

Enriching the indicator base for the
economics of knowledge
an introduction to the session on R&D and
innovation indicators

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An important task for applied economics in
the realm of innovation

- Enlarging the scope of empirical material that economists will come to regard as legitimate and perhaps even routine in applied research
- One special feature of the economics of innovation is that it calls for large amounts of data, much of it rather unconventional for economists
- This reflects that if we truly want to grasp the phenomena of knowledge and innovation, we have no choice but to seek data that have a direct bearing on such phenomena
- This is less obvious than it sounds:
 - i) economists are reluctant to engage in raw data collection, trying instead to overcome the scarcity of data with econometric ingenuity and sophistication (incentives in the profession are set accordingly);
 - ii) the prevailing conception of legitimate economic data is rather narrow and conservative. This may be justifiable in other areas of economics, but it is not in the realm of innovation

- Two ways:
 - Using existing data to build new indicators (e.g. on R&D internationalisation, R&D specialisation)
 - Collecting new types of data to build new indicators (e.g. on informal innovations, knowledge management, « new » organizational process or institutions)
- The quest for a broader and more systematic empirical material relating to phenomenon X must proceed through various strategic steps

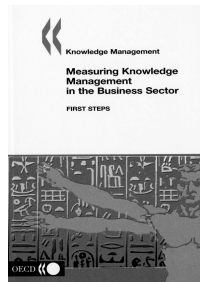
Designing a research strategy

- Preconception : building stylized facts
- Empirical research : highlighting the phenomenon with systematic data collection and analysis
- The big question : does it lead to more innovation, productivity gains? Whether an increase in inputs in X activities would lead to more output?
 - Unless this question is answered in the affirmative, there is no point in proceeding toward the usual prescription of economics, the manipulation of incentives and inputs to achieve particular goals
- Issues of manipulation of incentives and inputs to achieve particular goals and the policy implications
- Implications for systematic and regular data collection and analysis

- However, the proof of concept – the demonstration that phenomenon X is important and that aggregate measures are possible – is by no means sufficient to impose internationally new indicators and therefore routinize the data collection
- There are strong failures on the market for indicators

Failures on the market for indicators: the case of KM

- The KM survey offered some good results to the international economic and policy audience
- Strong economic case of implementing KM
- Aggregate measures are possible
- Statistical tools have been tested, improved and are available
- KM's impact on innovation and productivity



Failures on the market for indicators

- However the « proof of concept » is by no means sufficient to impose internationally new indicators and routinize the data collection
- KM indicators (e.g. KM intensity) are not ideal **now**
 - Precision, absence of bias, stability over time, comparability across different environments, difficulty to manipulate, aggregation, low cost
- A new indicator will get improved over time if enough time is given to it
- The first phase of building and using a new indicator is perilous (increasing returns)

Failures on the market for indicators

- Sources of increasing returns on the market for indicators:
- High fixed costs
- Network externalities
- Strategic complementarities
- Time series effect
- Learning a new code
- Scarce resources are : attention and time (for policy makers and business community)

Conclusion

- The case of the development of KM indicators shows that it is difficult to enlarge the scope of empirical material that economists will come to regard as legitimate, and perhaps even routine, in applied research
- Proof of concept is not a guarantee for international success
- Many failures on the market for indicators
- It is not clear that KM's indicators will be **developed** further
- Elements for hope
 - Most recent revision of the Oslo Manual extends coverage of innovation to « organizational innovation »
 - The four basic questions about KM practices used to estimate KM intensity have been lodged again in CIS4
 - Empirical studies about new human resources management practices are flourishing and converge toward conclusions that such new HRM practices raise performance
- This is a challenge for the economics of innovation as an empirically disciplined science
