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Policy and evaluation challenges of P2Ps

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Road map

- How well can traditional impact analysis handle P2Ps?
- Long-term analysis shows the importance of the Framework's social and organisational impacts
- P2Ps are part of a bigger shift in devolving governance of RTD policy
  - *Potential advantages*
  - *But also dangers*
- Not much evidence about P2Ps yet. PPP experience confirms the idea that devolution can be productive but needs careful governance
- The future – P2Ps, PPPs, governance and transformations

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What kinds of 'theories of change' underlie P2Ps?

- Common research effort provides signals that set common agendas among MS
- Alignment of agendas leads to
  - *Increased knowledge outputs and human capital development in domains of importance to Europe*
  - *Comparative advantage in those areas – both in research and in innovation*
  - *European added value as a result*
- Social benefits of alignment are realised through normal impact mechanisms

- Methodological challenge: understanding the net effects of coordination

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The literature says research-society links focuses on direct effects of research

- Increase in the stock of useful knowledge
- Supply of skilled graduates and researchers
- New instrumentation and methodologies
- Creation of networks and stimulation of social interaction
- Enhancement of problem-solving capability
- 'Spin-off' companies
- Provision of social knowledge

Ben Martin and Puay Tang, The Benefits from Publicly Funded Research, SPRU, 2007

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A recent review for OECD suggests there are perhaps six kinds of impact mechanism to consider

- Industrial innovation (including innovation in services as well as products and processes)
- Research-influenced changes in policy, agenda-setting
- Tackling 'grand' or societal challenges, that impede social and economic development or provide existential threats (e.g. climate change)
- The provision of improved public goods (and potentially the provision of associated state services)
- The improved exercise of professional skill, for example in research-based improvements in medical practice
- Human capital development – which is not orthogonal to the other categories but tends to feed into them

Methods for understanding agenda-setting are poorly developed

Erik Arnold and Katharine E Barker (2015) 'Assessing the impact of state interventions in research – techniques, issues, solutions', IMPAR Conference 2015, Paris: INRA

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Important impact mechanisms may operate over extended time periods

- Some of the most interesting evidence about the importance of basic and applied research comes from the budget rivalry between the US National Science Foundation (NSF) and mission-orientated research in the 1960s
- The US Department of Defence commissioned the Hindsight study, which traced the research antecedents of a number of weapons systems back for twenty years or so and concluded that the underpinning research was largely mission-orientated in nature
- NSF retorted with the TRACES study, which traced backwards for up to fifty years from five important civil innovations and found critical connections to basic research
- The unsurprising implication is that both sorts of research are at various times needed

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The focus of the FPs was originally on achieving direct benefits of research without impinging on national policy

- Common research has been done since the Iron and Steel Community
- Multilateral European research cooperations are even older
- From 1984, FP1 legitimised the expansion of Community R&D programmes beyond energy and IT, becoming *the Commission's industrial policy*
- Until FP6, just about any cross-border R&D action by the Commission was justified as having European Added Value
- The Commission respected the subsidiarity principle and kept out of national R&D policy, the budgets kept going up and everyone seemed happy

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Since ERA, the agenda-setting function has become more explicit

- Detaching EAV from subsidiarity, so that any project deemed interesting by Europe automatically has EAV
- Moving the focus of the FP from solving problems to seizing opportunities
- In particular, using this idea to tackle societal 'Grand Challenges' such as environment, ageing, health and thereby incidentally shifting the focus of the FP from industry to society as a whole
- Building very large and partly self-governing coalitions of existing EU actors, which define research agendas and align with the Commission in seeking funding for them – not only from the EU level but also from member states
- Shifting the role of the Commission from execution towards setting R&D policy, with implementation delegated to actor coalitions and/or specialised implementing agencies

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The changing nature of 'European Added Value'

Dimensions of European Added Value	FP1	FP2	FP3	FP4	FP5	FP6	FP7	FP8
Scale too big for Member States (MS) to handle alone	X	X	X	X	X	X	X	X
Financial benefits: a joint approach would be advantageous	X	X	X	X	X	X	X	X
Combines complementary MS efforts to tackle European problems	X	X	X	X	X	X	X	X
Cohesion	X	X	X	X	X	X	X	X
Unification of European S&T across borders	X	X	X	X	X	X	X	X
Promotes uniform laws and standards	X	X	X	X	X	X	X	X
Mobilising EU potential at European and global level by coordinating national and EU programmes				X	X	X	X	X
Contributes to implementing EU policy					X	X	X	X
Contributes to societal objectives (later 'grand challenges')					X	X	X	X
Exploits opportunities for the development of European science, technology and industry					X	X	X	X
Structures the EU R&D community and 'fabric'						X	X	X
Improves quality through exposure to EU-wide competition							X	X
Coordinates and strengthens 'internationalisation'								X

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This shift becomes more obvious once you study the longer-term impacts of the FPs

- Going beyond the 'intermediate knowledge products' of cooperation to more radical shifts
- Organising and enabling community formation and evolution
- Setting agendas
- Coordinating the fabric of the research and innovation landscape in Europe

Erik Arnold, (2012) 'Understanding long-term impacts of R&D funding: The EU Framework Programme', *Research Evaluation*, 21(5) 332-343

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Impact mechanisms that are less visible in a short term perspective …

Long-term impacts	QIPC	Brain Research	O_3	Solar PV	Auto-motive	Manu-future
Discovery	X	X	X	X		
Creating new knowledge outputs, more generally, especially moving towards applications	X	X	X	X	X	
Discipline development	X					
Focusing device in relation to innovation				X	X	X
Agenda-setting	X	X	X	X	X	X
Promoting self-organisation of stakeholder communities	X	X	X	X	X	X
Influencing regulations or standards	X		X	X	X	
Coordinating or influencing policy		X	X	X	X	X
Strengthening networks, Knowledge Value Collectives; defragmenting the research community	X		X	X	X	X

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Long-term impacts	QIPC	Brain Research	O_3	Solar PV	Auto-motive	Manu-future
Changing research network shapes: putting Europe in the centre	**X**	**X**	**X**	**X**	**N.A.**	**N.A.**
Levering funding for R&D	X	X	X			X
Mobility and development of human capital	X	X	X	X	X	
Research infrastructure (Grids, test-beds, etc)						
Behavioural additionality: learning a 'new' innovation model		X			X	X
Speeding up industry' entry into new technologies	X					
Tackling problems too big for an individual Member State	X	X	X			X
Addressing areas of major socio-economic importance for the EU	X	X	X	X	X	X

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Evolution of instruments but so far little concrete evidence about the effects of the more devolved governance

- Old-style Cooperation (collaborative, networked …) continues, reappearing in H2020 Societal Challenges
- New quasi-institutions are established, with governance detached from the MS, eg ERC, EIT
- There is greater effort on oordinating MS-governed activities, eg ERANETs, JPIs (P2Ps), Article 169/185
- PPPs appear, with governance devolved to the beneficiaries, eg ETPs, JTIs, Article 187
- The style of intervention is moving towards a “strategic European process” that shifts the role of the Commission from execution to coordination without necessarily returning much power to the national level

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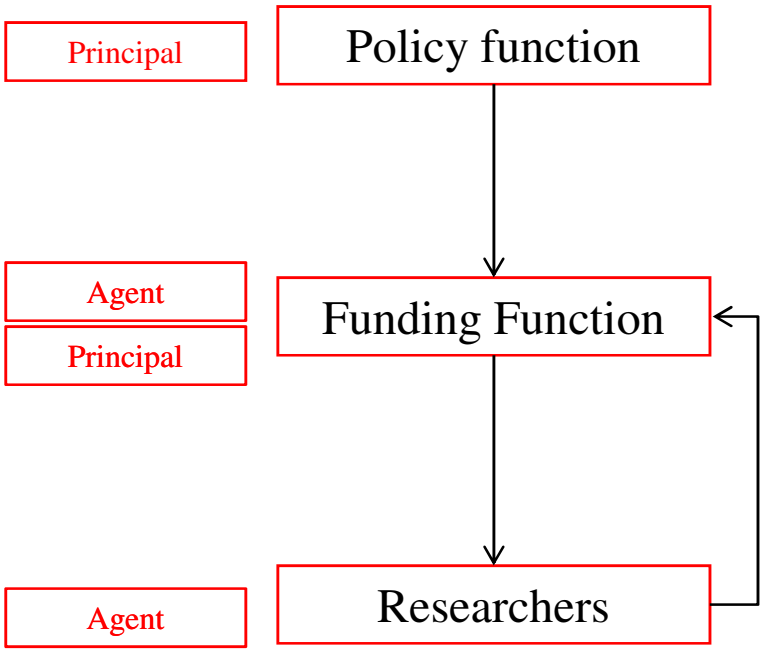
Devolution poses difficult governance challenges



- Double principal-agent relationship
- Mixed views about who 'owns' the intermediary level
- The role of beneficiaries in governance increases the risks of adverse selection and lock-in
- Checks and balances needed to constrain the power of the beneficiaries in deciding funding

Braun, Dietmar (1993) Who governs intermediary organisations? Principal-agent relations in research policy-making, Journal of Public Policy, 13(2) 135-162

Meulen, Barend van der (1998) Science policies as principal–agent games: institutionalization and path dependency in the relation between government and science. Research Policy, 27 (4). pp. 397-414

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Competence centre (PPP) experience suggests devolving responsibility works if governance challenges are managed

- Big economic impacts, over extended periods of time
- Changing research culture in universities and companies
- Key effects result from integrating and changing education
- Producing more industrially usable PhD-holders
- Importance of "sweat equity" (ERCs)
- Governance, balance of power are key to success in centres
- Integrated programmes and centres work best
- Sort out a fair IPR arrangement then get on with your life – the sooner the lawyers are kicked out, the better the centres work
- Behavioural additionality does not conquer the market failure associated with fundamental research – when the high subsidy runs out, the party's over

Peter Stern, Erik Arnold, Malin Carlberg,Tobias Fridholm,Cristina Rosemberg and Miriam Terrell (2013) Long Term Industrial Impacts of the Swedish Competence Centres, Vinnova Analysis 2013: 10

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PPP/P2P long lives and restructuring tasks need to be reflected in evaluation: from formative to summative

1. Early: is this PPP/P2P working?
   1. *Does it conform to the programme model?*
   2. *Does it have the right governance and processes in place?*
   3. *Is it equipped to produce and maintain quality*
   4. *Does it appear to be sustainable?*
2. Growing: is it beginning to produce good work, relevant to the stakeholders and with potential for wider impact? Is it setting new agendas, as intended? Governance?
3. Maturing: is it beginning to have visible impact beyond the stakeholder group while maintaining quality? Governance?
4. Late in life: what has it achieved (outputs, outcomes, impact)? At a good quality level? Succession/continuation? Governance?

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The 'new Malthusianism' of the societal challenges challenges not just RTD policy but governance

- First generation: basic research – Vannevar Bush; a policy for science
  - *The linear model implies there is little need for coordination*
- Second generation – Labelled 'science policy' but actually the birth of innovation policy, OECD, more demand-led, industry-focused
  - *Eventually an understanding of the need for 'holistic' research and innovation policies and therefore a need for cross-sectoral coordination*
- Third generation – societal rather than industrial demands made of science; requires large transitions and shifts in socio-technical systems
  - *Coordination needed not only across sectors in RDTI but among wider policies*

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Devolution is probably key in third generation governance but needs to stretch beyond RTD policy

- Maintain the ability to coordinate across different sectors of research and innovation
- Incorporate the 'downstream'
  - *Changes in value chains*
  - *Market creation and conditions*
  - *Altering the character of demand*
- Therefore extending to stakeholder groups not currently involved in RTD policy
- Massively complex – unlikely to be realisable through one central intelligence or coordination function
- Can our current devolved instruments – P2Ps and PPPs – step up the the challenge?

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Thanks for your attention!

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