

From Horizon 2020 to Open Innovation in Horizon Europe

**Horizons of European Research and Innovation:
Experiences of Horizon 2020 and perspectives for Horizon Europe
38th Conference of
Rectors and Presidents of
European Universities of Technology**

Prof. Lena J. Tsipouri

Outline



Open Innovation: The Concept in theory, in management, in policy



Some key issues (how open; actor specific issues)



Open Innovation in Horizon 2020



Openness in Horizon Europe



What's in it for Universities of Technology (what can OI do for you; what can you do for OI?)

The concept in theory

Open Innovation as opposed to Closed/Vertical Innovation: since the industrial revolution the dominant innovation logic aimed at vertical integration within the boundaries of a firm or company. Then, this dominant view was challenged in favour of a more distributed view on innovation.

This shift in the dominant mode of innovation, from vertically integrated innovation towards a more distributed mode of innovation, has forced companies to alter both their research and development processes and their approach to innovation management.

Open
Innovation has
come to stay*:
The name is
16 years old;
the concept is
much older

Open Innovation refers to the collaboration between companies, individuals, and other types of institutions to develop innovative products and services and, in the process, share the risks and rewards of research, development, and commercialisation (Chesbrough, 2003, 2006). Here the notion of openness is clear:

sharing knowledge.

Long before the name was coined many people were convinced and many policy schemes existed (including EU FPs long before 2003) to enhance knowledge sharing as well as costs and risks: research associations, clusters, university-industry networks of various forms but the name came to the **appropriate moment**. OI redefines the nature of partnerships and collaboration

* Survey: 82% more than three years earlier in Chesbrough's survey

The justification

Innovation is accelerated by heterogeneous knowledge, which is obtained in open innovation.

The whole concept of open innovation is grounded on the premise that opening the internal innovation process of a firm yields extra value

[\(Chesbrough et al., 2008\)](#)

The structure of the economy and the complexity of knowledge creation changed in the 20th century;
this led to the paradigm shift

Taxonomies to help understanding and policy

There are two major research streams linked to the phenomenon of distributed innovation that study both modes from a different perspective (Bogers & West, 2012).

- The open innovation paradigm takes the firm's perspective and examines the financial benefits of engaging in distributed innovation (West and Bogers, 2013).
- In contrast, the user innovation stream looks at distributed innovation processes from the perspective of the user (von Hippel, 2009). In this stream, the focus of the analysis lies mainly on the utility gains the innovation brings to this user.
- A specific situation where these two perspectives come together is the case of user entrepreneurs, where users innovate and decide to commercialise their innovation themselves (Shah and Tripsas, 2007).

More taxonomies

Openness is attained by enabling both inbound and outbound knowledge transfers:

Internally acquiring external knowledge ('buying') and externally exploiting internal knowledge assets ('selling'), a phenomenon that is referred to as two sides of openness (Torkkeli et al., 2009) or the 'coupled process' of open innovation (Enkel et al., 2009).

Besides (immaterial) knowledge, materialized knowledge in the form of technologies can also be the subject of inbound or outbound movements, processes that are referred to as 'technology acquisition' and 'technology exploitation' (Lichtenthaler, 2011).

Use of taxonomies: some research results

With regard to inbound practices, the practices oriented to cooperate with partners in a R&D context have a positive influence. The results show that outbound practices, either by direct generation of revenues from licensing payments or, more indirectly, through the indirect marketing and technical benefits that can stem from revealing have a positive effect on firm performance. Coupled practices, which are related to participation in clusters and innovation networks, have the highest impact on firm performance. In the industrial context examined, decentralization exerts a positive effect which enhances the effect of outbound practices meanwhile formalization reduces their positive effect.

“Open” is good but “the more open the better” is a dangerous simplification

Over these 16 years it has grown to an encompassing framework in the innovation and management research agendas and has been embraced by policy makers. But the more the literature grows the more it is refined and occasionally controversial. Crucial research questions:

- Does OI benefit all actors involved?
- Is Inbound (receptive to ideas and technologies sourced from elsewhere) or Outbound OI (existing firm shares ideas or technologies created in-house) better?
- The positive effects are limited by the trade-off between knowledge heterogeneity and coordination costs.
- What to reveal and what to hide (Open Science versus Open Innovation)
- Where should companies strike a balance between openness and IP?
- How many participants in research networks are optimal (3 ideal; between 2 and 8 beneficial; (Hitchen et al., 2017))



For more open to
be better there
are conditions to
fulfill

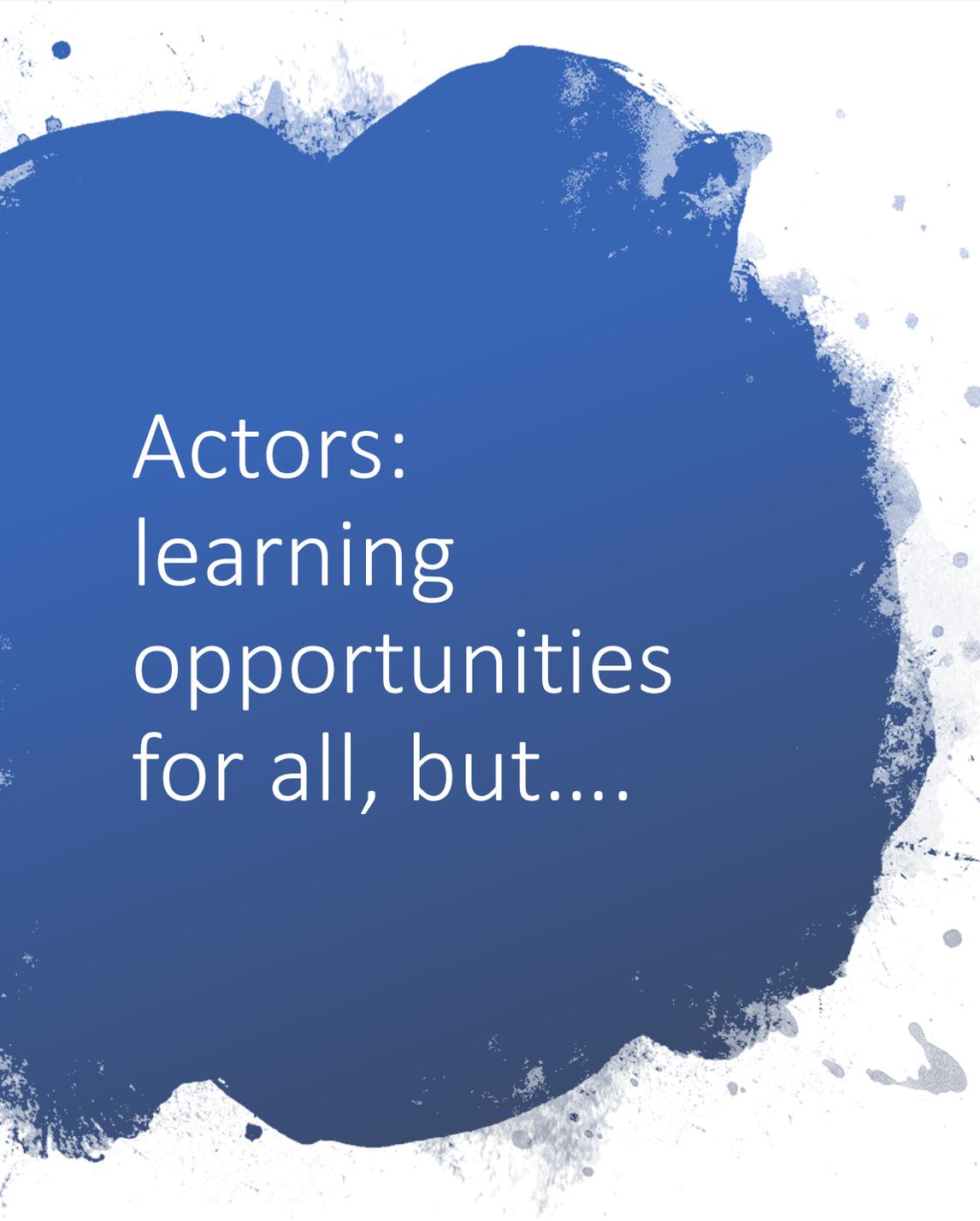
Factors that foster or impede OI:

- leadership style: leadership interacts with absorptive capacity and organizational learning culture to influence OI outcomes
- Skills: skills and capabilities to manage collaboration-related issues; OI requires human capital that is capable of selecting, acquiring, transforming and utilising knowledge for innovative purposes
- Trust: the million-dollar issue

A suggested *principle*

As open as possible, as closed as necessary

(borrowed from Open Data)



Actors: learning opportunities for all, but....

Enablers-providers-users (the roles are emulating)

- Business sector: tends to favour inbound; can benefit from outbound; a combination is real openness; striking a balance between the benefits of IP and openness
- Universities: Open Science (Academic careers; Research funding; Responsibility to Society) versus Open Innovation (Academic entrepreneurship; Spin Offs; Funding Opportunities); Open Science can conflict with firms' objective to maximise returns from IP
- NGOs/Society: There is a diversity of non-profit organizations that can be analyzed through the open innovation lens: universities, research labs, libraries, trusts, museums, and even regulatory agencies.
- The role of OI for competition (enhancing, e.g. diminishing barriers to entry or hampering e.g. acquisitions)?

Each faces (its own) considerable strategic challenges for growth and renewal, and—as with companies—open innovation may provide a way forward.

Openness in Horizon 2020

Open innovation in one of the three [priority areas of the Commissioner for Research, Science and Innovation Moedas](#).

1. Open Science and open data: support (i.a) to open innovation; great progress done
2. Open Innovation: A lot said; Was there something new? Is the EIC a form of OI?
3. Open to the World

Open innovation is characterised by the combined power of ideas and knowledge from different actors (whether private, public, third sector) to co-create new products and find solutions to societal needs. Open innovation is also characterised by the creation of shared economic and social value and the implications of mega-trends such as digitisation, mass participation and collaboration, and sustainability.

There was by definition an element of openness in all earlier FPs (partnership enhancement, living labs), the difference in H2020 is that it made it explicit

H2020 Interim Evaluation: reinforce openness (referring to open science)

Openness in Horizon Europe

Horizon Europe is still in a preparatory phase

In the formal presentation 28 times “Open” all referring to Open Science

But a clear (even if implicit) emphasis on Open Innovation in various :

- **Pillar 3 European Innovation Ecosystems**
- **New targets require renewed openness**
 - **Global challenges/SDGs**
 - **Missions**
 - **From the Sibiu targets: Transform science into leadership in innovation and entrepreneurship: leadership in breakthrough and disruptive innovation needs interdisciplinarity; Influential Europe needs strong science and innovation**
- **to strengthen the EU's scientific and technological bases and the European Research Area (ERA)**
- **to boost Europe's innovation capacity, competitiveness and jobs**
- **to deliver on citizens' priorities and sustain our socio-economic model and values**
- **Open for international participation**
- **Economic Impact (Generating innovation-based growth; Creating more and better jobs; Leveraging investments in R&I)**

The challenge is to translate the implicit into explicit policies

Policy Issues

- Public policy alternatives
- (a) competition/antitrust policy, which relates to market structure as well as to incentives to innovate and “exploit” the innovative outcomes;
- (b) labor market policies that can range from portable benefits to decisions to not permit innovative firms such as Uber, Lyft, or Airbnb to operate in certain jurisdictions and, more specifically, to “flexibility” of the labor market;
- (c) intellectual property policies at universities and at the national level; and
- (d) the extent of public and private funding for R&D.

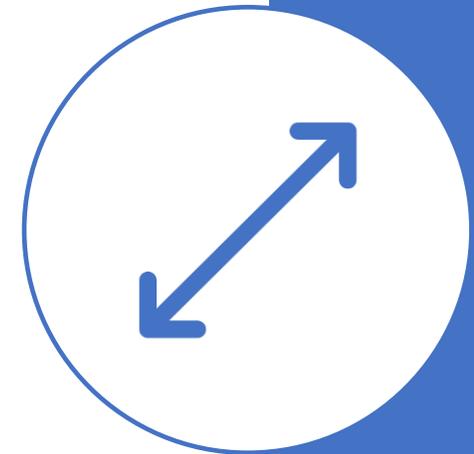
More (renewed approach) policy issues

Ideas about how to finance open innovation, to a new approach to intellectual property in government funded organizations, open innovation by supporting startups and SMEs, which bring new ideas to market and stimulate competition by established firms, expand open government. In sum, supporting open innovation policy means going beyond the traditional innovation policies, with new approaches that cut across different policy areas to advance and support innovation (Chesbrough 2017).

Can the EU be a global policy pioneer? Horizon Europe is a challenge

What's in it for the UoT? what can OI do for you

- The predominant focus of OI research has been at the firm level; yet all actors can win or lose from sharing knowledge
- Don't go for OI because H2020 or Horizon Europe say it is good: go to profit from it (keep the key issues in mind)
- Open Innovation can bring funding (Horizons and business contracts), commercialization of knowledge (licensing, spin offs), ideas, complementary knowledge
- The potential and the (potential) benefits differ by UoT: Make your own strategy (how open; what's in it for me?)



What can you do for OI



Steer Horizon Europe towards more and better support for Open Innovation



Balance Open Science and Open Innovation



TUs are the right actors to help the Commission in this direction

Conclusions



Open Innovation: it is a new term, it is timely, it is appropriate, it is (as yet) unbalanced



Some key issues: a lot of additional policy knowledge is necessary to capture all its value (if not all as much as possible)



Open Innovation in Horizon 2020: following earlier FPs it helped making it more explicit



Openness in Horizon Europe: still implicit but a good basis to become global policy pioneer



What's in it for Universities of Technology (what can OI do for you; what can you do for OI?): Universities can benefit from funding and influencing their own management AND help the Commission in its ambition to become a pioneer

Thank you for your attention
tsipouri@econ.uoa.gr