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.

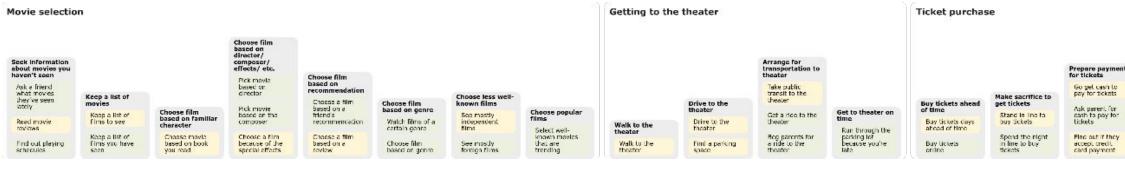
1 Feature List	
2 Theaters Near Me	
3 What's Playing Today (by zip code)	
4 What's Playing Today (by title)	
5 What's Playing Today (by director/actor)	
6 What's Playing Today (at favorite theaters)	
7 What's Playing Today (at favorite theaters)	
B My Favorite Theaters List	
Pick Favorite Theater (by location)	
0 Pick Favorite Theater (by concessions)	
1 Pick Favorite Theater (by screen size)	
2 Pick Favorite Theater (by sound system)	
ndi Young, "From Construct to Structure:	IA from Mental Models Classroom Exercises",
lay 2005, Page 1 at	
ttp://www.adaptivepath.com/events/worl	kshops/construct/files/ap construct 101 exercises.pdf
no longer available]	

	Unstructured Data Moviegoers:
	Ask a friend what movies they've seen lately
	Read movie reviews
	Choose seats in the rocking-seat section
	Choose less well-known films
	Get to theater on time
	Keep a list of films you have seen
	Choose film based on familiar character
)	Choose movie based on book you read
1	Choose film based on director/composer/effects/etc.
2	Find out playing schedules
3	Pick movie based on the composer
4	Choose a film because of the special effects
5	Choose film based on recommendation
6	Choose a film based on a friend's recommendation
7	Walk to the theater
trı 'oc	Young, From Adaptive Path: Construct to acture: Deriving User Experience from Mental dels, 2004, Slide 153 at
<u>ttr</u>	://www.adaptivepath.com/events/workshops/cons

truct/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.



[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

	Feel comforta	Make a compromi to see film					
					Move seats		
	Choose seat for comfort				Nove seats when someone		
	Choose seats in the middle of			Surmount difficulty to get to seat	tail sits in front of you	Admonish annoying	
	the theater Choose seats in	Choose seat for privacy		Step over people to get to	Nove seats when someone small sits in	Ask kid to stop	Cut school/ work to see a movie
Get discount tickets	the rocking- seat section	Choose seats in the back of the	Choose seat for immersion	a seat	front of you	kicking the back of your seat	Cut school to
Look for ways to	Choose	theater	Choose seats	Step in sticky soda spill	Move seats when someone	Ask kids to stop	see a movie
get tickets at a reduced price	handicapped scat	Sit in crying area with baby	close to the screen	Step on popcom	to you	talking during the movie	Cut work to see a movie

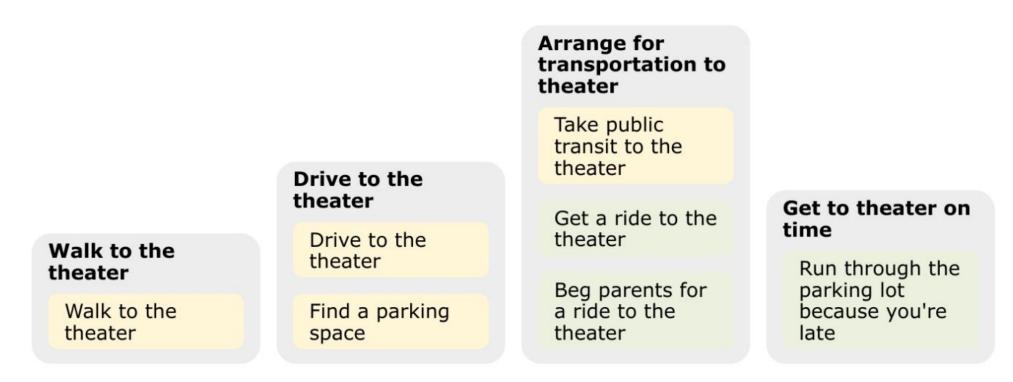
Mental Model Diagram created with https://indiyoung.com/mmd_generator.html

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



Created with https://indivoung.com/mmd_generator.html

Indi Young, Mental Models: Aligning Design Strategy with Human Behavior. Rosenfeld Media 2008, ISBN 9781933820194, Chapter 10.

Ticket purchase

Buy tickets ahead of time

Buy tickets days ahead of time

Buy tickets online

Make sacrifice to get tickets

Stand in line to buy tickets

Spend the night in line to buy tickets

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

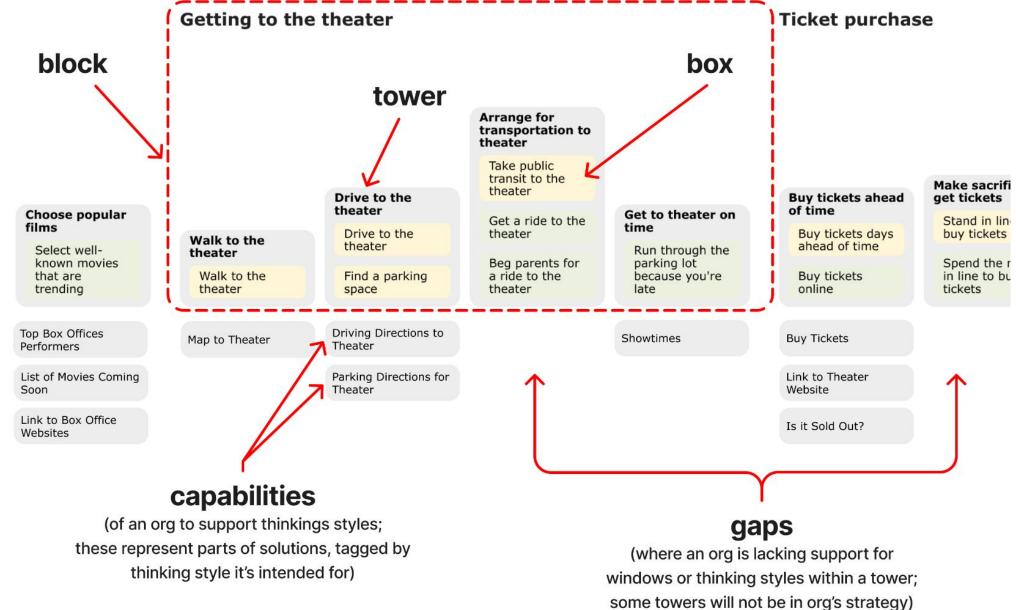
Alignment Diagrams

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_ex ercises.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.

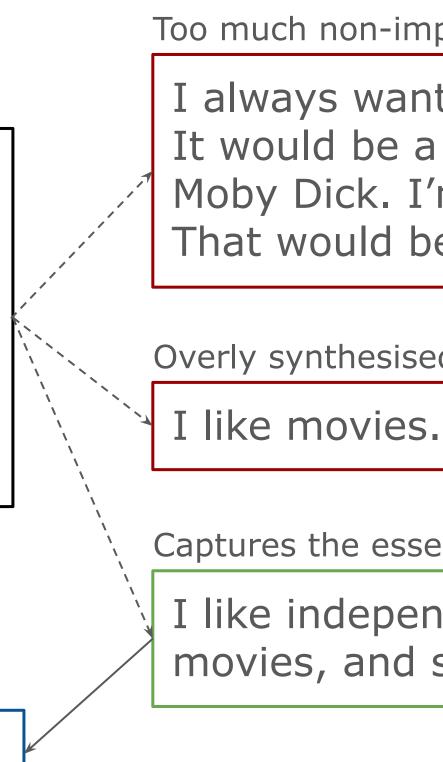
3 Ask a frie Read mov 4 5 Choose s 6 Choose I Get to the 8 Keep a lis 9 Choose fi 10 Choose n 11 Choose fi 12 Find out p 13 Pick movi 14 Choose a 15 Choose fi 16 Choose a 17 Walk to t 18 Choose fi 19 Watch filr 20 Choose fi 21 Seek info 22 See mos 23 See mos 24 Choose p 25 Select we

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

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film based on recommendation
a film based on a friend's recommendation
the theater
film based on genre
ms of a certain genre
film based on genre
ormation about movies you haven't seen
stly independent films
stly foreign films
popular films
ell-known movies that are trending

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.



Insight

Watch films of a certain genre

Example adapted from "From Construct to Structure: IA from Mental Models Classroom Exercises", written by Indi Young. May 2005, page 3 at http://www.adaptivepath.com/events/workshops/construct/files/ap_construct_101_exercises.pdf [no longer available].

Too much non-important information

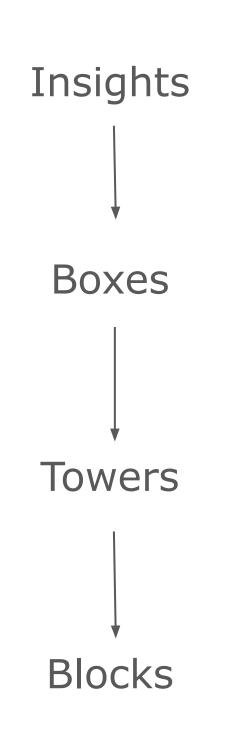
I always wanted to write a screen play. It would be a teen movie based on Moby Dick. I'm very excited about it. That would be hilarious.

Overly synthesised, loses too much detail

Captures the essence with enough detail

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

4. Organize Insights



Block	Tower	Box		
Movie sel	ection			
	Seek infor	mation abo		
		Ask a fr		
		Read m		
		Find out		
	Keep a list	of movies		
		Keep a l		
		Keep a		
	Choose fil	m based on		
		Choose m based on		
	Choose fil			
		Pick m		
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		Choose		
	Choose fil	m based on		
		Choose		
		Choose		
	Choose fil	m based on		
		Watchf		
		Choose		

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

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ovie based on director
ovie based on the composer
e a film because of the special effects
n recommendation
e a film based on a friend's recommendation
e a film based on a review
n genre
films of a certain genre
e film based on genre

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. \bigcirc
 - Disconnection from data source. Ο

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. Ο
 - Thick borders to add weight to certain boxes. Ο

Getting to the theater



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

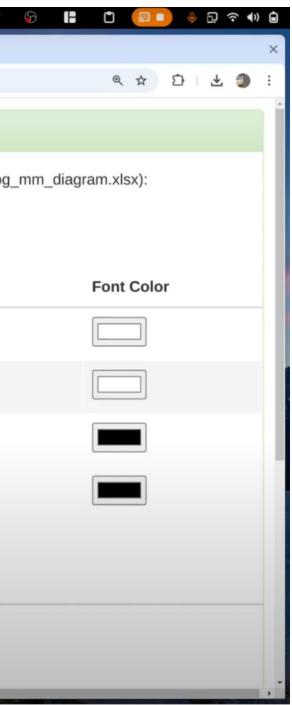
Get to theater on

Run through the parking lot because you're

Showcase: Indi Young's generator

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← → C 😋 indiyoung.com/mmd_generator.html							
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Mental Space	Arial ~	18	Bold ~				
Tower	Arial ~	12	Bold ~				
Summary	Arial ~	12	Normal ~				
Rectangles	Fill Color	Text Width					
Neighborhood							
Mental Space							

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 Nea

What's Playin (at favorite th

Pick Favorite (by concession

Pick Favorite (by architect)

Pick Favorite (by independ

Driving Direct Theater

Playing in the Two Hours (b

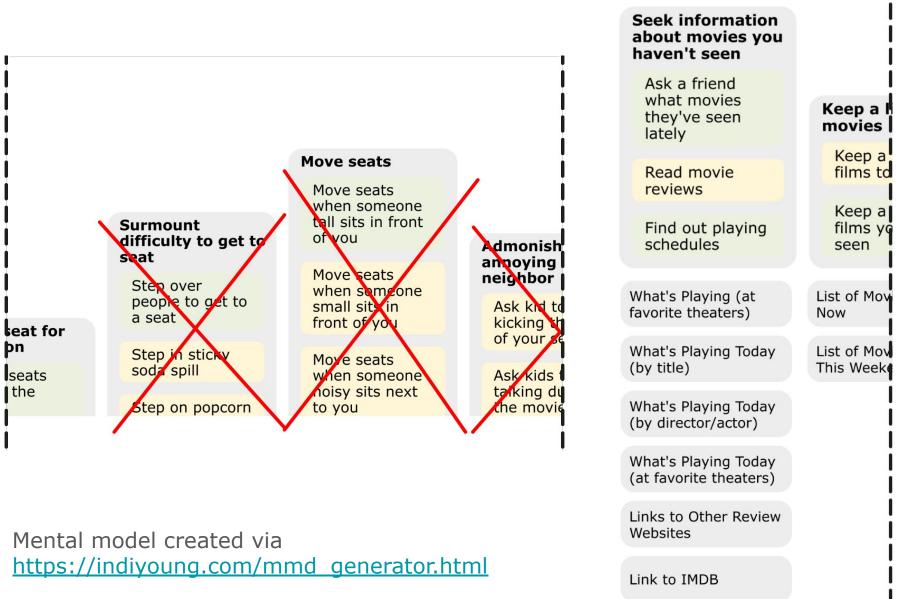
Pick a Film (b compiled revi

Indi Young, *Mental Models: Aligning Design Strategy with Human Behavior*. Rosenfeld Media 2008, ISBN 9781933820194, Page 354. Indi Young, *From Adaptive Path: Construct to Structure: Deriving User Experience from Mental Models*, 2004, Slide 153 at <u>http://www.adaptivepath.com/events/workshops/construct/files/ap_construct_101.pdf</u> [no longer available].

ar Me	What's Playing Today (by zip code)	What's Playing Today (by title)	Wr (bs
ng Today theaters)	What's Playing (at favorite theaters)	My Favorite Theaters List	Pid (b
e Theater ons)	Pick Favorite Theater (by screen size)	Pick Favorite Theater (by sound system)	Pic (b
e Theater cure)	Pick Favorite Theater (by parking)	Pick Favorite Theater (by nearby restaura	Pic (b
e Theater dents)	Local Film Festivals	National Film Festivals	Ма
ctions to	Parking Directions for Theater	Playing in the Next Two Hours (by ZC)	Pla Tw
e Next by title)	Playing in the Next Two Hours (directo	Showtimes	Pi¢
by views)	Pick a Film (by favorite reviewer)	Pick a Film (by related films)	Pic di
			-

2. Align Content with Mental Model

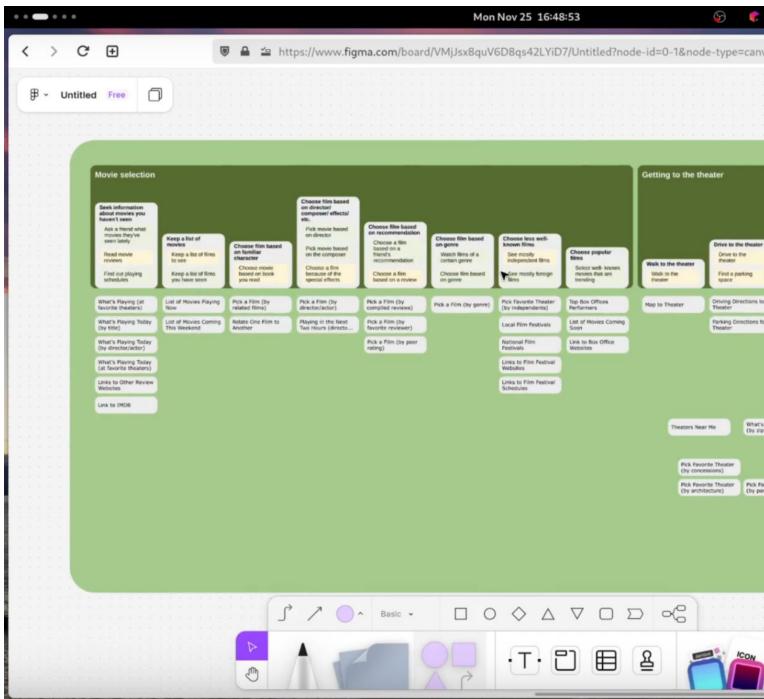
- 1. Check off towers out of your production scope.
- 2. Take a content box, and find what needs it is meeting.
- 3. Put it under the corresponding tower.
- Make primary and secondary 4. alignments (if necessary).



Indi Young, Mental Models: Aligning Design Strategy with Human Behavior, Rosenfeld Media 2008, ISBN 9781933820194, Page 402.

Movie selection

Showcase: FigJam



https://youtu.be/5aKr1bNzKus

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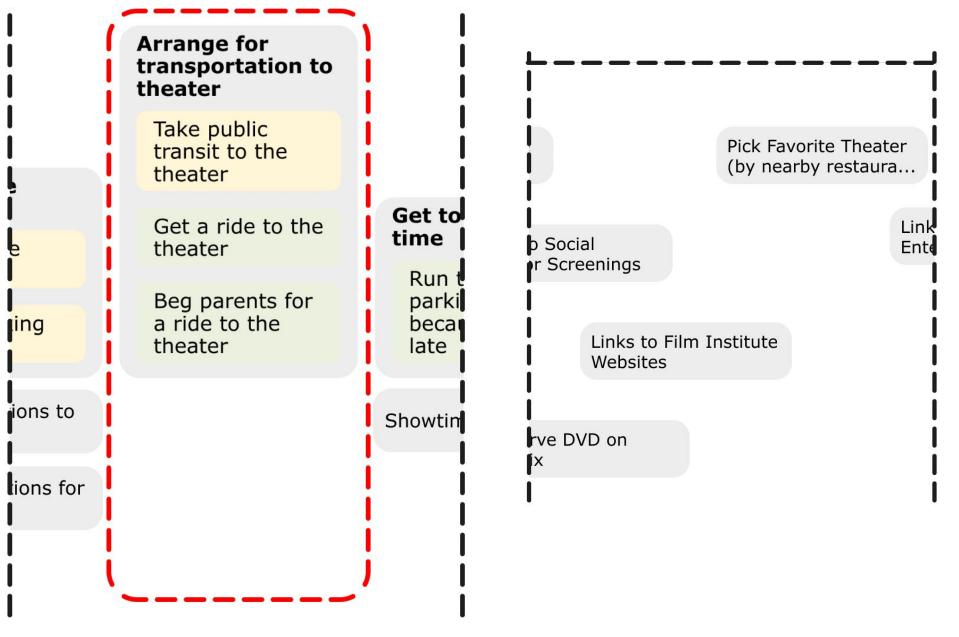
3. Gap Analysis [5]

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.



Indi Young, From Adaptive Path: Construct to Structure: Deriving User Experience from Mental Models [PowerPoint slides], 2004, Page 164 to 166 at http://www.adaptivepath.com/events/workshops/construct/files/ap construct 101 exercises.pdf [no longer available].

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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 Ο
 - Easily readable, can be understood by people without background knowledge \bigcirc
- 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.