Forum for European-Australian Science and Technology cooperation

Best Practices in Engaging with Europe

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A strategy challenge

- Bibliometric evidence that international research collaboration is good for “excellence”
- Europe is a major player in global R&D
- International flows of R&D funding can have a major impact on national R&D spending
- Obtaining targeted funding for international academic collaboration is problematic in Australia
- Exacerbated by the costly “tyranny of distance”
- So, what are the best means of dealing with this situation?

The global R&D hierarchy

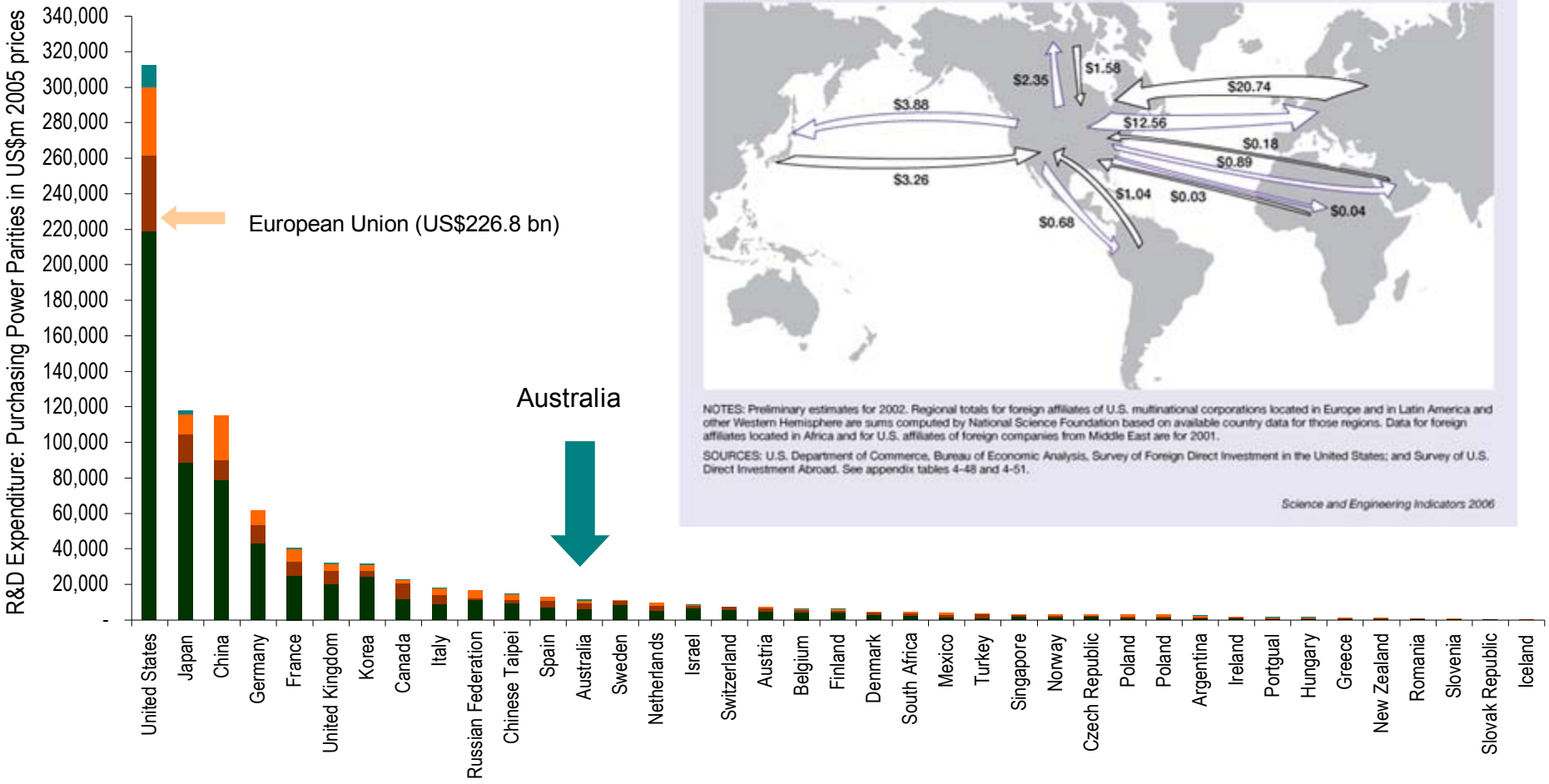


Figure 4-47
R&D performed by U.S. affiliates of foreign companies in U.S. by investing region and by foreign affiliates of U.S. multinational corporations by host region: 2002 or latest year

(Billions of current dollars)

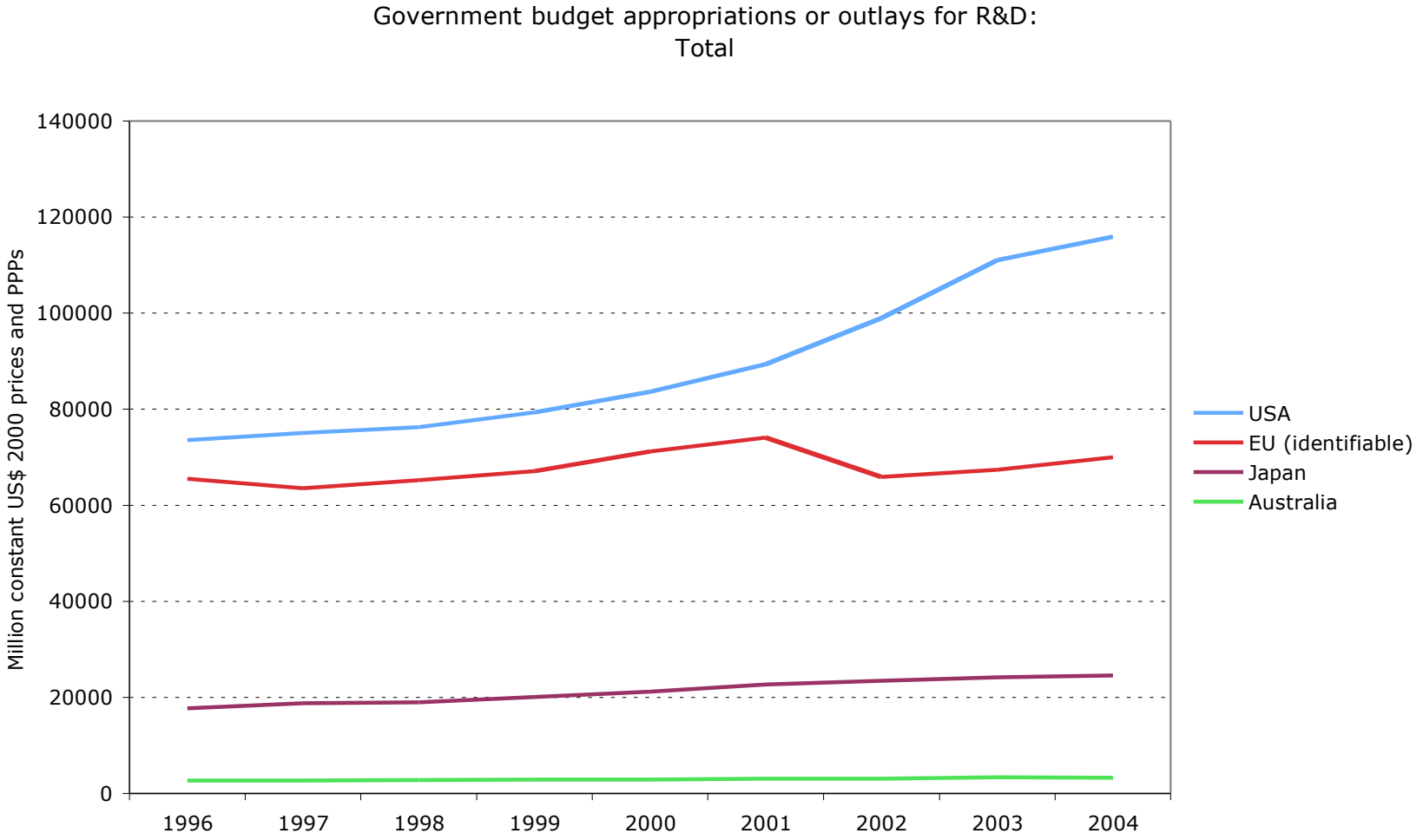
NOTES: Preliminary estimates for 2002. Regional totals for foreign affiliates of U.S. multinational corporations located in Europe and in Latin America and other Western Hemisphere are sums computed by National Science Foundation based on available country data for those regions. Data for foreign affiliates located in Africa and for U.S. affiliates of foreign companies from Middle East are for 2001.

SOURCES: U.S. Department of Commerce, Bureau of Economic Analysis, Survey of Foreign Direct Investment in the United States; and Survey of U.S. Direct Investment Abroad. See appendix tables 4-48 and 4-51.

Science and Engineering Indicators 2006

Source: OECD Main Science and Technology Indicators Database

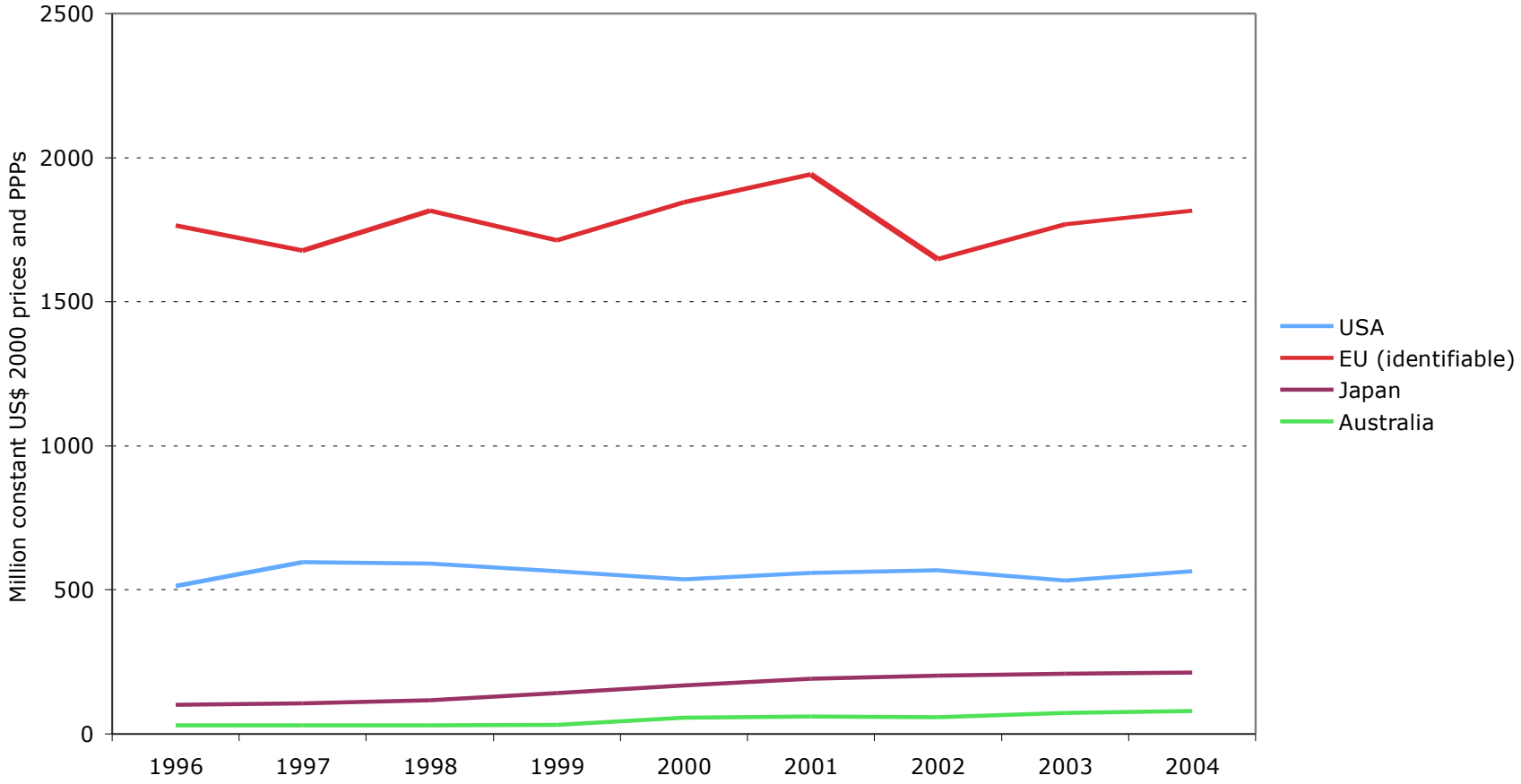
How do aggregate national Govt. R&D budgets stack up?



Source: OECD Main Science and Technology Indicators Database

Environment

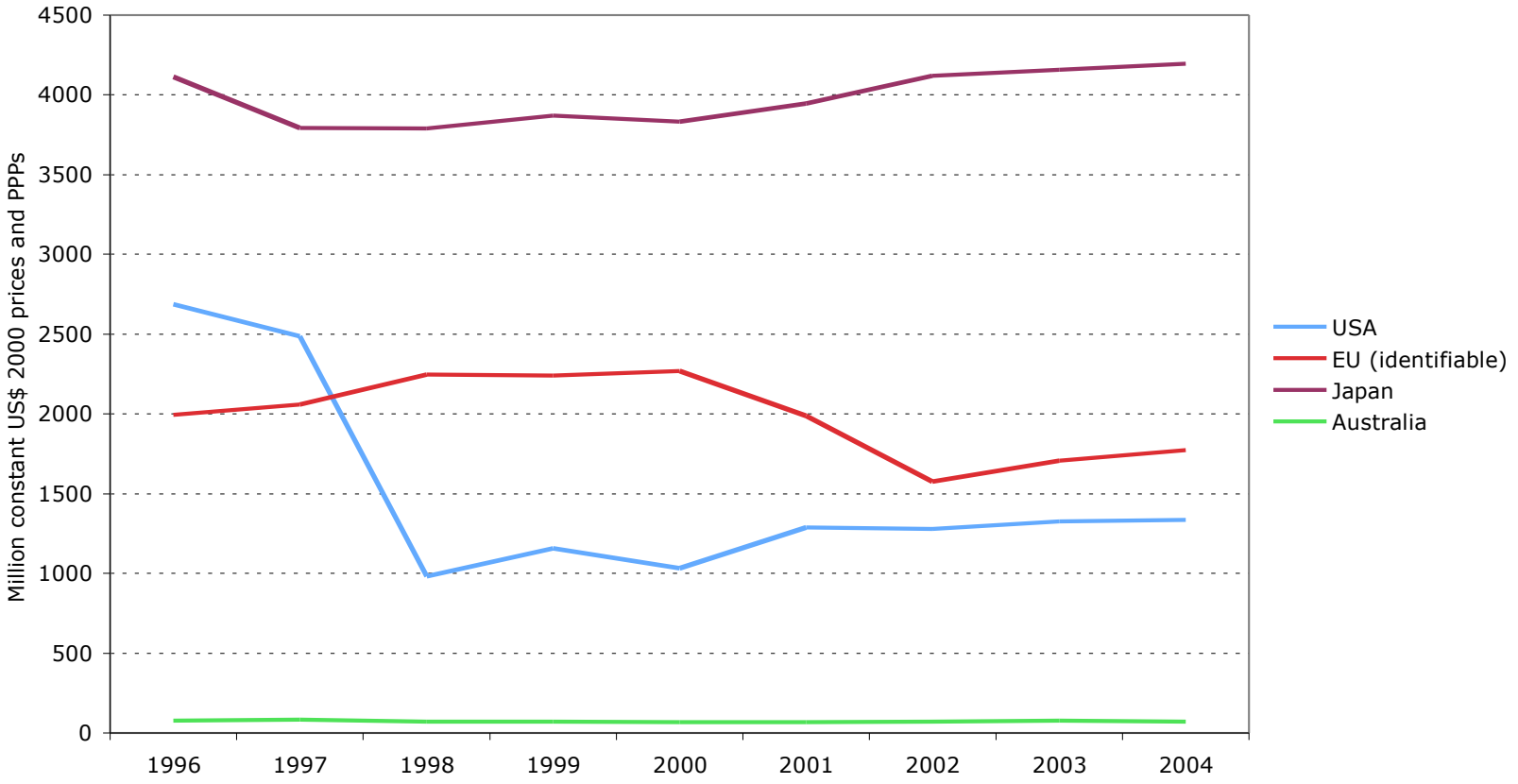
Government budget appropriations or outlays for R&D:
Control and care of the environment



Source: OECD Main Science and Technology Indicators Database

Energy

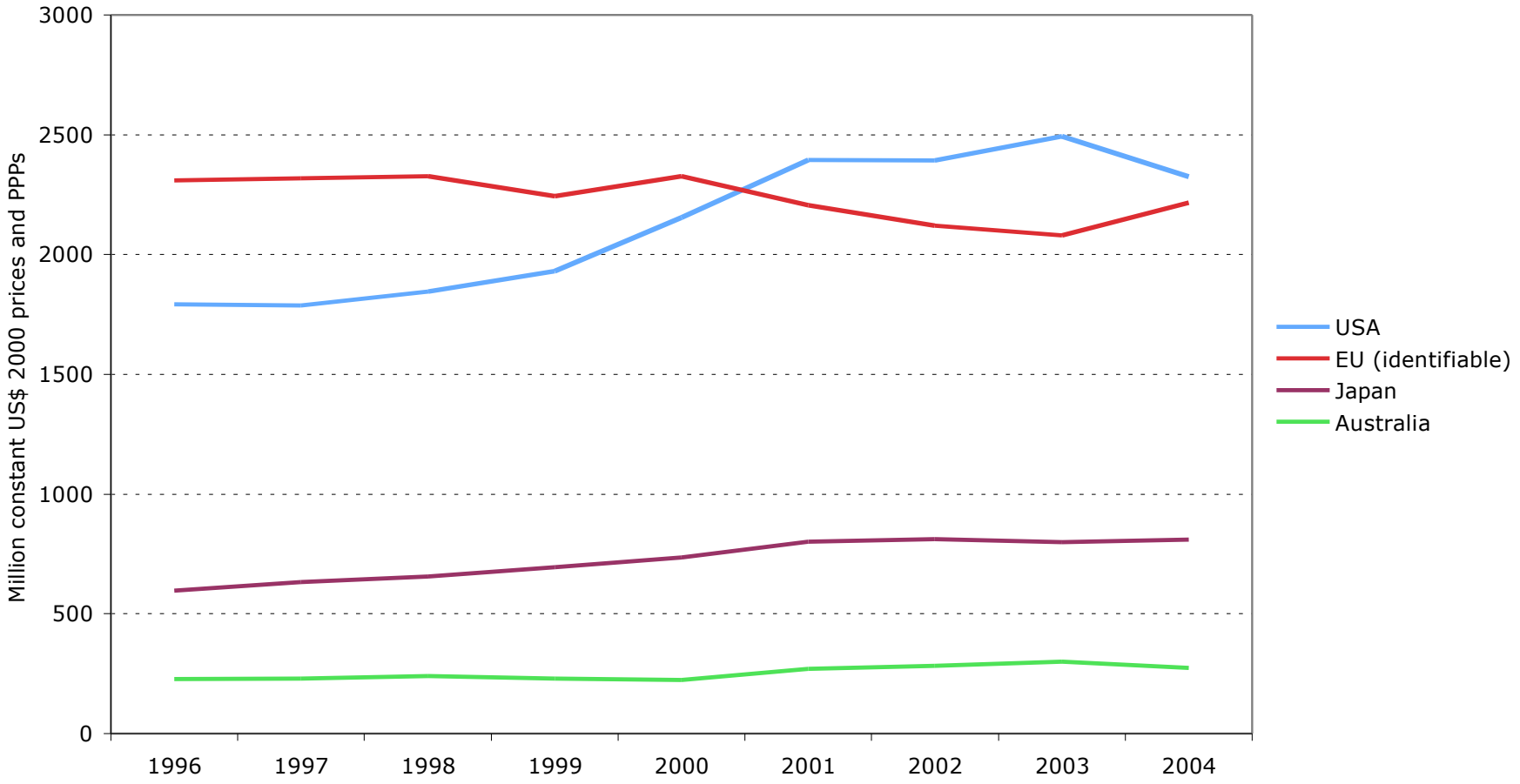
Government budget appropriations or outlays for R&D:
Production, distribution and rational utilisation of energy



Source: OECD Main Science and Technology Indicators Database

Agriculture

Government budget appropriations or outlays for R&D:
Agriculture production and technology

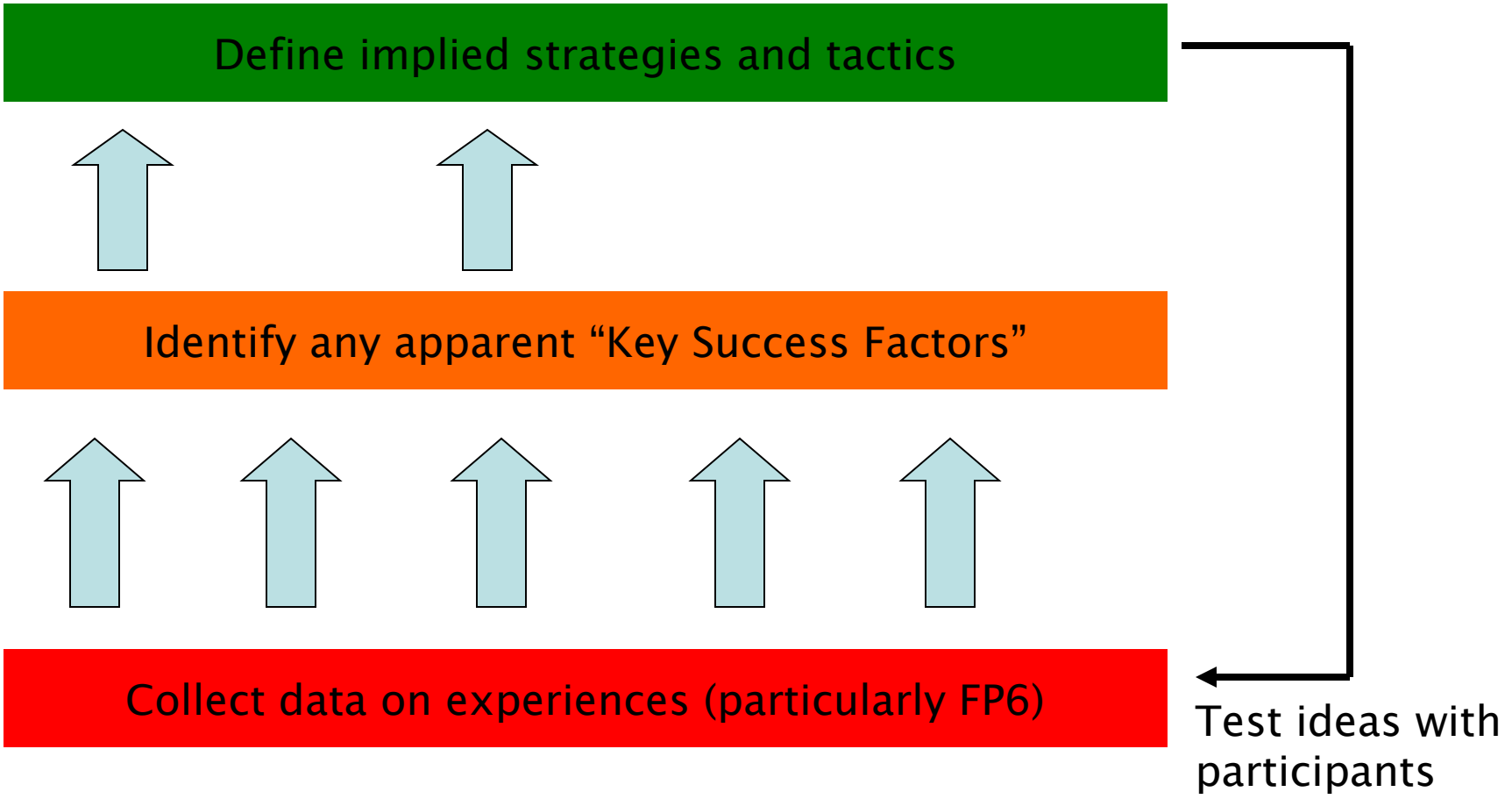


Source: OECD Main Science and Technology Indicators Database

Bilateral collaboration with Europe

- Great potential given European priorities for public science and industry
- Substantial activity already – but comprehensive data hard to obtain & not tracked
- Navigating the complexity of national funding sources is a challenge
  - FEAST working to develop standardised info on national funding opportunities

Current FEAST work on best practices



Questions asked

- What are the benefits you have obtained?
- What do you think the benefits of your participation were for your European colleagues?
- What impediments did you face?
- What general lessons would you like to communicate to your peers?
- Do you offer your project(s) as a case study?

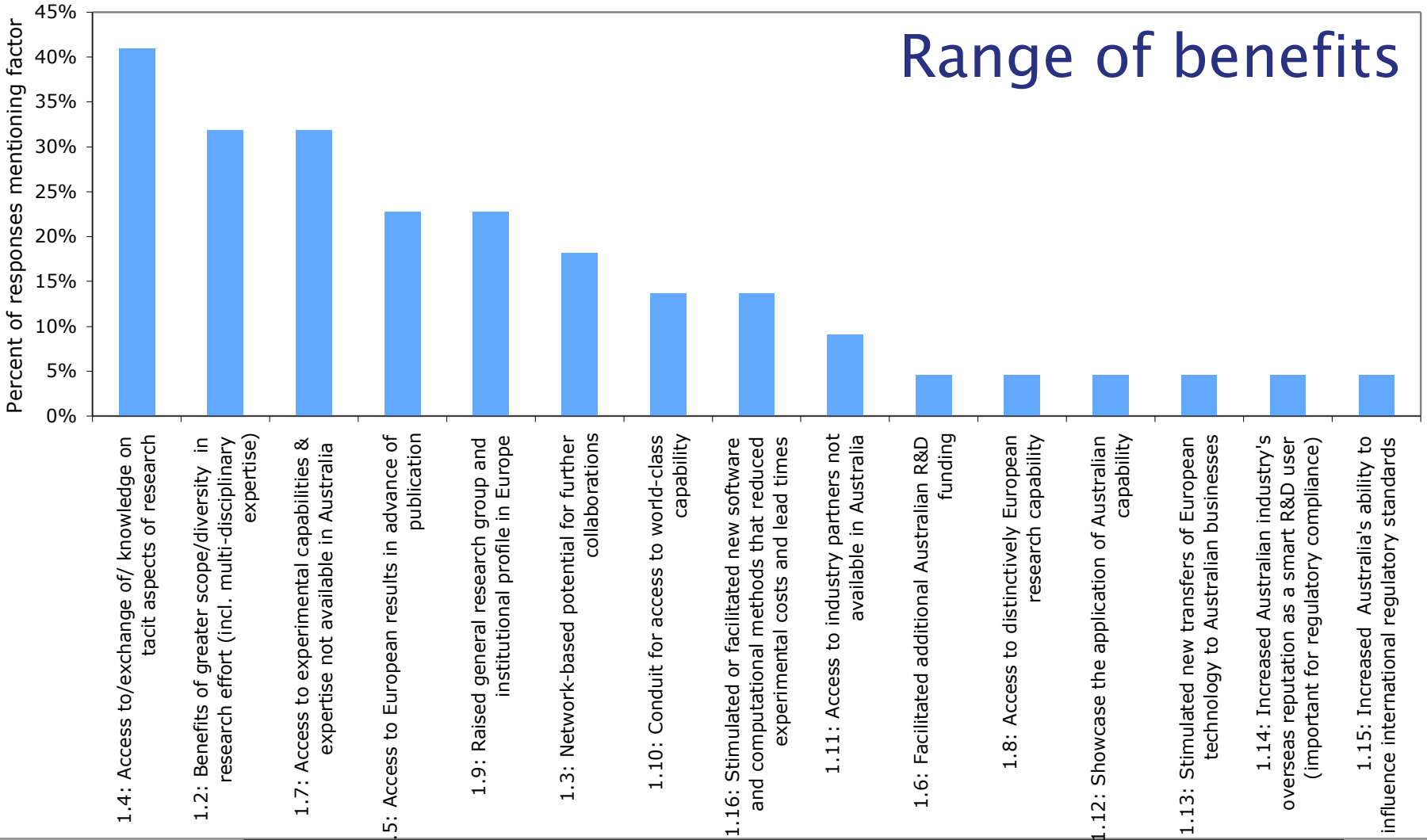
Follow-up process

- Consult nominated European partners for their views
- Obtain details of all publications and other outputs arising from the collaboration
- Examine other impact/relevance-related output measures (patents)
- Carry out a bibliometric analysis
  - Journal impact factors and citation profiles
  - Seek to identify "control" cases for comparisons
- *Aim: to what extent do collaborations with Europe enhance*
  - excellence?
  - relevance/impact?

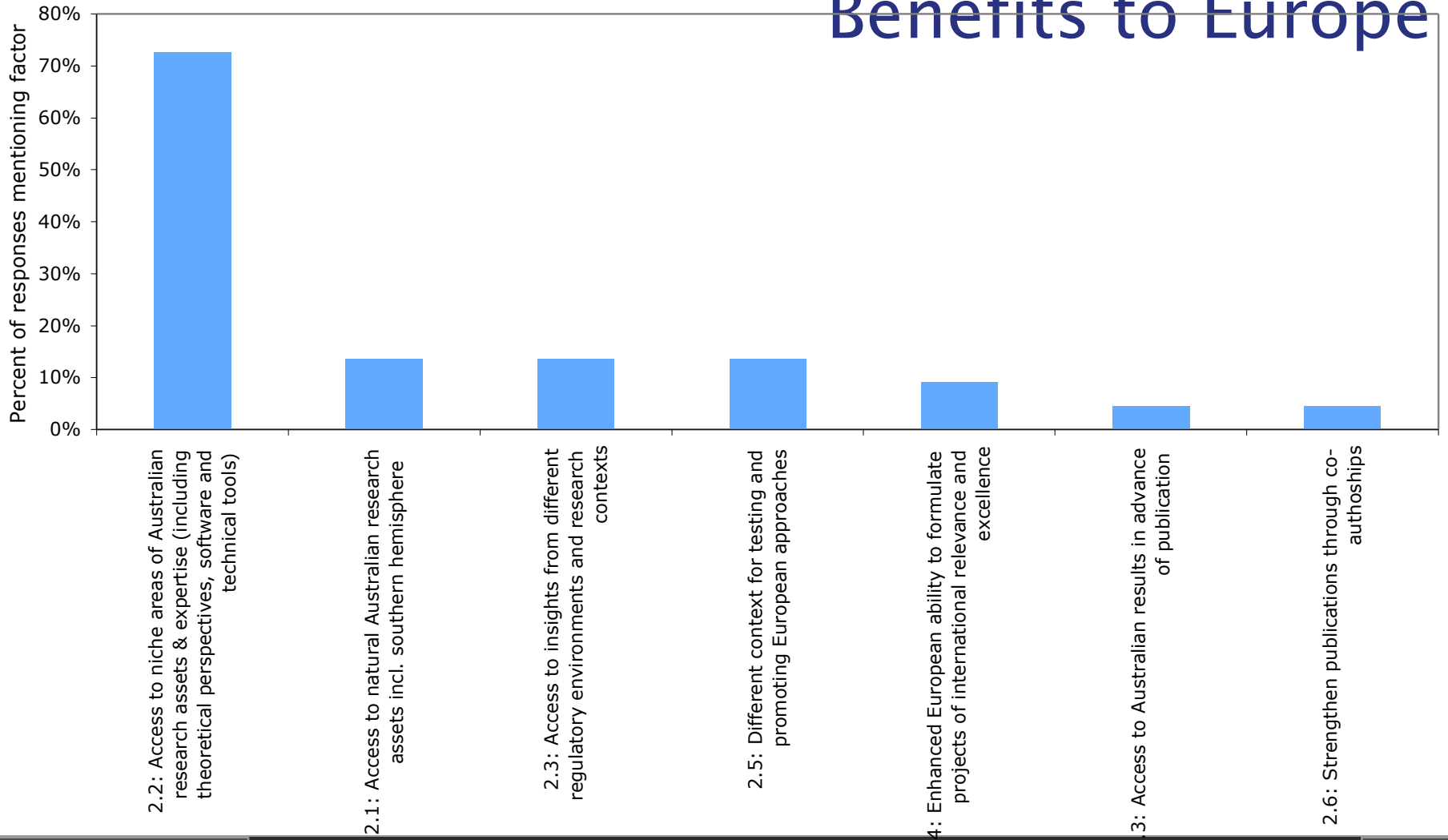
The sample of projects used to date

RUBICODE	Charles Sturt University	**NEWCOM**	University of South Australia
Europrevall	CSIRO	**CYBERCARS-2**	Griffith University
QAP	University of Queensland	**HARMONICA**	The Australian National University
DIMI	University of Sydney	**SEAMLESS**	The Australian National University
TRACE	Monash University	**AMEDEUS**	University of New South Wales
MALERIA AGE EXPOSURE	University of Western Australia & WEHI	**ImmunoGrid**	University of Queensland
SENSATION	University of Technology Sydney	**PathogenCombat**	University of Tasmania
SORMA	University of New South Wales	**BARP +**	University of New South Wales
AGRON-OMICS	University of Western Australia	**EUROMBRA**	University of Technology Sydney
BRIDGE	Anglo-Australian Observatory	**RECOPOL**	CSIRO
RADIONET	CSIRO		
SATINE	Royal Melbourne Institute of Technology University		

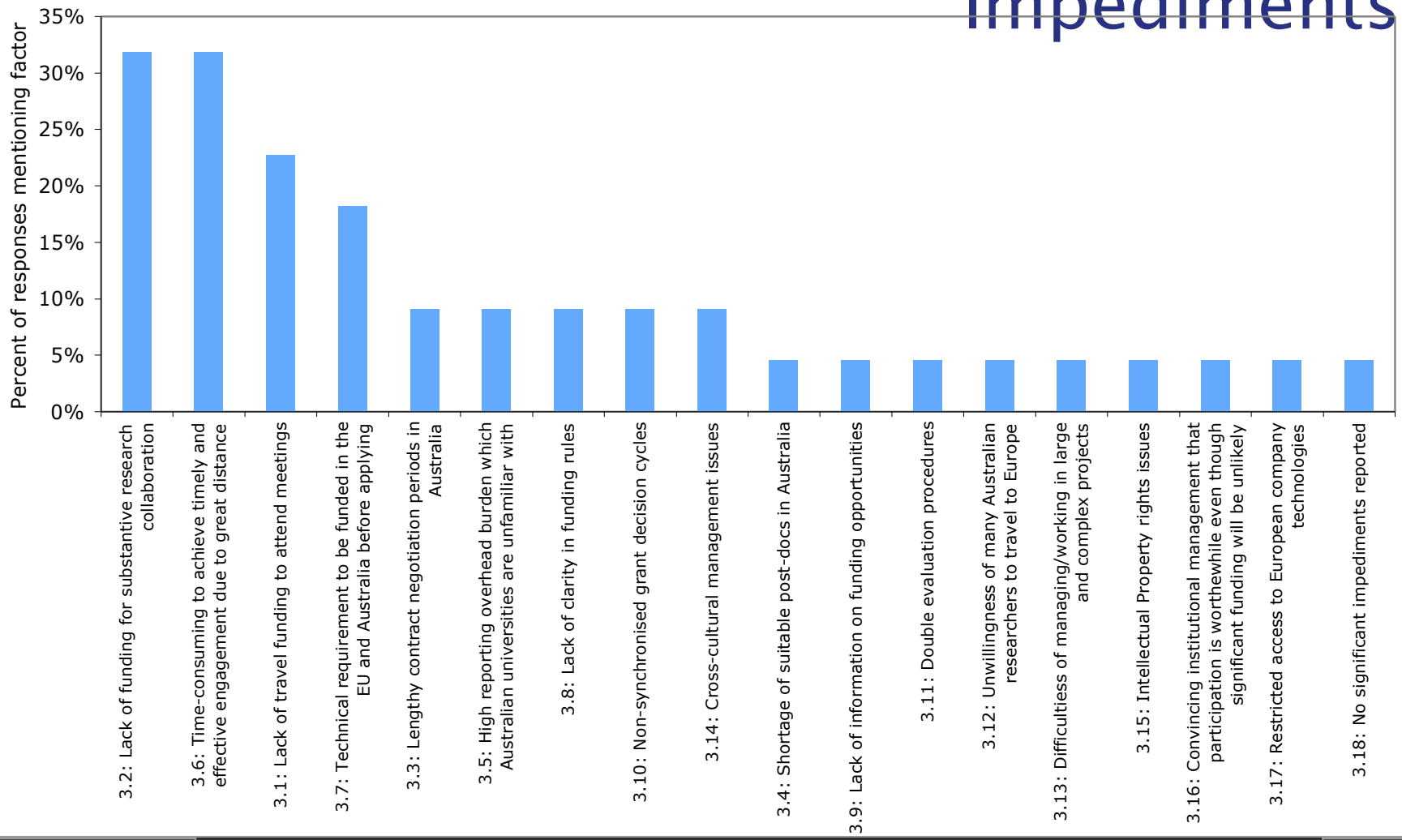
Range of benefits



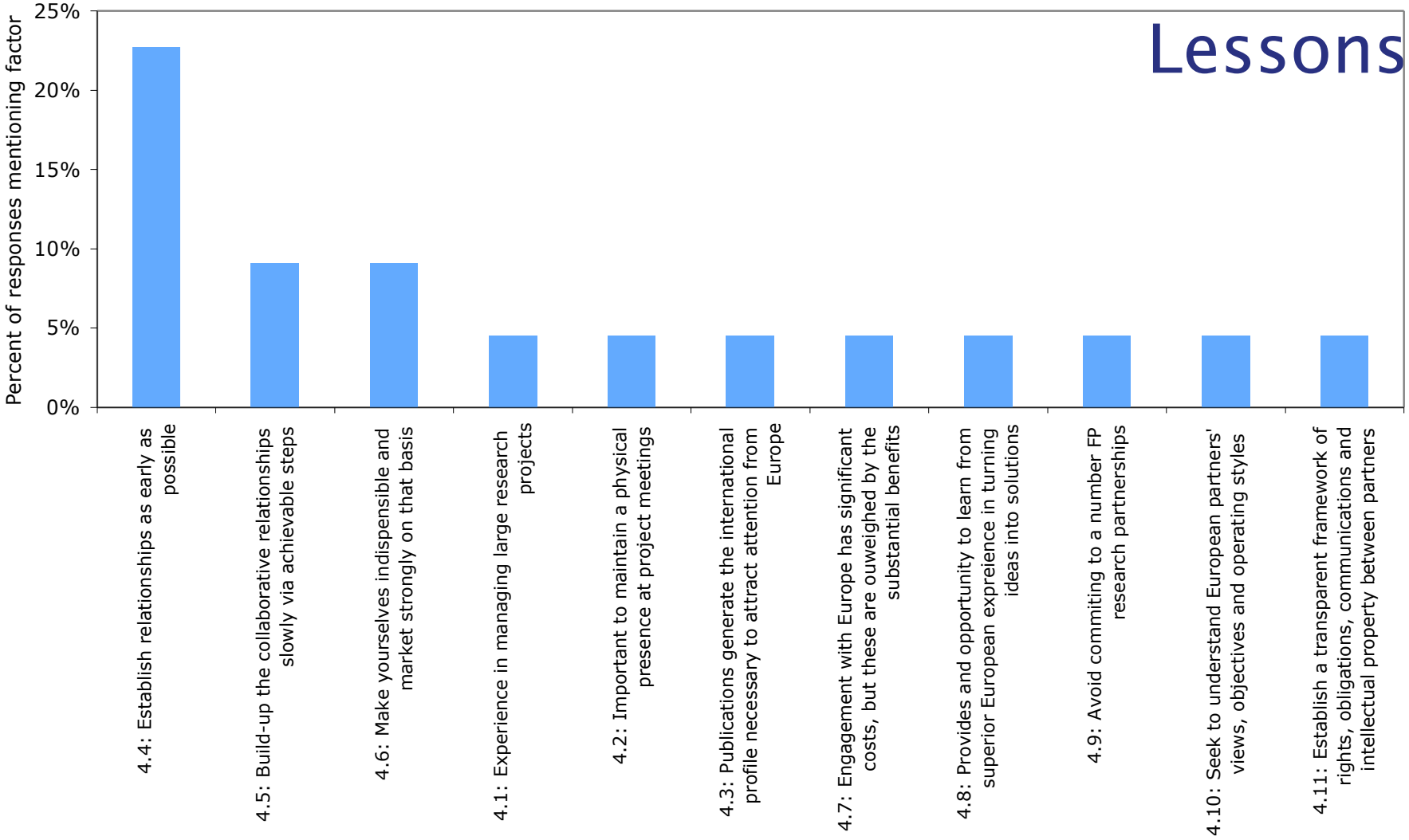
Benefits to Europe



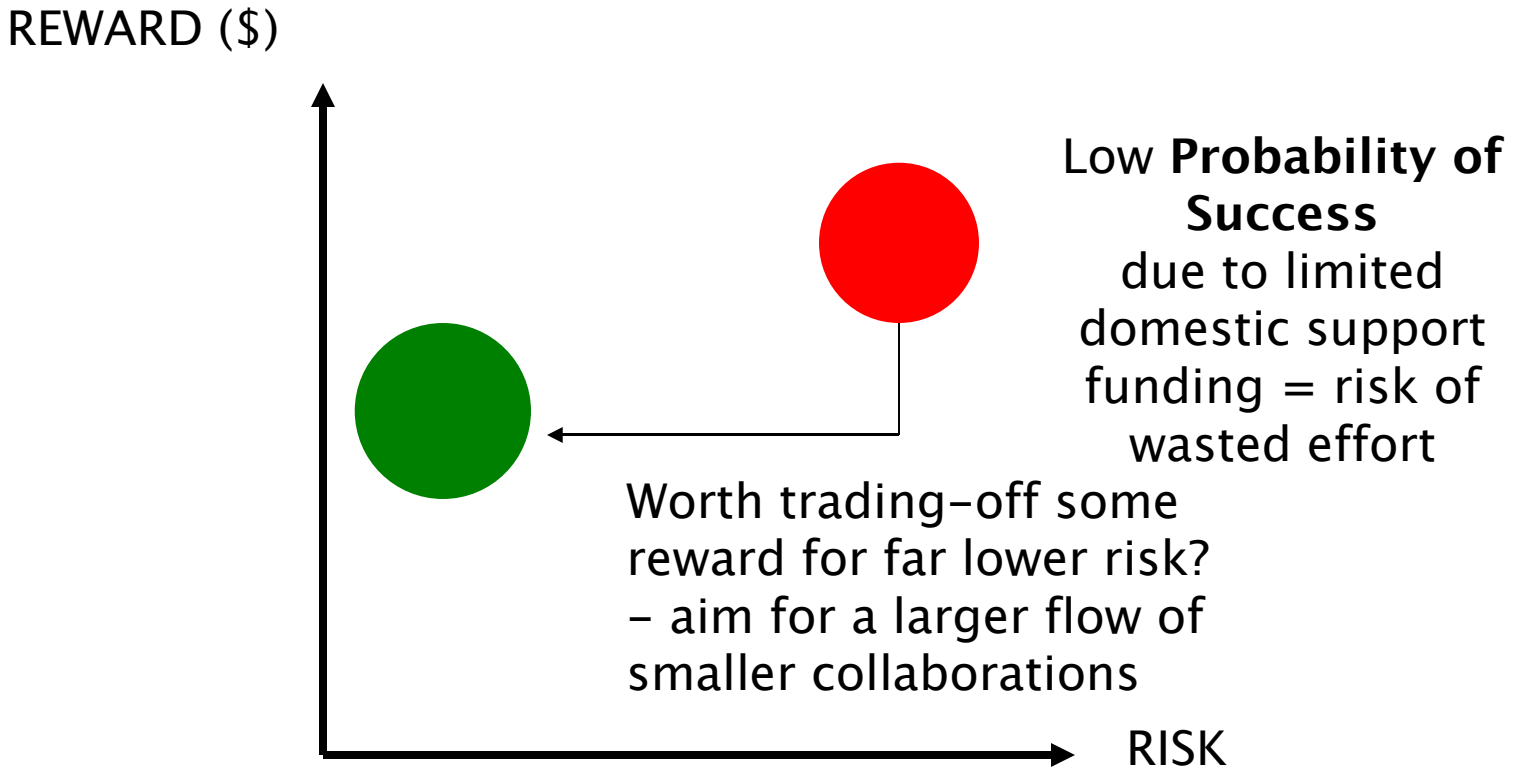
Impediments



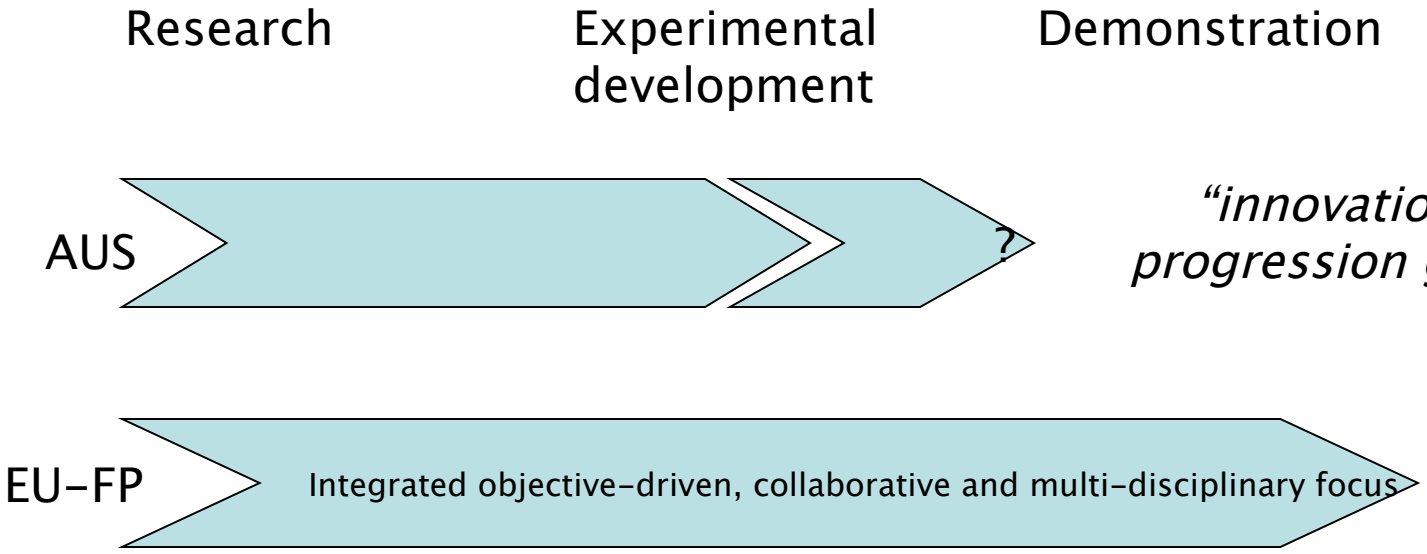
Lessons


Percent of responses mentioning factor
25%
20%
15%
10%
5%
0%
4.4: Establish relationships as early as possible
4.5: Build-up the collaborative relationships slowly via achievable steps
4.6: Make yourselves indispensible and market strongly on that basis
4.1: Experience in managing large research projects
4.2: Important to maintain a physical presence at project meetings
4.3: Publications generate the international profile necessary to attract attention from Europe
4.7: Engagement with Europe has significant costs, but these are ouweighed by the substantial benefits
4.8: Provides and opportunity to learn from superior European expreience in turning ideas into solutions
4.9: Avoid commiting to a number FP research partnerships
4.10: Seek to understand European partners' views, objectives and operating styles
4.11: Establish a transparent framework of rights, obligations, communications and intellectual property between partners

The challenge



The Framework Programme isn't just about research



The benefits from participation stem from the FP's far broader scope: the "innovation progression gap" is less of a problem and what is learned is different

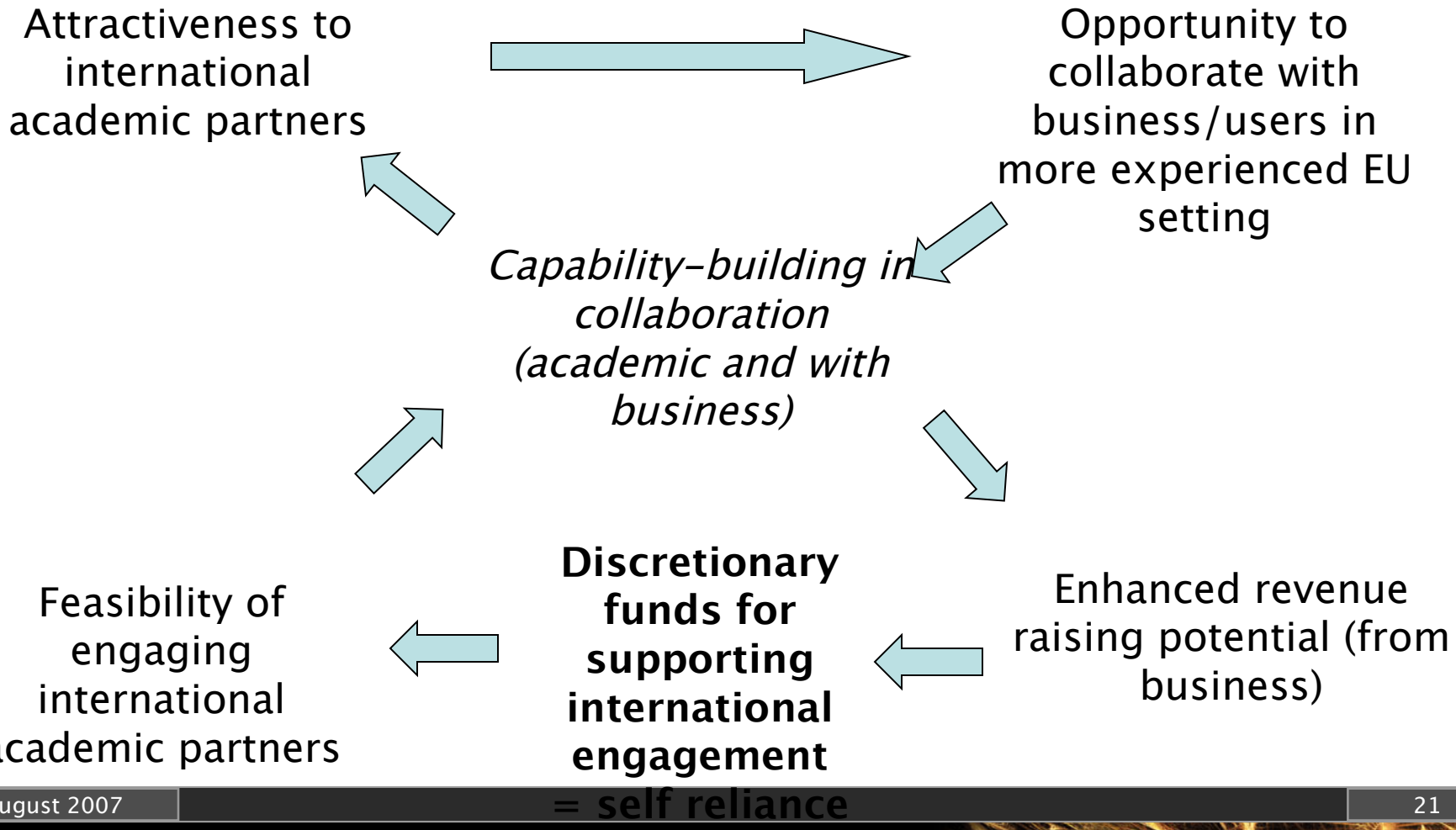
Conclusions on strategy

- Strategic "fit" with the institution's mission is critical to productive engagement with the FP
  - *Self-reliance*: the value proposition must stand on its own feet without the expectation of *external* funding = low risk
  - Bilateral collaboration and FP can be *complements*
  - Excellence helps to get you into the collaboration, but…
  - Relevance (impact) tends to be what you will get out of the engagement with the FP
  - This may have positive knock-on effects domestically (e.g. greater success with Linkage grants)
- Implies that the "yield" on engagement with the FP is fairly "systemic" for the institution… not discrete $'s

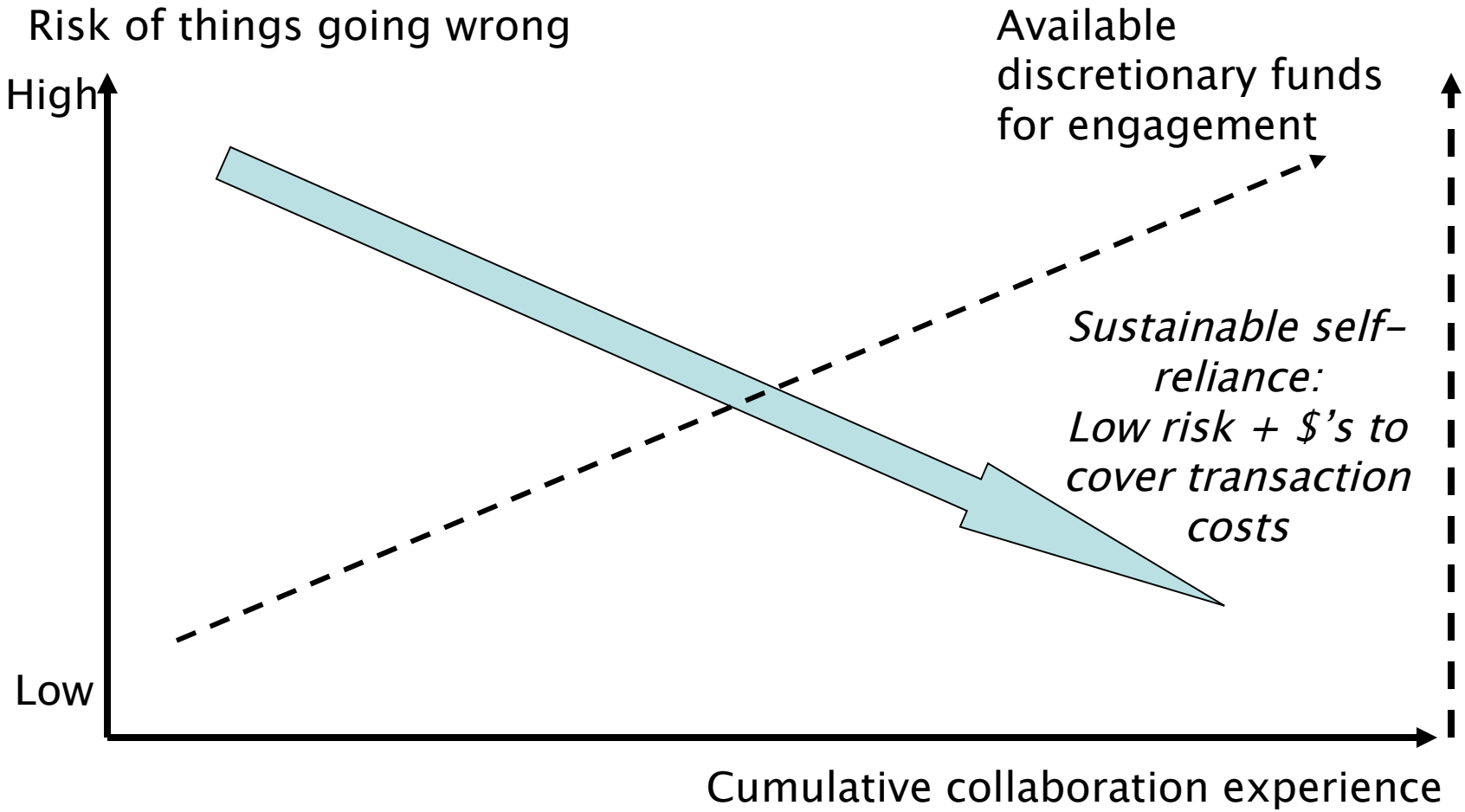
Strategy cont…

- Feasible to engage on the basis of *existing* research – and to commit to deliver that capability irrespective of additional funding
- Sufficient funding for engagement can be all that is required to realise these leverage benefits
- View stronger engagement with business/end users as both an *enabler* of international academic collaboration and an important outcome from international collaboration – can create a "virtuous circle"
  - More discretionary cash to support international collaboration
  - Enhanced capability to engage effectively with business

A virtuous circle linking excellence and relevance?



Think of this as a risk-based learning curve



Conclusions on tactics

- Look at how you can exploit what you are already doing
- International profile via traditional academic means is a pre-requisite (strong *enough* publications and reputation)
- Build collaborative networks slowly and strategically (e.g. on the back of conference visits)
- Engage early and on the basis of a clear value proposition (articulate what is on offer: data, methods, networks etc)
- Don't under-estimate the importance of face-to-face contact with EU officials (this is "*dirigiste*" funding) – but via consortium champions with official support (Embassy) and not ad hoc/junior
- Consider taking an "FP7 sub-contractor" role as an initial step (paid but more limited participation)
- Apply to become an FP7 Evaluator (paid trips to Europe) + institutions can register experts

How can you work with FEAST?

- Promote researcher participation in the current FEAST "engagement performance evaluation" (EPE) initiative?
  - this aims to generate useful data for dealing with policy-makers over funding and other impediments (e.g. accepting oversees peer-review, bid cycle synchronisation)
  - tell us about your bilateral collaborations
- Intensive strategy workshops for *each institution* hosted by FEAST
  - Confidential in-depth consideration of opportunities and constraints specific to that institution by working interactively with us
  - Assistance with practicalities

What do you think?

- Are we right about looking for benefits *mainly* in terms of relevance/impact?
- Is the "shaping" of existing research + engagement funding-enabled strategy too risk-averse?

Extras

Observations on administrative issues

- FP funding comes with high transaction costs
  - Reporting perceived to be onerous
  - Difficulties in getting the EU to accept ANAO standards
  - Rules and procedures not always clear but always complex (hard to find in the system)
  - Potential cash flow problems due to EU delays

Case study 1: TRACE (Monash)

- TRACE: *TR*affic *A*ccident *C*ausation in *E*urope (FP6)
- Collaborative project with car industry and govt. involvement
- Total value €4m over 3 years (€80k for the Monash University Accident Research Centre as contractor)
- Earlier involvement as a sub-contractor in the Safety Rating Advisory Committee (SARAC1) project then continued involvement in SARAC2
- Initial involvement in FP research through personal contacts with this German-led research network
- MUARC had been collecting weighted data on real car accidents – useful comparative data in a European context hence provided a "niche" justification for Australian involvement
- MUARC expertise and data critical critical as the Europeans had to explicitly justify using a non-EU contractor

Case 1 cont.

- INRETS in France had approached MUARC 1.5 years ago with FP7 participation in mind – Australia has "good credentials" to exploit in this area of research
- Early warning of FP7 call received via a general email on e-safety – seeking network formation in lead up to the FP bid
- The Monash team explicitly asked whether Australian participation was welcome – positive response (conditional on local funding) and now waiting to hear whether the FP7 bid is successful – *A$50k was spent to in preparing the submission*
- Prof Fildes nominated as an associate technical leader in the project
- Fildes is also an FP7 evaluator: paid trips to Brussels (€450 per day + €200 expenses) are invaluable in getting exposure to the state-of-the-art and on how to present FP proposals
  - noticed "major" improvement in quality when professional proposal writers have been prepared

Case 1 cont.

- Submitted an application to NHMRC for support funding ($200k over 3 years) – pending outcome of the SENIORS
- Previous ARC experience "really helpful" in helping to prepare the SENIORS proposal
  - Collaborative approach to research critical for FP projects – the significant economies of scale and scope involved in serious collaboration with industry
- IP issues hard to handle in the FP
- Publications arising (with Fildes as one author):
  - Edited books: 1
  - Peer-reviewed Journal articles: 8
  - Conference papers: 9
  - Reports: 19
- **Main lesson: engagement with the FP has enhanced relevance/impact both domestically and internationally**

Other examples:

- ImmunoGrid (UQ)
  - Benefited from Australian contributions in computational modeling for vaccine discovery (speed and cost reductions)
  - FP funding helped to disseminate this approach (now adopted with enthusiasm at Harvard Medical School)
  - Australian ideas imported to the US via Europe, but limited Australian funding puts our continued role at risk (however initial impetus came from work performed in Singapore)
  - One key researcher now at Harvard but maintains UQ link due to this project

Other examples:

- RUBICODE (Charles Sturt University)
  - 2003 paper outlined the concept of a “service providing unit” in ecosystem analysis
  - Led to invitation to join RUBICODE – which tested and developed the concept
  - Raised researcher’s international profile (enabled sabbatical at Oxford)
  - Valuable experienced gained in the large multi-partner projects necessary to implement innovative new concepts
  - Difficult to sustain key role in the project without travel funding