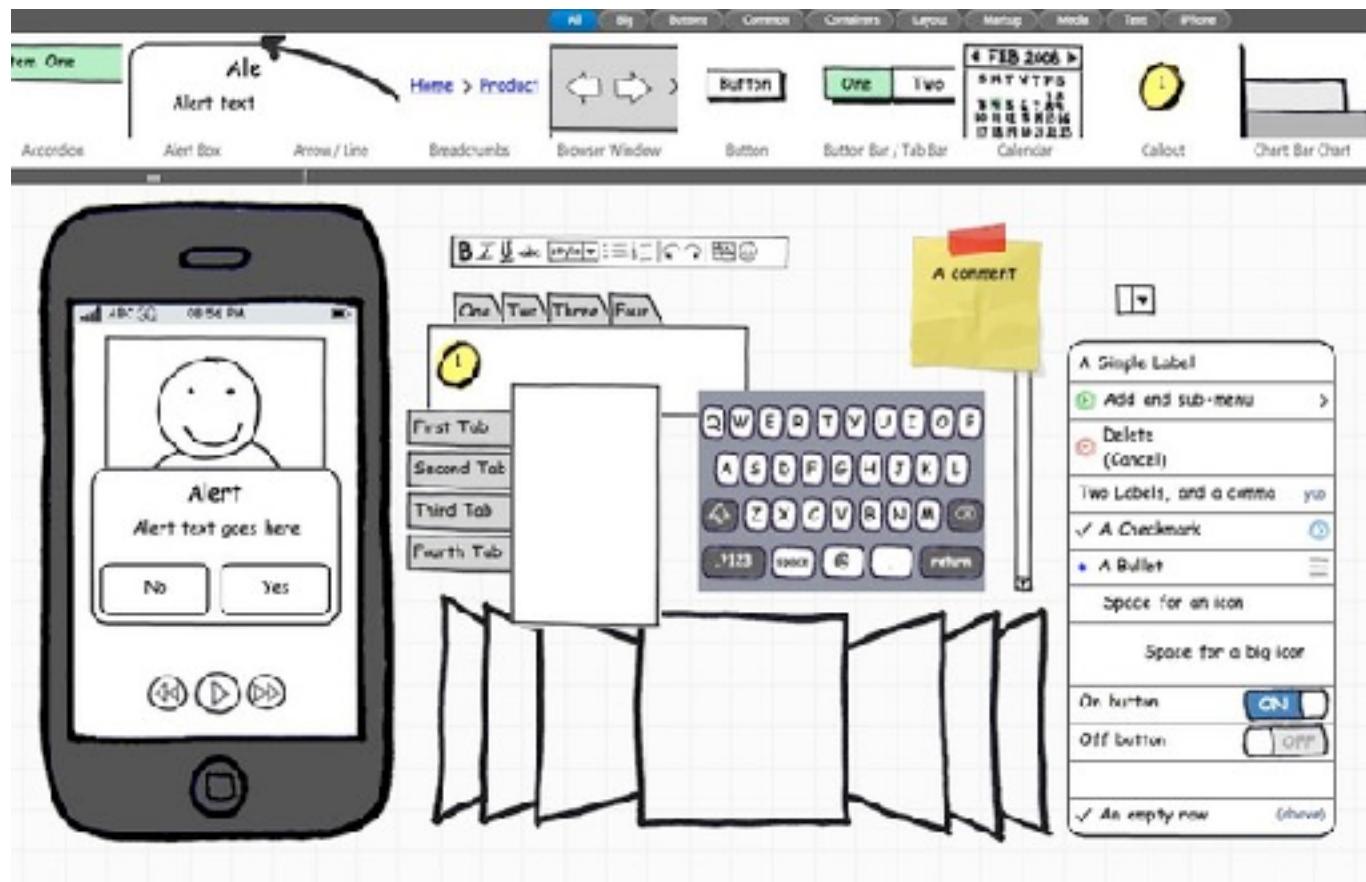
Did the world really need another MP3 player?

Team leader Anthony Fadell made models out of foam-core boards – even using fishing weights to give his prototype the right feel and to confound the cynics.

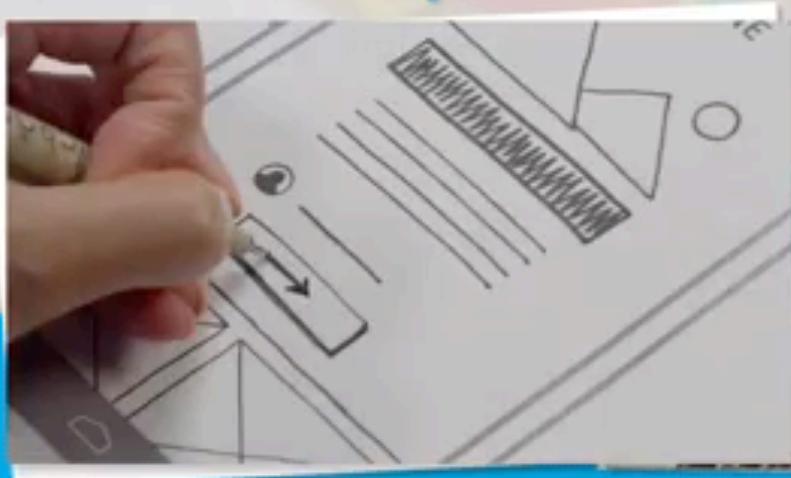
The iPod was sparked by the launch of Apple's iTunes software, when staff formed a low opinion of the MP3 players they were using.



SKELETON PLANE



Rapid Prototyping



Sketching &
Paper
Prototyping

Digital
Prototyping

Native
Prototyping

Problem Set #4

- Rework your Airtable assignment with a specific audience in mind. Ask: a) Who will be interested in seeing this? b) What do they want to see? c) Why do they want to see it?
- Also ask: Do I have enough content to keep them interested? If not, where can I find additional data and how? This question may lead to additional research works for identifying data sources such as open data and scraping. You may have to bring the imported open data and scrapped data into Airtable for additional processing (with formula and rollup)
- Develop actionable metrics and put them into the appropriate views for display
- Embed your views into a web page with supporting navigation aids (e.g. menu) and UI patterns to make the end results more engaging.

THANK YOU FOR YOUR TIME!