

WELCOME

Product Development Workshop



Longitude
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HOUSE KEEPING

in today's session

- When signing into the webinars, please use your team name and your first name only e.g. ←Team Name_First Name→ or ←TC_Team Name_First Name→
- Please respect the [Code of Conduct](#) throughout all the webinars
- Only click on links which are shared by Panellists in the chat
- Get involved! We want to hear from you, so please make use the interactive features of Zoom:
 - Q&A - please put any questions here
 - Chat - this can be used for more general discussion
 - Raise hand - opportunity for attendees to be unmuted and speak
 - Polls - these will pop up at different stages during the webinars and are anonymous
- Webinars and the slides will be available to watch after this week:
<https://longitudeexplorer.challenges.org/im-a-longitude-explorer-finalist/>
- There will be three multiple choice evaluation questions at the end of the webinar which we ask all attendees to please answer

WELCOME

Product Development Workshop



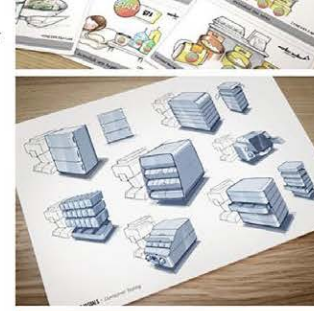
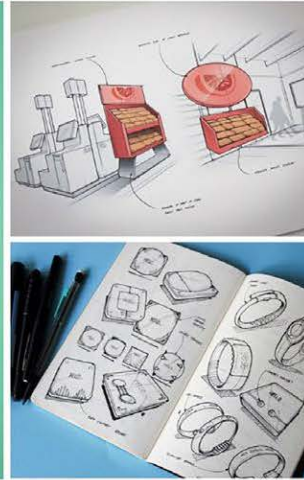
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ABOUT ME & WHAT I DO

Founder & Designer at Little Mammoth

Ideas designed for real life. Making a real difference.

As a design studio, we think we have the best job in the world: we bring ideas to life for our clients. Ideas designed to improve experiences, products and environments. Ideas designed to have a positive impact on the world around us.



WHAT ARE WE HERE TO DO

in today's session

- LEARN ABOUT NPD
- DEVELOP YOUR IDEAS
- COMPLETE YOUR WORKBOOK



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**SNAP UP
THE PRIZE**



WHAT ARE YOU GOING TO NEED

during the session



WHAT ARE WE GOING TO COVER

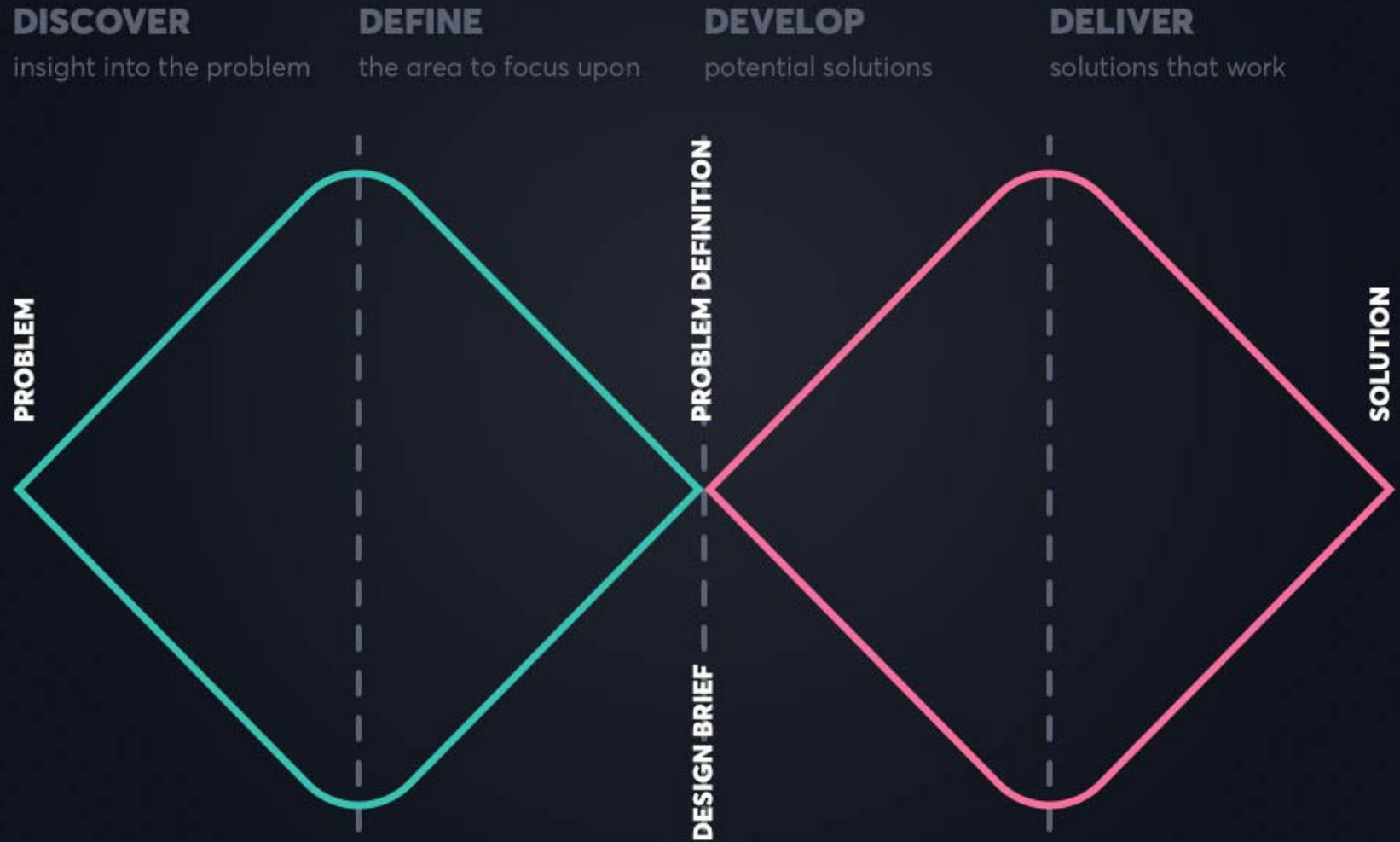
in today's session

- PRODUCT DEVELOPMENT PROCESS
- EXTERNAL TEAM RESOURCE
- PROTOTYPING METHODS
- PROTOTYPING PLANNING EXERCISE
- USER TESTING METHODS
- USER TESTING PLANNING EXERCISE
- QUESTIONS & ANSWERS

WHERE ARE WE IN THE PROCESS

the deliver phase

Double Diamond



DELIVER

what do we do here

REFINE

MAKE LOTS OF PROTOTYPES

CONDUCT USER TESTING

IMPROVE THE CONCEPT

EVALUATE AGAINST THE BRIEF

SELECT SINGLE SOLUTION





DELIVER

who can help

MODEL MAKER

GIFTED CRAFTSPERSON

TRANSLATE CONCEPT INTO 3D

TEST HOW THINGS WORK

CREATE BEAUTIFUL MODELS

WHY DO WE PROTOTYPE CONCEPTS

the deliver phase

- BETTER UNDERSTAND YOUR CONCEPT
- EVOLVE YOUR DESIGN
- DEVELOP TECHNICAL DETAILS
- EVALUATE ERGONOMICS & USABILITY
- TURNING 2D INTO 3D

PROTOTYPES FOR PRODUCTS

Methods to use when refining your concepts

SKETCH MODELS

the deliver phase

HANDMADE MODELS

QUICK & LOOSE OUTPUT

USING FOAM, CARD & PAPER

SCALE & PROPORTION

SOLVE PROBLEM IN 3D

EXPLORATIVE METHOD





3D PRINTING

the deliver phase

FROM 3D CAD DATA

ACCESSIBLE TECHNOLOGY

ACCURATE PROTOTYPES

MANY DIFFERENT MATERIALS

CONSIDER PRINTING TIME

FUNCTIONAL PROTOTYPES

the deliver phase

LEARN HOW CONCEPT WORKS
MECHANICAL / ELECTRONIC
PROVING THE PRINCIPLE
REQUIRES LOTS PLANNING
REQUIRES TECHNICAL HELP





APPEARANCE MODELS

the deliver phase

LOOKS LIKE END PRODUCT
SOLID / NO MOVING PARTS
TEST IDEA WITH USERS
DESIGN PHASE PRESENTATION
REQUIRES MODEL MAKER

PROTOTYPES FOR SERVICES

Methods to use when refining your concepts

UX PAPER PROTOTYPES

the deliver phase

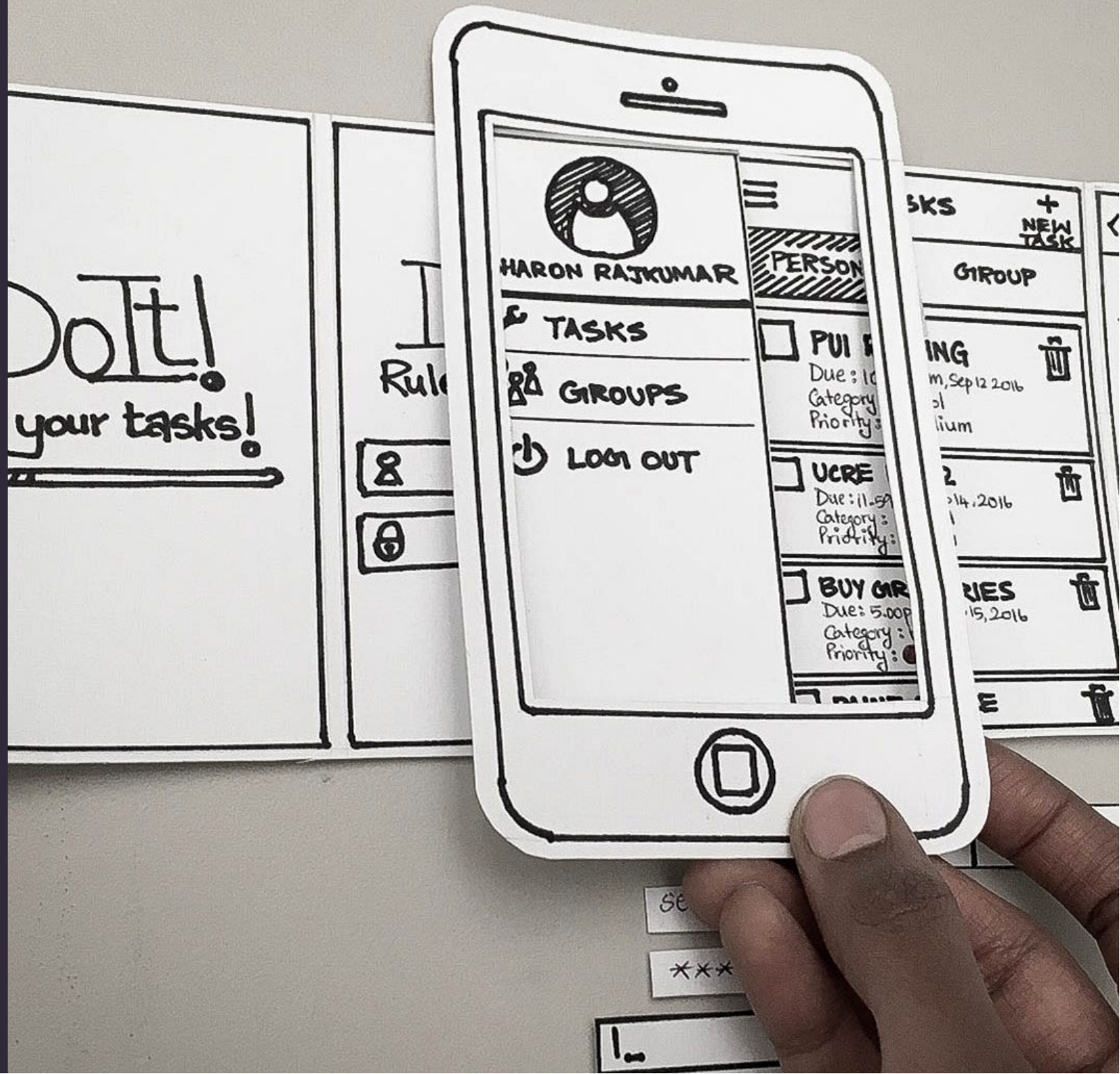
PLAN INTERFACE WORKFLOW

QUICK TO ITERATE

LOW TECH METHOD

SOLVE COMPLEX UX DESIGN

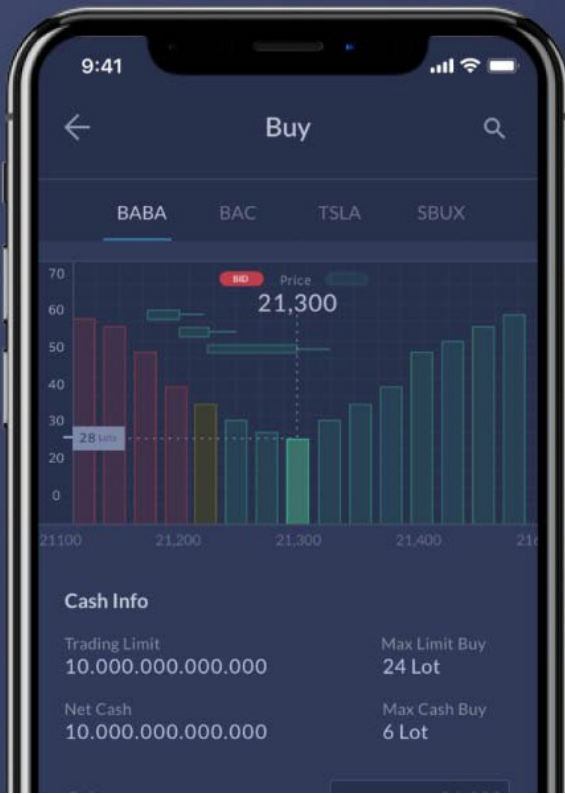
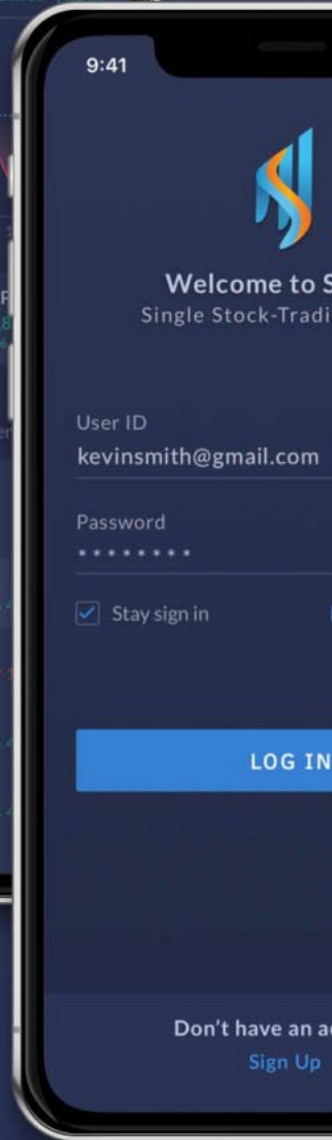
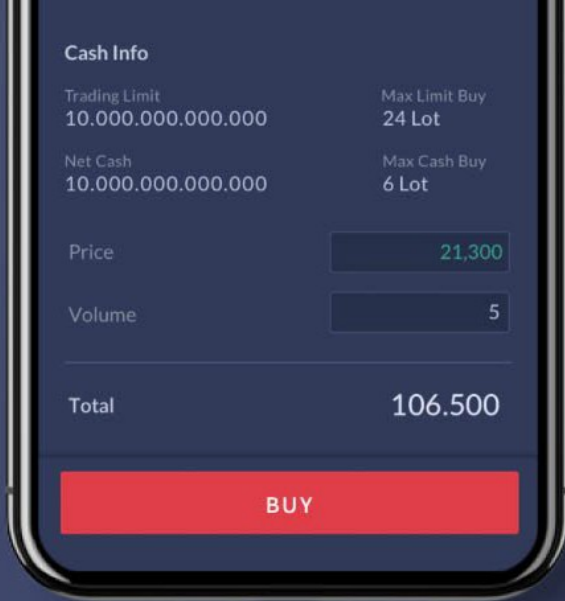
INTERACTIVE METHOD



DIGITAL UX PROTOTYPES

the deliver phase

STEP UP FROM PAPER
ANIMATED & INTERACTIVE
COMBINED GRAPHIC LAYOUT
LOG USABILITY DATA
SOFTWARE TOOLS AVAILABLE
LOW TECH OPTIONS



ENVIRONMENT MOCK UPS

the deliver phase

FULL SCALE ENVIRONMENT
TRACK USER MOVEMENT
ERGONOMIC CONSIDERATIONS
QUICK AND LOW TECH
REQUIRES PHYSICAL SPACE





DESKTOP ROLE PLAY

the deliver phase

LARGE COMPLEX SYSTEMS

QUICK & LOW TECH

SCALE MODELS

WALK THROUGH JOURNEY

EASILY MODIFIED

HOW TO PLAN A PROTOTYPE

the deliver phase

- CHOOSE APPROPRIATE METHOD
- WHAT DO YOU WANT TO LEARN
- WHO WILL INTERACT WITH IT
- WHAT MATERIALS DO YOU HAVE
- WHAT EXPERTISE DO YOU HAVE

PLANNING YOUR PROTOTYPE

WORKSHEET 6a

Use this worksheet to help plan out a strategy for prototyping your idea. Use the different methods presented in the workshop as inspiration. Please be mindful of what is achievable during lock-down and how you might need to modify your aspirations. Complete as a group.

WORKSHOP 2 - PRODUCT DEVELOPMENT

Workshop Task - Thursday 7th May 2020

Print one worksheet per person.

1. CONCEPT TITLE

(Copy from Worksheet 5)

2. WHAT IS THE FUNCTION OF THE PROTOTYPE?

(This is the primary function of your product / service)

3. WHO WILL INTERACT WITH THE PROTOTYPE?

(This could be your development team or user research respondent)

4. WHAT DO YOU WANT TO LEARN FROM THE PROTOTYPE?

(This could be Scale, Ergonomics, Appearance, Function, User Experience etc.)

5. WHAT MATERIALS DO YOU HAVE AVAILABLE?

(You may have to be creative here and source what is within the home)

6. IF THERE WAS NO COVID-19 LOCK DOWN HOW WOULD IT CHANGE YOUR PROTOTYPING APPROACH?

(Would you source different materials or engage with external experts?)

7. HOW WILL YOU NEED TO MODIFY/ SIMPLIFY YOUR CONCEPT TO PROTOTYPE IT?

(You may have to concentrate on specific aspects of your concept)

PLANNING YOUR PROTOTYPE

Use this worksheet to help plan out a strategy for prototyping your idea. Use the different methods presented in the workshop as inspiration. Please be mindful of what is achievable during lock-down and how you might need to modify your aspirations. Complete as a group.

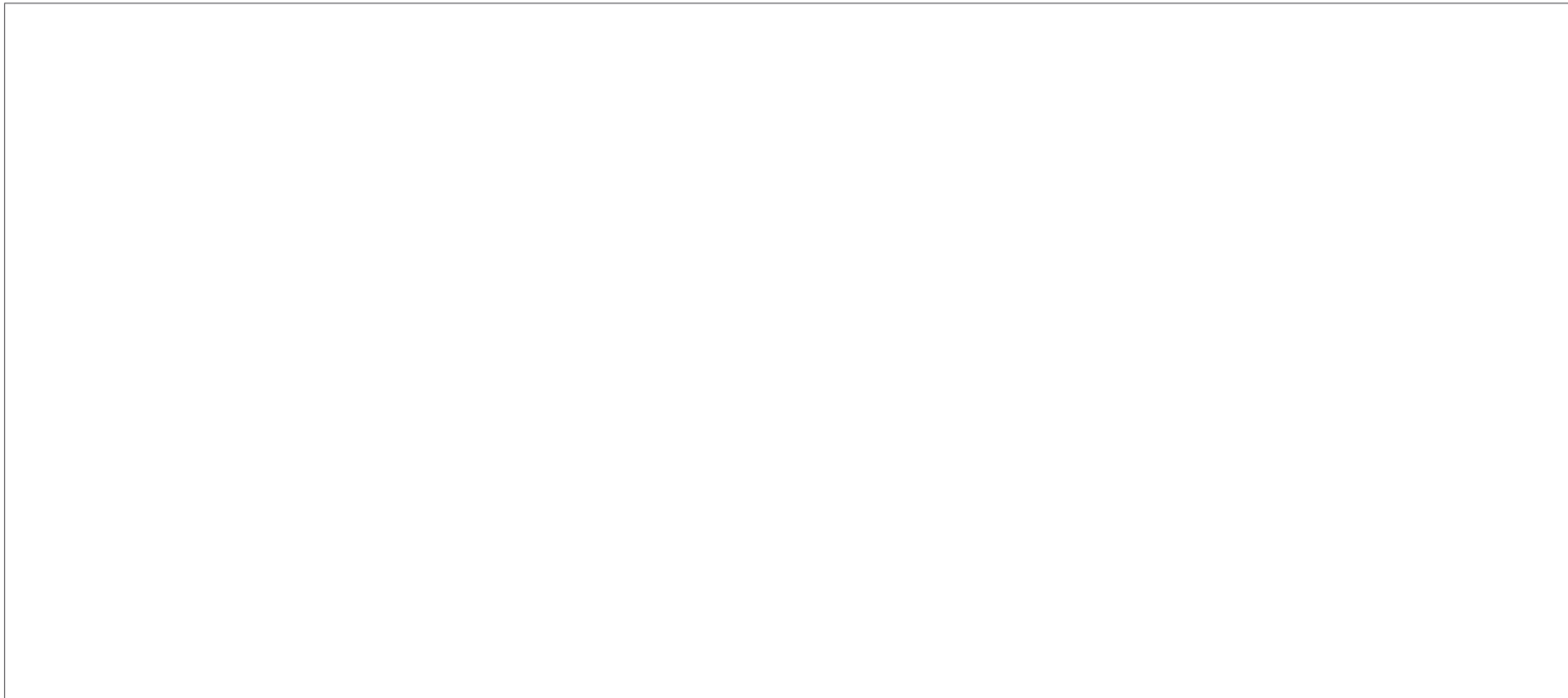
WORKSHEET 6b

WORKSHOP 2 - PRODUCT DEVELOPMENT

Workshop Task - Thursday 7th May 2020

Print one worksheet per person.

PROTOTYPE DRAWING (Use this area to sketch how you will prototype your concept, doodle, plan and stick sample down)



CAPTURING CONCEPTS

Use this worksheet to transform your post-it note ideas into robust concepts. Create 3 concepts individually and share with your team and score the concept as a group, selecting the highest ranking. Please have your favourite concept selected before Workshop 4 on Thursday.

EXAMPLE WORKSHEET 5

WORKSHOP 1 - CONCEPT DEVELOPMENT

Post Workshop Task - Monday 4th May 2020

Print three worksheets per person.

CONCEPT TITLE (give it a fun name)

' OCEAN HOOVER '

GARBAGE PATCH EXTRACTION RIG

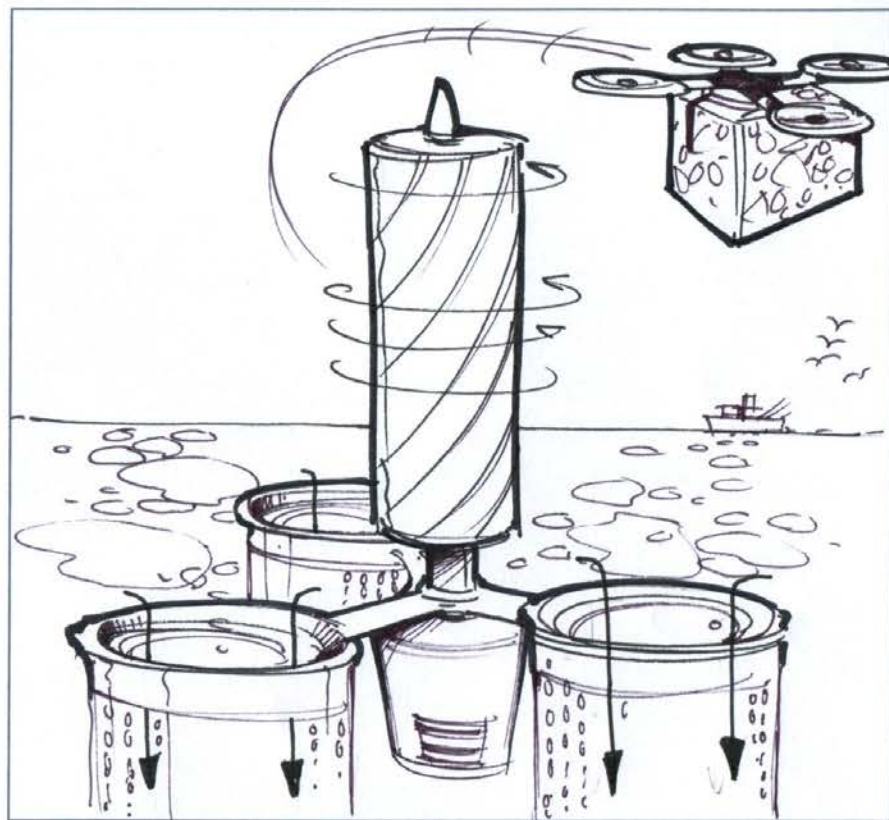
CONCEPT DESCRIPTION (give a little bit more detail)

A REMOTE FLOATING RIG, THAT IS SELF POWERED. (USING WIND + SOLAR ENERGY)
EXTRACTS + SORTS MARINE WASTE
BALING INTO PARCELS TO BE AIRLIFTED USING DRONE TECHNOLOGY

GROUP SCORING (circle where your team agrees)

1 2 3 4 5 6 7 8 9 10

CONCEPT ILLUSTRATION (draw a image of your idea)



PLANNING YOUR PROTOTYPE

Use this worksheet to help plan out a strategy for prototyping your idea. Use the different methods presented in the workshop as inspiration. Please be mindful of what is achievable during lock-down and how you might need to modify your aspirations. Complete as a group.

EXAMPLE WORKSHEET 6a

WORKSHOP 2 - PRODUCT DEVELOPMENT

Workshop Task - Thursday 7th May 2020

Print one worksheet per person

1. CONCEPT TITLE

(Copy from Worksheet 5)

' THE OCEAN HOOVER '

2. WHAT IS THE FUNCTION OF THE PROTOTYPE?

(This is the primary function of your product / service)

TO REMOVE PLASTIC WASTE FROM THE OCEAN AND RECYCLE IT

3. WHO WILL INTERACT WITH THE PROTOTYPE?

(This could be your development team or user research respondent)

- OUR TEAM

4. WHAT DO YOU WANT TO LEARN FROM THE PROTOTYPE?

(This could be Scale, Ergonomics, Appearance, Function, User Experience etc.)

- HOW THE INFRASTRUCTURE AND SYSTEM WILL OPERATE, OPERATION OF SYSTEM OVER TIME.

5. WHAT MATERIALS DO YOU HAVE AVAILABLE?

(You may have to be creative here and source what is within the home)

- CARD, PAPER, PLASTIC
- LEGO
- CAMERA / VIDEO

6. IF THERE WAS NO COVID-19 LOCK DOWN HOW WOULD IT CHANGE YOUR PROTOTYPING APPROACH?

(Would you source different materials or engage with external experts?)

- WE WOULD MAKE A SMALL FUNCTIONAL PROTOTYPE, SHOWING HOW THE DEVICE SUCKS UP THE PLASTIC WASTE

7. HOW WILL YOU NEED TO MODIFY/ SIMPLIFY YOUR CONCEPT TO PROTOTYPE IT?

(You may have to concentrate on specific aspects of your concept)

- WE NEED TO SIMPLIFY ALL COMPONENTS, - CAPTURE UNIT - FILTER UNIT - POWER - BALING AND TRANSPORTATION

PLANNING YOUR PROTOTYPE

Use this worksheet to help plan out a strategy for prototyping your idea. Use the different methods presented in the workshop as inspiration. Please be mindful of what is achievable during lock-down and how you might need to modify your aspirations. Complete as a group.

EXAMPLE WORKSHEET 6b

WORKSHOP 2 - PRODUCT DEVELOPMENT

Workshop Task - Thursday 7th May 2020

Print one worksheet per person.

PROTOTYPE DRAWING (Use this area to sketch how you will prototype your concept, doodle, plan and stick sample down)

*** ROLEPLAY EXERCISE**

- WALK THROUGH HOW PLASTIC MOVES THROUGH SYSTEM. (TAKE PHOTOS AND MAP OUT THE TASKS)
- QUESTION DOES IDEA WORK, HOW IS IT FILTERED? HOW IS IT BAILED. IS THIS THE BEST WAY FOR SYSTEM TO OPERATE?

WHY DO WE CONDUCT USER TESTING

the deliver phase

- IMPROVE OUR DESIGN
- TEST AGAINST THE ORIGINAL BRIEF
- SELECT THE BEST SOLUTION
- VALIDATE OUR THINKING
- COLLECT DATA FOR CLIENT APPROVAL

FOCUS GROUPS

the deliver phase

OPEN DISCUSSIONS

6- 12 PARTICIPANTS

BLEND OF PERSONALITIES

HELD IN RESEARCH FACILITY

MODERATED BY RESEARCHER

DESIGN TEAM OBSERVE

QUICK LITMUS TEST





ONE TO ONE INTERVIEWS

the deliver phase

FACE TO FACE DISCUSSION
HELD IN USERS HOME
MODERATED BY RESEARCHER
DISCUSSION GUIDE USED
FILMED FOR DESIGN TEAM
TIME CONSUMING
INDEPTH INSIGHTS

USER SURVEYS

the deliver phase

LARGE USER SAMPLE

COMPLETED REMOTELY

DIGITAL TOOLS AVAILABLE

QUICK TO PRODUCE

LOTS OF DATA TO ANALYSE

NO PERSONAL INSIGHTS



HOW TO CONDUCT USER TESTING

the deliver phase

- CHOOSE APPROPRIATE METHOD
- WHAT DO YOU WANT TO LEARN
- WHO WILL SPEAK TO
- HOW WILL EXPLAIN YOUR IDEA
- WHAT QUESTIONS WILL YOU ASK

CONDUCTING USER RESEARCH

WORKSHEET 7a

In order to get the most out of your research its important to plan carefully the type of questions to ask and how to ask them. Use this worksheet to plan a questionnaire or interview that you can digitally share or conduct with potential users. Complete as a group.

WORKSHOP 2 - PRODUCT DEVELOPMENT

Workshop Task - Thursday 7th May 2020

Print one worksheet per person.

1. CONCEPT TITLE

(Copy from Worksheet 5)

2. WHAT DO YOU WANT TO FIND OUT?

(What aspects of the concept do you need user feedback on?)

3. WHO ARE YOU GOING TO INTERVIEW?

(Its important that this correlates to the information in your brief)

4. WHAT DO YOU HAVE TO COMMUNICATE YOUR IDEA?

(Do you have sketches, photographs, models etc?)

5. WHAT ADDITIONAL ITEMS DO YOU NEED TO CREATE?

(Additional sketches, photographs, models etc?)

6. HOW WOULD YOU DESCRIBE YOUR CONCEPT?

(This must be in a language that your user will understand)



CONDUCTING USER RESEARCH

WORKSHEET 7b

In order to get the most out of your research its important to plan carefully the type of questions to ask and how to ask them. Use this worksheet to plan a questionnaire or interview that you can digitally share or conduct with potential users. Complete as a group.

WORKSHOP 2 - PRODUCT DEVELOPMENT

Workshop Task - Thursday 7th May 2020

Print one worksheet per person.

WHAT QUESTIONS WOULD YOU ASK YOUR INTERVIEWEE...

1. ABOUT THEMSELVES?

(This can break the ice and also give context to answers given)

2. ABOUT THEIR THOUGHTS ON THE PROBLEM

(Do they feel the same as your team about the problem you are solving?)

3. ABOUT YOUR CONCEPT

(Be careful how you frame the questions. We need open questions)

4. ABOUT HOW TO IMPROVE YOUR CONCEPT?

(This will help you improve your concept during development)



CONDUCTING USER RESEARCH

EXAMPLE WORKSHEET 7a

In order to get the most out of your research its important to plan carefully the type of questions to ask and how to ask them. Use this worksheet to plan a questionnaire or interview that you can digitally share or conduct with potential users. Complete as a group.

WORKSHOP 2 - PRODUCT DEVELOPMENT

Workshop Task - Thursday 7th May 2020

Print one worksheet per person.

1. CONCEPT TITLE

(Copy from Worksheet 5)

'THE OCEAN HOOVER'

2. WHAT DO YOU WANT TO FIND OUT?

(What aspects of the concept do you need user feedback on?)

THE IMPACT ON MARINE WILDLIFE WHEN OPERATED

3. WHO ARE YOU GOING TO INTERVIEW?

(Its important that this correlates to the information in your brief)

MARINE BIOLOGIST

4. WHAT DO YOU HAVE TO COMMUNICATE YOUR IDEA?

(Do you have sketches, photographs, models etc?)

- A SKETCH OF IDEA
- PROTOTYPE + MAP OF HOW SYSTEM WORKS

5. WHAT ADDITIONAL ITEMS DO YOU NEED TO CREATE?

(Additional sketches, photographs, models etc?)

- A DIAGRAM SHOWING HOW IT SITS IN THE OCEAN
- A MAP OF LOCATIONS IT WILL BE USED

6. HOW WOULD YOU DESCRIBE YOUR CONCEPT?

(This must be in a language that your user will understand)

- OUR PRODUCT AND SYSTEM SITS ON THE SURFACE OF OCEAN
- IT IS SELF POWERED AND NAVIGATES USING AI TECHNOLOGY
- 3 PODS FILL WITH WATER FILTERING PLASTIC AS IT MOVES
- WASTE IS SORTED + BALED AND TRANSPORTED BACK TO SHORE USING DRONE TECHNOLOGY

CONDUCTING USER RESEARCH

In order to get the most out of your research its important to plan carefully the type of questions to ask and how to ask them. Use this worksheet to plan a questionnaire interview that you can digitally share or conduct with potential users. Complete as a group.

EXAMPLE WORKSHEET 7b

WORKSHOP 2 - PRODUCT DEVELOPMENT

Workshop Task - Thursday 7th May 2020

Print one worksheet per person

WHAT QUESTIONS WOULD YOU ASK YOUR INTERVIEWEE...

1. ABOUT THEMSELVES?

(This can break the ice and also give context to answers given)

- WHAT IS YOUR JOB TITLE ?
- HOW LONG HAVE YOU WORKED WITH MARINE WILDLIFE ?
- WHAT IS YOUR FAVORITE THING ABOUT YOUR JOB ?

2. ABOUT THEIR THOUGHTS ON THE PROBLEM

(Do they feel the same as your team about the problem you are solving?)

- WHAT IS THE IMPACT OF WASTE ON WILDLIFE ?
- IS THERE AREAS THAT ARE MOST EFFECTED ?
- WHAT IS THE BIGGEST OFFENDER ?

3. ABOUT YOUR CONCEPT

(Be careful how you frame the questions. We need open questions)

- LOOKING AT OUR IDEA WHAT ARE YOU BIGGEST CONCERNS REGARDING WILDLIFE ?
- WHAT ARE YOUR THOUGHTS ON THE FILTRATION SYSTEM ?
- DO YOU THINK SYSTEM WILL WORK TO REMOVE WASTE ?

4. ABOUT HOW TO IMPROVE YOUR CONCEPT?

(This will help you improve your concept during development)

- HOW COULD WE IMPROVE SAFETY OF THE SYSTEM ?
- WHAT SHOULD WE THINK ABOUT WHEN SUCKING UP WATER ?
- HOW COULD WE LESS IMPACT ON OCEAN ENVIROMENT ?

WHAT TO DO AFTER THE SESSION

Homework tasks

CREATE A PROTOTYPE

-Use Worksheet 6 to help you

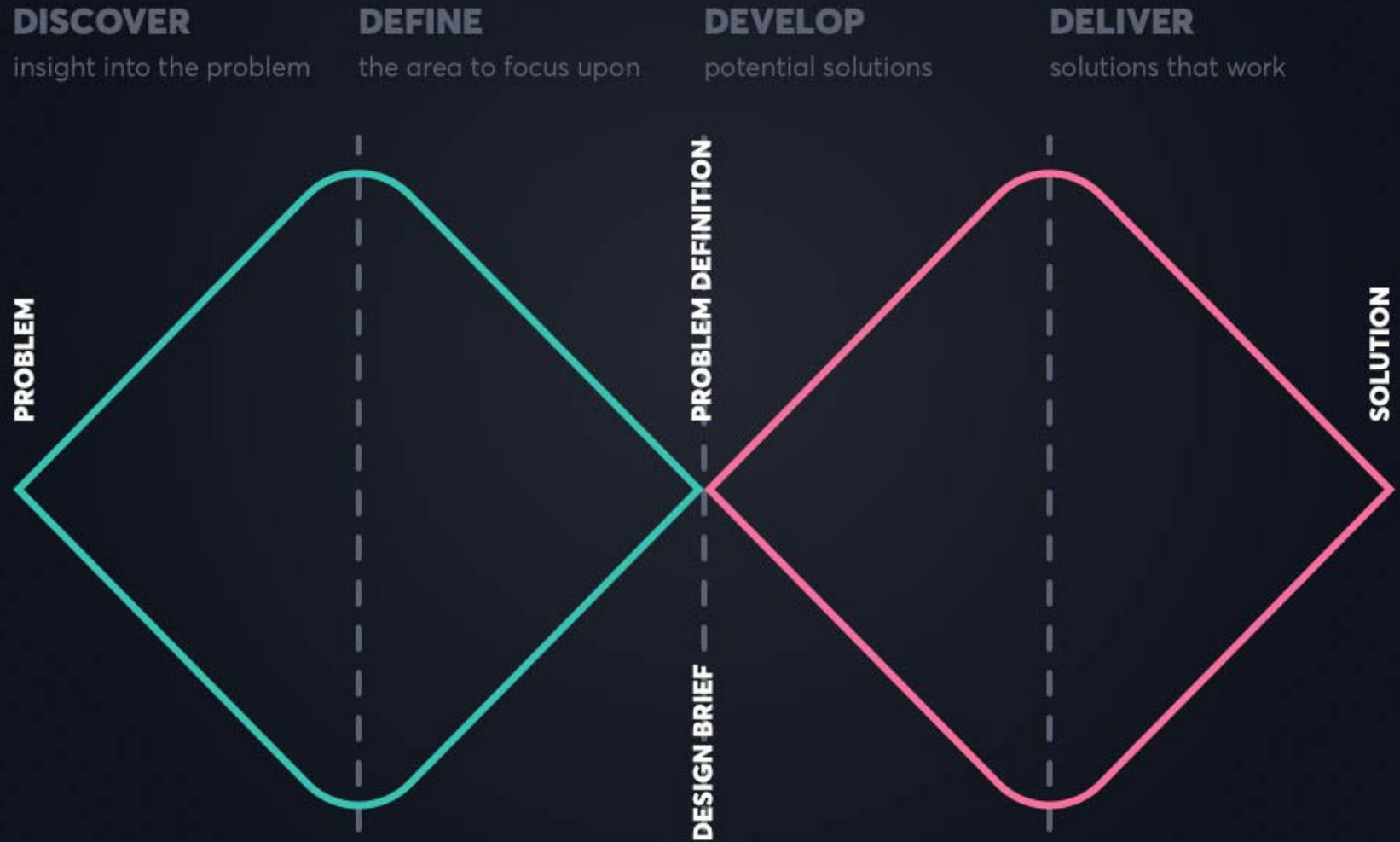
CONDUCT USER TESTING

-Use Worksheet 7 to help you

WHAT HAVE WE COVERED

*the new product
development
process*

Double Diamond



QUESTION & ANSWERS

do you have anything you want to ask me

BEFORE YOU GO

To help us continue to improve these sessions, please answer these three short multiple choice polls which will pop up on your screen now.

THANK YOU

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