

# **COM5961 DATA DRIVEN PRODUCTS & SERVICES DESIGN:**

## **LESSON 3 - DESIGN THINKING FOR USER RESEARCH**

# **Today's agenda.**

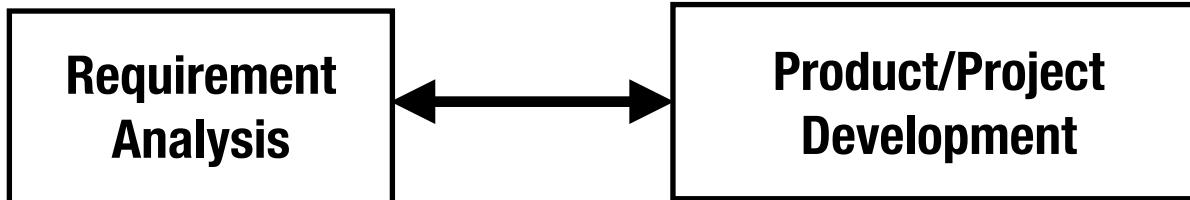
- 1. What is Design Thinking? And how does it work?**
- 2. The 5 Planes of User Experience (UX) Framework**
- 3. From UX Journey Mapping to User Story Mapping**
- 4. The Cross Industry Standard Process for Data Mining (CRISP-DM)**
- 5. From User Story Mapping to Information Architecture Design**
- 6. Database Design and Information Architecture**

# **Assignment #2 Review**

# Essential Roles of a Product Manager



# The Team



- Product Manager
- Project Manager
- Brand Manager
- Business Analysts
- Digital Marketers
- Client Representatives

Some roles may be combined depending on the scale of the company.

- Market Researchers
- UX Designers/Researchers
- Interactive/Visual/Product/Spatial/XR/Industrial Designers
- Information Architect
- Product/Hardware Engineers
- Front-end/Back-end/Full Stack Software Engineers
- Data Analysts/DB Administrator
- Cloud Architect/Cloud Engineers
- Data Scientists/ML Engineers
- Technical Writers

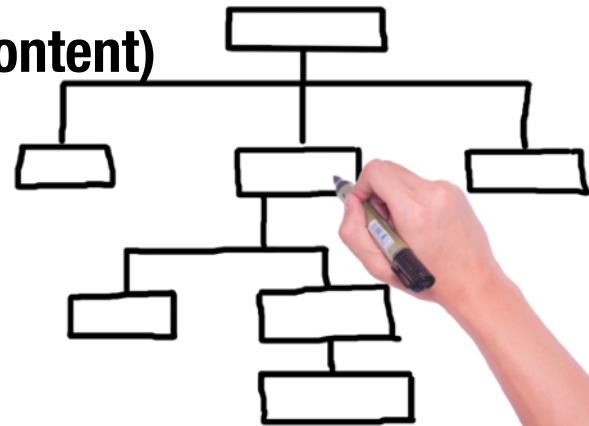
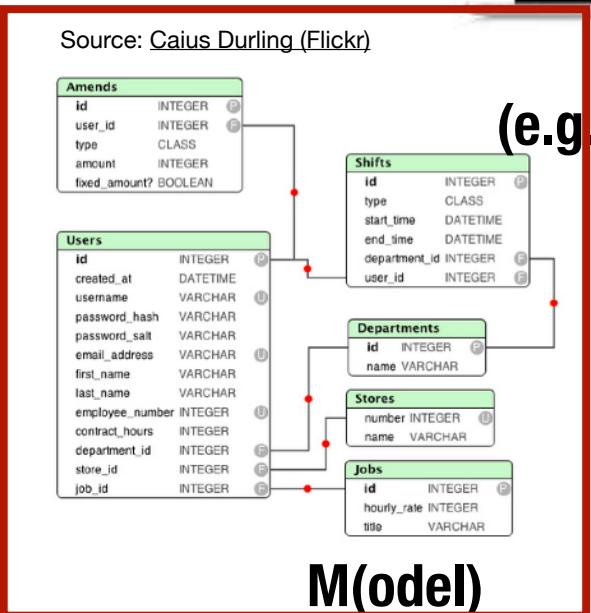
Source: [commons.wikimedia.org](https://commons.wikimedia.org)



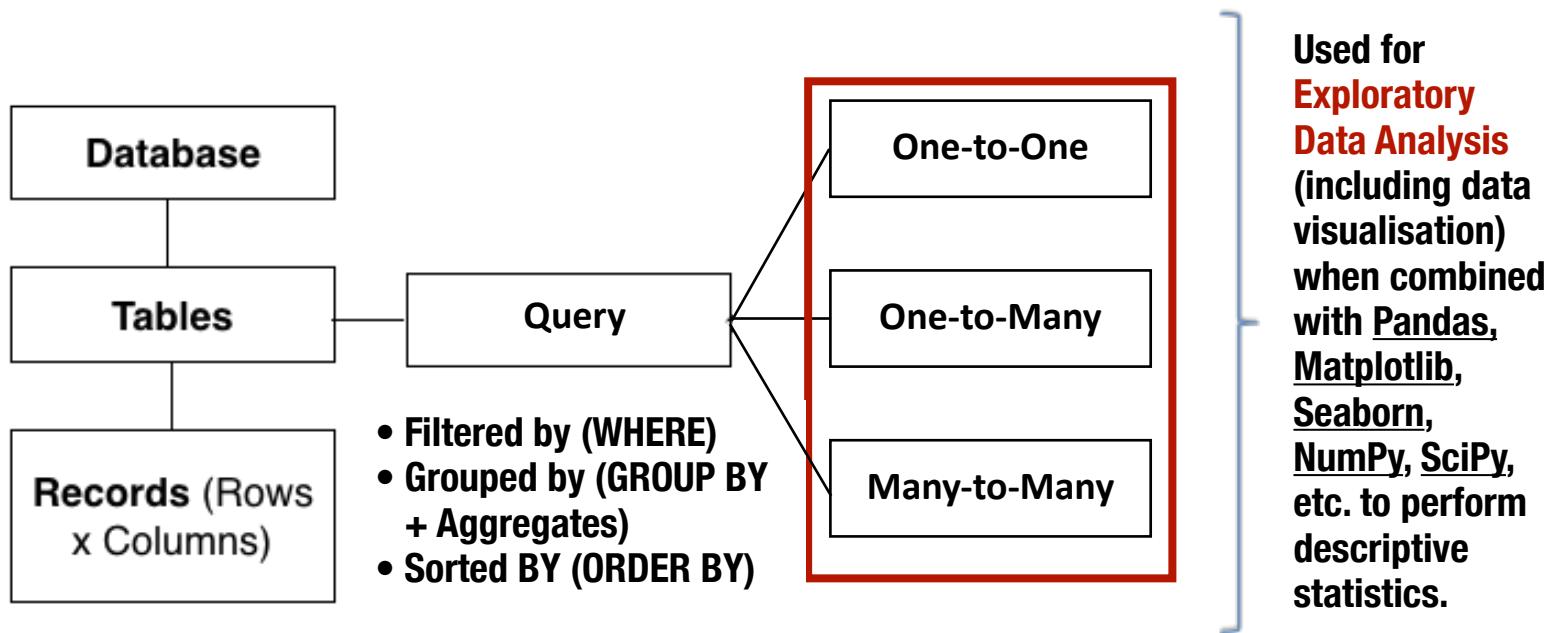
Source: [pexels.com](https://pexels.com)

**V(iew)**

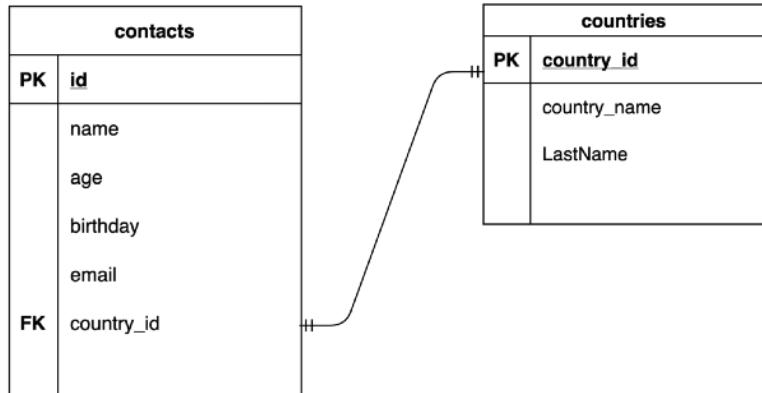
(e.g. user interface, media content)



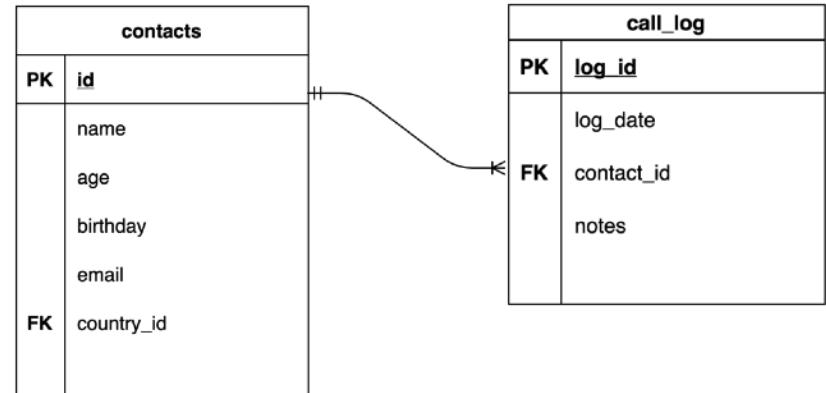
**C(ontroller)**  
(e.g. sitemap, navigation, routes)



## • One-to-One

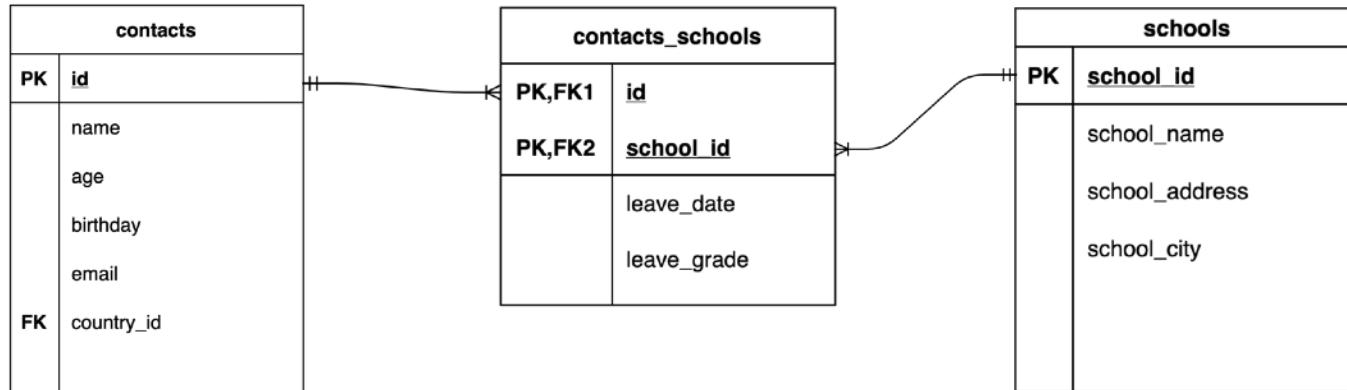


## • One-to-Many

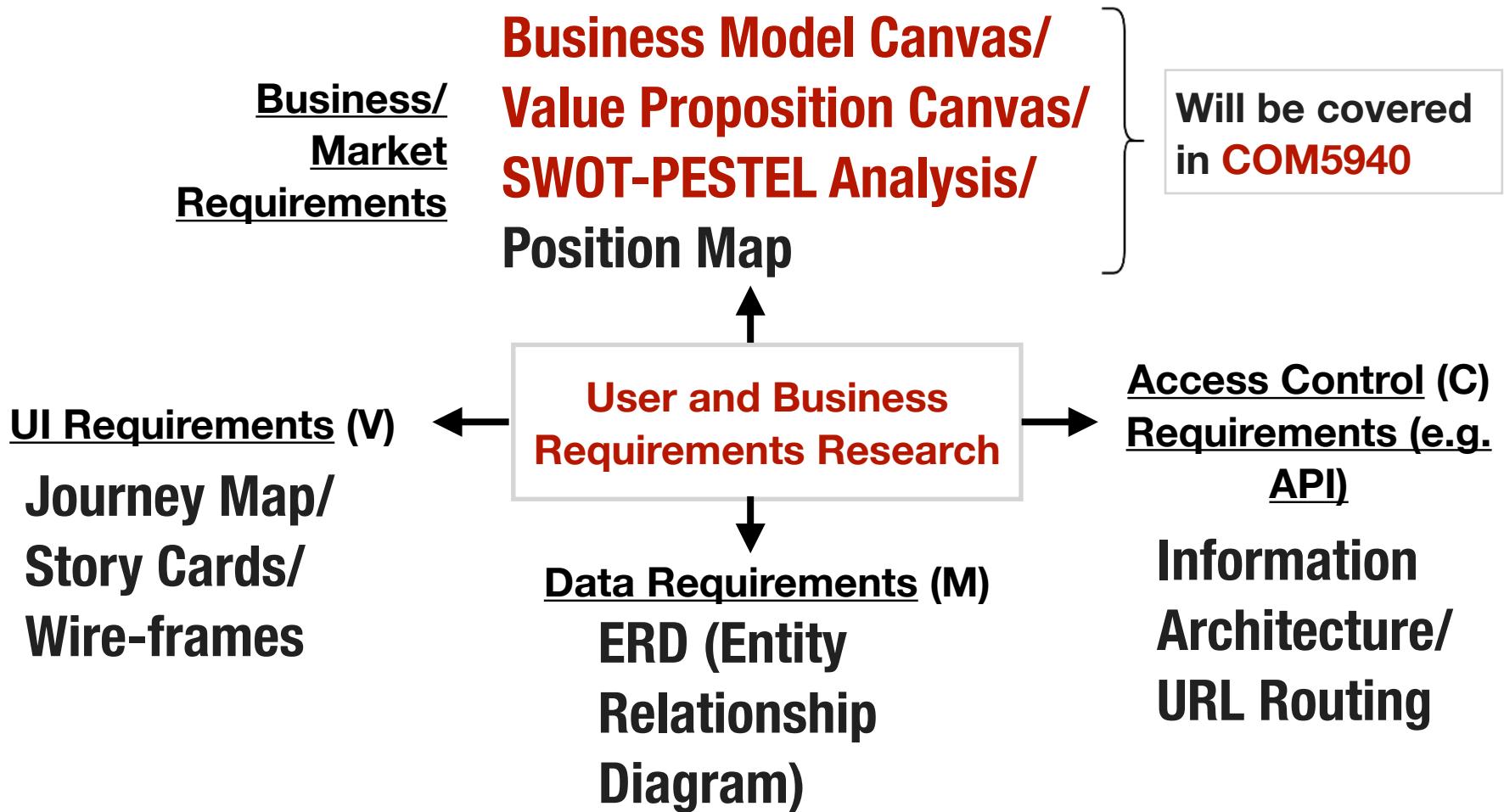


<https://app.diagrams.net/>

## • Many-to-Many



**See Example in Jupyter Notebook.**



**How can one decide what data (data requirements) to collect and why?**

**Design Thinking has the answers.**

NN/g



## Designer's Role

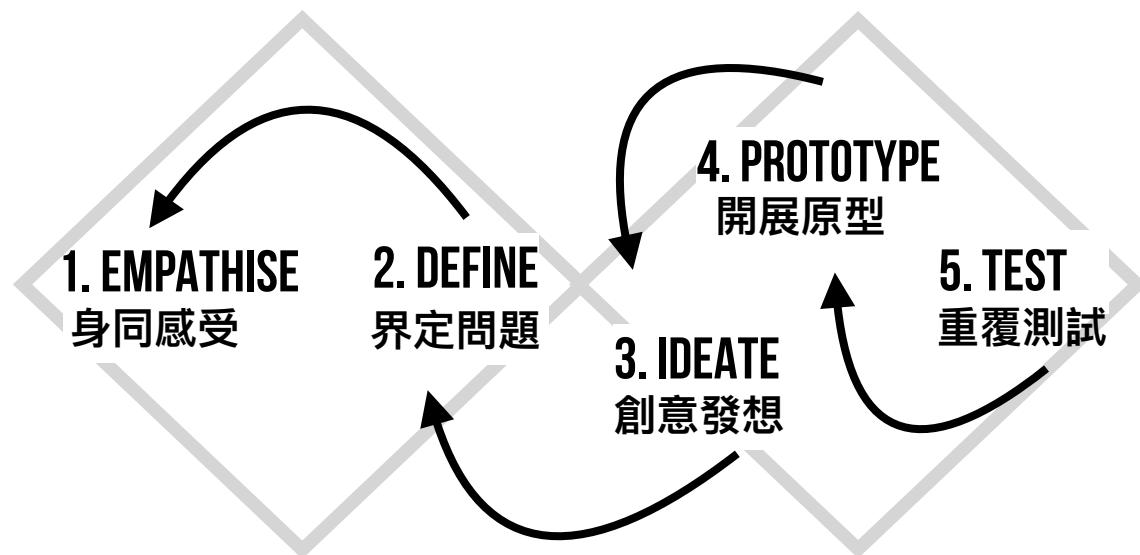
<https://www.youtube.com/watch?v=QewRjNfG1-8>

**Design thinking is a human-centric problem discovery and problem solving process that help fill communication gaps and address hidden needs.**

**Design thinking** is suitable for addressing  
semi-structured and unstructured problems.

# The Design Thinking Process

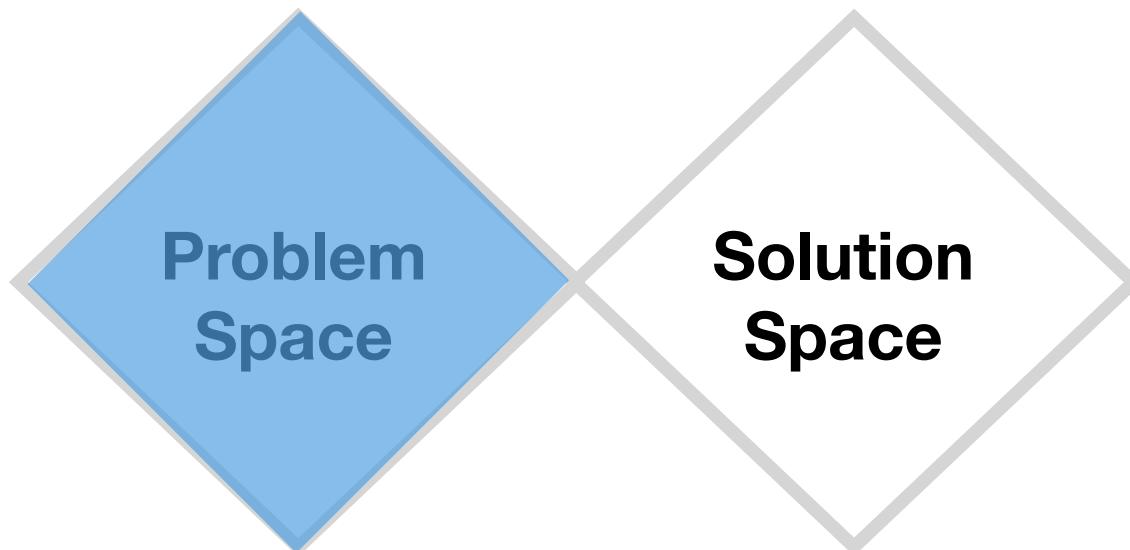
## (Double Diamond Model)





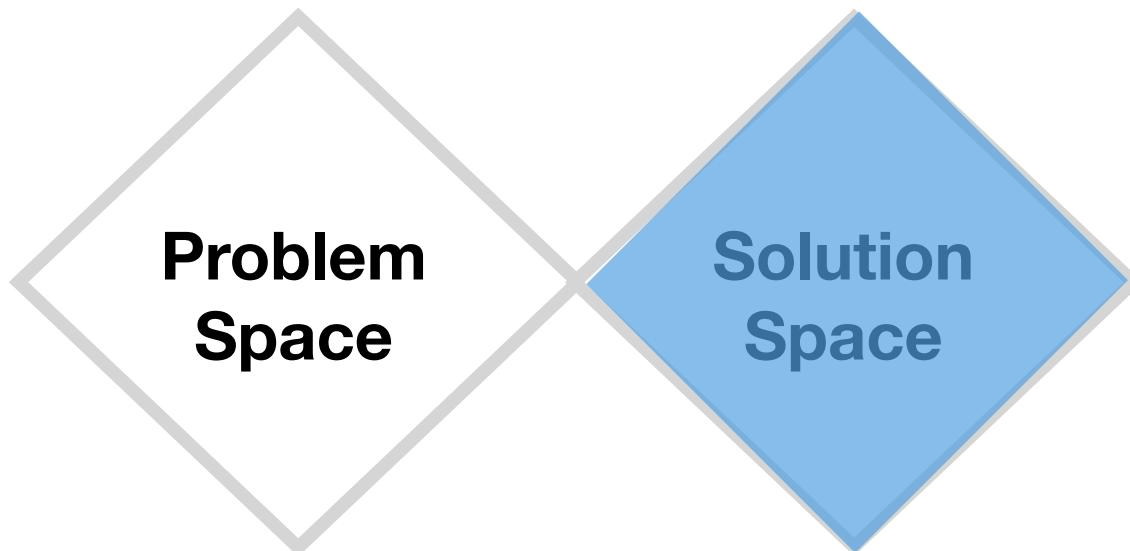
## CASE STUDY: REDESIGNING THE SHOPPING CART

# **Double Diamond Model**



1. What were the **backgrounds** of the team members?
2. Why did IDEO put together such a **diverse** team?
3. What **kinds** of **customer** were mentioned?
4. After returning from the site (i.e. supermarket) visit, **how did the team** members **share** their observations and interview results?
5. How did they **consolidate** their findings?

# **Double Diamond Model**



- 6. What **problems** were discovered?**
- 7. How did they **brainstorm** fresh ideas?**
- 8. How did they make their ideas **actionable** and **testable**?**
- 9. How did they **consolidate** their **solutions** into final result?**
- 10. Can you describe the **major features** of the final result?**



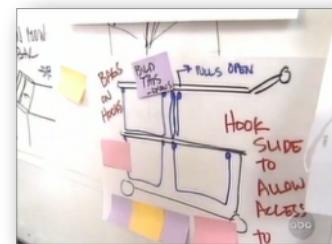
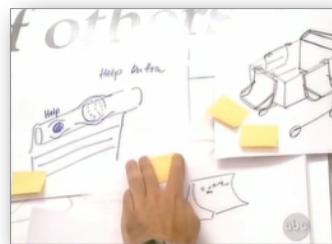
**1. EMPATHISE**  
身同感受

**2. DEFINE**  
界定問題

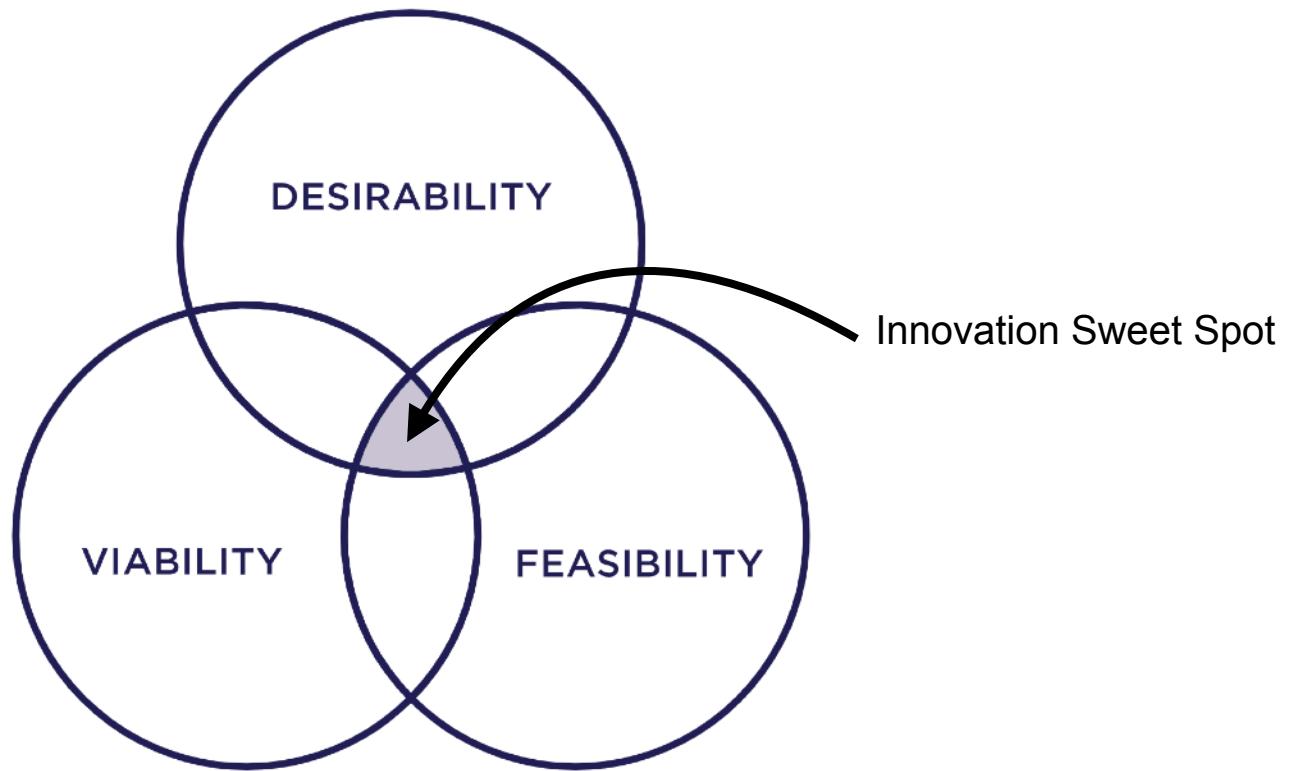
**3. IDEATE**  
創意發想

**4. PROTOTYPE**  
開展原型

**5. TEST**  
重覆測試



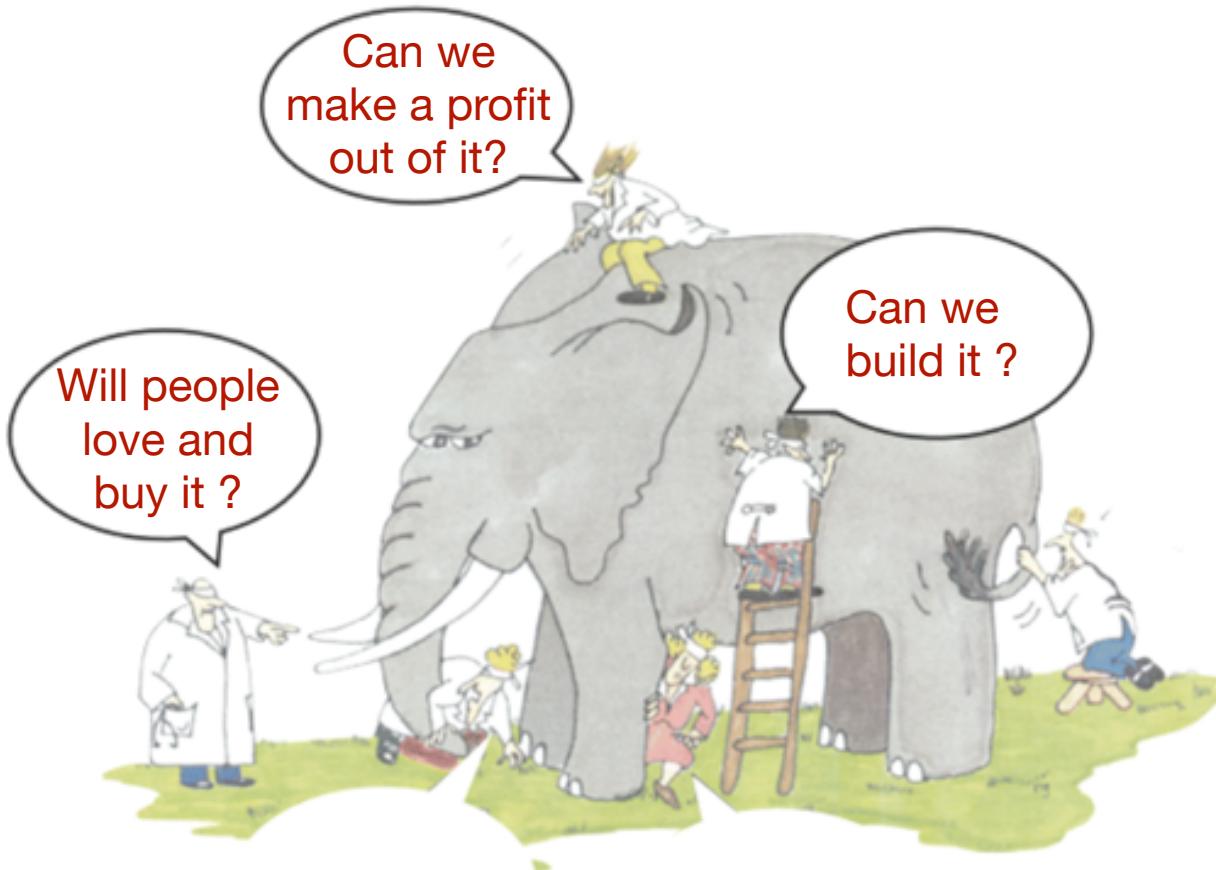
# **Design Objectives**

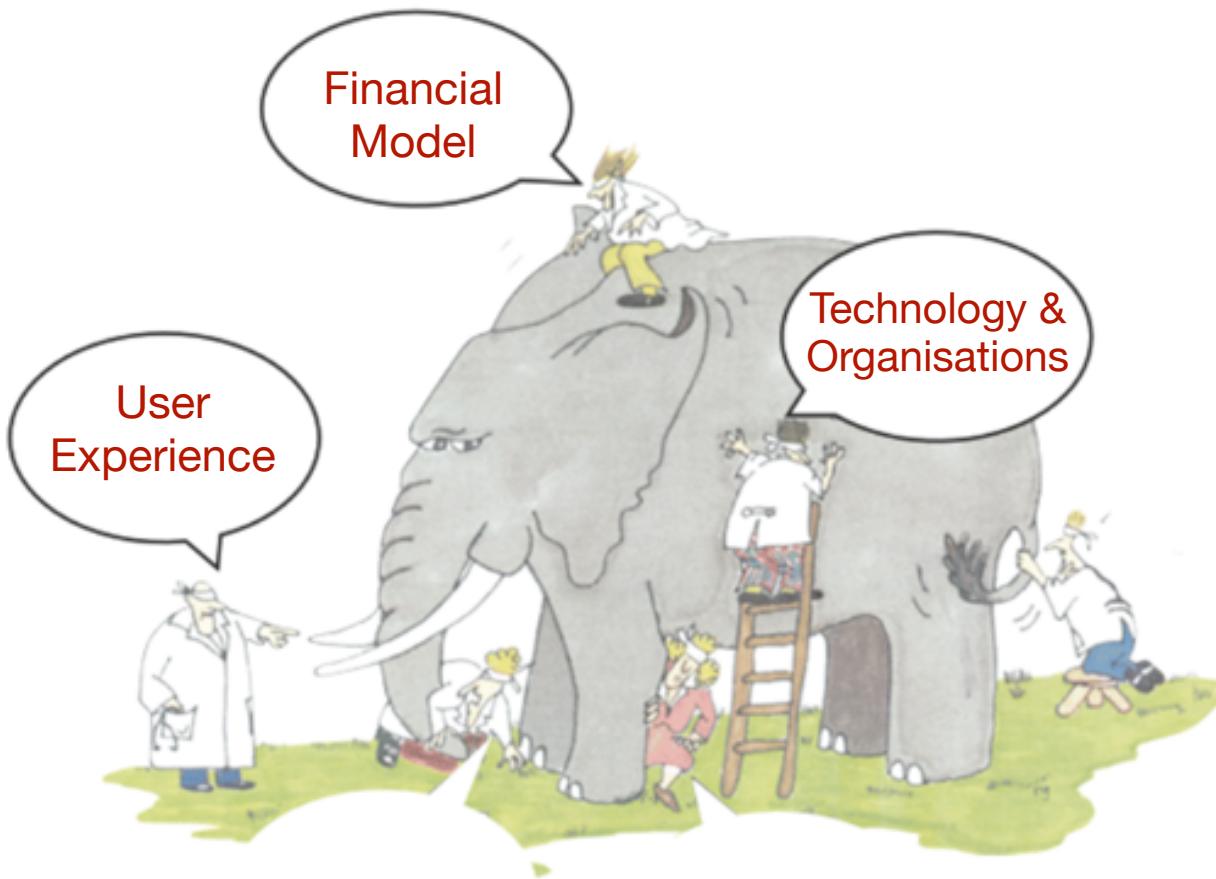


Source: IDEO



Adapted from IDEO Design Thinking Toolkit





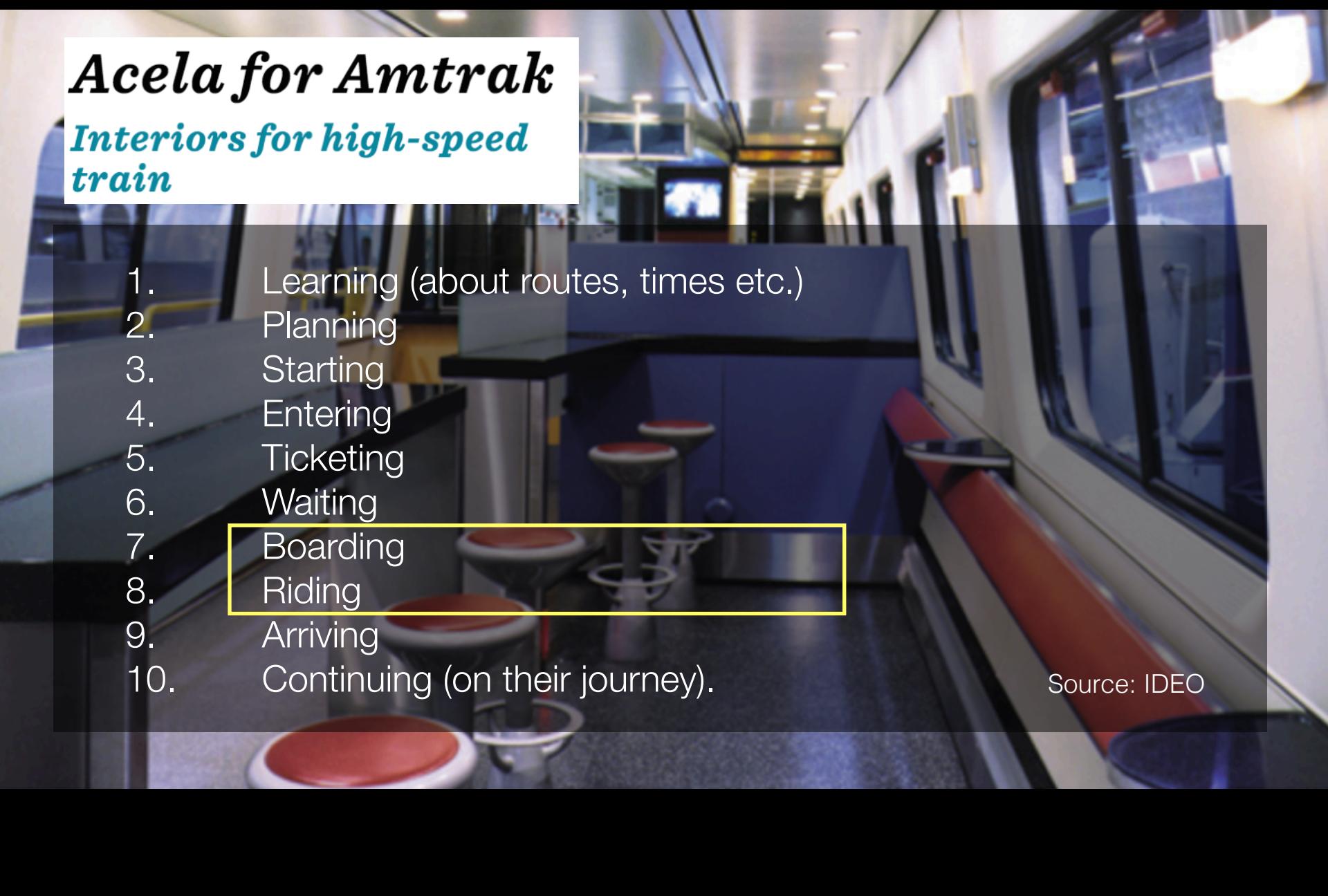
**Empathy** of the user experience as  
the starting point.



## CASE STUDY: REDESIGNING THE Source: IDEO TRAIN INTERIOR

# *Acela for Amtrak*

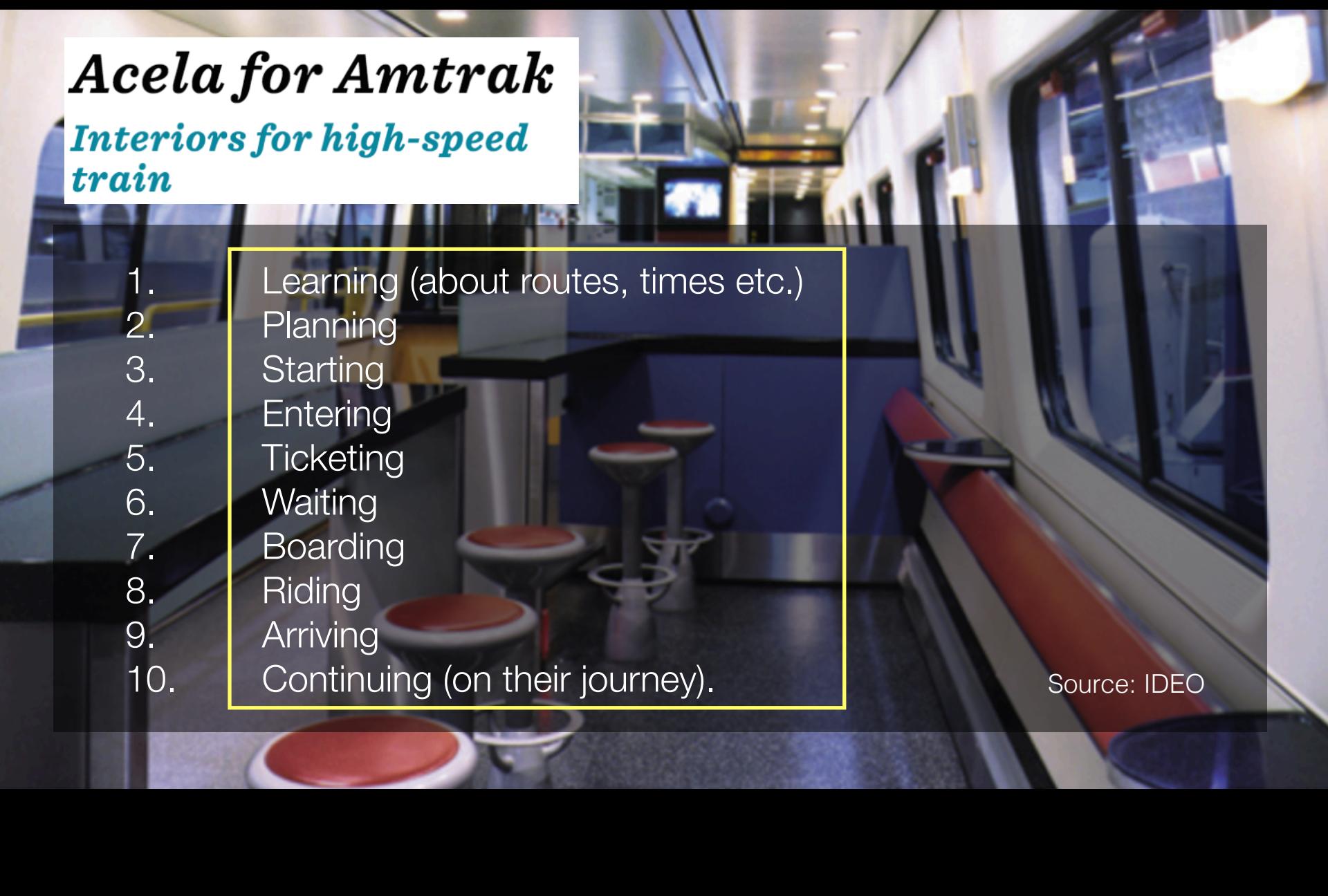
## *Interiors for high-speed train*

- 
1. Learning (about routes, times etc.)
  2. Planning
  3. Starting
  4. Entering
  5. Ticketing
  6. Waiting
  7. Boarding
  8. Riding
  9. Arriving
  10. Continuing (on their journey).

Source: IDEO

# *Acela for Amtrak*

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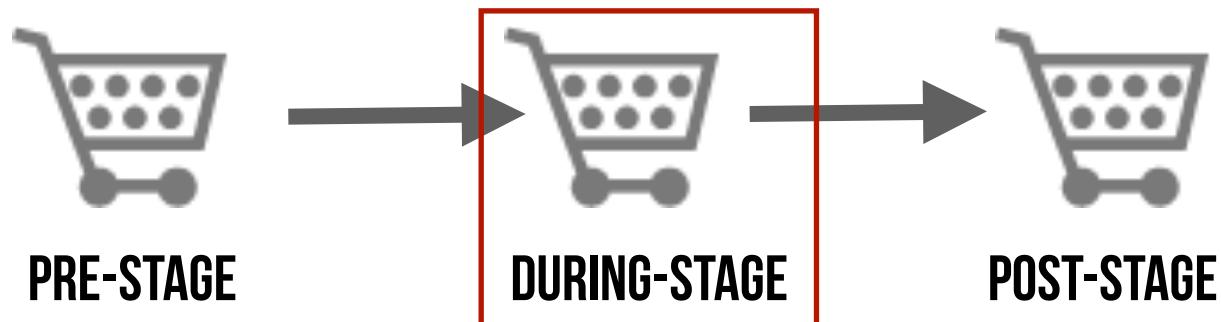
Source: IDEO



**EXPERIENCE OF USING**

**EXPERIENCE = JOURNEY = STORY**

**”The experience is the journey.”**

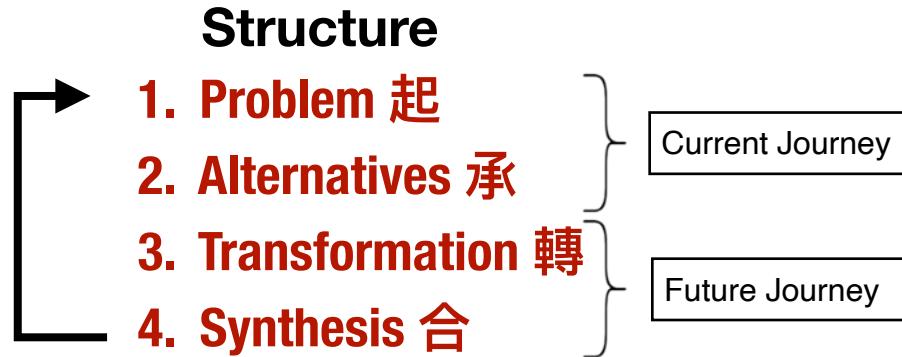


**”The experience is the journey.”**



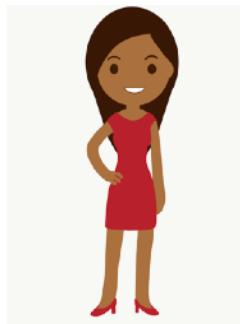
# THE JOURNEY AS A STORY

- Elements**
- 1. Persona 人
  - 2. Context 景
  - 3. Artifacts 物
  - 4. Tasks/Jobs 用



# Persona (人物輪廓)

Source:Interaction Design Foundation



Name: Ivy

Age: 36

Sex: Female

Education: Secondary

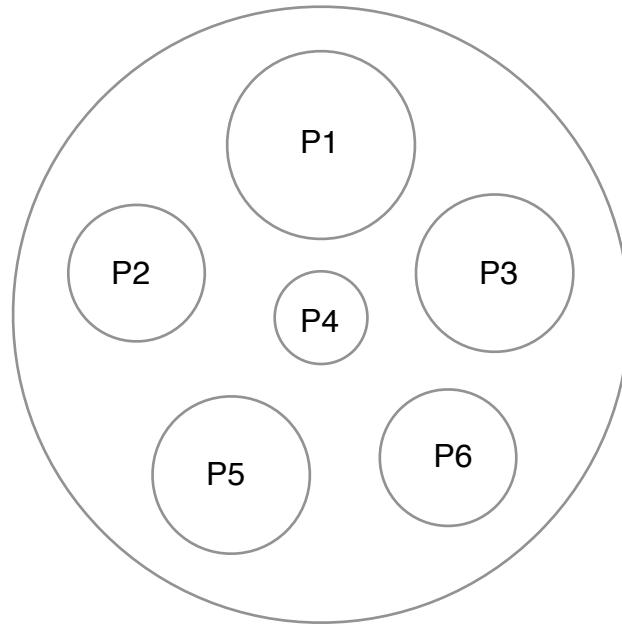
Marital Status: Married with

Industry: one kid

House wife

Lifestyle:	<b>Love to cook, home decoration, activity planning for kids and family.</b>
Shopping preference:	<b>Shop off-line using cash and credit card.</b>
Media usage preference:	<b>Soap opera fan, online videos, local news.</b>
Life/Career goal:	<b>Help kid get into good school. Keep family happy.</b>
Tech product adoption pref.:	<b>Not an early adopter of trendy tech products.</b>
Daily routine:	<b>Taking kid to school, shopping for food and family necessities, cook meals and help kid do homework</b>

**People who have the  
need to spend the  
time at the super-  
market to get their  
shopping job done  
and have their needs  
met.**



P1 To P6 ( Persona Types)  
e.g. House wife, 996 professional,  
Security Guard, etc.



Source: Flickr ([mliu92](#))

# Journey Map

3 / 3



SHARE



Background

Clear frame



Open on a Jamboard

**CUSTOMER JOURNEY MAPPING**

*designthinkersacademy*

EMOTIONAL STATUS OF PERSONA				
	Explain Emotions			
Name Profile Behaviour				
CONTEXT				
WHAT TASK IS PERSONA TRYING TO DO?				
ARTIFACT				

The persona section includes a placeholder for a user profile picture and fields for Name, Profile, and Behaviour. The 'Explain Emotions' section contains four empty rows for listing emotions. The main grid has four columns for each row: Context, Task, and two artifact slots.

We're here to help during this challenging time. See our tips for working from home with G Suite, including video meetings. [LEARN MORE →](#)

 Jamboard

Visualize your ideas in a new and collaborative way

Unleash your team's creativity with Jamboard. Sketch your ideas whiteboard-style while benefiting from the access and connectivity of an interactive canvas. Drop images, add notes, and pull assets directly from the web while collaborating with team members from anywhere.

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NGOLP2020

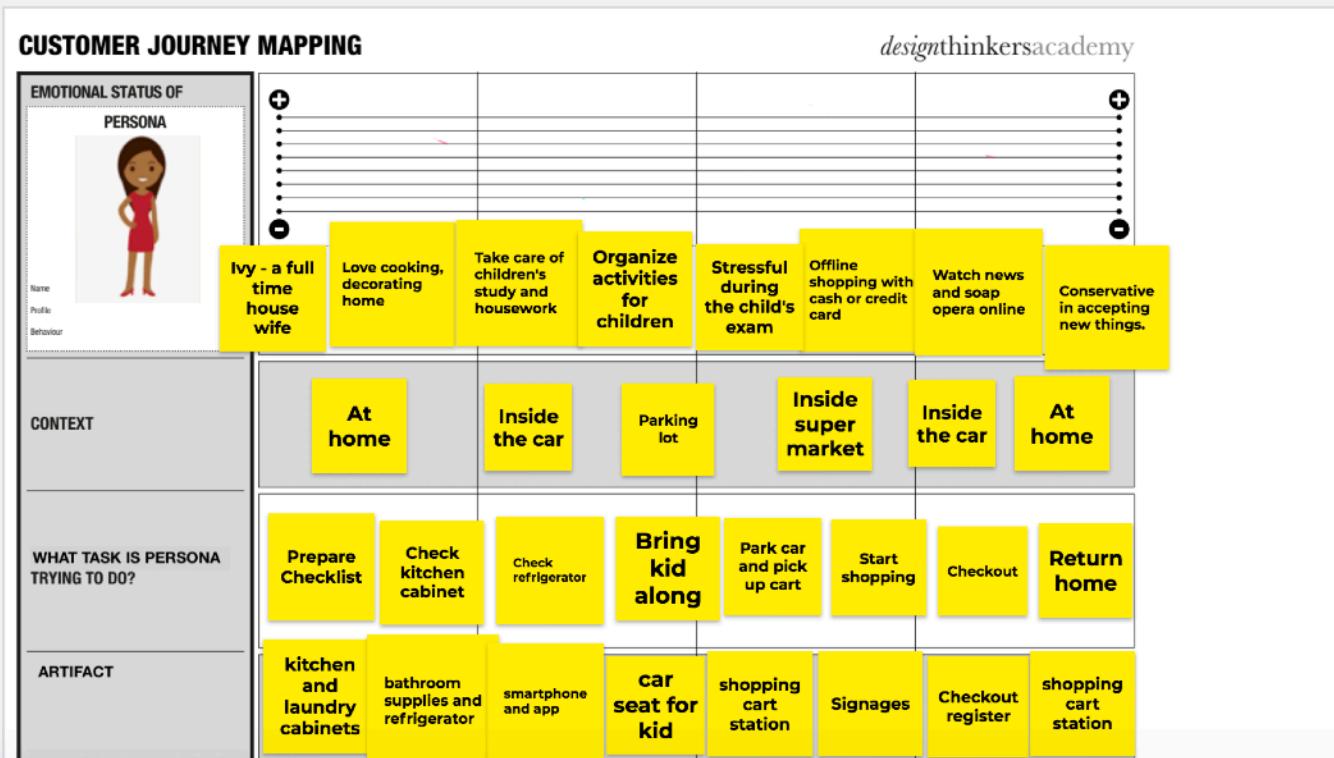


Background

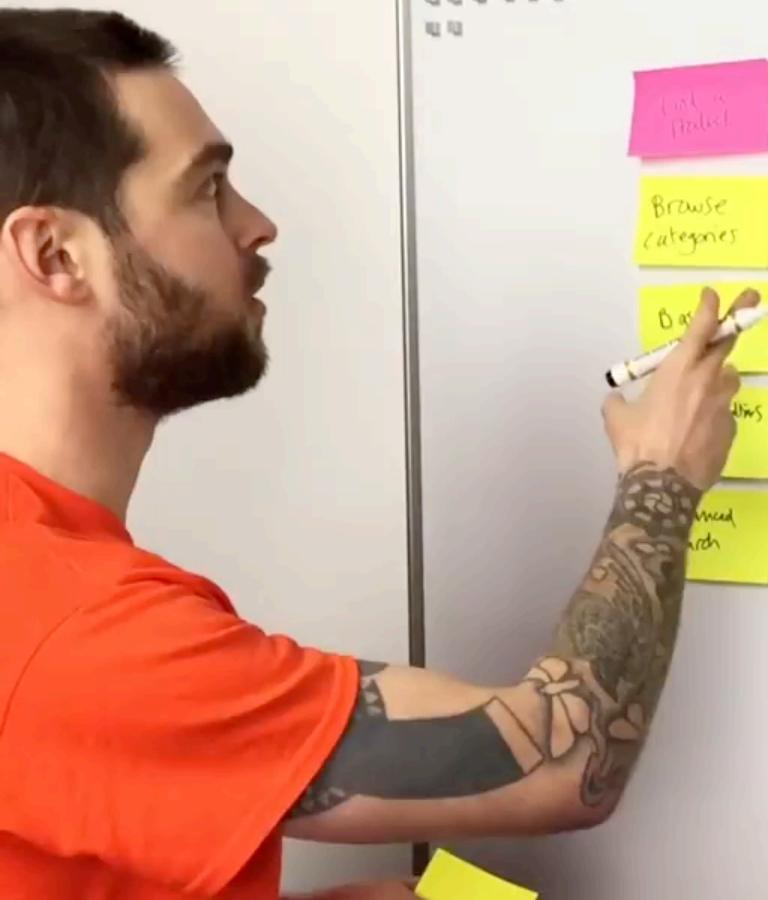
Clear frame

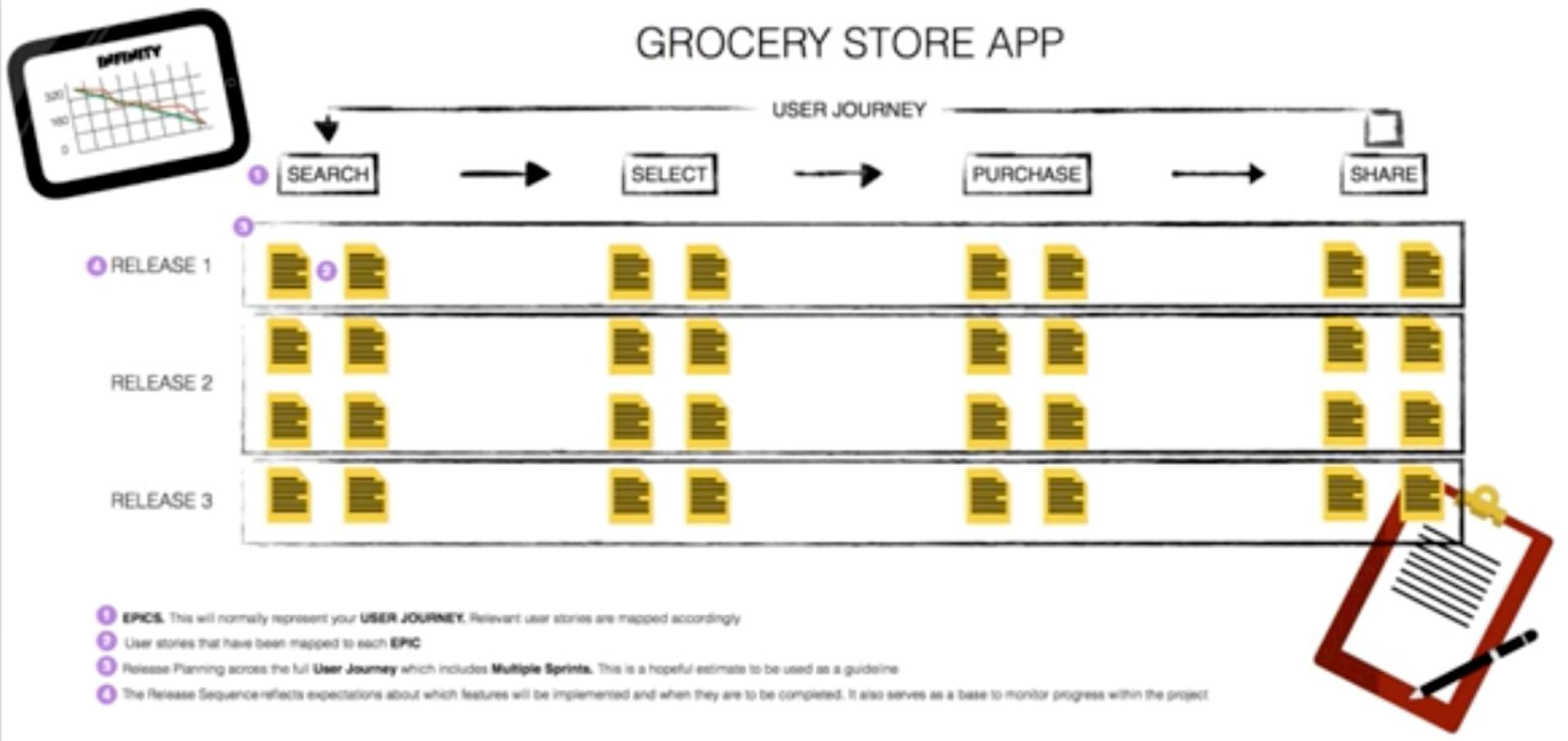


Open on a Jamboard

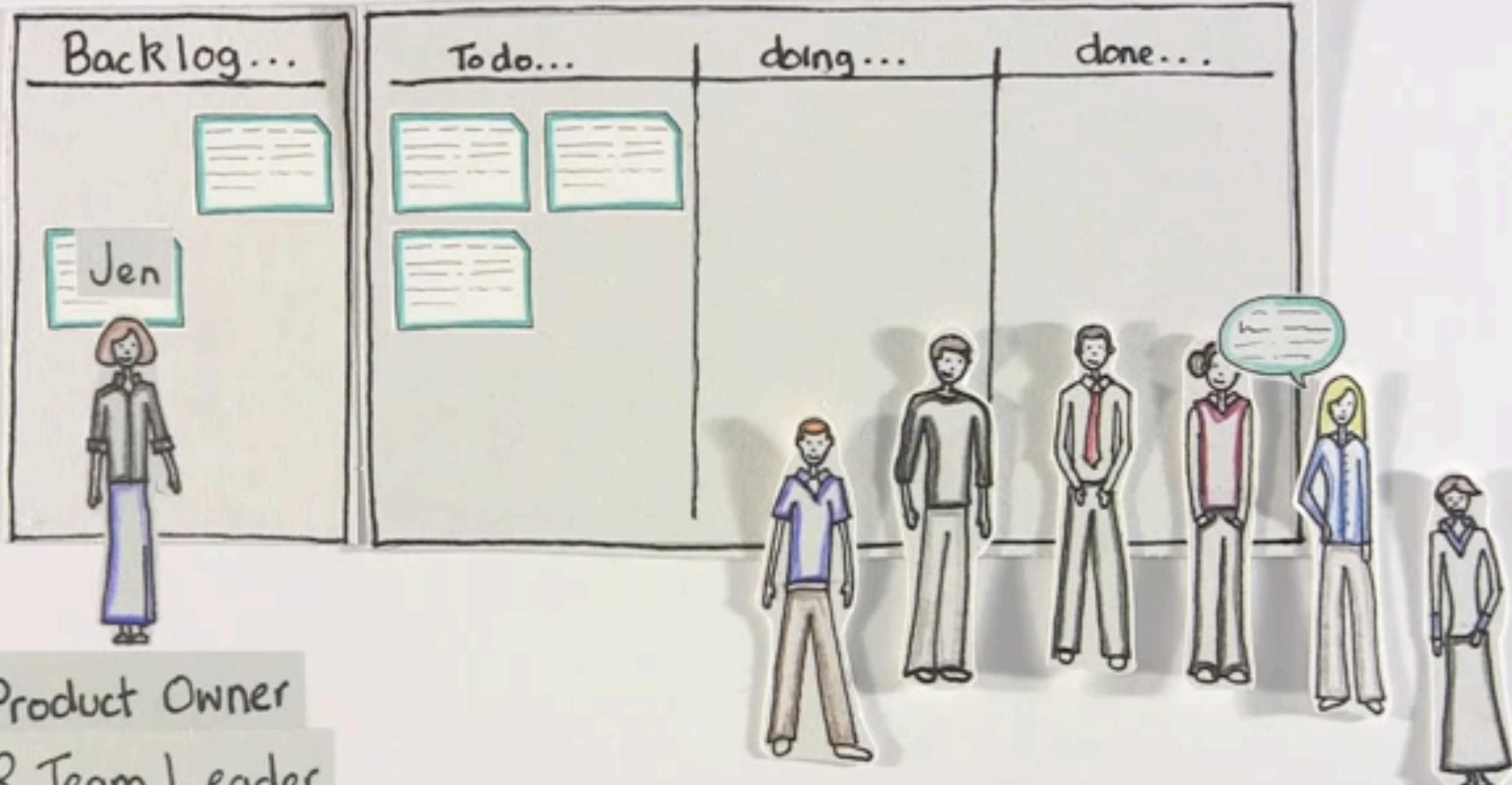


# **From Journey Map to Story Map**





## STORY MAPPING



<https://www.youtube.com/watch?v=LGeDZmrWsw>

# **Here are the pain points throughout current customer journey of Ivy, our persona:**

Hard to find shopping items.

Take a long time to checkout.

Take care of kids while shopping.

Not knowing availability of items.

Not knowing what lacks at home.

Take time to check stocks at home.

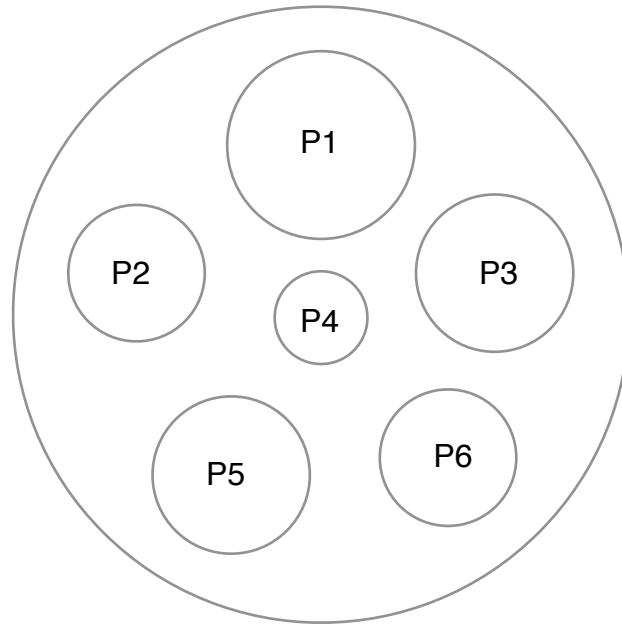
Too many things to carry.

Forget to buy some of the items.

**Whose point of view ?**

1. **Users/Customers** (which type of user/customer?)
2. **Staff** (in-store, outside-store)
3. **Owner** (supermarket top management)
4. **Others** (suppliers, community, government)

**People who have the  
need to spend the  
time at the super-  
market to get their  
shopping job done  
and have their needs  
met.**



P1 To P6 ( Persona Types)  
e.g. House wife, 996 professional,  
Security Guard, etc.

# Point of View

User/Customer (Who)	Pain/Gain (What)	Jobs to be done (Why)
<p>House wife</p>  <p>Name: Ivy Age: 35 Sex: Female Education: Secondary Marital Status: Married with one kid Industry: House wife</p> <p>Lifestyle: Love to cook, home decoration, activity planning for kids and family. Shopping preference: Shop off-line using cash and credit card. Media usage preference: Soap opera fan, online videos, local news.</p> <p>Life/Career goal: Help kid get into good school, Keep family happy. Tech product adoption prof.: Not an early adopter of trendy tech products. Daily routine: Taking kid to school, shopping for food and family necessities, cook meals and help kid do homework</p>	<p>Caring for her kid's well being and completing her daily family routines.</p> <p>Developing her own interests and well being.</p>	<p>Making good use of her time to keep the family and herself happy. Don't have to be torn between the two goals.</p> <ul style="list-style-type: none"><li>- Functional</li><li>- Emotional</li><li>- Social</li></ul>

## Example

Source: Interaction Design Foundation

# Problem Statement

How might we make \_\_\_\_\_ (**who**) address  
the problem of \_\_\_\_\_  
\_\_\_\_\_ (**what**) to achieve the goal of  
\_\_\_\_\_ (**why**)?

## Problem Statement

**How might we make a full time mom (**who**) address the problem of caring for her kid's safety and efficiently finishing up her shopping at the supermarket (**what**) to achieve the goal of making good use of her time to keep the family and herself happy (**why**)?**

NN/g

## User Need Statements



<https://www.youtube.com/watch?v=kT0ZqwdPYRM>

# Hypothesis to be tested

✓

✓

✓

✓

✓

✓

✓



**Exercise time:  
\_\_ minutes**

**Redefine the problem statement and  
redesign future customer journey.  
This affects the “scope” of the work  
to be done.**

## Problem Statement

**How might we make a full time mom (**who**) address the problem of caring for her kid's safety and efficiently finishing up her shopping at the supermarket (**what**) to achieve the goal of making good use of her time to keep the family and herself happy (**why**)?**

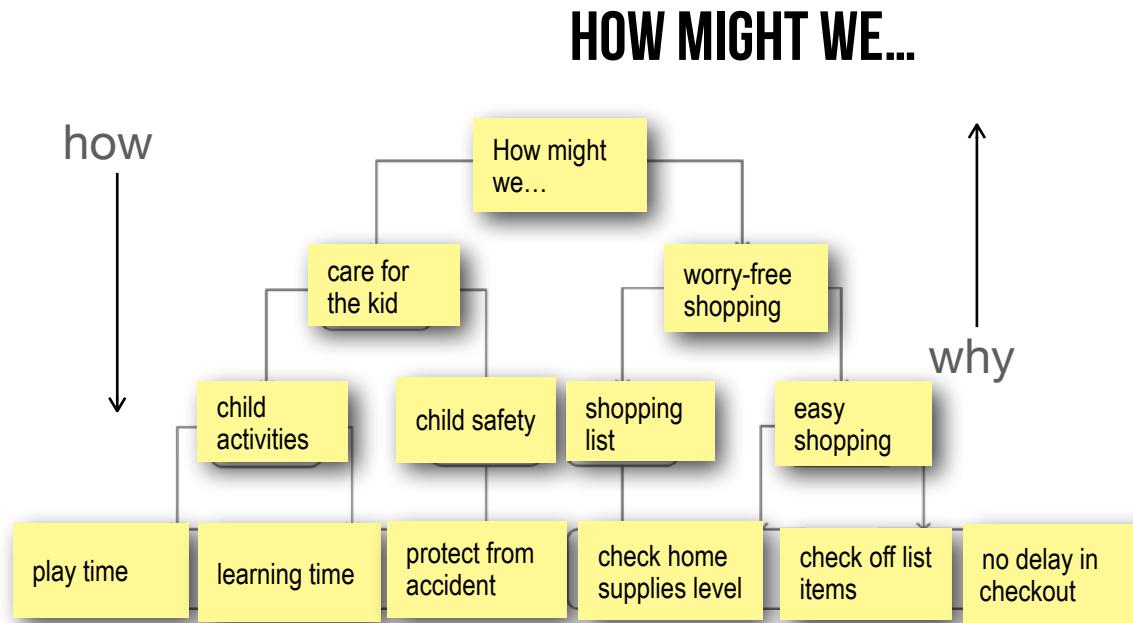
## Problem Statement

How might we make a full time mom (**who**) address the problem of caring for her kid's safety and efficiently finishing up her shopping (**what**) to achieve the goal of making good use of her time to keep the family and herself happy (**why**)?

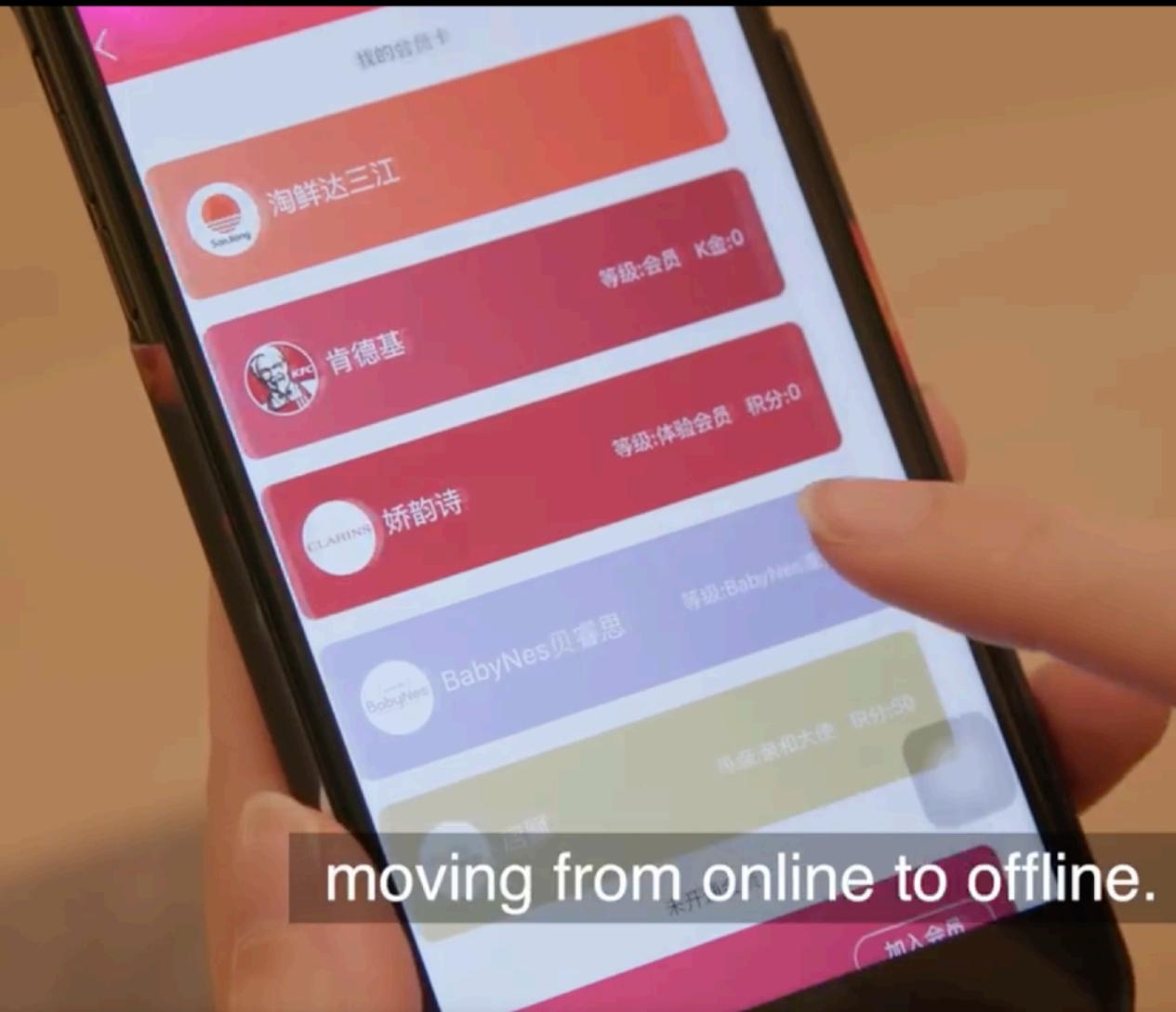
**Future Journey: Transforming  
the experience.**

## Why How Laddering Tree

Source: d.school



**How might we make a full time mom (who) address the problem of caring for her kid's safety and efficiently finishing up her shopping (what) to achieve the goal of making good use of her time to keep the family and herself happy (why)?**



Source: Alizilia



But also thinking more about logistics and data technology



online ordering for home delivery



can get their groceries in as fast as 30 minutes.

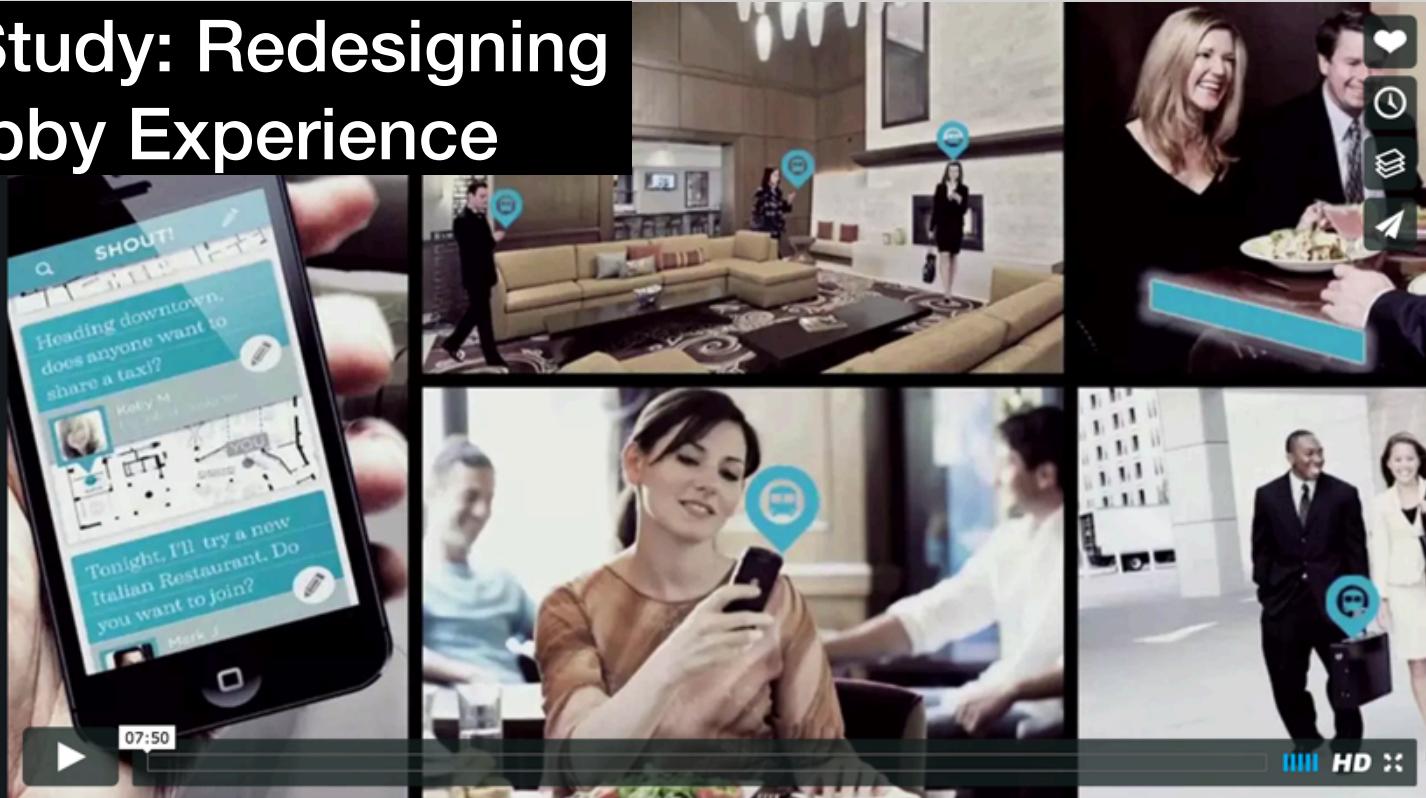
# Hypothesis to be tested

- ✓
- ✓
- ✓
- ✓
- ✓
- ✓
- ✓



**Exercise time:  
\_\_ minutes**

# Case Study: Redesigning the Lobby Experience



Exploring the Hotel Experience of the Future with Marriott Hotels

Source: MIT Mobile Experience Lab

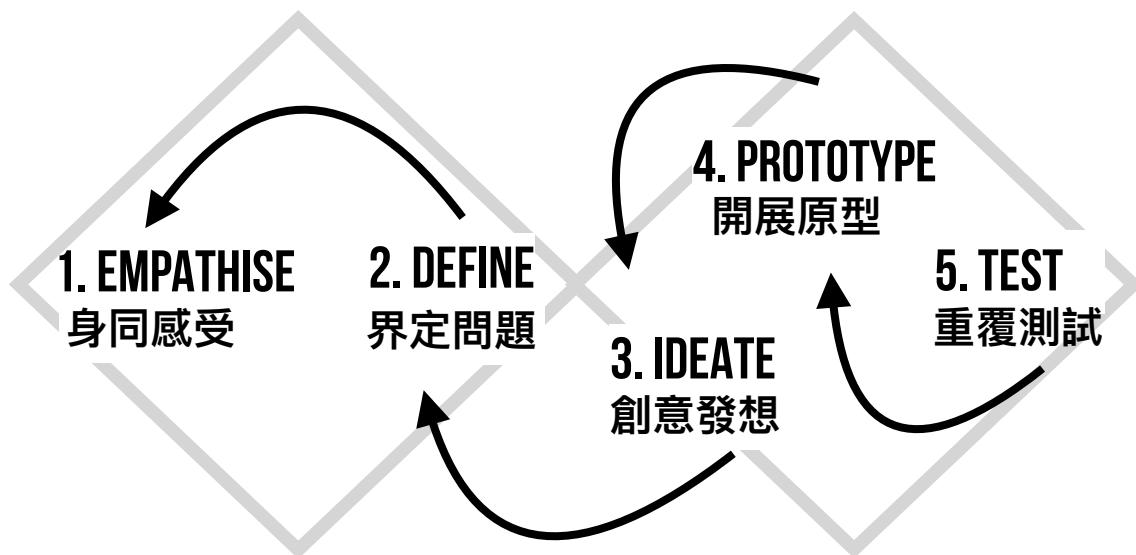
<https://design.mit.edu/projects/the-future-hotel-experience>

# **From Story Map to Information Architecture: The synthesis of stories and data, design and system.**

# **Problem Solving Frameworks**

# Design Thinking

## (Double Diamond Model)



# **Cross Industry Standard Process of Data Mining (**CRISP-DM**)**



# CRISP-DM

Source: [Wikimedia](#)

# **Elements of User Experience**

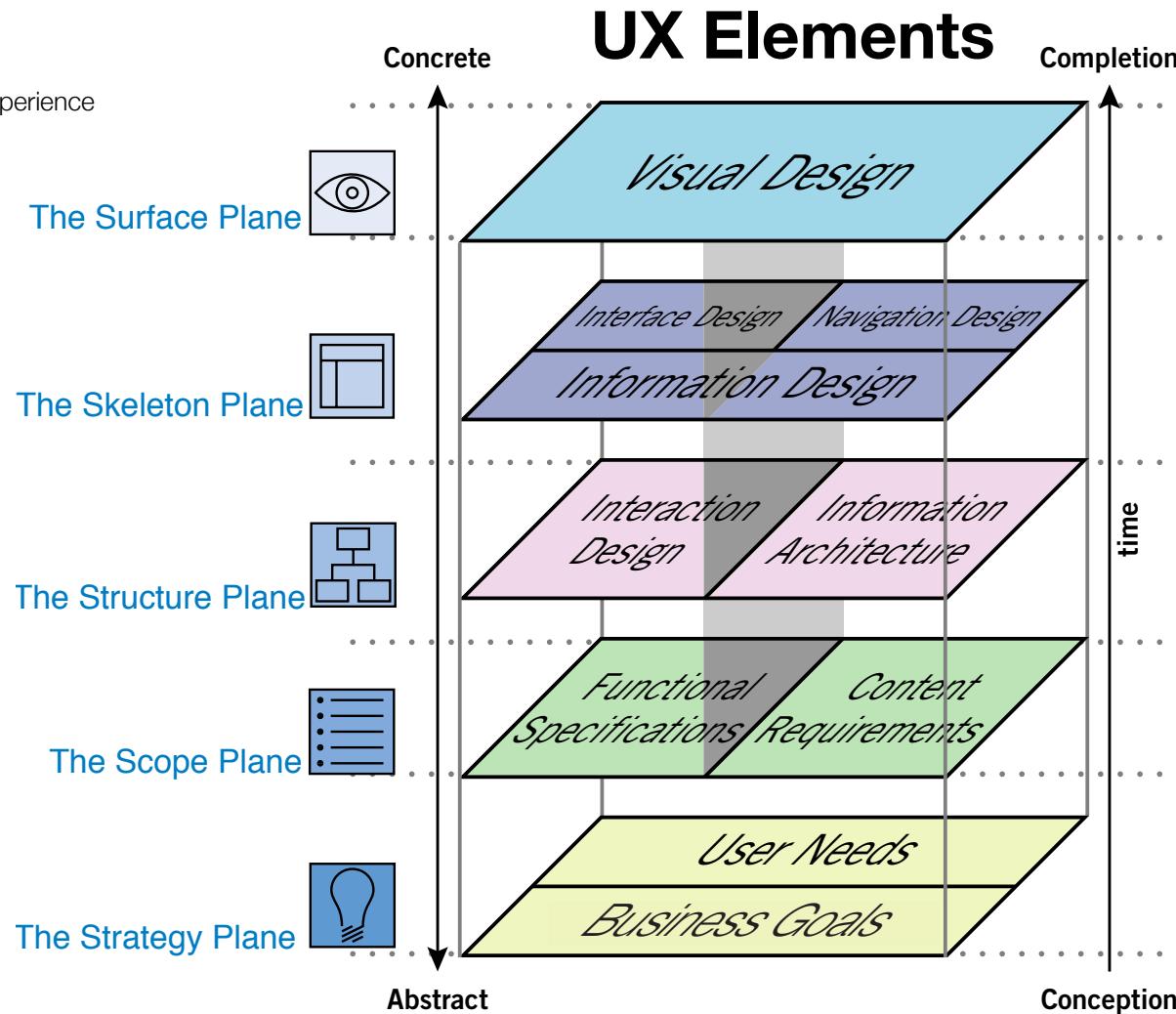
# Solution Space

how and  
how much

# Problem Space

who, what,  
and why

Source: Elements of User Experience  
by Jesse James Garrett



*Business Goals*

# **Combining the Frameworks**

# Solution Space

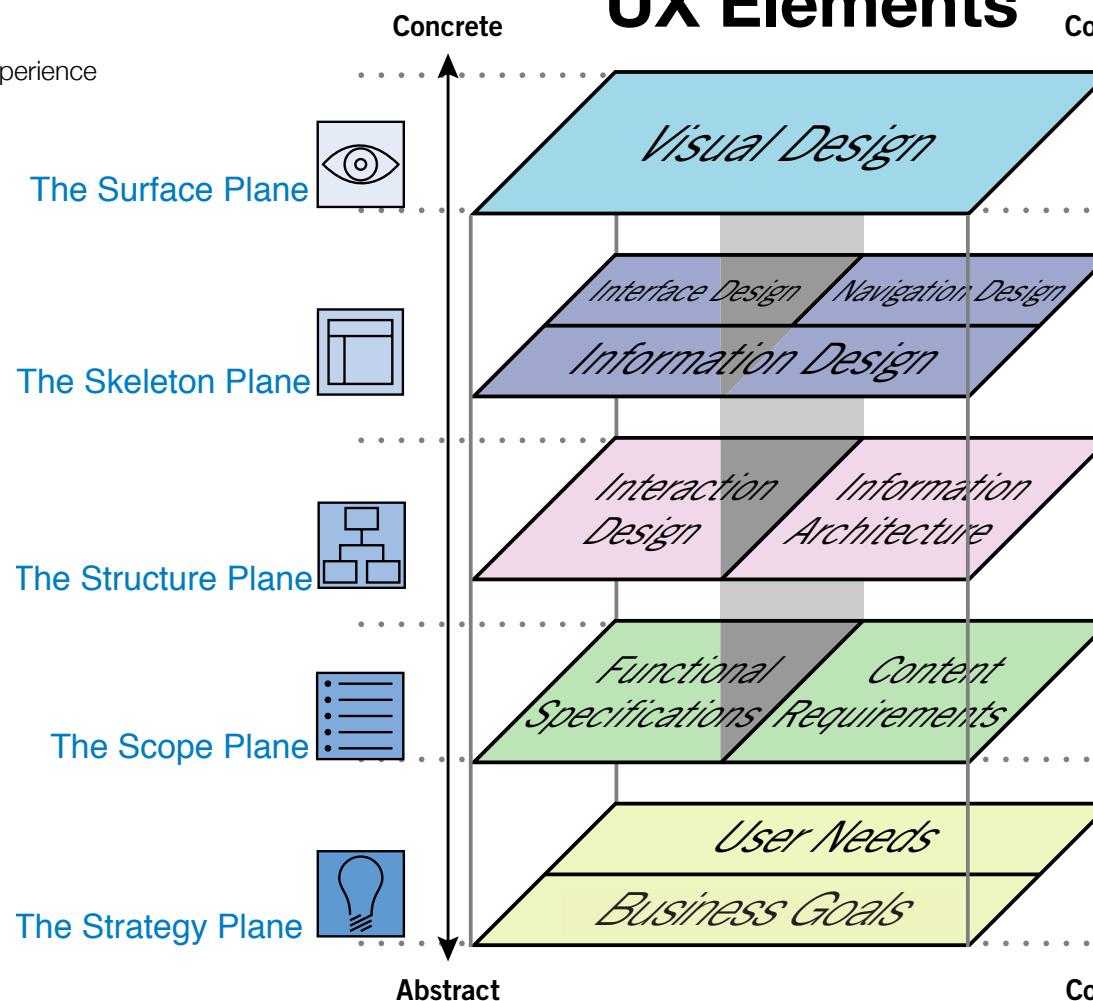
how and  
how much

# Problem Space

who, what,  
and why

Source: Elements of User Experience  
by Jesse James Garrett

# UX Elements



*Business Goals*

# **How are the frameworks applied?**

<b>Business Goals</b>	<b>Data</b>	<b>Metrics</b>
Increase market share	Market share data	Increase in returned and new customers stays
Increase revenue	Hotel revenue by departments	Increase in revenue by dept by returned and new customers
Increase in ROI from new platform	Investment in new platform	ROI calculated

<b>User Needs</b>	<b>Data</b>	<b>Metrics</b>
City adventure with friends	Request for New Friends	App download and activation
Explore new places	Destination inquiry and recommendation data	Rating of destinations recommended
Meet new friends	Profile completion and matching data	Rating of friend recommendation
Enjoy good deals	Inquiry of group booking and discount information	Increase in booking through the platform



## FIELD STUDY OBSERVATION AT THE HOTEL

We noticed a desire for customer autonomy, contextualized experiences, and public privacy.

**Source: MIT Mobile Experience Lab**



Source: MIT Mobile  
Experience Lab

## 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 Types

A collage of three images illustrating the research and design process for persona development:

- The top right image shows a wall covered in hand-drawn wireframes and notes for a mobile application, including sections for 'GREAT!', 'Feedback + Financial Guidance', and 'ADD FEATURES'.
- The bottom left image shows a wall covered in colorful post-it notes categorized under 'MEANS...' and 'GOOD'.
- The bottom right image shows a table covered with many colorful post-it notes, with the word 'INFORMATION' visible on the surface.

Source: MIT Mobile Experience Lab

**How can Marriott regain the market from Airbnb?**

HOME



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

LOBBY



Check-in.



ROOM



BOOKING

CHECK-IN

VISIT DESTINATIONS

RETURN

Adapted from: MIT  
Mobile Experience Lab

## **PROBLEM STATEMENT:**

How might we make marriott guests  
feel like **nodes within a network**  
while encouraging  
**interactions in the lobby space?**

**Source: MIT Mobile  
Experience Lab**

# **Future Journey Mapping**

HOME



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

LOBBY



Check-in.



ROOM



BOOKING

CHECK-IN

VISIT DESTINATIONS

RETURN

Adapted from: MIT  
Mobile Experience Lab

HOME

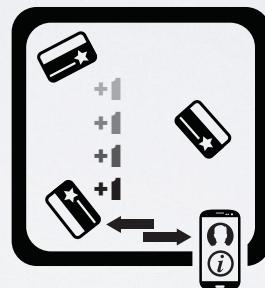


Joins loyalty program, creates a profile & installs phone app.

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

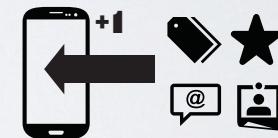
BOOKING

CHECK-IN

MEETUP

RETURN

## INTERACTIONS OUTSIDE HOTEL



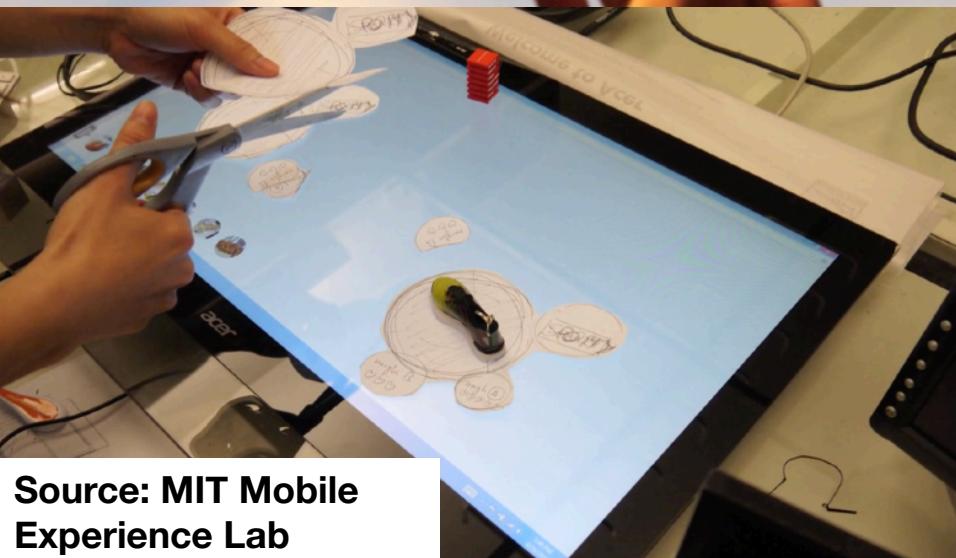
Prompted by app to tag places visited, ratings & social media for points — added to in-app database of recommendations.

Source: MIT Mobile Experience Lab

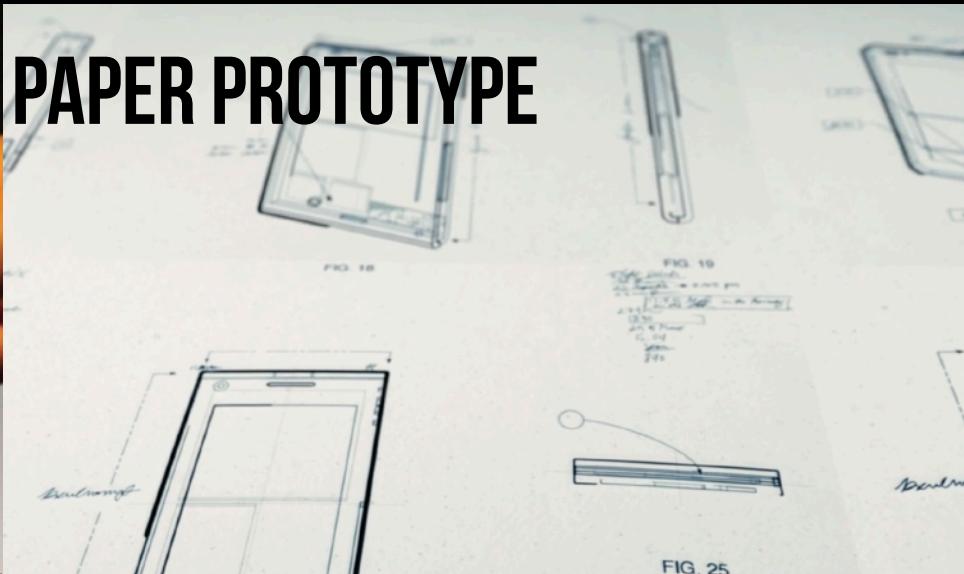
**How would the team find out if the new offering will be accepted?**

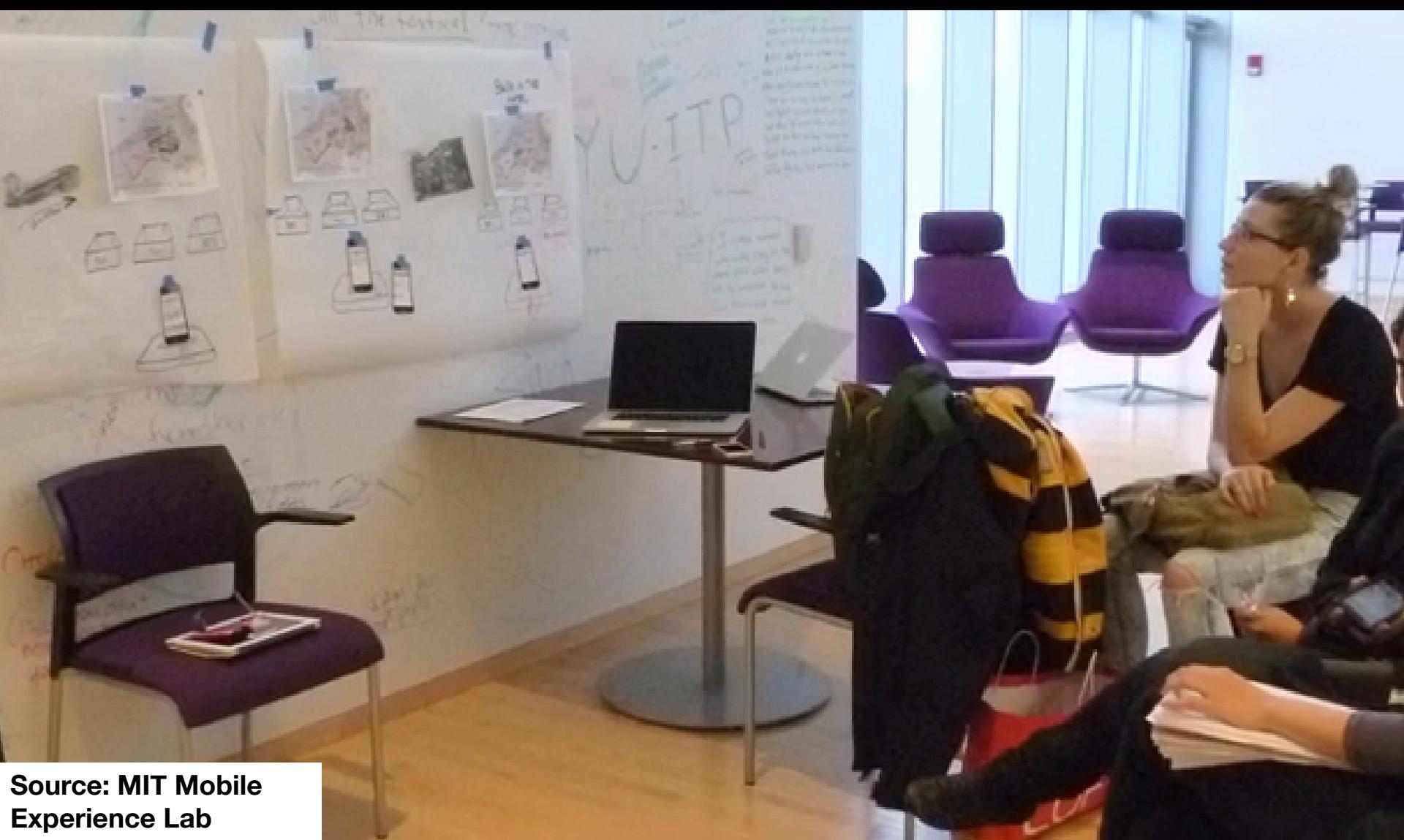
# **Develop Prototypes**

# SKETCH AND PAPER PROTOTYPE



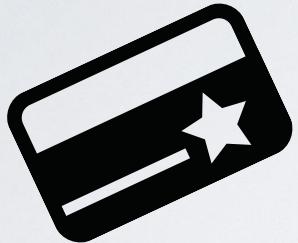
Source: MIT Mobile Experience Lab





Source: MIT Mobile  
Experience Lab

## THE CARD



## THE TABLE



## THE APP



room key  
point counter  
status symbol

the social hub

shared memory  
social networks  
recommendations

**LOYALTY**

**INTERACTION**

**DATA**

Source: MIT Mobile  
Experience Lab

# **From Story Map to Information Architecture**

HOME

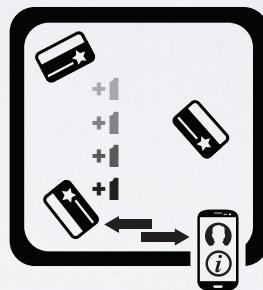


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ROOM

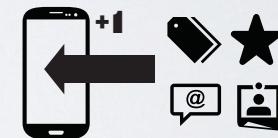
BOOKING

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

# **Throughout the journey, what customer's pain points did the MIT team have to address?**

Which hotel  
provides best  
deal?

What new  
places not to  
be missed?

What hotel  
services to  
be enjoyed?

Interesting  
people to  
meet?

Important  
things to get  
done

Opening  
hours of hot  
destinations

Directions to  
get to the  
destinations

Bargains and  
discounts  
available

# Throughout the journey, what **data points** did the MIT team have to plan for?

Hotel booking information and packages

Information of nearby destinations

Hotel services and charges

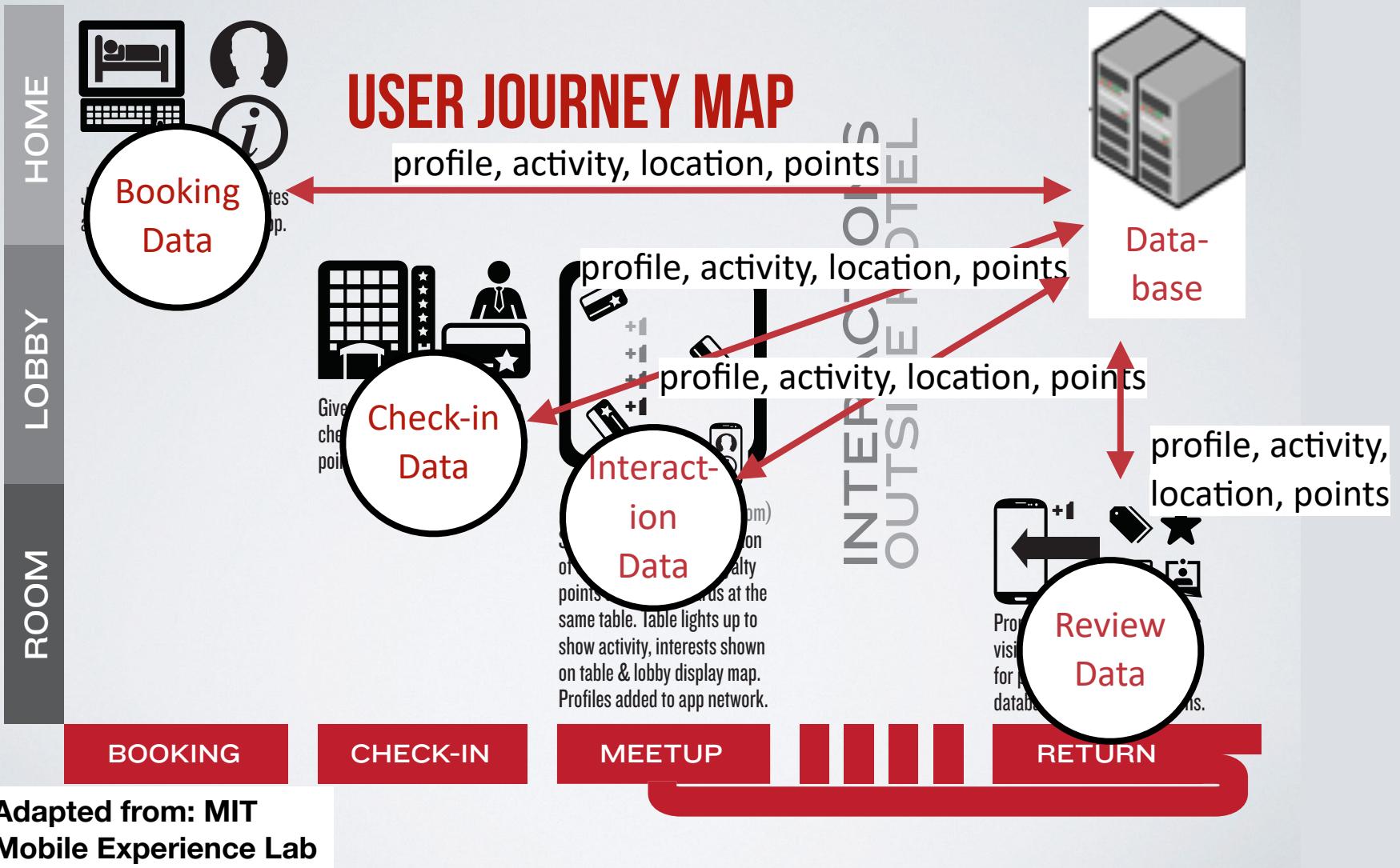
Guest profile information for matching

Group booking information for the guests

App download and activation

Comments and likes of experience

Rating of companion matched



# 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

## **Transformation of a hotel into a platform.**

- Generate **contents** through **user profiling** and **interests**, **destinations tracking**, **rating** and **reviews**
- Build **community stickiness** by **matching** profiles and interests, rewarding ratings and reviews
- Increase **membership** by implementing a **point system** to build loyalty and reinforce recurring guest visits and spending

# Hypothesis to be tested

✓

✓

✓

✓

✓

✓

✓



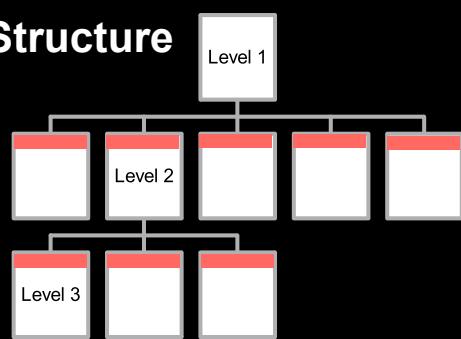
**Exercise time:  
\_\_ minutes**

**Information architecture** combines the art and science of structuring, organizing, labeling, navigating, and searching information space.

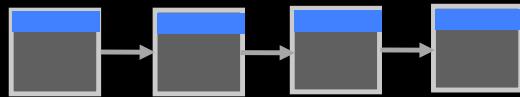
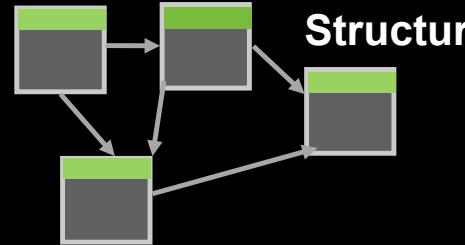
Information architecture = taxonomy of information (containing meta-data of data at hand). It defines how we classify data to make information accessible, findable and actionable.

# Information Architecture

Hierarchical  
Structure



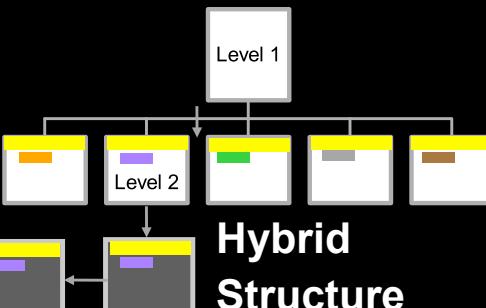
Organic  
Structure



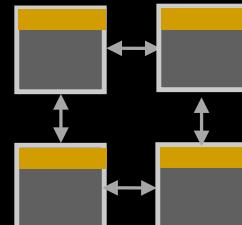
Sequential  
Structure

Level 1

Hybrid  
Structure



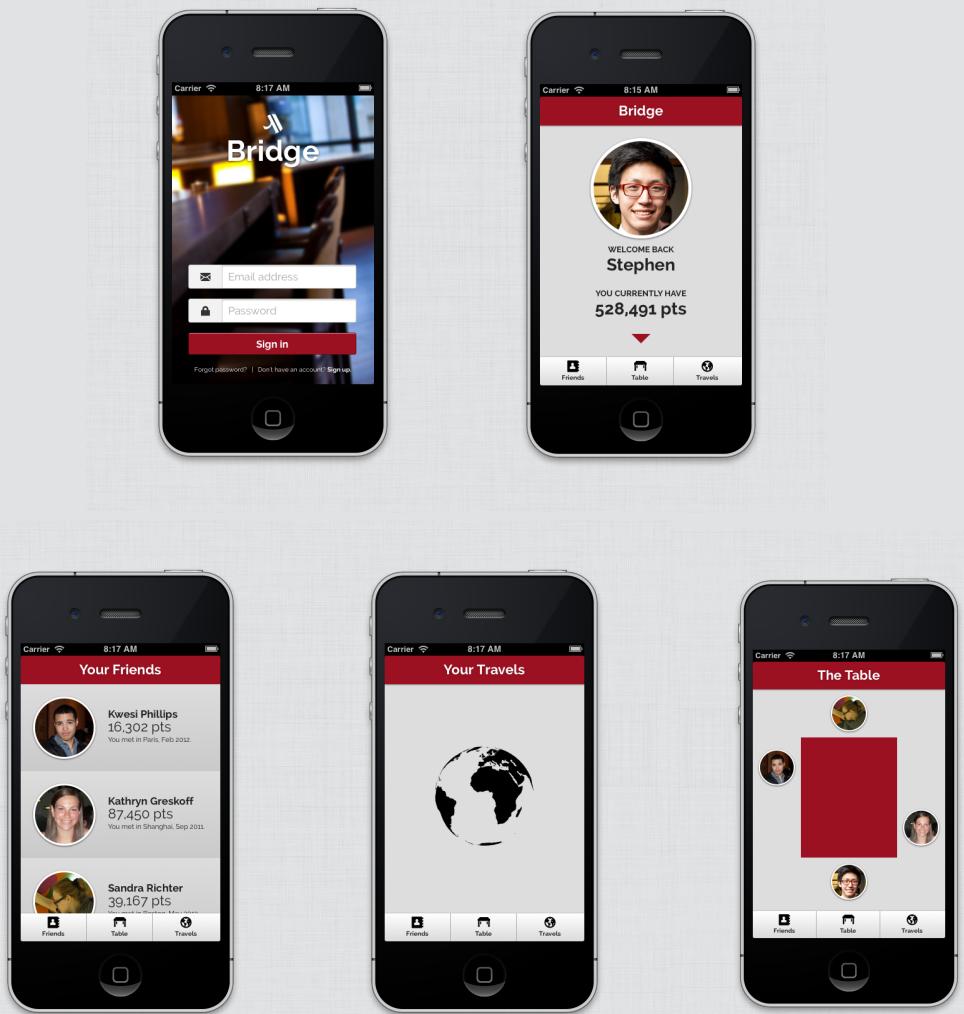
Matrix  
Structure

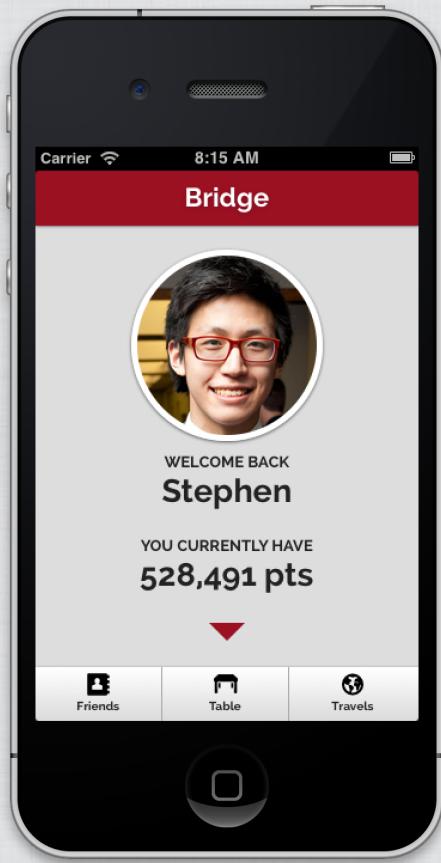
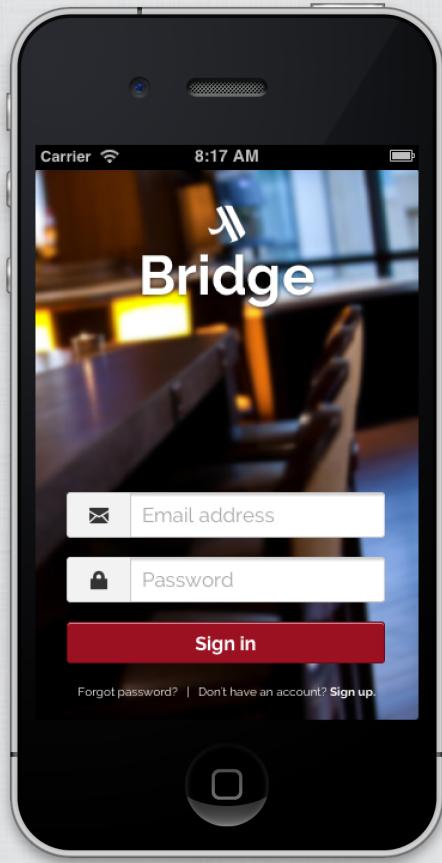


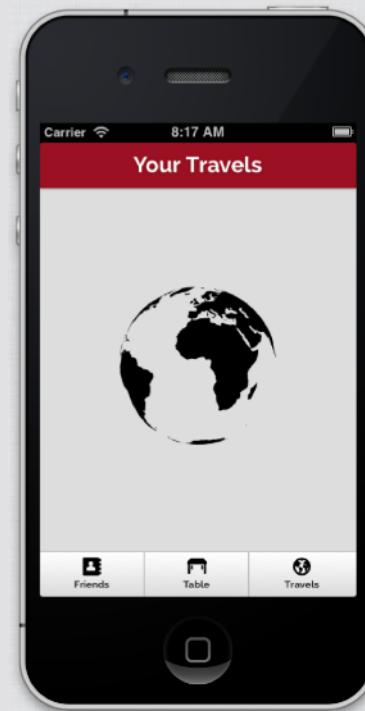
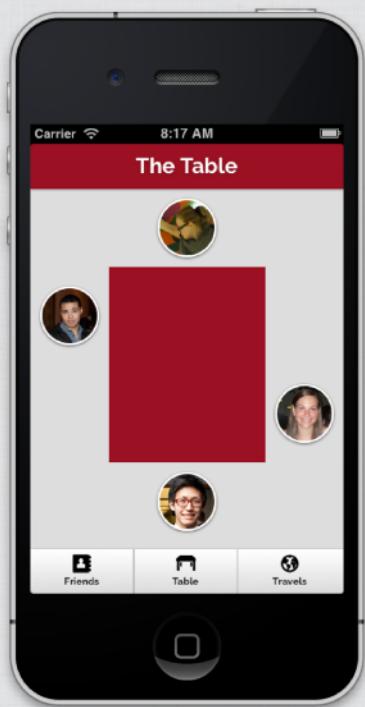
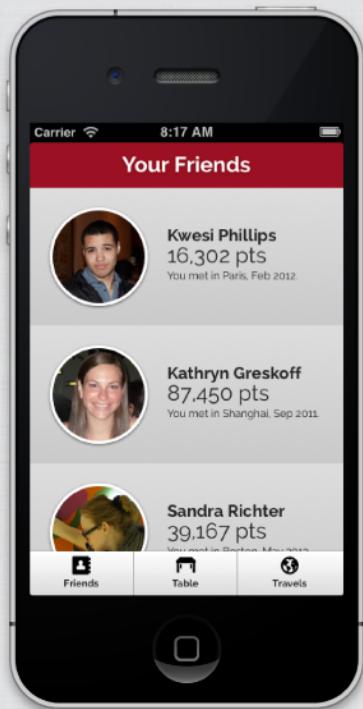


# MOCK-UP DIGITAL EXPERIENCE

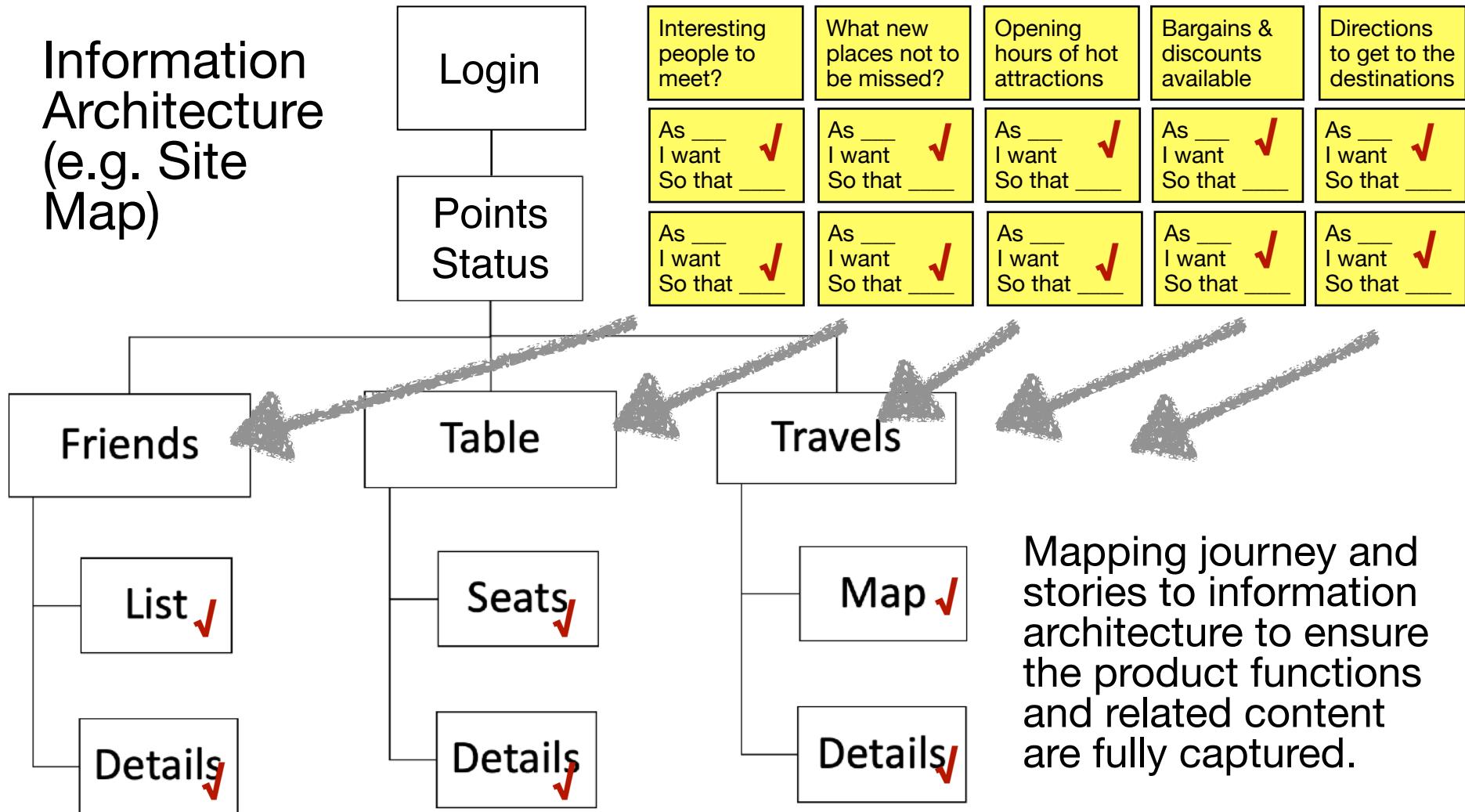
Source: MIT Mobile Experience Lab







# Information Architecture (e.g. Site Map)



# Bridge

Guests    Venues    Activities    Activity Types    Points    +

VIEWS    Grid view    ...    5 hidden fields    Filter    Group    Sort    Color    Share view

Find a view

	A Guest ID	A First N...	A Last N...	Email ...	Date Join	Date of Bi...	A Nationality	A Resident ...	Membership Points
1	1111	David	Chan	dchan2000...	1/1/2021	23/2/2000	Hong Kong SAR		20.0

Guests    Venues    Activities    Activity Types    Points    +

VIEWS    Grid view    ...    3 hidden fields    Filter

Find a view

Grid view

	A Name	Activity Types	Points	Activity Name
1	MIT			1001 Share location
2	Harvard University		20.0	1002 Share location
3	Harvard Square		20.0	1003 Share location
		Download App	20.0	Visit Harvard campus
		Activate App	20.0	Visit MIT Technology M...
		Join Table	20.0	Check in hotel.

Activity Types    Points    +

3 hidden fields    Filter    Group    Sort    Color    Share view

Name	Date	Guests	Guest...	Activity Code	Activity Name (fr...	Venues	Activity Point
1111-1001	1/2/2021	1111	David Chan	1001	Visit Harvard campus	Harvard University	10.0

Activity Types    Points    Social Interactions    +

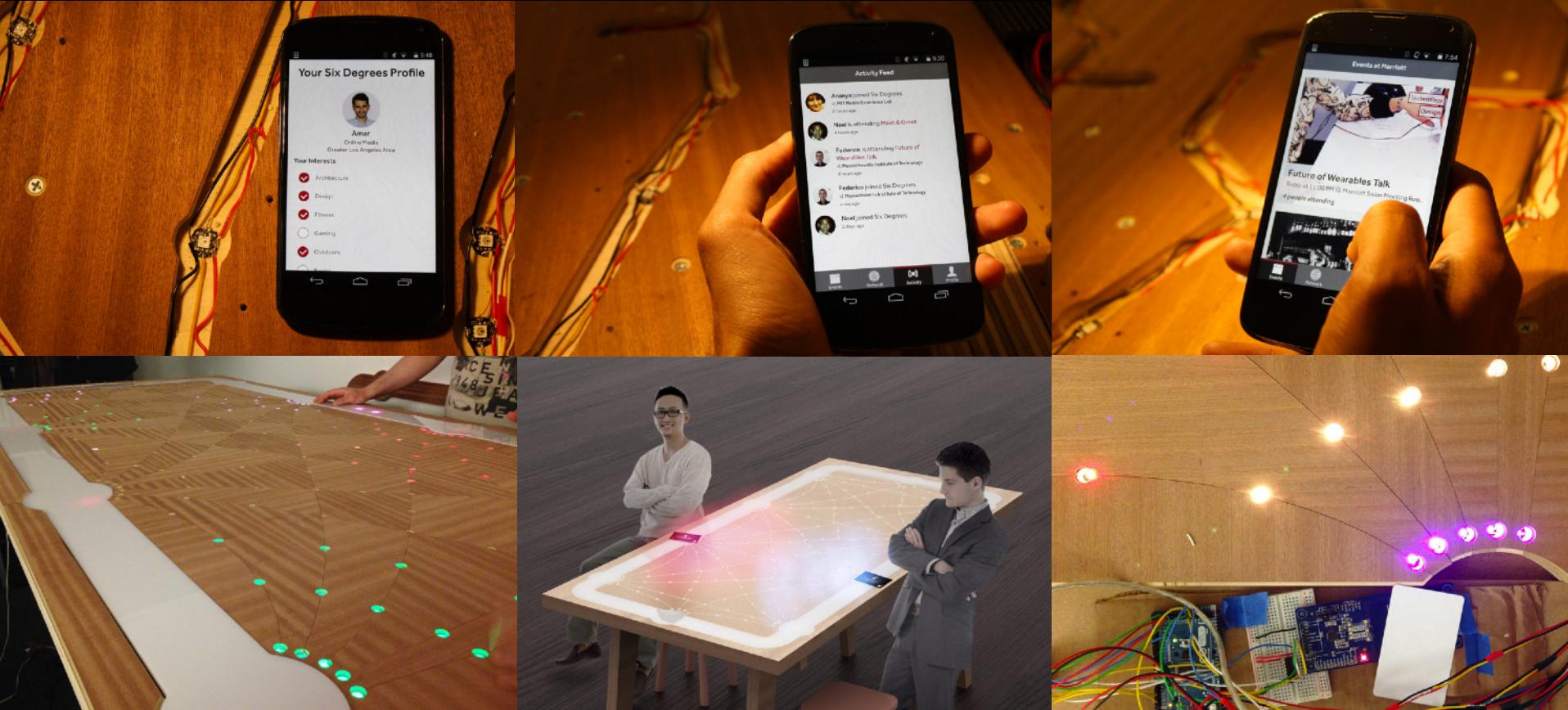
2 hidden fields    Filter    Group    Sort    Color    Share view

Guest Name	Guest ID	Friends Joining the ...	Ids of Friends	Link to Points	Activity
Peter Wong	1112	David Chan	1111	1111-1001 1111-1002	Visit Harvard campus, Visit MIT Technology ...

# **Role Play to Test the Interactions**



**Source: MIT Mobile Experience Lab**





## MARRIOTT **SIX DEGREES**

A social network for the connected lobby



**Six Degrees** is a prototype social network designed for the hotel lobby by the [\*\*MIT Mobile Experience Lab\*\*](#) in collaboration with **Marriott Hotels**.

Through Six Degrees, guests can discover how they are connected to one another, and can socialize with one another in events planned by Marriott. The platform is designed to highlight the connections that already exist between guests, while encouraging new connections to form.

# Solution Space

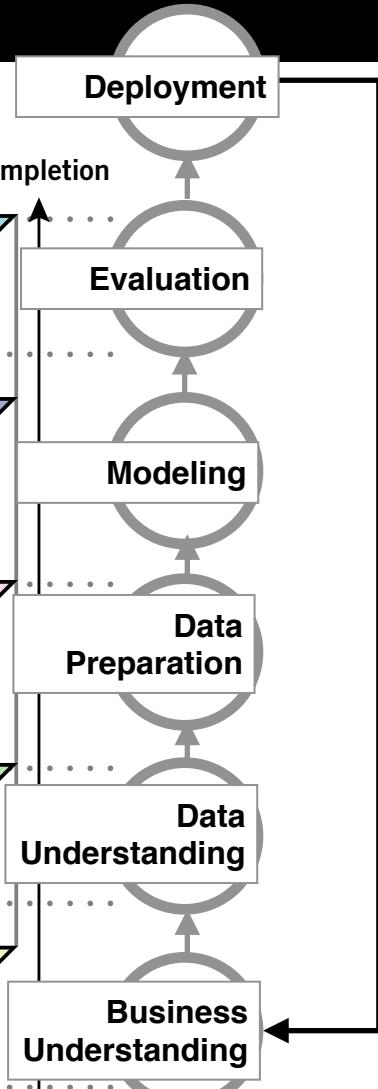
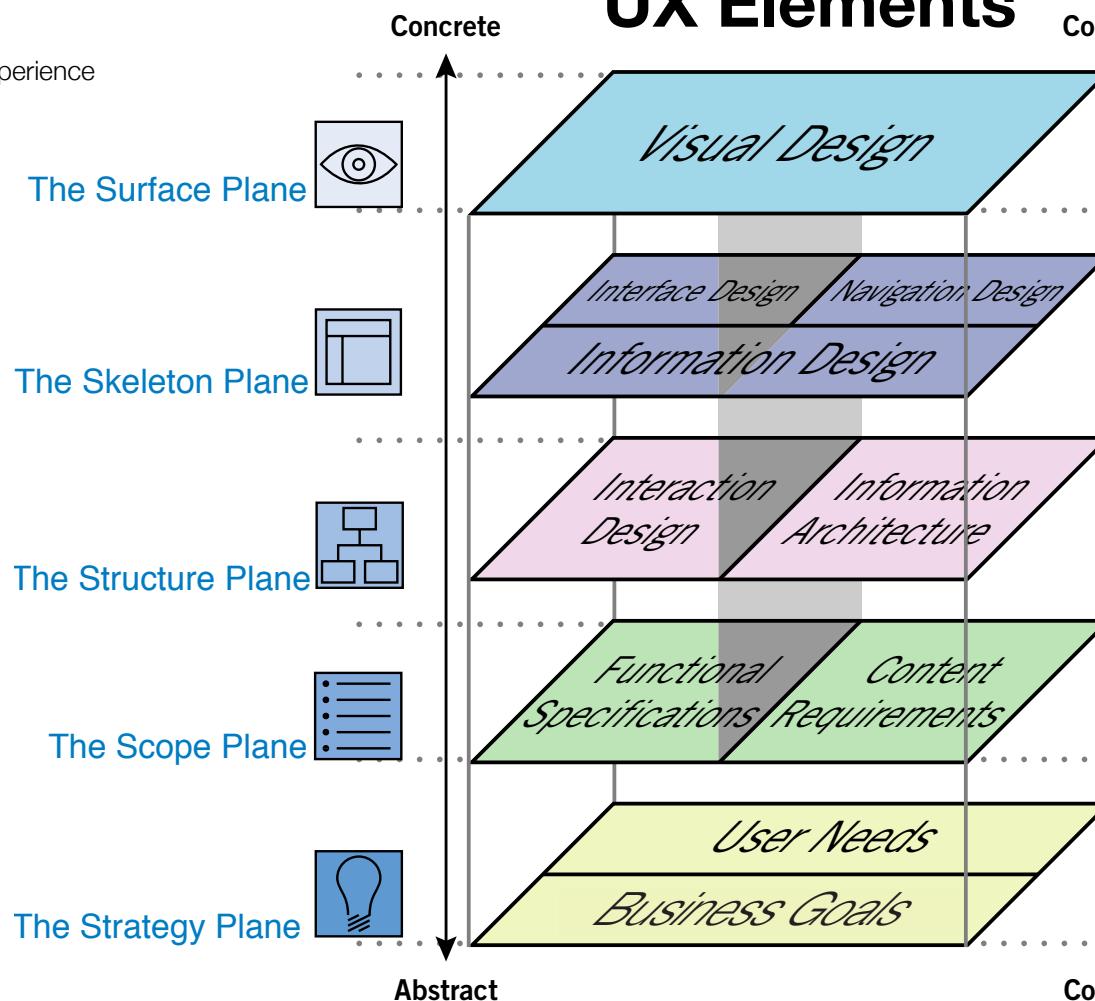
how and  
how much

# Problem Space

who, what,  
and why

Source: Elements of User Experience  
by Jesse James Garrett

# UX Elements



*Business Goals*

設計思維 Design Thinking	數據發掘 Data Mining	用戶體驗元素 Elements of UX	內容重點 Main Points
同理心 Empathy	商業理解 Business Understanding	戰畧層 Strategy Plane	Collect stories from stakeholders for framing and decomposing user and business problems into pain points and data points for meeting user needs and business goals.
界定問題 Definition	數據理解 Data Understanding	範圍層 Scope Plane	Define the scope and problem in terms of functional and content requirements for collecting data to support ongoing system development and future operations.
創意發想 Ideation	準備數據 Data Preparation	結構層 Structure Plane	Design classification schemes for grouping data attributes into data structures and information architectures for data aggregation and preparation.
開展原型 Prototyping	建立模型 Modeling	框架層 Skeleton Plane	Develop physical prototypes and software models/applications for later testing and evaluation.
重複測試 Testing	評估 Evaluation	表現層 Visual Plane	Evaluate findings through qualitative and quantitative methods to validate visual outcome and interfaces.

## **Recommended Reading**

1. Andreessen, Marc (2011) Why Software is Eating The World. The Wall Street Journal, August 20, 2011 (<https://uptakedigital.zendesk.com/hc/en-us/articles/115001167933-Why-Software-Is-Eating-the-World>).
2. Buytaert, Dries (2015) No, Data is Eating the World. Recode.net, Jan 7, 2015 (<https://www.vox.com/2015/1/7/11557562/no-data-is-eating-the-world>).
3. Davenport, Thomas H. and Patil D.J. (2012) Data Scientist: The Sexiest Job of the 21st Century. Harvard Business Review October 2012 Issue. (<https://hbr.org/2012/10/data-scientist-the-sexiest-job-of-the-21st-century>)
4. Garrett. J. J. (2011) Chap. 2 The Elements of User Experience ([http://www.jjg.net/elements/pdf/elements\\_ch02.pdf](http://www.jjg.net/elements/pdf/elements_ch02.pdf))
5. Minah, V., (2020) Data Science and Design Thinking Belong Together (<https://www.frogdesign.com/designmind/data-science-and-design-thinking-belong-together>)

# 首尔演唱会地图

THERE'S SALVATION  
FOR ME  
更轻松地规划您的首尔之旅

探索场馆

— 直接下滑，查看近期演出信息 —

Case Study: Seoul Concert Map



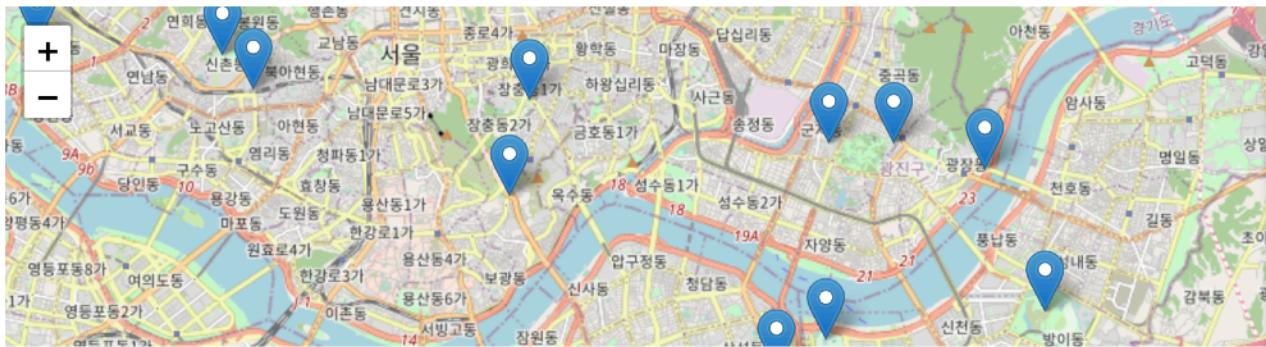
# 首尔演唱会地图

THERE'S SALVATION  
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探索场馆

— 直接下滑，查看近期演出信息 —

点击查看所有场馆具体位置



点击查看场馆最多容纳人数

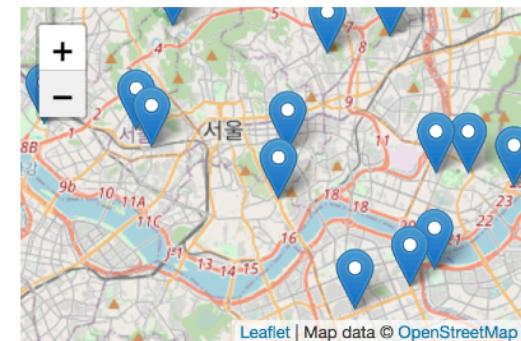
500-1499

100-2999

3000-9999

10000以上

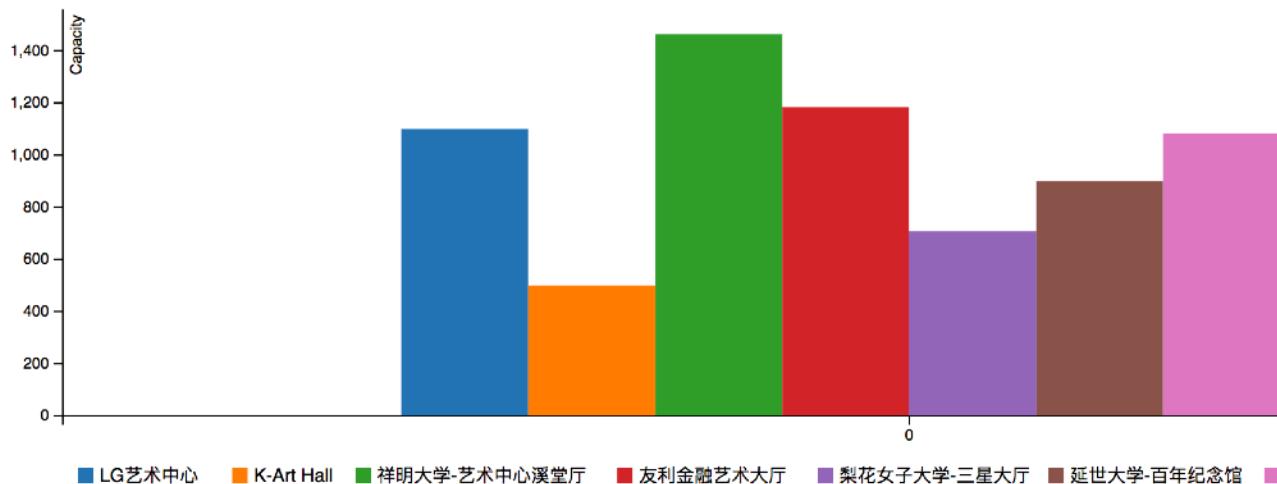
点击查看所有场馆具体位置



点击查看场馆最多容纳人数

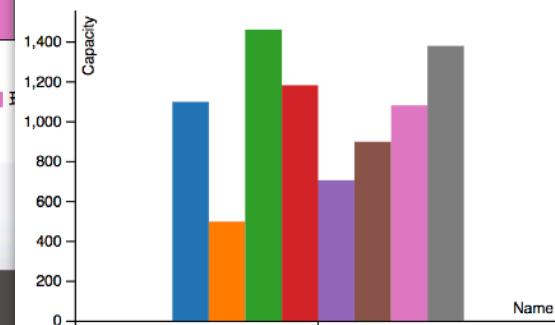
点击查看场馆最多容纳人数

500-1499    100-2999    3000-9999    10000以上



点击查看场馆最多容纳人数

500-1499    100-2999    3000-9999  
10000以上



一键查看所有推荐去处的具体信息

<input type="checkbox"/>	名称	类型	TripAdvisor...	行政区	地址	交通
1	梨花女子大学	文化场所	1115	西大门区	梨花女大街52	2号线梨大(Ewha Woman)
2	庆熙大学	文化场所	123	东大门区	庆熙大路26	1号线回基(Hoegi)站1号出
3	高丽大学	文化场所	53	城北区	安岩路145	6号线安岩(Anam)站1/2号
4	景福宫	文化场所	10421	钟路区	社稷路161	3号线景福宫(Gyeongbok)
5	北汉山国立公园	文化场所	1067	城北区	辅国门路262	4号线吉音(Gireum)站2号
6	韩国国立中央博物馆	文化场所	2303	龙山区	西冰库路137	4号线二村(Ichon)站2号出
7	三清阁	文化场所	112	城北区	大使馆路3	5号线光化门(Gwanghw)
8	北村韩屋村	文化场所	5138	钟路区	北村路11街...	3号线安国(Anguk)站
9	洪陵树木园	公园广场	21	东大门区	回基路57国...	6号线高丽大(Goryeodae)
10	纛岛汉江公园	公园广场	24	广津区	峨嵯山路200	2号线建大入口(Konkuk U)
11	汝矣岛公园	公园广场	637	永登浦区	汝矣岛洞330	5号线汝矣渡口(Yeoui-na)
12	奥林匹克公园	公园广场	695	松坡区	奥林匹克路...	5号线/9号线奥林匹克公园

<input type="checkbox"/>	名称	类型
1	梨花女子大学	文化场所
2	庆熙大学	文化场所
3	高丽大学	文化场所
4	景福宫	文化场所
5	北汉山国立公园	文化场所
6	韩国国立中央博物馆	文化场所
7	三清阁	文化场所
8	北村韩屋村	文化场所
9	洪陵树木园	公园广场
10	纛岛汉江公园	公园广场

# Introduction

“As a K-pop fan, from my personal experience, current information about Seoul concerts provided to Chinese K-pop fans is fragmented and unclear. There is no Chinese website or account that specifically summarizes and posts such information. Therefore, when people come up with the idea of going to Seoul to watch a concert, they have to spend a lot of time looking around for information from enormous websites, such as venue’s specific location, transportation, ticketing, accommodation, etc. More importantly, until the end, they may not be able to obtain correct and comprehensive information, affecting trips plan.

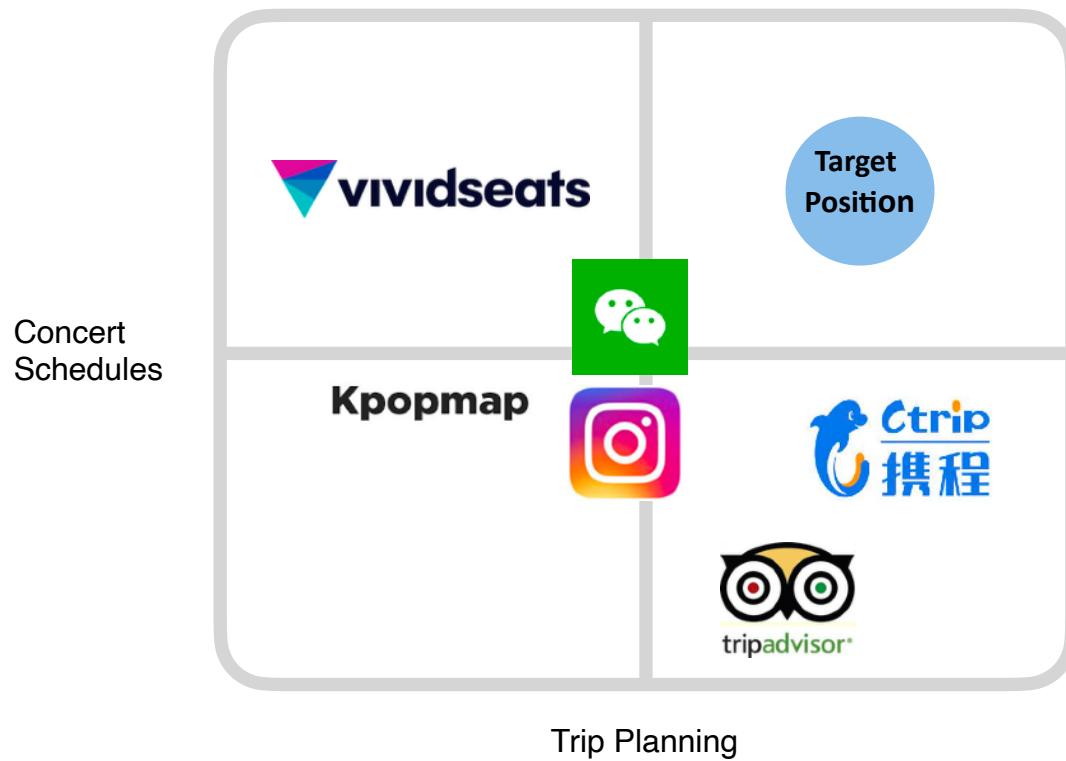
Thus, I want to build a website based on concert venues, providing all valid information of related aspects that people need for their concert journey to Seoul. Main purpose for this website is to help people better plan and arrange their trips, first finding venue conveniently and enjoy concert itself, then having a great time in Seoul.”

# **Interview Questions:**

1. Which websites or information sources will you rely on to obtain concert related information?
2. What do you think this website/app is about when you first see the first screen?
3. Can you show me what you'll click to check information on (see following) from this website or information source?
4. How do you find out one specific concert's information about ticketing?
5. How do you know if you need to bring rain gear on the concert day?
6. How do you choose your accommodation?
7. How do you choose where to go on the concert day?
8. Is the navigation bar clear enough?
9. Is the function of each part clear enough?
10. What part could be improved and how?
11. What content should be added?
12. Is this website helpful if you are going to watch a concert in Seoul?

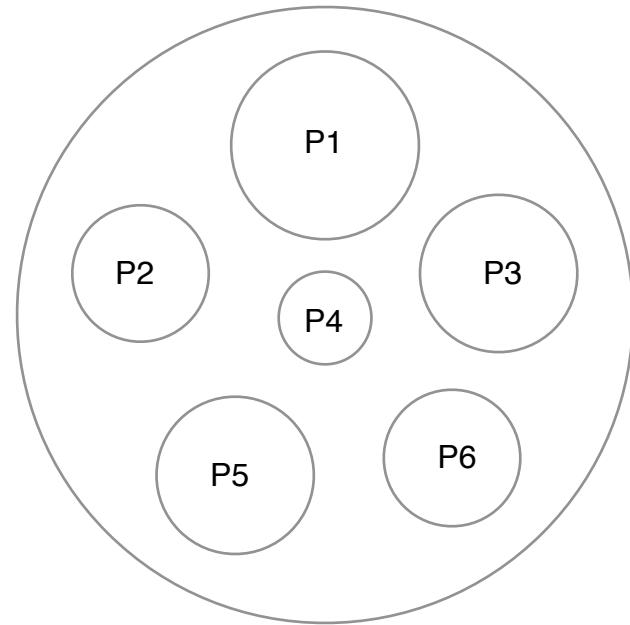
# **Current Alternatives**

# Positioning Map

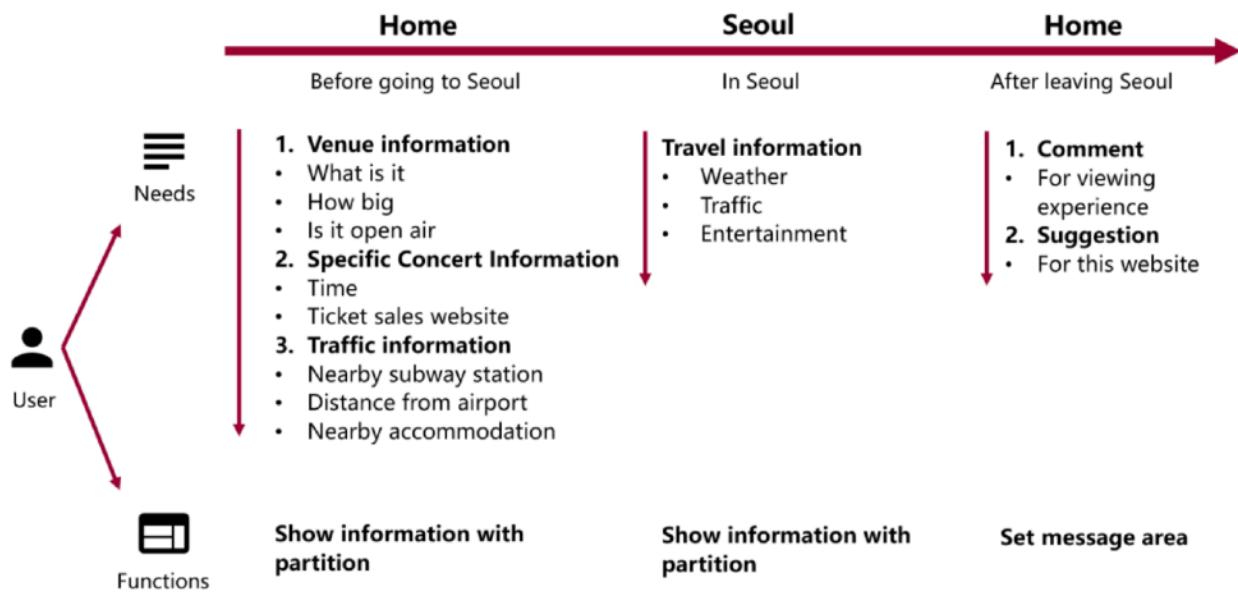


# **User and Data Research**

**People who have the need  
to plan a trip to Korea to  
attend the concerts of K-  
Pop idols**



P1 To P6 ( Persona Types)  
e.g. student K-Pop fan,  
fan circle lead, trend reporter



*Figure 1. User Journey Map*

# Scope - Function and Content Requirements

According to user journey map, this website will mainly provide information needed in the first two phases: before and during the trip.

## Venues information for route planning:

- Venues: all venues in Seoul that have a capacity of more than 500 people and have ever held concerts.
- Venues information: outfield and infield appearance, capacity, district, specific location, nearby subway station, directions and time required from Incheon Airport, recommended accommodation area, examples of previous concerts or plans of upcoming concerts.
- Visualization: map view showing specific locations of all venues, bar chart view comparing venue capacity by categories.

## Upcoming concerts information for scheduling and booking:

- Date, performer, concert name, ticket price and website, corresponding venue.

## Nearby entertainment information for pre-concert and post-concert activities:

- Distinct, specific location, nearby subway station, corresponding venue, directions and time required from venue, introduction, TripAdvisor comments, opening hours, suggested tour time.
- Additionally, there is also a “Contact Us” section to collect user suggestions and feedback.

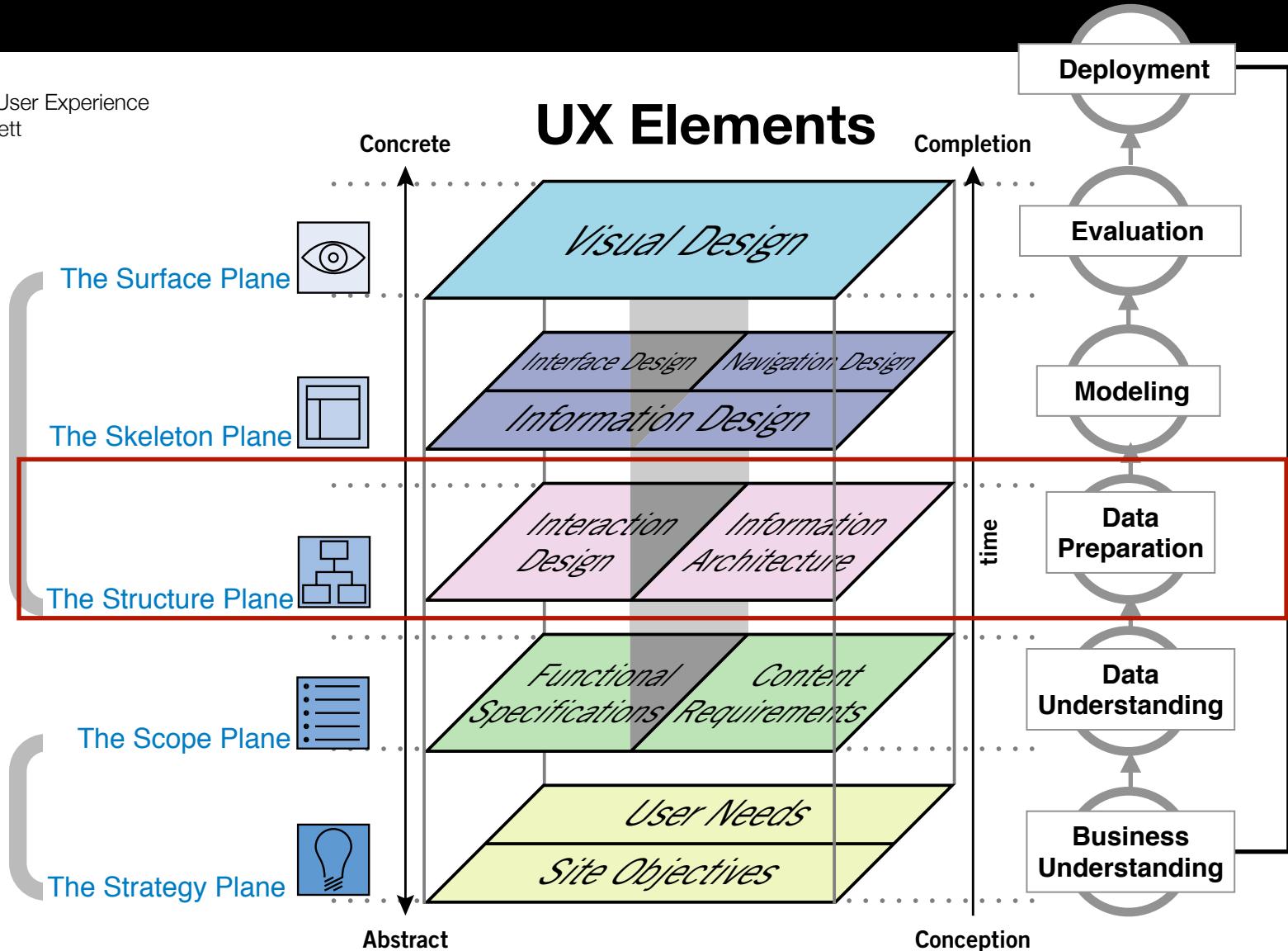
Source: Elements of User Experience  
by Jesse James Garrett

## Solution Space

how and  
how much

## Problem Space

who, what,  
and why



**Bridging the front-end and the backend  
with information architecture.**

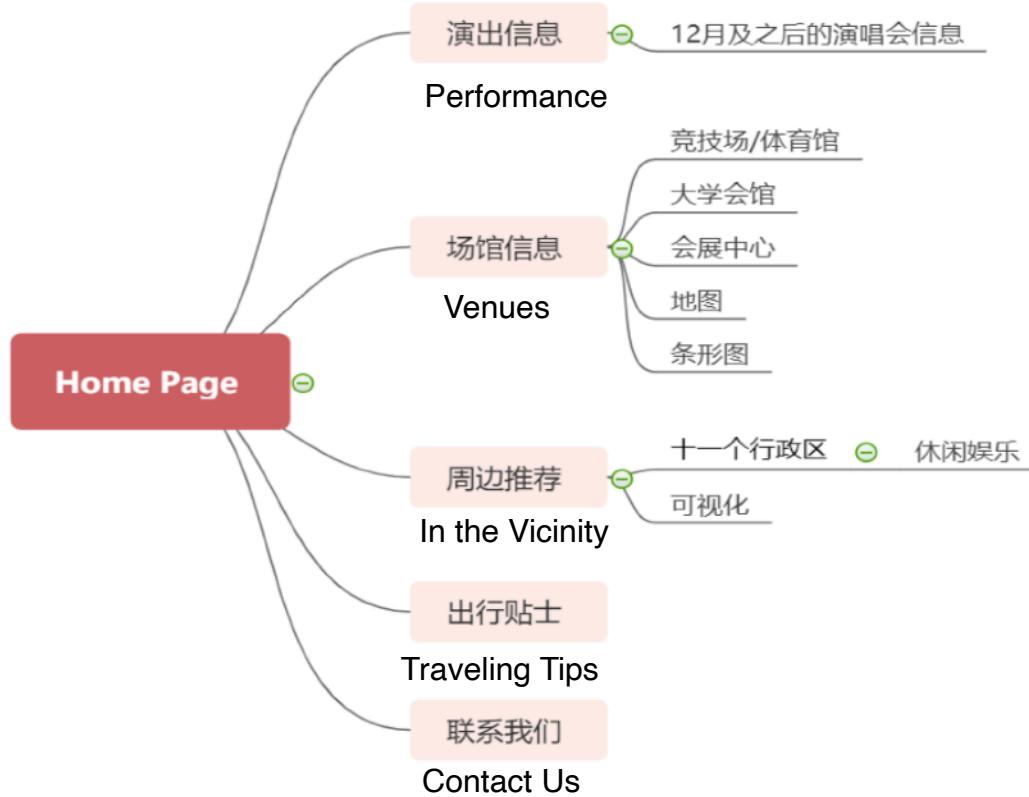


Figure 2. Site Map

# **User and Data Research**

# Seoul Concert Map

HELP ? 🔍 🔞 🧑



SEO keywords

ParseHub&OpenRefine-performances

Location

Picture



SHARE

AUTOMATIONS

APPS

VIEWS

Grid view



Hide fields

Filter

Group

Sort

Color



Share view



Find a view



Grid view



Create a view

Grid



Form



Calendar



Gallery



Kanban



	Name	lat	Lng	images	img_url
1	首尔世界杯体育场(Seoul ...	37.568222	126.897361		<a href="https://dl.airtable.com">https://dl.airtable.com</a>
2	高尺天空巨蛋球场(Gocheo...)	37.498222	126.867250		<a href="https://dl.airtable.com">https://dl.airtable.com</a>
3	奖忠体育馆(JangChung Ar...	37.558056	127.006667		<a href="https://dl.airtable.com">https://dl.airtable.com</a>
4	高丽大学化汀体育馆	37.592916	127.024666		<a href="https://dl.airtable.com">https://dl.airtable.com</a>
5	庆熙大学和平殿堂	37.598943	127.052638		<a href="https://dl.airtable.com">https://dl.airtable.com</a>
6	世宗大学大洋厅	37.550540	127.073203		<a href="https://dl.airtable.com">https://dl.airtable.com</a>
7	祥明大学艺术中心溪堂厅	37.602782	126.955198		<a href="https://dl.airtable.com">https://dl.airtable.com</a>
8	Yes24 Live hall	37.545816	127.108096		<a href="https://dl.airtable.com">https://dl.airtable.com</a>
9	忠武艺术中心大剧场	37.566280	127.014589		<a href="https://dl.airtable.com">https://dl.airtable.com</a>
10	LG艺术中心	37.502166	127.037181		<a href="https://dl.airtable.com">https://dl.airtable.com</a>
11	环球艺术中心	37.550535	127.087630		<a href="https://dl.airtable.com">https://dl.airtable.com</a>
12	COEX Artium Theater	37.510421	127.061536		<a href="https://dl.airtable.com">https://dl.airtable.com</a>
13	纳鲁艺术中心(Naru Arts C...	37.537600	127.070525		<a href="https://dl.airtable.com">https://dl.airtable.com</a>
19 records		Sum 713.447114	Sum 2413.315071		



# Seoul Concert Map

HELP ? 🔔 🚙



演出类型汇总

演出计划

SEO keywords

ParseHub&OpenRefine-perf...



SHARE

AUTOMATIONS

APPS

VIEWS

Grid



Hide fields

Filter

Group

Sort

Color



Share view



Find a view



Grid



Calendar using "start date"

Gallery

Kanban stacked by "genre"

Create a view

Grid



Form



Calendar



Gallery



Kanban



	A performance_name	B1 performance_start date	B1 performance_end date	A performance_casts1
1	2019 VIXX LIVE FANTA...	9/28/2019	9/29/2019	VIXX
2	2019 Yeon Woo Jin 10t...	9/28/2019		Yeon Woo Jin
3	2019 H.O.T 「High-five ...	9/20/2019	9/22/2019	H.O.T
4	The 11th Anniversary Fa...	9/21/2019		IU
5	2019 Kim Dong Han Fa...	9/21/2019		Kim Dong Han
6	Masterpiece of You wit...	9/21/2019		Real Slow
7	2019 Ryu Jun Yeol BIRT...	9/21/2019		Ryu Jun Yeol
8	BLACKPINK 2019 PRIV...	9/21/2019		BLACKPINK
9	2019 SEVENTEEN WOR...	8/30/2019	9/1/2019	Seventeen
10	2019 Yim Siwan Fanme...	9/8/2019		Yim Siwan
11	GWSN(Girls in the Park...	9/8/2019		GWSN
12	2019 Son Ho-young & ...	8/23/2019	8/25/2019	Son Ho-young&Kim Tae-...
13	JUNJIN ON AIR 2019	8/17/2019		Junjin
94 records				

# Seoul Concert Map

HELP ? 🔍 🔔 🚙



演出类型汇总

演出计划

SEO keywords

ParseHub&OpenRefine-perform



SHARE

AUTOMATIONS

APPS

IEWS

Grid



Hide fields

Filter

Group

Sort

Color



Share view



Find a view



Grid



Create a view

Grid



Form



Calendar



Gallery



Kanban



7 records

Keyword Phrase	Monthly Search Volume	CPC	PPC Competition	Related
Kpop concert	3600	0.51	0.02	viagogo
Seoul concert	1900	0.33	0.04	yes24, me
Seoul subway map	14800	0.18	0.05	seoul stati
Seoul map	12,100	0.24	0.06	
Gocheok Sky Dome	6600	0.37	0.03	
Seoul Olympic Stadium	4400	0.41	0	
Seoul Olympic Park	2900	0.43	0.01	



The Chinese University of Hong Kong

**GraduateSchool**

香港中文大學研究院

HK PhD Fellowship Scheme

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Why CUHK

Programmes

Admissions

Registration

Scholarships & Fees

Campus Support

FAQs



## Case Study: CUHK Graduate Admission Mini-site



HKPFS Leaflet

# PERSONA SEGMENTATION

Want to get a good job offer from local companies.

Obtain relevant academic experience

Prepare great CV that can enhance job application.

Pursue more international outlook to benefit future career

Want to get relevant course works that can be compatible with grad requirements.

Obtain relevant HK/PRC experience

Want to return to PRC upon graduation

Get to see other culture

Want to get a job in Hong Kong

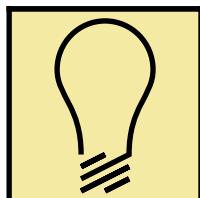
Take classes not offered in PRC

## LOCAL APPLICANTS

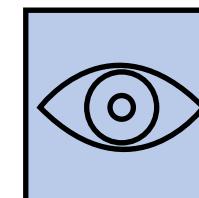
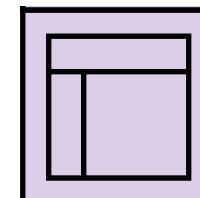
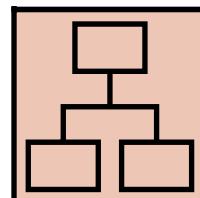
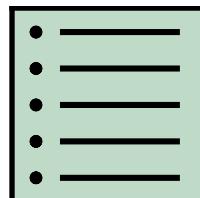
## FOREIGN APPLICANTS

## MAINLAND APPLICANTS

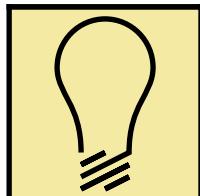
SITE OBJECTIVES		TARGET USERS		USER NEEDS
Primary goal	Become top tier university in the world.	Primary User	Top local students and world-class academics	Apply for degree enrollment and job vacancies.
Additional goal	Increase research output.	Secondary User	Chinese students interested in the west	Interested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



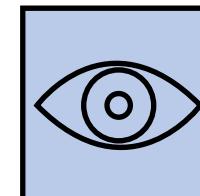
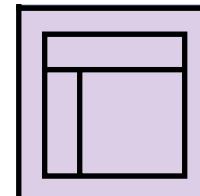
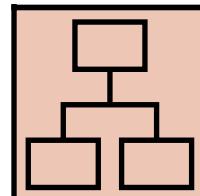
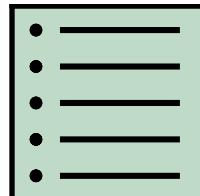
**STRATEGY**



SITE OBJECTIVES		TARGET USERS		USER NEEDS
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**STRATEGY**



Segments	Origin	Duration	Levels	Faculty	Ethnic Backgnd	Resident
1	Local	Full Time	Undergraduate	Arts	Chinese	Chung Chi New Asia
2	PRC	Part Time	Master	Science/ Engineering	Other Asian Pacific Countries	United Morningside
3	Foreign	Exchange	PhD	Business Admin	EU (Britain)	S.H.Ho C.W. Chu
4				Social Science	N. America	Wu Yee Sun Chung Chi
5				Law School	S.America	Lee Woo Sing Grad. House
6	<b>Segmentation Table</b>			Medical School	Middle Asia/ East Europe/ Others	Off-Campus Home

Home



Students research online and compare different programs to kickstart application

Current School



Attend off-line and online intro event

CUHK



Prepare application and apply for admission.



Admission received and start to adapt to life in HK and CUHK



Complete grad. req. & acquire resources to pursue study goals.



Prepare for graduation and apply for work or further study.

Research

Application

Admission

Enrolment

Graduation

# Student Journey Map



John  
Li

# Throughout the **journey**, what **pain points** did the student applicants (e.g. Mainland) encounter and what should be the **scope** ?

Hard to find the ideal program.

Take time to screen and apply.

Not meeting admission requirements.

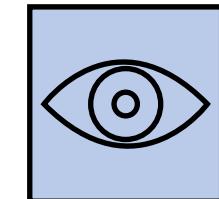
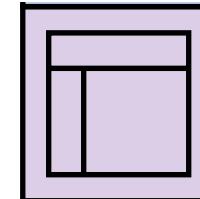
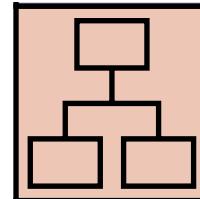
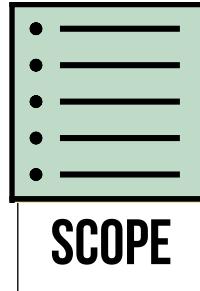
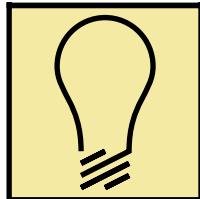
Cannot afford the tuition and living expenses.

Hard to find accommodation and roommates.

Choose right classes & meet learning goals.

Missing family support and friends.

Apply internship & jobs. Arrange interviews.



**Empathise**  
身同感受

**Define**  
界定问题

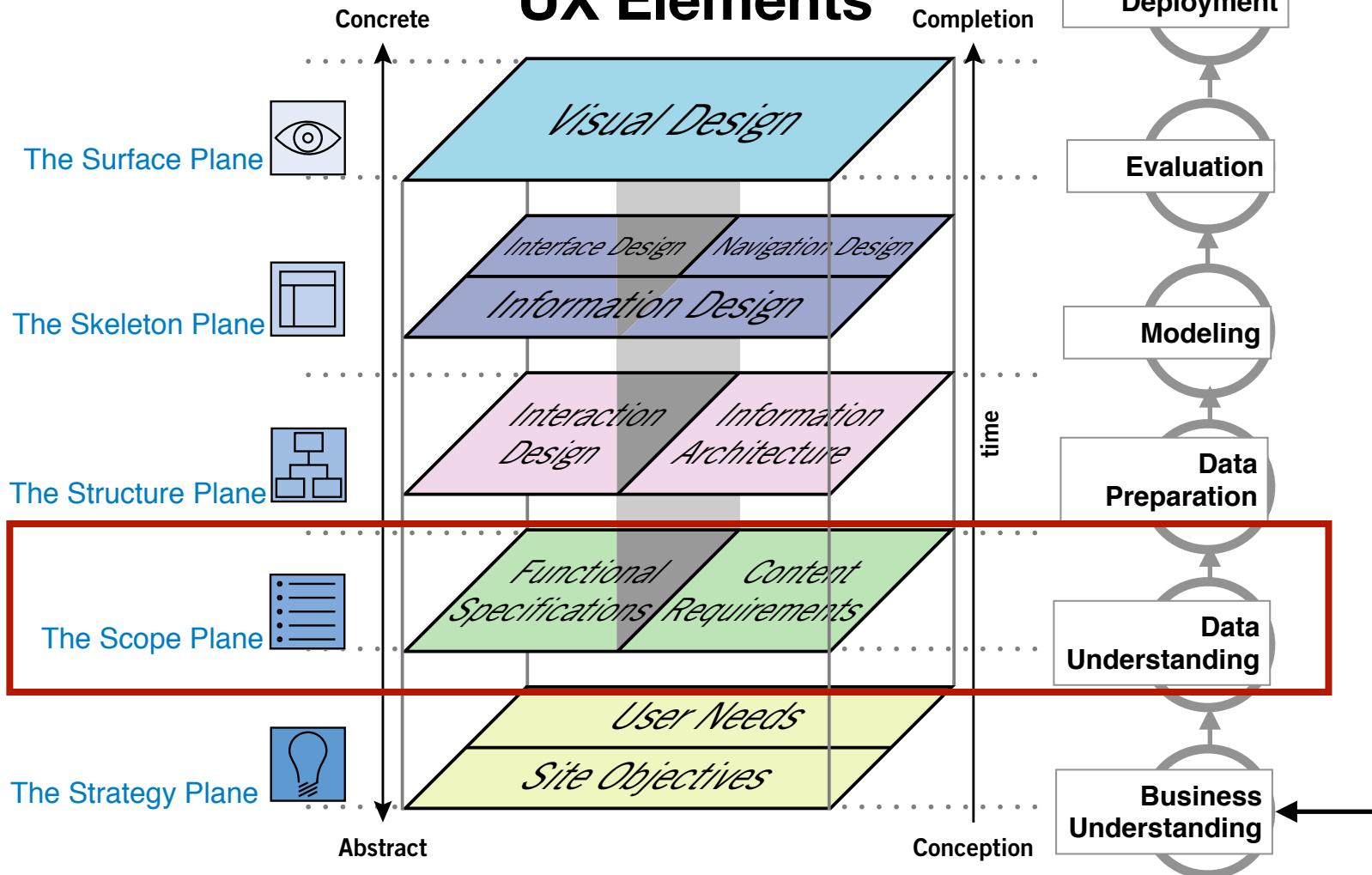
**Ideate**  
創意發想

**Prototype**  
開展原型

**Test &  
Implement**  
測試執行

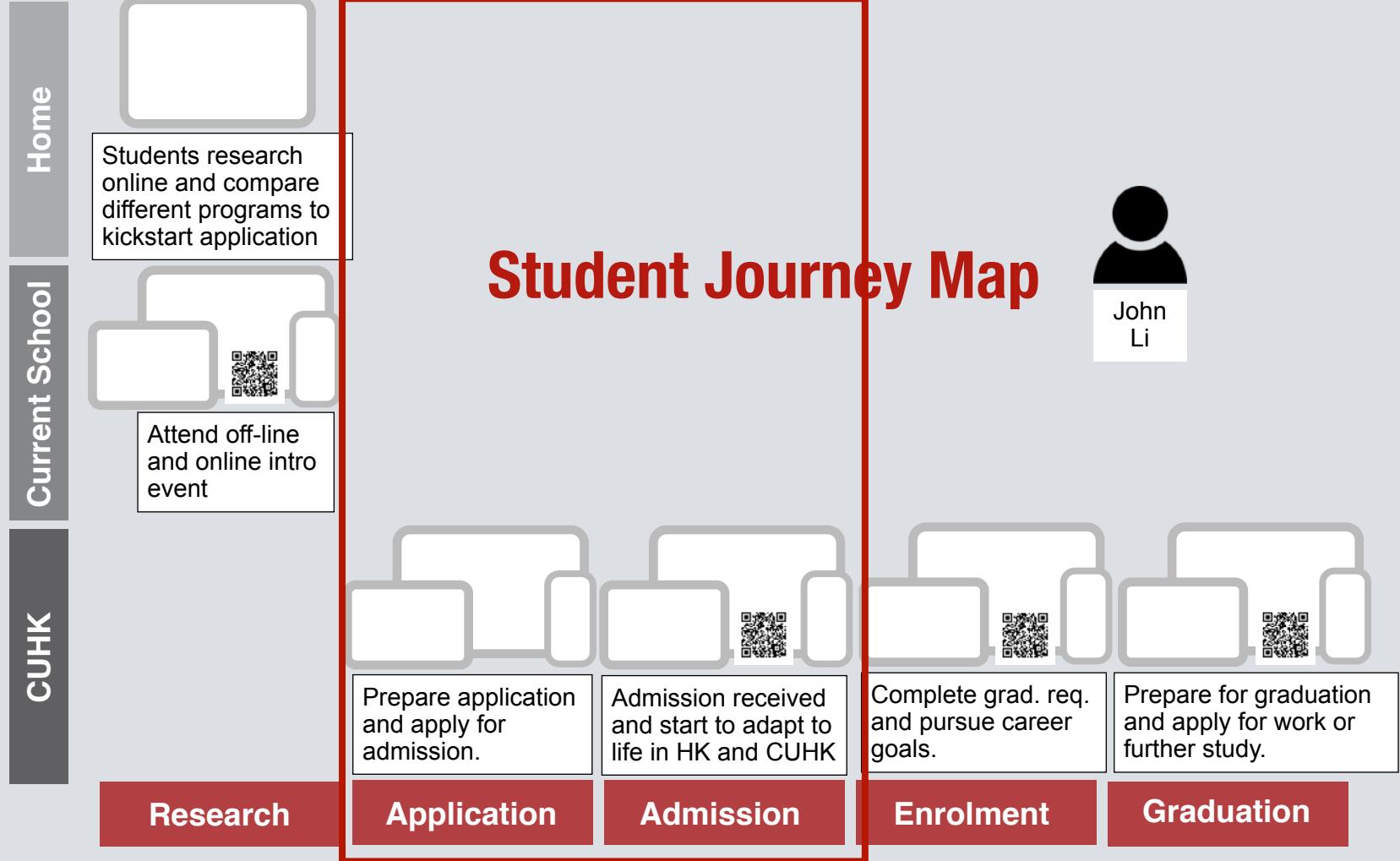
Source: Stanford D.School

# UX Elements



Source: Elements of User Experience by Jesse James Garrett

# **Refine the Scope**



## Problem Statement:

How might we help student applicants from Mainland (Who) to acquire and process the required information to complete their application to CUHK (What) so that they can be well prepared for living in Hong Kong and learning at the school to pursue their career (Why)?

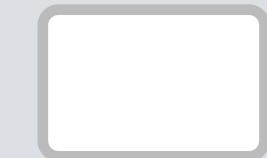
# **Problem Statement:**

**How might we help CUHK recruit top student applicants from Mainland (**Who**) to acquire and process the required information to complete their application to CUHK (**What**) so that CUHK can build on their contributions to finance its operations, produce top research publications, nurture future leaders and expand alumni network (**Why**)?**

**CUHK**

**Home**

**CUHK Online**



Students research online and compare different programs to kickstart application



Information on program, financing, admission and living in HKSAR



Application process and admission status.

**Enquiry**

**Application**

**Financing**

**Travel to HK**

**Settle Down**

# Student Journey Map



Tuition and living expenses arrangement.



Formal letter of acceptance & travelling arrangement.



Finalising accommodation contract & transportation arrangement.

# **Data Understanding**

# **Database Schema (Entity Relationship Diagram) for Supporting the Development of Information Architecture**



erd02.drawio

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Unsaved changes. Click here to save.



Search Shapes

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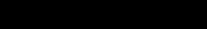
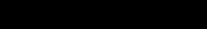
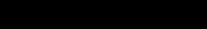
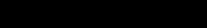
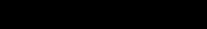
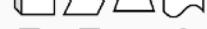
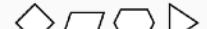
Search Shapes



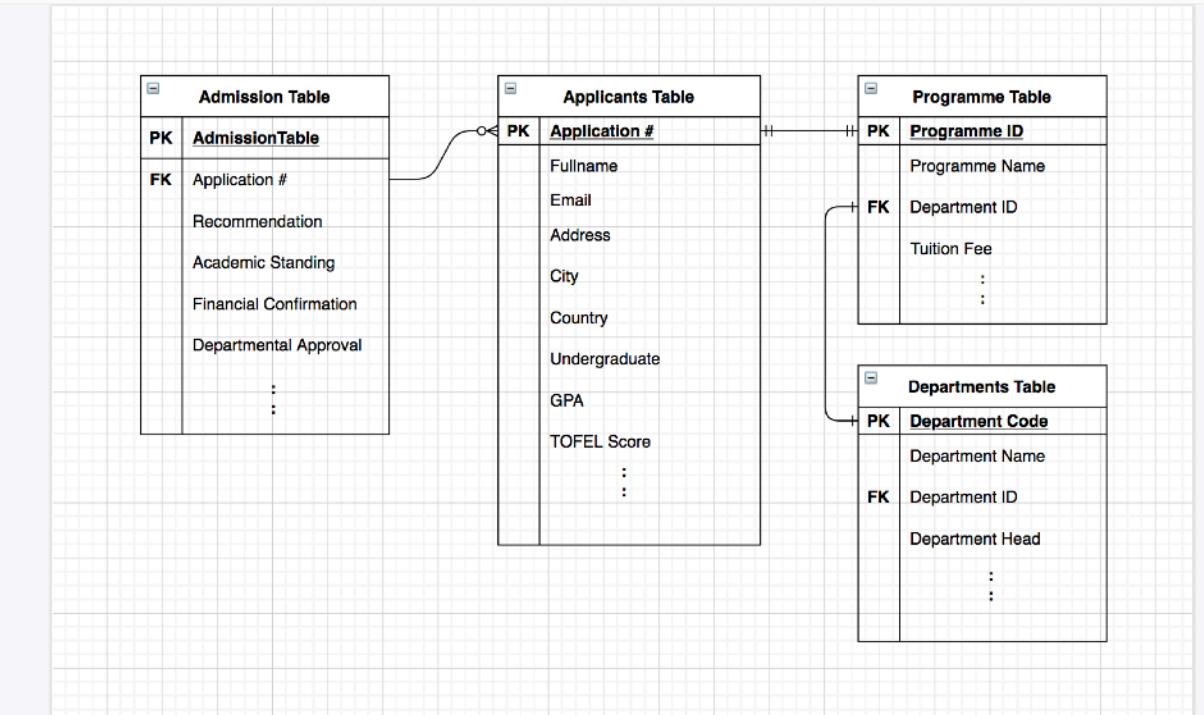
Scratchpad

Drag elements here

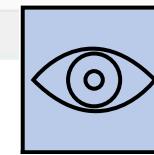
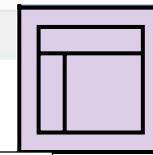
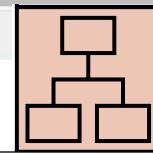
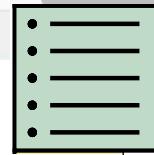
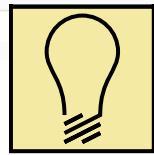
General



More Shapes...



Page-1



STRUCTURE PLANE

**Empathise**  
身同感受

**Define**  
界定问题

**Ideate**  
創意發想

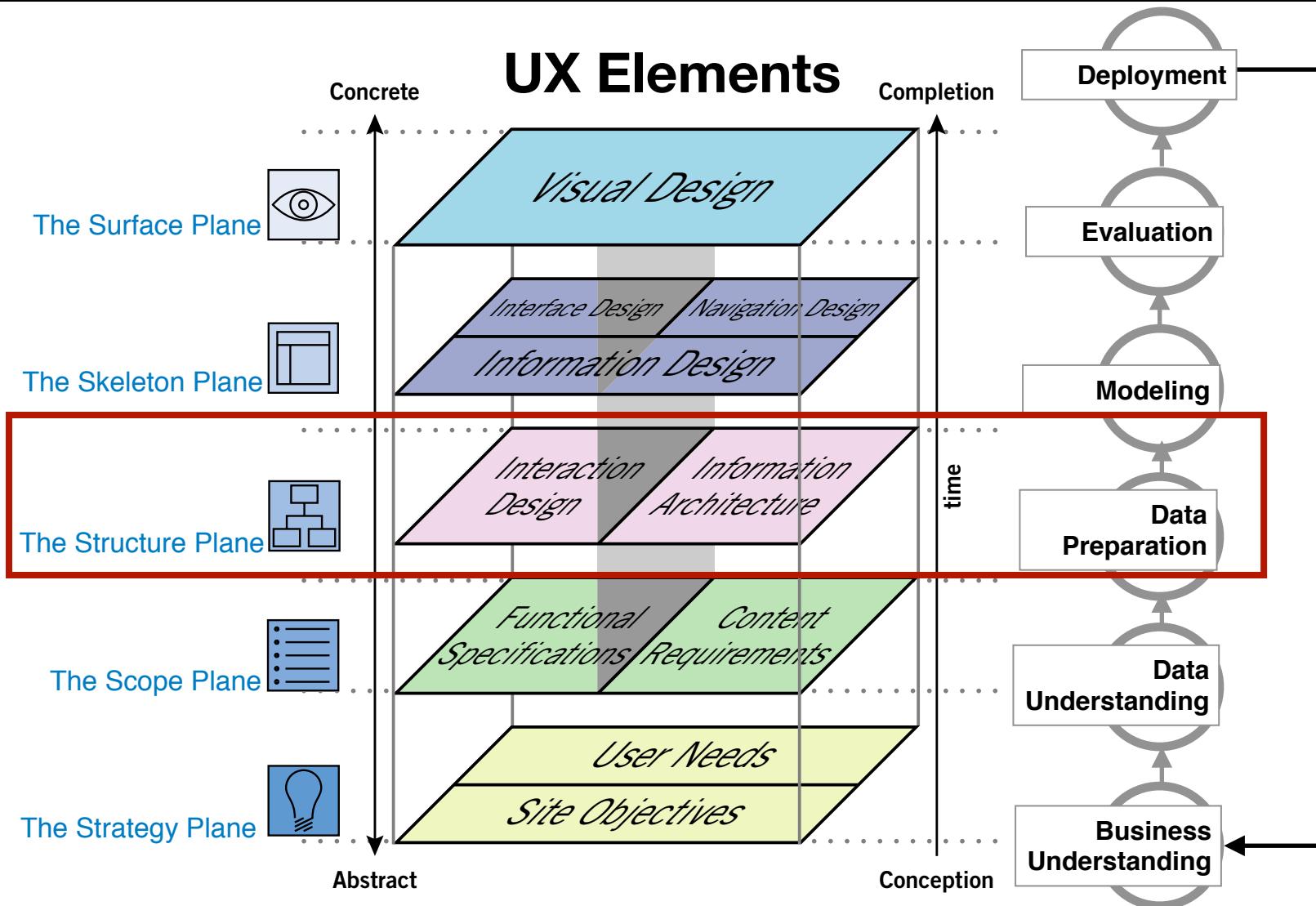
**Prototype**  
開展原型

**Test &  
Implement**  
測試執行

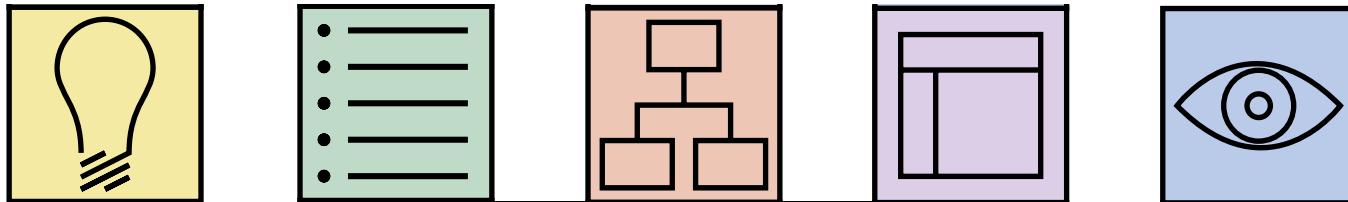
## THE 5 STEP DESIGN THINKING JOURNEY

Source: Stanford D.School

# UX Elements



Source: Elements of User Experience by Jesse James Garrett



Source: Elements of User Experience  
by Jesse James Garrett

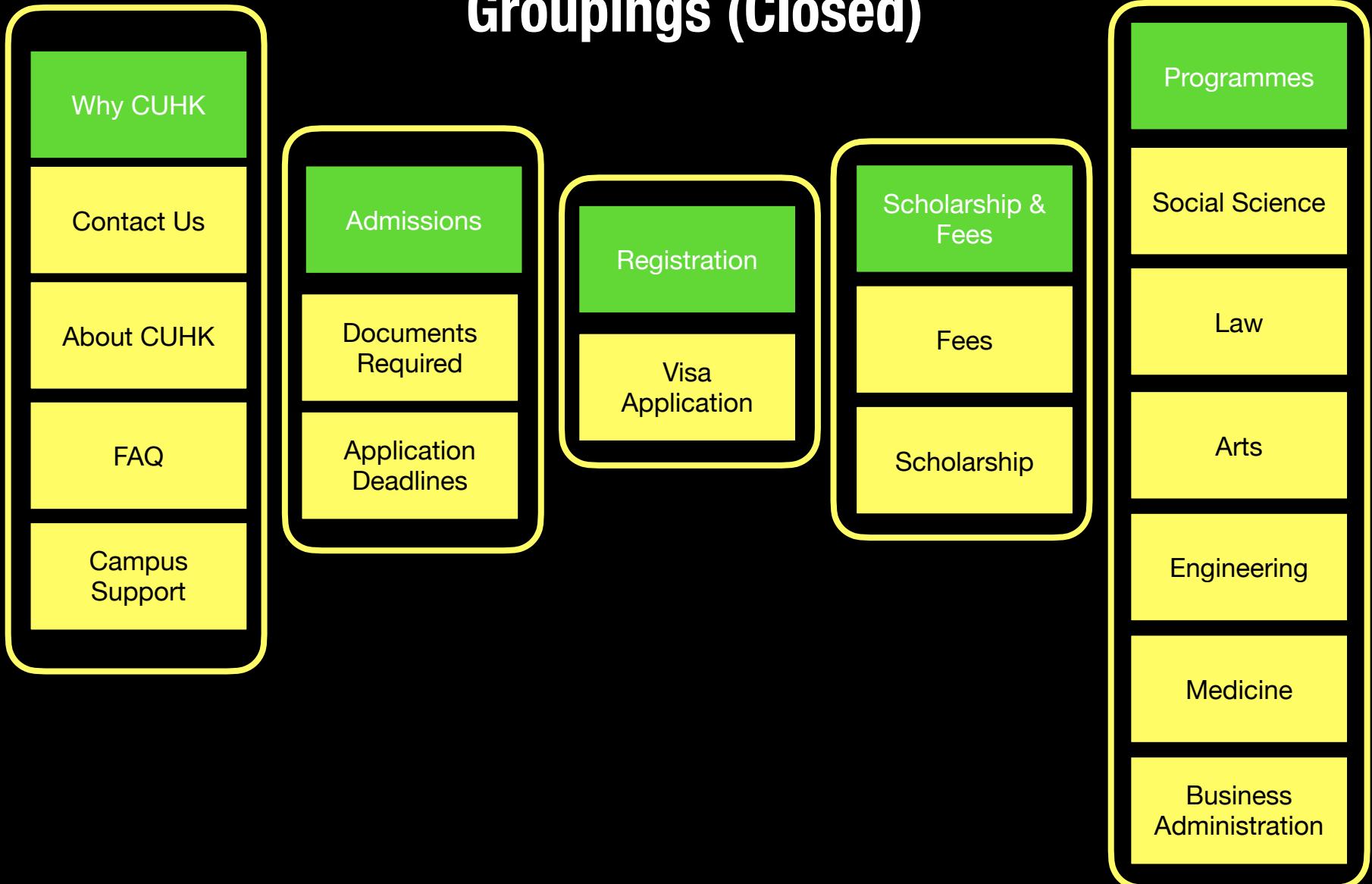
**Information architecture** combines the art and science of structuring, organizing, labeling, navigating, and searching information space.

Information architecture = taxonomy of information (containing meta-data of data at hand). It defines how we classify data to make information accessible, findable and actionable.

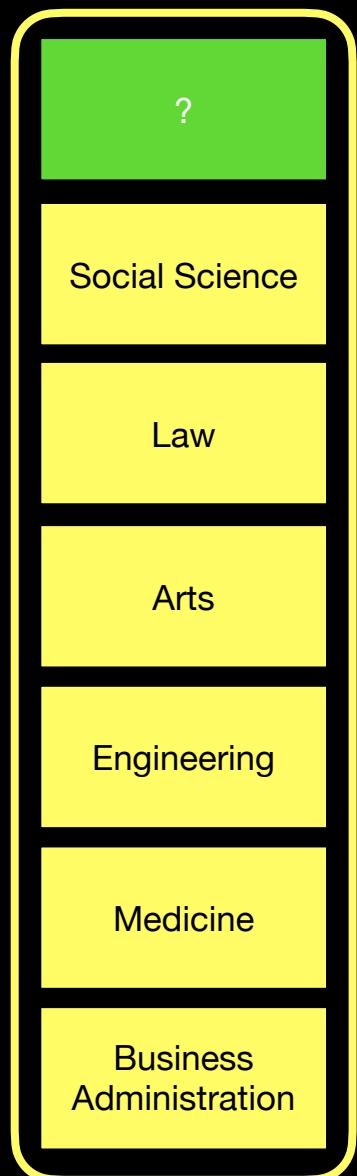
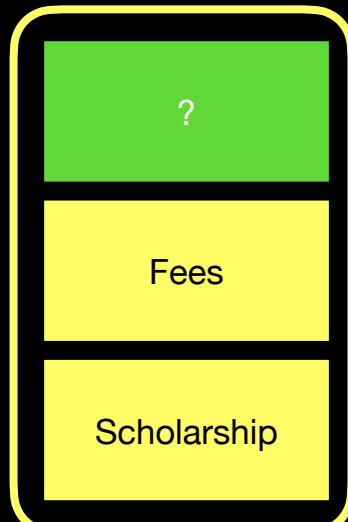
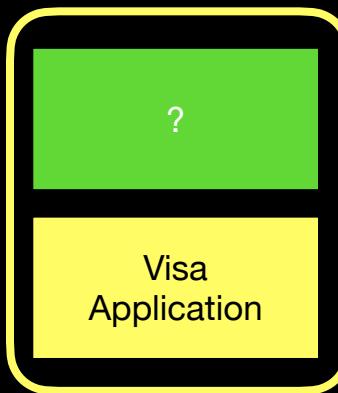
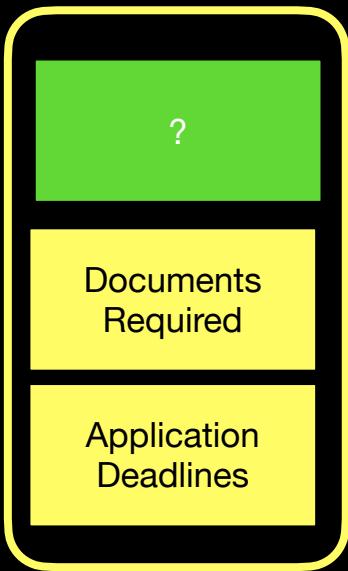
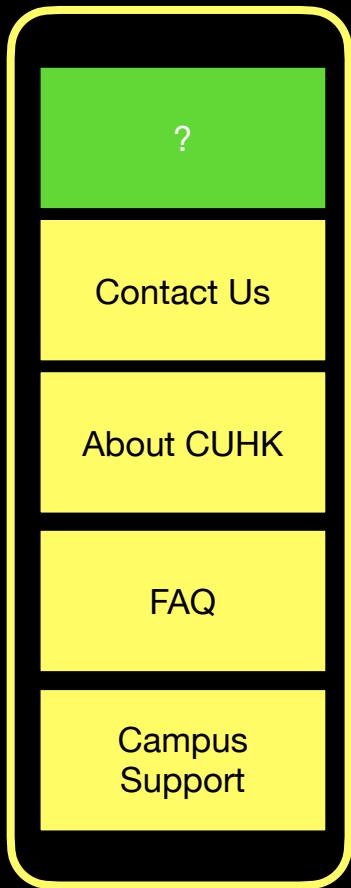
# How to Sort Out the Item in a Logical Order

Registration	Why CUHK	Fees	Social Science	Admissions
Scholarship & Fees	Campus Support	Programmes	Law	Contact Us
FAQ	Business Administration	Engineering	Scholarship	Arts
About CUHK	Documents Required	Medicine	Application Deadlines	Visa Application

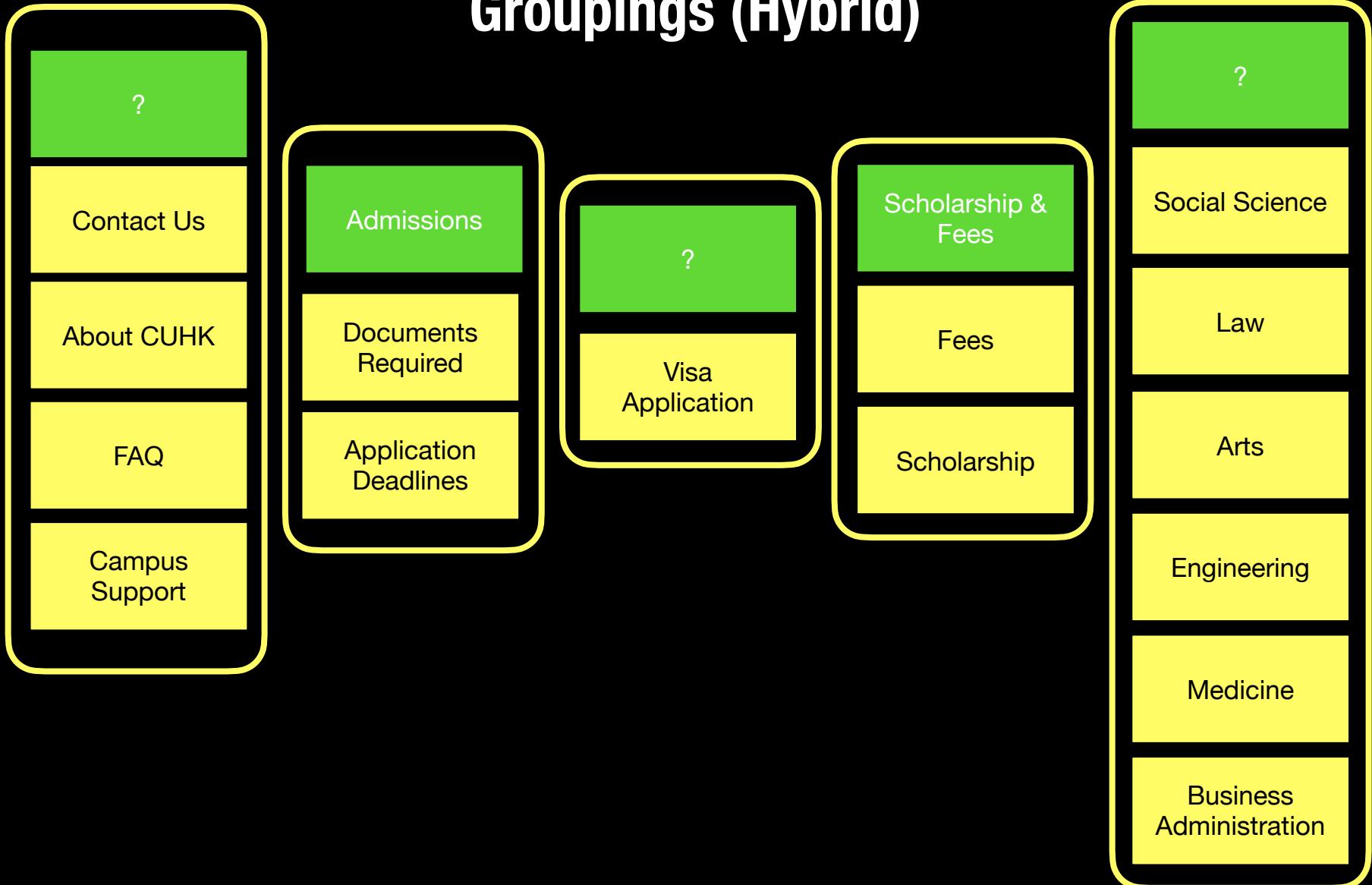
# Groupings (Closed)



# Groupings (Open)

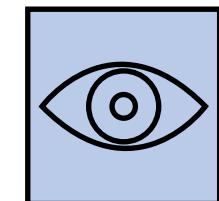
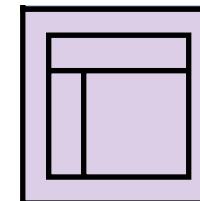
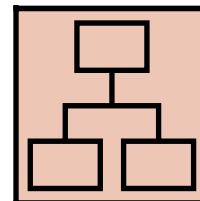
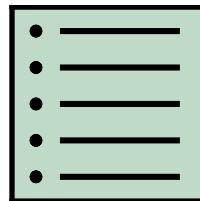
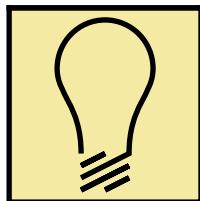


# Groupings (Hybrid)



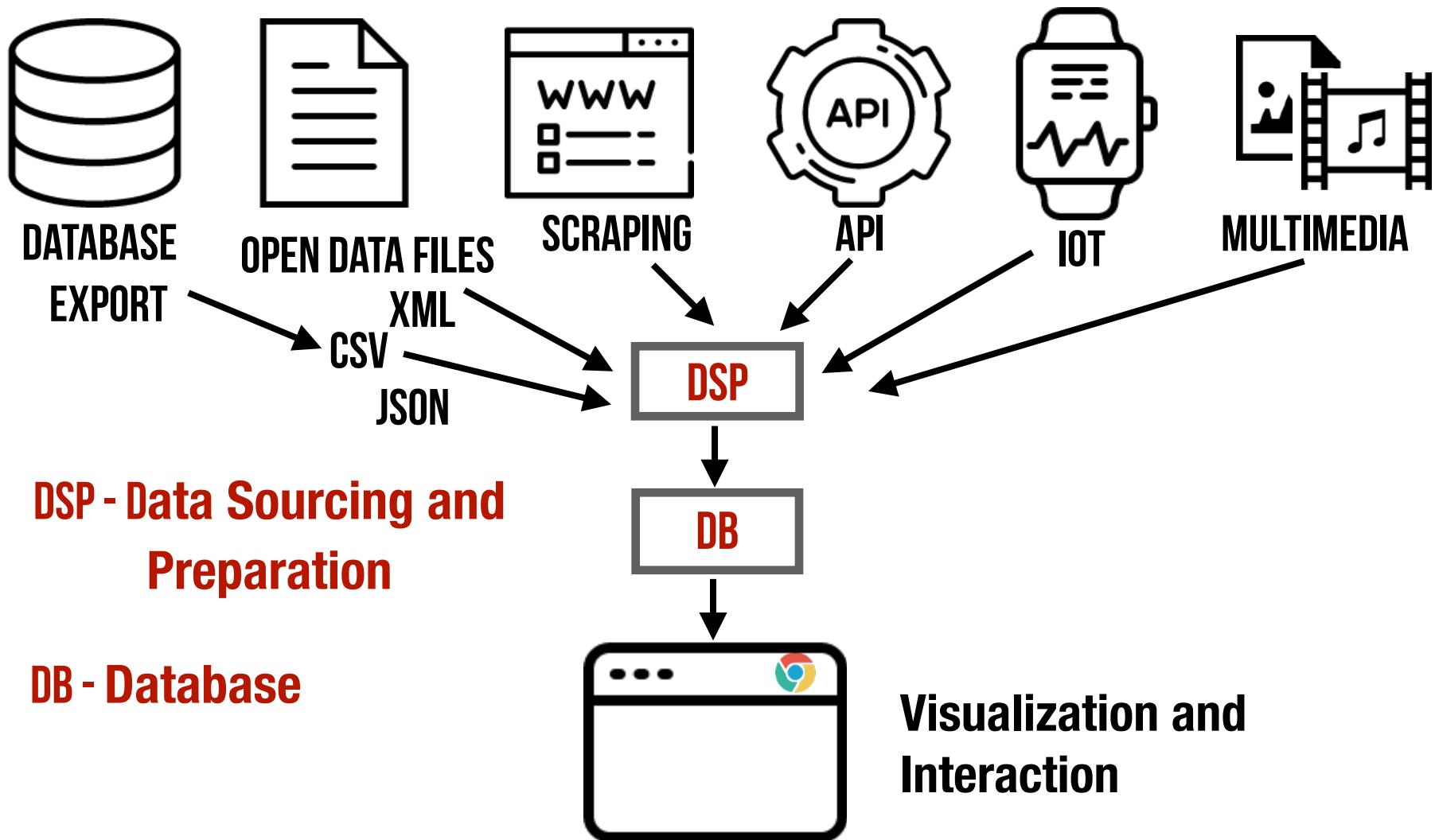
# Data Collection & Content Production Plan

Level	Section	Description	Status	Deadline	Assigned
1.0	About CUHK	An overview of the school	Done	NA	John
2.0	Admission & Financial Aid	General Admission and Financial Information	Final Review	1/9/2020	Peter
3.0	Programmes	Programme Description and Admission Req.	Collect Updates	1/9/2020	Mary
4.0	Contact Us	Contact info and location	Done	NA	Paul



**STRUCTURE PLANE**

**Next week's focus: Where and how  
to source the data?**



## Problem Set #3 (Define Your Problem)

1. Write a **short introduction** to a problem that interests you tremendously.
2. Interview (10 to 15 min x 5) five persons who share that problem (e.g. Planning a trip to Korea to attend the concerts of famous K-Pop idols) with a **list of interview questions** (Include the **interviewees' responses** as appendix).
3. Find **persona types** (e.g student K-Pop fan/fan circle lead/trend reporter).
4. Develop a current journey map based on “one” of the persona types (Briefly explain why this one) chosen.
5. Define a **problem statement** (who, what, & why) for the chosen persona.
6. Create a **story map** (with **story cards**) from the journey map to highlight functional (i.e. job to be done) and content (i.e. information serving the job's need) requirements.
7. Perform an **open card sort** and have the participants label the **category names** for grouping the shuffled story cards (using **Google Jam Board**).
8. Create a **position map** describing competing product solutions.

**Thank you for your time!**