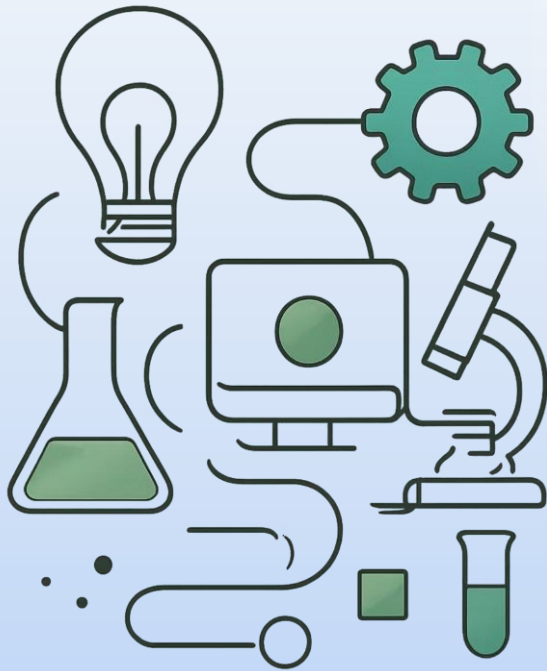




From Innovation to Commercialisation: Practical Solutions for an Impractical World

June 2026

2 Innovation is Hard..... and in Thailand, it is even harder!

Different Models

- China: Centralised industrial policy + economic might
- South Korea: successful transition from assembly to technology ownership to leadership
- Malaysia: strong niche focus and better long-term policies

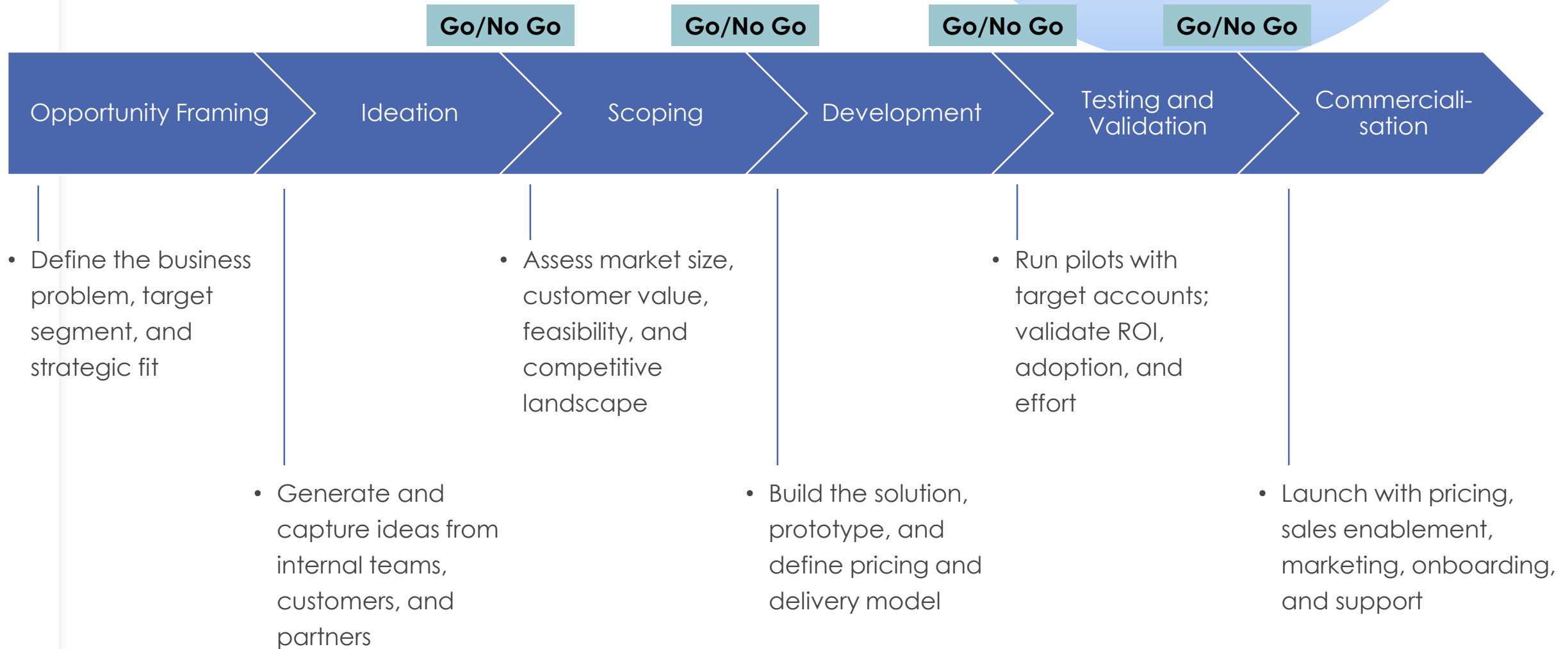
Thailand's Issues

- Large manufacturing base with R&D spending but inefficient input to output conversion
- Fragmented innovation system, no clusters
- Limited central policy co-ordination



Global Rankings			Score	Southeast Asia Rankings			Score
1		Switzerland	66.0	5		Singapore	59.9
2		Sweden	62.6	34		Malaysia	40.6
3		USA	61.7	44		Vietnam	37.1
4		South Korea	60.0	45		Thailand	36.7
5		Singapore	59.9	50		Philippines	33.6
6		UK	59.1	55		Indonesia	31.3
7		Finland	57.7	88		Brunei	24.5
8		Netherlands	57.0	100		Cambodia	22.0
9		Denmark	56.9	109		Laos	20.1
10		China	56.6	122		Myanmar	17.3

3 A Standard Process Flow for Innovation Seems Straightforward *But belies the complexities and challenges*



4

Collaborate with End Users to Truly Understand Their Needs Use to guide offering development and commercialisation model



Background:
Healthcare industry “red ocean” of air decontamination systems

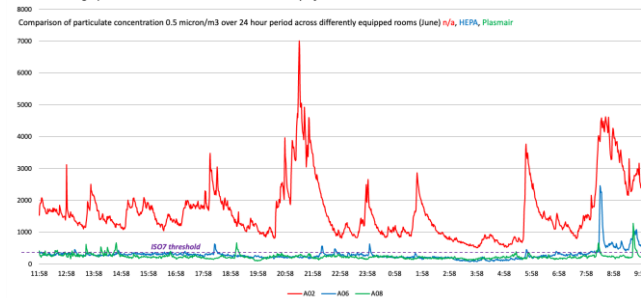
Insight: Hospitals need clean air security, not air cleaning machines



Top of the range product
Anti-“razor and blade” model



Current Air Treatment Maintains Clean Room Environments Successfully
Lower average particle counts as well as more stability of environment



Data-driven approach,
collaboration with stakeholders
throughout

Outcomes

- Reduction in nosocomial infection of up to 80%
- Reduced overall cost to hospital
- Units still in operation at 10 years+

5 Listen and Be Open to Exploring a Different Direction

Use data and analysis but do not discount intuition

Background: Innovation of Oil Palm Wood lumber. Challenge of overcoming cost vs. competing wood products

Insight: The inherent structure and properties of palm wood have commercial potential beyond the wood itself

Lumber



~20 years

Furniture

Functional Wood



Materials

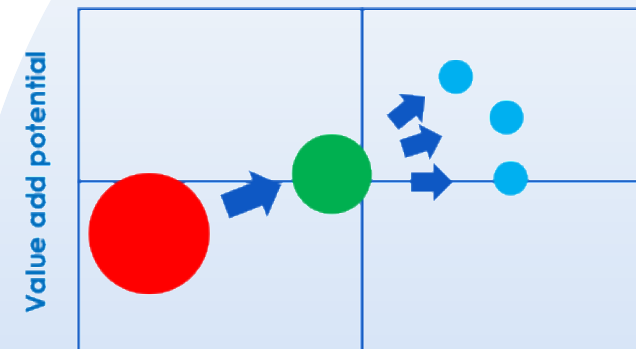
Organic microcapsules



Agriculture
Construction
F&B

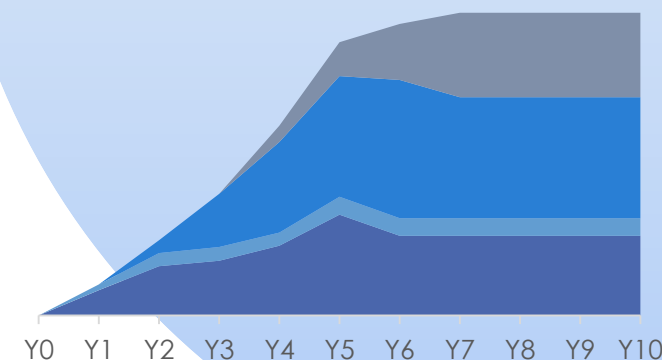
< 2 years

Outcomes



Relative competitive position

Transform value potential



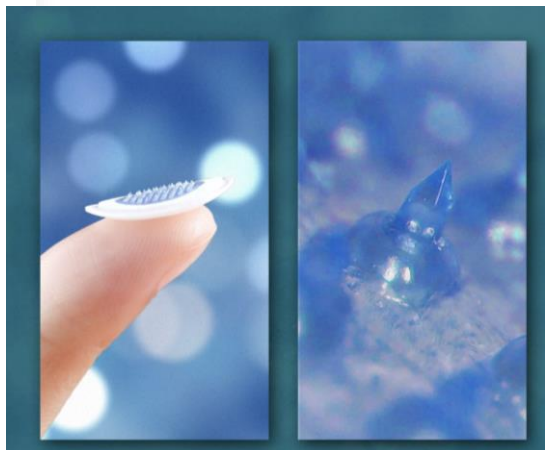
Commercial viability

6 Understand and Protect Your Core Differentiation



Background: Strategic decision on whether to outsource production for a medical device start up

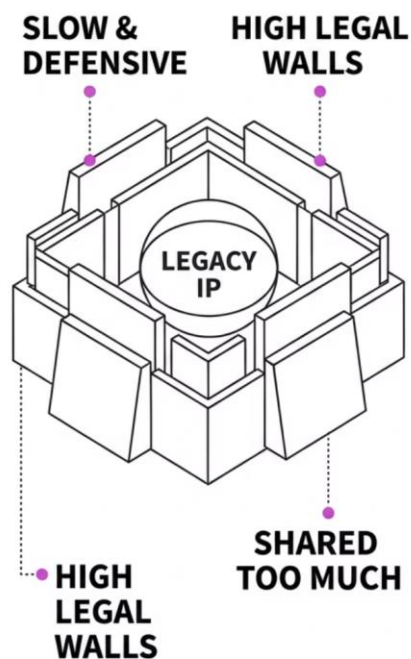
Insight: Patents are insufficient to provide IP protection, especially in international markets



detachable, dissolvable micro-vector array

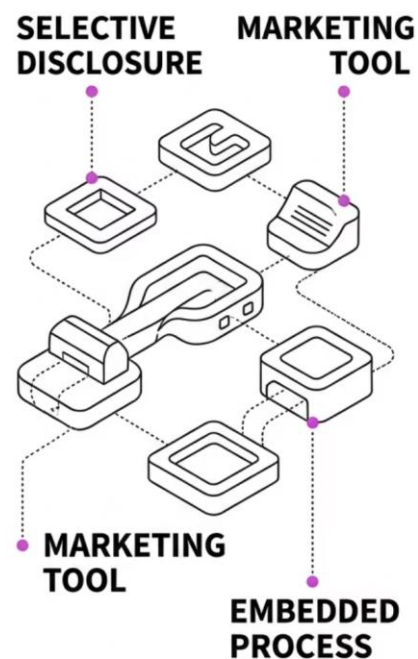
IP Fortress

Obsess



Operational Moat

Strategic



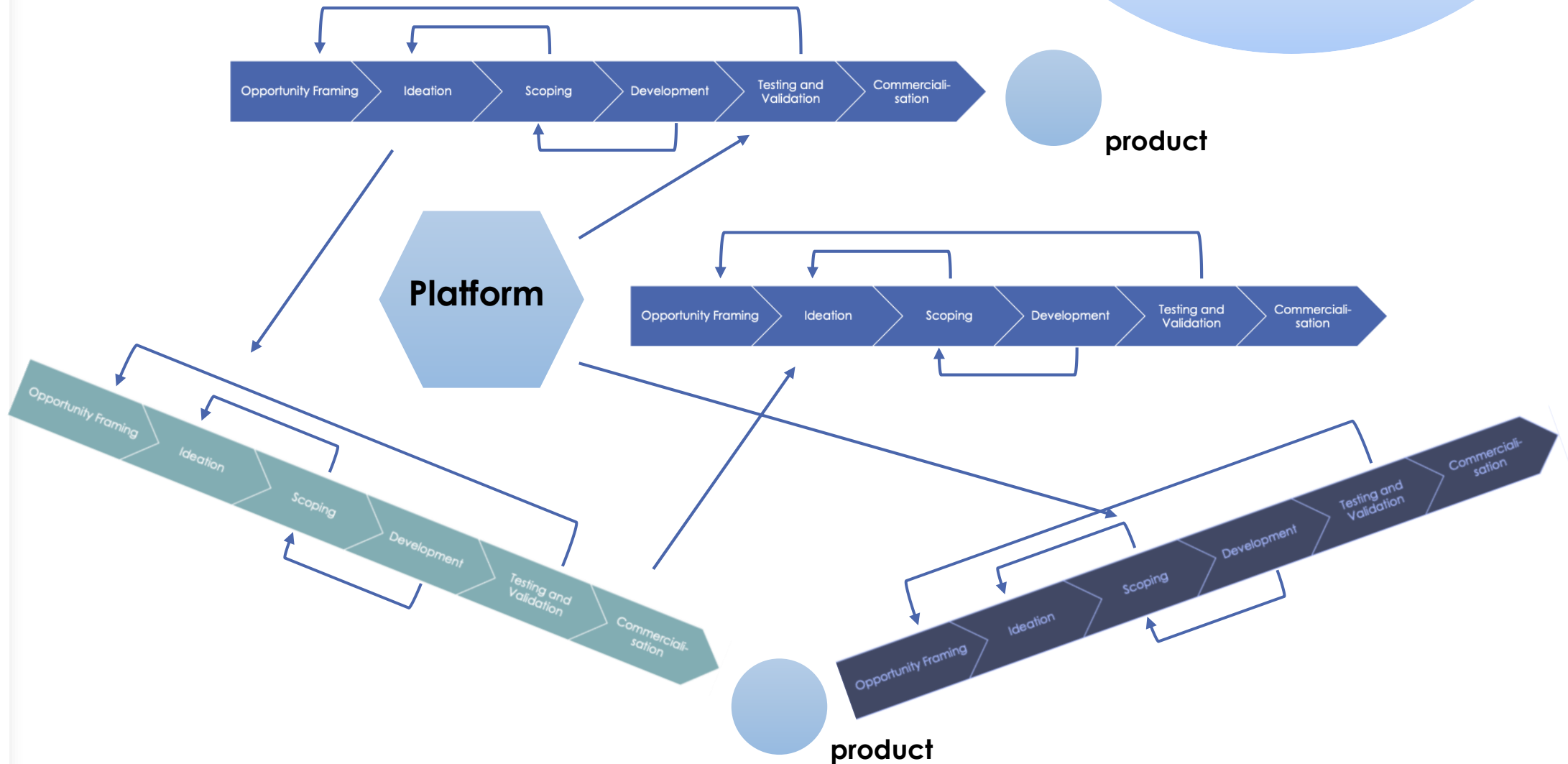
Outcomes

- Change in strategic alignment of start-up to focus on production
- Clear investment story and engagement of stakeholders/investors
- Opportunity to generate significant income early on

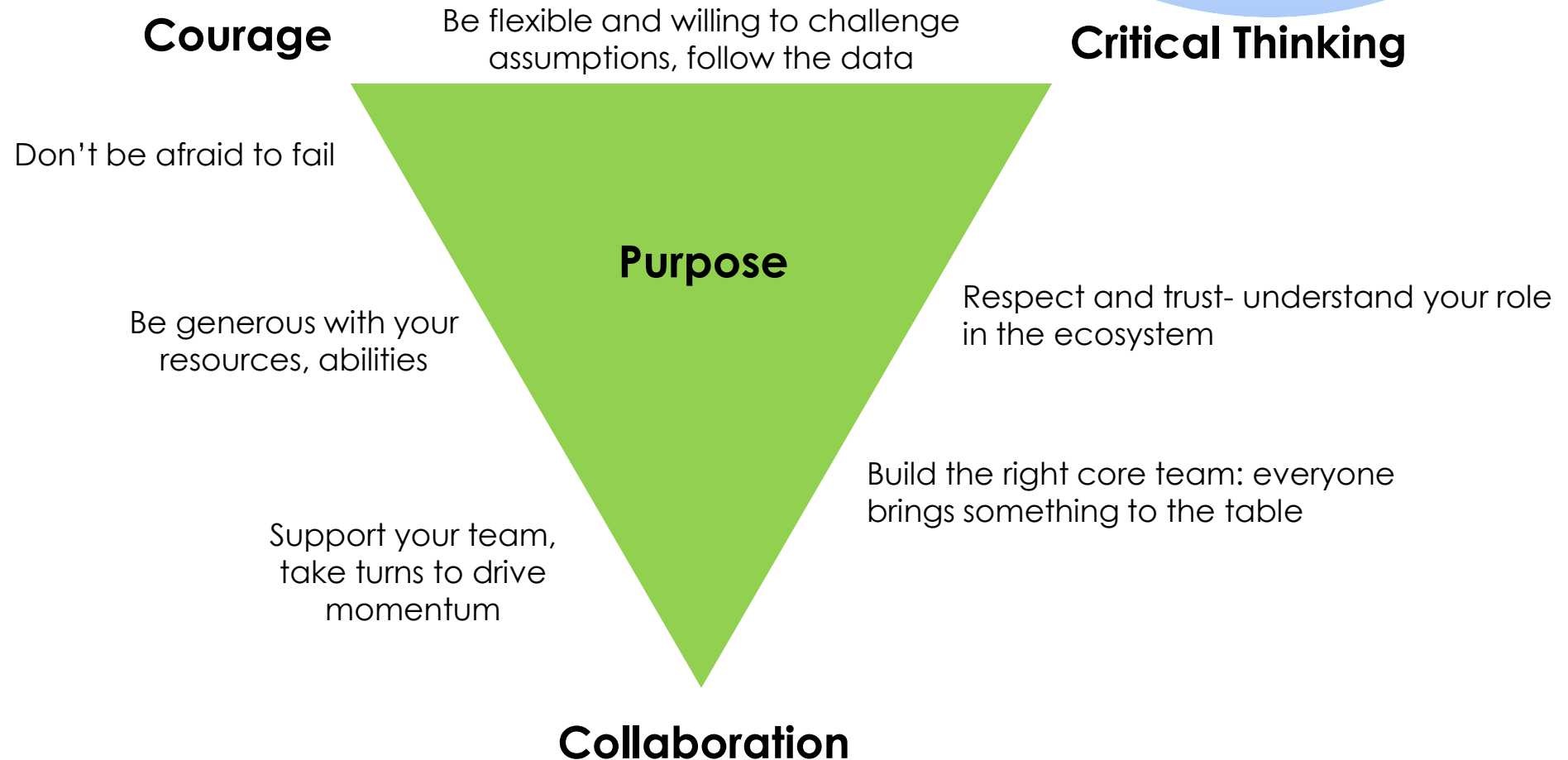
7

Revisiting the Innovation to Commercialisation Flow

Innovation does not have to be linear



8 Making Innovation Happen- a Values Based Perspective



9 What Makes a Chemical Engineer an Excellent Entrepreneur ?

“Chemical engineering is the engineering of compromise”

Understanding of systems

(interactions, flows, equilibrium points, lag, dynamics, etc.)

IN + MADE = OUT + USED