

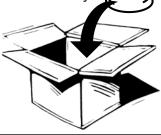




Putting himself in the situation of the end-user

Observed user behavior

Framed the problem in a different way



We have codified this way of thinking and we are going to share it with you today.

It is called Design Thinking

#### Day 1

Introductions
What is Design Design thinking?
Identifying a stakeholder and challenge to focus on
User research
Problem definition
Brainstorming
Idea Proposal

#### Day 2

Wrapping idea in a business model Expanding the innovation opportunity Identifying the assumptions Validating through experiments



**Trevor Vaugh**Faculty Maynooth University / Strategic designer











Programme Director MSc Design Innovation

12 years medical device innovation 50 granted and pending patents 4 radical, 2 disruptive products on the market Cleveland clinic's top 10 innovations 2009 Partner at Actionable Innovation

Clients: Vhi, Musgraves, IDA, Openet,
Ovacare, Irish Times, AIB

### **World-first surgical devices**



LESS SURGERY- Top 10 innovations 2009

FDA lifted ban on procedure
Procedure Cost savings of approx \$10k Fewer
perioperative complications



Martin Ryan
Faculty Maynooth University / Design Entrepreneur







Programme director BSc Product design at Maynooth University

Inventor and director of BUA Saddles

Multi-Award winner: Dyson design award, ISPO sports design award, IDI, JEC composites award, Dupont 40/40

Partner at Actionable Innovation

Clients: Vhi, Musgraves, IDA, Openet,
Ovacare, Irish Times, AIB

### The biggest advance in saddles since...saddles





# Research to Action ()



London, 2–4 September 2014 An Investigation into Design Thinking

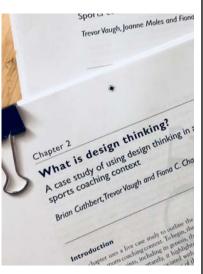
#### Behaviours in Early Stage Radical Innovation Martin P. RYAN\*a and Frank DEVITTb

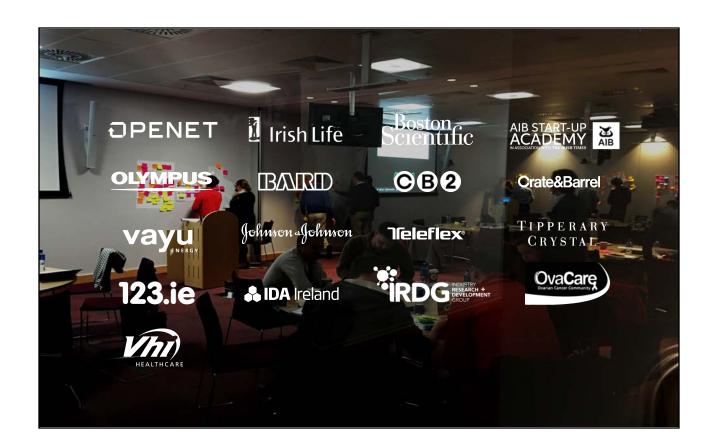
19th DMI: Academic Design Management Conference

Design Management in an Era of Disruption

<sup>a</sup> National University of Ireland, Maynooth 'a'; <sup>b</sup> National University of Ireland,

The early stage of radical innovation is characterised by uncertainty, data overload and often high rates of change. Schumpeter's 'creative destruction's view of innovation is now exacerbated by 'hypercompetition' (D'Aveni, 19: a theory that describers the increasing rate and intensity of change in mod markets. In the design and strategy literature, design thinking is often positioned as an appropriate mediator of radical innovation in these positioned as an appropriate mediator of radical innovation in these circumstances, by facilitating interpretation of market uncertainties and moderating organisational behaviours. At its inception radical innovation is determined largely by the cognitive behaviour of the actors involved, often semi-consciously. In this study we set out to distinguish design thinking from analytical thinking and investigate the suitability of both for the effective early stage formation of radical innovation concepts. Additionally, whereas





Over the next 1.5 days we are going to challenge you to re-imagine and improve A service, product or process important to your organisation

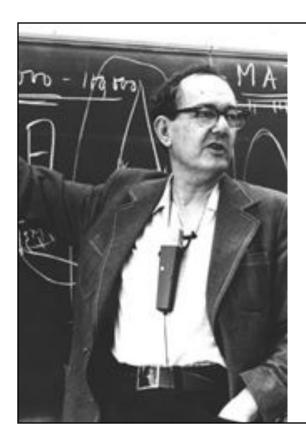
You will use an approach called **Design Thinking** 





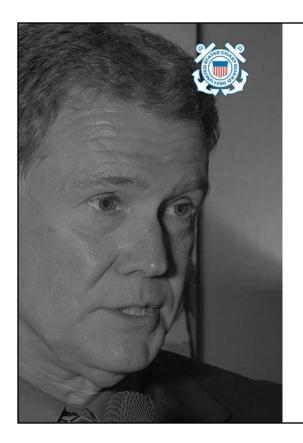
For the maritime industry, the next generation of naval architects and marine systems engineers must be like the next generation of aerospace or automotive innovators: capable of engineering, design thinking and, most importantly, they must have a convergent mindset.

> Christopher J. Wiernicki Chairman, President, and CEO of American Bureau of Shipping,



"To design is to devise courses of action aimed at changing existing situations into preferred ones"

Herbert Simon
Two times Nobel laureate

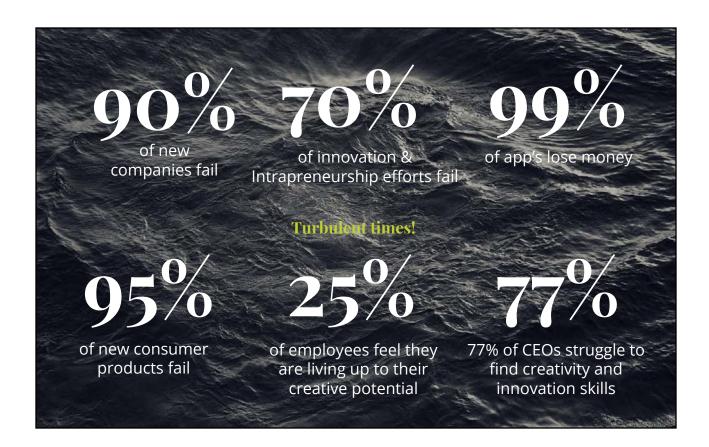


"design thinking" and "human-centered design" methodologies are driving how the Coast Guard leads innovation.

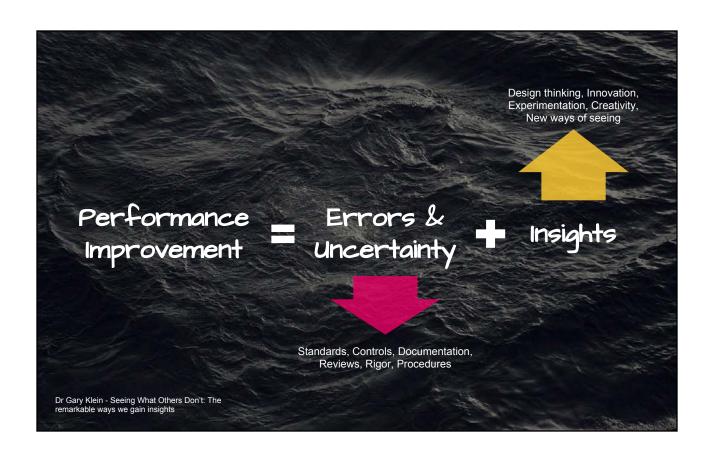
They play a critical role in designing challenges and prototyping potential solutions generated by the workforce.

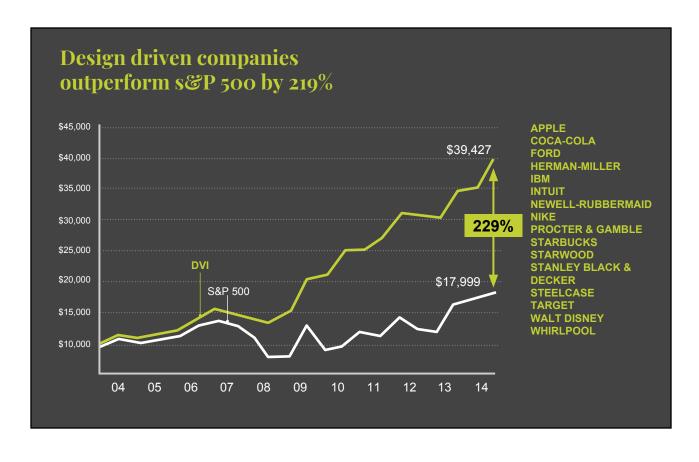
It's about supporting the Coastie with the idea, and how we couple our strategic needs with the Coast Guard men and women that have the talent and knowledge to help us design solutions that get us from our current state to our desired state."

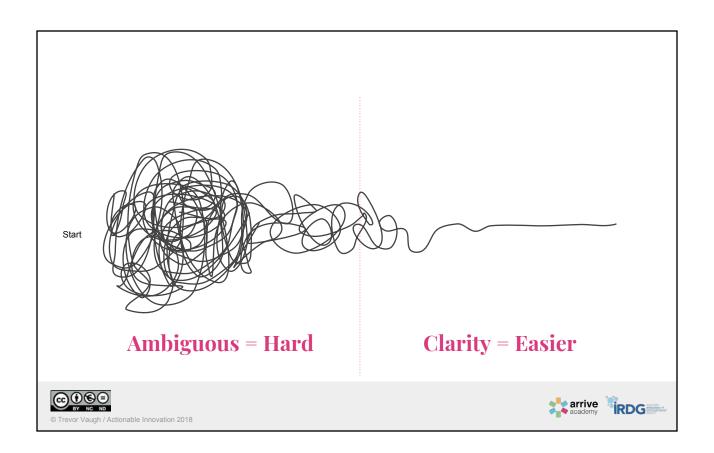
Bert Macesker
Executive Director
US Coast Guard Research & Development Center

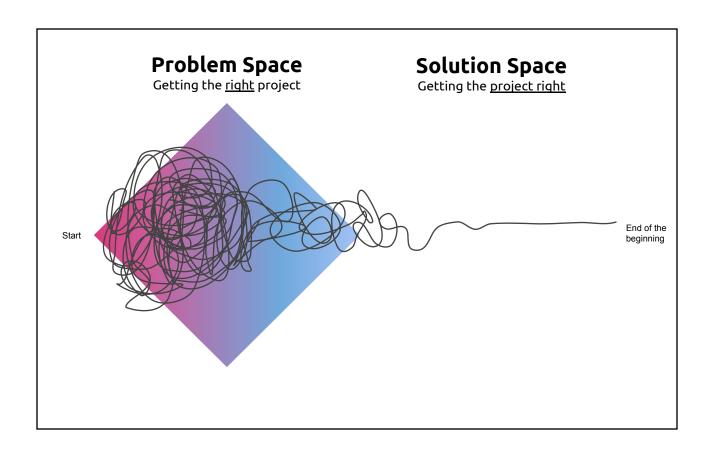












Scenario

# A design challenge

Each year, more than 1 million babies die on the day they are born. 98% of these deaths occur in the developing world



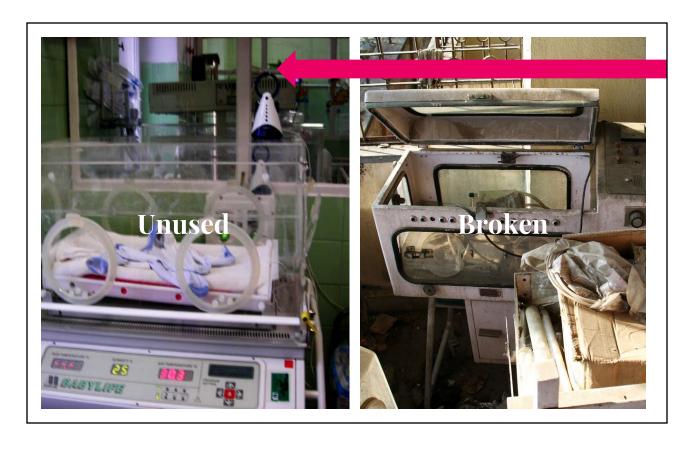
Your challenge - design a low cost incubator. 1% of standard cost for use in countries such as Nepal. **Under €250** 

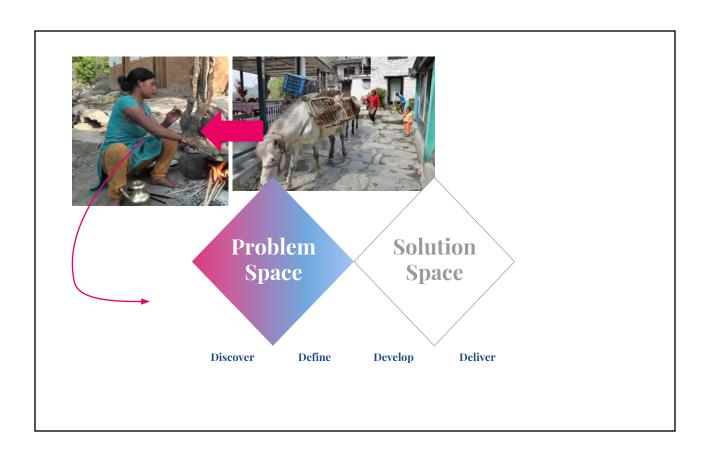


Value engineering? Cheaper components? Better process Cost cutting? Funding? Sponsorship?











ig 132: Prototype of a hand held whoopie/ hot water bottle



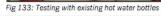




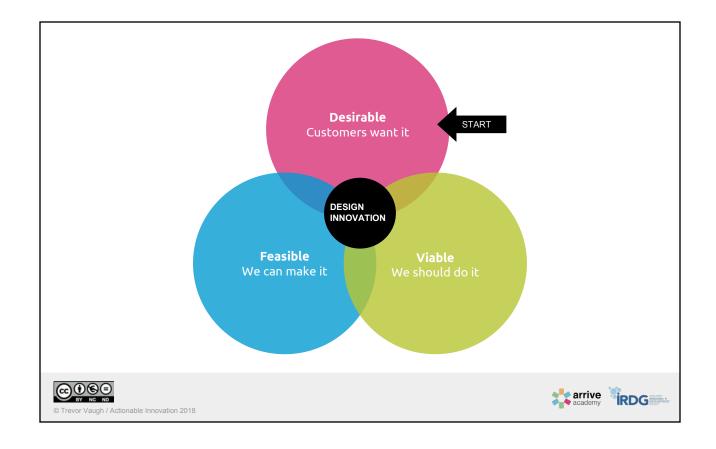
Fig 134: Checking pcm temperature

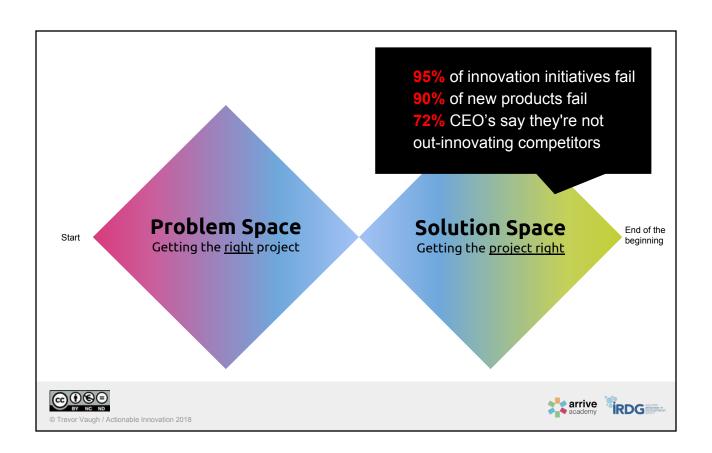


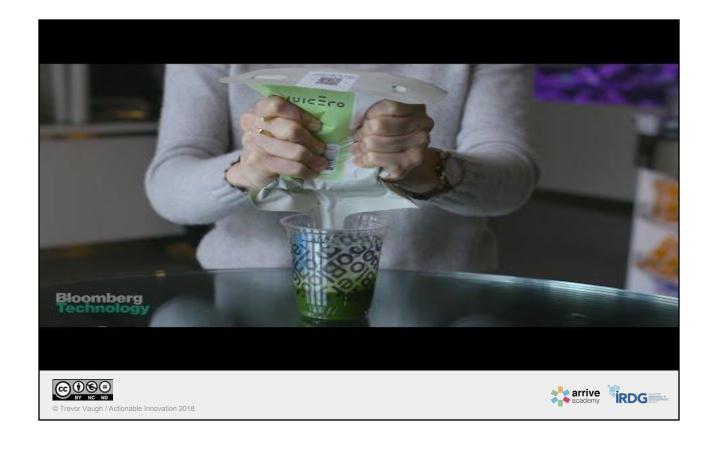


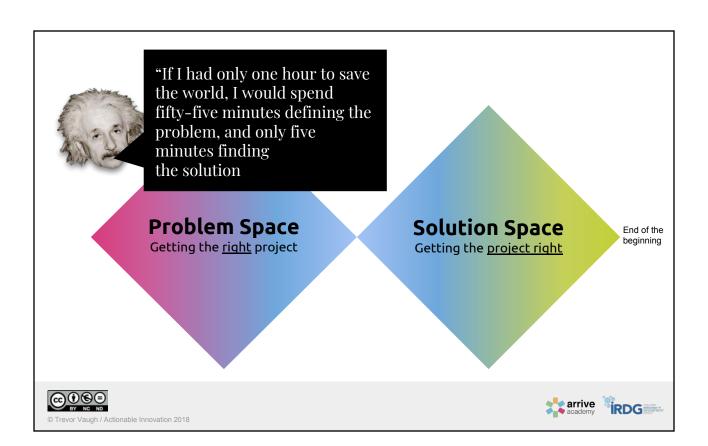


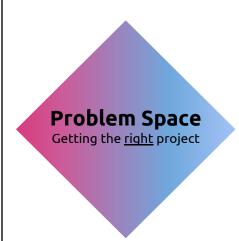












# Think about your organisation.....

Do you really understand the problem or are you making big assumptions?

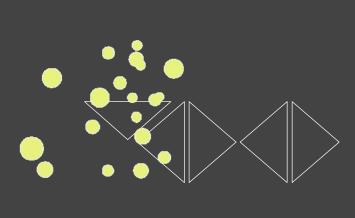
Who do you need to better understand to get to the root cause?

What is the origin of this problem?



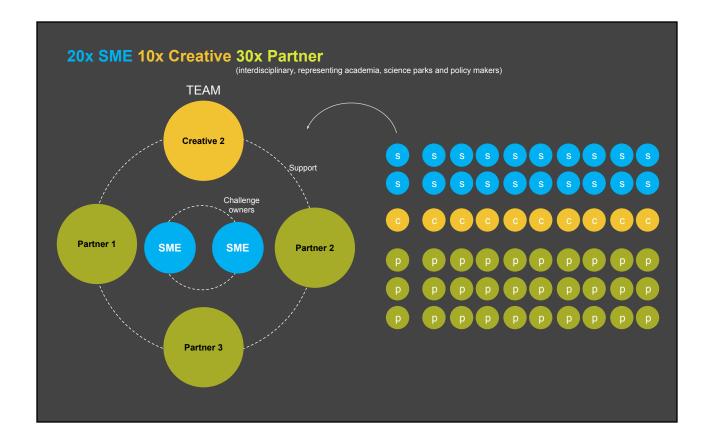


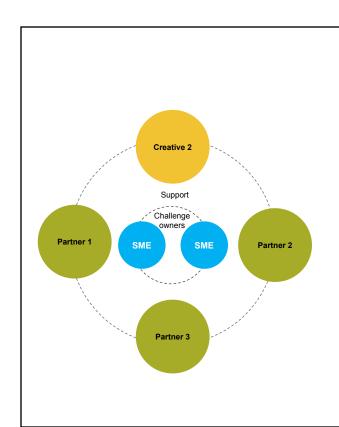




## Project team



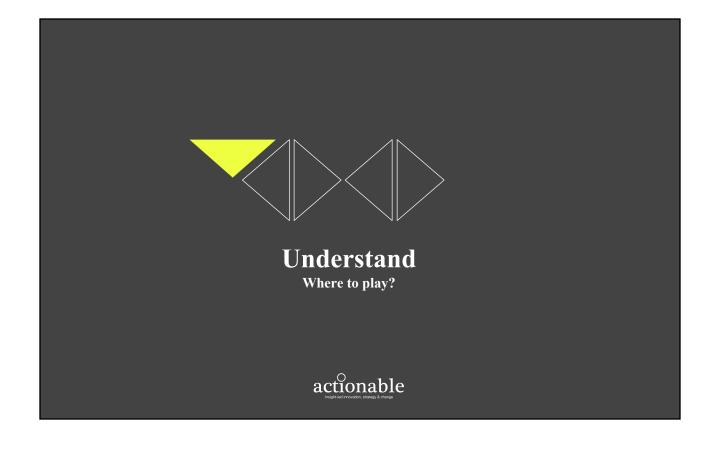




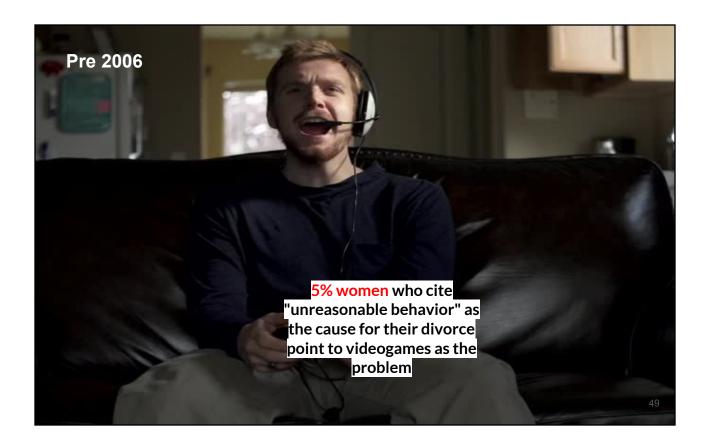
## 10 groups of 6

2 x SME 1 x Creative 3 x Partner

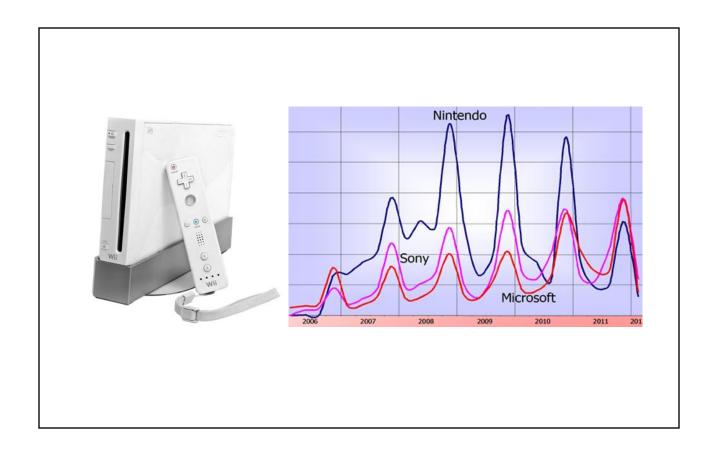
5:00<sub>stop</sub>



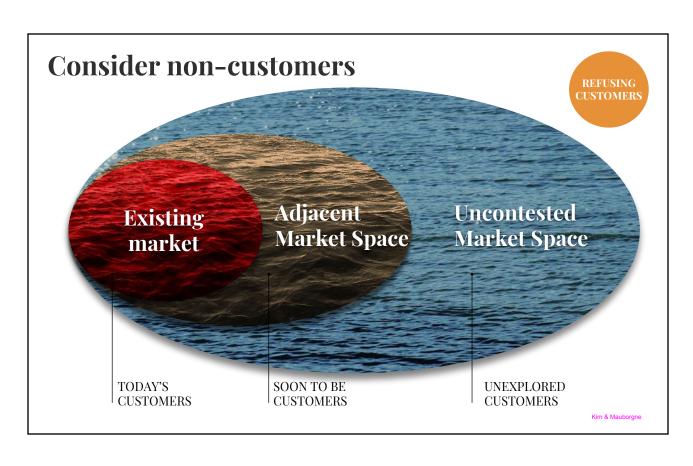














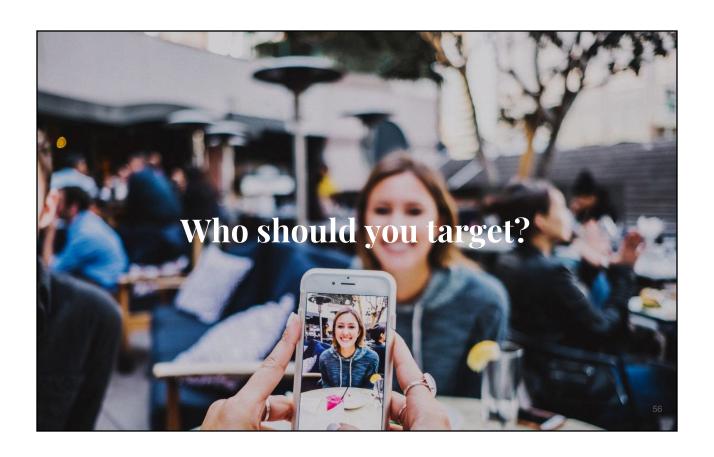
## **Impact**

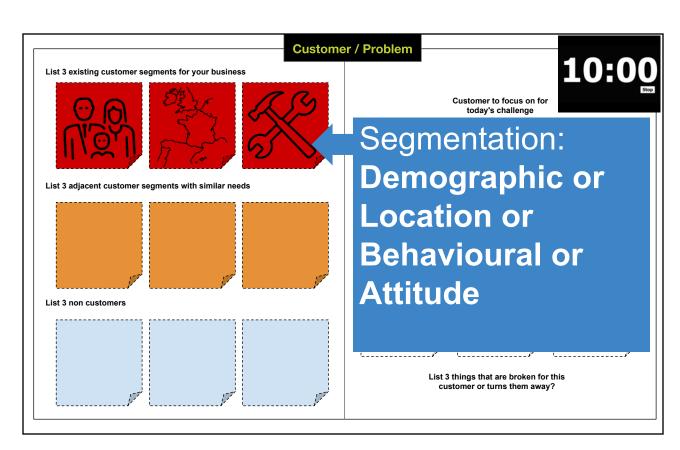
**Top exported Australian wine** 

No1. US Imported wine brand



 $3\% \rightarrow 20\%$  Australian share of US market





## Pick a segment with potential

What is the value of the segment?

How does it fit with your organisation?

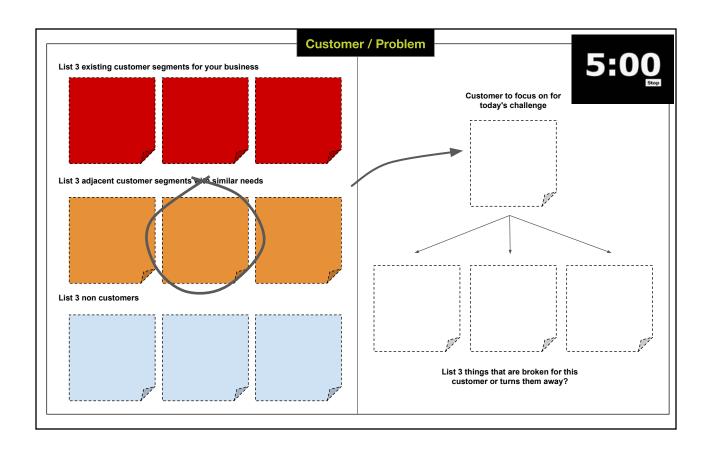
What is the strength of competitor offerings?

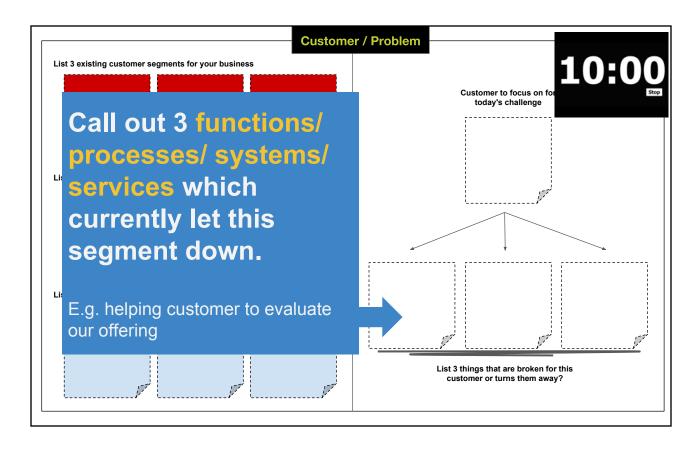


### A quick calculation....

Size of the prize
Putting a value on customers

Customer segments?	Total segment population	Percentage motivated to buy?	Relevant population?	Avg spend	Value
WINE	240m No. of adults	 <b>(</b> 95% = 	228m	X \$135 \$10 x 13 bottles	= \$31b
BEER	240m	 <b>(</b> 96% = 	230m	<b>\$456</b> \$5 x 91 bottles	= \$ <u>105b</u>
SPIRITS	240m )	90% =	216m	<b>\$361</b> \$9 x 40 bottles	= \$78b





The Challenge

# We need to better serve

this customer starting with

this process









1/ Ethnography / Observation



2/Experience mapping



3/ Empathy mapping



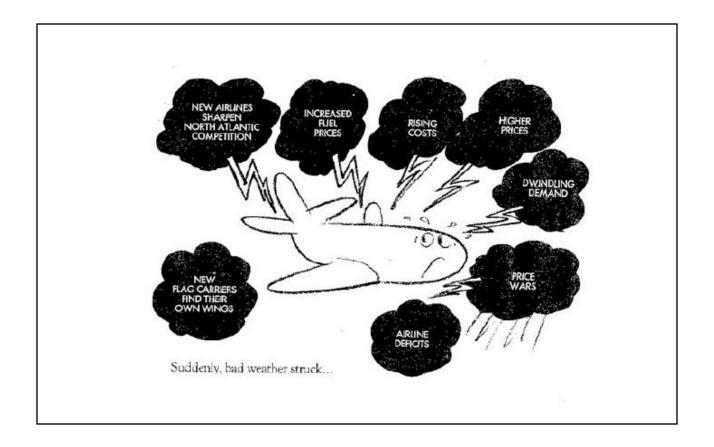
Organisation

#### Stakeholder



Service, process, product etc.

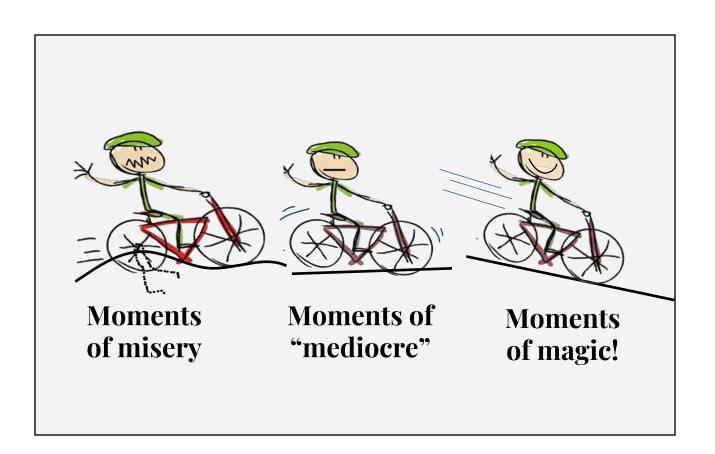


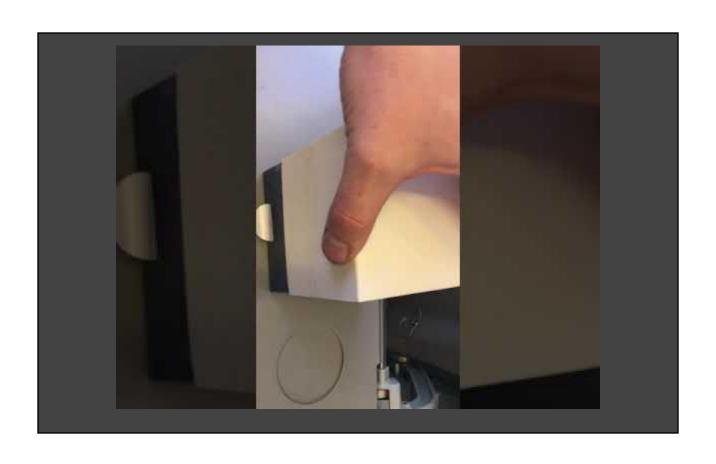




SAS is 'created' 50 million times a year, 15 seconds at a time. These 50 million 'moments of truth' are the moments that ultimately determine whether SAS will succeed or fail as a company. They are the moments when we must prove to our customers that SAS is their best alternative.

Jan Carlzon

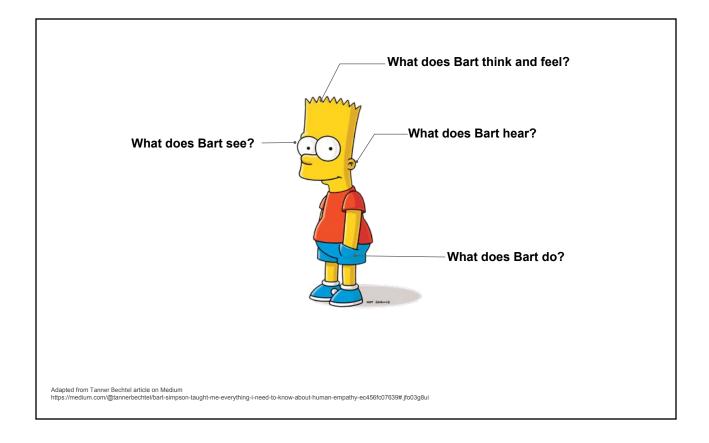




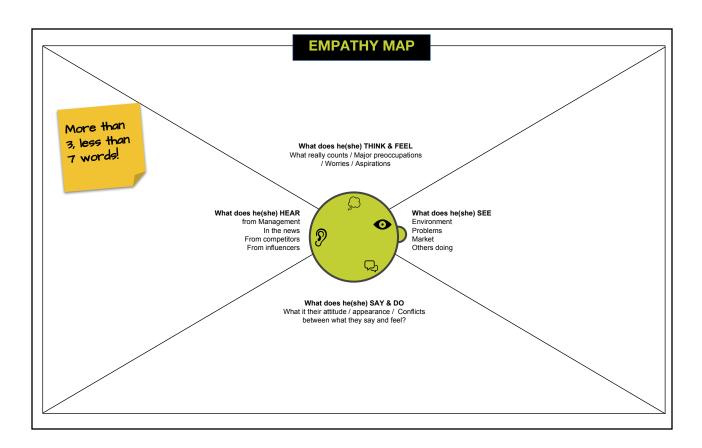


Adapted from Tanner Bechtel article on Medium https://medium.com/@tannerbechtel/bart-simpson-taught-me-everything-i-need-to-know-about-human-empathy-ec456fc07639#.jfo03g8ui

72

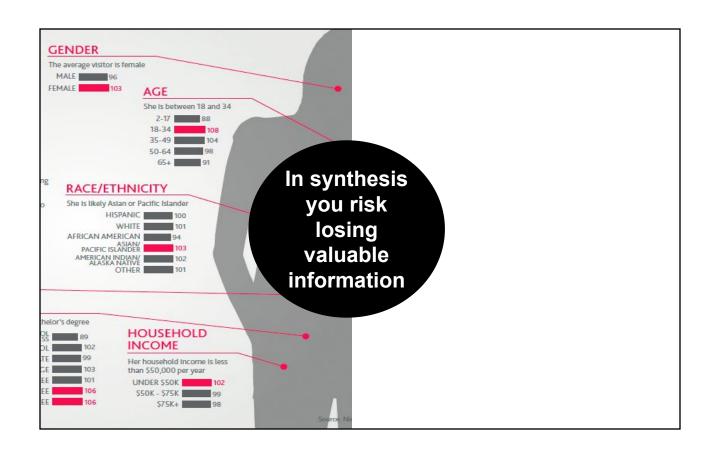




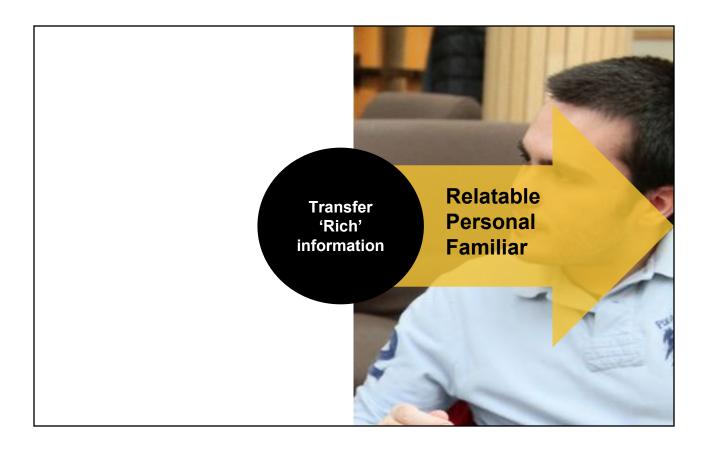












#### Potential customer - Irish supermarket chain





#### **Basic Facts**

- · Age 29
- · 3 children, 1 toddler, baby twins
- · profession: home maker, (ex- event organiser)
- · single income
- · small terraced house
- · main shop: Lidl



Doesn't buy at SV now but could be tempted

#### Behaviour & life situation

Lyndsey lives with her teacher husband in the northern suburbs of Dublin. They have a 3 year old daughter and 2 month old twins. She is very health conscious, listening to nutrition pod casts while shopping and blending freshly cooked food in her NutriBullet.

She is a Lidl fan because it enables her to buy fresh food and still keep enough money for some quality things in life, like a holiday to Perpignan, France. She writes weekly meal plans and detailed shopping lists. Offers on the leaflets coming through the door are circled during the week (emails and texts risk getting lost).

Branded: "I used Pampers and Waterwipes in the beginning, but now own brand is fine" Online takes too much quality time away. "I tried online (bad experience, Tesco, 2010) - too long and complicated - never again".

"If we do a big shop in Tesco it can get really expensive". "A basket that costs €30 in Lidl might cost €50 in Dunnes'

"I hate the Tesco look & colours" (Tesco falls between the 2, not cheap not nice either).

"Lidl feels more boutique, fresh foods stacked up like whole foods". "Lidl has great patês, cheese and pesto"

"SuperValu is a bit out of my price bracket but they do have lovely stuff"

"SuperValu is lovely, the bakery is nice but expensive. Their sausages are legendary"

"I buy fresh vegetables, never jars"."I have always cooked for Anna"

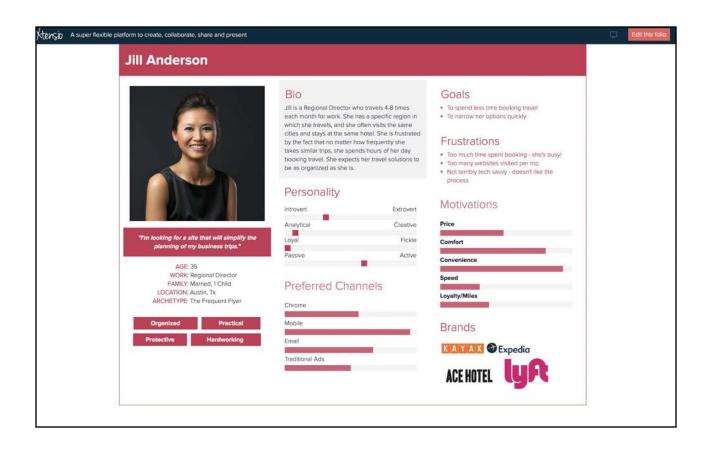
"I buy something on offer if I see it, like in the centre aisle at Lid!"

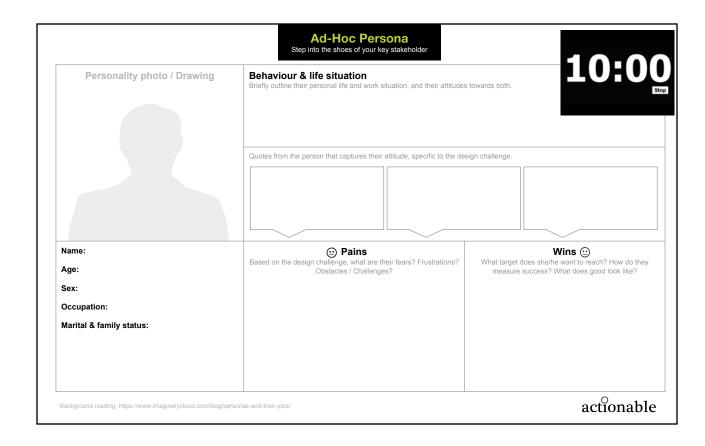
#### My needs and motivation

- Bringing quality to everything I do, if
- Treat me like an intelligent human being (nice environment, friendly staff)

#### What puts me off:

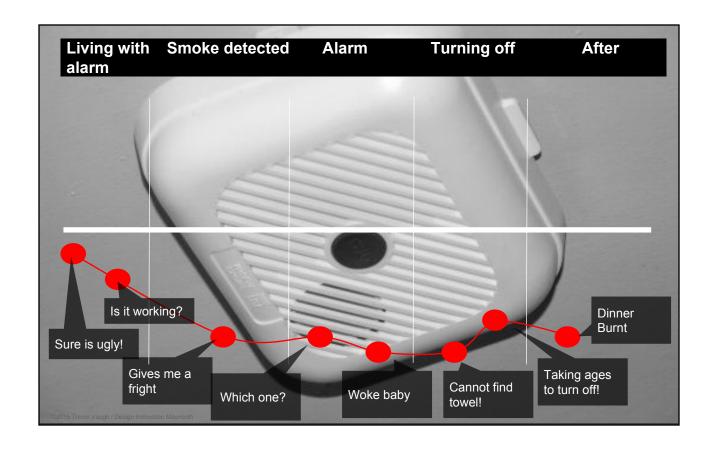
- "feeling like a walking wallet" impersonal treatment, offers poor quality
- - poor value for money

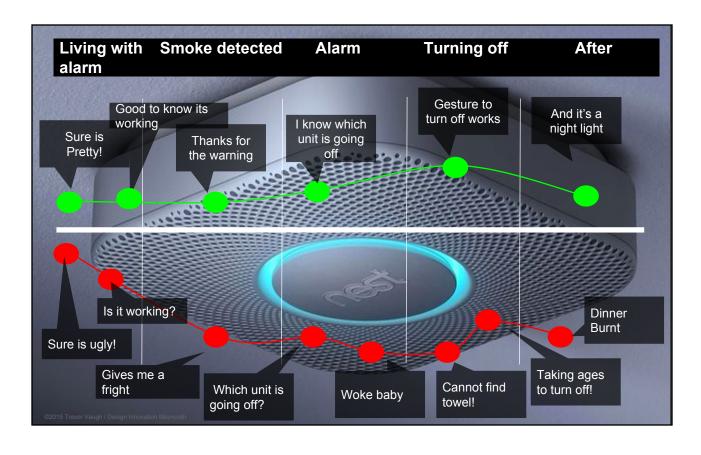




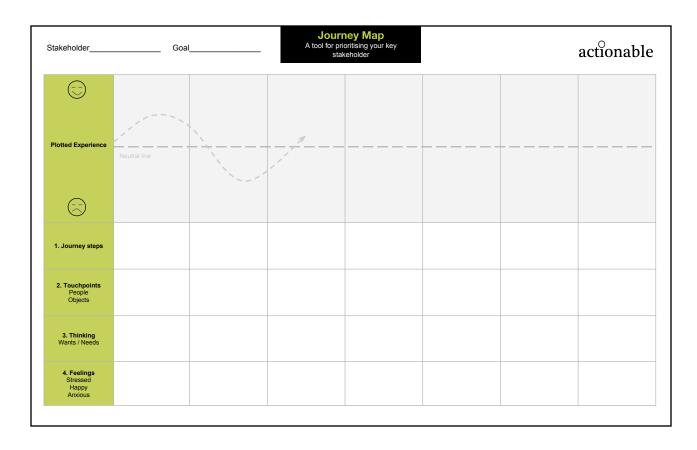








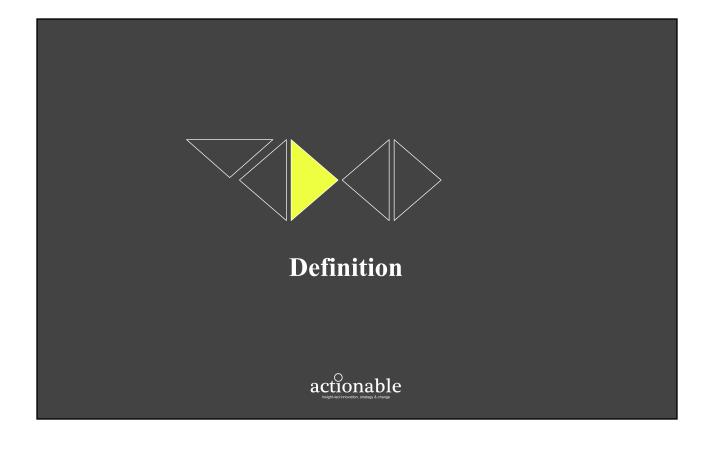


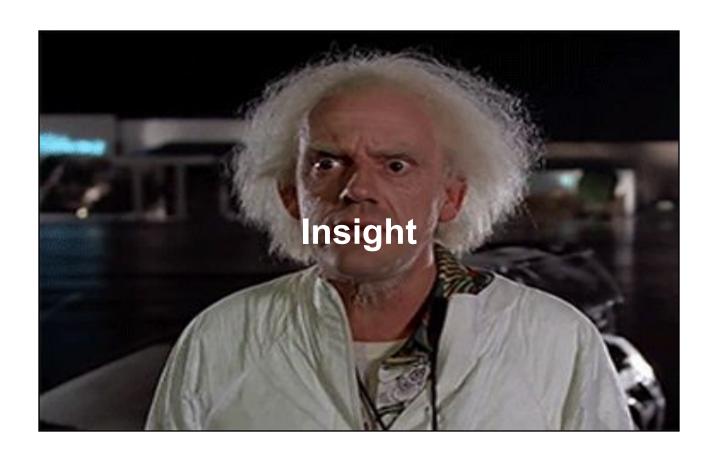


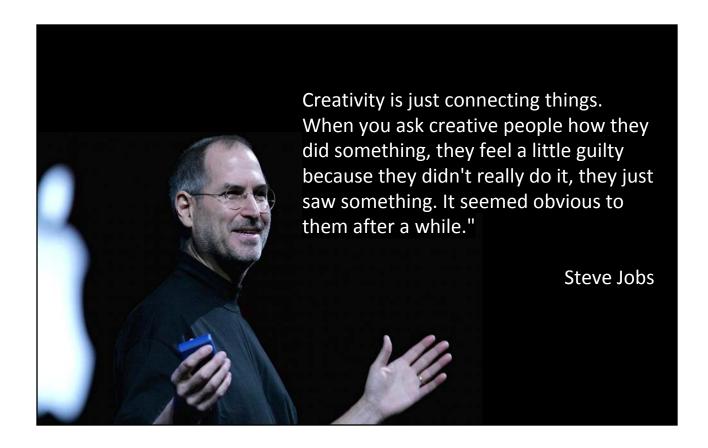
# SMEs - complete an experience map for the chosen stakeholder problem

E.g. Sourcing product, making a purchasing decision, Selecting partner company.

<u> 45:00</u>







Insights shift us toward a new story, a new set of beliefs about a human behaviour that is more accurate, more comprehensive, and more useful. A better story

## I saw this + I know this = Insight

Analyse your field notes and document interesting observations, anomalies, or things you found particularly unique. Start to answer the "why" based on your own personal experiences and what you know about the situation

Draw insights from the key observations in each group.

Informed intuition

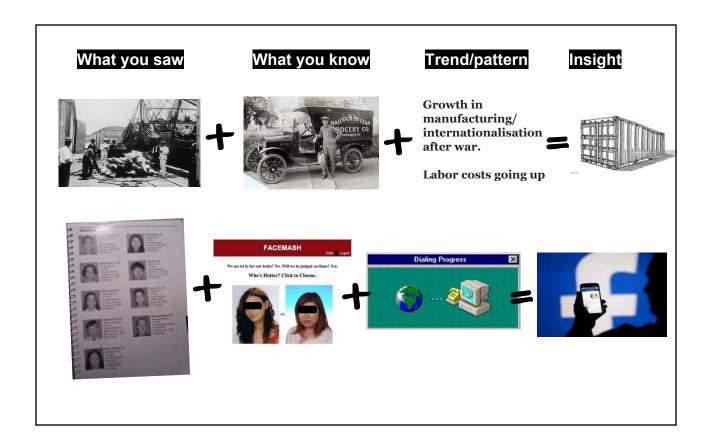
### Insight + Ti

A human behaviour relevant to the challenge

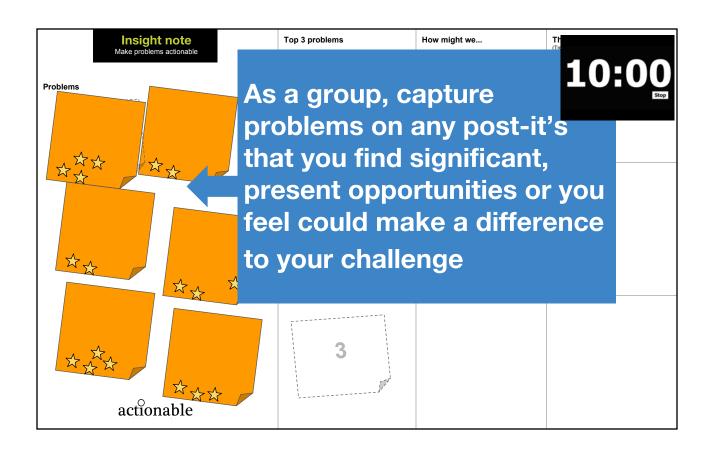
+ Trend/Pattern

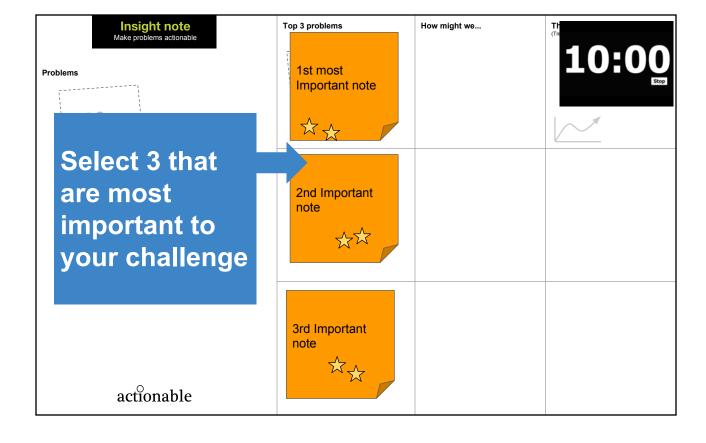
Technology or market based

= Design idea

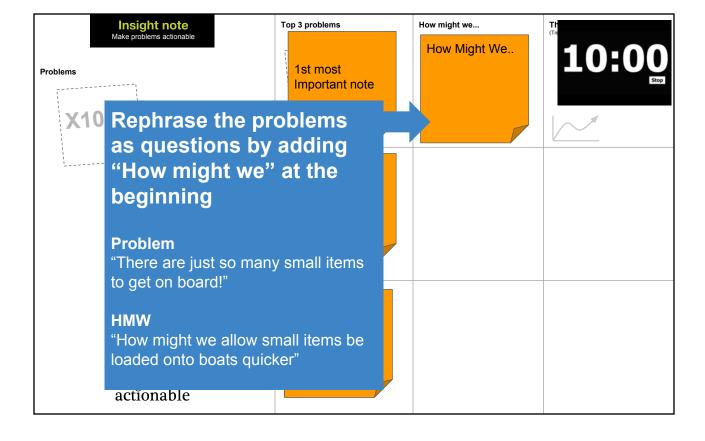


<b>Insight note</b> Make problems actionable	Top 3 problems	How might we	This is significant because (Trend / statistic / market pattern)
Problems X10	1		
	2		
actionable	3		



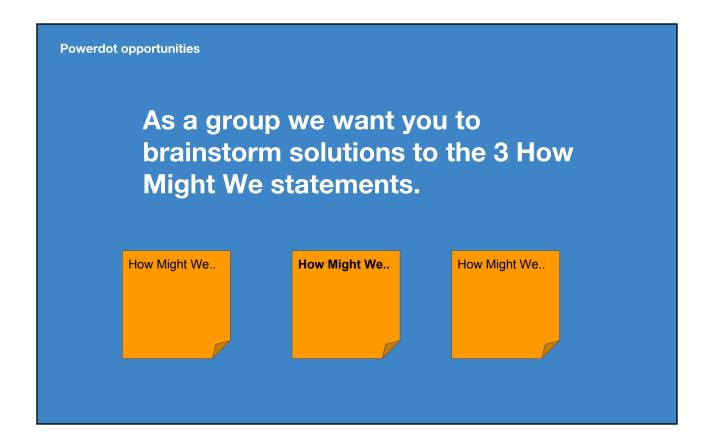












Solo Brainstorm						
Idea 1	Idea 2	Idea 3				
Idea 4	Idea 5	Idea 6				
Idea 7	Idea 8	Idea 9				
		10:00 <sub>stop</sub>				
		Stop				

How would \_\_\_\_\_\_ solve the problem?

9 to shine + Through other eyes

low would \_\_\_\_\_









What will the solution look like in 100 years?



What is the worst idea you can come up with to solve the problem?

**10:00** 

#### **Experience - The new battleground**

89%

of companies expect to compete mostly on the basis of customer experience, versus 36% four years ago

- Gartner

**50**%

Of consumer product investments will be redirected to customer experience innovations

Gartner

86%

of buyers will pay more for a better customer experience.

Gartner

**6**X

More likely to buy with a positive emotional experience

- Temkin group

**73**%

Of consumers trust recommendations from friends and families, only 19% trust direct communication **5X** 

More likely to forgive a mistake if there is a positive emotional experience

- Temkin group

#### Values of design thinking



#### **User-centered**

Services should be experienced through the customer's eyes



#### **Sequencing**

The service should be visualised as a sequence of interrelated actions



#### **Co-creative**

All stakeholders should be included in the service design process



#### **Evidencing**

Intangible services should be visualised in terms of physical artefacts



#### Iterative

Service design is an exploratory, adaptive, and experimental approach, iterating toward implementation



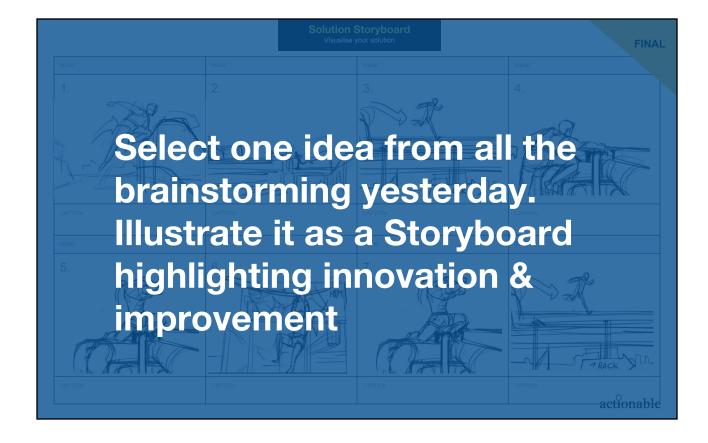
#### Holistic

The entire environment of a service should be considered

Marc Stickdorn - This Is Service Design Doing









Establishing shot of classroom. One student snoring. One sits up in alarm over assignment.



Moment of clarity. "Aha!" Ding or chimes; lightbulb moment.



Submitting via Coursework. Fade out as if ending.



Student feels overwhelmed. Voiceover: "I've never done this!" Camera pans slowly to make space.



Working in a dark dorm room. Sounds of clock ticking and pencil scratching on paper.



Back to the classroom. Keep as similar as possible to original. "Elaborate on your storyboards!"



3

20:00

Ideas surrounde bubble. Brainstorm may also be video montage surrounded by blurry frame.



Proudly shows off finished storyboard. Wipes sweat off brow. Victory music. Zoom in on storyboard.

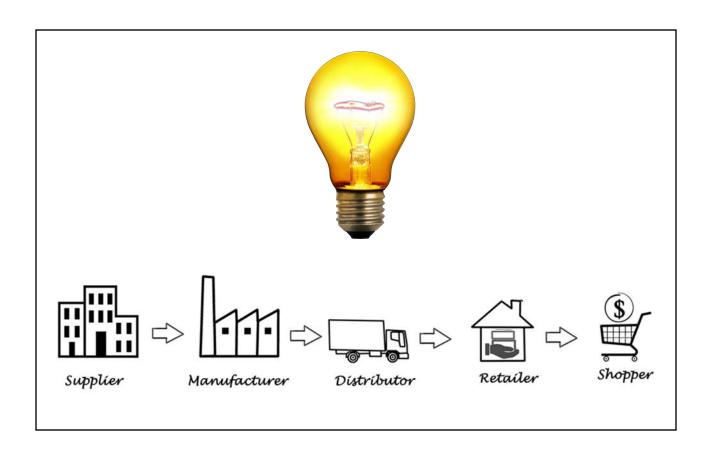


Back to the drawing board. Looking haggard but determined. Fade out.

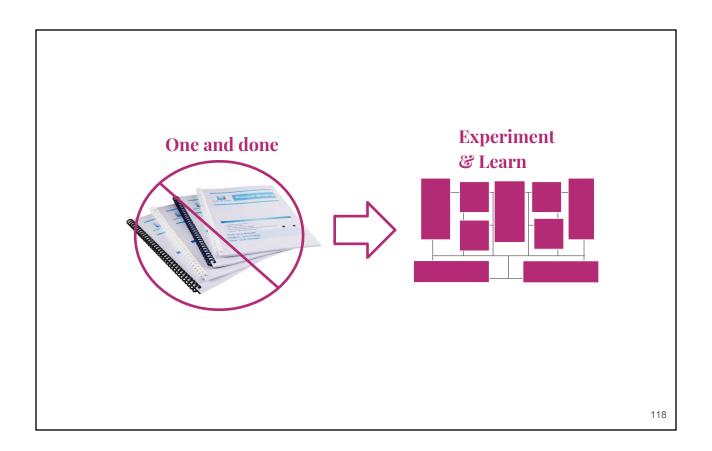


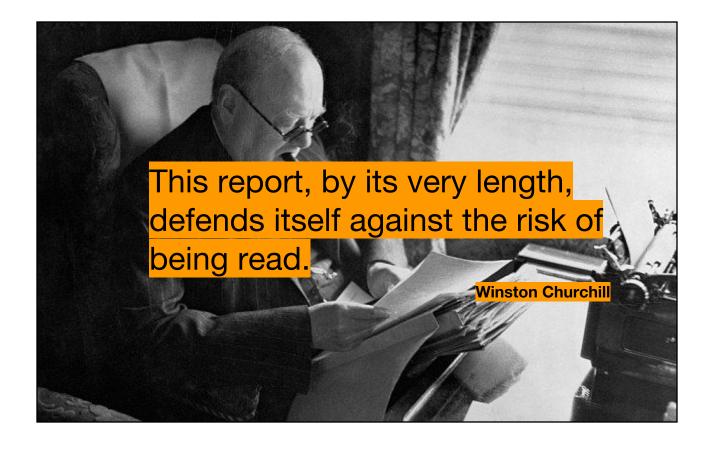
**Delivery** 

actionable



A business model helps organisations to realise the economic value of their product, services, business and/or technology"



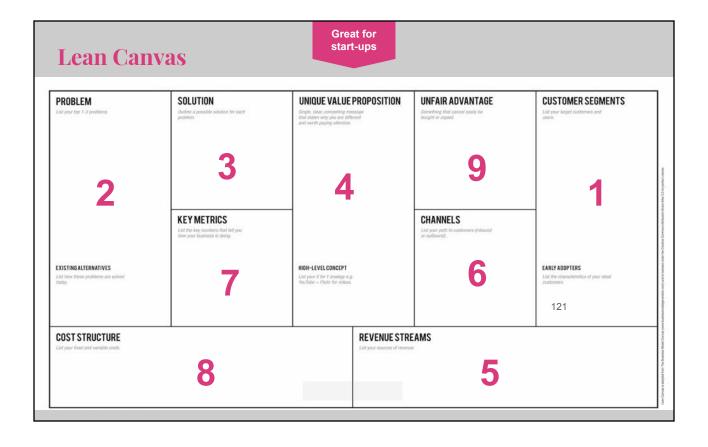


#### Overarching principle: Validated learning

Build a model and then use experiments to validate (or invalidate) the model

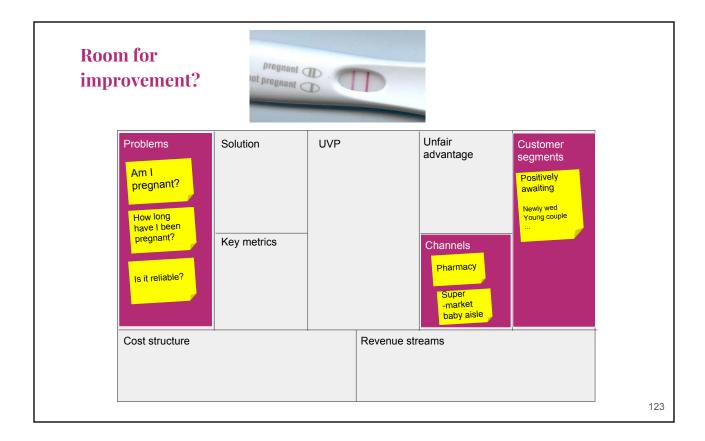
Just like design - hypothesis and test

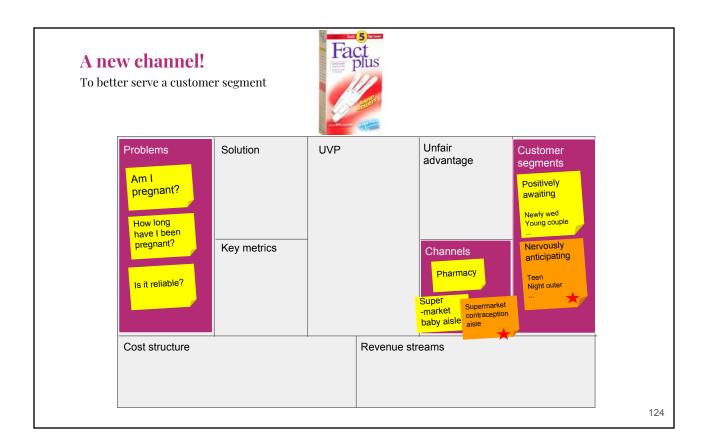
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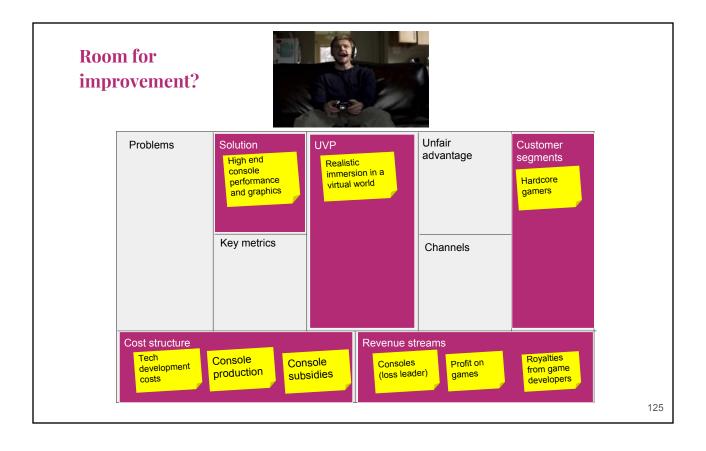


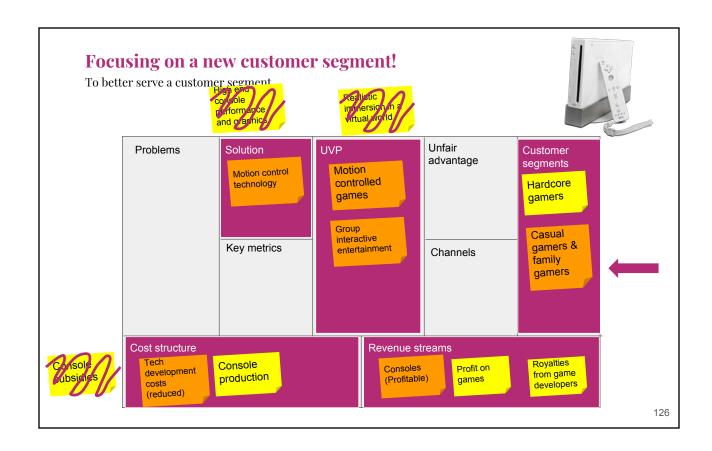
# Capture: Document a starting plan Prioritise: identify riskiest parts Experiment: Systematically test your plan Learn Measure

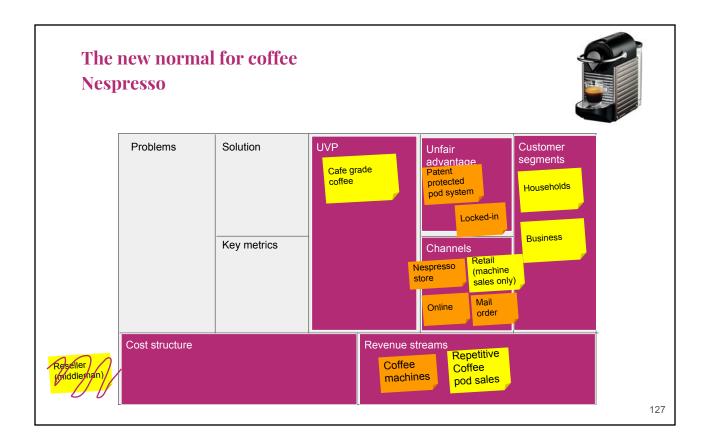
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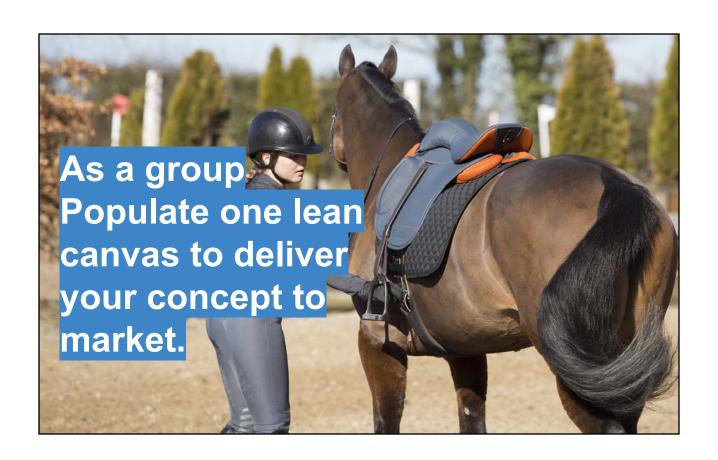




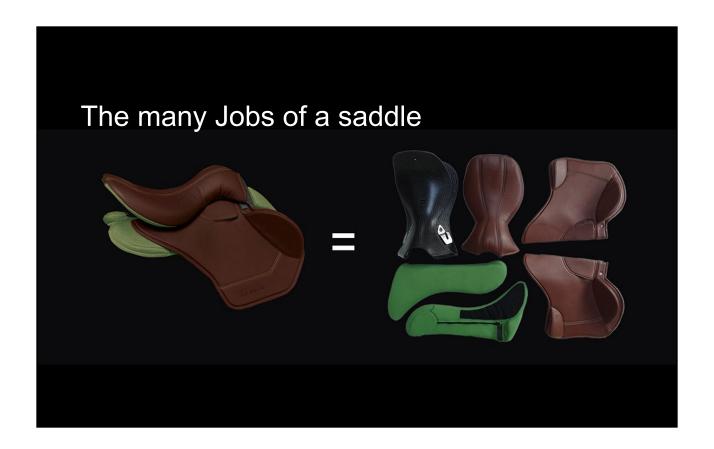




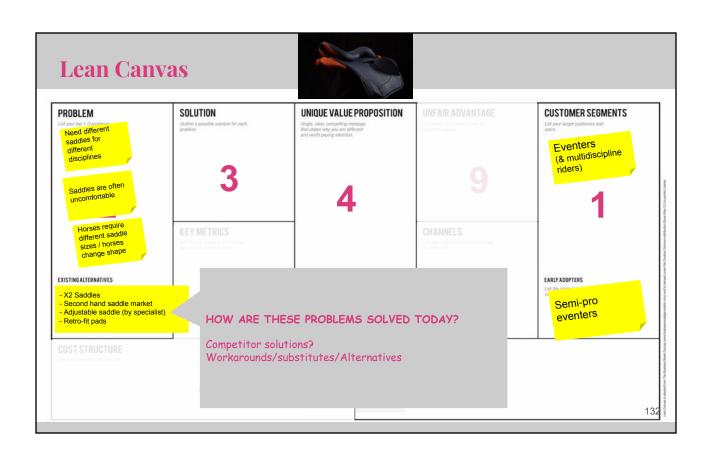


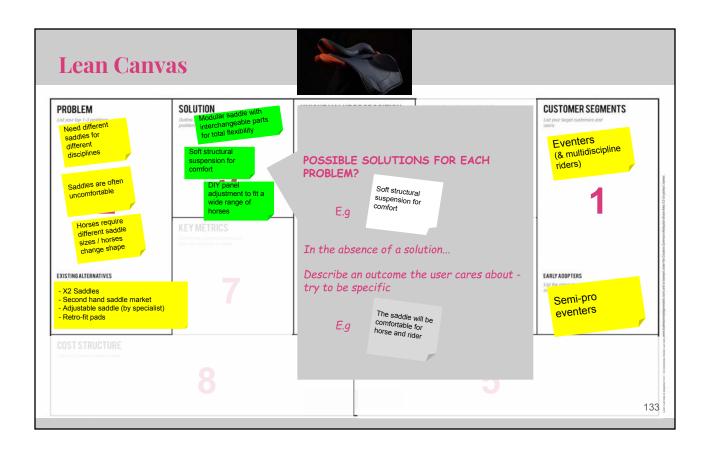


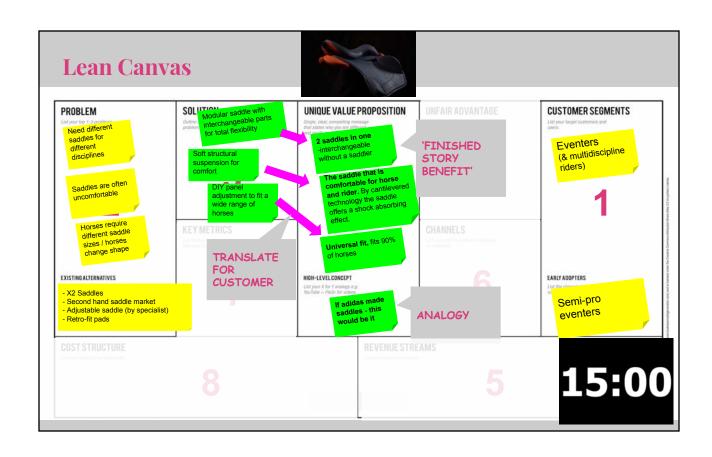


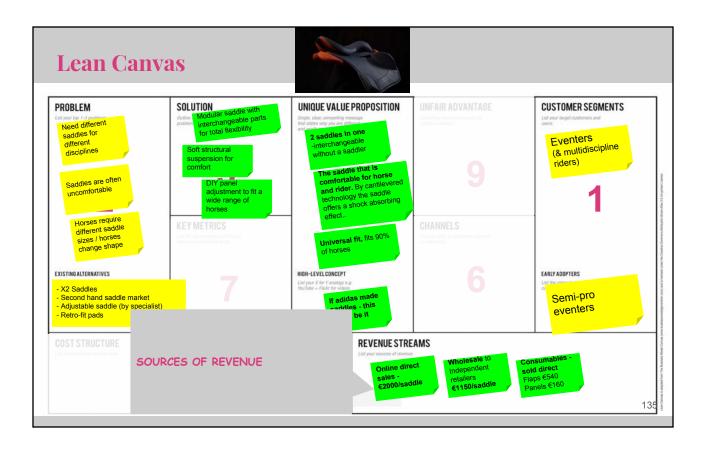


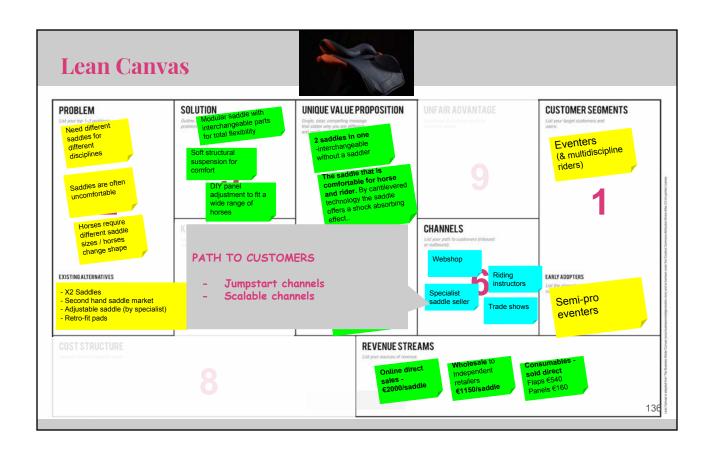


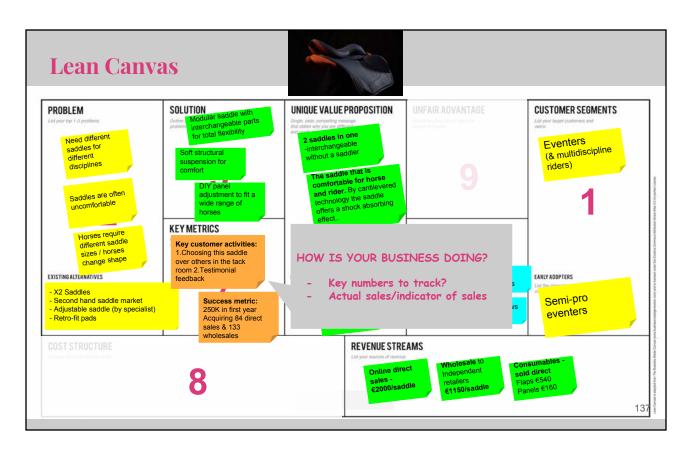


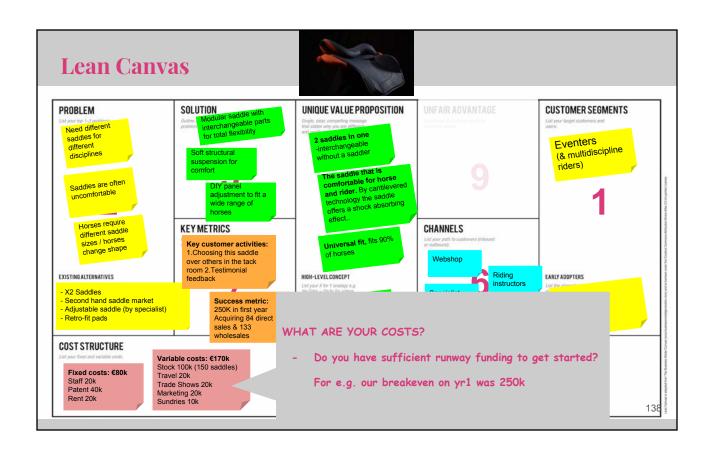


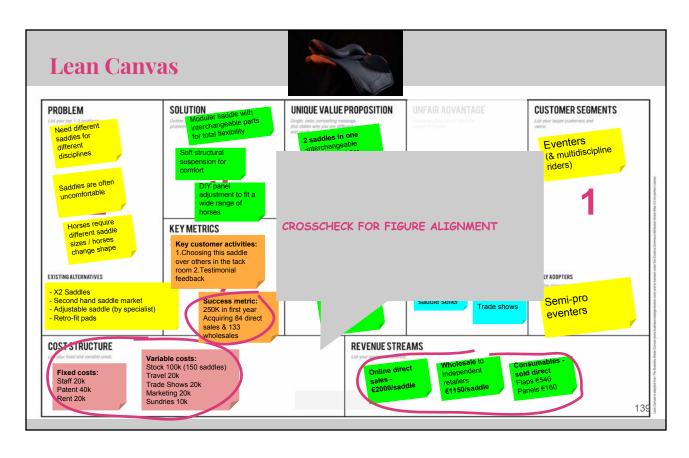


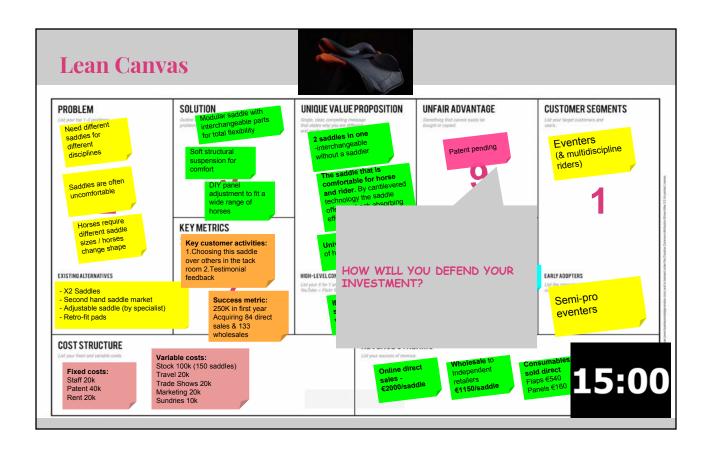
















# 10 Types of 10:00 step of the model: **Innovation**

wno might we make additional revenue from x?

**Network:** How might we connect better with partners to create value?

**Structure:** How might we organise, develop or find talent?

**Brand:** How do we position the brand and transport our values with it?

**Process:** How might we do what we do better than anybody?

#### Customer engagement:

How can we engage the customer and deliver value by that?

#### **Product** performance:

How might we make x deliver more value?

Service: How do we create value in servicing the customer?

#### **Product system:**

How might we complement x with additional products

**Channel:** Which channels do we use to deliver the value?









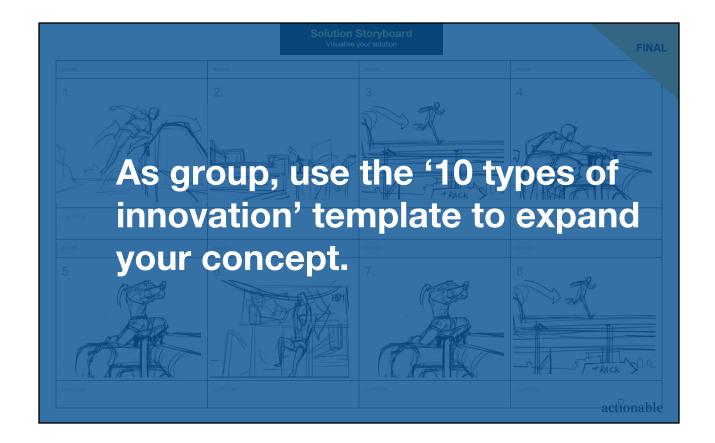
https://www.doblin.com/ten-types







https://www.doblin.com/ten-types





DESIRABLE	VIABLE	FEASIBLE
Customers will love this because?  Our target customer for this concept is? (tip: How would you describe your primary customer segment?)  The problem our customer wants to solve is? (tip: what does your customer struggle with or what need do they want to fulfill)  Our customer cannot solve this problem today because? (tip: what obstacles have prevented customers from solving this)	Our Early Adopters will be? (tip: what customer segment will be the first to use your?)  Our acquisition strategy for obtaining new customers is? (tip: what will be your one or two main acquisition channels)  Our customers will use our product repeatedly because? (tip: what would customers come back to do and how often would they do it)  We will generate revenue by? (tip: what will be the primary way you make money)	Our biggest technical or engineering challenges are? (tip: what major architecture challenge could get in the way of building)  Our biggest legal or regulatory risk will be? (tip: what laws or regulations could prevent you from operating)  Our primary competitors to our product are? (tip: list out the top 1-3 competitors to your product)  Our team is uniquely positioned to win because? (tip: what makes your team well suited to beat the market)
The outcome our customer wants to achieve is? (tip: what qualitative / quantitative outcomes happen in your customer's life)  actionable	<ol> <li>Write one assumption or question per sticky note.</li> <li>Evaluate each item quickly and on your own—roughly plot them on the grid where they make most sense.</li> <li>Once many items are on the grid, begin to discuss and reposition them in relation to each other—how certain are you in knowing the correct answer to the question, and how risky is it if you're wrong?</li> <li>Focus the discussion on the items in the upper-right quadrant. These are the assumptions and questions that most urgently need further validation and inquiry.</li> </ol>	







Webby People's Voice, Family & Kids Apps, 2016 Kidscreen Award, Best Game App, 2016 IDEA Silver, Web and App, 2012 Webby Award, Parenting, 2011 Babble.com Top 50 iPhone Apps for Kids, 2010

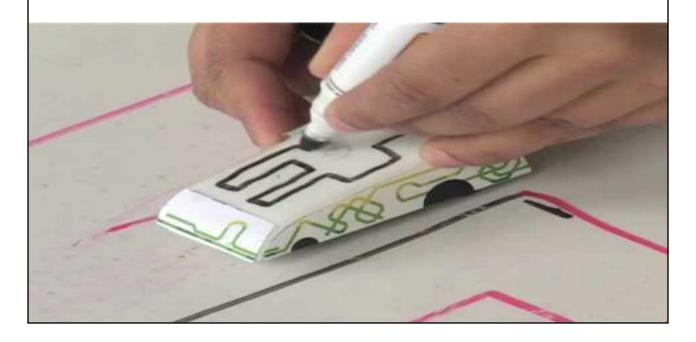
Top 100 paid iPhone apps in the iTunes store.

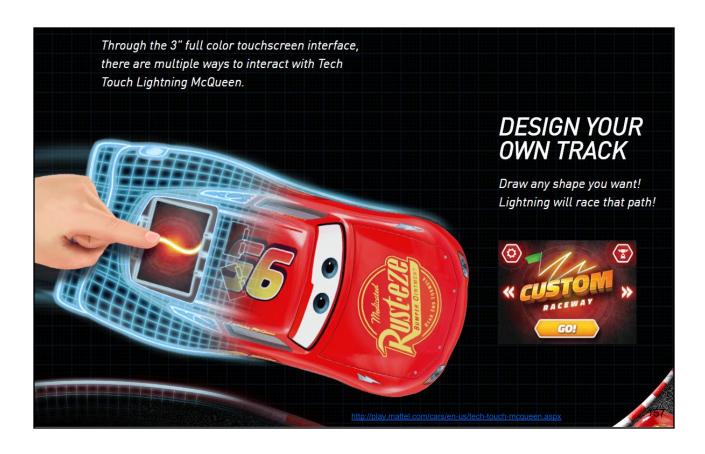
#### Assumption:

My new pharmacy service Idea will appeal to the target market



# **Assumption:**Kids will enjoy the play with this toy



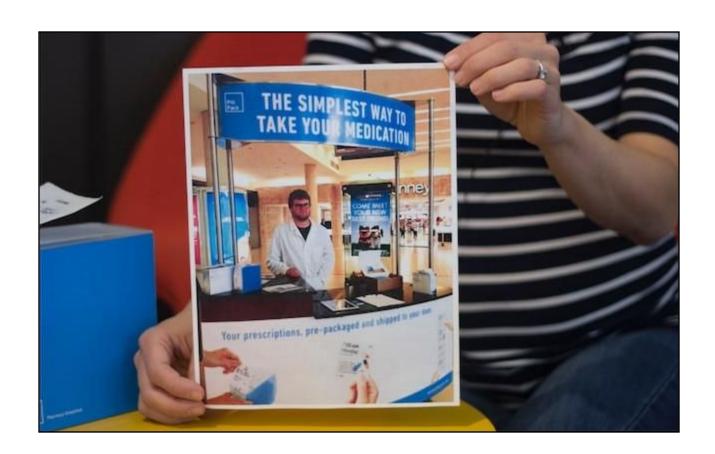


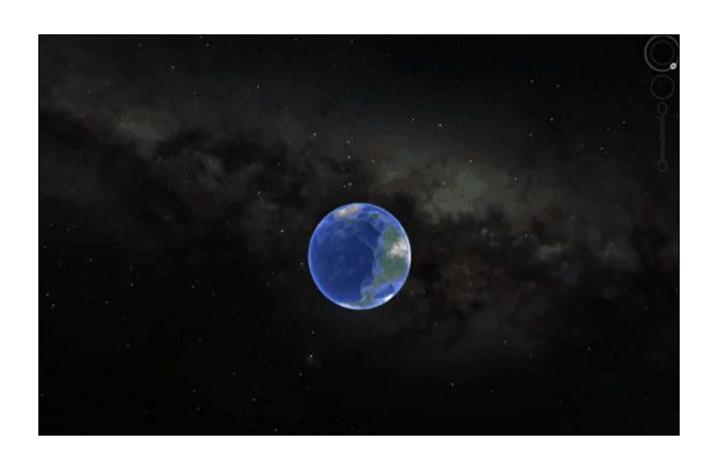
#### Assumption to be tested: People will Buy shoes online (1999)

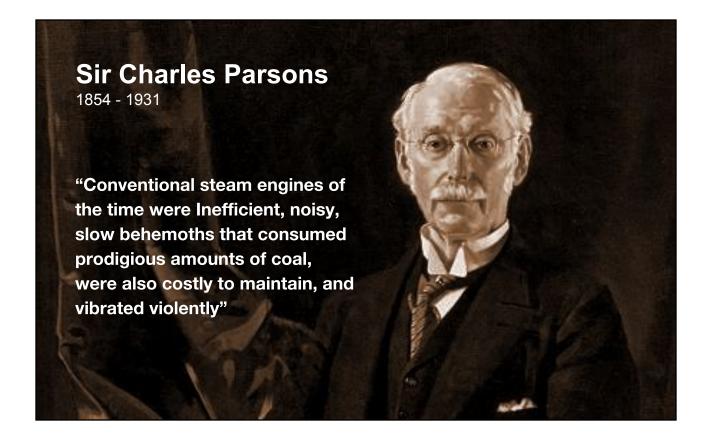


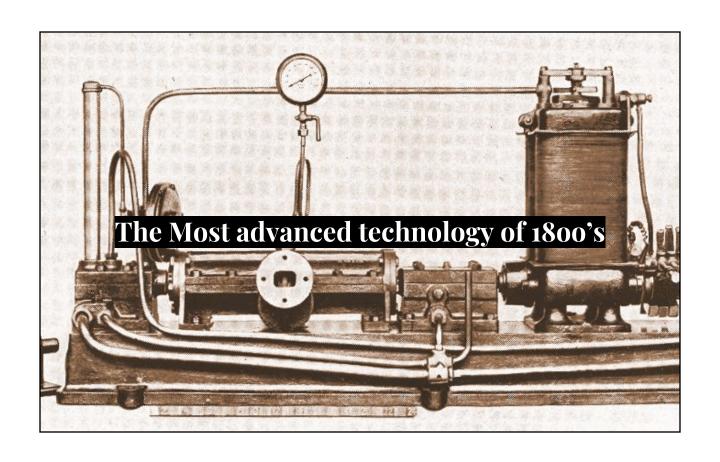
#### Assumption to be tested:

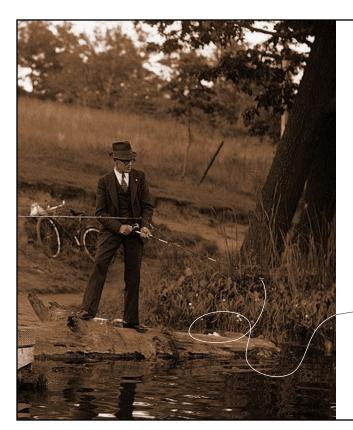
Customer will appreciate the pricing and value proposition of our radical new pharmacy concept.



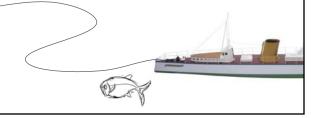


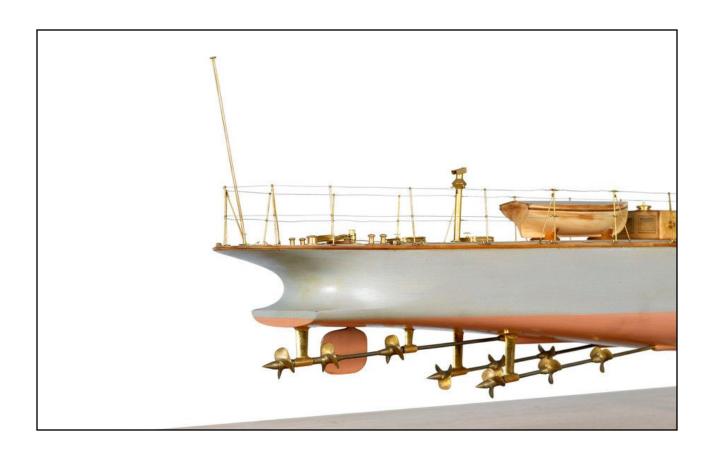


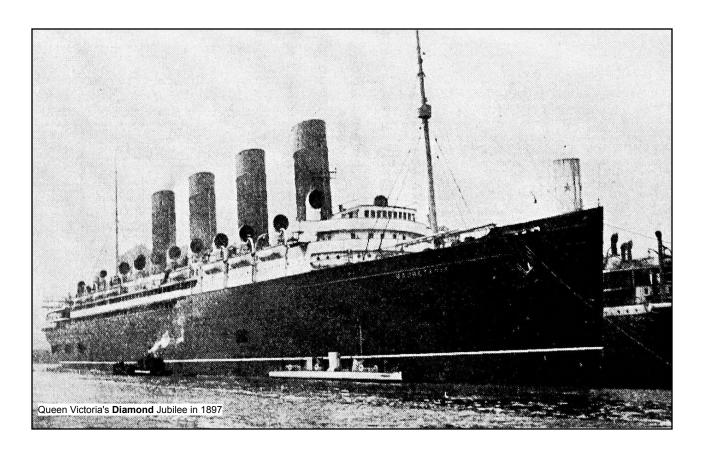


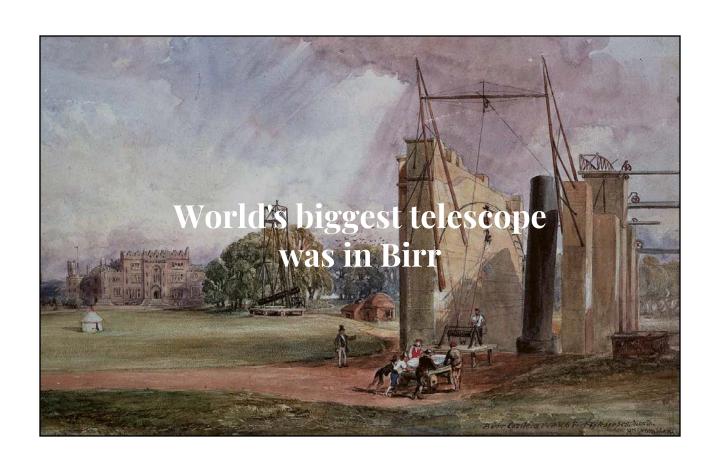


"He delighted in the making of models, not for show, but for their utility in the demonstration of some principle in which he was interested at the time"







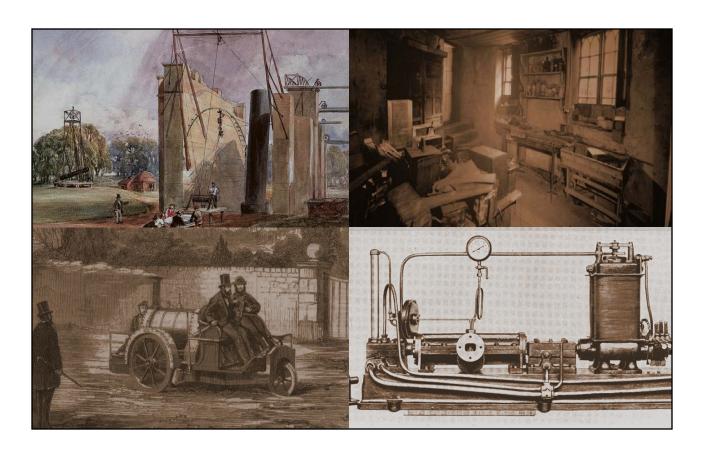


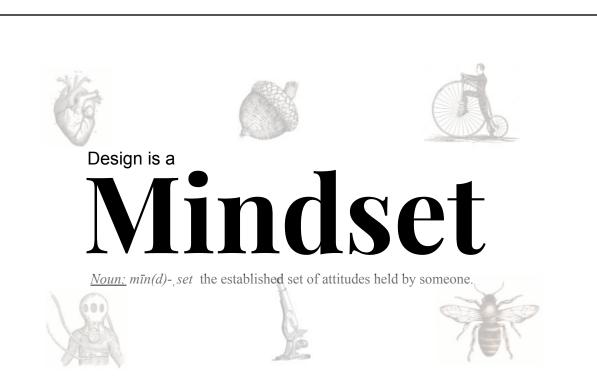












#### What was the secret?



Finding problems worth solving based on human values



Bridging technology and humanity



Big ambition & prepared to start small



Experimenting creatively towards desirability, viability & feasibility



Iterating & learning project into existence



Created a culture of experimentation

#### Thank you! Any Questions?

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Martin.Ryan@MU.ie

actionable