

Supporting Risk-Aware Research: A FASTS-ANU Policy Dialogue Collaboration

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The ANU's Research and Innovation Policy Project: An Overview

- Support the Cutler Review
 - significant cash and in-kind resources
 - partnership-based working
- Foster policy dialogues – solution oriented
- Develop a more agile fixed-duration support mechanism for wider application in policy-shaping
 - start-up quickly and end with no longer-term resource implications
- Contribute to the broadening of the *Research Evaluation and Policy Programme's* (REPPs) remit
 - new research and innovation “think tank” capability @ ANU (aiming at campus-wide cooperation)
 - New Chair to be appointed in 2008 (Matthews as Interim REPP Director)
 - working in partnership with others (e.g. FASTS?)

The Policy Dialogue Workshops

- Supporting risk-aware research: ANU + FASTS
- Public sector innovation: ANU + ANZSOG + FASTS
- Costs and Compacts: Go8 + ANU + Uni. Melb
- Contribution of the creative industries to the National Innovation System: ANU + CCI@QUT
- Economic and social importance of innovation in services: ANU + group of professional services firms
- Learning from different central economic Ministry perspectives on research and innovation: ANU + Treasury (t.b.c)

Supporting Risk-Aware Research: The Rationale

- Concerns over shortcomings in current funding and evaluation arrangements
 - risk-aversion (in peer review, funding, program design, performance assessment)
 - retrospective (reward) emphasis – contested funding principle dominates emphasis on understanding the unknown
- How do we know that we are funding blue-sky research effectively?

Supporting Risk-Aware Research: Issues for Consideration

- The move toward Compact-based funding
- From the “success-reward” relationship to the risk-reward relationship
 - untangling funding rationales
- Peer review processes
 - From the “success-reward” relationship to the risk-reward relationship!
- Performance assessment
 - Evaluation methods must align with selection methods
 - Learning loops must be effective
 - Economic impact fetish: over-stated *ex ante* impact appraisals are encouraged and rarely held to account: learning loop disconnect
 - A focus on non-scalable stochastic “lighting strike” commercial outcomes as harbinger of higher future benefits to come “ we need (n) more Cochlears!
- Learning from the private sector
 - where the risk-reward relationship really matters
- Learning from the national security community
 - Capability, prescience and preparedness (CP²)

Supporting risk-Aware Research: The Key Questions

- What are the elements of a comprehensive analysis of research project risks and how could this be taken into consideration in project/programme selection processes?
- What can Australia learn from the policies for supporting risk-aware research elsewhere in the world?
- To what extent would longer-term project timeframes allow research risks to be managed better (e.g. by allowing greater scope for learning from failure)?
- Should a more incremental risk-based approach be implemented in order to allow sets of “long-shot” ideas to be explored and then selected for further research without locking funding into long-term research contracts (i.e. adopt a system of more frequent evaluation points linked to stop, proceed or re-focus decisions – a more flexible approach now used by businesses)?

Supporting risk-Aware Research: The Key Questions (cont.)

- How else might we introduce greater *agility* (flexibility and responsiveness) into our system of research funding in order to allow emerging opportunities to be exploited more effectively and in a timely manner?
- To what extent would options-based approaches (such as those being explored by CSIRO) help to select and evaluate research projects in a more risk-aware manner?
- Should risk-aware portfolio-based rather than project-specific selection and evaluation arrangements be used to offset the uncertainties and types of risk inherent in supporting the full spectrum of research modes (by allowing different risk factors to offset each other)?
- If portfolio approaches are to be recommended:
 - at what level of aggregation/scale should they be applied and how should the risk-reward relationship be managed in a public policy context (e.g. taking greater risks to address the most important policy challenges)?
 - how should risk-aware portfolio-based research balance the advantages of *critical mass* against the advantages of *diversity* in managing research risks?

Options methods

- Real options methods now starting to be used in evaluations of S&I funding (e.g. CSIRO)
- Conceptually appealing and supports growing recognition of the importance of preparedness as a research outcome
- The challenges to using real options methods have already been encountered in the private sector
 - The findings can be opaque and hard to grasp for non-initiates
 - Can require sophisticated and costly expertise in applied mathematics to handle complex cases
 - Raises cost-benefit questions about “how many options are enough”
- Continued economic impact emphasis may limit applicability to blue-sky research (counter-productive?)

Portfolio methods

- Bundling: possibility of counter-balancing different types of research risk
 - importance of a risk taxonomy
- Evaluating portfolios not discrete project
 - at what scale?
 - How to balance critical mass against diversity
 - Using risk-reward principles in relation to major national priorities

Your Ideas....

- Countering the “risk is bad” ethos:
 - the unknown is a bigger risk than the risk of “failure” against well-defined objectives
 - come back “exploration” – all is forgiven
- Appealing new methods
 - Funding rationales (beyond economic impacts – prescience and preparedness etc)
 - Selection
 - Evaluation