Towards Smart specialisation 2.0: challenges for less developed and low institutional capacity regions

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An outline

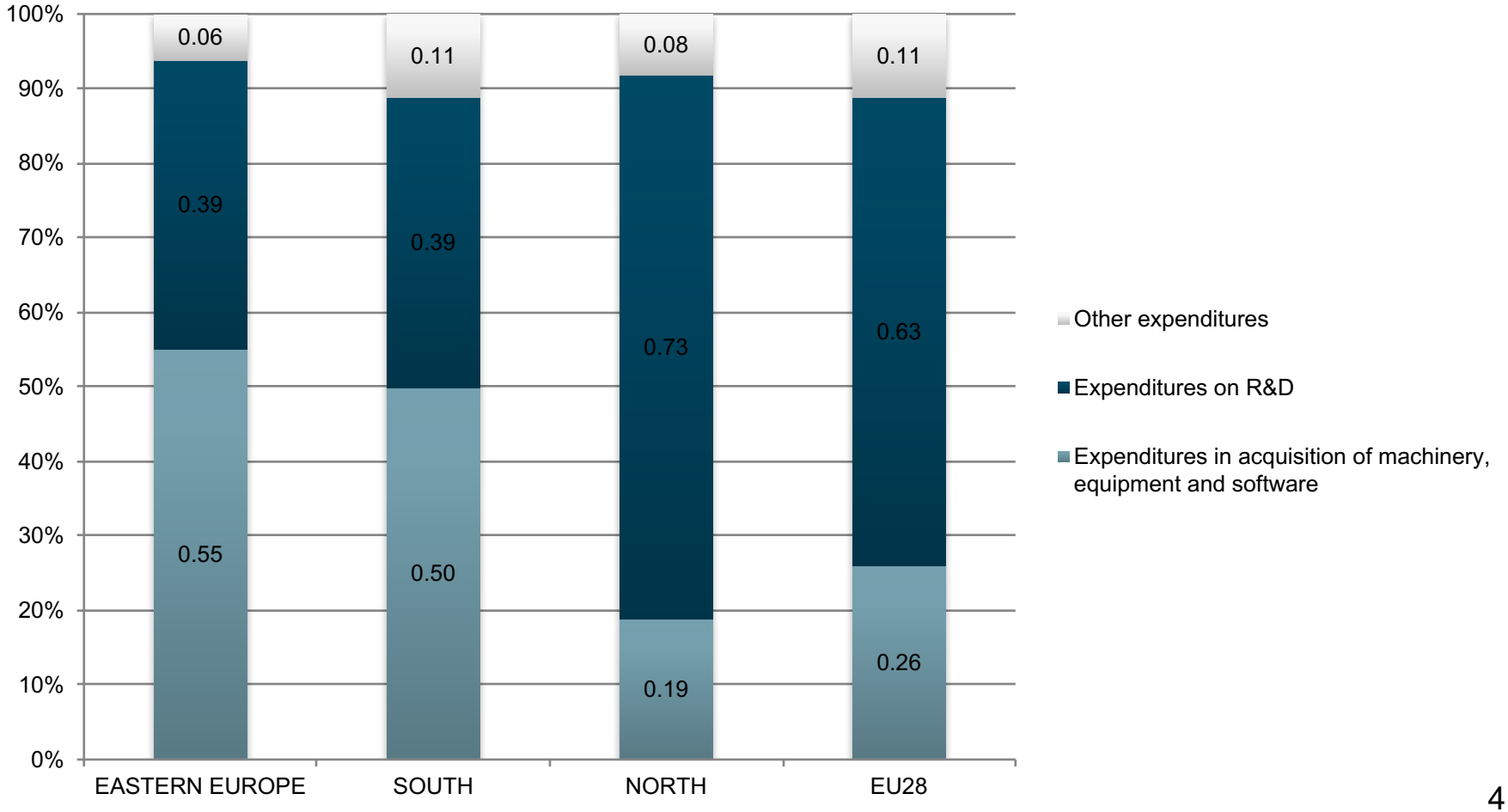
Challenge	Policy solution
The specific nature of innovation activity in LDC/LDRs	Two way innovation model requires two way policies
Institutional capacities for innovation policy in LDC/LDRs:	Ex-ante conditionality and assessing institutional implementation capacities
How to reconcile experimentation with accountability in SS policies:	Action learning and Learning networks' as a solution

Challenge: The SPECIFIC nature of innovation activity in LDC/LDRs

POLICY SOLUTION: TWO WAY INNOVATION MODEL REQUIRES TWO WAY POLICIES

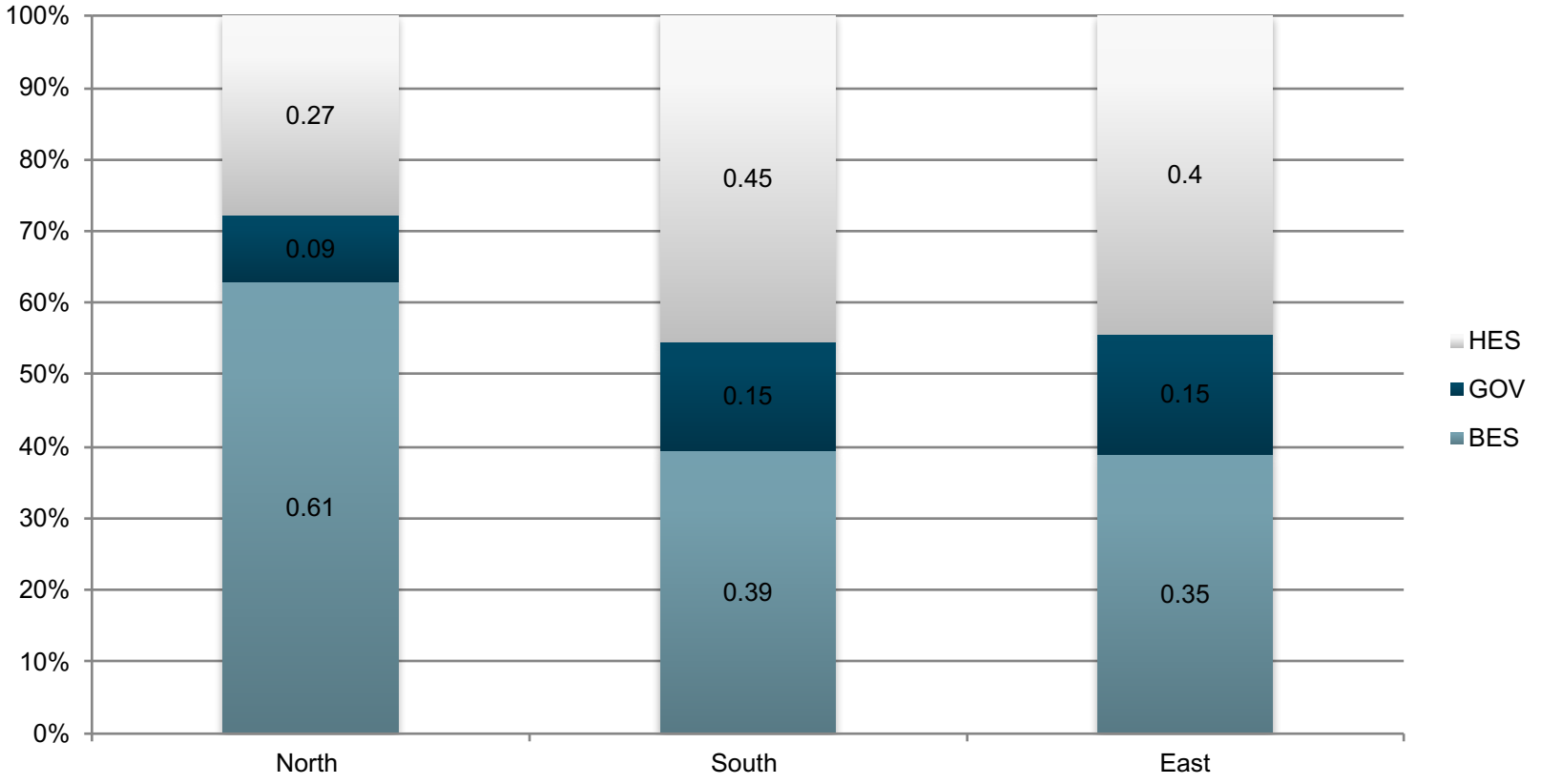
Different nature of innovation activities between the EU core and periphery

Structure of innovation expenditures 2010-2012 in EU28 regions



Shares in R&D employment by sectors (2013 or nearest year) in three EU regions: North, South, CEE

EU R&D: two (three) structurally distinct R&D systems



The R&D paradigm of innovation and its relevance for LDC/LDRs

- 'The central process of innovation is not science but design. … …Thus, the notion that innovation is initiated by research is wrong most of the time. …' (Kline, J. and Rosenberg, N, 1986: p2880).

- In reality, there are no true "non-R&D-intensive sectors" > 17% of firms in high tech sectors do not do any R&D, 27% in the medium-tech sector and 58% in low tech sectors (Som, 2012) > over half of all innovative firms in Europe do not perform R&D (based on CIS)(Arundel, 2009)

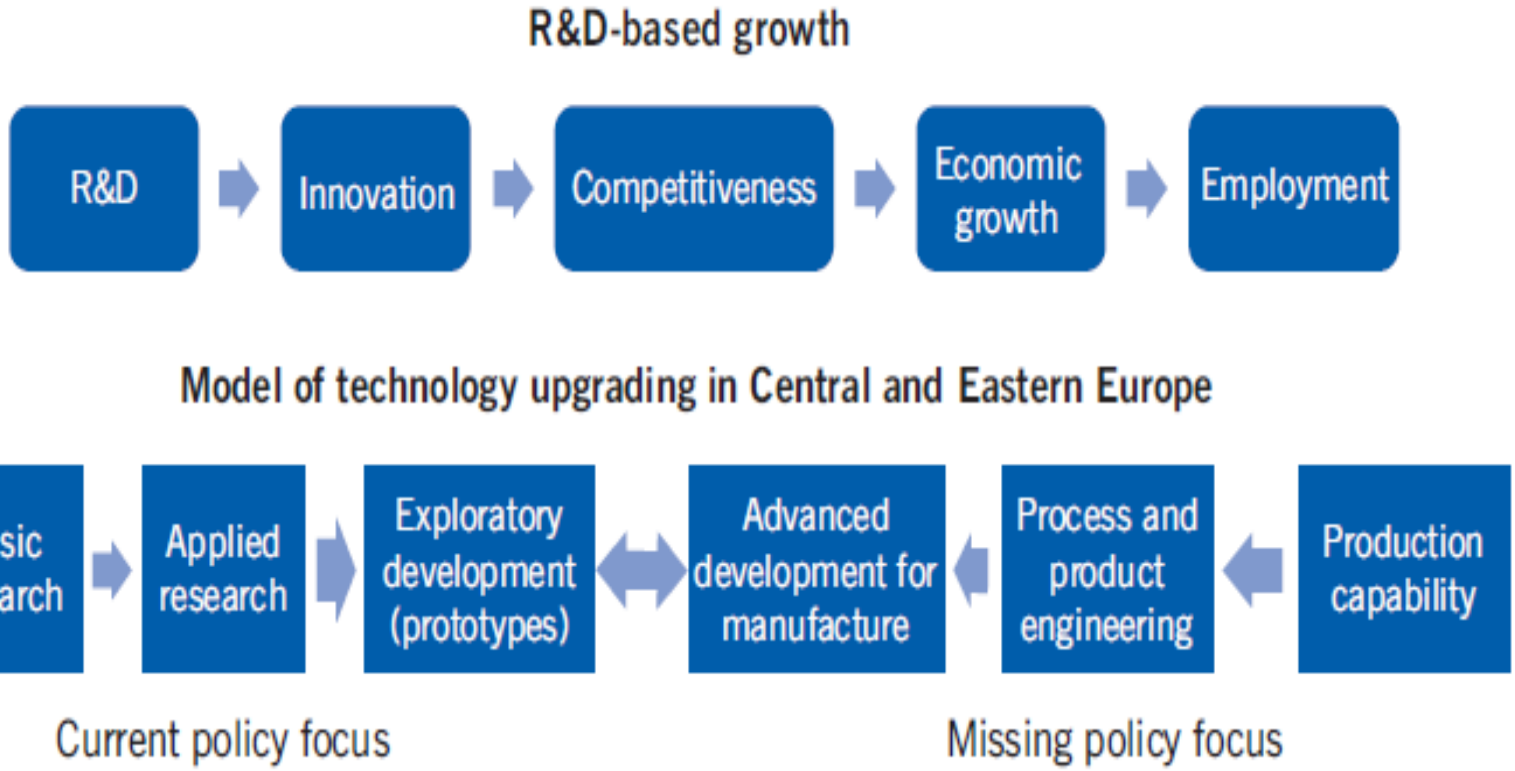
- Share of enterprises engaged continuously in in-house R&D activities: EU-CEE 18%; EU South-20%, EU-North-34%

Why you cannot jump from R&D to innovation? Missing design, engineering, management and production capabilities (DEMP)

1. R&D capabilities – i.e. capabilities for creating new knowledge and transforming it into the specifications for application in production
2. Design, engineering and associated management capabilities – i.e. capabilities for transforming existing knowledge into new, often innovative, configurations for new or changed production systems.
3. Operating or production capabilities – i.e. capabilities for using knowledge that is embodied in, or closely associated with, existing production systems and facilities.

Source: Bell (2007)

Two innovation – productivity models

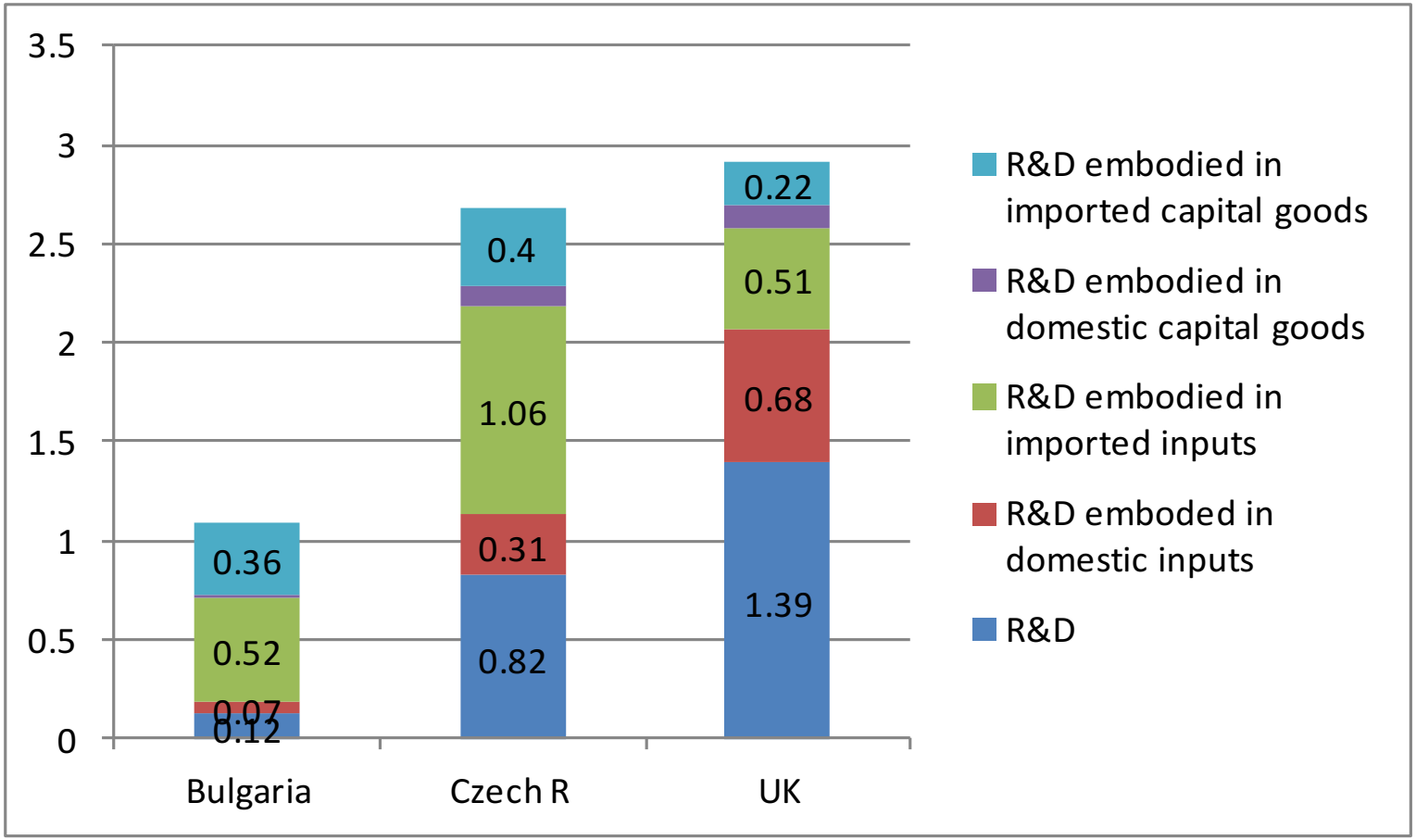


Threshold 1: from Applied R&D to Exploratory development;
Threshold 2: from PC/P&P engineering to Advanced/Exploratory Development

Broad concept of R&D

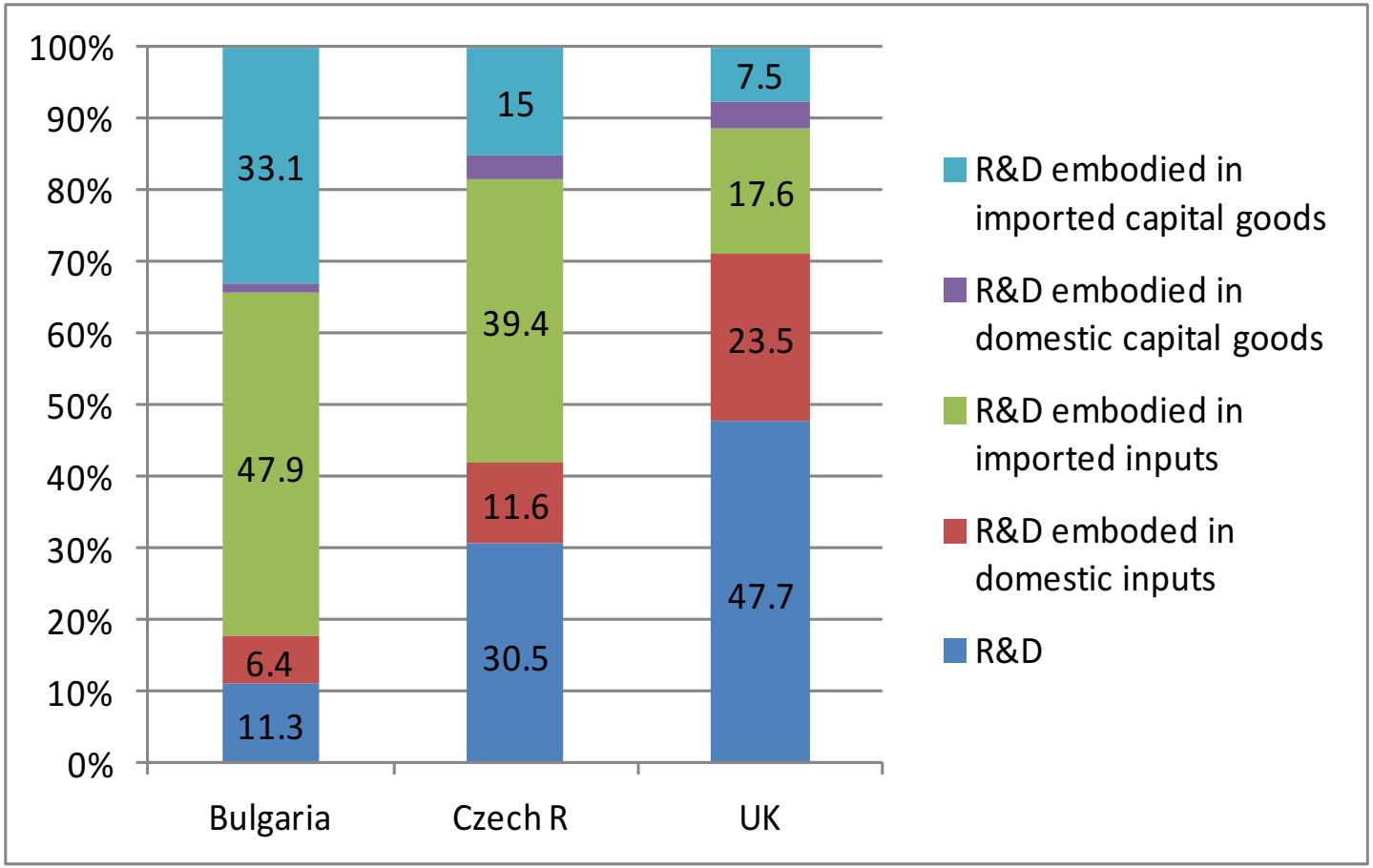
Direct R&D and indirect R&D/embodied in inputs and capital goods

R&D intensities in value added



Source: Own calculations based on Knell, M. (2008), 'Embodied technology diffusion and intersectoral linkages in Europe', Europe Innova Sectoral Innovation Watch deliverable WP4, Brussels: EC

Share in total R&D content of R&D and R&D Embodied in inputs and capital goods in Bulgaria (2001), UK (2000) and Czech Republic (2000)



Source: Own calculations based on Knell, M. (2008) 'Embodied technology diffusion and intersectoral linkages in Europe', Europe Innova Sectoral Innovation Watch deliverable WP4, Brussels: EC,

The importance of coupling of own R&D effort with the inward and international technology transfer

- Econometric evidence: 124,862 firms spanning 90 4-digit NACE sectors located in 15 EU countries in 2004-2013 (Bruno et al, 2018, forthcoming, UCL)
- Firms are more likely to catch up to the EU frontier if they:
  - have higher own as well as embedded technology
  - can strategically combine interaction between own and embedded R&D
- *Own R&D* at the sectoral level is a significant determinant of closing productivity gap and *embodied R&D* (domestic and imported) also plays an important role in closing the gap
- But negative interaction between endogenous technology effort and technology transfer shows lack of complementarities (mismatches) in interaction between R&D and technology transfer (FDI/GVC) policies
  - cf.mismatch between EU R&D and industrial policy

ZigZag* Innovation policy (cf. Poland)

- The 2007-13 financial perspective focused excessively on the import and adoption of foreign technology (cf. only technology use confined on purchase of equipment and machinery),
- 2014-2020: an “innovation tsunami” focused narrowly on early stage risk capital and R&D expenditure in SMEs (Breznitz and Ornston, 2017)
- 2020-2027?! Investments in enterprise R&D & significant investments in human capital (both university and vocational education) & technology upgrading (DEMP: Design, Engineering, Management, Production capabilities)
- *ZigZag: a situation in which actions, plans, or ideas change suddenly and completely, and then change back again equally suddenly (Cambridge Dictionary):*

Policy implications: different levels and patterns technology upgrading require different innovation policies

- Current policy focus: R&D driven innovation policy
- Missing policy focus: design, engineering, management and production capabilities (DEMP)
- Avoid zigzag policies …. but link R&D, GVC and DEMP policies
- Coupling of own R&D effort with the inward and international technology transfer: merging R&D/innovation policy and FDI/GVC policy

CHALLENGE: Weak institutional capacities for innovation policy in LDC/LDRs

POLICY SOLUTION: ASSESSING INSTITUTIONAL IMPLEMENTATION CAPACITIES AS EX-ANTE CONDITIONALITY

Institutional capacity for innovation policy (strategy setting capabilities; policy coordination and implementation capabilities – technical, operational and political (TOP); M&E capacities)

- Required technical capabilities to implement individual policy measures are much less available than in developed regions
- Very often M&E is adequately done only when funded as part of international organisations programs
- By aiming for best practices policies less developed regions are overlooking to assess whether they have required TOP capacities.
- 'Shallow' transnational policy learning: copying instruments disregarding whether they are the 'best matches' to the local environment.
- > A key challenge: to shift from the 'best practice' to 'best matches' policy discourse

Innovation policy and low institutional capacity of regions: from the 'best practice' to 'best matches'

- On average, the less developed regions/countries have weaker governance capacities than more developed
- => Ultimate solution: improve institutional and implementation capacities using the best practice as a reference case.
- Intermediate solution: institutional preconditions as an ex-ante conditionality for delivery of specific programs and instruments.
- However, copying of the best practice does not necessarily represent a response to the local context but more compliance to external requirements
- Also, externally imposed governance requirements can be very often formally met without meeting functional requirements of such governance > 'isomorphic mimicry'
- Alternative solution: try to design policies which correspond to the weak institutional capacities of LDC/LDRs => the 'best matches'

‘Best matches’ challenges: what is ‘the best match’ and take the existing capabilities as given

- Going for the ‘best practices’ lead to tasks that may widely exceed public sector capabilities (Crespi et al 2014) > take the existing institutions as given and select ‘the best matches’ policy instruments.
- However, this requires assessment of institutional and implementation capacities and matching appropriate instruments to the existing capacities (cf. incompetent policy maker asses its implementation competencies > ‘chicken and egg’ problem remains unresolved).
- Also ….should we accept the existing institutional and implementation capabilities as given and adjust goals to the lowest common denominator?
- … so, ‘Houston we have a problem’ ....
- The only solution is external assessment of implementation capacities

Challenge: Balancing experimentation with accountability

SOLUTION: 'ACTION LEARNING' PRINCIPLES AND LEARNING NETWORKS AS GOVERNANCE MECHANISM

Why experimentation in innovation policy for LDC/LDRs?

- The exact nature of the innovation policy problems and the best way to address them are not known ex-ante
- No single agent (be it government, its agencies, firms or R&D organisations) has a panoramic view of the economy.
- The key feature of NIP is getting the policy process such that it can lead to 'discovery' of new specializations
  - 'Policy as discovery process' (Rodrik)
  - Policy as the "entrepreneurial discovery process" (EDP)
- Policy making is endogenous variable in the process of discovery, coordination and implementation of industrial policy, which facilitate the process of self-discovery by agents.

- Further on this see our volume: *Advances in theory and practice of smart specialization*, Radosevic et al (ed) 2017 by Elsevier

Different approaches to the issue of experimentation in innovation policy

Smart Specialization Entrepreneurial Discovery Process (Foray, 2015)
Experimental governance (Sabel and Zeitlin, 2010)
Problem-driven iterative adaptation (PDIA)(Andrews et al., 2012)
EFA (Experimentation- feedback – adaptation)(Crespi et al., 2014)
Directed improvisation (variation- selection – niche creation)(Ang, 2016)

Common challenge to all experimentalist approaches:

how to reconcile experimentation approach with requirements for accountability of public policy

- A disconnect between the rhetoric which calls for a more experimental public sector, and the reality of a public sector compliance culture that is intolerant of mistakes and failure (Morgan, 2016)
- 'Experimentalist governance' > Schumpeterian Development Agency: specific organisation which operates based on the system of rules different from conventional public policy
- 'Directed improvisation' > specific governance regime which allows competition among regional administrations but also assumes strong central power (cf. China).

Whether experimentation is bounded or unbounded?

- S3: experimentation is confined on design stage
- 'Directed improvisation': a central government makes selection recognising those experimental models which have shown to be successful.
- 'Experimentalist governance': Schumpeterian development agency is managing a portfolio of projects and thus is ultimately responsible for producing the portfolio with the best outcomes and synergies.
- Other approaches (PDIA and EFA): implicitly assumes the existence of competent public agencies which can engage in experimentation/implementation cycle.

In conditions of conventional public programs we do not (yet) have an organisational solution to experimental governance

- Organisational solutions are either
  - confined on individual 'pockets of excellence' (autonomous 'Schumpeterian development agencies') which may also result in individual 'pockets of disaster'
  - on the specific institutional setup (cf. Chinese policy which can combine experimentation with centralised selection followed by diffusion of newly discovered practices)
  - problem is assumed as non-existent or is ignored

- Alternative: Principles of 'action learning' and 'learning networks' as governance mechanism to embed experimental approach into conventional public programs

‘Action learning’ and ‘Learning networks’ as missing tool of the EDP, Implementation and Adaptation of innovation policy

- Key insight of AL: significant knowledge benefits can be captured when ‘communities of practice’ develop across different stakeholders in a sector or between sectors.
- Action learning (AL) is a straightforward form of ‘learning by doing’ based on teams of participants who offer each other advice and encouragement and challenge each other to think and act > it is focused on problems where there is no single solution
- Learning Networks (LN) has been developed to operationalise this latent opportunity
- LN - a suitable governance form to overcome vested interests by democratizing EDP and minimizing the impact of active and influential actors and give space to weak and potentially promising actors

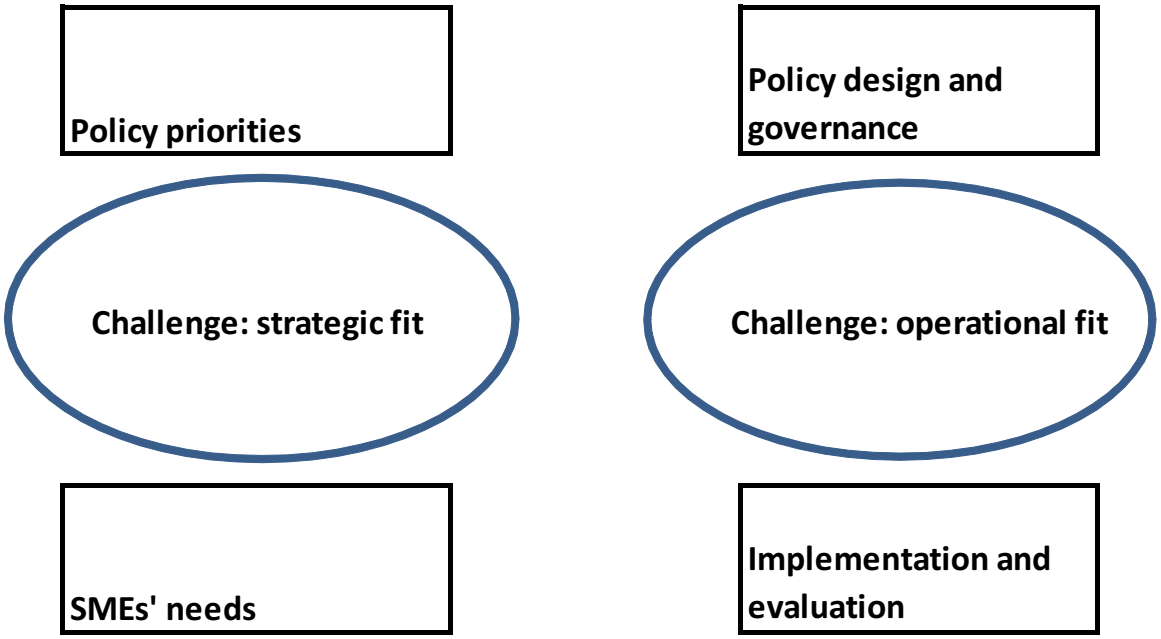
Characteristics of Learning Networks

- include representatives of different organisations (mainly but not exclusively, private firms;)
- are formally established with clear and defined boundaries for participation;
- have an explicit structure for operation with regular processes and actions;
- have a primary target – some specific learning/new knowledge that the network is going to enable;
- can assess the “learning” outcomes that feedback on the operation of the network
- Source: Tsekouras, G., and D. Kanellou, 2018

How LN differ from traditional M&E mechanisms that focus on compliance with a linear process of design followed by implementation and allow 'lessons' only at the end project?

- LN aims to allow people working on design and implementation of different programs to find new solutions = a mechanism of the search for solutions that fit local context (see next slide)
- A governance mechanism to overcome or significantly reduce the power of vested interests that can bias search process.
- Different agents should have different roles in LN: some could provide power and other awareness of the problem, some ideas or resources, while other act as connectors or bridgers

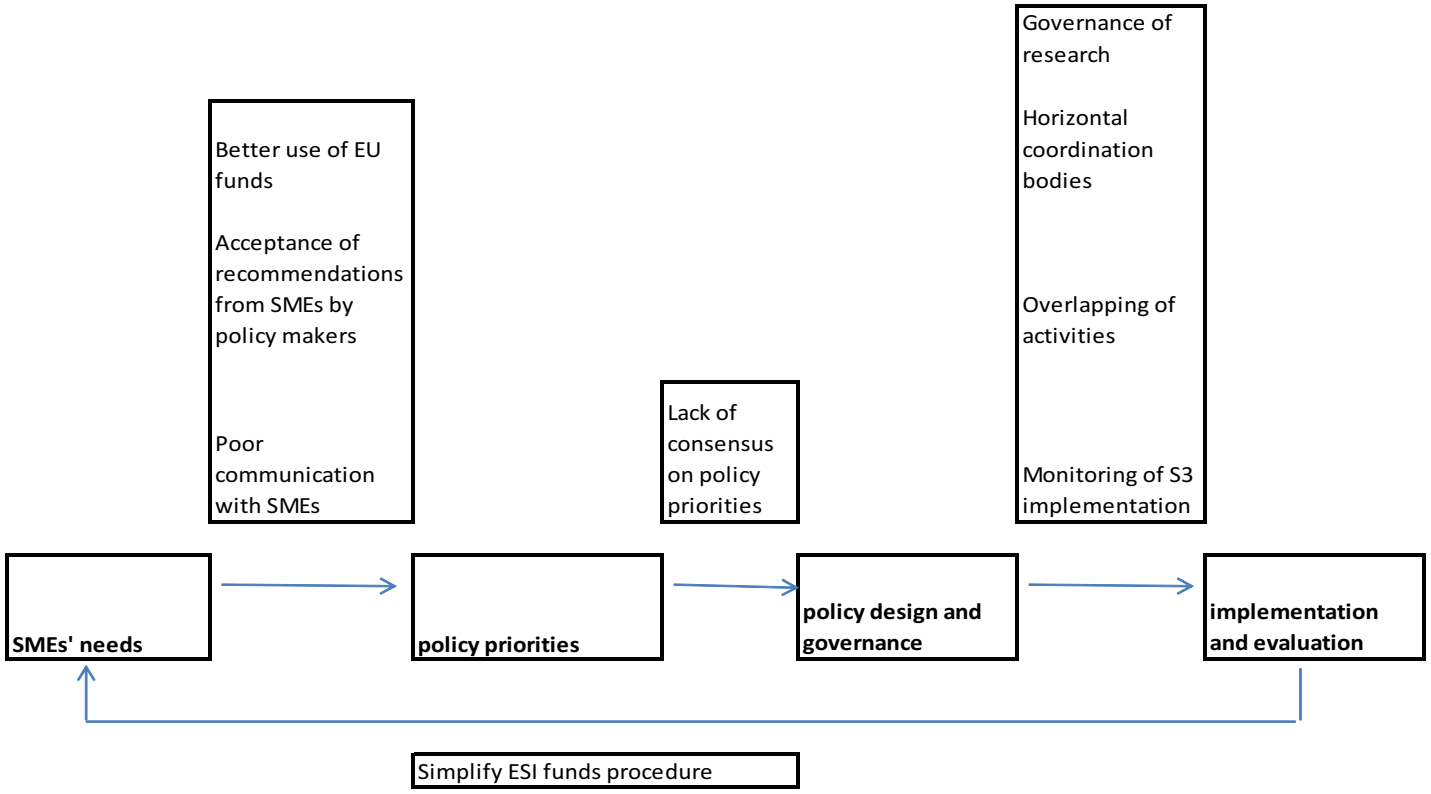
LN would aim to address two critical challenges of experimental innovation policy: Strategic and Operational fit



As formalised structure LN should have the following vital actors (Tseokuras and Kanellou, 2018):

- **Network moderator** who manages and coordinates activities, people and time, matches learning needs with knowledge resources, and monitor the relationships between members
- **Peer group facilitators** who assist groups of practitioners in their structured reflection. The facilitators are trained and accumulated experience over time.
- **Network members** are individuals representing an organisation - with executive power.
- **Invited experts** are non-network members invited to participate in the network for a specific reason (such as the presentation of a topic) and a defined period.

Areas of potential implementation of Learning Networks in the Smart Specialization policy process identified by Training Workshop participants in Croatia



THANK YOU