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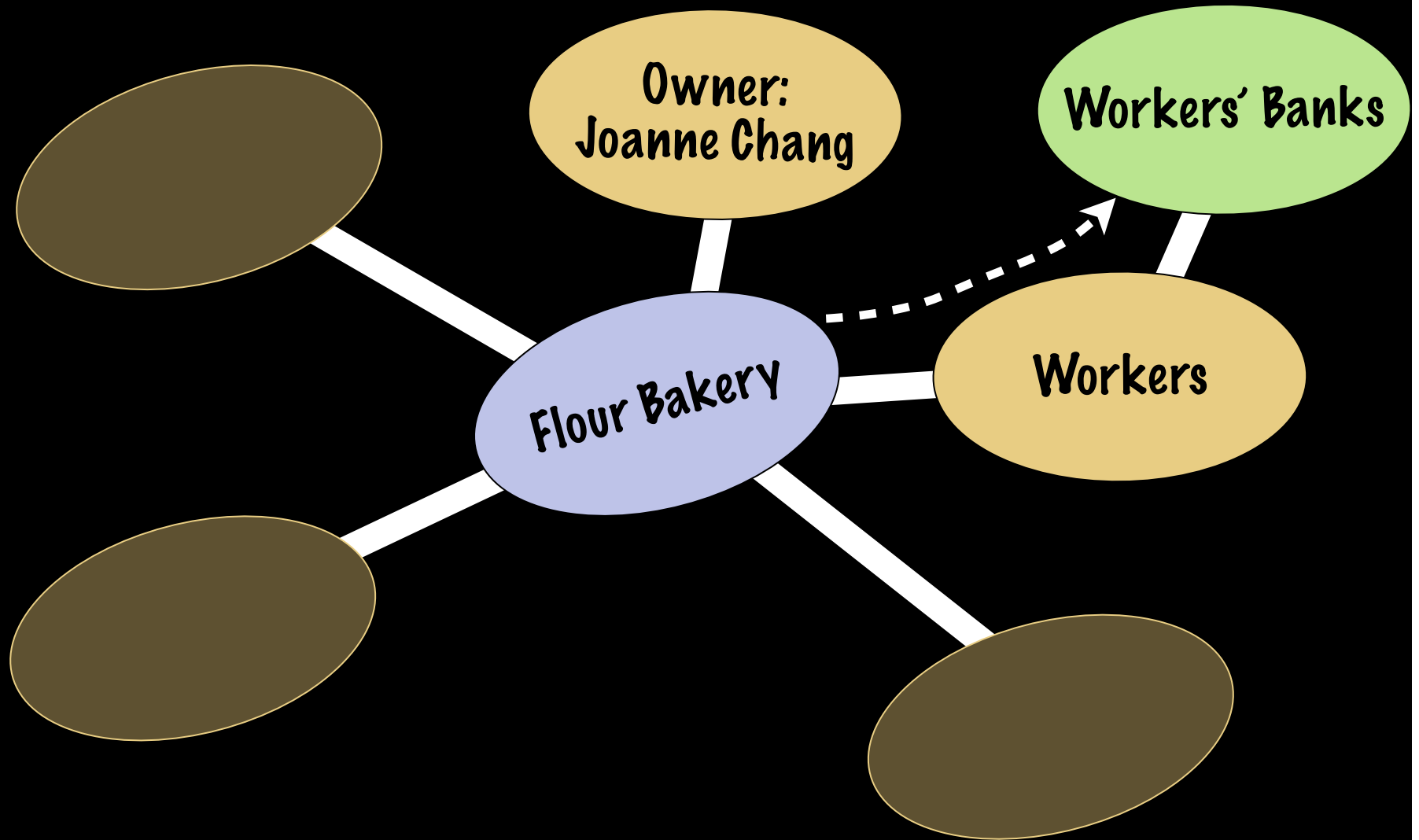
**Engineering Innovation & Design**

# Review

## **Reactions to Dieter Rams 10 principles for good design?**

1. Good design is innovative.
2. Good design makes a product useful.
3. Good design is aesthetic.
4. Good design helps us to understand a product.
5. Good design is unobtrusive.
6. Good design is honest.
7. Good design is durable.
8. Good design is consequent to the last detail.
9. Good design is concerned with the environment.
10. Good design is as little design as possible.

# Stakeholder Analysis: **What's the benefit?**



# Homework Review

- **Who were** the primary and secondary stakeholders for an **art-museum?**
- **Who were** the primary and secondary stakeholders for a **new kind of battery technology?**

Who used the 10-step design process for  
the **Making A Game** homework?

# Homework

- 1) Design a 2-player game
- 2) Maximum cost of materials < \$5
- 3) **Must** include an element of chance
- 4) **Must** be able to be taught within 3 minutes

# Serious Games!



# Articulating The Design

# How to Articulate the Design

## 1. Sketch it out

- Refine ideas
- Refine expression of the ideas

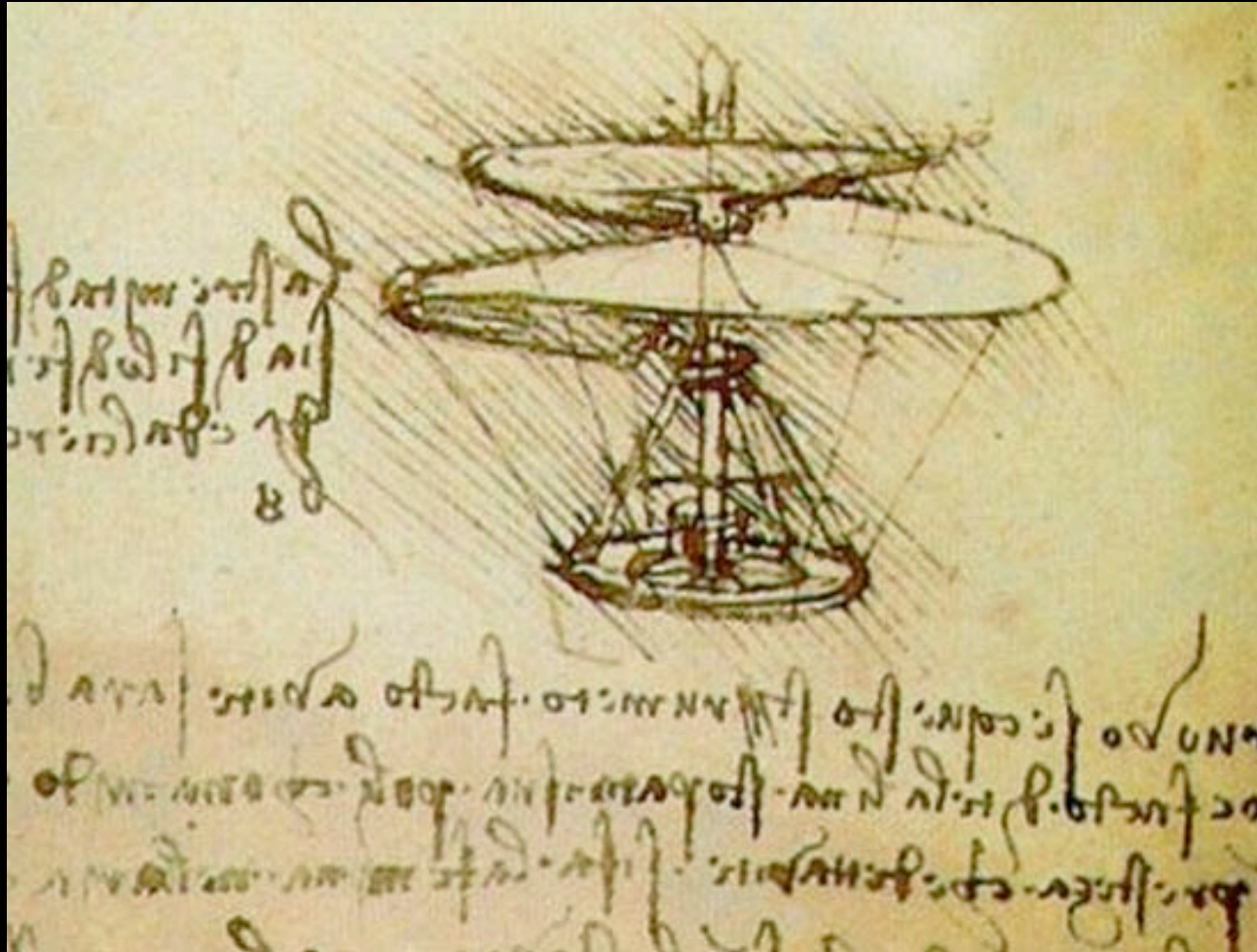
## 2. Draw out the connections

- Refine the logic
- Refine the sketch

## 3. Articulate the details

- Define the specifics
- Refine the connections
- Refine the sketch

# What's a Sketch?



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# Challenge!

# Sketch out a house for Blade

# How to Articulate the Design - House

- Sketch it out
  - Refine ideas
  - Refine expression of the ideas
- Draw out the connections
  - Refine the logic
  - Refine the sketch
- Articulate the details
  - Define the specifics
  - Refine the connections
  - Refine the sketch

# How to Articulate the Design

- Sketch it out
  - Refine ideas
  - Refine expression of the ideas
- Draw out the connections
  - Refine the logic
  - Refine the sketch
- Articulate the details
  - DEfine the specifics
  - Refine the connections
  - Refine the sketch

# How do we sketch out solutions in...

- Physical Objects: bottles, cranes, boxes
- Process: Line at Disney World, manufacturing process for printed IC
- Other things...?



# K-Scripts: Translating Research into Design

- K-Scripts are scripts that show user interactions
- K-Scripts are easy to edit
- Quick to generate
- Allow a group to work collaboratively

# About K-Scripts

- Using K-Scripts
  - Good K-Scripts start by showing a typical interaction
  - When a group is satisfied with the K-Scripts then robust artifacts to express the idea (e.g., a story board)
- When to use them
  - At the very beginning, then later on as ideas are refined
  - To align a diverse team and educate new members

## The ordering process for a meatball sub

Who	What	Notes
Customer	Walks up to the counter and sees a menu listing sandwiches. Looks at deli guy and says "I'll take a large meatball sub"	If the deli guy <u>is</u> busy, the customer would generally wait. Perhaps we should add a bell?
Deli Guy	" <u>ok</u> , do you want cheese?"	
Customer	"... <u>uh</u> ...."	The cheeses are not listed on the <u>menu</u> , most people know what they want. If there is a long enough pause, the deli guy would tell them their options
Customer	" <u>yeah</u> do you have provolone?"	
Deli guy	" <u>yeah</u> . Sauce?"	
Customer	" <u>yeah</u> ."	Customers generally know that meatball subs have tomato sauce, and not some other kind. And the deli guy will make it in view of the customer.

## User wants to take and post video to SuperSocialSite™

Who	What	Notes
User	While at a bar, a college student want's to record their friends being silly on Halloween. User opens up <u>SuperSocialSite</u> app on iPhone	App would also be available for Android, but not for first release
App	Splash screen is shown, then 3 buttons: Photo, Video, Audio	This assumes the user has logged in before and gave permission for geo-location
User	Clicks Video button	
App	Screen shows standard iPhone "From Library" and "From Camera"	
User	Clicks on "From Camera"	
App	App pops up standard iPhone video capture screen	
User	Clicks record button and takes video of his friends making faces and being silly. Users see countdown timer go from 15 seconds to 0	The app only lets user capture short videos

## K-Script for Dialog System

Who's Speaking	What they're saying	Notes
System	<Audio Icon> Are you calling for technical support of an Apple product?	
Caller	Yes	
System	Just say the name of the product for which you want technical support. For example you could say: "PowerMac G4" or "iPod". Go ahead:	
Caller	It's an iPod	
System	An iPod. Okay, what type of computer are you using it with, primarily? Say the name of the Macintosh computer or say "a Windows machine". Go ahead:	
Caller	Uh...a graphite iMac	
System	Alright, was the <i>computer</i> bought by a school or using an educational discount?	Language emphasis here to indicate that the question is regarding the "computer" not the "iPod".
Caller	No.	
System	Great. I'll transfer you to an iPod specialist. Hold on. <exit audio icon>	

# Example interaction (Observation)

- iPhone User: “Siri, remind me”
- Siri: “Ok just tell me what you wanted to be reminded About”
- iPhone user:” Meet with Dave Droga on Tuesday”
- Siri “What time your event”
- iPhone user: “10 am”
- Siri: “Ok, here’s your meeting, Note that you already have 2 events that overlap with this. Shall I schedule it anyway?”

# In Class Exercise-Make a K-Script for the Siri Interaction

- Use 3 column method
- Add notes where needed
  - iPhone User: “Siri, remind me”
  - Siri: “Ok just tell me what you wanted to be reminded About”
  - iPhone user:” Meet with Dave Droga on Tuesday”
  - Siri “What time your event”
  - iPhone user: “10 am”
  - Siri: “Ok, here’s your meeting, Note that you already have 2 events that overlap with this. Shall I schedule it anyway?”

# In Class: K-Script Writing

- Write out a K-Script showing the interaction between you and Amtrak agent (in person) to book a ticket



# Principles of Design (1 - 10)

Class	1	2	3	4	5	6	7	8	9	10
Day of Week/ Date	W Sept 5	M Sept 10	W Sept 12	M Sept 17	W Sept 19	M Sept 24	W Sept 26	M Oct 1	W Oct 3	W Oct 10
Lecture Topic	Introduction	10 Step Design Process Dieter Rams	Research Stakeholder Analysis	Articulating Design	Articulating Design Psychology	Usability	Dialogue Systems Technology (Siri+)	Dialogue System Design (Questions/Feedback)	Dialogue System Design 2	Branding
Assigned	Good and Bad Design	Design a Game	Stakeholder analysis for games		Articulating Design HW	2 Subject Usability Test	Complete in-class assignment	K-Scripts	K-Scripts 2	Make a Commercial
Due		Good and Bad Design Movie		Game + SHA		Articulating Design HW	2 Subject Usability Test	In-class assignment (7), Transcription assignment	K-Scripts	K-Scripts 2

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