

The Future of Innovation in Europe as seen by Euro-CASE

Prof. Bjorn O. NILSSON, Royal Swedish Academy of Engineering Sciences (IVA)



Evidence-based Policy Advice and Innovation Policy beyond Horizon 2020

Euro-CASE Annual Conference
Brussels, December 3, 2014



Euro-CASE

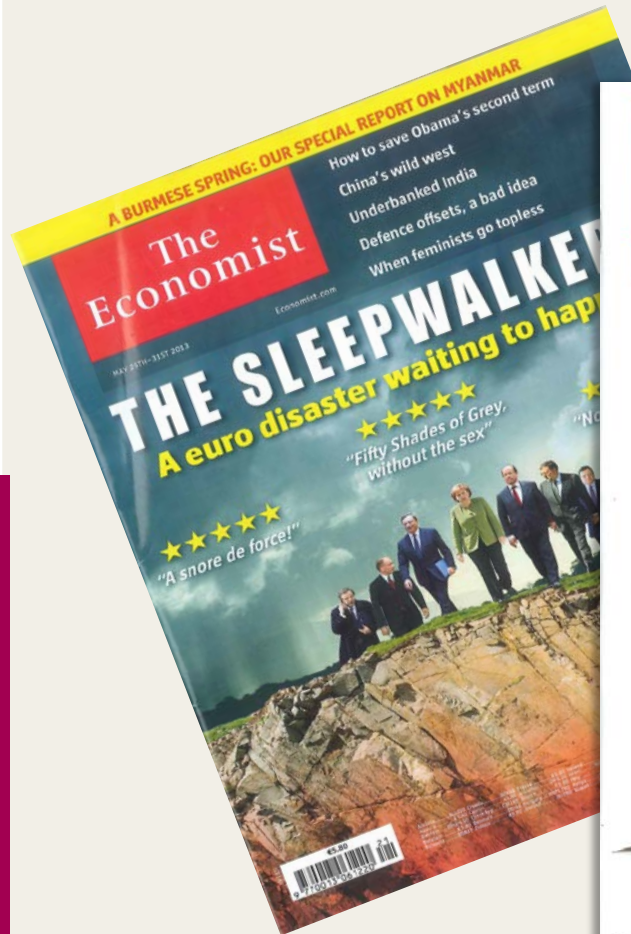




IWA

There is not much hope for Europe...

...according to The Economist



Europe is not performing very well

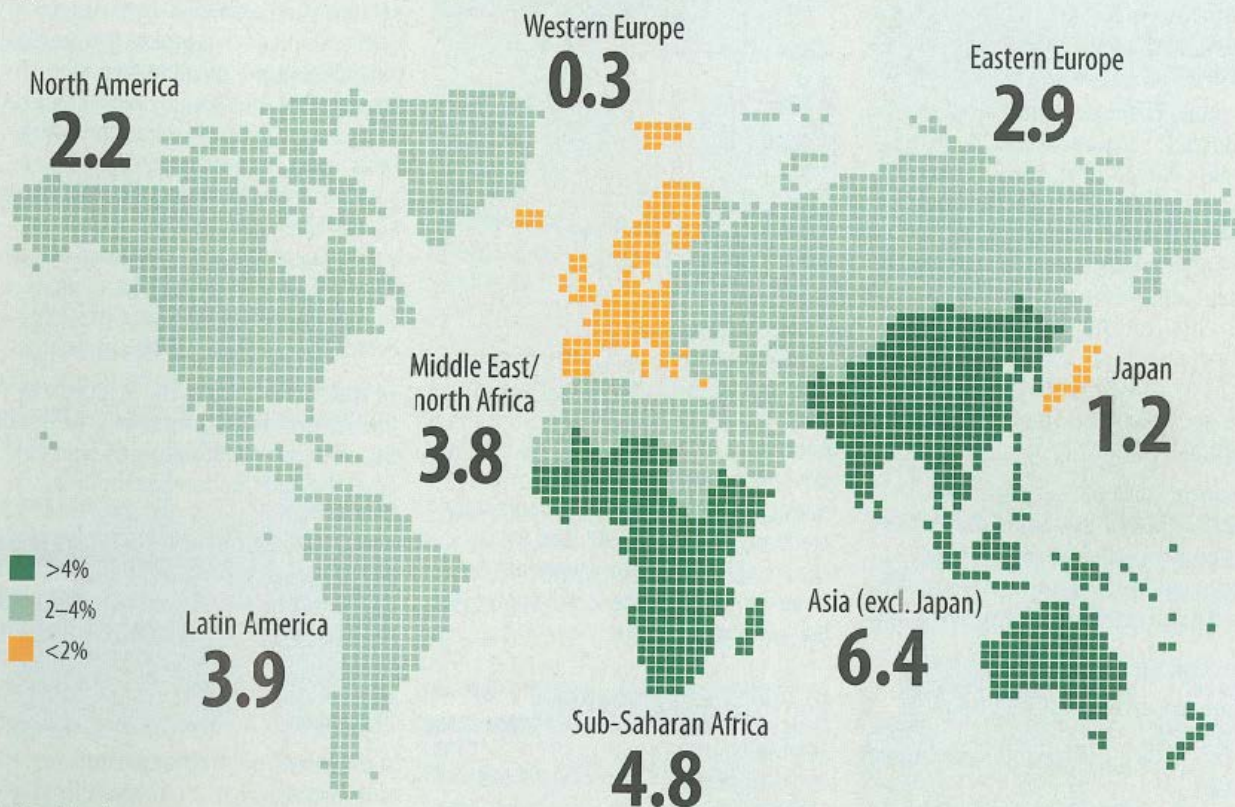
The Economist

TOP GROWERS

Rank	Country	GDP growth, %
1	Mongolia	18.1
2	Macau	13.5
3	Libya	12.2
4	China	8.6
5	Bhutan	8.5
6	Timor-Leste	8.3
7=	Iraq	8.2
7=	Mozambique	8.2
9	Rwanda	7.8
10	Ghana	7.6

World GDP growth*, 2013

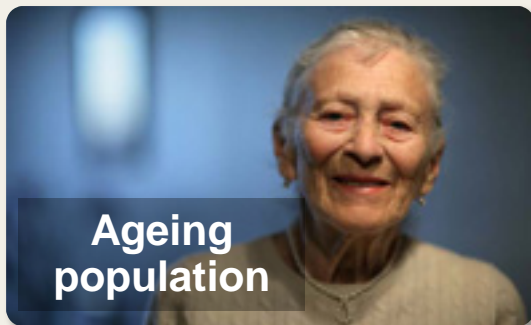
%



* At market exchange rates

The world is changing

Grand Societal Challenges



The big hope is “Innovation”

- an overused buzzword?



Organization for Econ. Co-op. & Dev. (OECD)

Comprehensive Innovation strategy launched in 2010



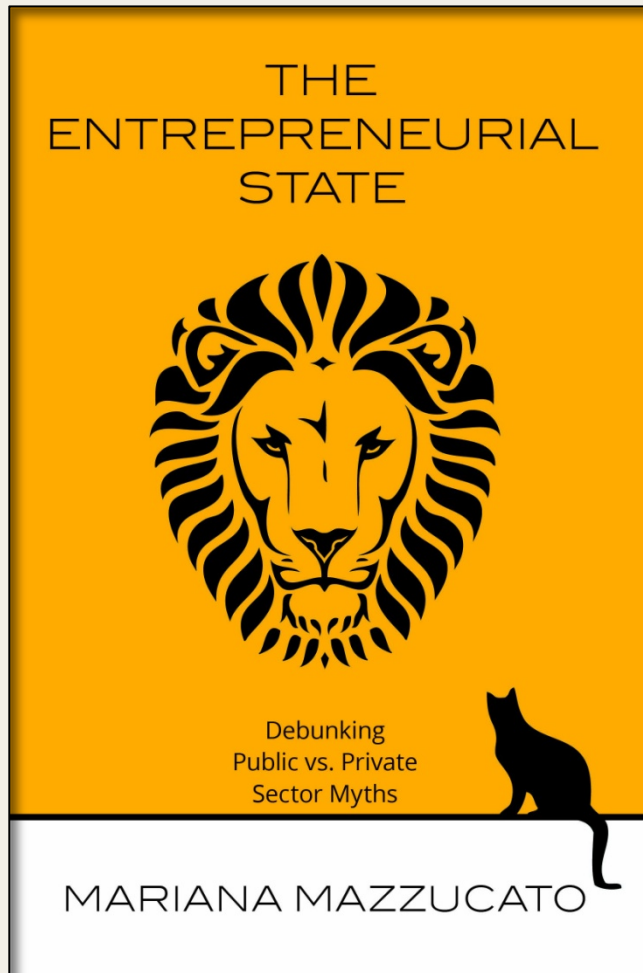
Innovation

- What is the role of government?
- What isn't the role of government?
- Education, Research, Infrastructure, Conditions for business, Procurement, Sustainability, Housing, Culture, Incentives for entrepreneurship, Incubators, Early stage venture capital, Later stage venture capital, Taxes, Sharing risk, etceteras



Prof. Mariana Mazzucato, Univ. of Sussex

"The state is the real engine of innovation"



The state is the real engine of innovation

Book review

A brilliant exploration of new ideas in business argues that government is behind the boldest risks and biggest breakthroughs, writes **Martin Wolf**

Growth of output per head determines living standards. Innovation determines the growth of output per head. But what determines innovation? Conventional economics offers abstract models; conventional wisdom insists the answer lies with private entrepreneurship. In this brilliant book, Mariana Mazzucato, a Sussex university professor of economics who specialises in science and technology, argues that the former is useless and the latter incomplete. Yes, innovation depends on bold entrepreneurship. But the entity that takes the boldest risks and achieves the biggest breakthroughs is not the private sector; it is the much maligned state.

Mazzucato notes that "75 per cent of the new molecular entities (approved by the Food and Drug Administration between 1960 and 2004) trace their research... to publicly funded National Institutes of Health (NIH) labs in the US". The UK's Medical Research Council discovered mono-

clonal antibodies, which are the foundation of biotechnology. Such discoveries are then handed cheaply to private companies that reap huge profits.

A perhaps even more potent example is the information and communications revolution. The US National Science Foundation funded the algorithm that drove Google's search engine. Early funding for Apple came from the US government's Small Business Innovation Research Program. Moreover, "All the technologies which make the iPhone 'smart' are also state-funded... the Internet, wireless networks, the global positioning system, microelectronics, touchscreens displays and the latest voice-activated Siri personal assistant." Apple put this together, brilliantly. But it was gathering the fruit of seven decades of state-supported innovation.

Why is the state's role so important? The answer lies in the huge uncertainties, time spans and costs associated with fundamental, science-based innovation. Private companies cannot and will not bear these costs, partly because they cannot be sure to reap the fruits and partly because these fruits lie so far in the future.

Indeed, the more competitive and finance-driven the economy, the less the private sector will be willing to bear such risks. Buying back shares is apparently a far more attractive way of using surplus cash than spending on fundamental innovation. The days of AT&T's path-breaking Bell Labs are long gone. In any case, the private

sector could not have created the Internet or GPS. Only the US military had the resources to do so.

Arguably, the most important engines of innovation in the past five decades have been the US Defense Advanced Research Projects Agency and the NIH. Today, if the world is to make fundamental breakthroughs in energy technologies, states will play a big role. Indeed, the US government even helped drive the development of the hydraulic fracturing of shale rock.

The Entrepreneurial State

Debunking Public vs Private Sector Myths
By Mariana Mazzucato
(Artem Press, £14.99, \$18.95)

quarter of R&D and nearly 60 per cent of basic research). But the state is also an active entrepreneur, taking risks and, of course, accepting the inevitable failures. America has been a developmental state since the days of Alexander Hamilton. Indeed, the nation's recent role as the premier promoter of fundamental innovations owes as much to its state as to the get-up-and-go of its entrepreneurs.

Germany's failure to remain at the forefront of today's new technologies, in contrast to before the second world war, may be down to the limited role now accorded its state.

Mazzucato loves puncturing myths about risk-loving venture capital and risk-averse bureaucrats. Does it matter that the role of the state has been written out of the story? She argues that it does.

First, policy makers increasingly believe the myth that the state is only an obstacle, thereby depriving innovation of support and humanity of its best prospects for prosperity. Indeed, the scorn heaped on government also deprives it of the will and capacity to take entrepreneurial risks.

Second, government has also increasingly accepted that it funds the risks, while the private sector reaps the rewards. What is emerging, then, is not a truly symbiotic ecosystem of innovation, but a parasitic one, in which the most life-making elements are socialised, while the profit-making ones are largely privatised. Do ordinary taxpayers understand that their taxes fund the fundamental innovations that drive their economy?

This book has a controversialist slant. But it is basically right. The failure to recognise the role of the government in driving innovation may well be the greatest threat to rising prosperity.

The writer is the chief economics commentator of the Financial Times

TED
Ideas worth spreading

Euro-CASE Innovation Platform



innovation

Euro-CASE Innovation Platform

“The platform remains when the train has left the station”



Euro-CASE innovation platform

Agreed goals



- Provides science-based policy advice to relevant EU Institutions and national governments within chosen focus areas
- Establishes best practice of national innovation strategies in Europe (“learning from each other”)
- Topics and proposals are mapped towards the relevant European documents and in line with Europe 2020 and its flagships (Innovation Union), Horizon 2020 and others.
- Reports should be made from each workshop meeting

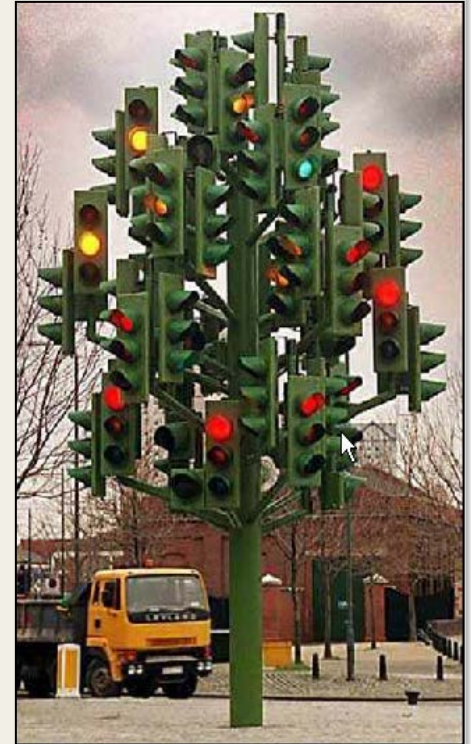


Euro-CASE Innovation Platform

Identified major challenges



- Still too fragmented markets in Europe
- Unfinished European Research Area (ERA)
- Limited financial resources due to the on going financial and economic depth crises in several European countries
- Deteriorating venture capital markets
- Limited entrepreneurial activities and attitudes
- Manufacturing jobs disappearing



Euro-CASE Innovation Platform

Activities 2012-2014

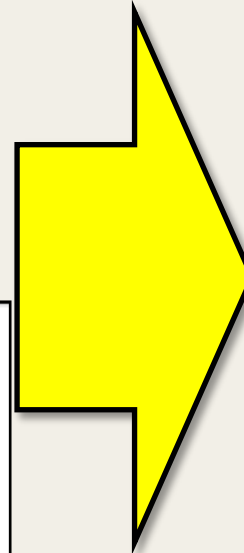
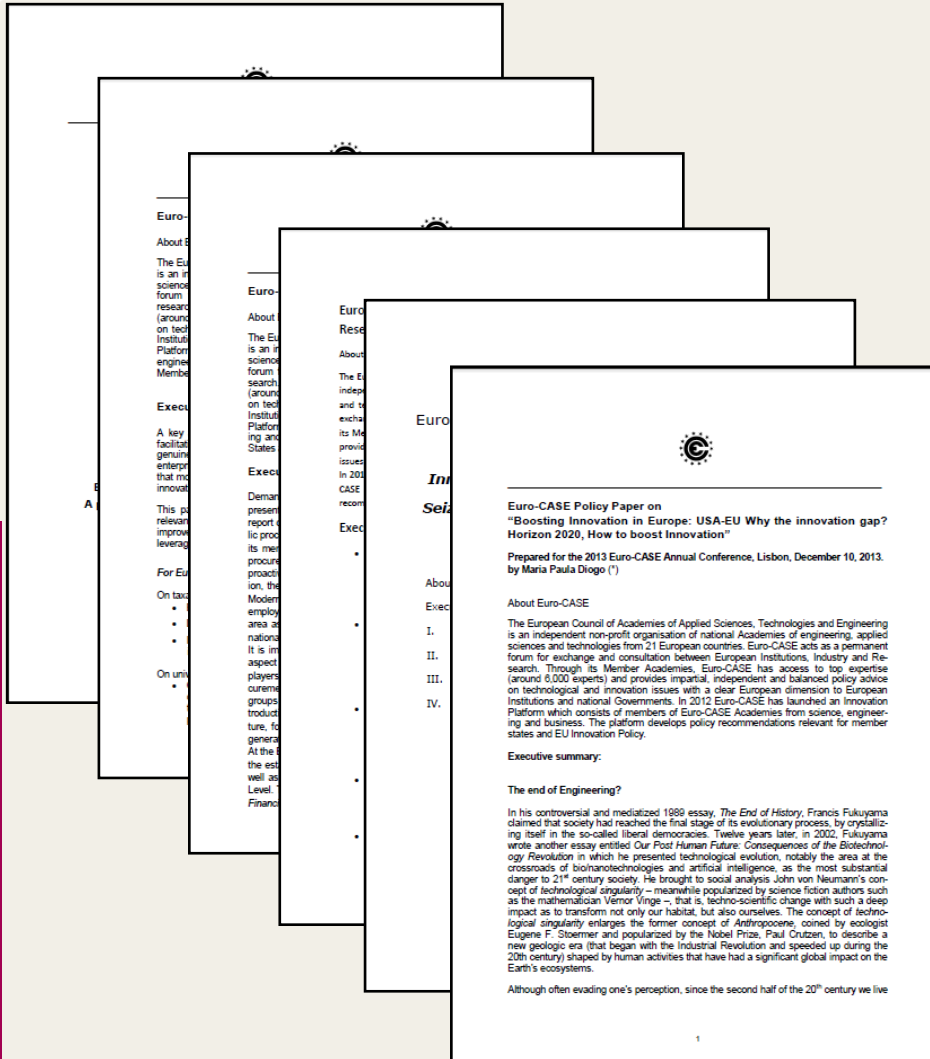


- Co-chaired by Bjorn O. Nilsson, Royal Swedish Academy of Engineering Sciences, IVA (Sweden) & Ernst Rietschel, *acatech* (Germany)
- Workshops meetings
 - 15-16 February 2012, Stockholm, Sweden
Innovation procurement **Position Paper Published**
 - 29-30 May 2012, Brussels, Belgium
EU public-private partnerships in research and innovation
Position Paper Published
 - 11-12 October 2012, London, UK
Financing innovation **Position Paper Published**
 - 23-24 January 2013, Helsinki, Finland
Innovation and changing industry structure
Discussion Paper Published
 - 5-6 June 2013, Madrid, Spain
Transforming manufacturing **Position Paper Published**
 - 29-30 October 2013, Lisbon, Portugal
Boosting innovation in Europe **Discussion Paper Published**
 - **17-18 March 2014, Paris, France**
Final report work, Final report Published, October 2014



Euro-CASE Innovation Platform

Status



1. Annual Conference, December 3, 2014
2. Innovation Platform 2

Euro-CASE Innovation Platform

Main overall conclusions

- Research, innovation and technology are vital to secure competitiveness and address our grand challenges
- A change in the innovation culture and the way entrepreneurial activities are valued in Europe are prerequisites to make Europe competitive
- The European Union, as well as the Member States, should act resolutely in making their innovation systems more competitive
- Europe cannot, and should not, compete on the basis of cheap labour
- Topics such as embracing technological change, driving the next industrial revolution and supporting a culture of innovation across academia, industry and entrepreneurs are important steps for Europe's competitiveness



Euro-CASE Innovation Platform

Policy recommendation areas



• Innovation Procurement

- There is negligence in the EU and its member states of demand-side innovation policy instruments, especially innovation procurement.
- Number of test beds for implementation of innovation procurement should be increased at the national level.
- We strongly support Europe 2020, the Innovation Union and the Commission communications on Smart regulations (COM (2010) 543 final)



• Public-Private-Partnerships in Research & Innovation

- Under Horizon 2020, the European Union establishes a unified, comprehensive, open, and competitive framework for the development of new public-private partnerships at European level complemented by a corresponding legal regulatory structure.
- In the next Framework Programme, this framework should result in a dedicated Research Public-Private Partnership Funding Programme

Euro-CASE Innovation Platform

Policy recommendation areas



- Financing Innovation

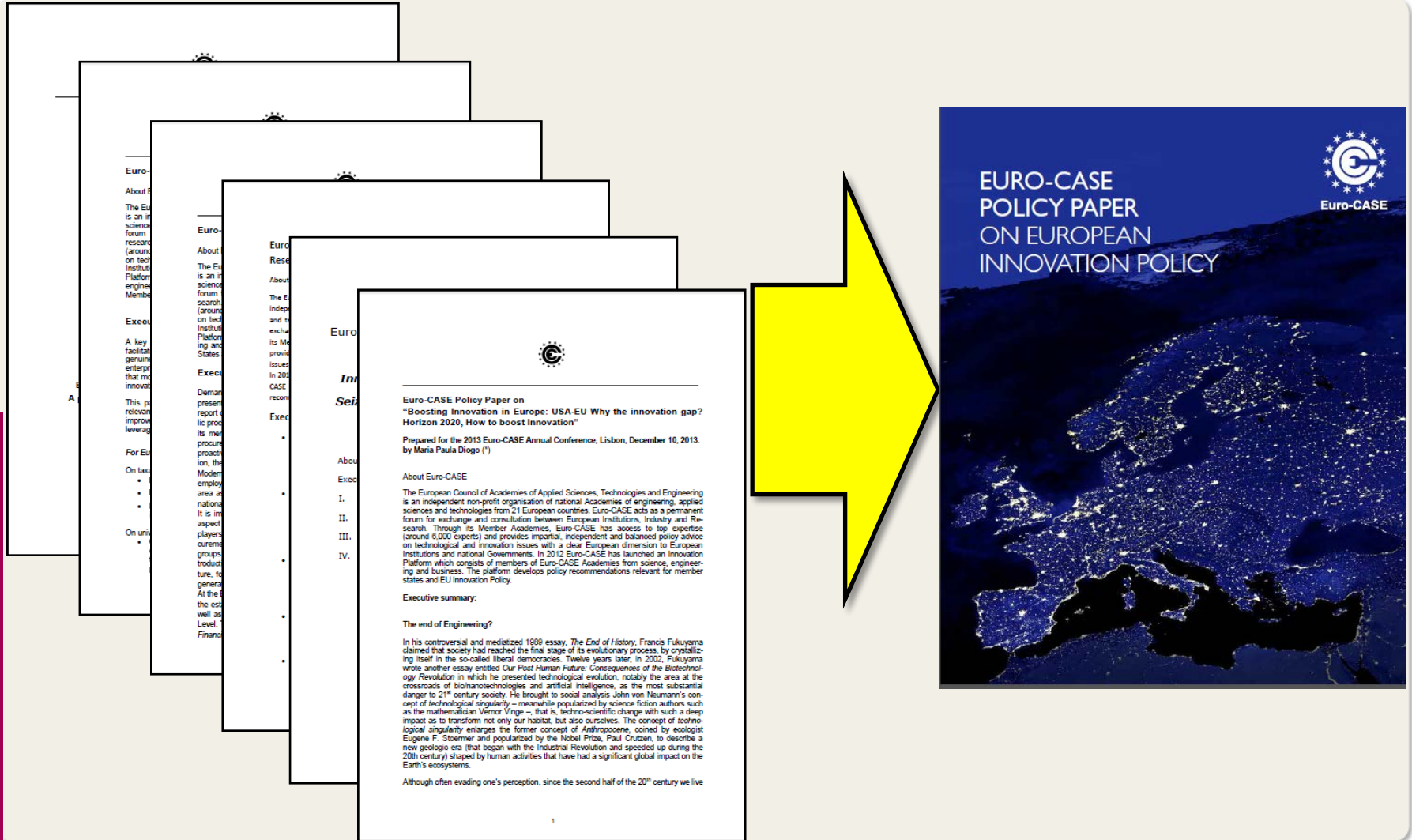
- Providing or facilitating finance for innovative enterprises
- More must be done at member state level to attract and nurture private financing for innovation
- A number of specific recommendations to European states and the EU

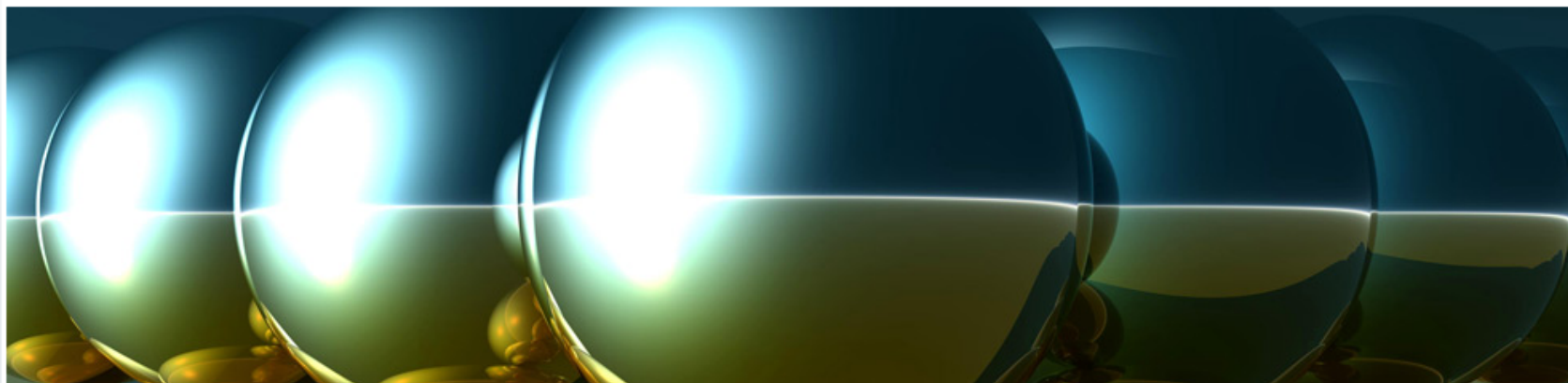


- Transformation of Manufacturing

- We recommend widening the concept of manufacturing and considering integrated production spaces as part of the integrated space of value creation.
- EU and European states are equally advised to support High Complexity, High Value Manufacturing (HCHVM) that will allow European manufacturing businesses to compete on a global level.
- The EU is called to update and enhance the cybernetic infrastructure to support wide digitalisation, connectivity, robotization and automation

Euro-CASE Innovation Platform





Innovation

The Euro-CASE Innovation Platform took up its work at the beginning of 2012 under the leadership of acatech (DE) and IVA (SE) – Chair of the Platform is Prof. Dr Ernst Rietschel, with Prof Dr Bjoern O. Nilsson as co-chair. Ultimately, the objective is to help putting in place the necessary conditions for Europe to increase its innovative power.

Agreed goals are that the Innovation Platform:

- Provides science-based policy advice to relevant EU Institutions and national governments within chosen focus areas,
- Establishes best practice of national innovation strategies in Europe ("learning from each other"),
- Topics and proposals are mapped towards the relevant European documents and in line with Europe 2020 and its flagships (Innovation Union) and Horizon 2020.

The purpose is that the Innovation Platform:

- Contributes to make Europe the most successful innovation region in the world,
- In a proactive way, provides advice to the EU and European Institutions on innovation issues.

Public Reports 2009/2011

Classification of themes:

All

Member Academies:

All

Classification of publications:

All

Key words...

Search



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Euro-CASE



Innovation to drive competitiveness of Europe

"Wayne Gretzky said: Good hockey players can rapidly skate **to where the puck is**.

Great hockey players can rapidly skate **to where the puck is going**.

In innovation, Europe must skate **to where the puck is going, not where it is.**"

Mr. Esko Aho, *Prime Minister of Finland 1991 – 1995, innovation guru, Nokia and Harvard Business School.*

Stated at the *Euro-CASE Innovation Platform meeting* in Finland, January 2013



Innovation is an idea driven process



Innovation

*No amount of hard work can compensate
for a stupid idea*

