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Alipay
seek
阿里巴巴 Alibaba.com
How to develop successful Technology Products?
Spotify
LinkedIn
PayPal
抖音
meesho
NETFLIX
淘宝网 Taobao.com
2023
Technology Innovation
1

Technology Innovation
Gil Tidhar
RMIT UNIVERSITY
2023
2
Technology Innovation

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Technology Innovation

The process that results in the introduction, through practical implementation, of new or improved Technology Products, as goods or services.

As software developers we innovate by developing new or improved software Products.

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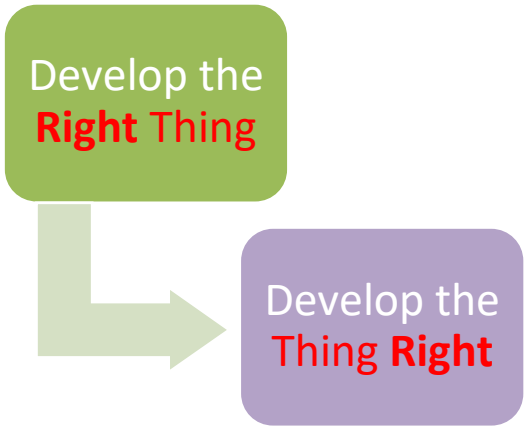
Innovation: first "Why?" and "What?"



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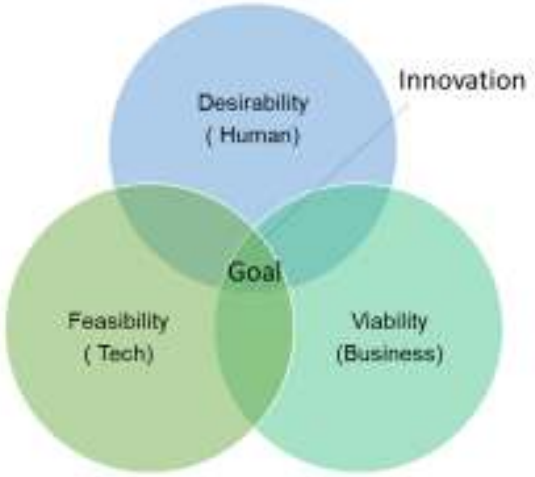
The Right Thing



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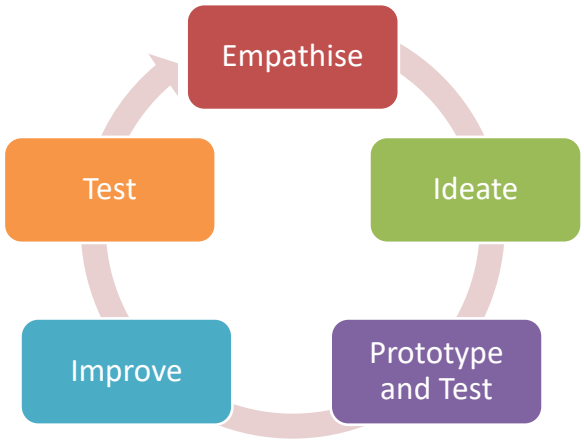
Rapid Innovation Process



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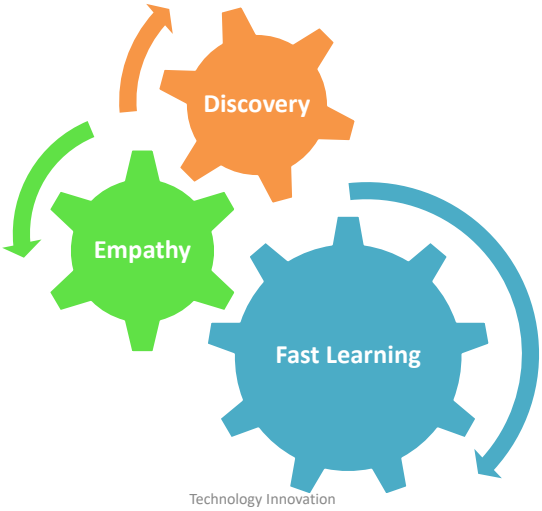
Principles of Innovation



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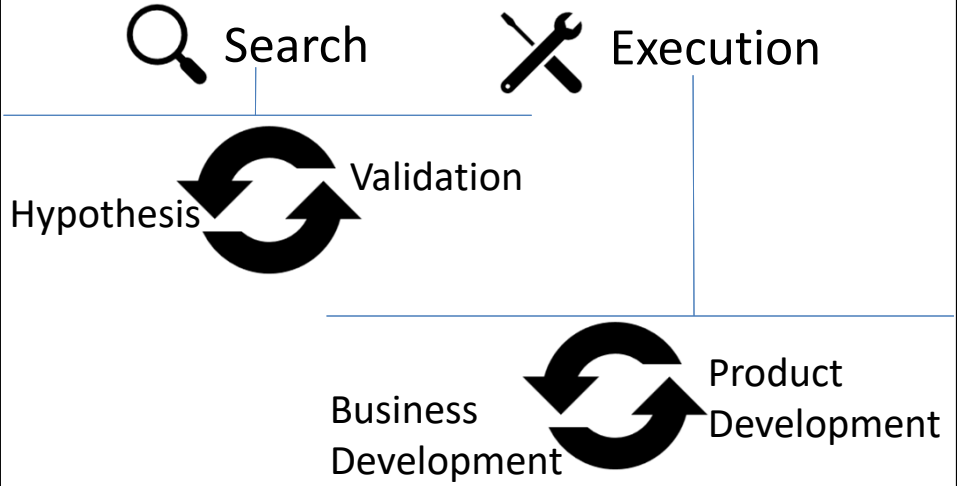
Search and Experimentation



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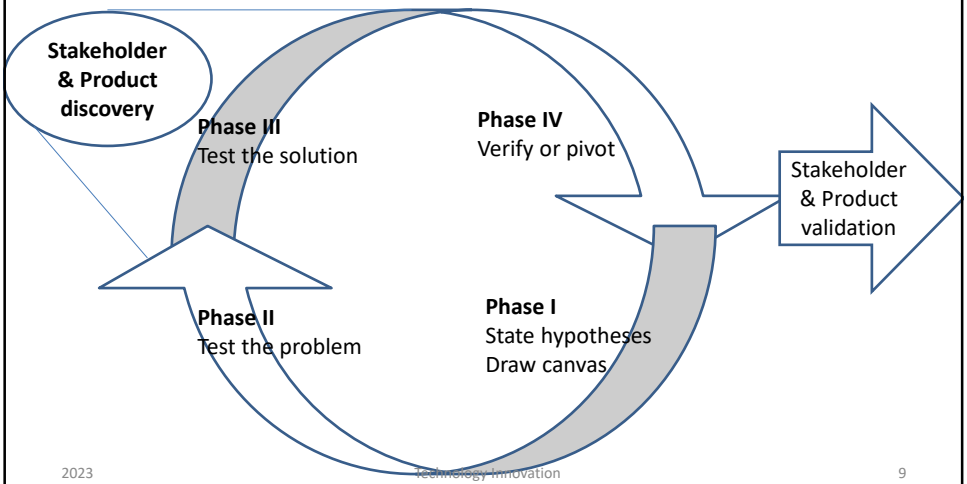
Innovation: Iterative Stakeholder & Product discovery process



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What are we searching for?

- A Customer Segment
- A Value Proposition
- A Minimum Viable Product

Using Experimentation

(minimum viable product) (product)

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Your Initial Product Idea

1. Purpose: How does your product address the social challenge?
2. Target Market: Who are the intended beneficiaries of your product?
3. Value Proposition: What is the benefit provided to the Target Market by your product?
4. Competitive Advantage: Why is your product better than existing products?

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Multiple Target Markets and Initial Customer Personas

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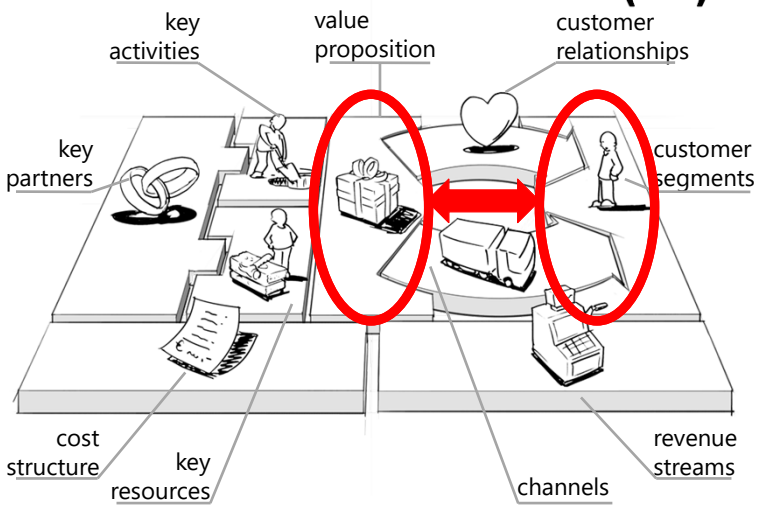
Product Market Value (Fit)



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Your Final Product Idea

1. **Purpose: How does your product address the social challenge?**
2. **Target Market(s): Who are the intended beneficiaries of your product?**
3. **Value Proposition(s): What is the benefit provided to the Target Market by your product?**
4. **Competitive Advantage(s): Why is your product better than existing products?**

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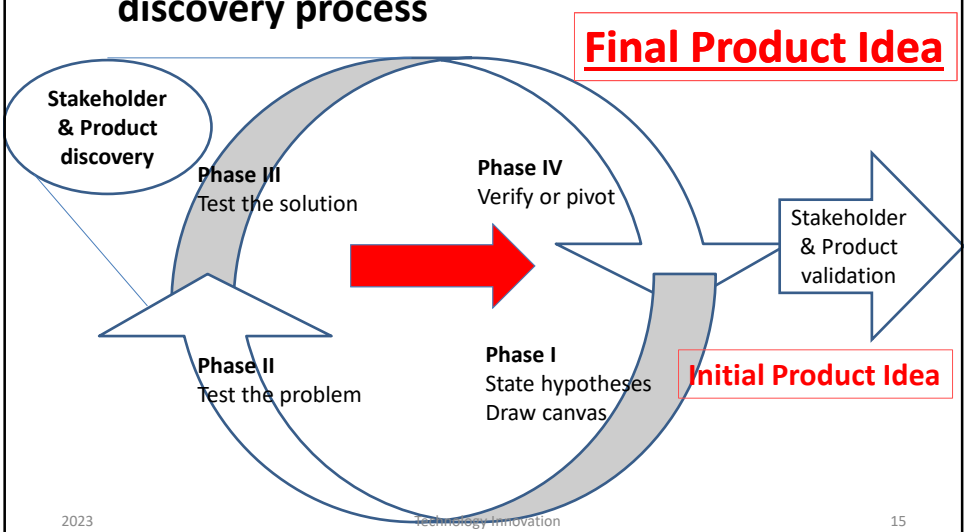
Innovation: Iterative Stakeholder & Product discovery process



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Technology Innovation Process

STEP 1 Purpose
STEP 2A Target Market
STEP 2B Customer Profile
STEP 3 Value Proposition
STEP 4A Competitive Analysis
STEP 4B Competitive Advantage
STEP 5 Verify or Pivot
STEP 6 Multiple Stakeholders
STEP 7 Product Market Value
STEP 8 Verify or Pivot

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Week 1 Innovation Portfolio

- Work in Groups
  - Face each other
- Group answers
- Can use collaboration environment for groupwork
  - Use a shared document
- Can copy table from question

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Social Challenge - Background

Rental and Shared Houses

Each year more than 200,000 international students from over 170 countries choose to come to Victoria to study. These students need a place to live in. Many chose to live in shared accommodation or rooming houses. There are currently over 1,300 registered rooming houses in Victoria. A simple search shows that over 16,000 people are looking for shared living or more affordable living arrangements.

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Social Challenge – Innovation

Today's Challenge is to innovate a technology-based solution to assist renters, landlords, community organizations, or the government, with rental arrangements in shared accommodation or rooming houses.

You have worked on this Social Challenge before – Introduction to Innovation in Programming Studio 1.

You can and should reuse your ideas!

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Technology Innovation Process (1st Iteration)

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Step 1: Purpose (Shared Vision)

What is the Purpose of your Product in addressing this Social Challenge?

- **Develop a shared vision for the team – agree and document the Purpose of your technology Product:**
  - **Problem/opportunity that will be addressed by your Technology Product**
  - **Stakeholders that will be affected by your Technology Product**
  - **Impact of your Technology Product**

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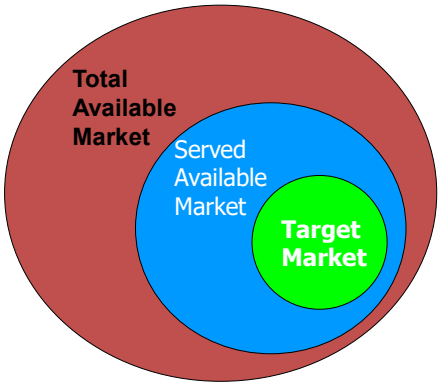
Step 2a: Identify the Target Market

Identification of groups most likely to use and buy

- **What are the most significant characteristics of your Target Market?**

- Consider characteristics:
  - ✓ Geographic
  - ✓ Demographic
  - ✓ Behavioral variables
  - ✓ Channel
  - ✓ etc…



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Step2b: The Customer Profile

- Goals
- Jobs
- Pains
- Gains

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Customer Profile

What are the characteristics of a **Stakeholder** of the **Target Market**? e.g., a user of your Product

What high priority **Jobs** are included in your **Customer Profile**?

What high-priority **Pains** are included in your **Customer Profile**?

What high-priority **Gains** are included in your **Customer Profile**?

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Customer Profile: Fill the Circle

2-3 high priority items in each segment

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Step 3: Value Proposition

What **benefits** will your **Product** deliver to the **Users**?

What **Products and Services** are included in your **Value Proposition**?

What **Pain Relievers** are included in your Value Proposition?

What **Gain Creators** are included in your **Value Proposition**?

Fill the Square

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The Value Map

Products & Services

Pain Relievers

Gain Creators

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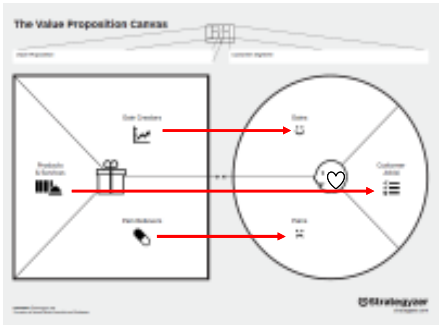
Addressing Needs

Which high-priority **Jobs** do they perform for the **User**?

Which high-priority **Pains** do they relieve for the **User**?

Which high-priority **Gains** do they provide to the **User**?



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Step 4a: Competitive Analysis

Understand others in current market

1. **Find one (1) Alternative Products**
2. **Analyze how well the alternative product delivers the benefits to the beneficiaries when addressing the social challenge.**

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Step 4b: Competitive Advantage

What is the advantage of your Product?

List the advantages of your Product Idea over the alternative product that you identified.

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Competitive Advantage

Does your product….

address more jobs or pains or get more gains?	help a lot more customers get a job done, resolve a pain, or obtain a gain?
switch to a more important job or pain?	get a job done incrementally better?
go beyond functional jobs and satisfy motivations?	help a customer get a job done or get more gains radically better?

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Step 5: Verify or Pivot

Based on **Steps 4a and 4b** should your **Product** be improved?

How can the **Products and Services** included in your Value **Proposition** be improved?

How can the **Pain Relievers** included in your **Value Proposition be improved**?

How can the **Gain Creators** included in your **Value Proposition** be improved?

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Pivot Your Initial Product Idea

1. **Purpose: How does your product address the social challenge?**
2. **Target Market: Who are the intended beneficiaries of your product?**
3. **Value Proposition: What is the benefit provided to the Target Market by your product?**
4. **Competitive Advantage: Why is your product better than existing products?**

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Your Initial Product Idea

1. Purpose: How does your product address the social challenge?
2. Target Market: Who are the intended beneficiaries of your product?
3. Value Proposition: What is the benefit provided to the Target Market by your product?
4. Competitive Advantage: Why is your product better than existing products?

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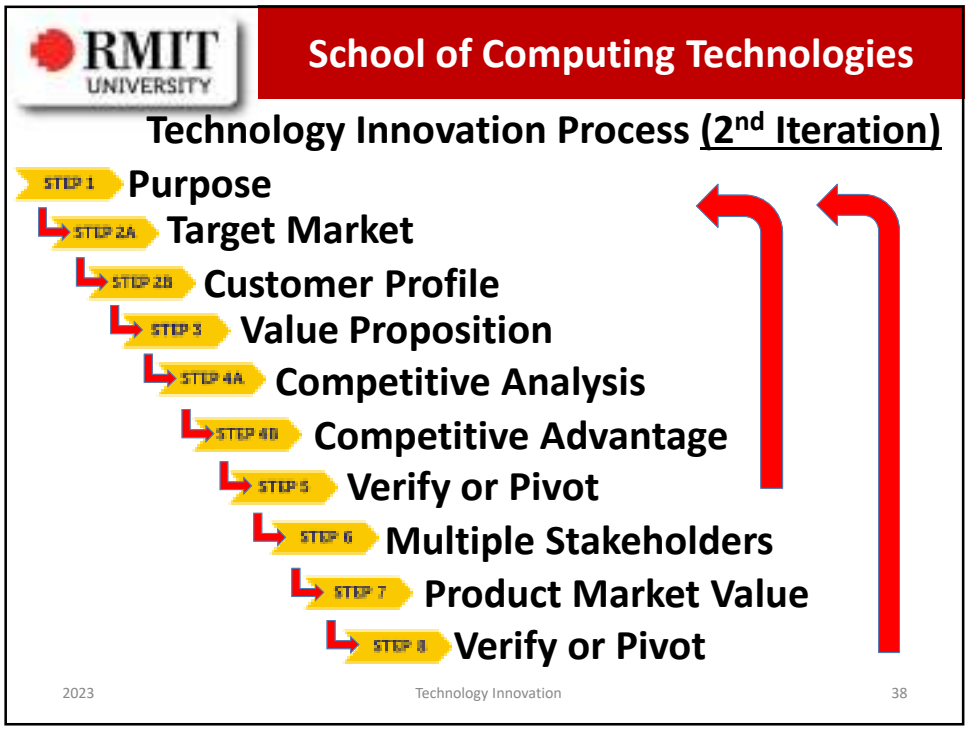
You have an Initial Product Idea!

Wellbeing Break
5min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Technology Innovation Process (2nd Iteration)
STEP 1 Purpose
STEP 2A Target Market
STEP 2B Customer Profile
STEP 3 Value Proposition
STEP 4A Competitive Analysis
STEP 4B Competitive Advantage
STEP 5 Verify or Pivot
STEP 6 Multiple Stakeholders
STEP 7 Product Market Value
STEP 8 Verify or Pivot
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Technology Innovation
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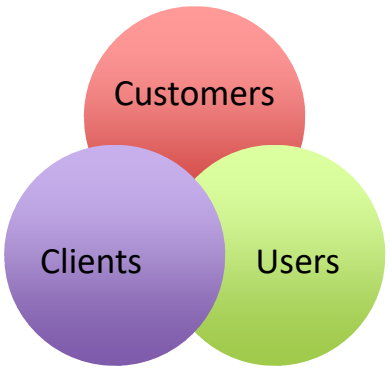
Customers, Clients and Users

- **A User:** someone who employs or uses our product
- **A Client:** someone who purchases **the use** of a product or service from our business
- **A Customer:** someone who purchases a product or service from our business



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Types of Target Markets

- Single User/Client Type
- Multiple User/Client Types
- Multi-Sided Market
- One Implementation – Multiple Products

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Market Type (8 min)

What is the **Market Type** of your **Product**?

If required identify multiple **Target Markets**

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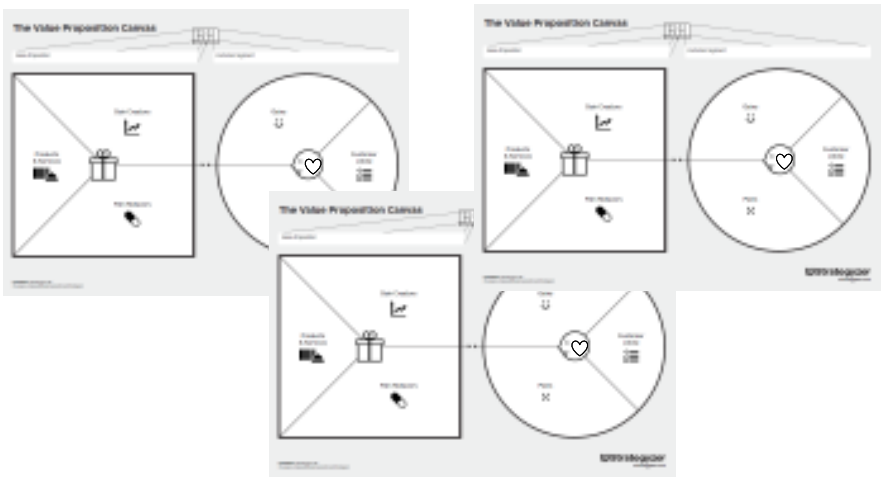
Multiple VPCs



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Multiple Target Markets and Initial Customer Personas

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Multiple Customer Profiles (12 min)

Who are the multiple **Customer Profiles** of your **Product**?

Create multiple **VPC**s (one for each Stakeholder)

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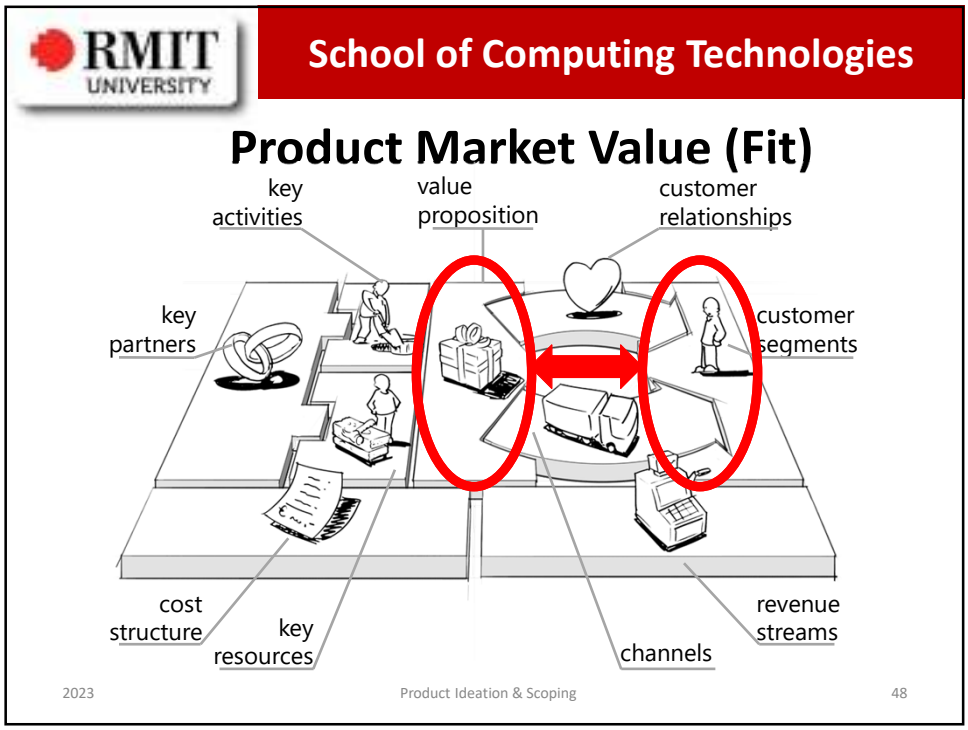
Your Refined Product Idea

1. **Purpose: How does your product address the social challenge?**
2. **Target Market(s): Who are the intended beneficiaries of your product?**
3. **Value Proposition(s): What is the benefit provided to the Target Market by your product?**
4. **Competitive Advantage(s): Why is your product better than existing products?**

Step 7: Product Market Value
20min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Product Market Value (Fit)
key activities
value proposition
customer relationships
key partners
customer segments
cost structure
key resources
channels
revenue streams
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Product Ideation & Scoping
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Achieving Greater Product Market Value

- The greater the Product Market Value the greater the chances of success
- Increasing Product Market Value
- How?
  - ➢Understand the Current Situation
  - ➢Understand the Situation with the Product
  - ➢Understand the Product Market Value
  - ➢Refine and Focus the Product Idea
- Balancing Impact vs. Investment

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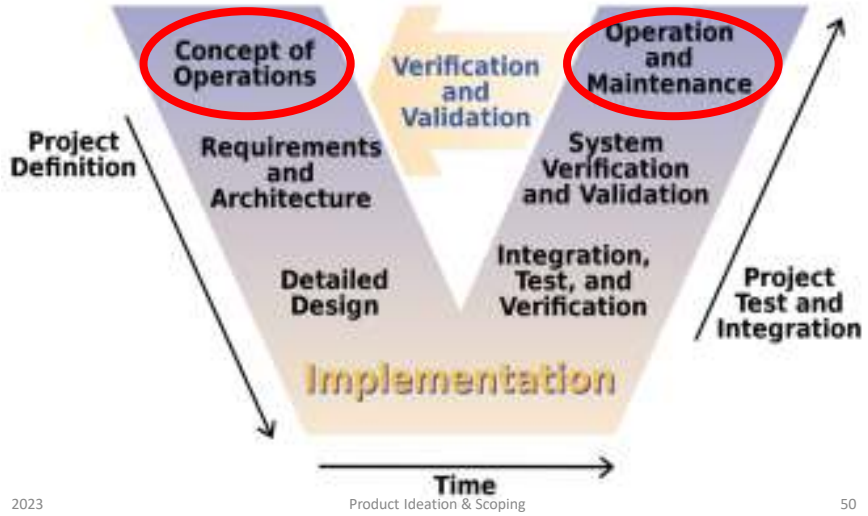
CONOPS Within Systems Engineering



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Graphical CONOPS: Graphical Storytelling

- The Graphical CONOPS provides a graphical depiction of what the Product is about and an idea of the users and usage involved.
- The Graphical CONOPS can be used to orient and focus detailed discussions. Its main use is to aid human communication, and it is intended for presentation to high-level decision-makers.

Graphical Storytelling

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Using a Graphical CONOPS

- The intended usage of the Graphical CONOPS includes:
  - Putting a use situation or scenario into context.
  - Providing a tool for discussion and presentation; for example, aids developer engagement.
  - Providing an aggregate illustration of the Product details within its anticipated use.
- There can be multiple graphic instances for a single Product depicting different user types, uses, locations, or times.

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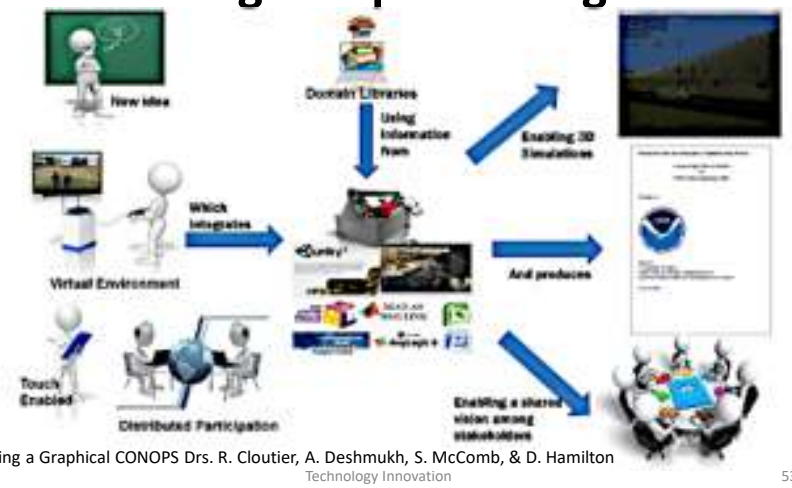
Graphical CONOPS Example: Tool for creating and presenting CONOPS



Developing a Graphical CONOPS Drs. R. Cloutier, A. Deshmukh, S. McComb, & D. Hamilton

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Graphical CONOPS (8 min)

What is a simple **Graphical CONOPS** of your **Product**?

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Simply Estimating Value of VP Item

Estimated *VP Item Value* = *((R*I*A)/(E*T))*C*

Measure	Unit	Method
Reach (***R***)	Number of Beneficiaries (in '000)	Size of Target Market, as assessed by Founders, that have the Need addressed by VP Item
Importance (***I***)	High (6), Medium (4), Low (2)	Importance, as assessed by potential Customers, of Need addressed by VP Item
Alignment (***A***)	High (6), Medium (4), Low (2)	Match, as assessed by Founders, of VP Item with the Product's Purpose
Effort/Cost (***E***)	High (3), Medium (2), Low (1)	Development effort/cost, as assessed by Founders, of bringing VP Item to market
Time (***T***)	High (3), Medium (2), Low (1)	Duration, as assessed by Founders, of bringing VP Item to market
Confidence (***C***)	High (80%), Medium (50%), Low (20%)	Confidence, as assessed by Founders, in the above estimates

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Simply Estimating Product Market Value

Collating VP Items' Value

$$Estimated\ Product\ Market\ Value\ =$$

$$\frac{\sum_{VP\ Item}\ (R*I*A)*C}{\sum_{VP\ Item}(E*T)}$$

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Increasing Product Market Value

- Greater the Importance => Greater the Value
  - Address High Ranking needs
- Greater the Reach => Greater the Value
  - Target larger Markets
- Greater the Alignment => Greater the Value
  - Select Aligned Value Propositions and/or Update the Purpose
- Greater the Confidence => Greater the Value
  - Experiment and test to build confidence
- Greater Effort/Cost and Time => Lower Value
  - Select "Low Hanging Fruit" and/or Ensure Access to Expertise

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Estimated Product Market Value (12 min)

What is the Estimated **Product Market Value** of your **Product**?

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Your Refined Product Idea

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3. Value Proposition(s): What is the benefit provided to the Target Market by your product?
4. Competitive Advantage(s): Why is your product better than existing products?

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Step 8: Verify or Pivot

Based on **Step 6** and **Step 7** should your **Product** be improved?

How can the **Products and Services** included in your Value **Proposition(s)** be improved?

How can the **Pain Relievers** included in your **Value Proposition(s) be improved**?

How can the **Gain Creators(s)** included in your **Value Proposition** be improved?

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Pivot Your Product Idea

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3. **Value Proposition(s): What is the benefit provided to the Target Market by your product?**
4. **Competitive Advantage(s): Why is your product better than existing products?**

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Your Final Product Idea

1. Purpose: How does your product address the social challenge?
2. Target Market(s): Who are the intended beneficiaries of your product?
3. Value Proposition(s): What is the benefit provided to the Target Market by your product?
4. Competitive Advantage(s): Why is your product better than existing products?

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Technology Innovation Process

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Identifying the Final Product Scope

- **Product Scope = All Value Proposition(s)**
  (= $\sum_{VPC}$ Value Map)
- **Use *Effort/Cost (E)* and *Time (T)* estimates to estimate Development Effort/Cost and Time**

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You have a

Final Product Idea!

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This is how to develop successful Technology Products!

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