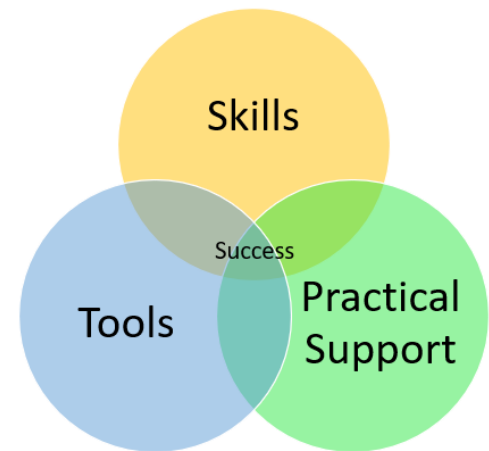




Introduction to Enterprise / Entrepreneurship

The Plan for Today

- Personal aspirations linked to entrepreneurship / enterprise activities
- **Introduction to entrepreneurship**
- The **tools and language** of an entrepreneur
- Look at the **similarities with engineering**
- The entrepreneur's **product development journey**
- The **skills** of an entrepreneur



Entrepreneurs

- What do we mean by entrepreneurship?
- What are the words that come into your head?



Note: *In this part of the DIP programme, entrepreneur can equally mean intrapreneur, social entrepreneur, or any form of change maker*

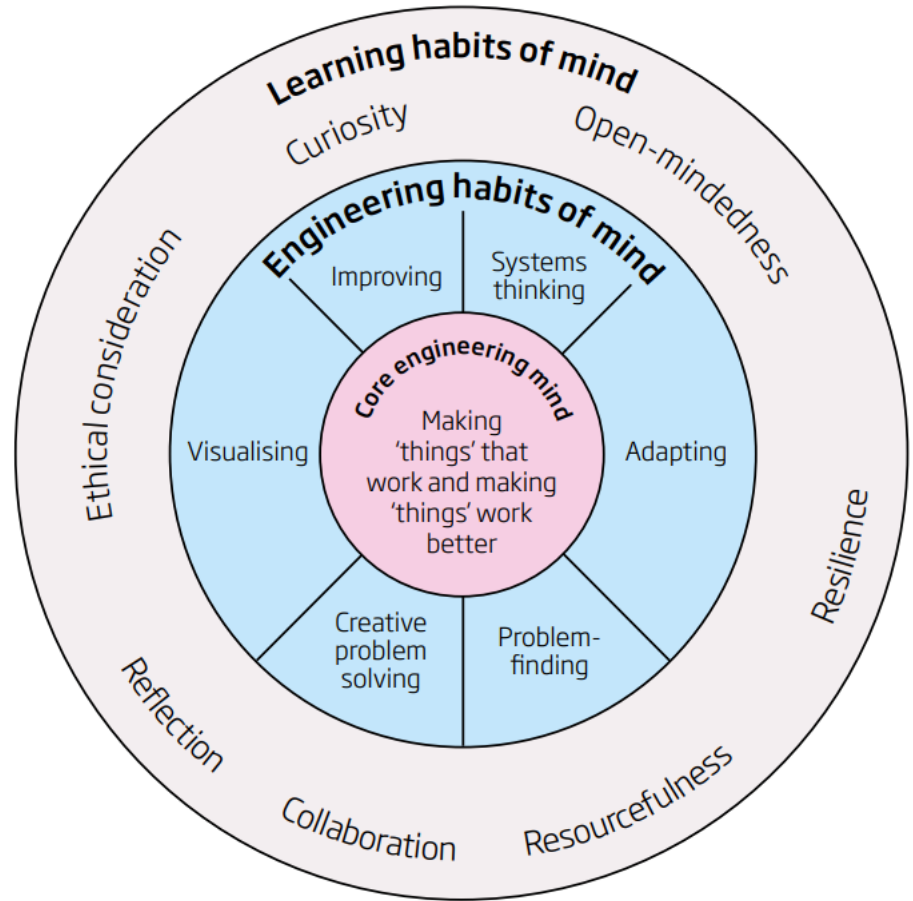
Skills of an Entrepreneur/Change Maker?

Co-creation Activity

- In pairs, come up with a list of skills (and behaviours) that you think entrepreneurs need
- Use single words where possible
- Write them on post-it notes
- Add them to the flip chart, where they will be ordered into groups

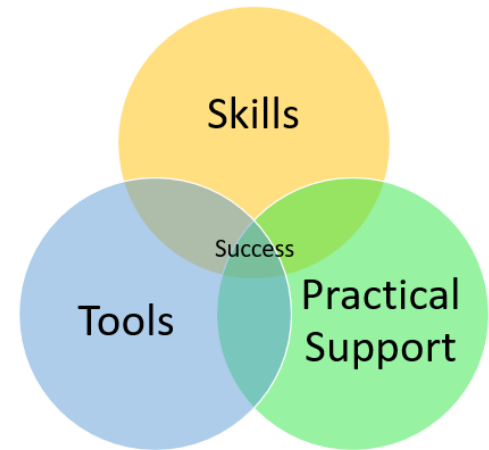
Skills of an Engineer

- Problem finder / solver
- Creative
- Innovative
- Attention to detail
- Able to make, test and validate
- Enterprising
- Curious
- Regenerative
- Designer
- Organised
- Systems thinker
- Logical
- Risk Aware
- Safety conscious
- Ethical
- Sustainable



Some Tools of an Entrepreneur

- Ideation and Validation*
- Business Model Canvas*
- Value Proposition*
 - Customer Profile
 - Value Map
- Market Segmentation*
- Risk Management*
- Minimum Viable Product (MVP)*
- Customer Journey*
- Prioritisation
- The Business Plan
- Marketing
- Project Management
- Team management
- Pitching*
- Fundraising
- Multi-tasking
- Systems Thinking

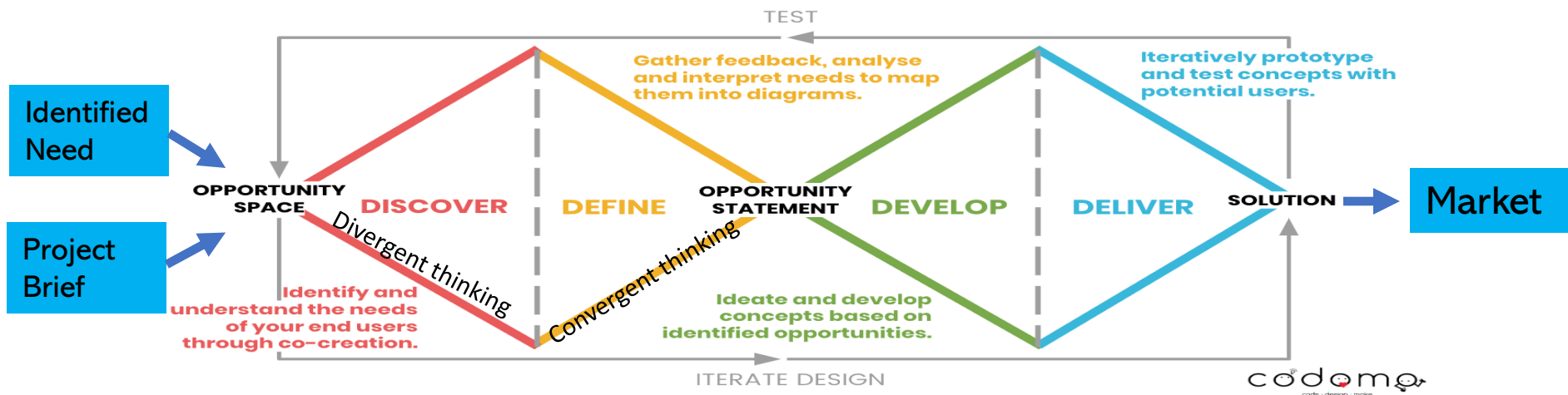


Many of the tools of an entrepreneur can help us in our role as engineers, particularly in the design phase.

The Journey



Double Diamond Design Framework



The Journey and the 'Tools'



Ideation and Validation*
Business Model Canvas
Value Map
Customer Profile
Value Proposition*
Market Segmentation*
Prioritisation
Minimum Viable Product
Validation
Customer Journey*
Pitching*
Fundraising
Risk Management*

Tools to help with the journey →

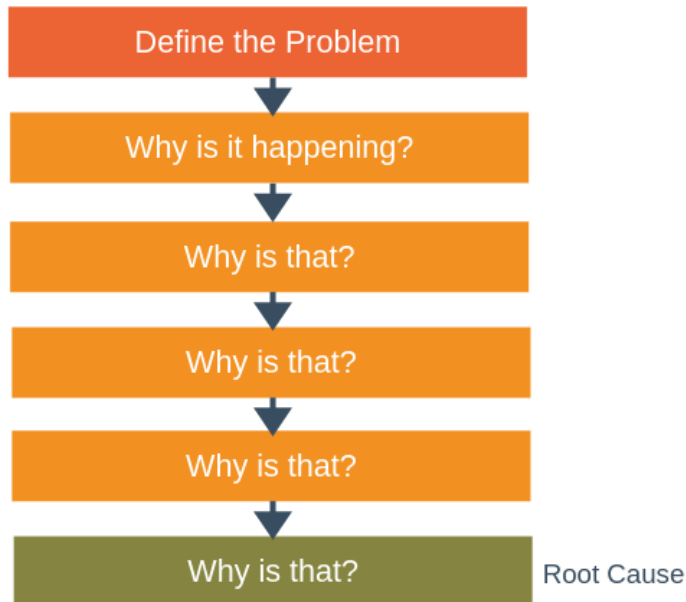
It starts with a Need

- Identify a need or gap
- OR **Understand the brief** you have been given
- Take time to really understand the need
- Do your research
- Look at the context and the system
- Talk to the relevant people
- Answer a series of ‘Whys?’
- Don’t end up with a fabulous solution.... to the wrong problem



Five Why's Technique

The 5 Whys



- Think about this problem:

'Rubbish bins on campus are too full and constantly overflowing.'

Ask yourself 5 Whys and see what you come up with.

- Now think the problem reframed in another way:

'We are generating too much non recyclable rubbish and the bins on campus are too full and constantly overflowing'

Solutions to these may include:

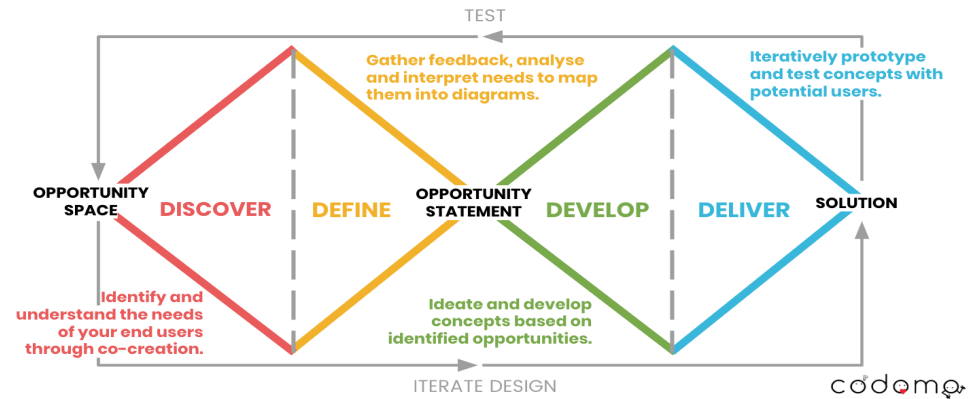
Empty the bins more often; create better signage to show what rubbish goes where; get more bins; crush the rubbish so that more can fit in; create a tech system which identified rubbish and sorts it into the right place...

Or they might include solutions like: stop selling food and drink in disposable containers; ask people to take rubbish home; train people to care more about recycling; charge people to use the bins; create a market for selling the rubbish

Ideation – Discovery of possible solutions

- Convergent thinking
- Ask the right questions
- Focus on your users, their need, and your insights about them
- Step beyond the obvious solutions – *think laterally*
- Bring together different perspectives
- Uncover unexpected areas of innovation
- Create volume and variety in your innovation options
- Get obvious solutions out of your heads
- ‘No idea’s a bad idea’
- Brainstorming
- Sketching
- Worst Possible Idea
- Challenge assumptions
- Ask stupid questions
- Check that your final solution aligns with your problem

Double Diamond Design Framework



Exercise in Creative/Convergent Thinking

How many uses can you think of for a brick?
(you have 10 minutes and think of at least 20 different
uses for a brick)

1. Build things
2. Paperweight
3. A step
4.

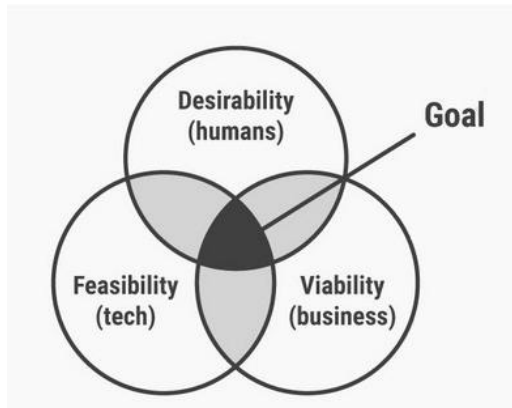


1. Build things
2. Paperweight
3. A step
4. Measuring implement
5. Shoes to walk over hot coals
6. Stepping stones
7. Crush up, re-sinter, and make something else
8. Crush up and make a small beach
9. Crush into pebbles & fill potholes
10. Weapon / missile
11. Break window
12. Tablet to write on
13. Nailfile
14. Knife sharpener
15. Storage heater (hot water bottle)
16. Container for keeping things in, like paperclips
17. Use as currency
18. Insulation from hot things

19. Insulator to touch electric current
20. Fire container (for campfire)
21. Standard for weight or volume
22. Games: juggling, throw/catch
23. Hide and seek
24. Dice
25. X marks the spot
26. Weight training
27. Deportment (carry on head)
28. Footrest
29. Play Jenga
30. Prop something up (e.g. car with no wheels, wonky table)
31. Hammer
32. Counterweight
33. Comedy aid
34. Pillow
35. Divider
36. Strength/hardness test
37. Shoe wiper
38. Bookends

Focus on Outcomes not Outputs

Even though this is early in the process, focusing on the end goals, measures of success, and the outcomes is crucial **right at the start**. Don't just consider the technical solution, but be inclusive of other issues too.



Inclusive Engineering Framework



Sustainable Development Goals

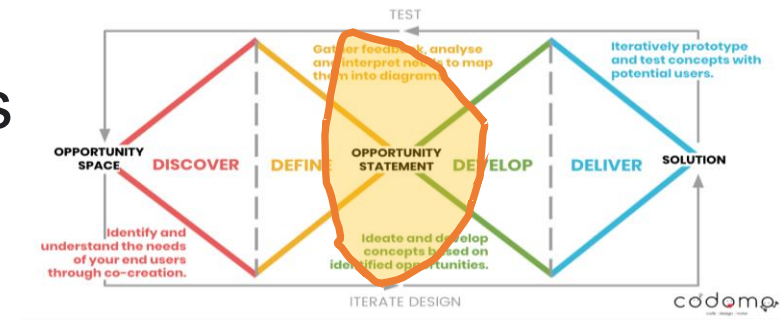


The SDGs represent a set of global **Values**

The Importance of Validation

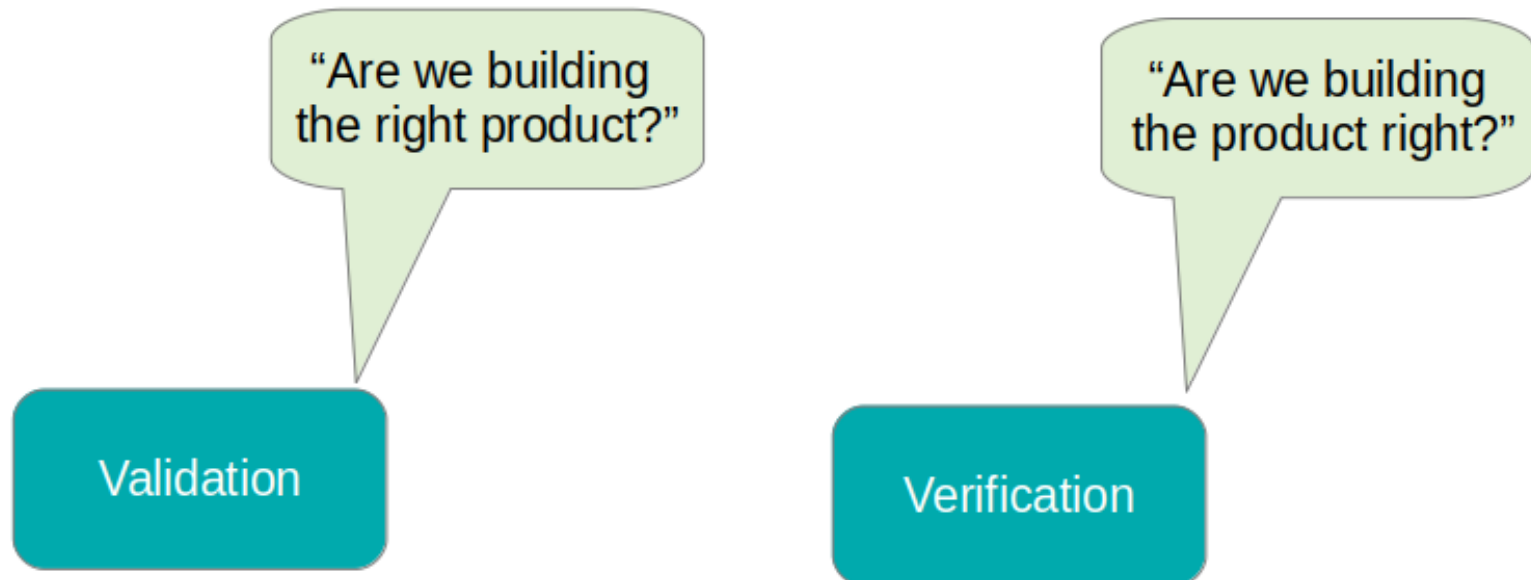
Validation will:

- Test the strength of the idea
- Identify key business questions
- Identifies the competition
- Identifies current patents
- Identify major flaws
- Help you avoid assumptions that you hadn't realised you were making
- Signposts you to other products in the market
- Throws up unanticipated opportunities
- Identifies where your knowledge gaps are
- Gives confidence
- Requires a feedback loop to ensure that changes can be implemented



Validation v Verification

- **Idea validation** is the process of confirming that your idea or proposed solution is what the customer/client actually wants i.e. making sure that your assumptions were correct
- Validation or "Building the right thing" refers back to the user's needs
- **Verification** asks "are we building it right" – it checks that the specifications are correctly implemented by the system
- In some contexts (ISO9000) it is required to have written requirements for both, as well as formal procedures or protocols for determining compliance



The Business Model Canvas

Designed for:

Designed by:

Date:

Version:

Key Partners 	Key Activities 	Value Propositions 	Customer Relationships 	Customer Segments 
	Key Resources 		Channels 	
Cost Structure 			Revenue Streams 	



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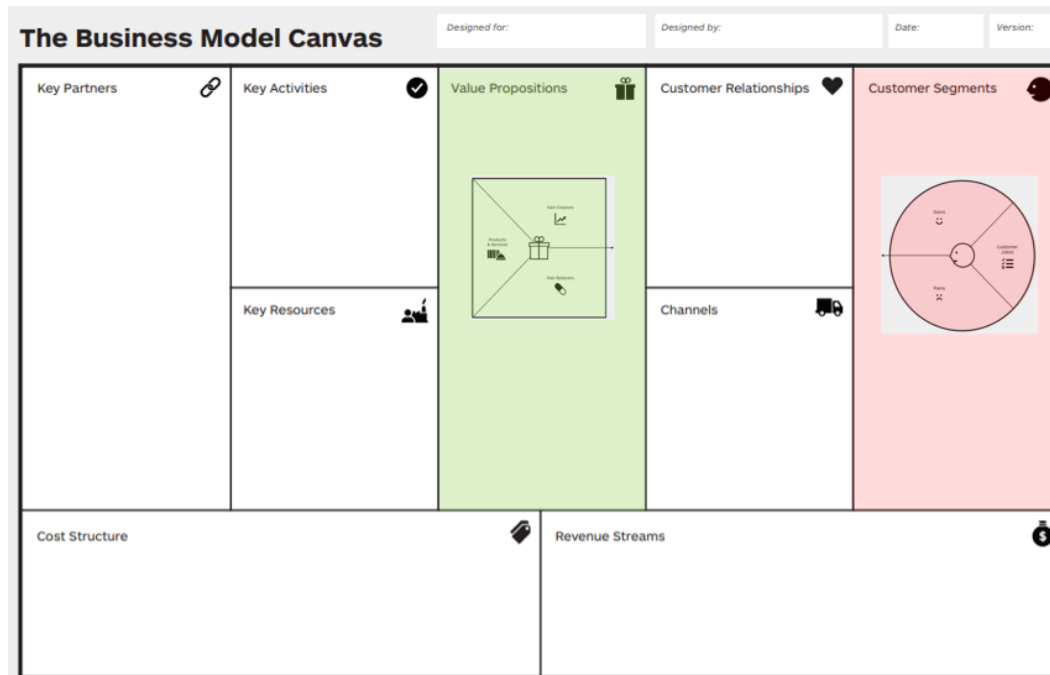
DESIGNED BY: Strategyzer AG
The makers of Business Model Generation and Strategyzer

 **Strategyzer**
strategyzer.com

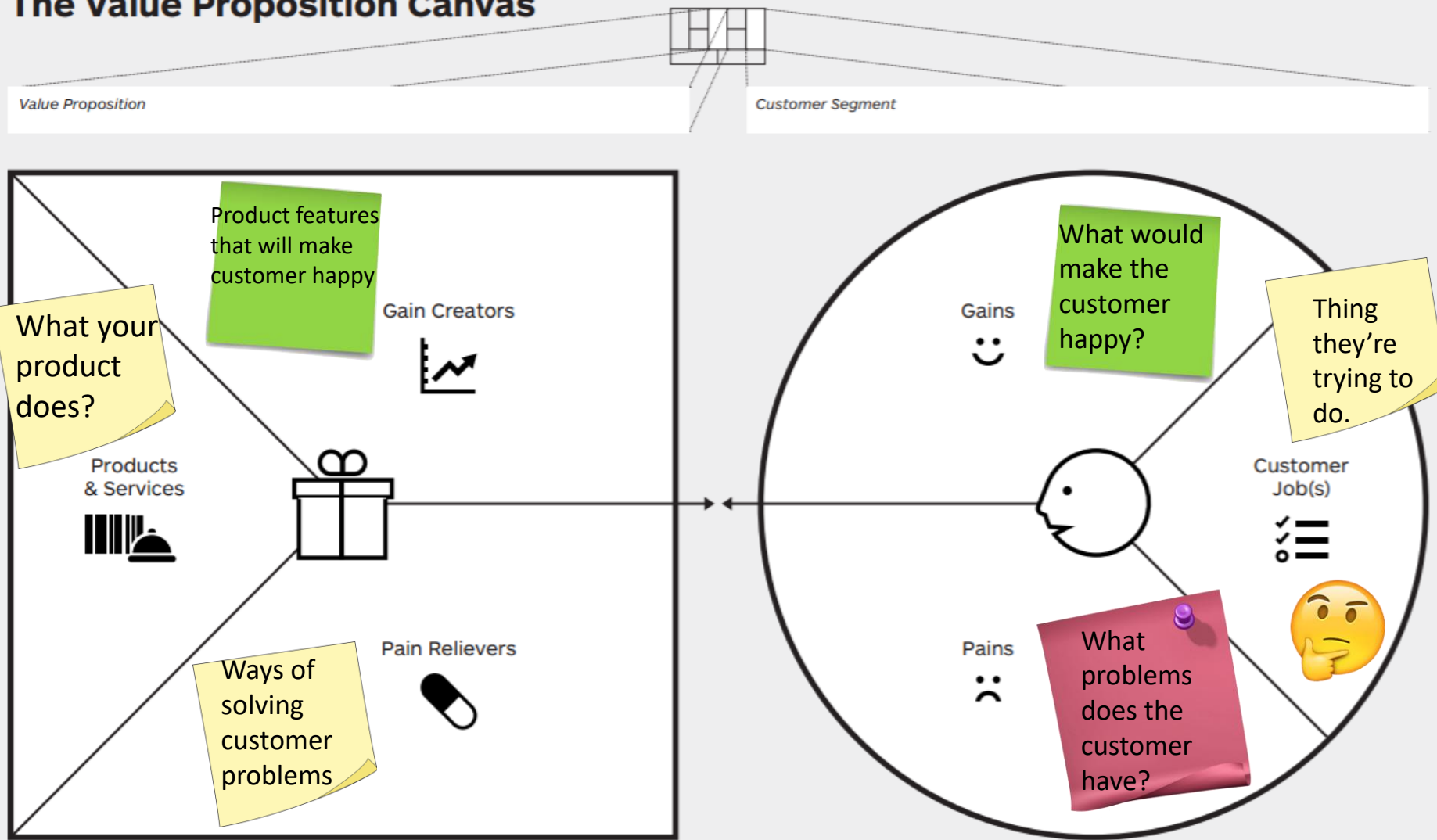
<https://www.strategyzer.com/canvas/business-model-canvas>

The Value Proposition Canvas

- A **value proposition** is a positioning statement that explains what benefit you provide for whom and how you do it uniquely well. It describes your target buyer, the pain point you solve, and why you're distinctly better than the alternatives.



The Value Proposition Canvas



Fit Analysis

The 'Fit' shows how well your product features match the needs of the customer.

Customer Problem – what is their need or what to they want to achieve	Product, service or feature (i.e. Gain Creators)	Linking word to show Fit	Customer Benefits (i.e. Gains)
		Enables....	
		So that.....	
		Which allows....	
		Allows...	



Fit Analysis – Uber Example

Customer Problem	Product features (the Gain Creator)	Linking word to show Fit	Customer Benefits (the Gain)
Get from A to B and they don't have any other method	Uber is a taxi service that allows people to get from one place to another	So that they...	Don't have to walk Don't have to take public transport Can live without their own car etc.
Get from A to B in a city in quickest way	Uber app with the ability to see how close the Uber driver is using real time data	Enables....	... customers to decide whether to use service or not based on real time data
Get from A to B in cheapest most convenient way	Sharing facility available	So that.....	...customers pay a reduced service price for minimal reduction in convenience
Don't have cash but want to pay in advance	Preloaded payment details linked to app	Which allows....	...customer to use service even if they have lost their wallet
Stay safe	Driver rating facility	Allows...	... customer to trust the driver and make a decision about whether to use them or not

Personas – define your customer

- **Personas** are fictional profiles that represent groups of similar people in a target audience. They can help you figure out how to reach people on a more personal level, while delivering the right messages, offers, and products at the right time.
- Used in marketing and also product development.
- Allow you to target your development more accurately to the customer need.

Gives insights into their:

- Values and Drivers
- ‘Customer’ journey
- Messaging
- How to reach them
- How to convince them
- What barriers to adoption would you need to get over?

Good to use in many situations as it forces you to think from the ‘customer’ viewpoint.

Market Segmentation



Geographics

Country
City
Density
Language
Climate
Area
Population



Demographics

Age
Gender
Income
Education
Social Status
Family
Life Stage
Occupation



Psychographics

Lifestyle
AIO: Activity,
Interest, Opinion
Concerns
Personality
Values
Attitudes

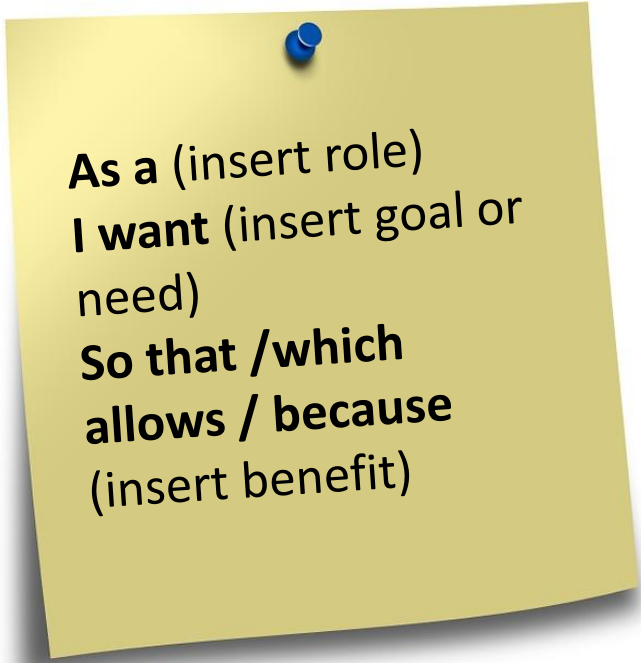


Behavioral

Benefits Sought
Purchase
Usage
Intent
Occasion
Buyer Stage
User Status
Life Cycle Stage
Engagement

Pizza Activity

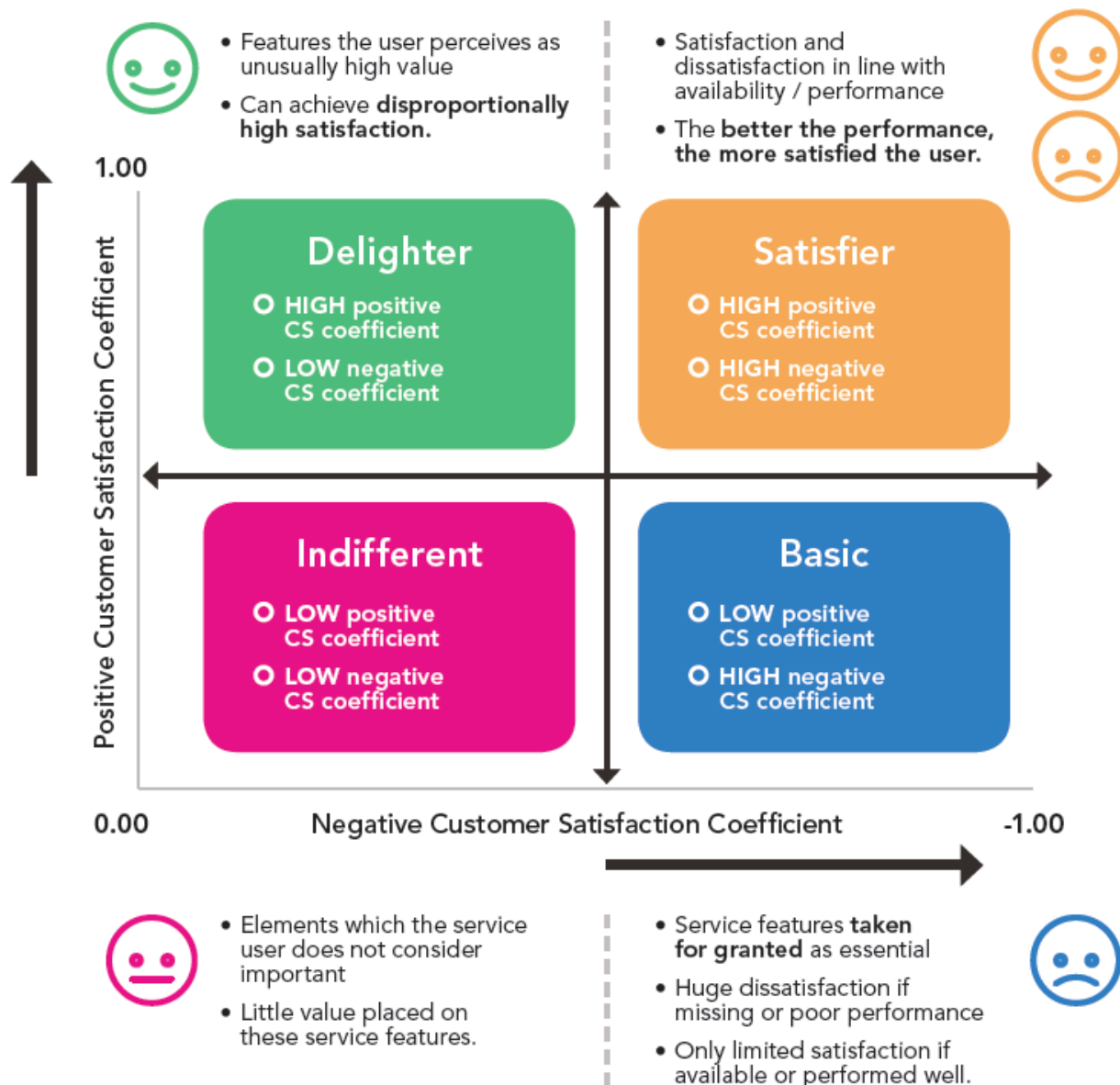
- You will develop a 'user story' and develop a pizza for that persona



As a (insert role)
I want (insert goal or
need)
So that /which
allows / because
(insert benefit)

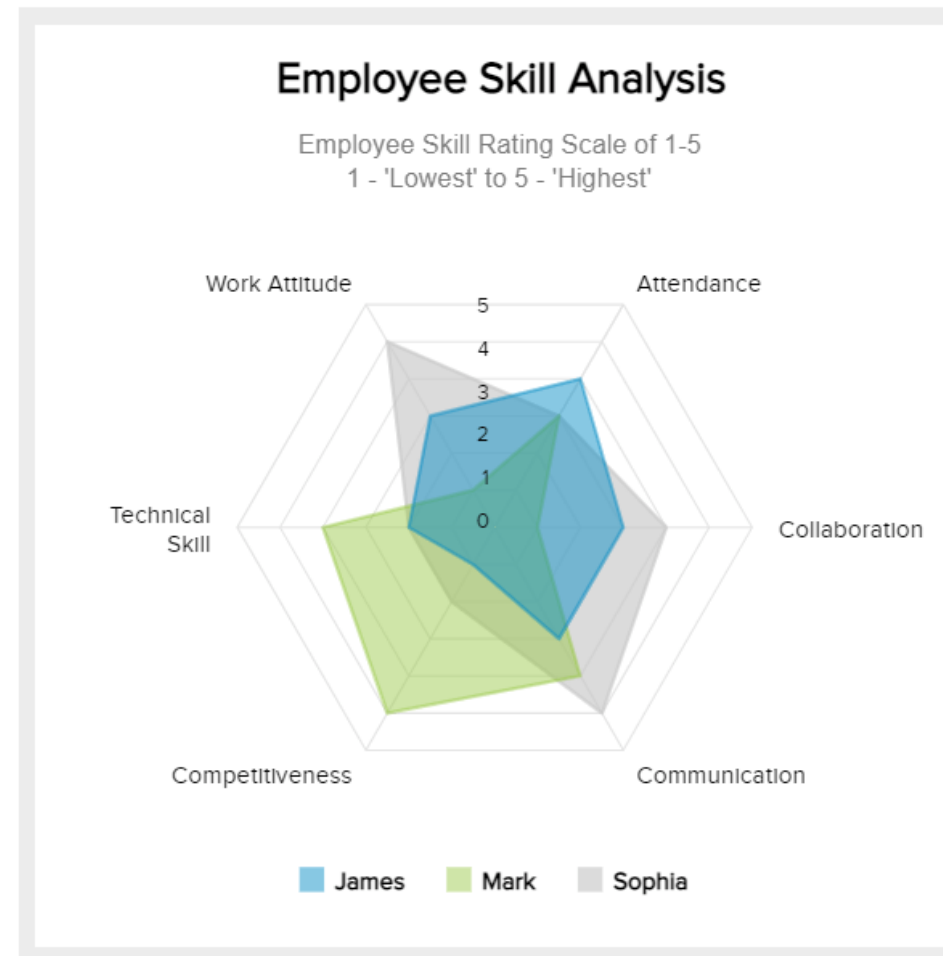
1. Get into groups of 5 and work out your user story
2. Consider what features will you include in your product to satisfy your customer
3. Create your user story and share with the wider group.

The KANO Model in Action



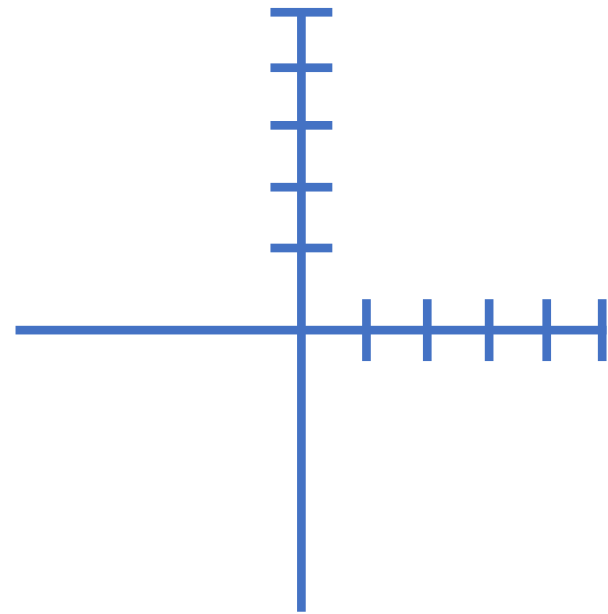
Radar Chart and Competitor Analysis

- Consider your competitors
- What features have they prioritised?
- List four or five of the features that come up most regularly as key priorities
- On the flip chart, create a radar chart like the one shown and complete it for your own pizza and each of the competitors with marks out of 5 (5 is best, most competitive mark)



Going back to your pizza design....

- Choose **4 features** to include in your pizza design
- **Create a radar chart** with at least four points and **compare your pizza with three of your competitors**, for example:
 - Pizza Express
 - Pizza Hut
 - Dominos
 - Bath Pizza Company
 - The Real Italian Pizza Company
 - The Oven Pizzeria
 - La Piazza



Market Segmentation Analysis – Uber example

Market Segment (Persona)	Behaviour Characteristic	Attractiveness of your product to this segment	Value of Segment Attractiveness	Competitive Advantage	Strength of Competitive Advantage
Identify the Market Segment in question	<i>What characteristics & behaviours define this group?</i>	<i>How attractive is your product to this market sector?</i>	0-1	<i>How do the features of your product fit the needs of this group?</i>	0-1
Carless people					
Party Divas (e.g. students and young people)					
High Flyers (e.g. Professionals)					

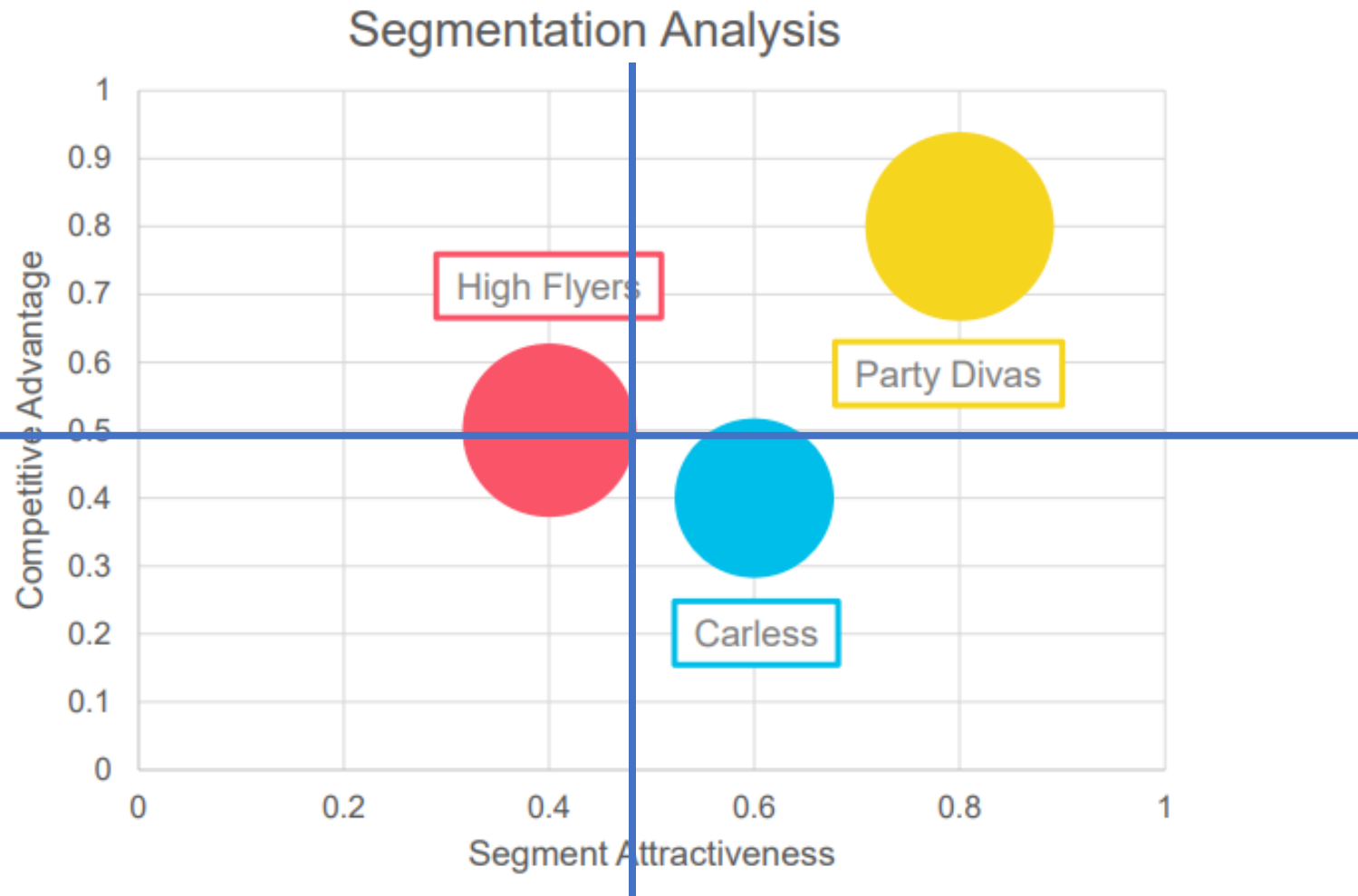
Market Segmentation Example from Uber

Market Segmentation

How do the features of your product fit the needs of this group over and above the competition?

Segment (Size)	Behavioural Characteristics		Segment Attractiveness		Competitive Advantage
Carless (32 million)	• Live in urban areas • Likely to be young • Generally low earners • Low monthly outgoings • Use public transport regularly	0.6	• Medium sales potential • High cross-selling potential • Low disposable income • Within geographical scope	0.4	• High availability
Party Divas (45 million)	• Aged 18 – 30 • Dynamic social life • Low monthly outgoings • Use taxis weekly/monthly	0.8	• High sales potential • High cross-selling potential • Medium disposable income • Within geographical scope	0.8	• Mobile App • Cashless payments • Driver ratings
High Flyers (38 million)	• Age 40 – 55 • Top 25% of earners • Use taxis infrequently	0.4	• Low sales potential • Medium upselling potential • High disposable income • Outside of geographical scope	0.5	• Save time

Market Segmentation Example from Uber



Size of circle represents size of market

c/o Jessica Leigh Jones, iungo solutions

Minimum Viable Product (MVP)

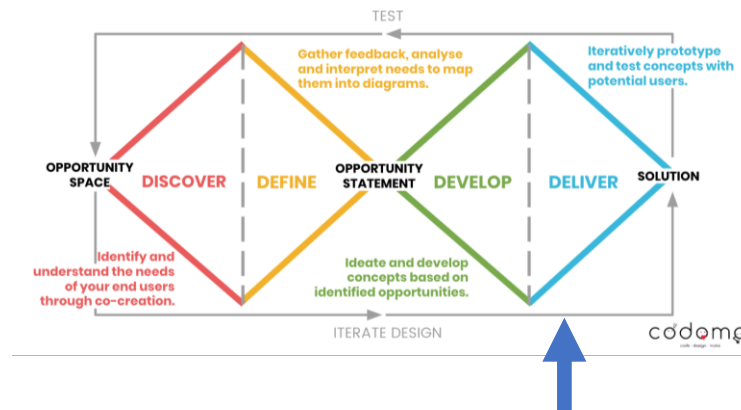
An MVP is an actual product, rather than just an idea.

Could be:

- **Physical** (e.g. made by hand, by rapid prototyping, or paper model)
- **Digital** (e.g. website mock up, wire frame, landing page, CAD drawing)
- **Experience** (e.g. customer survey, testing, limited service)
- **A bid** (for a customer)

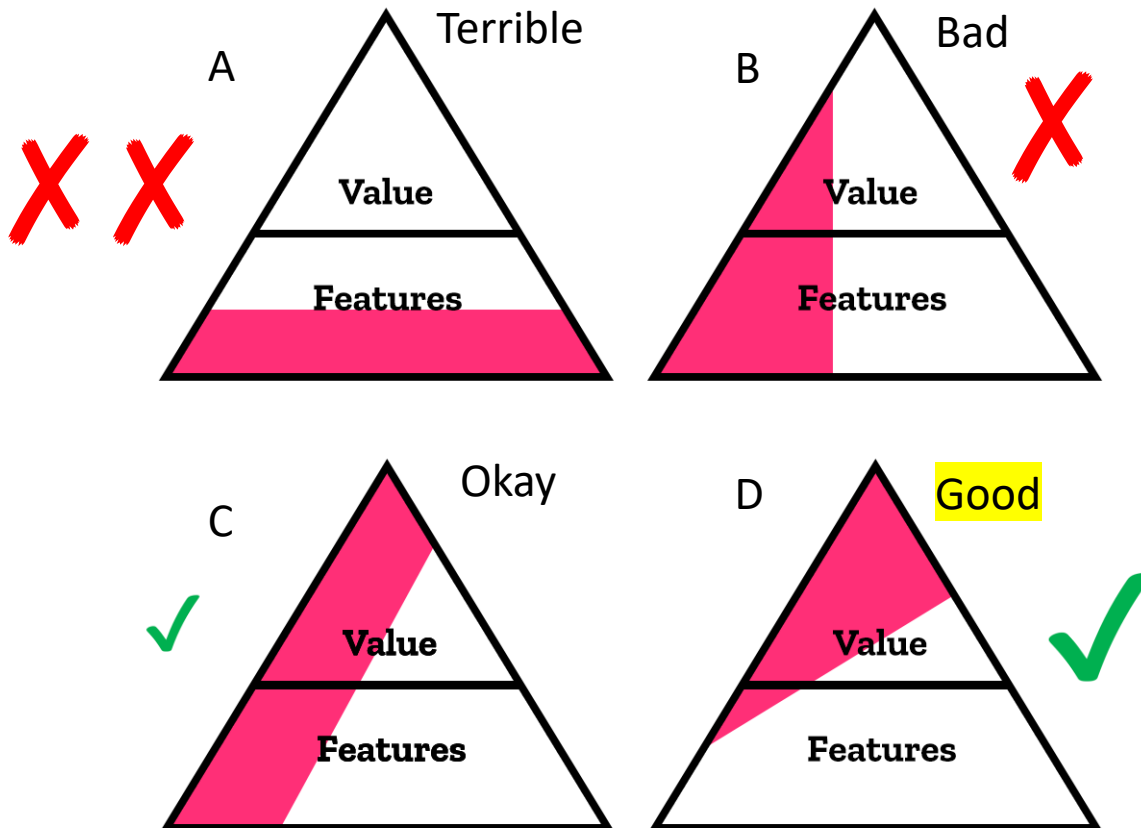
Allows you to test your hypothesis, and observe the customer journey – pains, gains and opportunities, and decide on features.

MVP has to be of sufficient quality to reliably assess value.



Minimum Viable Product

Which of these signifies a Minimum Viable Product? And Why?



An MVP assesses the value of the proposition to the customer, without the cost of adding additional features.

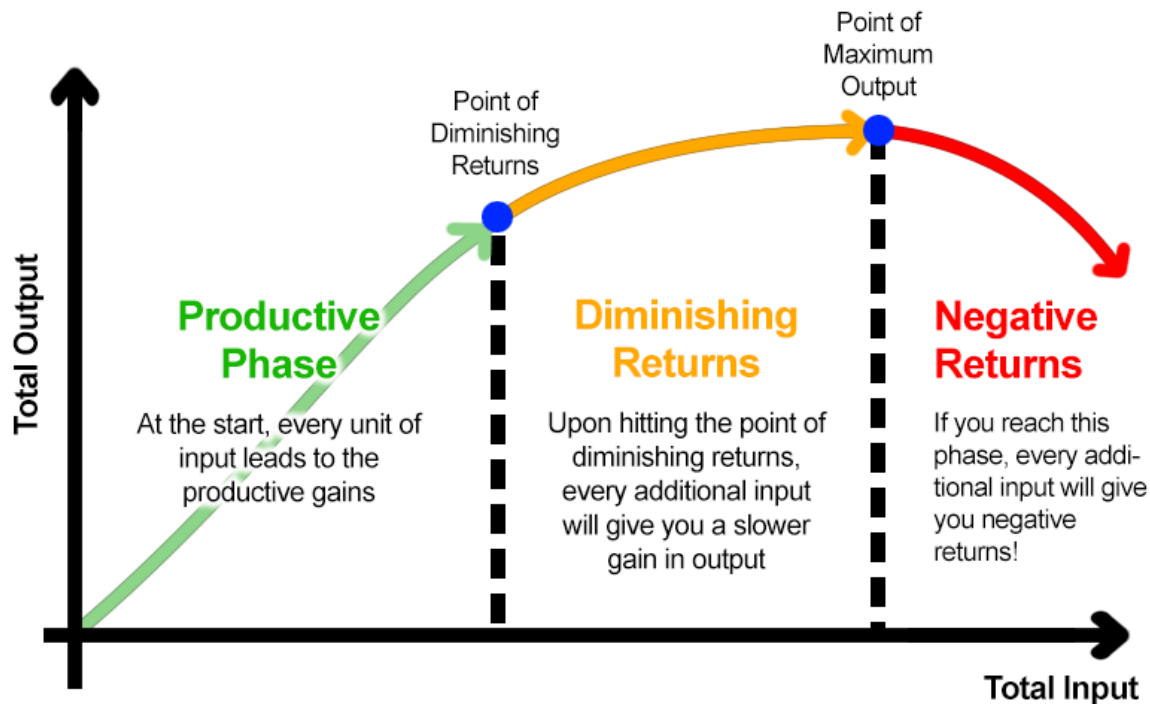
It gives maximum amount of learning with least amount of effort and cost.

Value here signifies the value of your product to the customer.

Minimum Viable Product

The concept of an MVP is transferrable to many things. It is useful in stopping you spending too long on a design solution, or a presentation, or an essay when the time is not well spent.

Being a perfectionist is sometimes necessary, but usually not, and the law of diminishing returns shows that an optimum point is reached.



Customer Journey Mapping

Once you have an MPV you can assess the customer's journey to:

- Identify the typical user (may be multiple types of user)
 - Identify the story ending (what they will achieve)
 - Identify the actions that the user takes to get there (or not)
 - What their emotions are on the journey
 - What are their uncertainties, or the issues preventing them moving to the next stage
 - Barriers – what stands in the way of them completing their journey?
 - What could go wrong?
 - How happy they are with the overall process, and how successful it was
-
- Customer story mapping will also give information on what is important to the customer, and what their priorities are (e.g. sustainability issues, cost, status)

CUSTOMER JOURNEY MAP

Example of an online grocery store

STAGE	AWARENESS	CONSIDERATION	DECISION	DELIVERY & USE	LOYALTY & ADVOCACY				
CUSTOMER ACTIVITIES	Hear from friends, see offline or online ad, read from newspapers	Compare & evaluate alternatives	Add groceries to shopping cart	Make an order	Receive or pick up on order	Contact customer service	Enjoy groceries	Order again and/or order more	Share experience
CUSTOMER GOALS	No goals at this point	Find the best solution to buy food	Find and select products easily, get inspired	Order effortlessly	Receive or pick up an order effortlessly and when needed	Get help if problems appear, request for refund	Have the right and good quality ingredients	Repeat good customer experience	Share feelings, give feedback
TOUCHPOINTS	Word of mouth, traditional media, social media	Word of mouth, website, brick & mortar store, social media		Website, app, order confirmation email	Delivery service, packing, messages (email, SMS, phone call)	Phone, email, chat	Food products, packages, other materials		Word of mouth, social media
EXPERIENCE	 Interested, curious	 Requires effort but excited	 Excited	 "Payment is painful"	 Requires effort, happy when received	 Frustrated	 Satisfied	 "This is easy"	 "I have to share this"
BUSINESS GOAL	Increase awareness and interest	Increase number of website visitors	Increase shopping cart value & conversion rate	Increase online sales and conversion rate	Deliver on time and minimise the delivery window	Increase customer service satisfaction, minimise waiting time	Make products to match expectations	Increase retention rate and order value and/or frequency	Turn customers into advocates, turn negative experiences into positive
KPIs	Number of people reached	New website visitors	Shopping cart value, conversion rate	Online sales, conversion rate	On time delivery rate, average delivery window	Customer service success rate, waiting time	Product reviews	Retention rate, order value and frequency	Customer satisfaction
ORGANISATIONAL ACTIVITIES	Create marketing campaigns and content both offline and online, PR	Create marketing campaigns and content both offline and online	Optimise grocery shopping experience	Optimise online purchase funnel, order handling	Picking & delivery	Organise customer service	Develop products & product range	Target marketing, make re-ordering easy, upselling and/or cross-selling	Manage feedback and social media, develop sharing / inviting possibilities
RESPONSIBLE	Marketing & Communications	Marketing & Communications	Online development, Customer service	Online development, warehouse, logistics	Warehouse, logistics	Customer service	Product development, purchasing	Marketing, online development	Customer service, online development
TECHNOLOGY SYSTEMS	CRM, analytics, programmatic buying platform, social media	CRM, analytics, CMS, marketing automation	CRM, analytics, CMS, ecommerce platform, PIM	CRM, analytics, CMS, ecommerce platform, PIM, inventory system, marketing automation	CRM, analytics, order & delivery system, marketing automation	CRM, analytics, help desk, ticketing system, chat	CRM, analytics, vendor management system, PIM	CRM, analytics, marketing automation, ecommerce platform	CRM, analytics, marketing automation, ecommerce platform, social media analytics

The Journey and the 'Tools'



Ideation and Validation*
Business Model Canvas
Value Map
Customer Profile
Value Proposition*
Market Segmentation*
Prioritisation
Minimum Viable Product
Validation
Customer Journey*
Pitching*
Fundraising
Risk Management*

Tools to help with the journey →

Thank you !

That's it for today

