

Panel 6.1: Nano from Lab to Fab – Upscaling.

INL: Your worldwide partner for science and innovation.

Lars Montelius
Director General INL
www.inl.int

LM1

Overall aim of the presentation:

Three messages:

Message 1: Smart Specialisation must be seen in a holistic perspective. It is not about making a region R to be a specialist in several topics T1, T2, T3 etc and by that become a great actor in a Sector S. It is about how different regions R1, R2, R3 etc having various competencies in topics T1, T2 T3 etc can together strengthen each other and fill value chain in order for Europe to become a major player in several sectors S1, S2, S3 etc. So, a number of regions R1, R2 etc are connected in a certain sector and are filling in their respective competencies ultimately. So, it is not about that Europe must put all efforts in a few selected sectors and then let other sectors die. On the contrary it is about creating a "Europe Enterprise" that will become a major player in several sectors. So, in contrast to old paradigms (compare Ruhr belt) it is about a digitally connected Europe having large enough critical mass in certain sectors by making up a distributed eco-system.

Message 2: In addition to this showcase the importance of putting efforts onto KETs - for making it possible for Europe to stay on top and keep up the competition with other regions worldwide. This support should in order to be as efficient as possible be put on the KETs by themselves and not just spreading support to KETs through various verticals. If only support verticals the enabling character of KETs will be largely lost.

Message 3: Introduction of INL. INL is an intergovernmental research organisation, one of the three such research organisations worldwide (the other two are CERN and EMBL) and the only one in the KET-area. We are building a distributed eco-system and we are offering access to one of the most modern science and technology infrastructures worldwide having a cross-KET perspective. We are offering actors worldwide to work with us and we are also inviting states to become member states. Our vision is to become the best organisation worldwide that deploy nanotechnology for the benefit of the society.

The structure of the presentation is to start to talk about challenges ahead of us, the changes of the science & innovation landscape, the need for a holistic approach for matching the challenges, the importance of nanotechnology as a Key Enabling Technology, the need of KETs and KET support for effective diffusion of knowledge between verticals, a short presentation of INL and how INL can work as an efficient actor to support regional specialisation.

Lars Montelius; 03.04.2018

We have a very interesting program!

<p>Nicoleta Lupu General Manager, National Institute of Research & Development for Technical Physics, Iasi, Romania</p>	<p>Advanced nanostructures from lab to fab: challenges and opportunities</p>
<p>Mircea Dragoman, President of the Scientific Council of the National Institute for Research and Development in Microtechnologies – IMT Bucharest, Romania</p>	<p>Graphene goes to cars - graphene lighting of automobiles</p>
<p>Antonios Vavouliotis, Managing Director and Co-Founder of Adamant Composites Ltd., Greece</p>	<p>Scaling-up of nano-enabled composite materials through a modular R2R pilot line. The SME perspective</p>
<p>Anna Boczkowska, Professor of Warsaw University of Technology, Faculty of Materials Science and Engineering, as well as Scientific Director of TMBK Partners</p>	<p>Up-scaling of CNT-doped thermoplastic veils production</p>
<p>Ferry Kienberger, Austria Country Manager of Keysight Technologies Inc., and leading a Keysight R&D Team in Linz, Austria</p>	<p>Portable GHz instruments for electrical characterisation of nanoscale layered energy materials in manufacturing environments</p>
<p>Lars Montelius, Director General of the International Iberian Nanotechnology Laboratory, Portugal</p>	<p>EPPN: An enabler for accelerated innovation through rapid upscaling</p>

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Three simple questions to the presenters:

1. Describe your challenge within the from lab to fab scope.
2. Describe your working methodology to address the challenge.
3. Describe the outcome – and the learning you achieved.

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Lars Montelius; 03.04.2018

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Accelerated innovation through rapid upscaling.



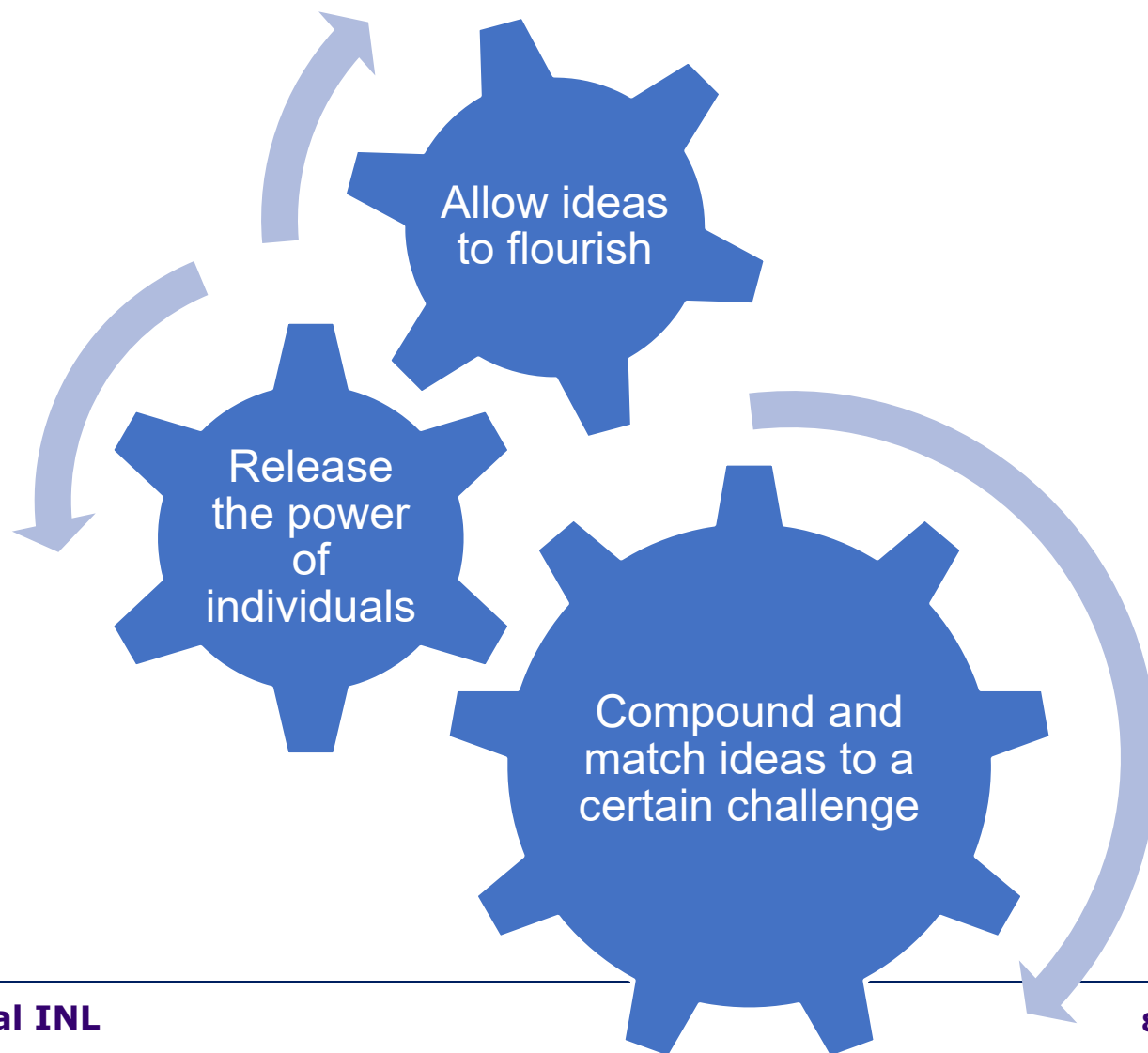
It is not enough to have – or create capacity!

Our challenge:
It is to create *Innovations to Happen!*

The working methodology is to create a mechanism....

This holds for:

- Organisations,
- Companies,
- Associations,
- Municipalities
- Countries and
- EU!

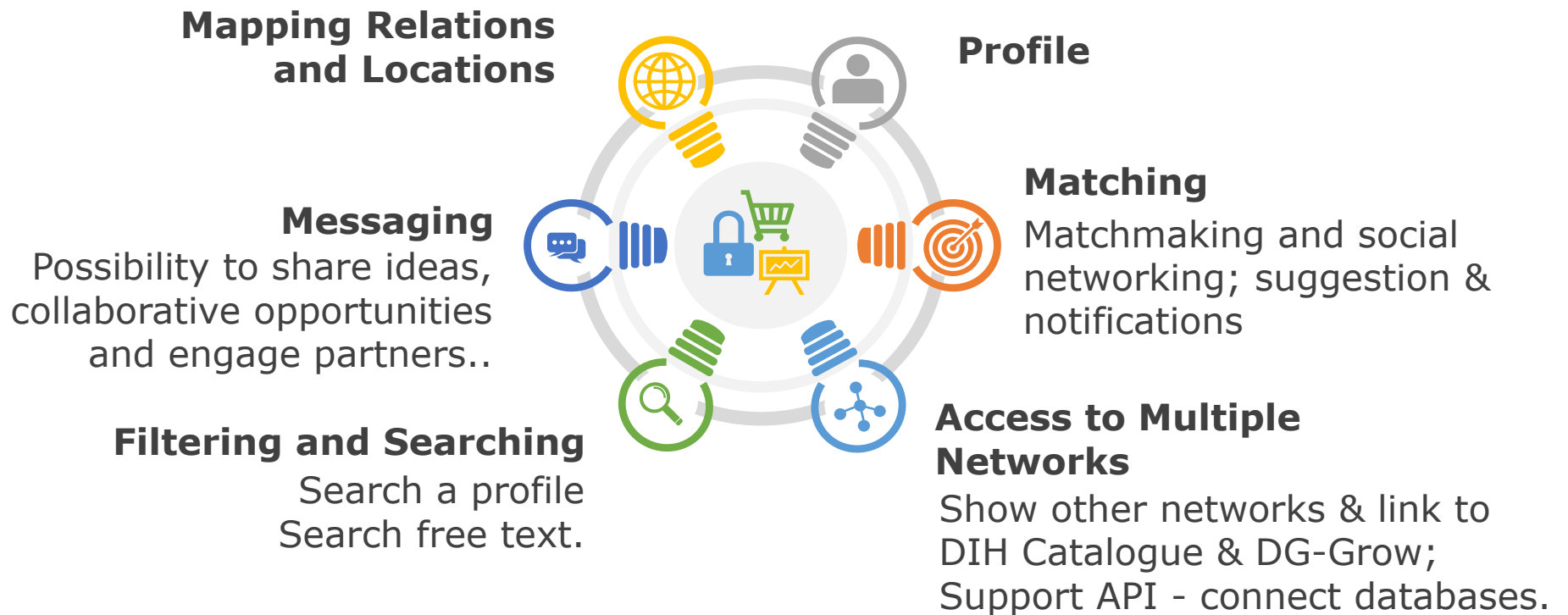


The outcome is EPPN –
a Digital Marketplace –
connecting the
interfaces.



EPPN Platform

Main Functionalities



EPPN Platform

A Screenshot

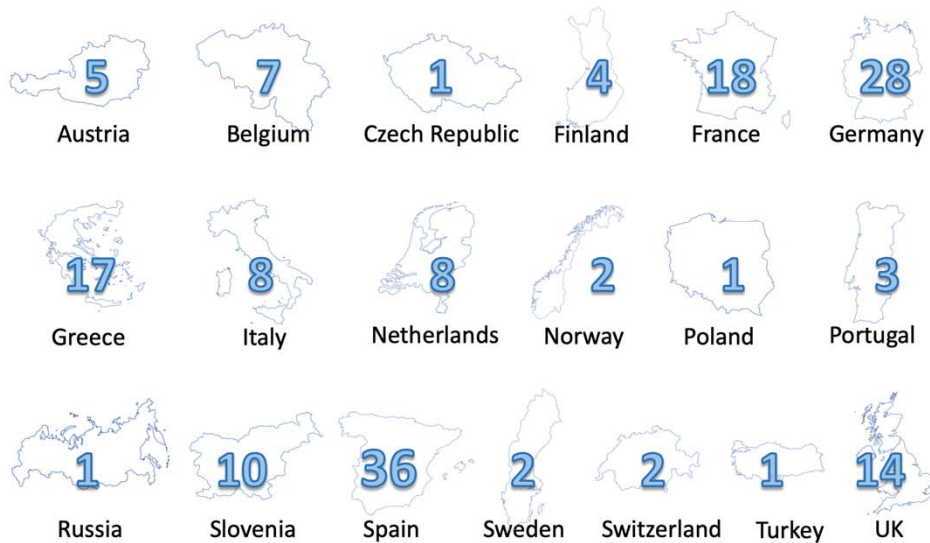


DISTRIBUTION OF ACTIVE MEMBERS OF EPPN PLATFORM BY COUNTRY

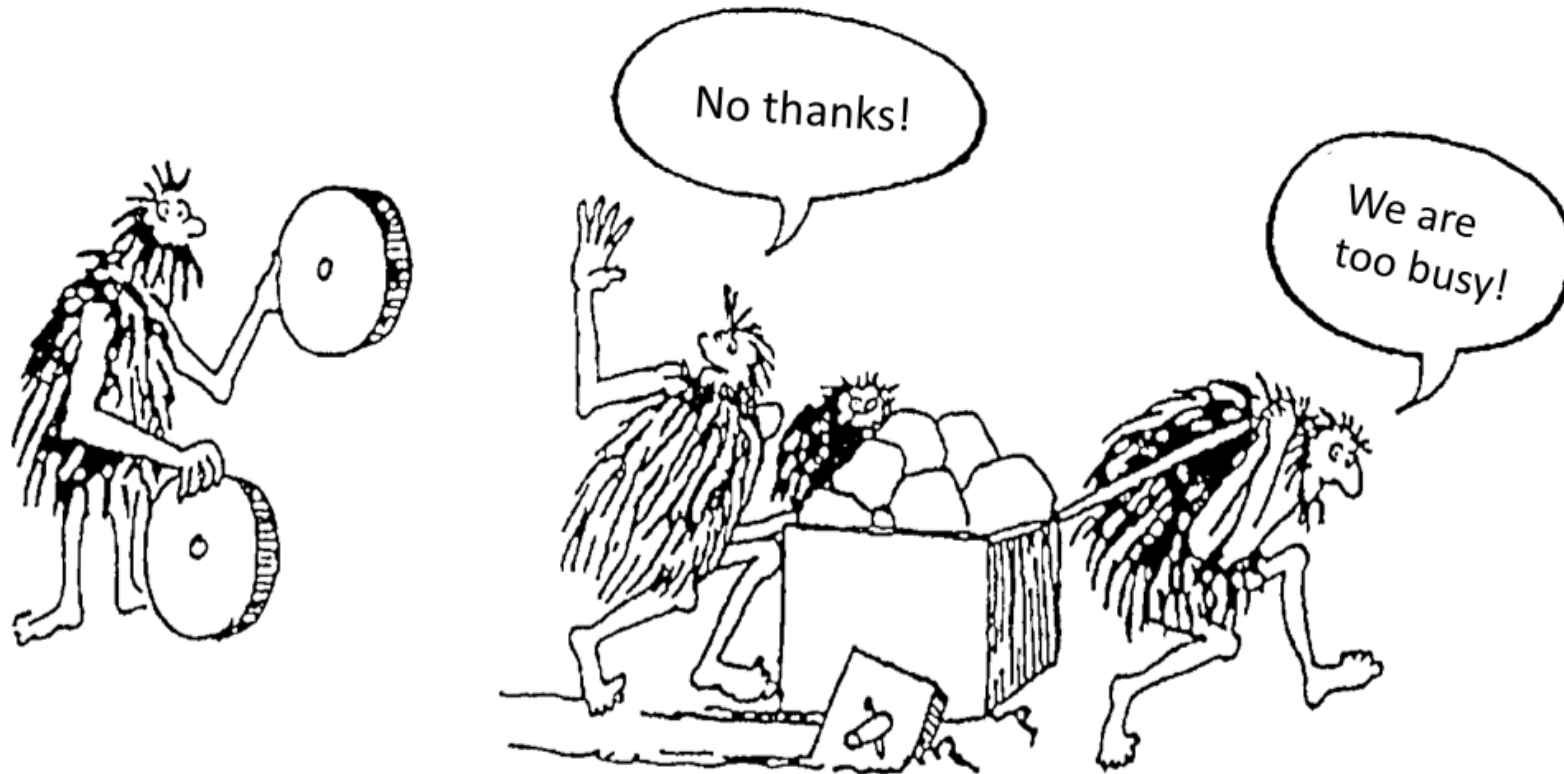
— Last Update: 02 June 2019 —

NUMBER OF PILOT PLANTS BY COUNTRIES

168



EPPN



it could be the start of the next big thing



The importance of Articulation!



MegaTrends!

IoT.
Big Data.
AI - AR - VR
Deep Learning.
Sharing Economy.
Ageing Population.
Urbanisation. Resilience.
Are You Quantum ready?

The challenge was to create innovations to happen.

The working methodology was to create a mechanism: release the power, allow ideas to flourish, match ideas to challenges



The outcome is EPPN - a Digital Marketplace – connecting the interfaces.

YOUR WORLDWIDE PARTNER
For Science and Innovation



Welcome to INL!

Thank You for listening!

Rapid prototyping; 200 mm wafer fab
High resolution electron microscopy and spectroscopy
Nanophotonics & NEMS/MEMS & Electronics & Energy & Quantum Materials
Food Science & Environmental & Medical Devices & Sensors!

YOUR WORLDWIDE PARTNER

For Science and Innovation



The world's only **intergovernmental** institute for nanotechnology

Representation: Israel, Brussel, Scandinavia, Shanghai, HongKong, Austin, Boston, Dubai

Short facts: 47 000 dedicated sqms 100 MEuro Investment



Open to the world!

Rapid growth: In four years: From \approx 60 to 300* passionate persons from \approx 32 countries

From 10s of visitors & few events to thousands of annual visitors in \approx 50 annual events!

NanoStart Up Programme Nanoincubator INL IP Ventures Scale Travels Programme

INL Working Model:

We work with the international community integrating the worldwide best solutions to commercial needs creating societal value!

Lars Montelius, Director General INL

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