Valuing Investment in Military C2 Training: can we use intermediate decision-based measures?

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Questions posed

Can we adopt intermediate decision-based measures as useful 'proxies' for measuring effectiveness of C2 training and development?
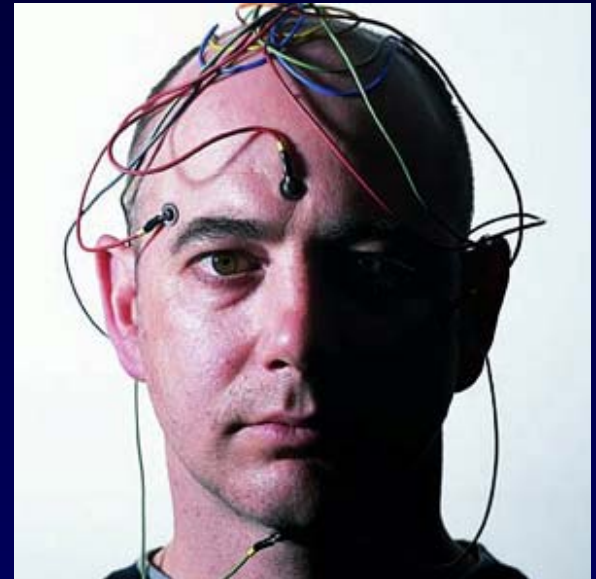
How might such measures address aspects of value-added across the many different stakeholders ?

How might such decision-based measurements be captured?

Contents

What

options

do I have?

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01

Operational demands

The problems facing us in contemporary operations are not easy to foresee and are often not familiar; nor readily solved using courses of action developed in standard training.

Decision   Complexity
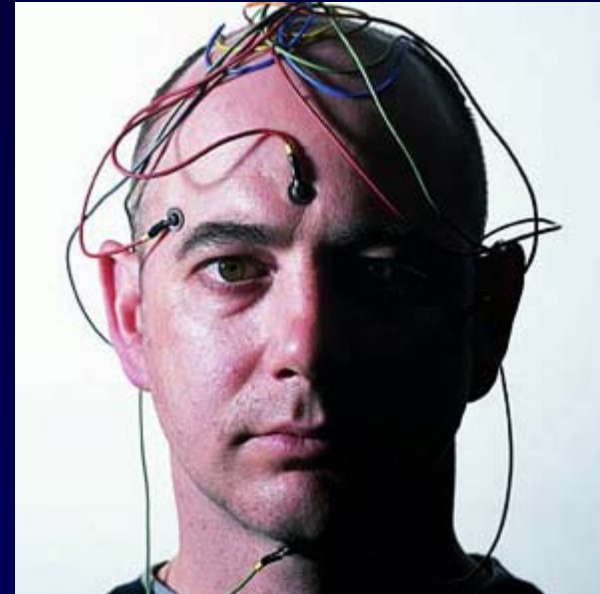
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Big-world demands self-reflection

	foreseen	unforeseen
creative	transitional through **education**	Big-world **and this quality of self-refection** ?
non-creative	Small-world	If in doubt refer-up or across for assistance or stick to SOPs

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Types of knowledge according to ways of learning

☐*Techne*: Technical/practical skills (as developed by practice and repetition);

☐*Episteme*: Teachable knowledge (as developed by being taught in company of those who already know or by reading training notes or books);

☐*Phronesis*: Experiential knowledge (can be learnt only by direct personal experience – actually being there to know what it felt like);

☐*Metis*: Conjectural knowledge (that combines wisdom, deception, insightfulness, vigilance, resourcefulness, opportunism and 'cunning').
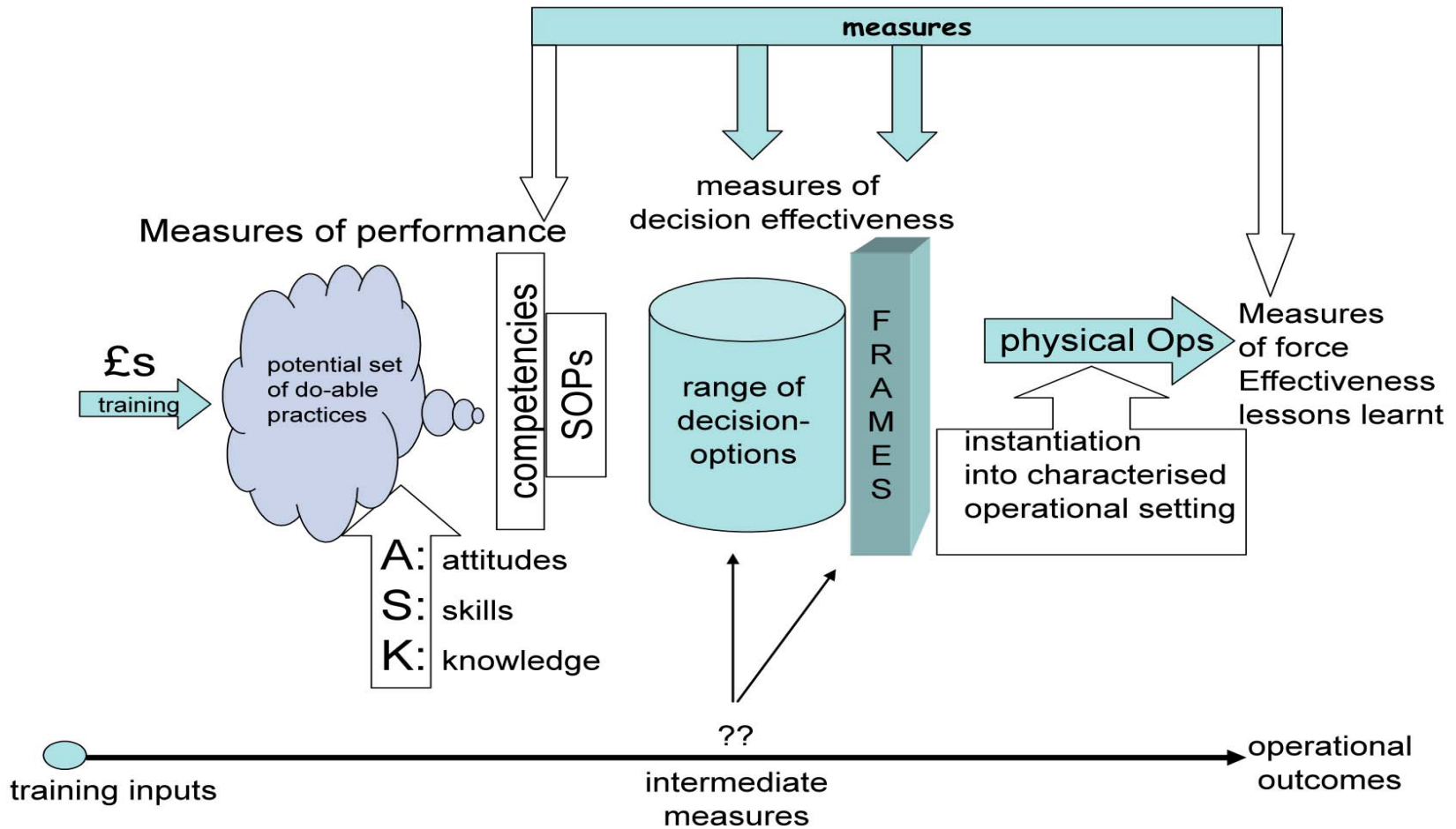
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02
Decision-based measures

Options   matter

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Measuring Effectiveness

What options are being considered according to types of decision-roles?
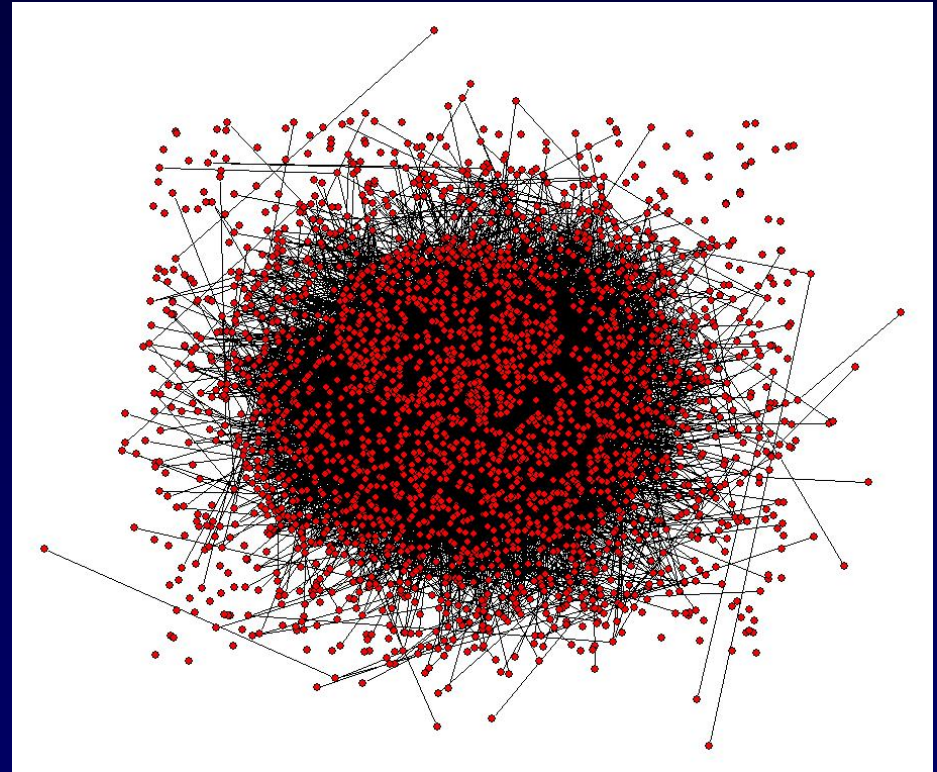
Operators (e.g. drivers);

Decision-takers (e.g. tactical commanders);

Decision-makers (e.g. operational commanders);

Shapers (e.g. strategic leaders).

03
Conceptual framework

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Where do we need to add value?

	Type of decision-role			
	Operator (e.g. driver) Practical	Decision-taker (e.g. Battle Cmdr) Tactical	Decision-maker (e.g. 2* Cmdr) Operational	Shaper (e.g. 4* CINC) Strategic
Conjectural knowledge and cunning learnt thro complexity (*metis*)	Understanding modus operandi and decoys, etc of adversarial operators.	Plan robustness and ability to consider 'cunning' plans.	Ability to defer decisions and to balance all aspects of rules and freedoms.	How to shape relationships for natural flow of complex operations.
Experiential knowledge learnt through felt experience (*phronesis*)	Self reflection & creation of new options or actions – being resourceful.	Create effective options outside usual course of action options.	Understanding of situation as a whole – as felt OK to over-ride principles.	Feel for when to re-generate or remove policy boundaries.
Teachable knowledge (*episteme*)	Learning how to cope with equipment break-down.	Operational and situational knowledge (e.g. ORBATs and geography).	Knowledge of own capability & organisation: constraints and restraints.	Knowledge of others' key strengths and weaknesses (power balance).
Technical skills and practices (*techne*)	Skills & refresh of practical tasks.	Estimate processes and CoA selection.	People skills for appropriate delegation of decision rights.	Mechanisms for setting policy (e.g. veto, rules of engagement).

Four types of knowledge

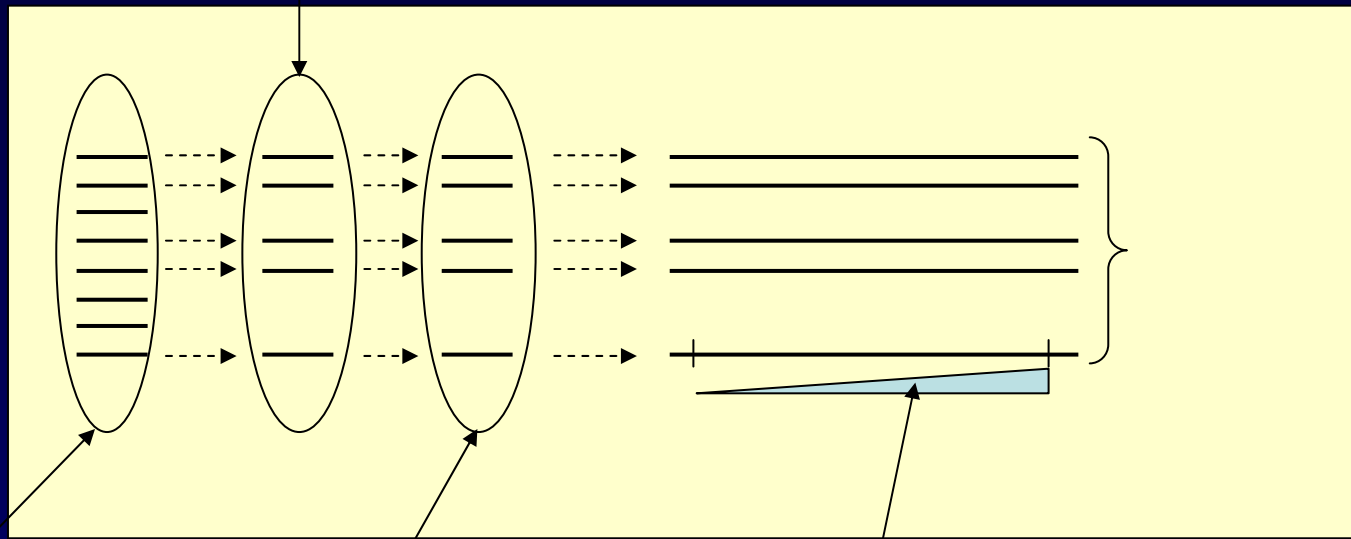*Intellectual Excellence in Defence*

04
Adopting different viewpoints and
using a multi-perspective approach
to address what might give us the
'added value'

Lines of Perspective (LOP)

Perspectives that the stakeholder 'cares about' in a given context.

Lines of Perspective make-up a stakeholder 'landscape'
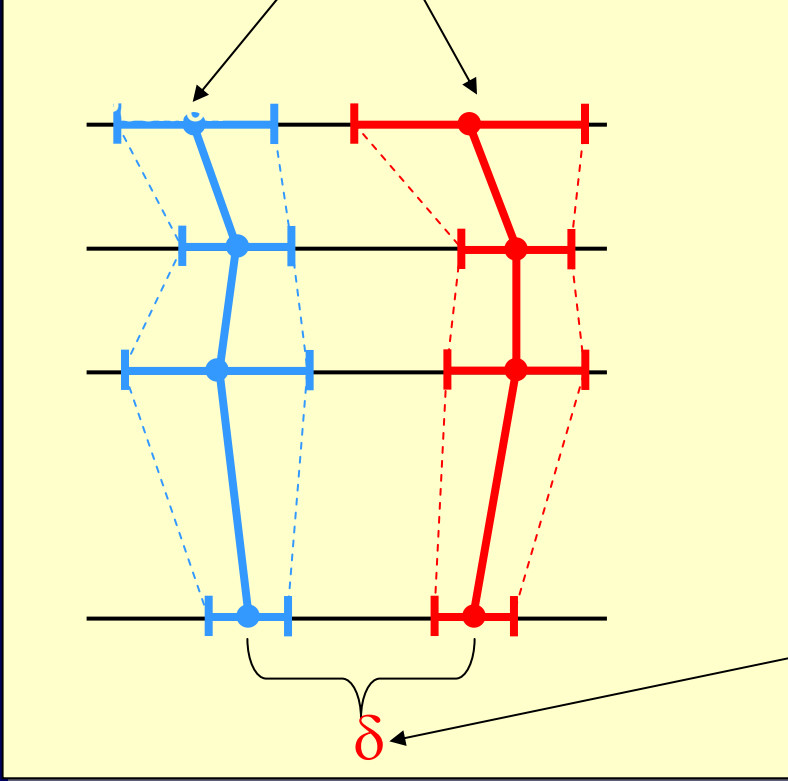

Initial candidate set of perspectives

Measures associated with each LOP (Could include proxies)

Range of observables that are relevant to the stakeholder and the context

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Stakeholder Positions

Attractors in the perspective 'landscape'

δ

Stakeholder's drive for actions

and support for options

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Towards Repertoire of Actions and extending Options

Need to impose order

Means

Variety of actions

Drive to extend repertoire

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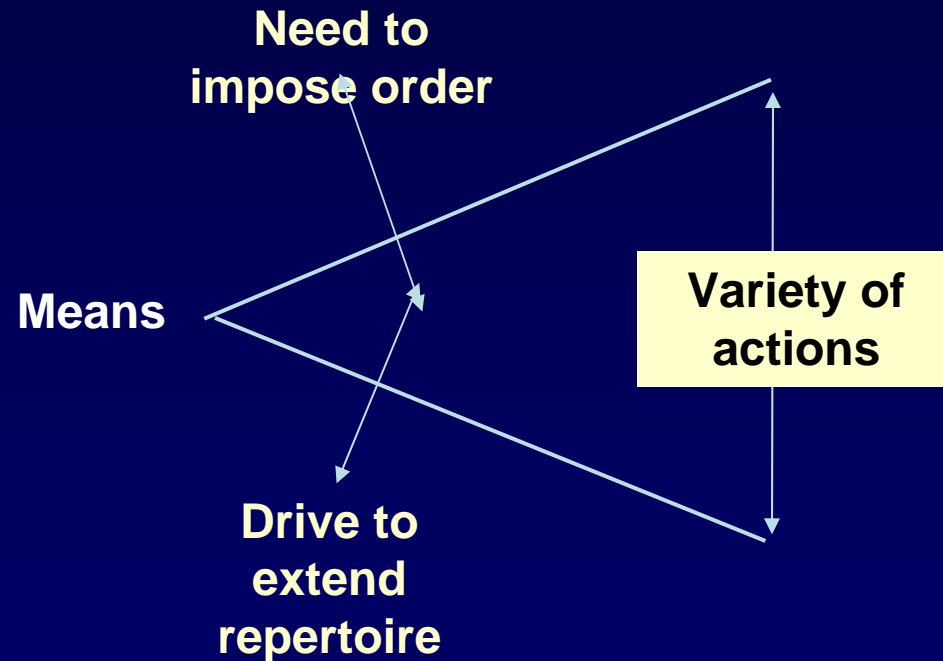
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Frameworks for analysis

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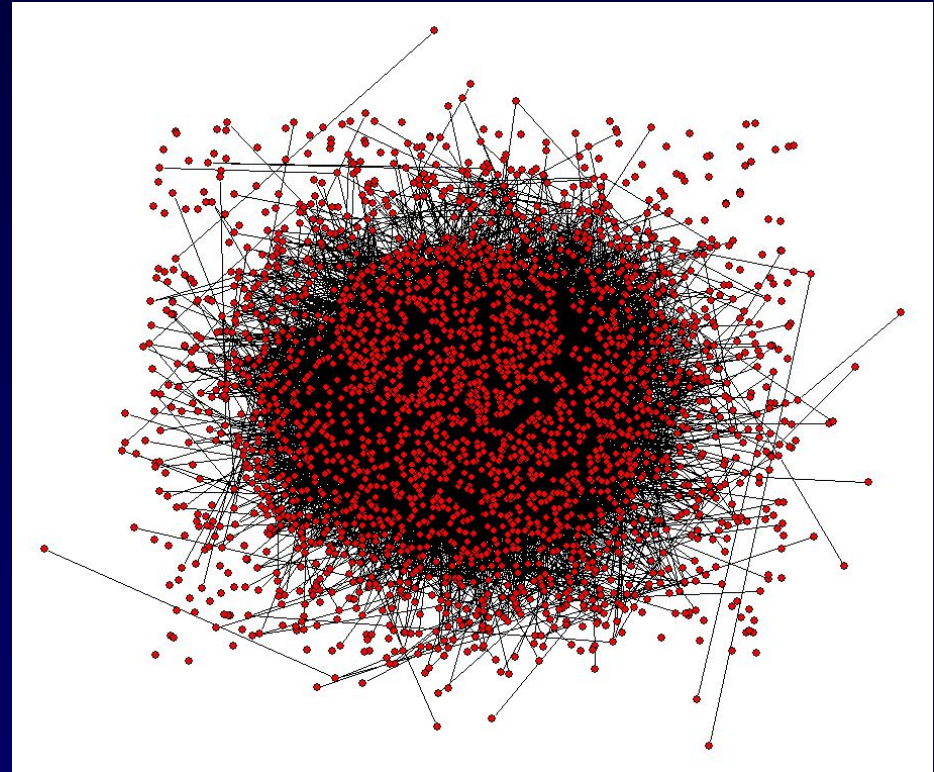
Two types of question

- Forward-looking question:
  - What could be the effects of investing £X in Future CAST training programme or educational establishment?
- Backward-looking question:
  - What could have been a cause, in terms of lack of training, education or learning, of recent deaths and casualties in theatre of operations?

- Within an adaptive analytical framework, Backward-looking questions are very challenging due to the multiplicity of frameworks required.
- So for test-case study use a forward-looking question; for example, "which option(s) should be considered and adopted for Future CAST?"

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06

Illustrative Example using Future Command and Staff Trainer

FCAST   OPTIONS

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Potential Stakeholders who take an interest in "Which options for Future CAST?"

- Operational Commanders
- Learners as peace-keeper, war-fighter, etc
- Educators and Land Warfare training establishment
- Capability auditors and Directorate for Scrutiny
- Defence analysts
- Through-Life Capability Manager
- Defence Industry
- UK Government
- Potential adversaries
- ………..

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Stakeholders' foci of interest

Stakeholder	What defines main aspects of stakeholder interest in FCAST?
Commander	FCAST as a contributor to force strength and all aspects of agility
Learner	FCAST as a means of professional development and learning
Capability 'valuer'	FCAST as a value-adding funded strand of capability provision
Educator	FCAST as a means of imparting knowledge and achieving a 'training mission'.

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Lines of Perspective:
what aspects do stakeholders care about?

- Doctrinal
- Educational
- Financial
- Professional
- Emotional (personal)
- Social
- Commercial (industrial)
- Operational
- Experiential
- Technical
- Analytical
- Organisational
- Political

- Institutional

Options for Future CAST

Stakeholder	What defines main aspects of stakeholder interests in training	line of perspective	Measures
Commander	FCAST as contributor to force strength and agility	• Operational • Organizational	• Mission outcome achievable • Ease of re-organisation • freedoms to operate
Learner	FCAST as a means of personal development	• Professional • Social • Operational • Technical • Educational • Emotional (personal)	• Increase in status • Breadth of associates • Mission outcome achieved • Level of knowledge gained • Exams taken and passed • Level of self-esteem/confidence • confidence to command
Auditor	Measures of effectiveness to value FCAST as a funded strand of capability provision	• Financial • Commercial • Operational • Institutional • Political	• Cost in relation to budget • Price of commercial suppliers • Strategic mission outcomes • Balance of investment • Amount of political buy-in/power
Educator	FCAST as a means of imparting knowledge and achieving a 'training mission'.	• Educational • Operational • Technical • Doctrinal • Financial	• Outcome of staff reviews • Utility in operational application • Level of knowledge imparted • Coverage of lessons learnt • Costs of courses and budgets

Option 1 for Future CAST

Stakeholder	What defines main aspects of stakeholder interests in training	line of perspective	Measures
Commander	FCAST as contributor to force strength and agility	• Operational • Organizational	• Mission outcome achievable • Ease of re-organisation
Learner	FCAST as a means of personal development	• Professional • Social • Operational • Technical • Educational • Emotional (personal)	• Achievement of 'pass' • Breadth of associates • Mission outcome achieved • Level of knowledge gained • Exams taken and passed • Level of self-esteem/confidence
Auditor	Measures of effectiveness to value FCAST as a funded strand of capability provision	• Financial • Commercial • Operational • Institutional • Political	• Cost in relation to budget • Price of commercial suppliers • Strategic mission outcomes • Balance of investment • Amount of political buy-in/power
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Perceived Position   Desired Position

X   X

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Discussion of illustrative example

- Adoption of training options could result in any of the following:
  - Movements in perceived positions of stakeholders.
  - Movements in desired positions of stakeholders.
    - Either by changing the measurement scale:
    - Or adding/removing a Line of Perspective.
- Limited analysis undertaken has shown that adopting different viewpoints and multiple perspectives has potential for providing interesting cross-stakeholder valuations.
- The framework supports a more open and subjective approach to analysis and valuing training investment.
- The method helps to open-up inquiry and tries to avoid advocacy.

Summary discussion and open questions

- Focus on decision options is a potentially useful way to establish fuller extent of a learnt capacity to respond openly to complex situations.

- Certain aspects of assessment-based training programmes may have a tendency to suppress natural capacity for creativity in option generation.

  - There is no room to learn from failure

- Can we get value-added 'for free' if we refrain from imposing certain types of process-reinforcing training programmes?

QUESTIONS?

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