



OCDE ORGANISATION DE COOPÉRATION ET  
DE DÉVELOPPEMENT ÉCONOMIQUES



# NEW FORMS OF INNOVATION: INSIGHTS FROM RECENT TIP WORK

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**Lecture at the Higher School of  
Economics – Moscow  
18 June 2012**

# Agenda

- Defining Innovation
- Changing forms of innovation and drivers
- Evidence and measurement issues
- Towards a taxonomy of New forms of Innovation
- Policy Instruments to Support NFI
- Policy Issues

# Schumpeterian innovation

- Schumpeter (1934) Five types of innovation
  - new products,
  - new methods of production
  - new sources of supply,
  - opening of new markets,
  - new ways of organising businesses

# Innovation actors

- At the core:
- The Schumpeterian **entrepreneur**
- **Internal R&D** as centre of innovation.

# OECD Definition

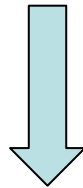
- Oslo manual (2005) defines innovation as  
“An innovation is the implementation of  
a new or significantly improved  
product (good or service), or process,  
a new marketing method, or **a new  
organisational method in business  
practices, workplace organisation or  
external relations**

# a new organisational method

- In business practices: e.g. codifying knowledge; education and training schemes; supply chain management; business reengineering; lean production; quality management systems
- In workplace organisation: new methods for distributing responsibility and decision making among employees
- In external relations: with other firms or public institutions or customers/suppliers

# What has changed?

- Globalisation.
- New technological paradigms and the service economy.
- New government – new public management.
- Regionalisation, devolution, local vs. global.
- Evolution of socio-cultural behaviour .
- Societal/global challenges (social and environmental sustainability).



**NEW ACTORS – NEW MODES- NEW CHALLENGES**

# Open innovation

## ***Then: Closed Innovation***

❑ Approach: “not invented here”

❑ Innovation:

- Strategy independent of overall business strategy
- Performed in-house
- Internal pool of innovators

❑ Outputs:

- Incorporated in firm's products and services.
- Product revenues finance next cycles of in-house R&D

## ***Now: “Open” Innovation***

❑ Approach: “proudly found elsewhere”

❑ Innovation:

- Business strategy drives targets
- Technology developed cooperatively or acquired
- Work with many innovators and users/consumers
- Leverage own IP

❑ Outputs:

- Both internalized and externalized (*licensing, spin-offs, venturing*)

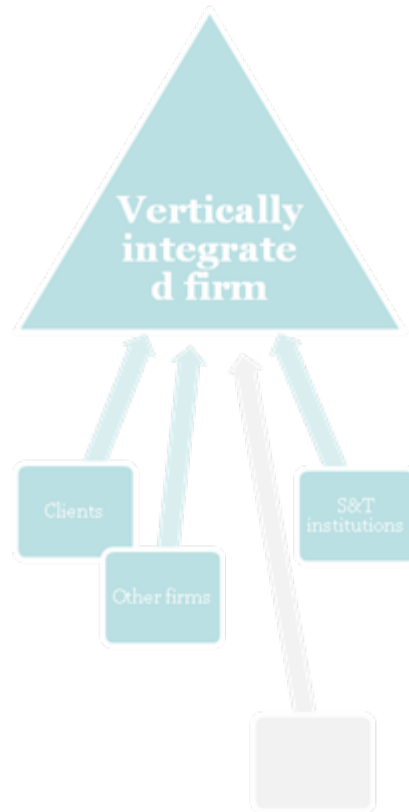


# Complexity and variety: towards a collaborative model of innovation

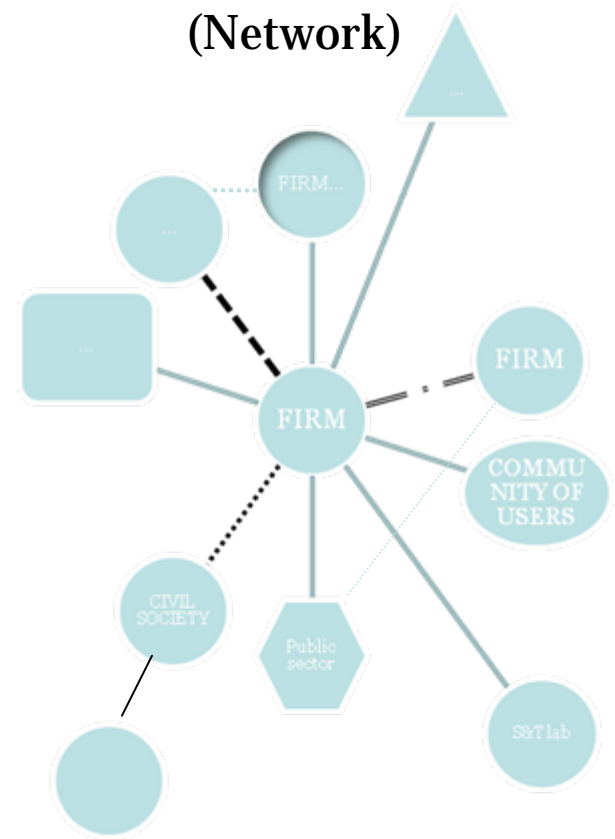
**Mode 1  
(Market)**



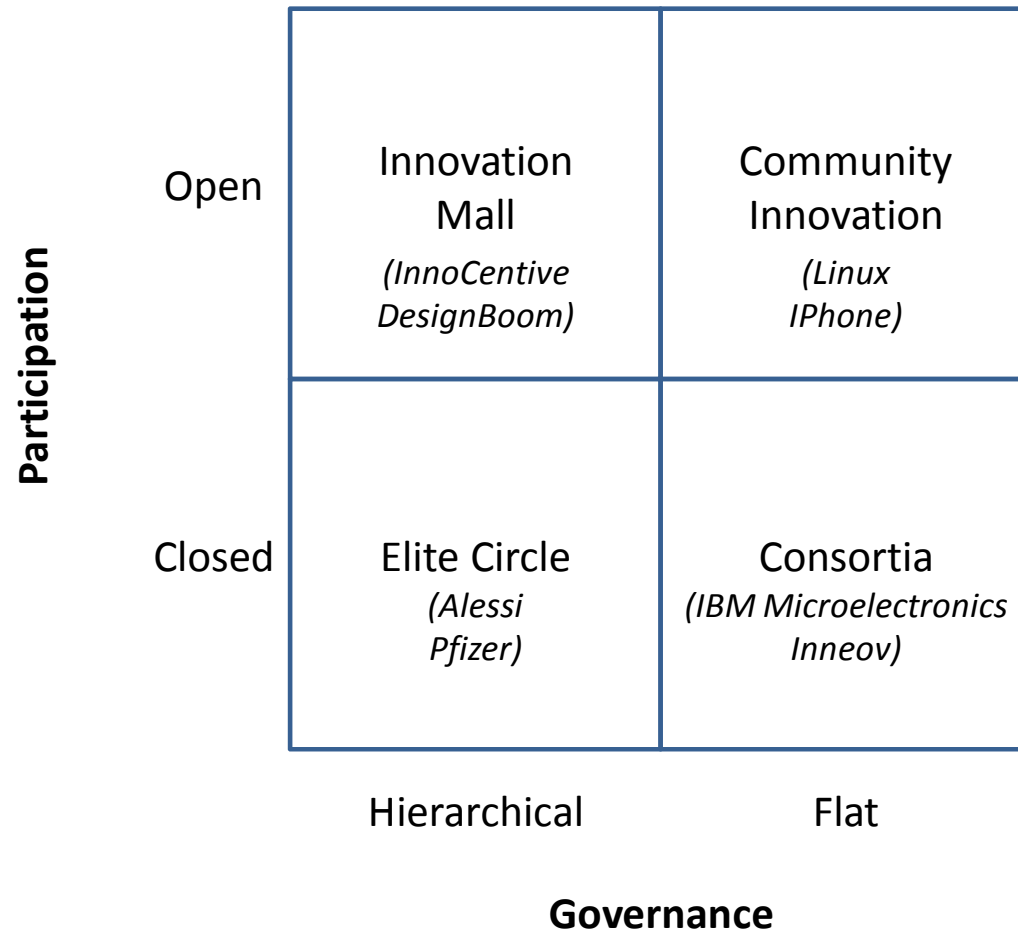
**Mode 2  
(Hierarchy)**



**Mode 3  
(Network)**



# Modes of Collaborative Innovation



# New Forms of Innovation

# Demand-driven innovation

- Market demand as dominant enabler of innovation (as distinct from technological progress itself)
- Framework conditions, income growth
- Business environment: Regulations, Standards, Pricing
- Government as a key player, through public procurement, esp. in areas where there are social needs (i.e. health, education)

# User-driven innovation

- Innovation of use
  - By intermediate users (firms)
  - By consumers (who adapt an innovation to new use)
- Non-linear, i.e. does not results from initial R&D process
- Lead users (Von Hippel 1986)

# Social innovation

- Innovation to meet social needs (e.g. health, education, employment, reduce poverty)
- Social entrepreneurs as drivers of innovation
- Broad stakeholder involvement (firms, civil society, patient groups, etc.)

# Inclusive innovation

- Innovations by firms rarely address the needs of the poor (non-inclusive).
- Innovation in the informal sector, esp. in developing countries (e.g. microfinance)
- Entrepreneurially-based
- Socially oriented : empower women and the disenfranchised.

# Automated innovation

- Software places an increasing role in automating innovation process (e.g. web crawlers).
- Powerful algorithms can be used to simulate innovation outcomes and their environmental and societal impact
- Importance of inter-operability, open standards
- IPR issues, privacy, user rights, equity in data sharing from automated creation)
- Costs and liability of (big) data storage



# Public Sector Innovation

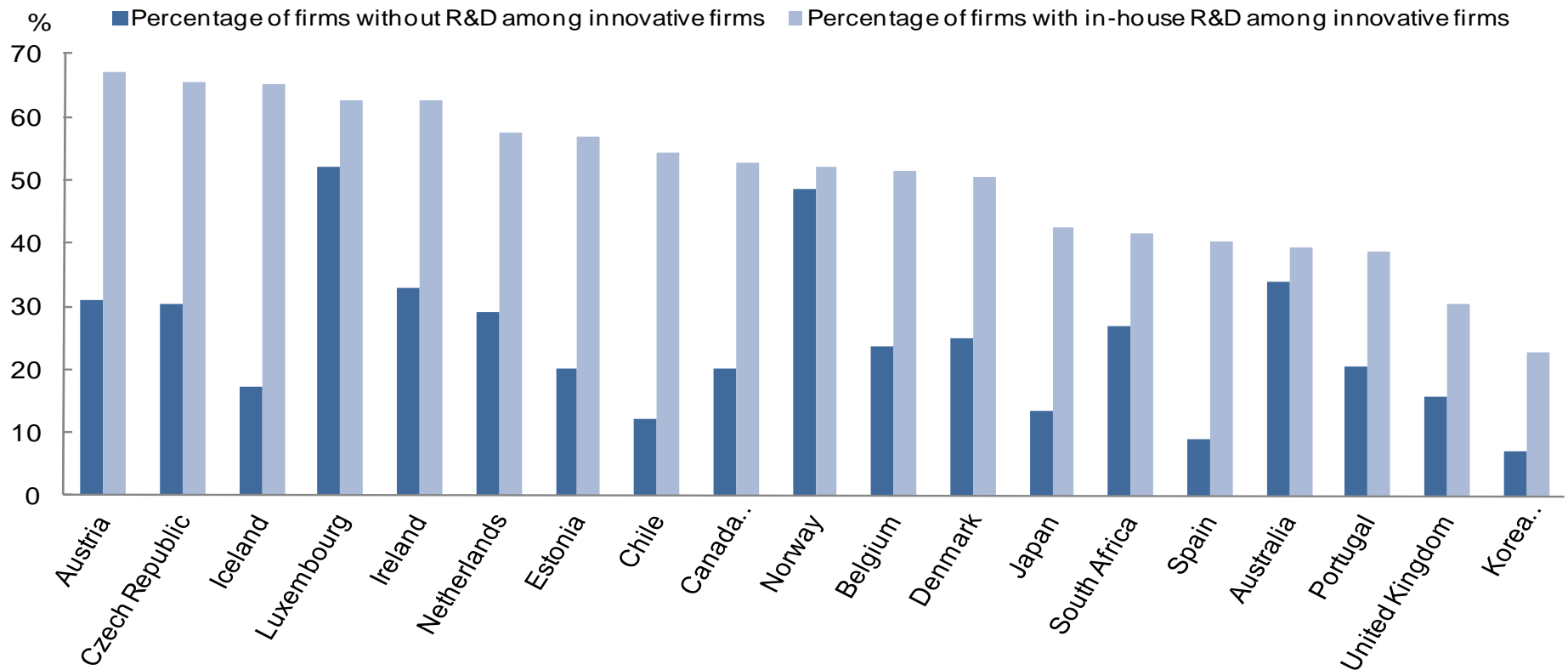
- New public management and removal of red tape.
- Evidence of potential for innovation in the public sector, and many examples that many public institutions are in fact innovative.
- Public sector innovation necessary to sustain high levels of public service (sustainability of welfare state)
- Public sector actor in efforts to address social/global challenges
- Lack of data hinders efforts to understand and to promote public sector innovation.

# Evidence and measurement

# Non-R&D innovators

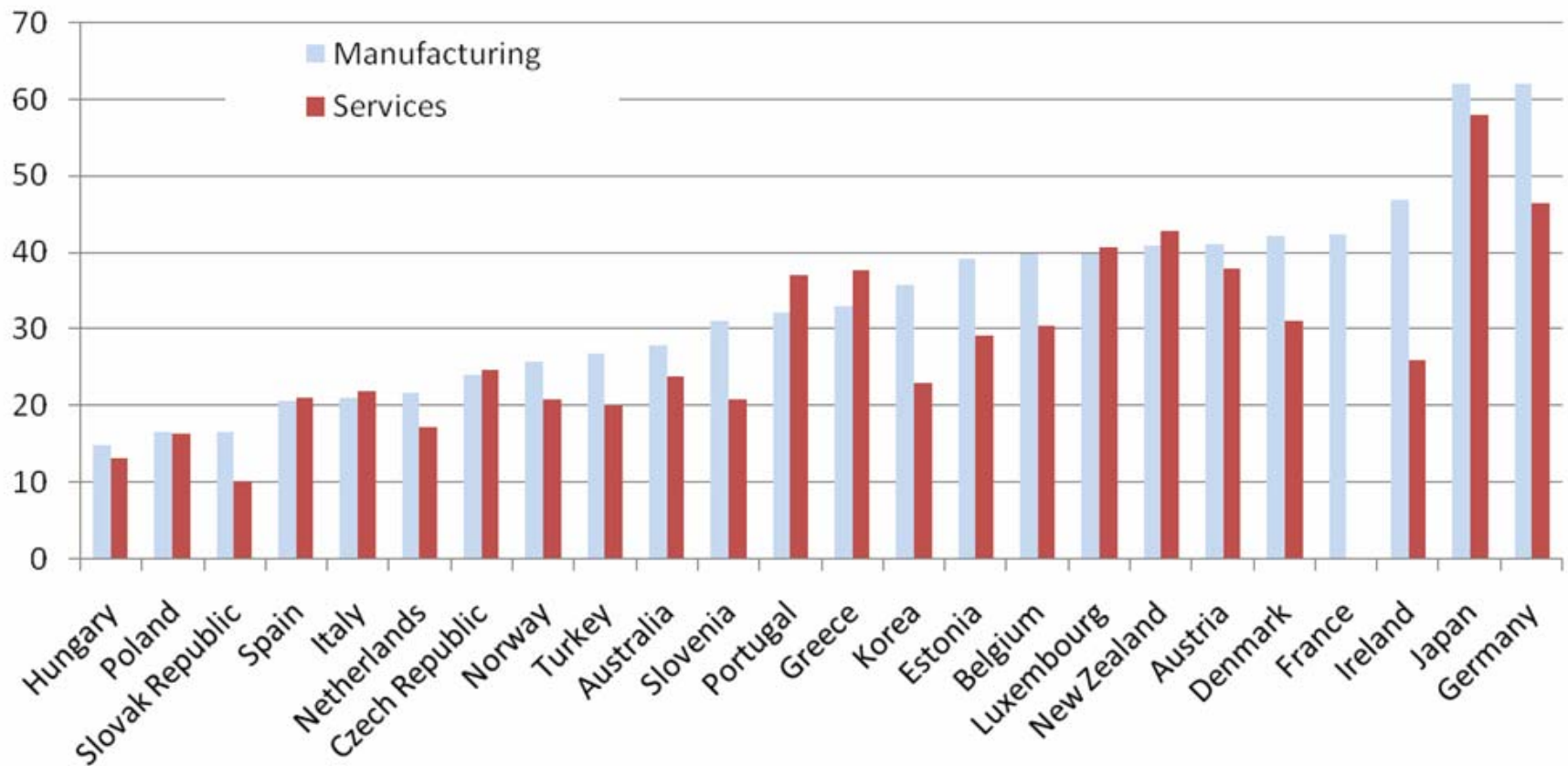
**New to market product innovators with and without R&D, 2004-06 (or latest)**

As a percentage of innovators



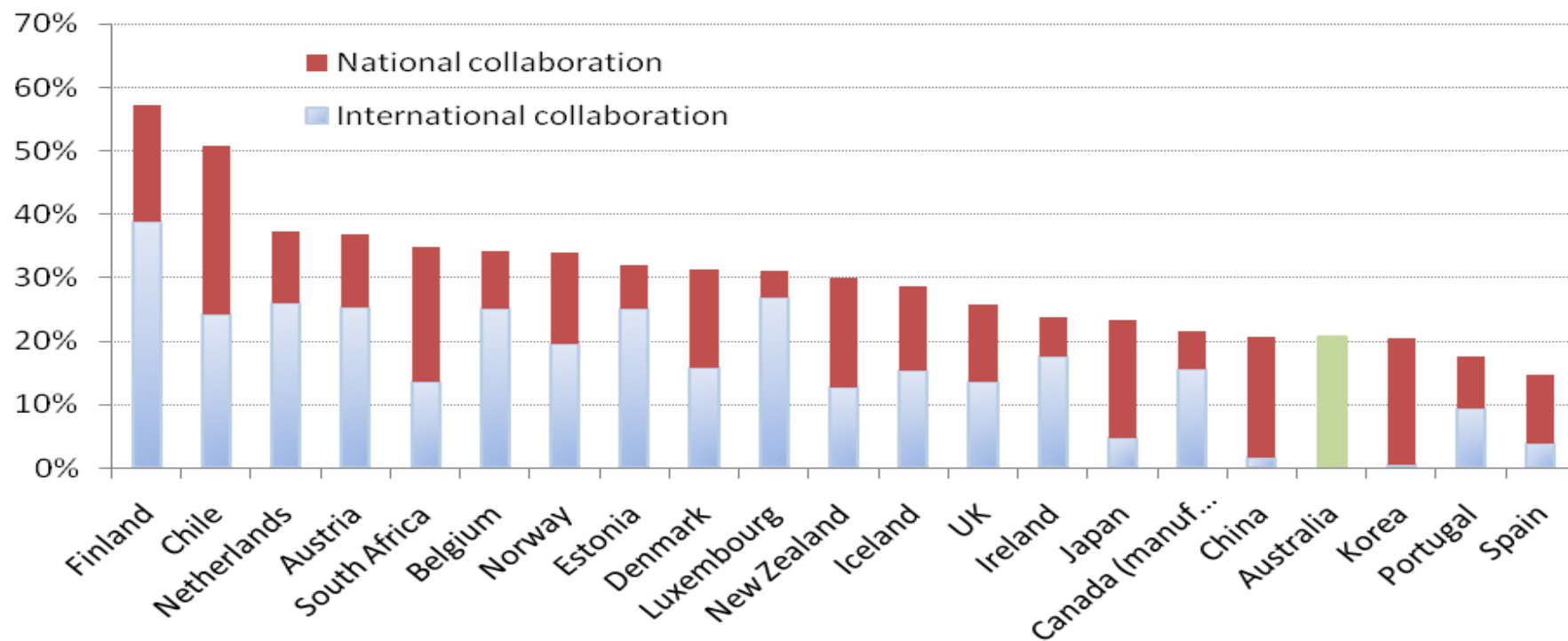
# Technology is only one approach to value creation

Non-technological innovators by sector, as a percentage of all firms, 2004-2006



Source: OECD, based on CIS and national sources.

# Companies collaborating on innovation, as a percentage of all firms, 2004-2006



# TOWARDS A TAXONOMY OF NFI

Typology		Challenges for innovation policy
OUTPUT-BASED	“non-technological”, design-driven, organizational and business methods, etc.	COMPLEXITY  VARIETY
BEHAVIOUR-BASED	New and varied forms of collaborations-cooperation for innovation	
CHALLENGE-DRIVEN	Mobilizing knowledge (innovation + diffusion) to address social and environmental sustainability	

# Examples of policies to foster New Forms of Innovation

# 1.Policies to support an output-based approach: non-technological innovations, design-driven innovations; etc.);

Belgium	Flanders in Shape	To support to capacity building in product design and development. Type of support: individual advice- collective services like training, platforms, etc.
Belgium (Bru)	6 incubators	The incubators expand the type of services/activities offered by traditional incubators (managerial support, organizational features, etc.)
Germany	BMBF in-house task force on innovative services	to identify mechanisms to support non tech innovations
Spain	COTEC - Desing and Innovation. Managment challenges in firms (2008)	Guidelines for design development and management for SMEs
Spain	ADN	To establish a culture that favors innovation and design as a way to create value for a sustainable economic growth. Targeted beneficiaries: SMEs in catch-up regions Resources allocated: funded through FEDER



UK	Designing Demand	<p>Designing Demand is a business support programme from the Design Council. It helps businesses discover how to become more innovative, more competitive and more profitable.</p> <p>It does this by giving managers the skills to exploit design by spotting opportunities, briefing designers and running design projects</p>

## 2. Examples of policies to support challenge driven innovation and social innovations – growth and sustainability

Australia	Cooperative Research Center program	To support end-user driven research partnership between publicly funded researchers and end-users to address social and environmental challenges
Belgium (Fl)	Flanders synergy-	Promotion of social innovation and introduction of new modes of organization to improve the quality of work in response to demographic change.
Canada	Expert Panel on Nanotechnology (Council of Canadian Academies)	To assess the state of knowledge about the properties of nano-materials and their health and environmental risks). The report called for increasing coordination between government and international regulatory agencies.
USA	Strategy for American Innovation	To develop and articulate administration policy for innovation to sustainable growth and quality jobs

USA	Social Innovation Fund	Grow the marketplace for community innovations and provide the technology and tools for greater civic participation to help tackle the nation's toughest problems. The Fund will identify the most promising, results-oriented non-profit programs and provide the capital needed to replicate their success in communities around the country
USA	Zero Net Energy commercial building initiative	To reduce energy consumption by commercial buildings

### 3. Examples of policies to promote collaborative innovation

Australia	Commonwealth Commercialization Institute	To support the commercialization of Australian research through extensions services such as business mentors+ expert advice services + capital investment
Canada	CANARIE	To provide advanced networking capabilities to enable scientists to manage and exchange high volumes of data
Canada	Business Led Networks	Networks of centers of excellence and centers of excellence for commercialization and research
Chile	Industrial and Technological research consortium	To strengthen the links between the academy and end-users and business sector
Denmark	Danish innovation centers	To support the globalization of Danish innovation
Denmark	Program for user-driven innovation	To provide grants to cross-sectoral issues relating with social problems and with promising market returns for innovations in the private and public sector.
Finland	Aalto University	Combining engineering, business and arts to create new competences. Multidisciplinary approach

<b>The Netherlands</b>	<b>Innovation Performance contract</b>	<b>Promoting innovation in SMEs through collaboration</b>
<b>UK</b>	<b>Innovation voucher scheme</b>	<b>Innovation Vouchers are a Solutions for Business product which enable small and medium-sized businesses in England to buy support from knowledge-based institutions so that they can explore potential opportunities for future collaboration in developing new products, service and processes</b>
<b>UK</b>	<b>Knowledge Transfer Network</b>	<b>A Knowledge Transfer Network is a single over-arching national network in a specific field of technology or business application which brings together people from businesses, universities, research, finance and technology organizations to stimulate innovation through knowledge transfer. A new KTN for the creative industries has been established.</b>
<b>USA</b>	<b>National Innovation Market place</b>	<b>Help manufacturers make the shift away from aging industries and put them on a self-sustaining path to support the new economy. Allow manufacturers to harvest technologies available in the Federal labs to match up and to create new markets with new products. Help manufactures know what new products they can make and who they can sell them to. Help connect suppliers to new industries of the future.</b>

## 4. Demand and user-driven policies

<b>Finland</b>	<b>Demand and user driven innovation policy framework</b>	<b>To develop a framework to include users in policy desing</b>
<b>UK</b>	<b>Innovation Procurement plans</b>	<b>To help Government Departments setting out how they will embed innovation in their procurement practices and seek to use innovative procurement mechanisms</b>
<b>Brazil</b>	<b>National Council for C&amp;T</b>	<b>Advisory body with members from the civil society, academy and relevant ministries to identify priorities for the national innovation agenda</b>
<b>Brazil</b>	<b>Production Development Policy</b>	<b>Coordination mechanism between demand-supply of S&amp;T</b>

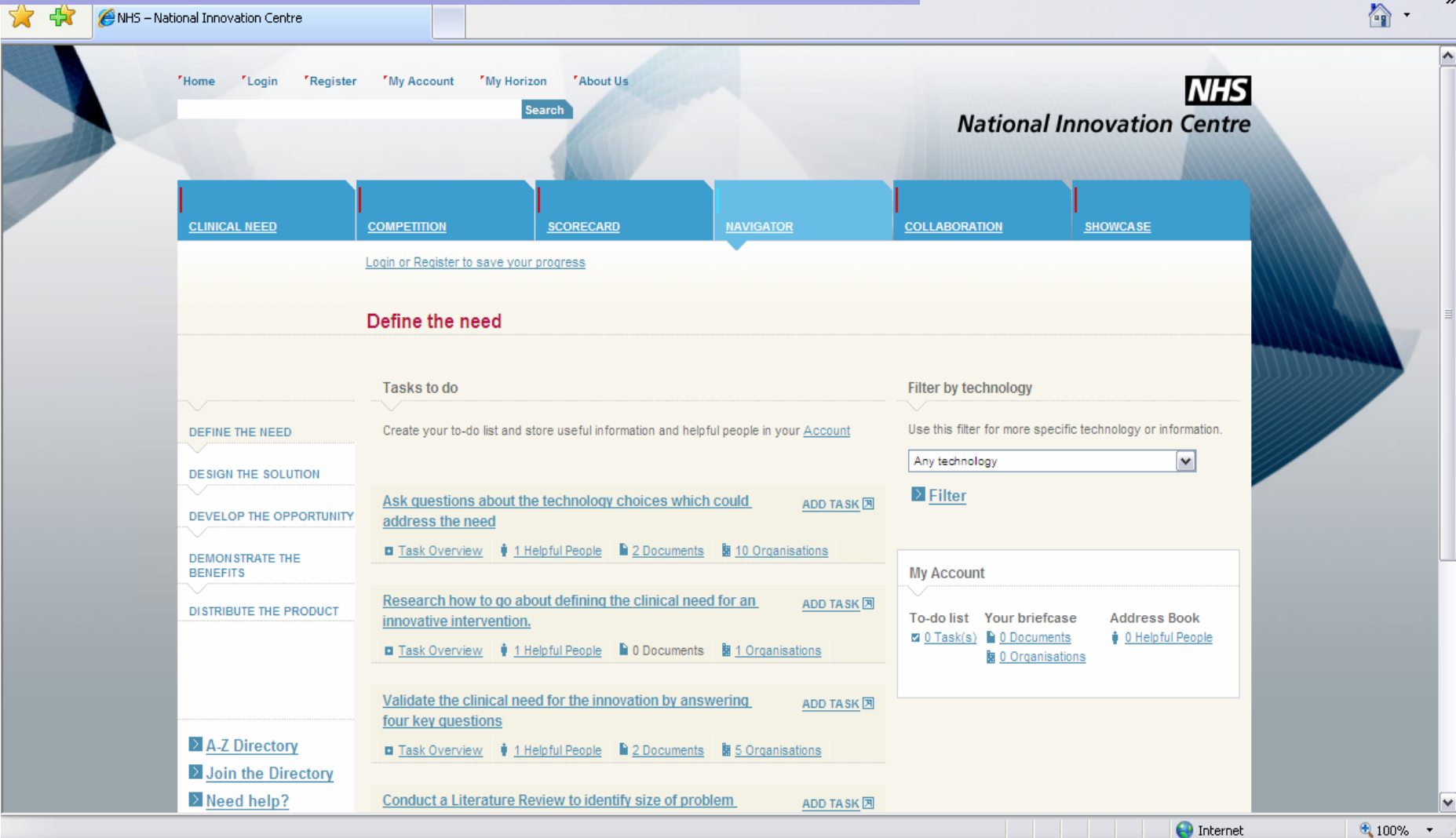
<b>Brazil</b>	<b>Pro-Inova</b>	<b>To increase awareness of public policy instruments and supporting the creation of an innovation culture</b>
<b>Canada</b>	<b>National Research Council (NRC); Natural Science and Engineering Research Council (NSERC) and Business Development Canada (BDC) Cooperation.</b>	<b>To align the activities and increase effectiveness of R&amp;D federal assistance</b>
<b>Canada</b>	<b>Canadian workshop on Multidisciplinary research in nano</b>	<b>To identify research gaps and new directions for public policy, such as supporting joint research from different disciplines/areas</b>
<b>Germany</b>	<b>BMBF Federal Ministry of Education and Research Foresight Process</b>	<b>Identification of new research areas across traditional fields</b>
<b>The Netherlands</b>	<b>Innovation Platform</b>	<b>A policy space supporting dialogue/interaction and problem solving; it does not provide grants or subsidies</b>
<b>UK</b>	<b>Innovation Index</b>	<b>To better understand the role of policies</b>

## 5. Innovation in the public sector and innovation in the delivery of public services

Australia	Government 2.0	Accelerating the development of Government 2.0 to help government consult, and where possible actively collaborate with the community, to open up government and to maximize access to publicly funded information through the use of Web 2.0 techniques
USA	Open Government Initiative	To coordinate Open Government policy, projects, and design technology platforms that foster openness across the Executive Branch. To stimulate innovation by making government data available online for repurposing; Engage citizens in development of public policy; Increase government accountability



# UK National Health Service Web-based Innovation Platform



The screenshot displays the NHS National Innovation Centre web-based innovation platform. The interface is viewed through a web browser window with a Google search bar and navigation icons. The platform's header includes a search bar and links for Home, Login, Register, My Account, My Horizon, and About Us. The main navigation bar features tabs for CLINICAL NEED, COMPETITION, SCORECARD, NAVIGATOR (highlighted), COLLABORATION, and SHOWCASE. Below the navigation bar, a section titled "Define the need" is visible. This section includes a sidebar with a vertical list of steps: DEFINE THE NEED, DESIGN THE SOLUTION, DEVELOP THE OPPORTUNITY, DEMONSTRATE THE BENEFITS, and DISTRIBUTE THE PRODUCT. The main content area under "Define the need" is titled "Tasks to do" and contains three task cards. Each card has a title, an "ADD TASK" button, and a summary of resources (Tasks, Helpful People, Documents, and Organisations). A "Filter by technology" section is also present, allowing users to filter tasks by technology. On the right side, a "My Account" section provides a summary of the user's current state, including the number of tasks, briefcases, and helpful people. The bottom of the browser window shows the Internet Explorer status bar with a 100% zoom level.

NHS  
National Innovation Centre

Home Login Register My Account My Horizon About Us

Search

CLINICAL NEED COMPETITION SCORECARD NAVIGATOR COLLABORATION SHOWCASE

Login or Register to save your progress

### Define the need

Tasks to do

Create your to-do list and store useful information and helpful people in your [Account](#)

Filter by technology

Use this filter for more specific technology or information.

Any technology

Filter

My Account

To-do list: 0 Task(s)  
Your briefcase: 0 Documents, 0 Organisations  
Address Book: 0 Helpful People

DEFINE THE NEED

DESIGN THE SOLUTION

DEVELOP THE OPPORTUNITY

DEMONSTRATE THE BENEFITS

DISTRIBUTE THE PRODUCT

A-Z Directory

Join the Directory

Need help?

Ask questions about the technology choices which could address the need

ADD TASK

Task Overview 1 Helpful People 2 Documents 10 Organisations

Research how to go about defining the clinical need for an innovative intervention.

ADD TASK

Task Overview 1 Helpful People 0 Documents 1 Organisations

Validate the clinical need for the innovation by answering four key questions

ADD TASK

Task Overview 1 Helpful People 2 Documents 5 Organisations

Conduct a Literature Review to identify size of problem.

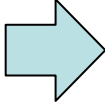
ADD TASK

Internet 100%

# Summing up

- The sources and actors in innovation are changing
- Non R&D firms matter:
  - Innovative companies introduce products, processes and organizational innovation also **without** carrying out R&D.
- Evidence shows firm size and sectors show heterogeneous patterns in **both** dimensions
- More than science and technology – also design, business models, organisational changes
- More than high-tech manufacturing – also in services
- More than firms and research institutions – also non-governmental organisations, the public sector, users and consumers
- Involving people throughout the economy
- Involving supply and demand, “pull” and “push” policies.

# Summing up

- A more **open innovation** process
  - But **in-house R&D continues to** plays an important role due to limited sourcing capacity , transactions costs and learning.
  - Enabling technologies ; ICTs, nano, biotech are critical to fostering new forms of innovation  **Technology still matters.**

# Policy implications

## New actors/New sources of ideas for innovation

- What are the capabilities and inputs required for innovation?
- Input policies for R&D and non-R&D based firms?

## Variety of forms of collaboration for innovation

- Linking policies: How to better support collaboration-cooperation for innovation considering the increase in opportunities for sourcing knowledge from “non-usual suspects”? (users, consumers, civil society, networks, diverse scientific and technical domains, etc.)

## New challenges and changing values/norms (societal and environmental)

## New patterns of diffusion of innovation/knowledge (balance with appropriability)

- IPRs
- Collaborative IPR mechanisms, copy left, free licenses

NFI broaden the scope of innovation, challenging the **governance structure of innovation policies** The broadening scope of innovation.

- Increasing complexity and variety in the dynamics of the real economy requires a systemic approach to S&T&I policies (from National Innovation Systems to Systems Innovation ?). (challenge: increased management complexity)
- Addressing global challenges/issues in national (and regional/local) policies (across-boarder policies)
- Supporting the development of a new measurement agenda for better fine-tuning and monitoring policies

# Conclusion

- Innovation is a pervasive driver of change and value creation
- Involves both market and social risks – not all innovation is socially desirable nor economically efficient (sustainability)
- A broad strategy is needed – requires joining up a range of policies and some smart management and targeting

# Thank you!

[www.oecd.org/sti/innovation](http://www.oecd.org/sti/innovation)

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