Australian Defence Industry Case Study: **Transparent and collaborative R&D funding prioritisation to support R&D investment decision making in the face of high uncertainty, poor data and multiple stakeholders**

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Sydney, Australia

SDP Annual Conference 2024 – Government Track

CEO and Technical Director of Catalyze APAC
(and husband, father of two, singer and wine enjoyer)
Transforming the way the world makes decisions that matter…

…so that everyone has a say in decisions that matter to them. Businesses, communities and countries thrive from engaged people, conserved resources, money spent wisely, and effective action taken.
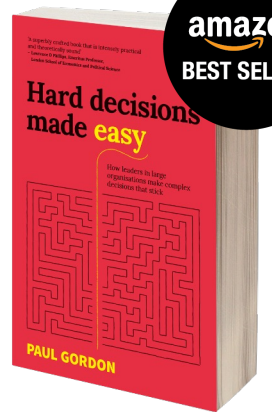
Almost 20 years putting best-practice decision science into the real world by helping large organisations – public and private – make hard decisions with ease.

Such as:
- 3M
- Roche
- ExxonMobil
- Australian Defence Force
- New Zealand Ministry of Transport
- Department of Finance

Working in sectors including:
- Defence
- Pharma
- Health
- Federal Government
- Oil and gas

President, SDP Australasian Chapter

Paul Gordon

Alice and the Cheshire Cat

"Cheshire Puss," she began…
"Would you tell me, please, which way I ought to go from here?"

"That depends a good deal on where you want to get to," said the Cat.

"I don't much care where—" said Alice.

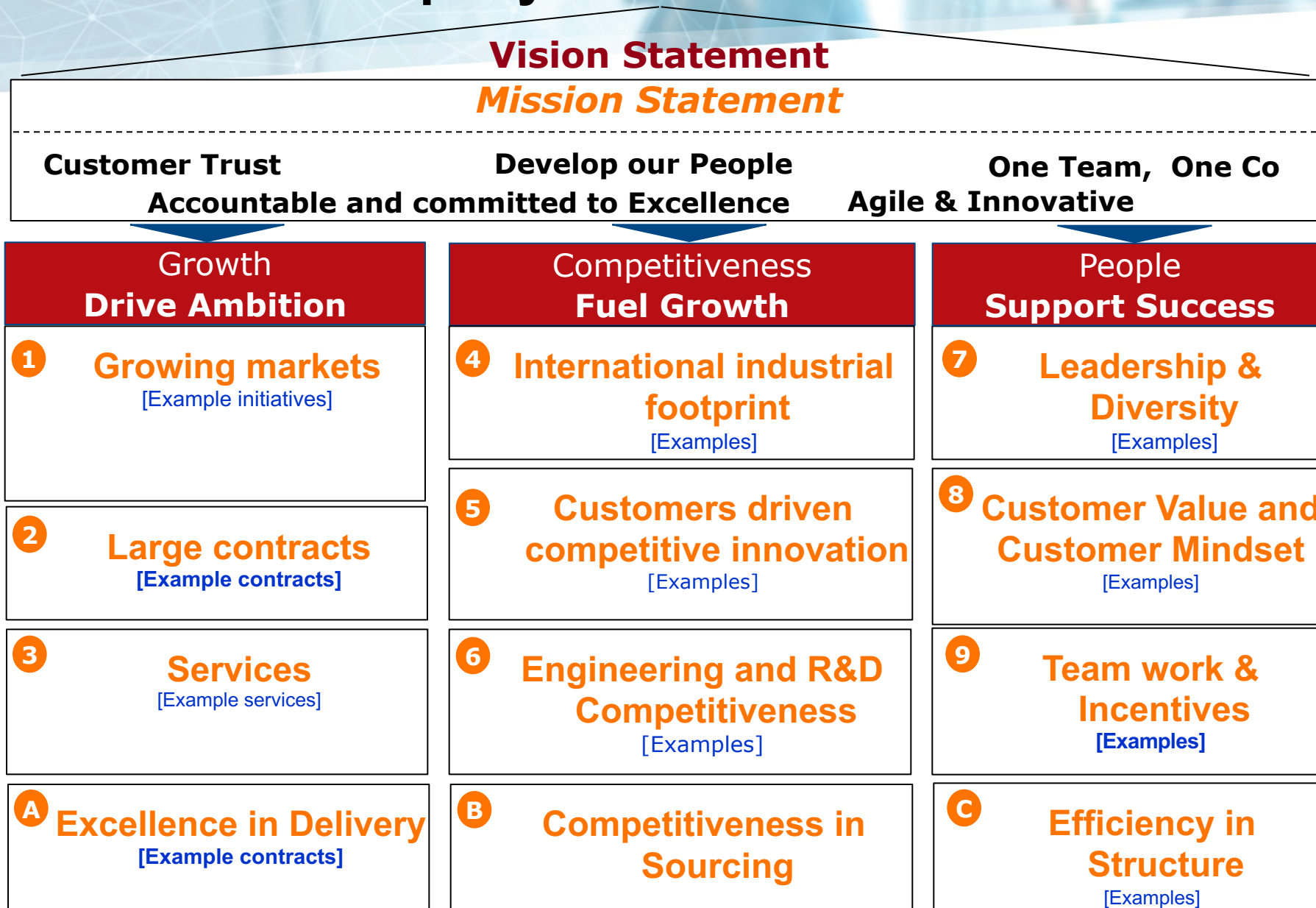"Then it doesn't matter which way you walk," said the Cat.

Lewis Carroll, Alice's Adventures in Wonderland

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The World of R&D Investment

- Competing siloes

- High uncertainty

- Trying to find the next 'big win'

- Very little data

- Everyone has a great idea

- It's a lot like gambling!

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Australian Defence Company

Vision Statement

Mission Statement

Customer Trust	Develop our People	One Team, One Co
Accountable and committed to Excellence		Agile & Innovative

Growth	Competitiveness	People
Drive Ambition	**Fuel Growth**	**Support Success**

❶ **Growing markets** [Example initiatives]	❹ **International industrial footprint** [Examples]	❼ **Leadership & Diversity** [Examples]
❷ **Large contracts** **[Example contracts]**	❺ **Customers driven competitive innovation** [Examples]	❽ **Customer Value and Customer Mindset** [Examples]
❸ **Services** [Example services]	❻ **Engineering and R&D Competitiveness** [Examples]	❾ **Team work & Incentives** **[Examples]**
Ⓐ **Excellence in Delivery** **[Example contracts]**	Ⓑ **Competitiveness in Sourcing**	Ⓒ **Efficiency in Structure** [Examples]

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R&D Investment Prioritisation Programme

- **Aim**
  - Agree Business Unit investment portfolio for Next FY execution
    - What is the optimal value-for-money portfolio of investments which will best deliver the BU strategy and Org growth?
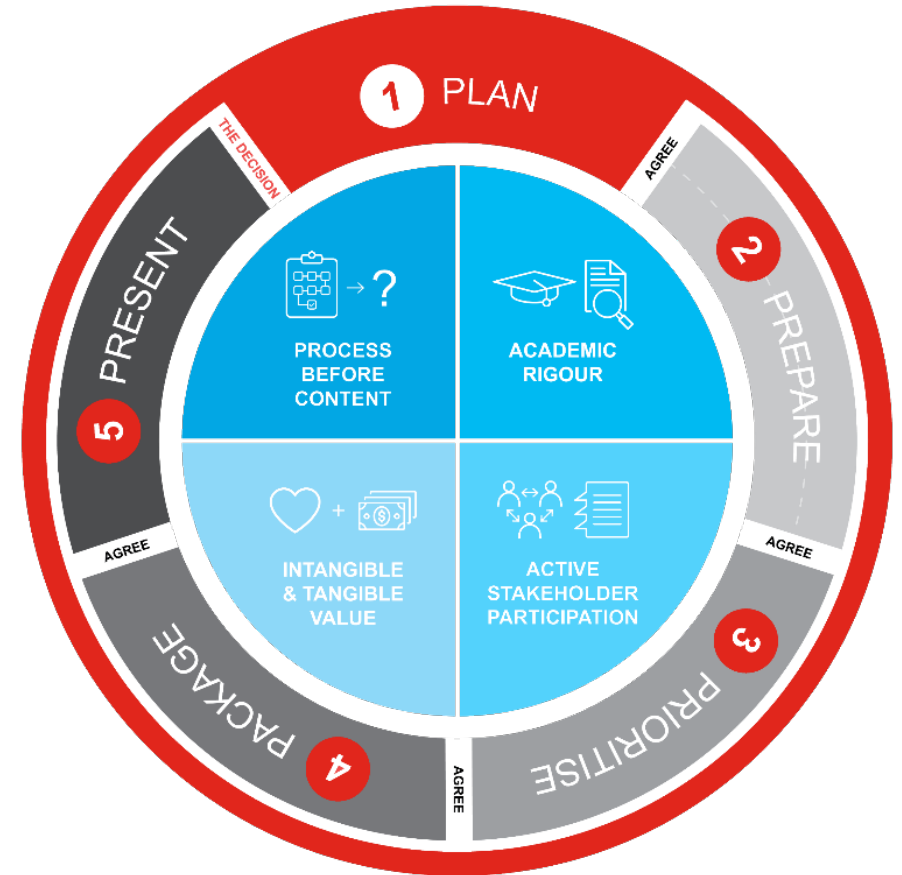
- **Scope**
  - Included: R&D, Business Improvement (incl specialist capability development), Business Development (e.g., major marketing)
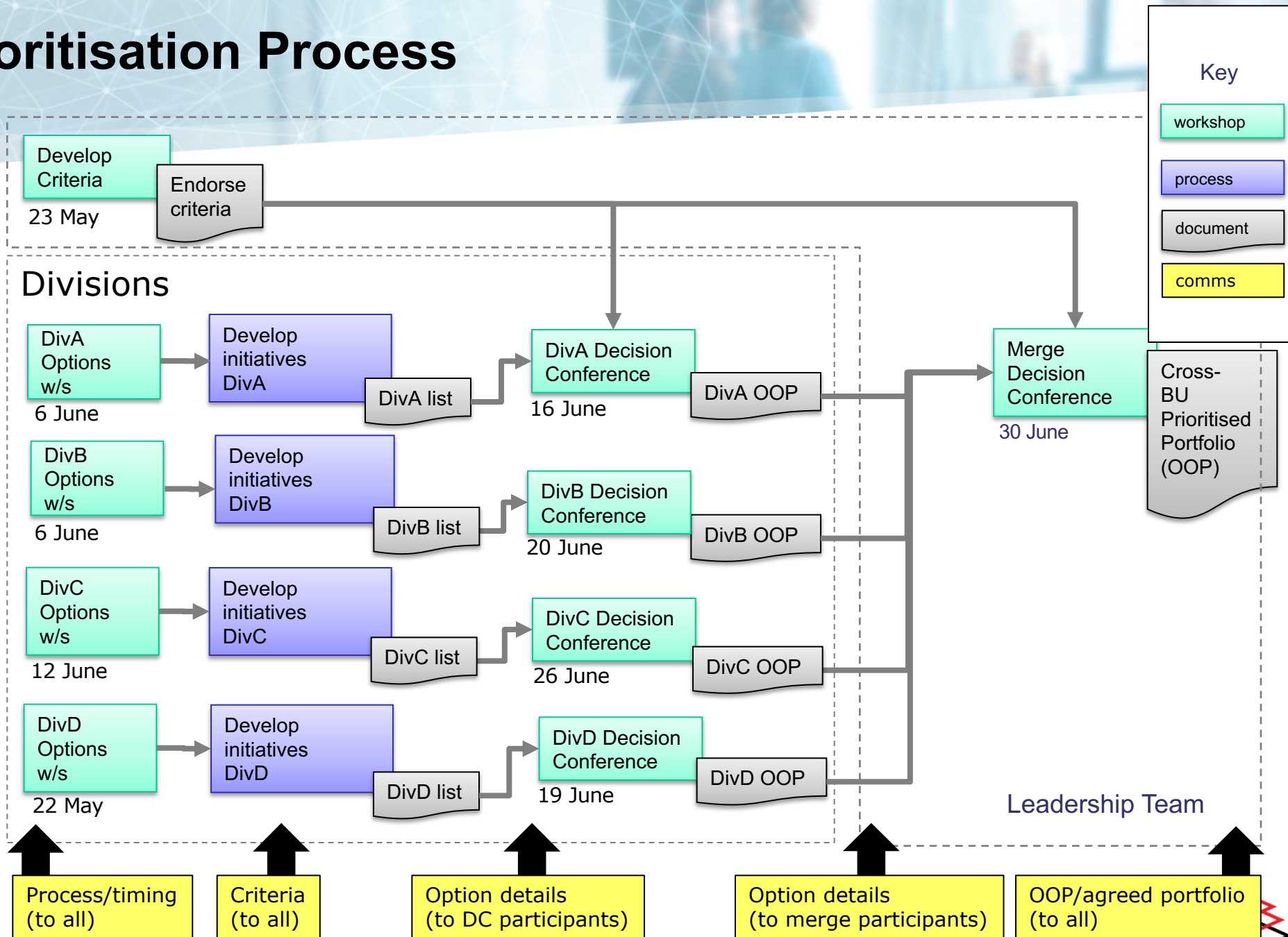 - Excluded: Bids, general training

- **How**
  - Use of structured prioritisation process – Multi-Criteria Decision Analysis (MCDA) and Decision Conferencing
    - Capitalising on and further developing BU internal capability
  - Each Division develops and prioritises their own list of potential initiatives
  - Overall portfolio agreed at 'merge' meeting on 30 June
    - Input to the annual business planning process

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The P⁵ Framework

- Plan
  - the who, what, where, when and how of the decision process. What context is relevant?
- Prepare
  - value, options, alternatives, criteria
- Prioritise
  - social process, scoring, weighting
- Package
  - constraints, future scenarios, make trade-offs, test for dependencies
- Present
  - what does the submission look like? What are the recommendations? What is the data / visuals? Include decision trail.

The Prioritisation Process

Key

- workshop
- process
- document
- comms

Develop Criteria
23 May

Endorse criteria

Divisions

DivA Options w/s
6 June
→ **Develop initiatives DivA**
→ DivA list
→ **DivA Decision Conference**
16 June
→ DivA OOP

DivB Options w/s
6 June
→ **Develop initiatives DivB**
→ DivB list
→ **DivB Decision Conference**
20 June
→ DivB OOP

DivC Options w/s
12 June
→ **Develop initiatives DivC**
→ DivC list
→ **DivC Decision Conference**
26 June
→ DivC OOP

DivD Options w/s
22 May
→ **Develop initiatives DivD**
→ DivD list
→ **DivD Decision Conference**
19 June
→ DivD OOP

Merge Decision Conference
30 June

Cross-BU Prioritised Portfolio (OOP)

Leadership Team

Process/timing (to all)

Criteria (to all)

Option details (to DC participants)

Option details (to merge participants)

OOP/agreed portfolio (to all)

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Decision Conferencing – a socio-technical approach

A social (group) process to:

- Establish a shared understanding of project issues
- Develop a sense of common purpose
- Understand different perspectives and objectives
- Gain agreement & commitment to the way forward from those implementing the decisions

A technical process (MCDA) to:

- Support the social process
- Provide real-time modeling
- Conform to the axioms of decision theory
- Perform sensitivity and robustness analysis
- Act as knowledge repository or 'corporate memory'
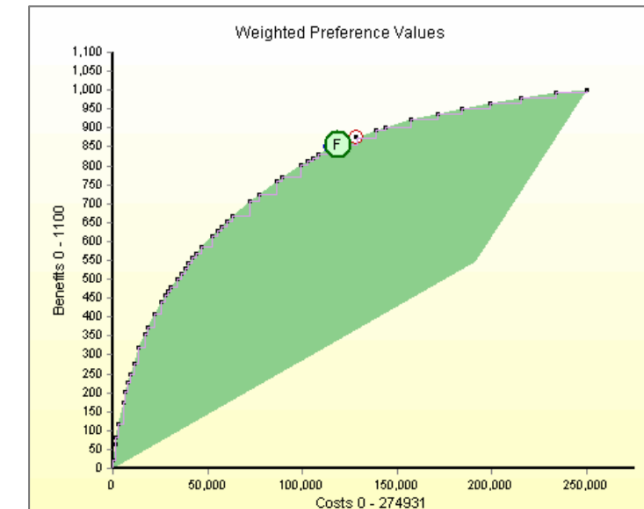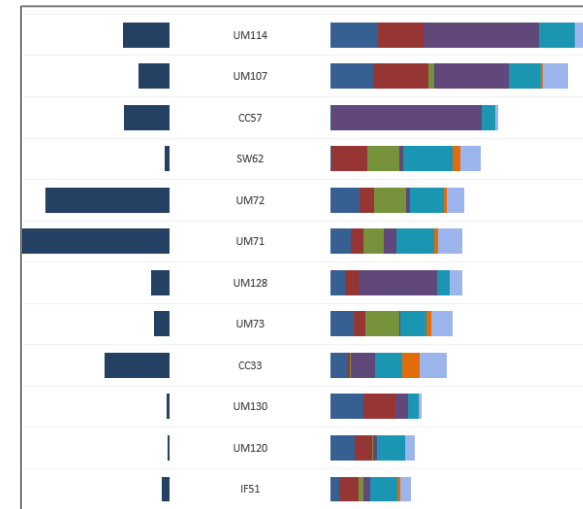
Decision Conference Roles & Responsibilities

- **Chair (also an evaluator)**
  - Only required to make a call in the case of impasse (picks between 2 scores; doesn't come up with a new alternative)

- **Evaluators**
  - Perform the scoring and weighting
  - All have **equal standing**

- **Facilitator (Independent)**
  - Expert in MCDA/Decision Conferencing, NOT content
  - Ensures the conference reaches a conclusion

- **MCDA Analyst, co-facilitator**
  - Expert in MCDA/Decision Conferencing
  - Supports the facilitator and manages the decision model

- **Subject matter experts**
  - Brief interventions and provide clarifications/detail when requested by evaluators
  - Raise any factual errors

- **Scribes**
  - Capture rationale to support results
  - Capture narrative for the decision paper and audit trail
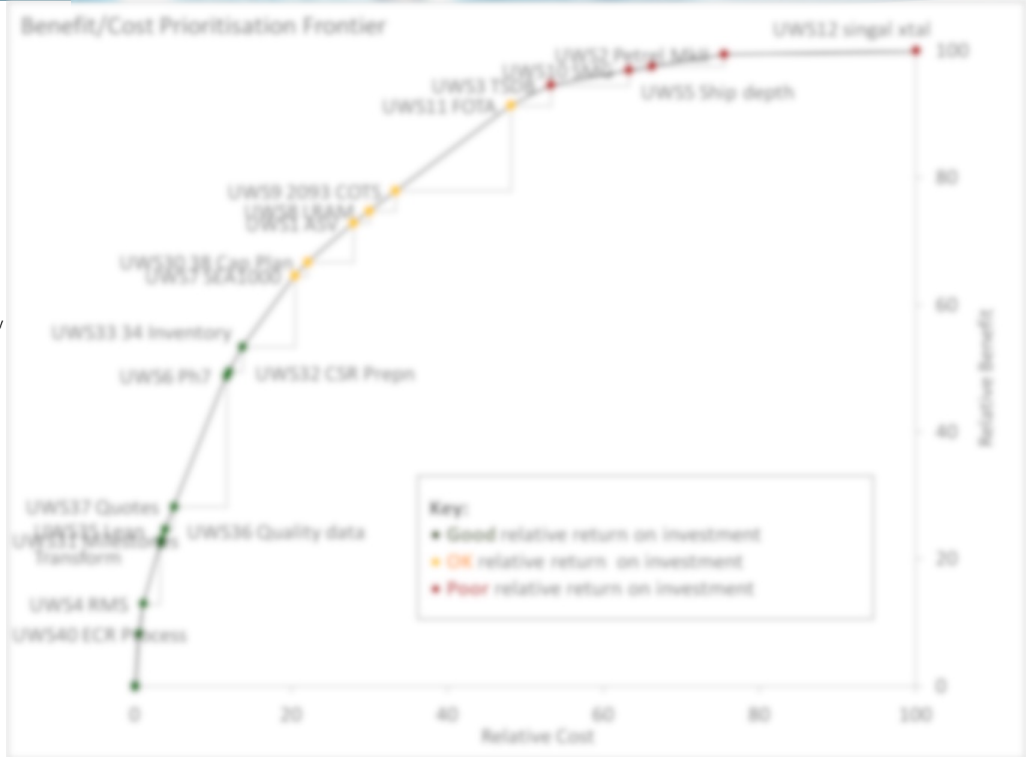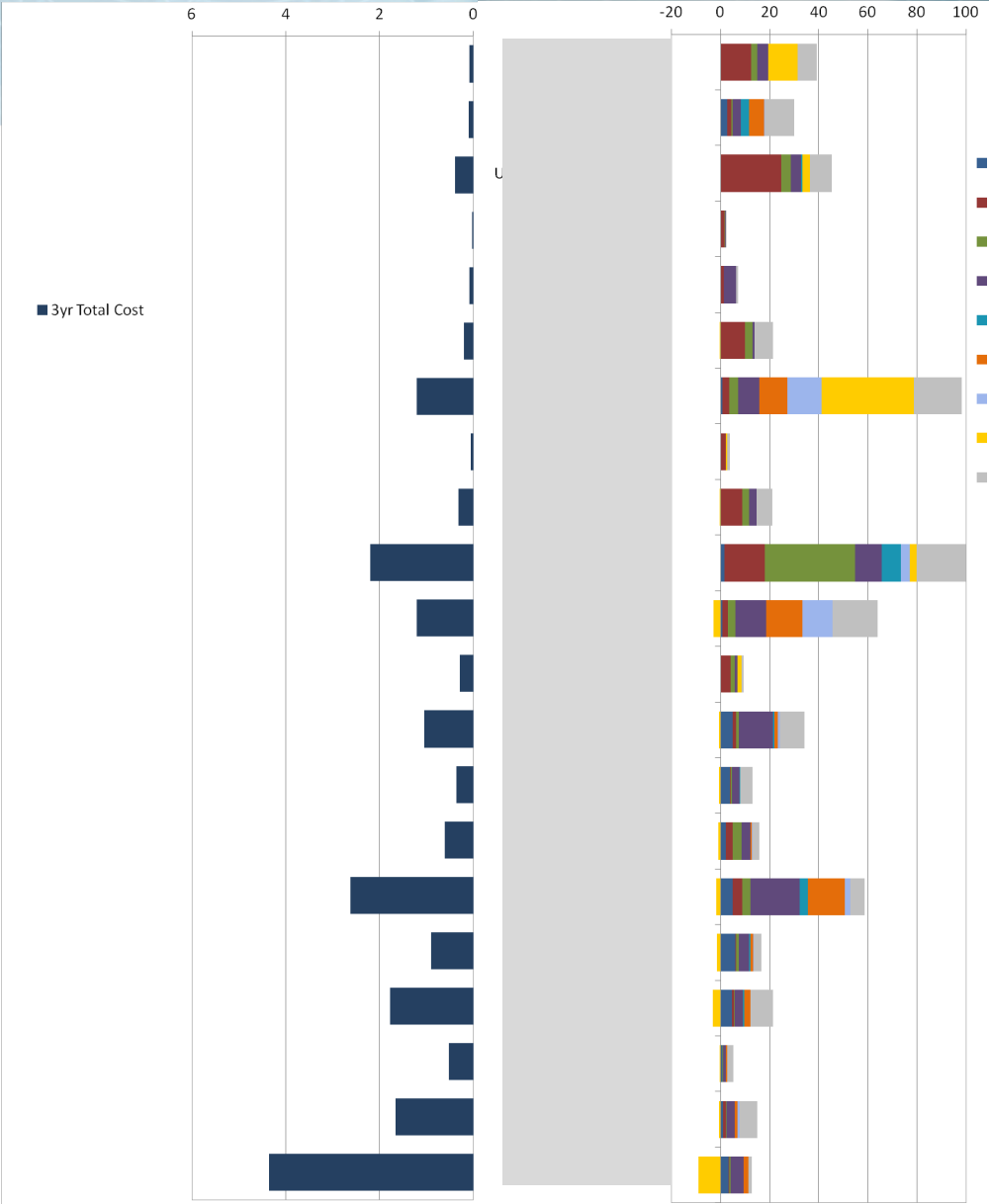
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Prioritisation Criteria

Vision Statement

Mission Statement

Customer Trust   Develop our People   One Team, One Co
Accountable and committed to Excellence   Agile & Innovative

Growth Drive Ambition	Competitiveness Fuel Growth	People Support Success
• **Service revenue growth** (over 10 years) • **New market revenue growth** (over 10 years) • **$ Revenue** (3 years) • **$ Profit** (3 years)	• **Innovation** The extent to which the initiative is innovative, creating novel ways of working or novel products and services, and/or contributes to changing the Org offer • **Efficiency** The extent to which the initiative increases Orgs' efficiency by reducing the cost of creating products or delivering services, increasing the speed at which products or services are delivered or increasing performance	• **Customer Trust** The extent to which the initiative grows and sustains customers' trust in Org, including creating customer understanding and intimacy. • **People** The extent to which the initiative supports the way we work, motivating and engaging our people, and supporting diversity

• **Probability of success**

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Divisional Results

DivC Prioritisation Chart

Whole BU Results

Process Adjustments

- **Inconsistent data (esp. cost estimates) identified at first merge**
  - Data QA across all initiatives (actually small changes)

- **Comparing R&D with Business Improvement confused the results**
  - Separated out into two portfolios – agreed funding split R&D / BI

- **Some GMs missed the first merge Decision Conference**
  - Weights reviewed by whole leadership team – greater emphasis on financial criteria

- **Some concern over scoring consistency**
  - DivC scores reviewed and refreshed (actually small changes)

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Agreed Affordable R&D Portfolio ($3.5m)

- **R&D Initiatives ($ shown are Next FY R&D investment)**
  - Actual total R&D investment: $3.86m

$1.06m	$1.79m*	$1.01m
DivA	DivB	DivC

	DivA	DivB	DivC
Next FY FTE required	4.7	TBC	5.3

*includes $0.55m commitment

Cost and benefit of the division portfolios

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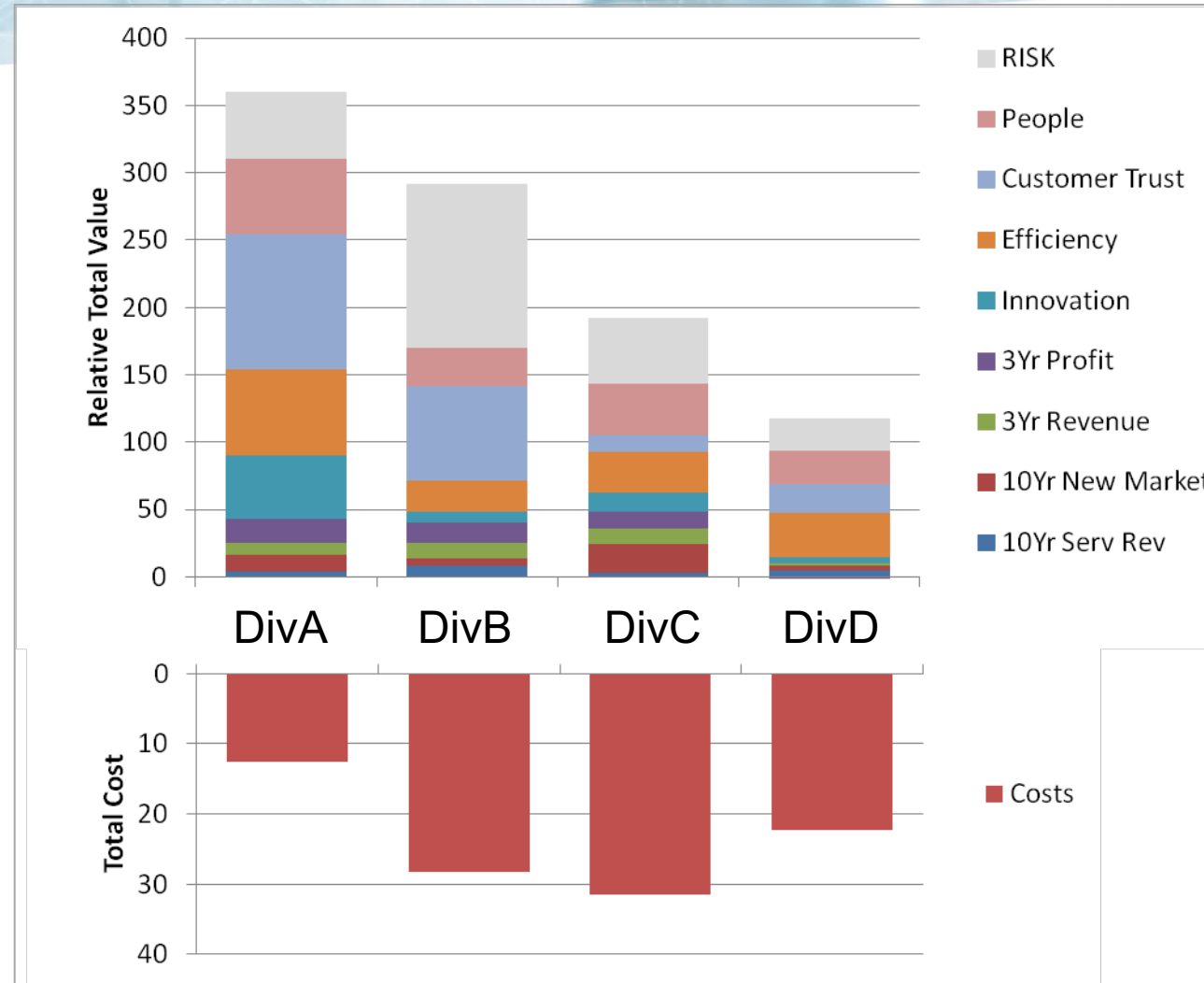
R&D Prioritisation Chart

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R&D portfolio

Benefit/Cost Prioritisation Frontier
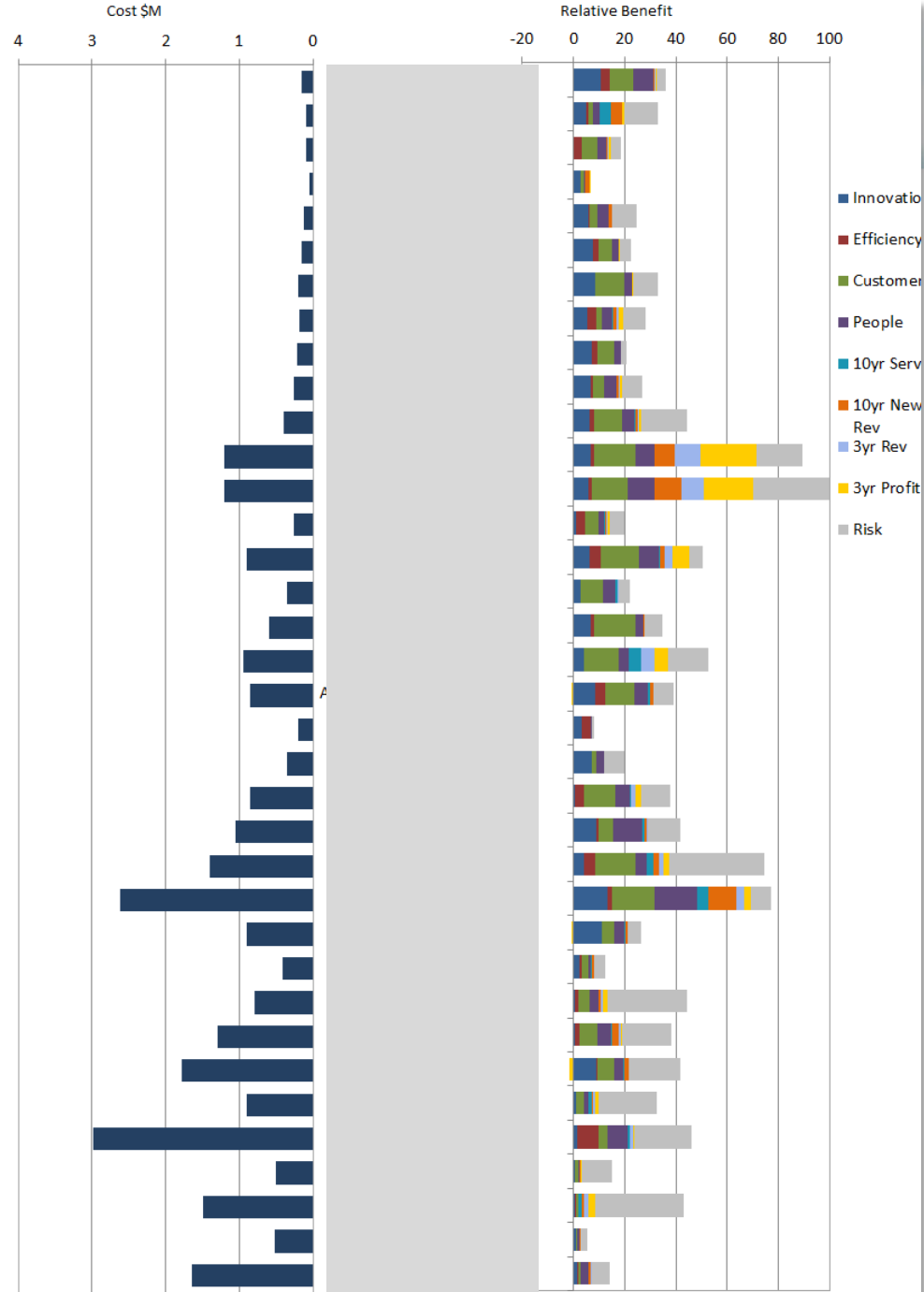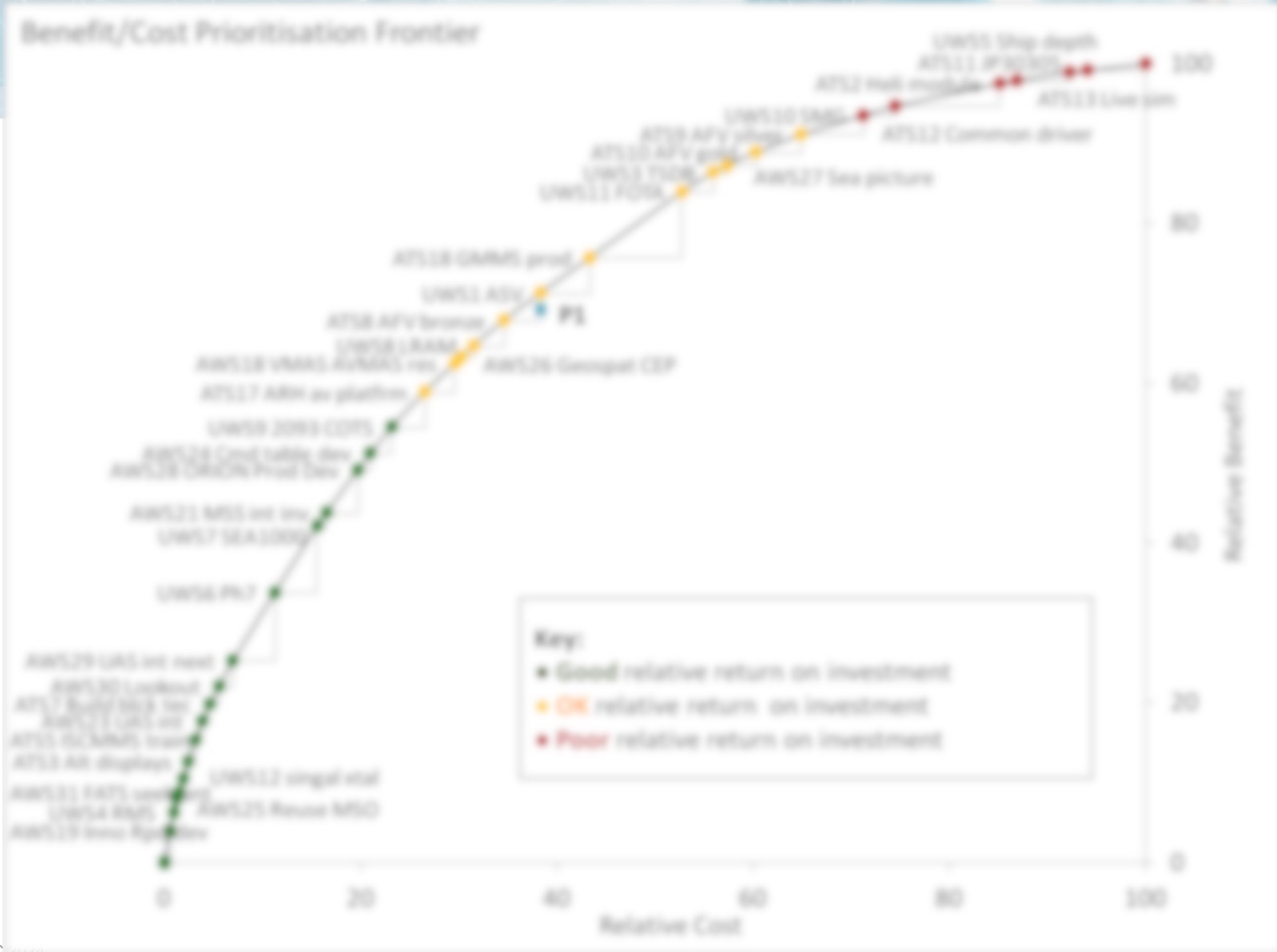
DivA 3-year R&D view

Profit & Loss

Net Revenue Growth	200.7%	142.9%	

All values in $M

				3yr CAGR %
Incremental Revenue				124.5%
Variable Cost of Sales				
Gross Margin				
% of Sales				
Total SFRD Expense				
Total Sales Costs Expense				
Total Other Costs Expense				
Total Investment	1.07	0.71	0.54	
% of Sales	42.6%	9.4%	3.0%	
IFO	**-0.34**	**1.40**	**4.55**	
% of Sales	-13.4%	18.6%	24.8%	

Headcount Summary

				Delta
Annual FTE Requirement	4.7	4.3	3.0	-0.5

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BI Prioritisation Chart

Cost $M

Relative Benefit

3yr Total Cost

Innovation
Efficiency
Customer Trust
People
10yr Service Rev
10yr New Mkt Rev
3yr Rev
3yr Profit
Risk

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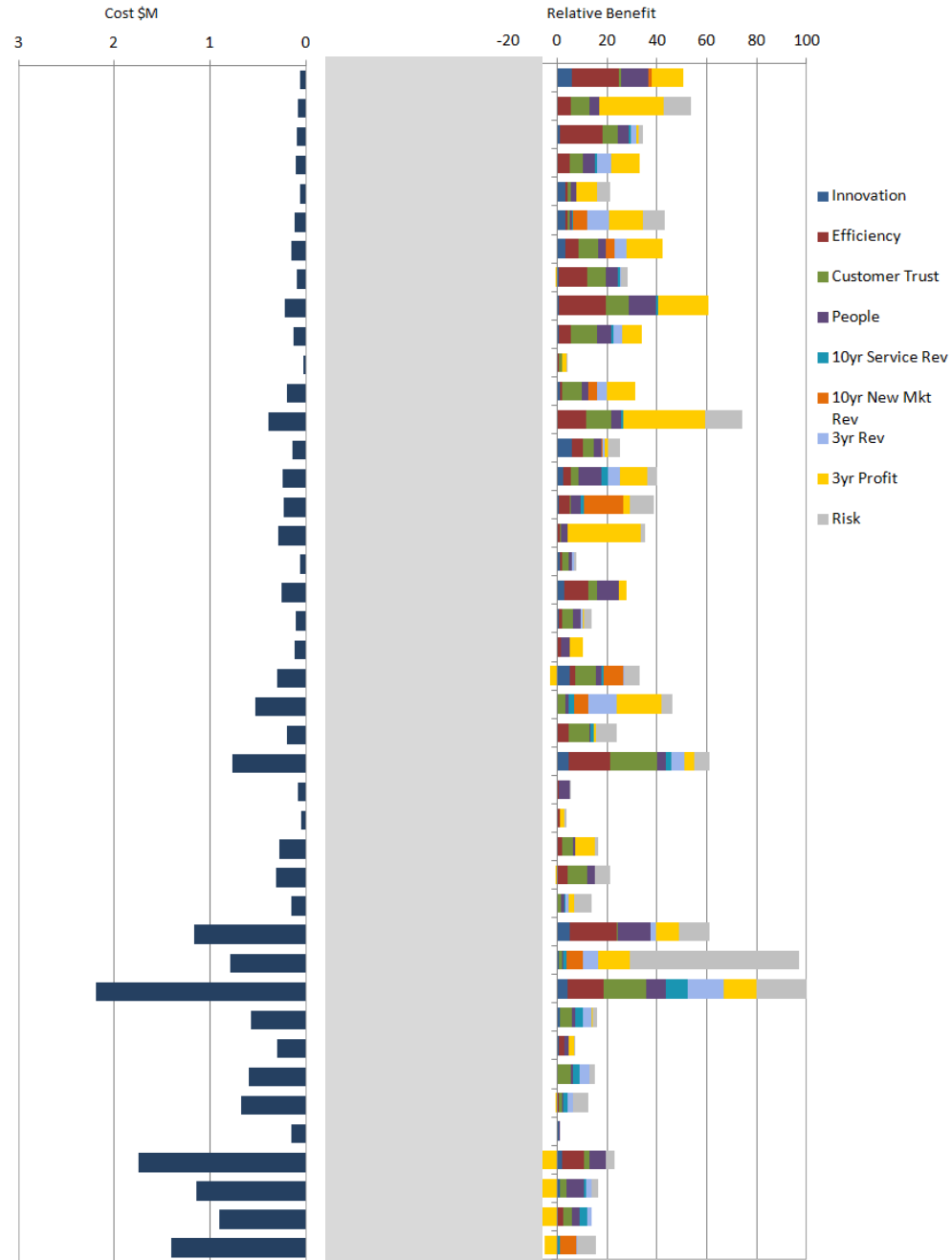
Embracing the World of R&D Investment

The Challenge	The solution
Competing siloes	Division-by-division then merge
High uncertainty	Probability of success criterion
Trying to find the next 'big win'	Financial criteria and diverse input
Very little data	MCDA
Everyone has a great idea	Active participation
It's a lot like gambling!	You've got to be in to win!
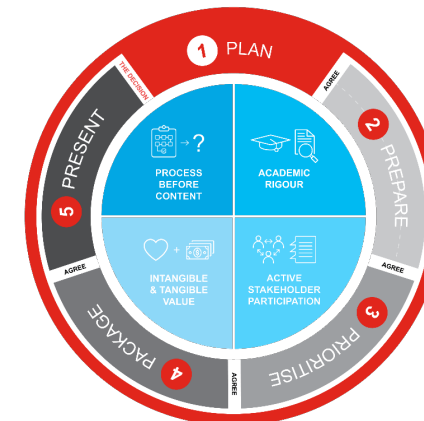
Outcomes, Lessons and Keys to Success

Outcomes

- R&D and BI Funded as agreed
  - all leadership team on board
  - Whole of org on board
- Headcount deployed
- Initiatives executed
- Business performance on track

Lessons

- Be prepared to be flexible with process and timing
- It's OK to go 'backwards' if it increases trust
- Everyone is poor at cost estimating
- R&D outcomes hard to articulate

Keys to success

Transparency of process throughout
  - Regular briefings
  - Each Division had team participate

Divisional prioritisation first
  - Ensured divisional commitment

Senior sponsorship – and commitment to follow-through

Clarity of roles

Criteria well-defined and set from strategy

ANY QUESTIONS?

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