

Mental Model Diagrams and Alignment Diagrams

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Example Domain: Moviegoers Dataset

- Context: gap analysis for movie-goer website.
- List of already extracted tasks (we did not conduct interviews) for the Mental Model Diagram.
- Website features as content data to align.

1	Feature List
2	Theaters Near Me
3	What's Playing Today (by zip code)
4	What's Playing Today (by title)
5	What's Playing Today (by director/actor)
6	What's Playing Today (at favorite theaters)
7	What's Playing Today (at favorite theaters)
8	My Favorite Theaters List
9	Pick Favorite Theater (by location)
10	Pick Favorite Theater (by concessions)
11	Pick Favorite Theater (by screen size)
12	Pick Favorite Theater (by sound system)

Indi Young, "From Construct to Structure: IA from Mental Models Classroom Exercises", May 2005, Page 1 at http://www.adaptivepath.com/events/workshops/construct/files/ap_construct_101_exercises.pdf [no longer available]

1	Unstructured Data Moviegoers:
2	
3	Ask a friend what movies they've seen lately
4	Read movie reviews
5	Choose seats in the rocking-seat section
6	Choose less well-known films
7	Get to theater on time
8	Keep a list of films you have seen
9	Choose film based on familiar character
10	Choose movie based on book you read
11	Choose film based on director/composer/effects/etc.
12	Find out playing schedules
13	Pick movie based on the composer
14	Choose a film because of the special effects
15	Choose film based on recommendation
16	Choose a film based on a friend's recommendation
17	Walk to the theater

Indi Young, *From Adaptive Path: Construct to Structure: Deriving User Experience from Mental Models*, 2004, Slide 153 at http://www.adaptivepath.com/events/workshops/construct/files/ap_construct_101.pdf [no longer available].

Mental Model Diagrams

- Mental Model Diagrams represent how a system works in someone's mind. [1]
- Build the top half of the Alignment Diagram.
- Capture how people we design for experience a specific area. [2]
- Can easily be shared/reused because they are not product centered.



Mental Model Diagram created with https://indiyong.com/mmd_generator.html

[1] Jack O'Donoghue, 10 Mental Model Examples for Better UX Design, 20 Feb 2023

<https://makeiterate.com/mental-model-examples-for-better-ux-design/>

[2] Tiago Camacho, Building Mental Model Diagrams, 23. Sep 2020

<https://medium.com/seek-blog/building-mental-model-diagrams-72f30fc879f3>

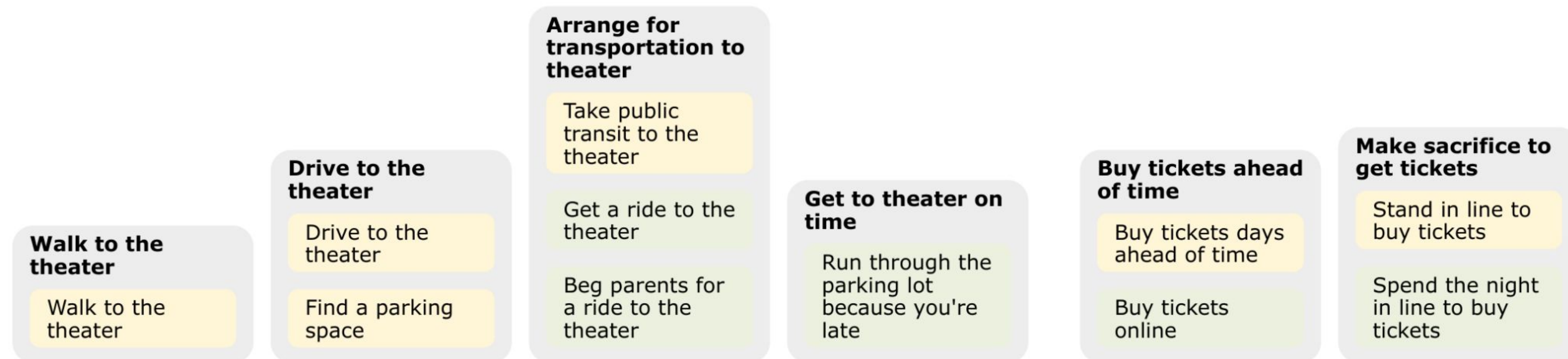
Terminology (Indi Young)

A Mental Space has 3 levels of hierarchy:

- Box: summary of inner thinking, emotional reaction or guiding principle.
- Tower: collection of multiple boxes related to the same purpose.
- Block: collection of towers with the same high-level goal.

Getting to the theater

Ticket purchase



Content Model Diagram

- Show all the functionality that already exists and is planned [1].
- Also called Solution Space or Content Map.
- Bottom half of the Alignment Diagram.
- Helps organize offered content in relation to user needs.

Alignment Diagrams

- Alignment Diagrams “describe the class of maps and diagrams that visualize touchpoints in a business process”[1].
- There are different approaches to Alignment Diagrams, main point is that it shows the touchpoint of user and provider.
- We focus on Alignment Diagrams that use Mental Model Diagrams
- Two horizontal groups of steps (top and bottom half, usually representing user-specific and provider-specific information).
- Vertical alignment shows touchpoints of the two halves

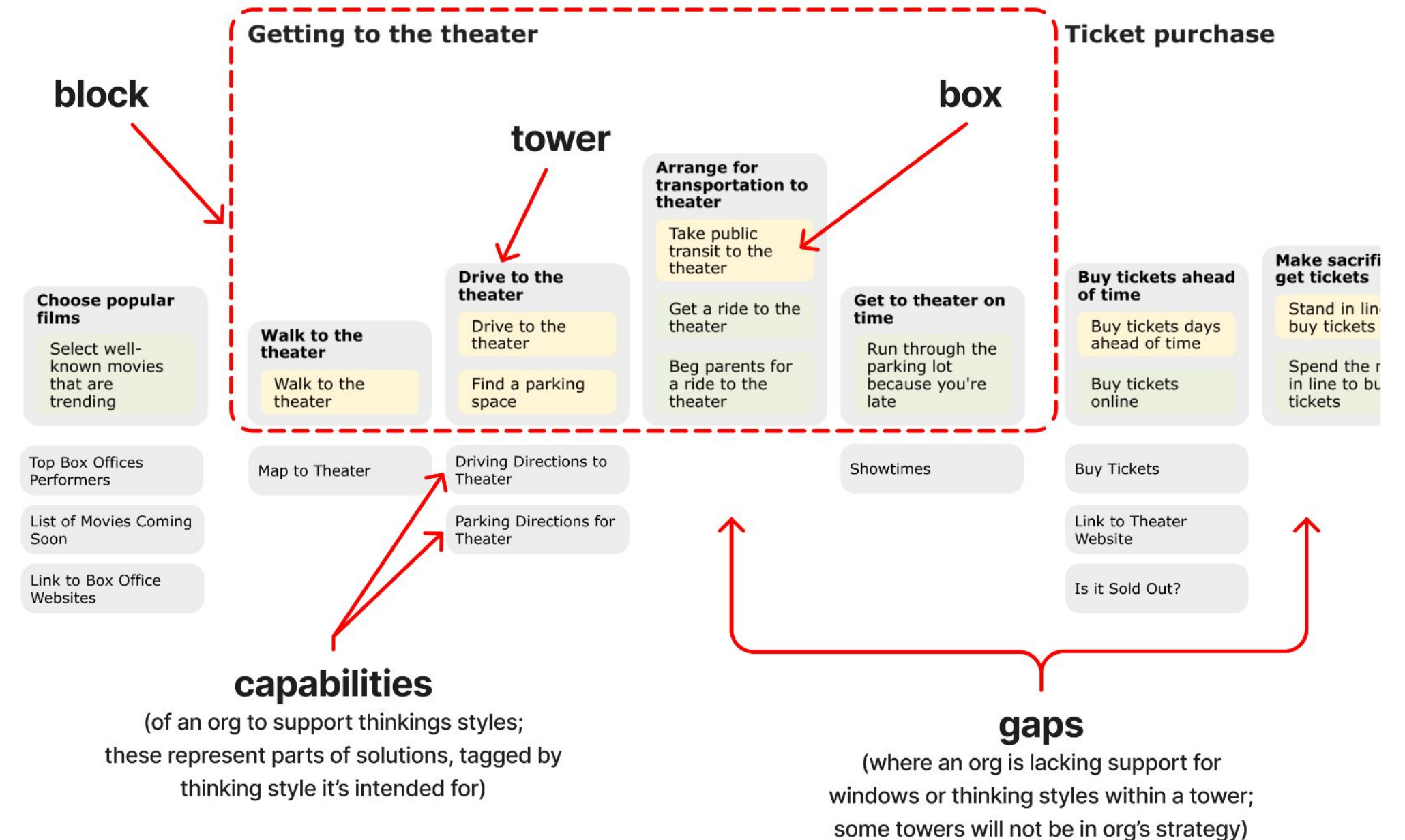
Alignment Diagrams

Top Half - Mental Model Diagram

User behavior, thoughts and feelings on tasks, steps in a process, barriers to consumption.

Bottom Half - Content Model Diagram

Description of a provider's offerings and their business process.



Alignment Diagram consisting of a Mental Model and Content Model.

Steps to Create a Mental Model Diagram

Tiago Camacho, Building Mental Model Diagrams, 23. Sep 2020
<https://medium.com/seek-blog/building-mental-model-diagrams-72f30fc879f3>

1. Scope the Study

- Define the research goal and question(s) you want answered.
- Do exploratory and qualitative research.

2. Do the Research

- Variety of participants.
- Semi or unstructured 1-on-1 interviews.
- Open-ended questions and explore broad areas of interest.
- Create transcripts.

Interview Transcript #104:

[Tell me about the movies you see.] *I'll go see anything. That's not totally true. I won't go see anything. I have preferences, but they're all over the map. I like independent movies and the cheesy teen movies, and I always wanted to write a screen play. It would be a teen movie based on Moby Dick. I'm very excited about it. That would be hilarious. I'll go see summer blockbusters. Going to see movies is very much about setting expectations ahead of time before you see it.*

[How?] *Going into a movie, you set the bar for what you think it will be. It puts me in contrast to Peter who decides whether the movie lives up to the high bar he set. As a result he never sees cheesy teen cheerleader movies. I will go see them and not expect anything, and some of them are brilliantly structured or well written. I don't enjoy being constantly disappointed. [...]*

Transcript extracted from "From Construct to Structure: IA from Mental Models Classroom Exercises", written by Indi Young. May 2005, Page 1 at http://www.adaptivepath.com/events/workshops/construct/files/ap_construct_101_exercises.pdf [no longer available]

3. Summarize the Data

Create Descriptions



Map Insights



Evaluate importance

Do not draw too many conclusions, it will make you lose detail.

3	Ask a friend what movies they've seen lately
4	Read movie reviews
5	Choose seats in the rocking-seat section
6	Choose less well-known films
7	Get to theater on time
8	Keep a list of films you have seen
9	Choose film based on familiar character
10	Choose movie based on book you read
11	Choose film based on director/composer/effects/etc.
12	Find out playing schedules
13	Pick movie based on the composer
14	Choose a film because of the special effects
15	Choose film based on recommendation
16	Choose a film based on a friend's recommendation
17	Walk to the theater
18	Choose film based on genre
19	Watch films of a certain genre
20	Choose film based on genre
21	Seek information about movies you haven't seen
22	See mostly independent films
23	See mostly foreign films
24	Choose popular films
25	Select well-known movies that are trending

Data extracted from "From Construct to Structure: IA from Mental Models Classroom Exercises", written by Indi Young. May 2005, page 9 at http://www.adaptivepath.com/events/workshops/construct/files/ap_construct_101_exercises.pdf [no longer available]

Original quote

(...) I like independent movies and the cheesy teen movies, and I always wanted to write a screen play. It would be a teen movie based on Moby Dick. I'm very excited about it. That would be hilarious. I'll go see summer blockbusters.

Too much non-important information

I always wanted to write a screen play. It would be a teen movie based on Moby Dick. I'm very excited about it. That would be hilarious.

Overly synthesised, loses too much detail

I like movies.

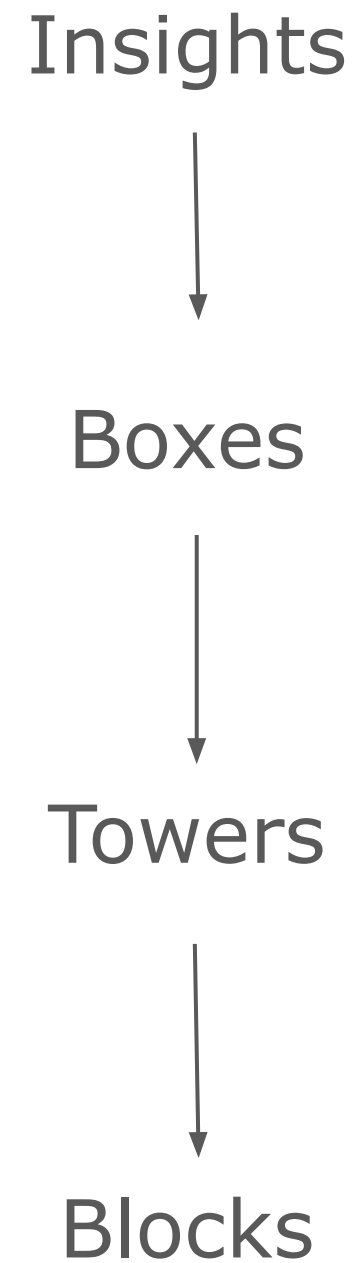
Captures the essence with enough detail

I like independent films, cheesy teen movies, and summer blockbusters.

Insight

Watch films of a certain genre

4. Organize Insights



Block	Tower	Box
Movie selection		
	Seek information about movies you haven't seen	
		Ask a friend what movies they've seen lately
		Read movie reviews
		Find out playing schedules
	Keep a list of movies	
		Keep a list of films to see
		Keep a list of films you have seen
	Choose film based on familiar character	
		Choose movie based on book you read
	Choose film based on director/composer/effects/etc.	
		Pick movie based on director
		Pick movie based on the composer
		Choose a film because of the special effects
	Choose film based on recommendation	
		Choose a film based on a friend's recommendation
		Choose a film based on a review
	Choose film based on genre	
		Watch films of a certain genre
		Choose film based on genre

Data extracted from "From Construct to Structure: IA from Mental Models Classroom Exercises", written by Indi Young. May 2005, page 9 at http://www.adaptivepath.com/events/workshops/construct/files/ap_construct_101_exercises.pdf [no longer available].

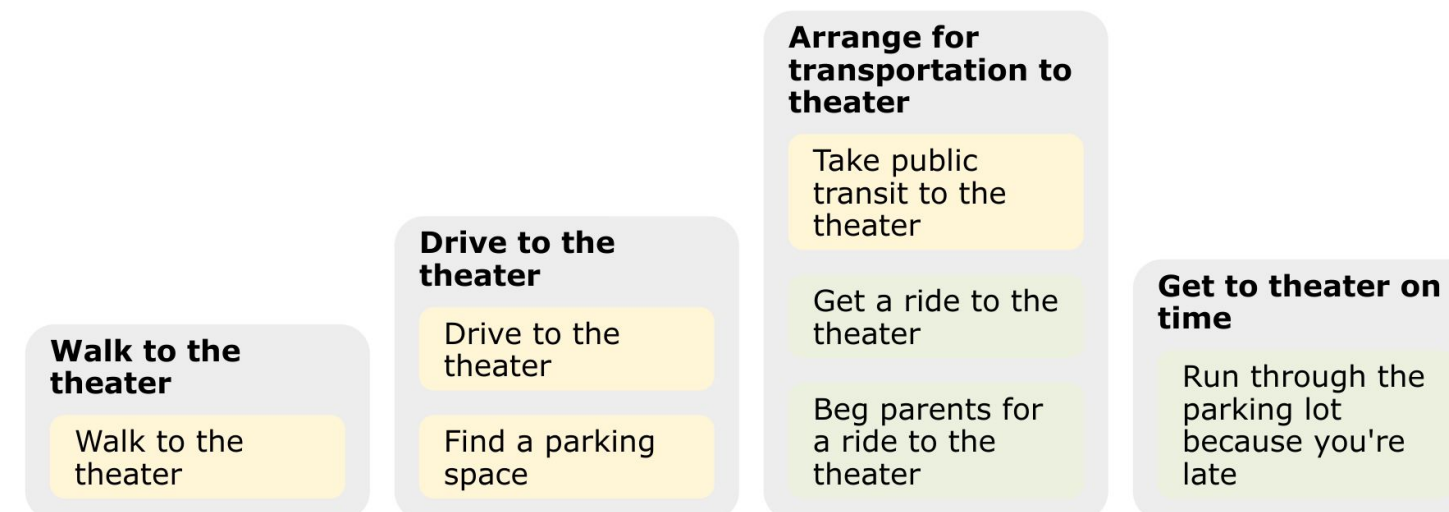
5. Assess the Results

- Try to identify gaps in your knowledge.
- If there is more information needed do another iteration and go back to research.
- Decide if the model should be visualised or not:
 - Loss of flexibility.
 - Disconnection from data source.

6. Visualize the Model

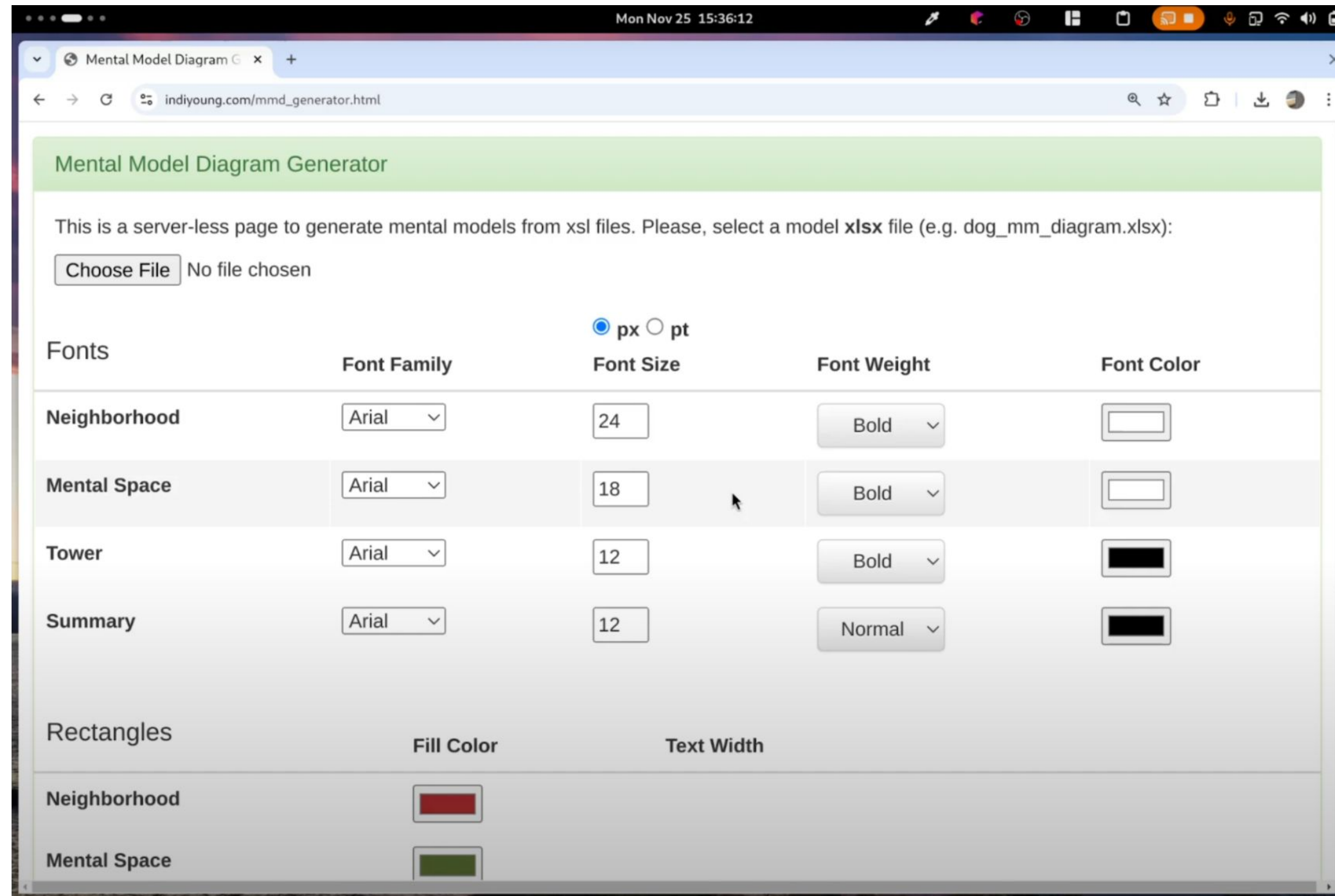
- Simple to build, basic shapes to display the boxes and towers.
- Draw or automatically generate the diagram.
- Optional decorations for more information:
 - Colors for different user types/thinking styles.
 - Thick borders to add weight to certain boxes.

Getting to the theater



Example created with Indi Young's Mental Model Diagram Generation Tool:
https://indiyong.com/mmd_generator.html

Showcase: Indi Young's generator



<https://youtu.be/Rw2blwt7Fok>

Aligning Mental Model Diagram and Content Model Diagram

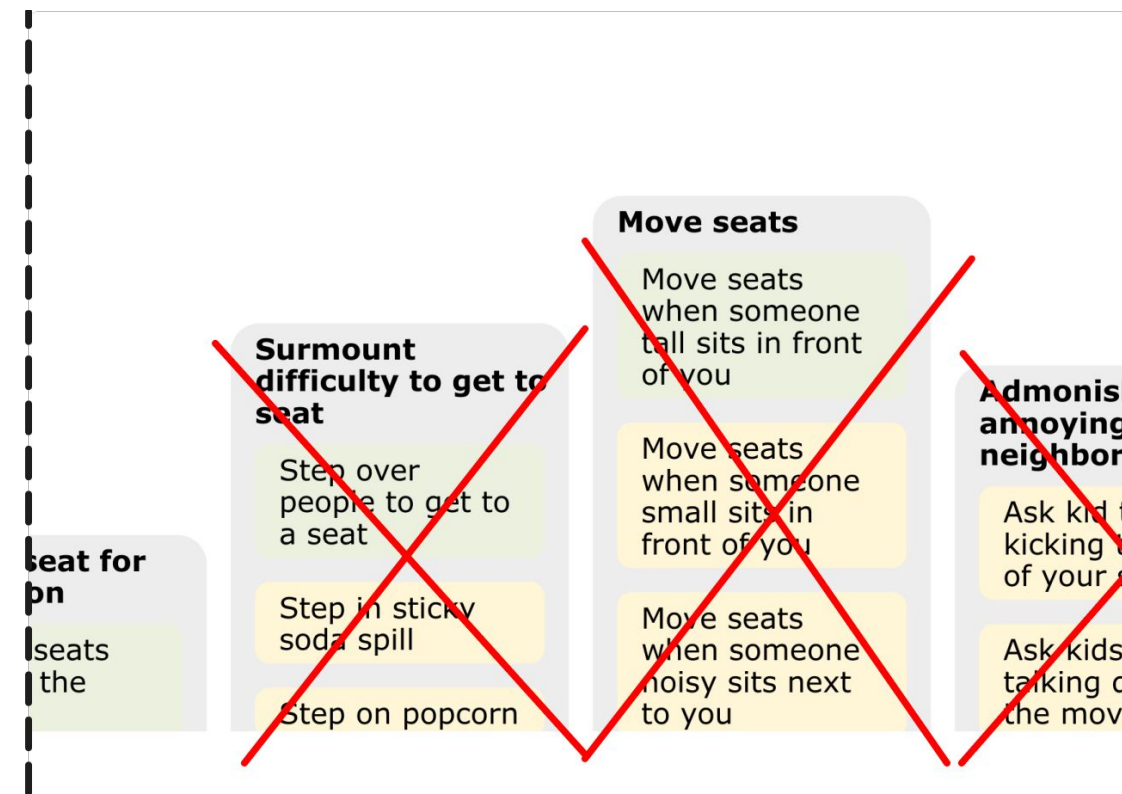
1. Audit the Content

- Find all the ways you serve people
- List the functionalities:
 - Already offered.
 - Planned offerings.
- Remove unimportant content (R.O.T.):
 - Is it Redundant?
 - Is it Outdated?
 - Is it Trivial?

Theaters Near Me	What's Playing Today (by zip code)	What's Playing Today (by title)	What's Playing Today (by title)
What's Playing Today (at favorite theaters)	What's Playing (at favorite theaters)	My Favorite Theaters List	Pick Favorite Theater (by sound system)
Pick Favorite Theater (by concessions)	Pick Favorite Theater (by screen size)	Pick Favorite Theater (by sound system)	Pick Favorite Theater (by sound system)
Pick Favorite Theater (by architecture)	Pick Favorite Theater (by parking)	Pick Favorite Theater (by nearby restaura...)	Pick Favorite Theater (by nearby restaura...)
Pick Favorite Theater (by independents)	Local Film Festivals	National Film Festivals	Local Film Festivals
Driving Directions to Theater	Parking Directions for Theater	Playing in the Next Two Hours (by ZC)	Playing in the Next Two Hours (by ZC)
Playing in the Next Two Hours (by title)	Playing in the Next Two Hours (directo...)	Showtimes	Playing in the Next Two Hours (directo...)
Pick a Film (by compiled reviews)	Pick a Film (by favorite reviewer)	Pick a Film (by related films)	Pick a Film (by related films)

2. Align Content with Mental Model

1. Check off towers out of your production scope.
2. Take a content box, and find what needs it is meeting.
3. Put it under the corresponding tower.
4. Make primary and secondary alignments (if necessary).



Mental model created via https://indiyoung.com/mmd_generator.html

Movie selection

Seek information about movies you haven't seen

Ask a friend what movies they've seen lately

Read movie reviews

Find out playing schedules

What's Playing (at favorite theaters)

What's Playing Today (by title)

What's Playing Today (by director/actor)

What's Playing Today (at favorite theaters)

Links to Other Review Websites

Link to IMDB

Keep a list of movies

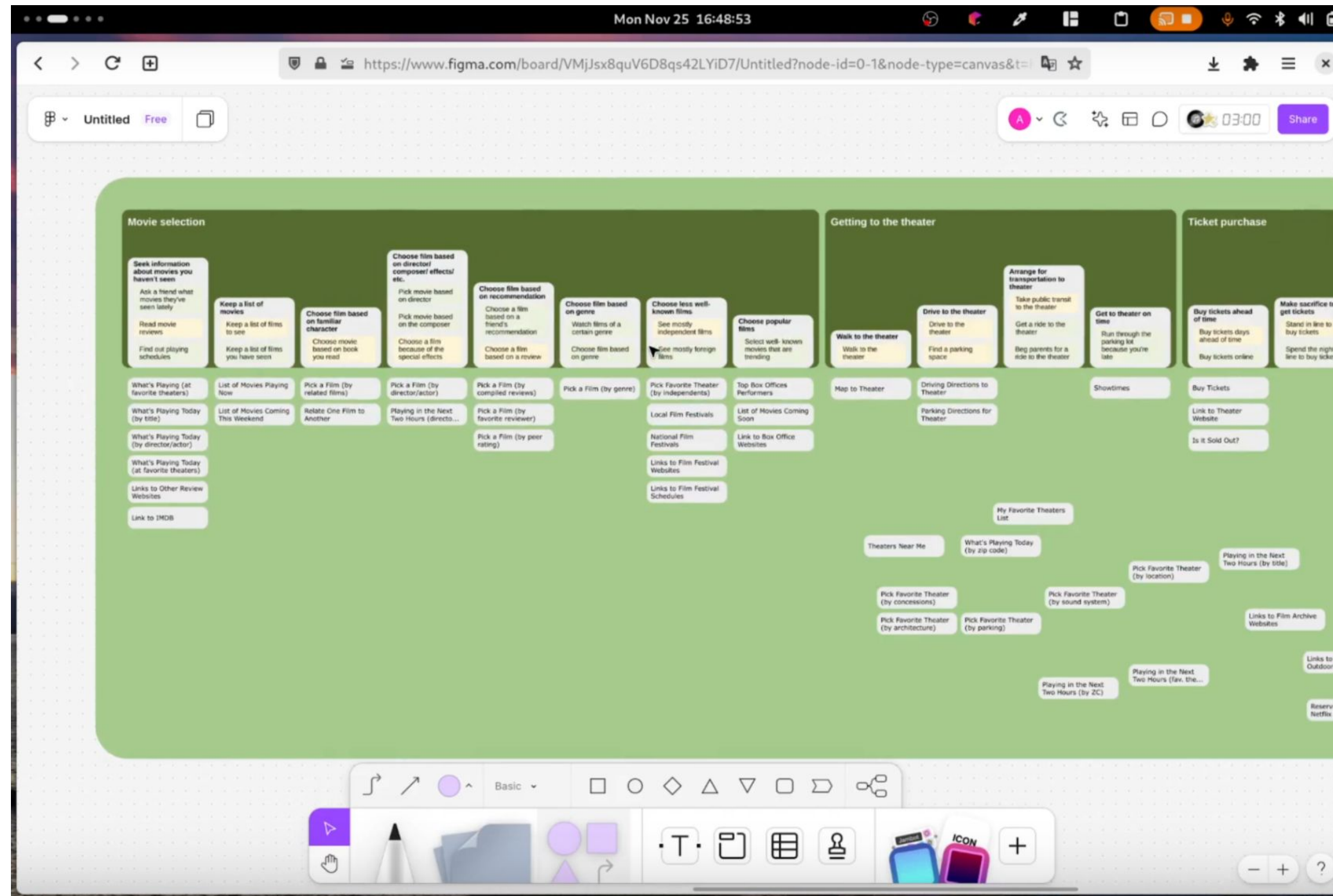
Keep a list of films to watch

Keep a list of films you've seen

List of Movies Now

List of Movies This Week

Showcase: FigJam

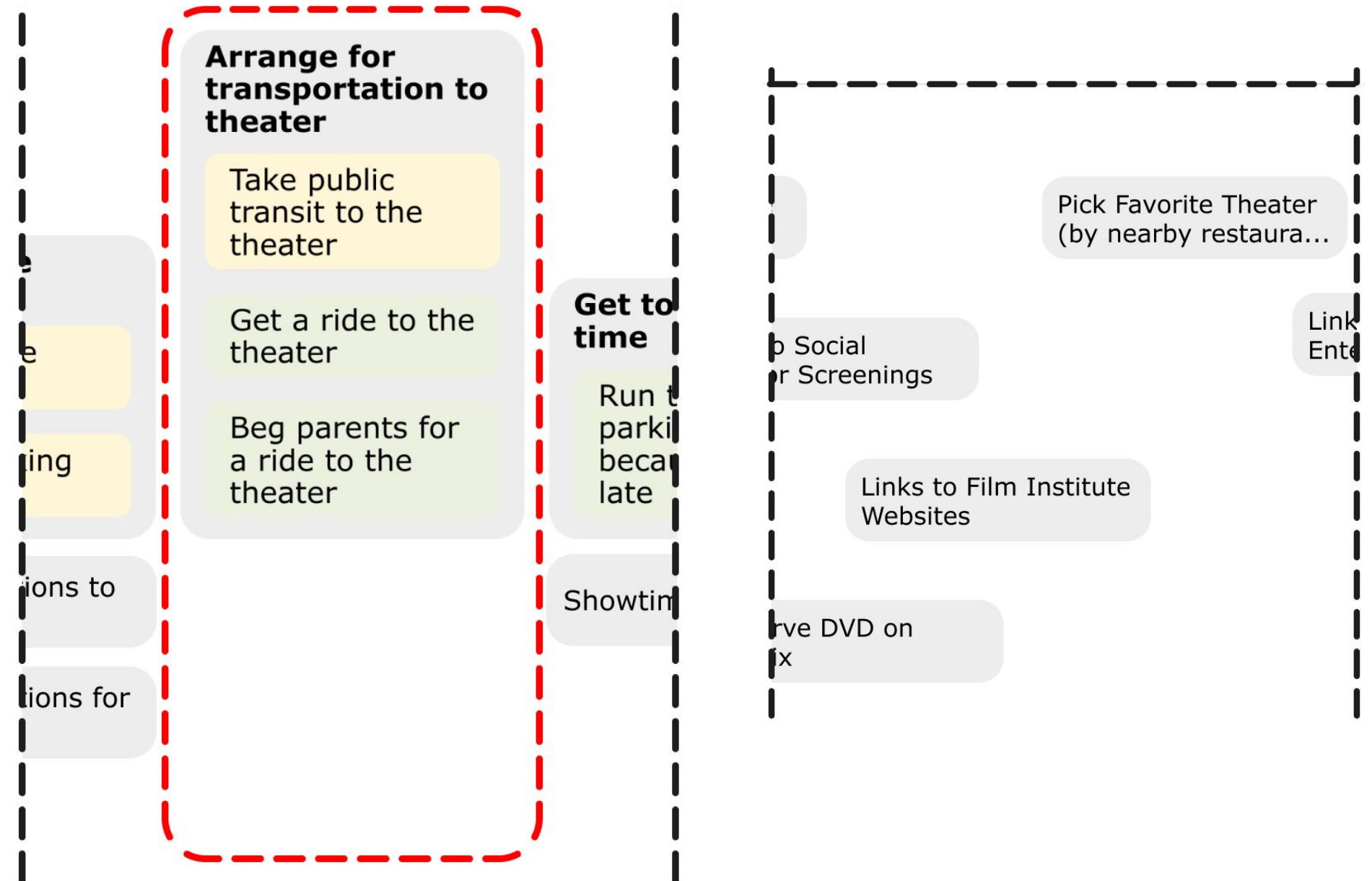


<https://youtu.be/5aKr1bNzKus>

3. Gap Analysis [5]

Possible Problems:

- **User Needs Not Supported by Content:**
 - Reevaluate production scope.
 - Redefine, combine or augment existing content.
 - New ideas: evaluate if it is a plausible future product.
- **Content Available Without User Need:**
 - Is it worth maintaining?
 - If it is worth keeping, we can create a new tower in the Mental Model.



Conclusions

- Mental Model Diagrams are very powerful because they are not product centered.
- Mental Model Alignment Diagrams give overview about many aspects of a product.
 - Redundancies, Opportunities, Misconceptions
 - Easily readable, can be understood by people without background knowledge
- They help us understand the user better and find new opportunities.
- Cumbersome, time-consuming process, but can be worth it.
- Helpful Tools exist but only cover aspects of the creation process.