



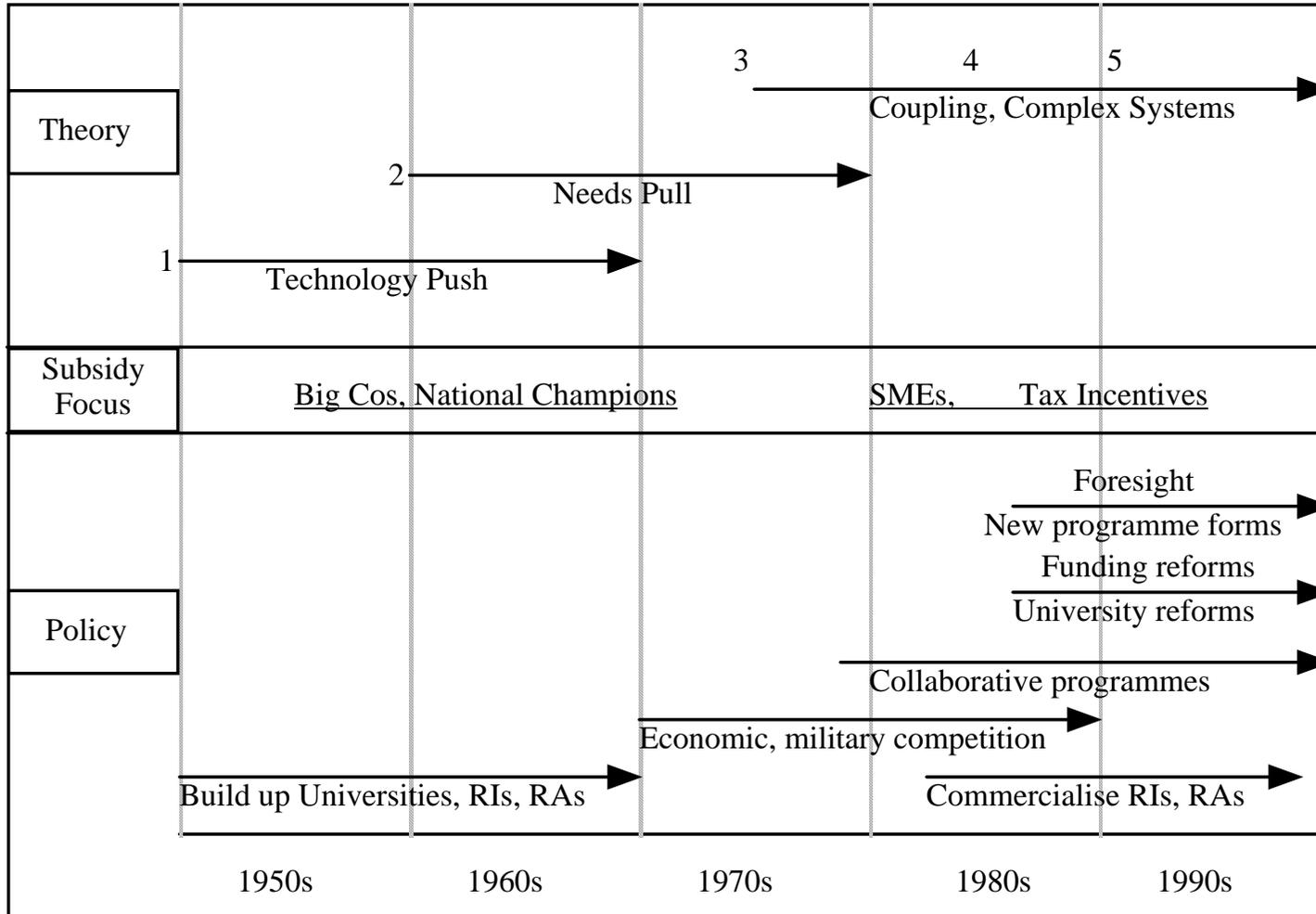
Peer Review, Evaluation and Policy Learning

Erik Arnold

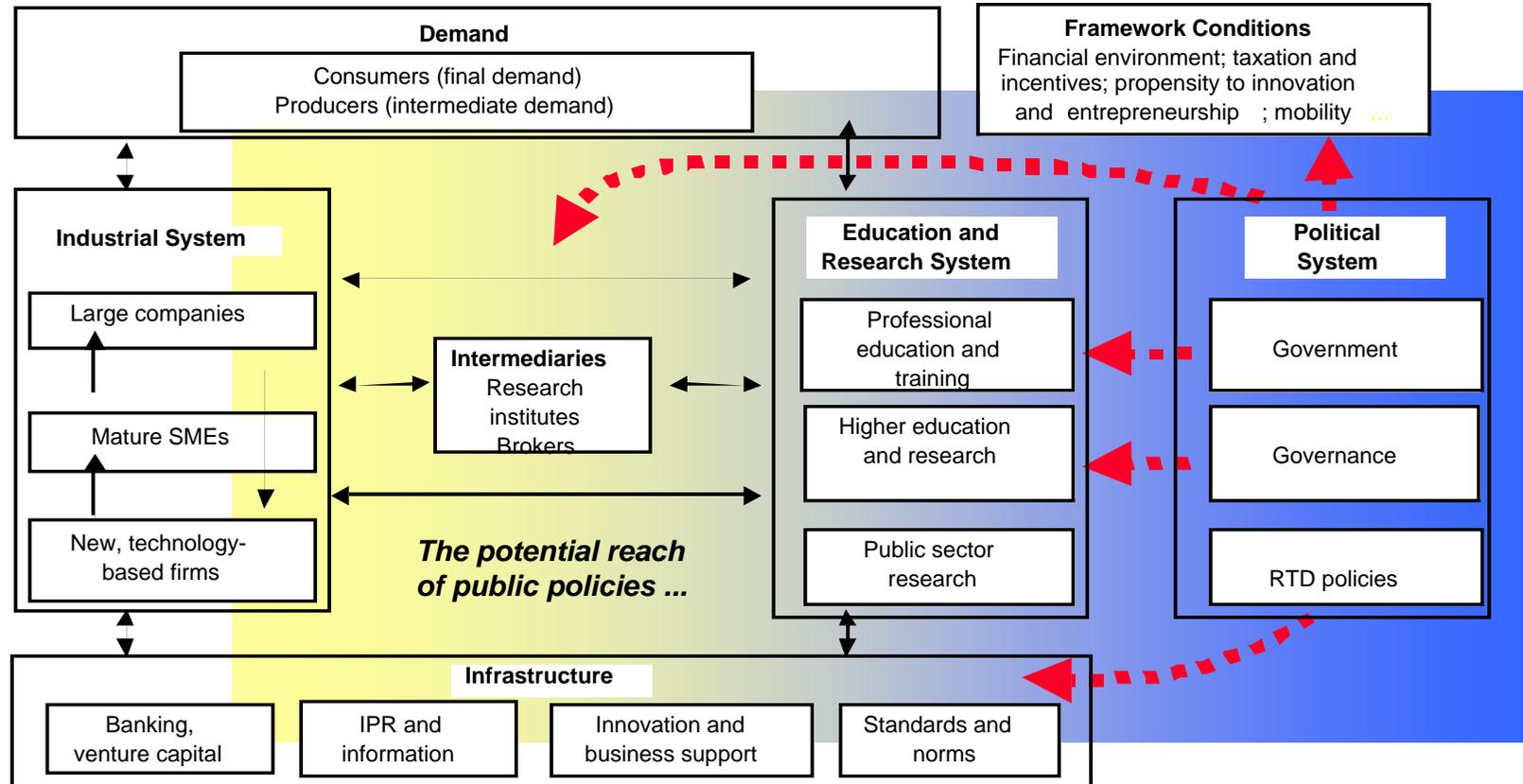
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If you don't understand history, you understand nothing ... Peer review is one of the most deeply political aspects of R&D evaluation



The intellectual battle has culminated in a 'national innovation systems' perspective that undermines the special status of science and the scientific community



Source: Arnold and Kuhlmann, 2001

- **Originally developed to decide about the suitability of articles proposed for publication in academic journals (17th century) - still probably the dominant mode essentially a judgement about scientific quality**
- **Much later (20th century), peer review was extended to play a ‘gate keeping’ role in the access to research resources via Research Councils**
- **In the late 20th century, the concept is extended further (‘extended peer review’) to tackle non-quality questions such as relevance (ex ante) and impact (ex post)**

John Rigby's classification (Plattform FTE, 21, June 2004)

Sub-Type of Expert Review	Science	Level of Specialisation	Level of Professionalization
Traditional Peer-Review (Canonical Academic Review)	Academic Science Republican Science (Fuller, 2000) Post-Academic Science (Ziman, 1995) & Liberalized Science (Fuller, 2000)	Generally Increasing 	Generally Increasing 
Direct Peer Review			
Modified Direct Peer Review			
Pre-Emptive Peer Review			
Indirect Peer Review			
Ment Review (extended form of Peer Review)			
Ancillary Peer-Review			
Expert Panels/Peer Review			
Panel Review			
Professional Evaluators			
Extended Peer Communities	Post Normal Science (Furtonicz, Ravetz	Specialisation non- relevant	Wider communities - anti-professional

A key to understanding peer review is to see its role in the self organisation of the scientific community

- **Rooted in the Mertonian and Humboldtian ideas of science and researchers' roles in society**
- **Reinforces Authority within the intensely hierarchical world of science (cp Feyerabend)**
- **Connects access to resources with conformity to the views of the Establishment (Lakatos)**
- **Presents the conventional wisdom of the scientific community as the highest form of Truth in the debate between science and society**
 - **Shorthand: In the UK debate, homeopathy is attached, not because it is wrong but because it isn't peer reviewed**
- **Forces conformity: making science students “victims of a history rewritten by the powers that be” (Kuhn)**

Despite these important political legitimization roles, the scientific community increasingly questions the adequacy of peer review

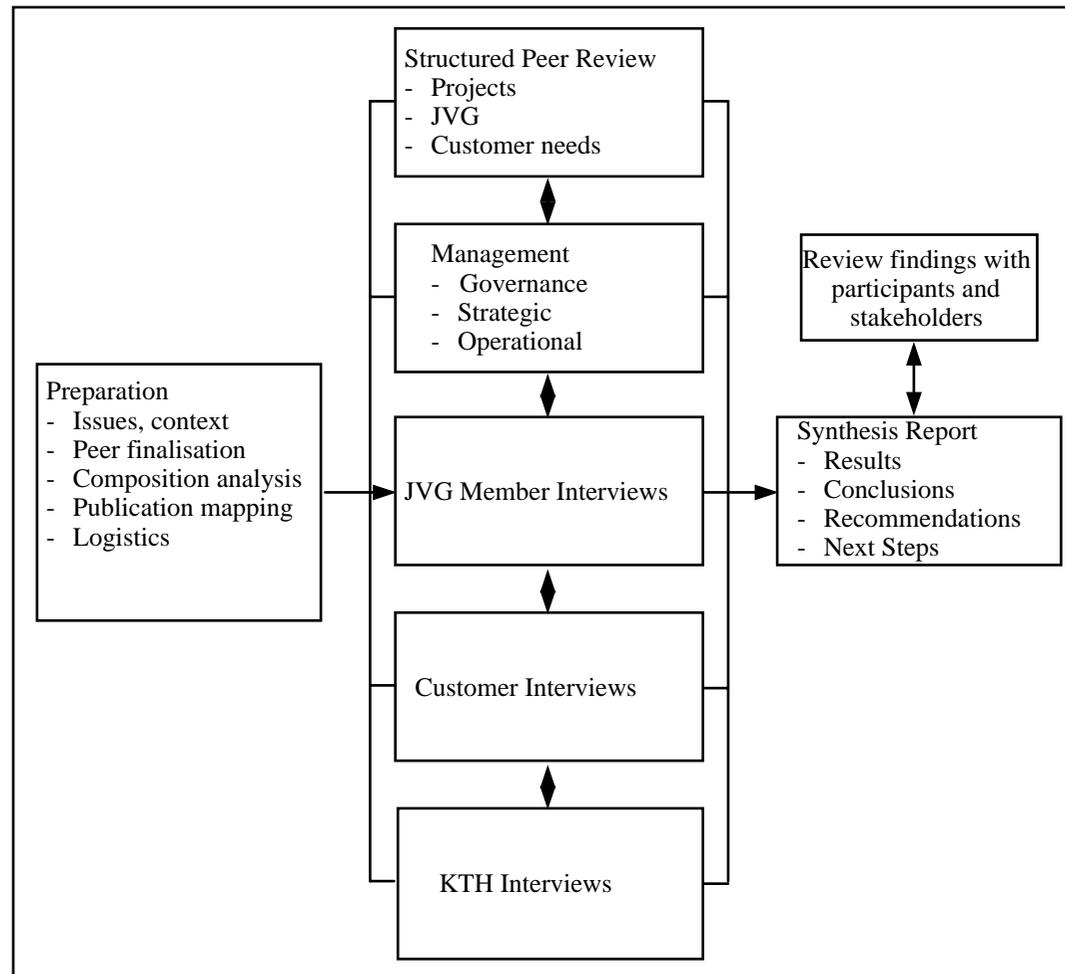
- **Slow**
- **Expensive**
- **Prone to bias (friendship, tit for tat, positive ignorance bias, intimidation)**
- **Open to abuse (especially in small systems)**
- **Sometimes incompetent**
- **Unable to detect fraud**
- **No audit trail**
- **Boundary problem (?): often judges the ‘real project’ rather than the evaluation object**

And it's

- **Running out of capacity - eating up the research system it's supposed to support**

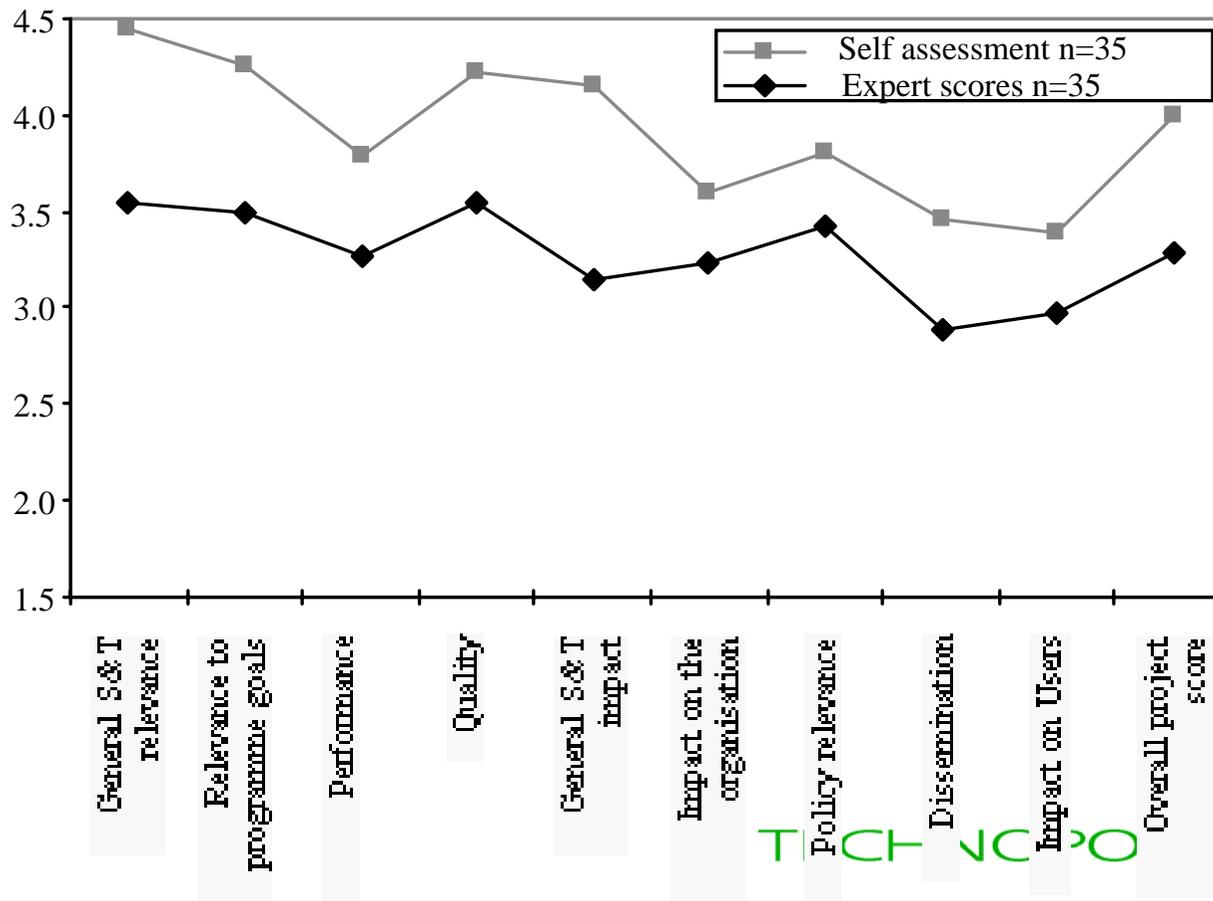
In evidence-base evaluation practice, peer review is not a last-resort method choice but a rich source of insight - as long as the evaluators stay in charge of the process by structuring it

**Railway
Research
Group, KTH**



Experience suggests there's intelligent life out there

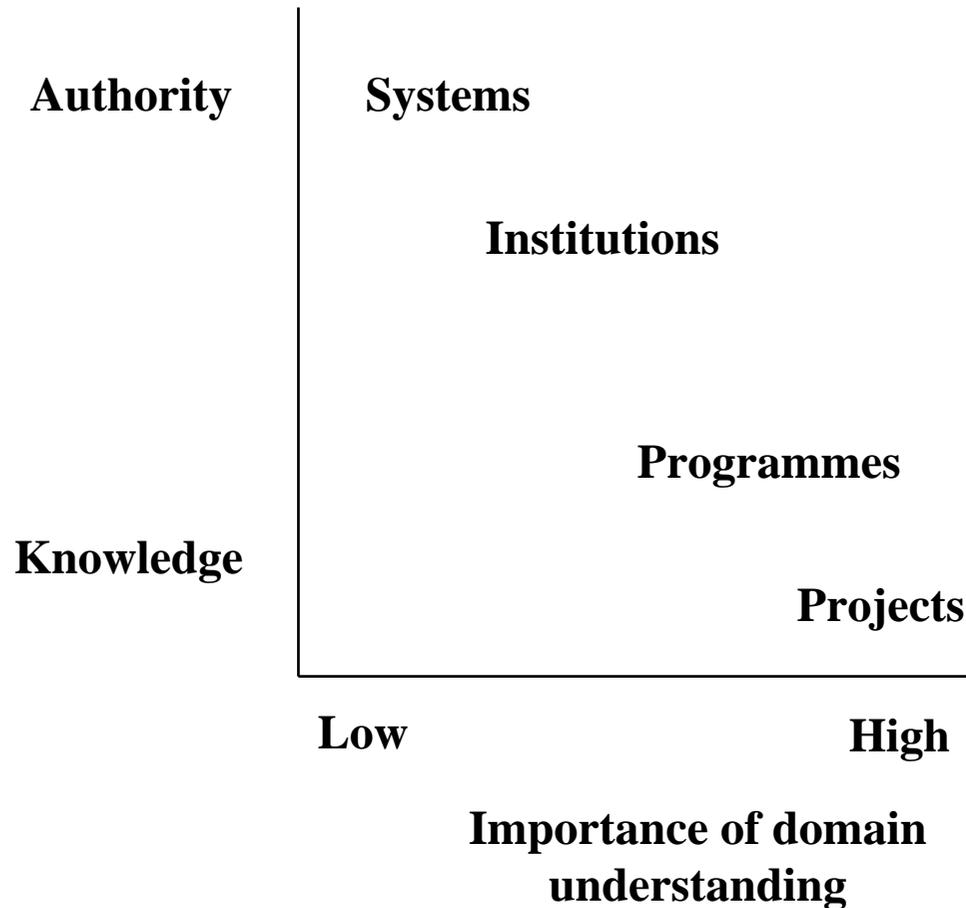
Experts' Scores Compared to Respondents' Scores



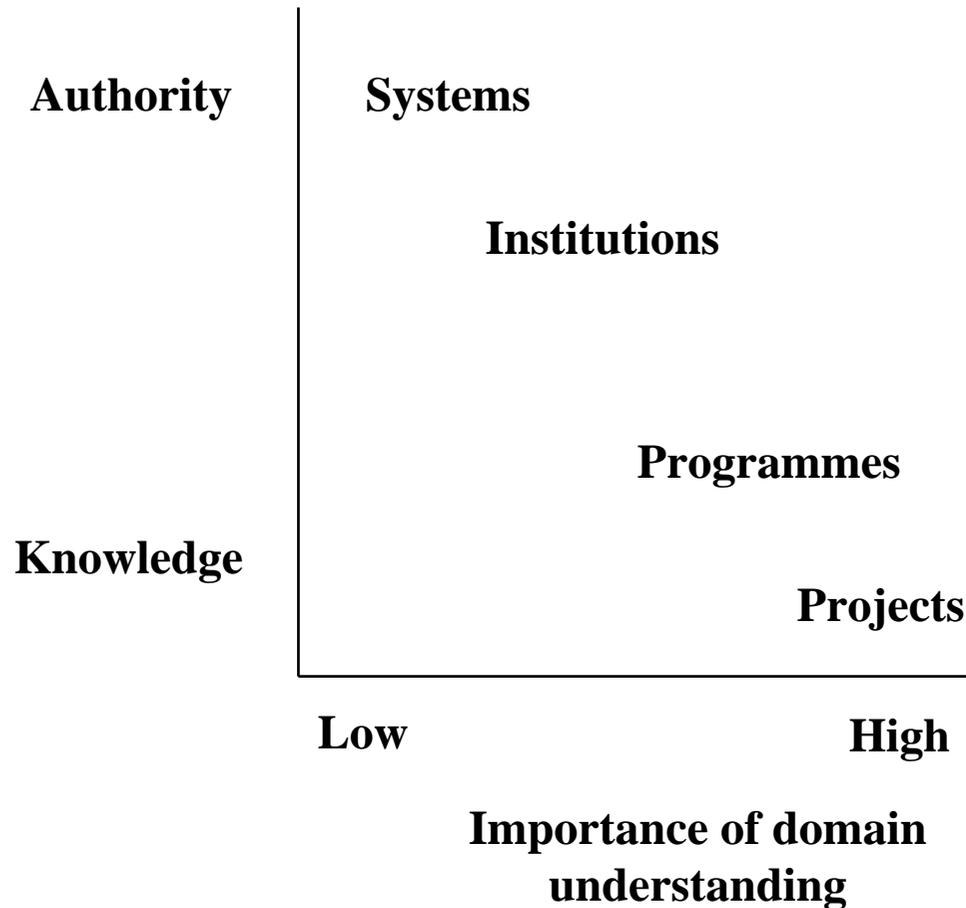
Where do we see peer review done?

	Before	During/After	
System			National reviews: SF, CREST, OECD
Institutions			} High-level: Authorities attacking or defending institutions, eg FPs
Programmes			
Projects	  	 	Scientific self-management

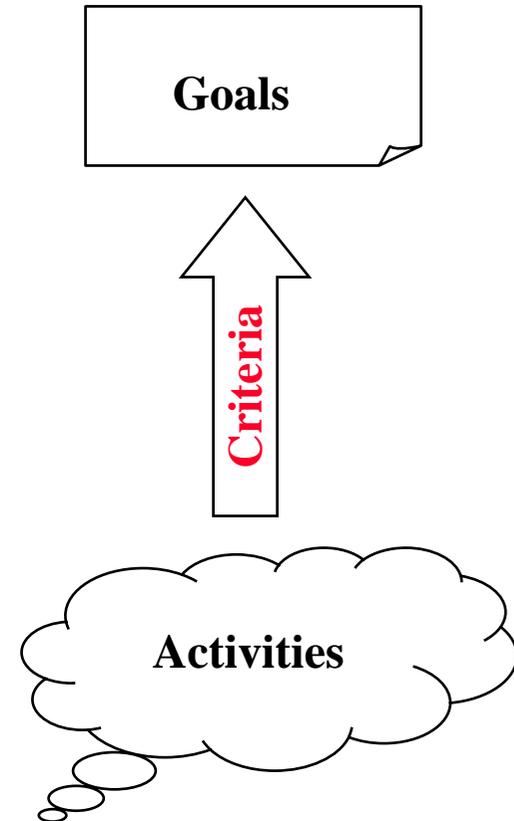
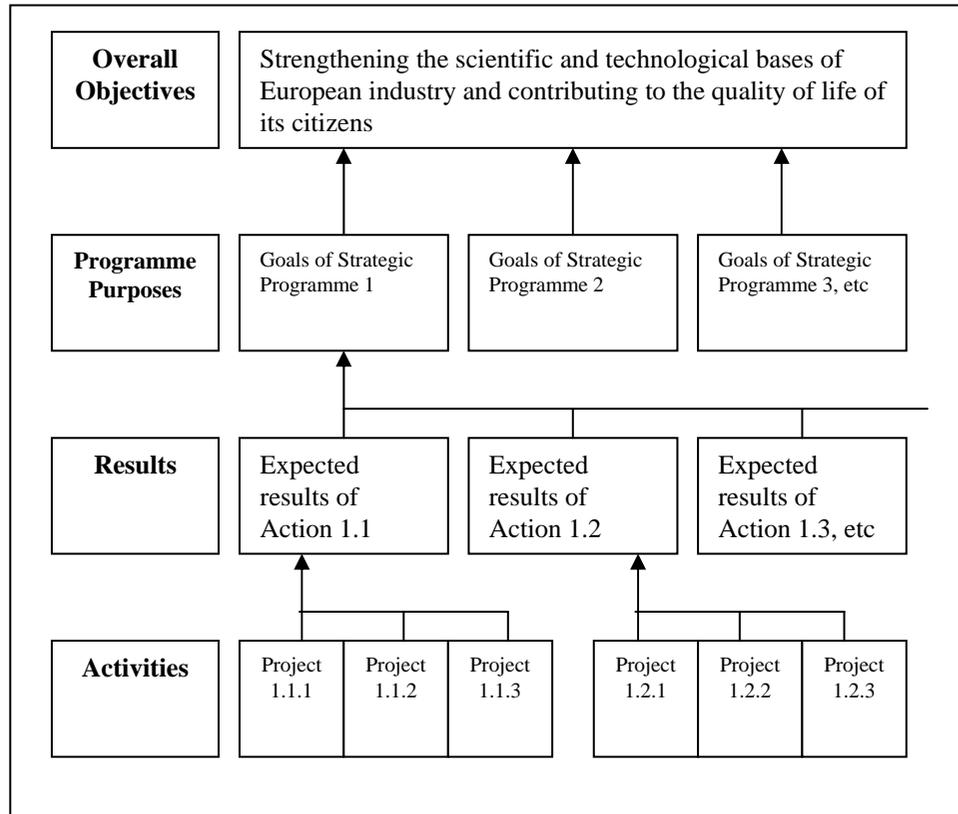
Leaving aside scientific self organisation, the reasons why peers are wanted seem to have less and less to do with their domain knowledge the higher the level of enquiry



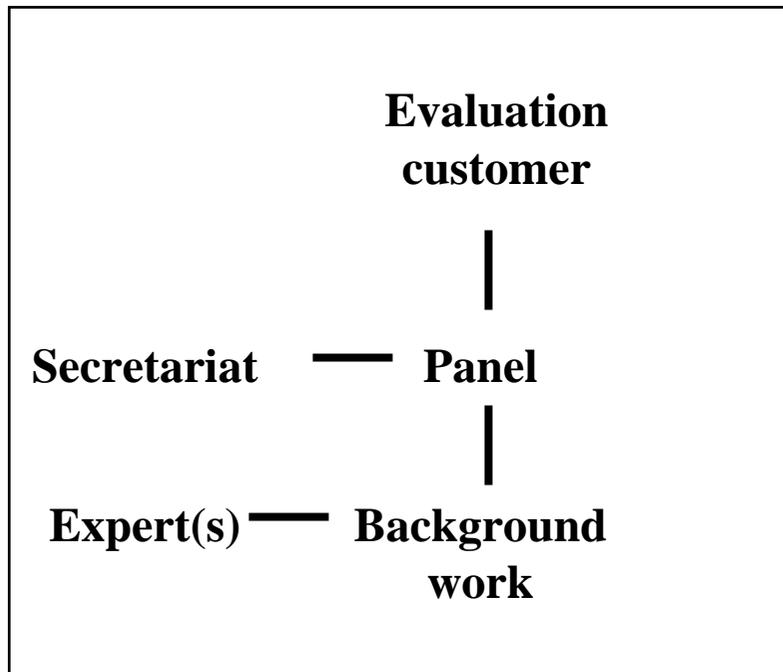
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The political incentive is obvious. A practical corollary is that the higher up you go, the harder it is to make evidence based judgements - especially where planning is inexplicit, cp FP5



Recent attempts to use peer review at a high level recognise systems complexity - and are being driven to use background studies, increasingly using innovation system and evaluation specialists



Examples

- **Finnish NIS Review**
- **EU 5-year assessments**
- **OECD ‘Innovation System’ reviews**
- **EU-CREST ‘Policy Mix’ reviews**

- **If the wonks do the work, who really makes the judgements?**
- **How do you embed learning mechanisms? The degree of learning seems to vary**
 - **Finland**
 - **EU**
 - **OECD**
 - **CREST-OMC**
- **At what point do you empower the wonks to speak truth to power?**