

Thinking aloud about services and innovation

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Presentation outline

- What are some of the major global and regional challenges we confront and what role can innovation, including in services, play in addressing them?
- How much do we know about innovation in service industries?
- What are the main policy requirements of an innovation agenda in services?
- What role for trade and investment policy?

What are some of the major global and regional challenges we confront and what role can innovation, including in services, play in addressing them?

- Human capital enhancement
- Climate change, green energies and their financing
- Designing intelligent cities and work places
- Nurturing the revolution in life sciences
- Intelligent mobility (transportation)
- Investing in the digital society – E-commerce, E-governance, E-health

...Each one of these meta challenges will require major doses of innovation in product design and delivery platforms, and the efficiency with which services – finance, ICT, business services, architecture, design, R&D, education – are delivered will be key in addressing these challenges

Responding to these challenges will also create vast new trade and investment opportunities, with or without trade agreements.

How much do we know about innovation in service industries?

- The most honest answer is surprisingly little!
- But lots of people have been scratching their heads of late and a diagnostic picture is slowly emerging...

The role of service-sector innovation has long been under-appreciated

- This is due to some extent to the difficulty of measuring innovation in the service sector, a patchwork of different industries with significantly different innovation processes. Measurement problems are legion in services, feeding excessive precaution in policy as the predictive robustness of economic models is so much weaker than in goods trade/manufacturing.
- R&D expenditures are often employed as a proxy for innovation, although they measure just one input into the innovation process.
- Even in manufacturing, R&D generally amounts to only about half of total investment in innovation; in services the share is generally considered smaller, in part due to the small average size of service firms.
- Other components of innovation appear more important for services, where most innovation is linked to changes in processes, organisational arrangements and market structures.

Is innovation less pervasive in services?

Perceptions matter

- The service sector has traditionally been seen as less innovative than manufacturing and as playing only a supportive role in the innovation system.
- As a result, national innovation policies have paid scant attention to services, and service-sector firms have rarely been active participants in government-sponsored innovation programmes.
- However, recent work confirms that services are more innovative than previously thought.

But services are different, such that enhancing innovation in the service sector requires attention to policy issues that differ from those affecting manufacturing...

- Service-sector innovation derives less from investments in formal R&D and draws more extensively on the acquisition of knowledge from outside sources that is acquired through purchases of equipment and intellectual property, as well as via collaboration with clients and even competitors.
- Human resource development is especially important to service firms, given their reliance on highly skilled and educated workers, as well as indications that a lack of highly skilled personnel is a major impediment to service innovation in most economies.
- The role of newly established firms in innovative activity is greater in services than in manufacturing, so that entrepreneurship is also a key driver of service innovation. Nonetheless, small firms tend to be less innovative than larger firms.
- IPR protection, especially as it relates to software and business method patents, appears to have strong links to innovation in services.

Service-sector firms are innovative, although less so, in aggregate, than firms in manufacturing industries

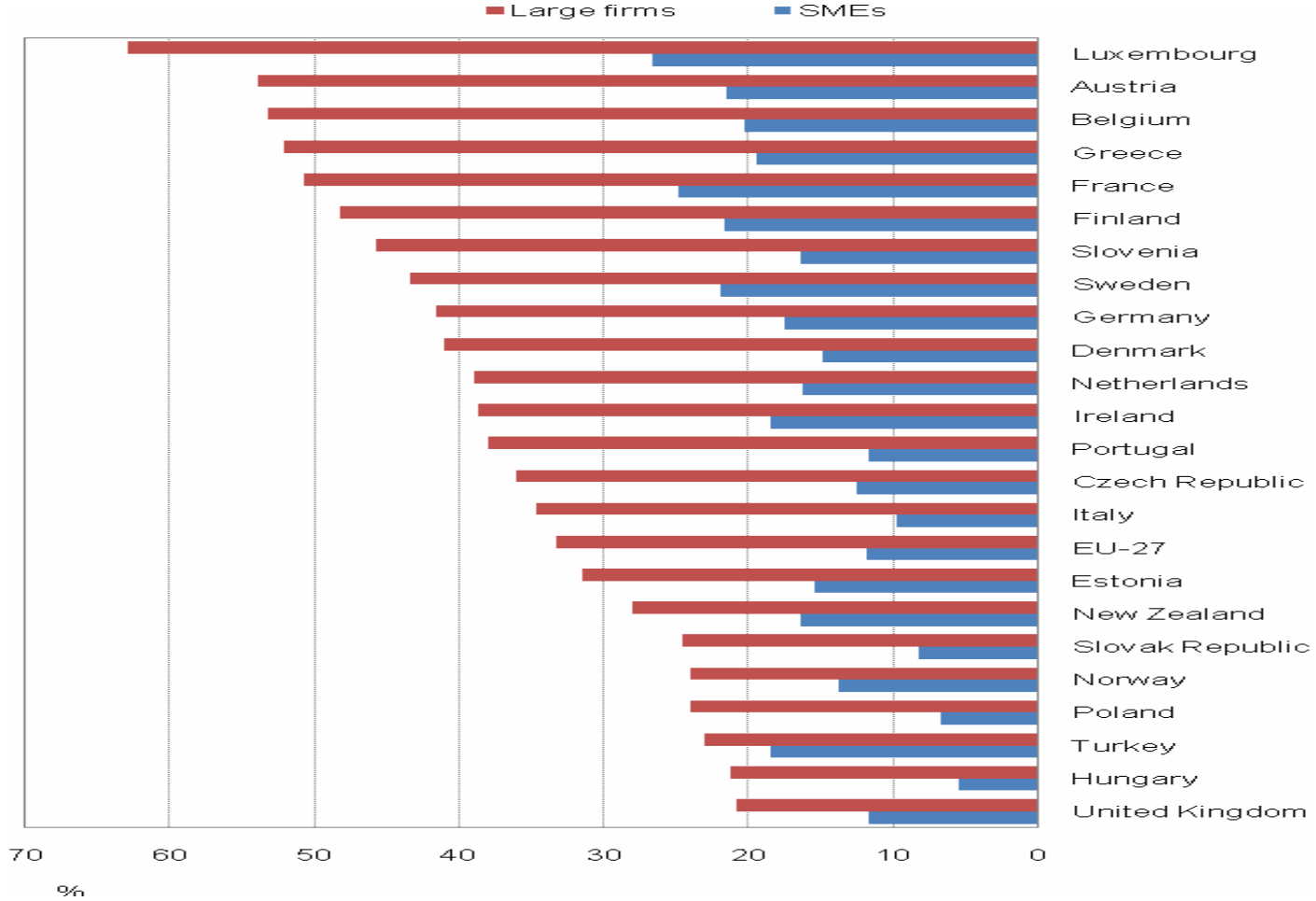
- Average figures mask considerable variation, with some services appearing to be more innovative than the manufacturing sector average.
- Reported innovative density is highest in business services and financial intermediation, with results indicating that more than 60% and 50% of firms, respectively, were innovative.
- In wholesale and retail trade and transport and communications, fewer than 40% and 30% of firms, respectively, reported that they were innovative.
- These figures compare to an average of just below 50% in manufacturing industries.

Does size matter?

- Large firms tend to introduce more “novel” innovations than small and medium-sized enterprises (SMEs).
- Overall, SMEs are less likely to introduce novel innovations.
- Data on innovations mainly developed within a firm (so-called “in-house innovators”) confirm that small and medium-sized enterprises (SMEs) tend to be “adopters” more frequently than large firms.
- In more than half of the OECD countries surveyed, 40% or more of all large firms had developed during 2004-06 an in-house product innovation, and around 20% of all SMEs.
- In terms of sectors, manufacturing firms tend to undertake more in-house innovation than services firms, for both products and processes.

Firms with new-to-market product innovations by size, 2004-06

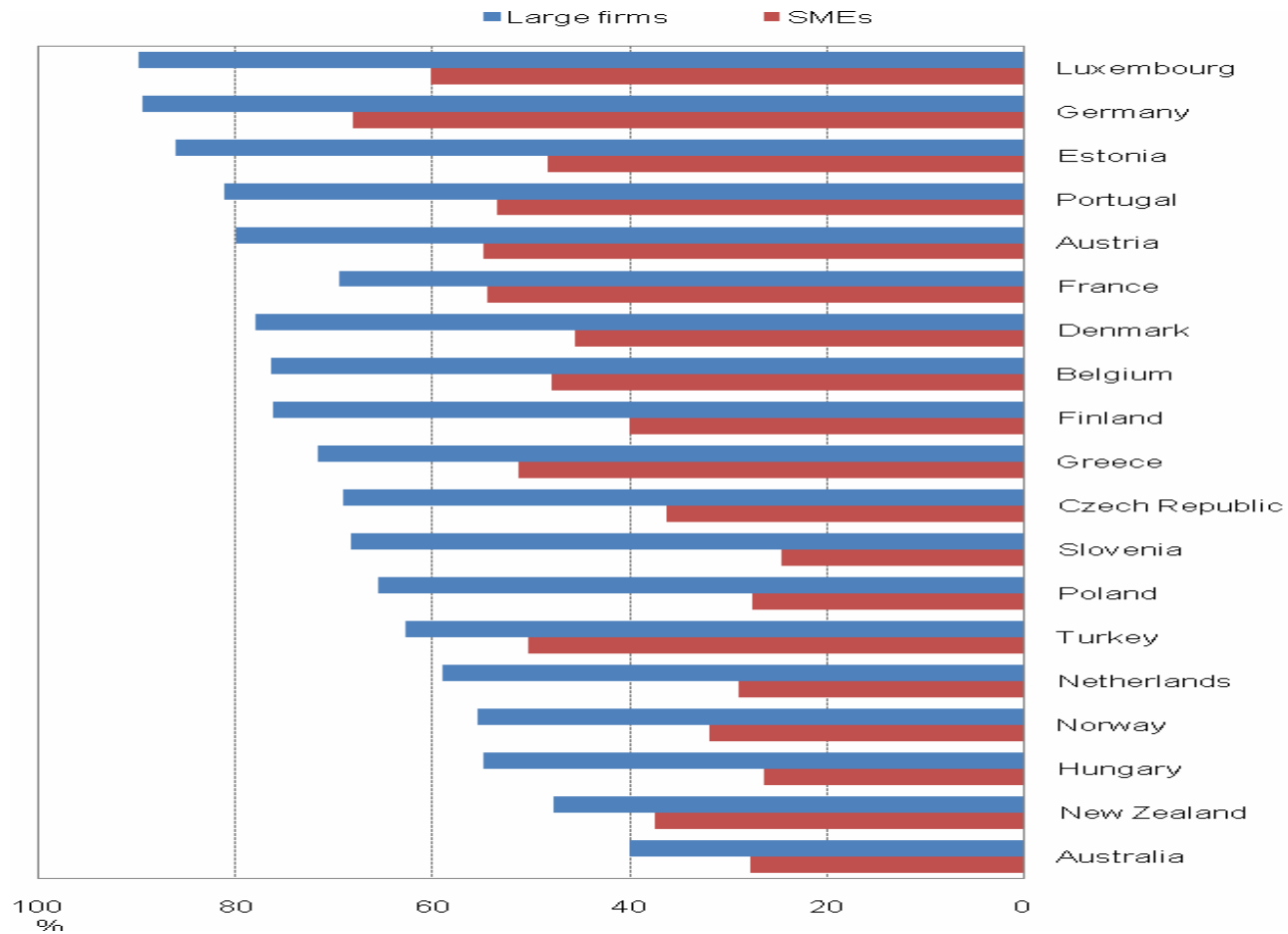
As a percentage of all firms



Non-technological innovation

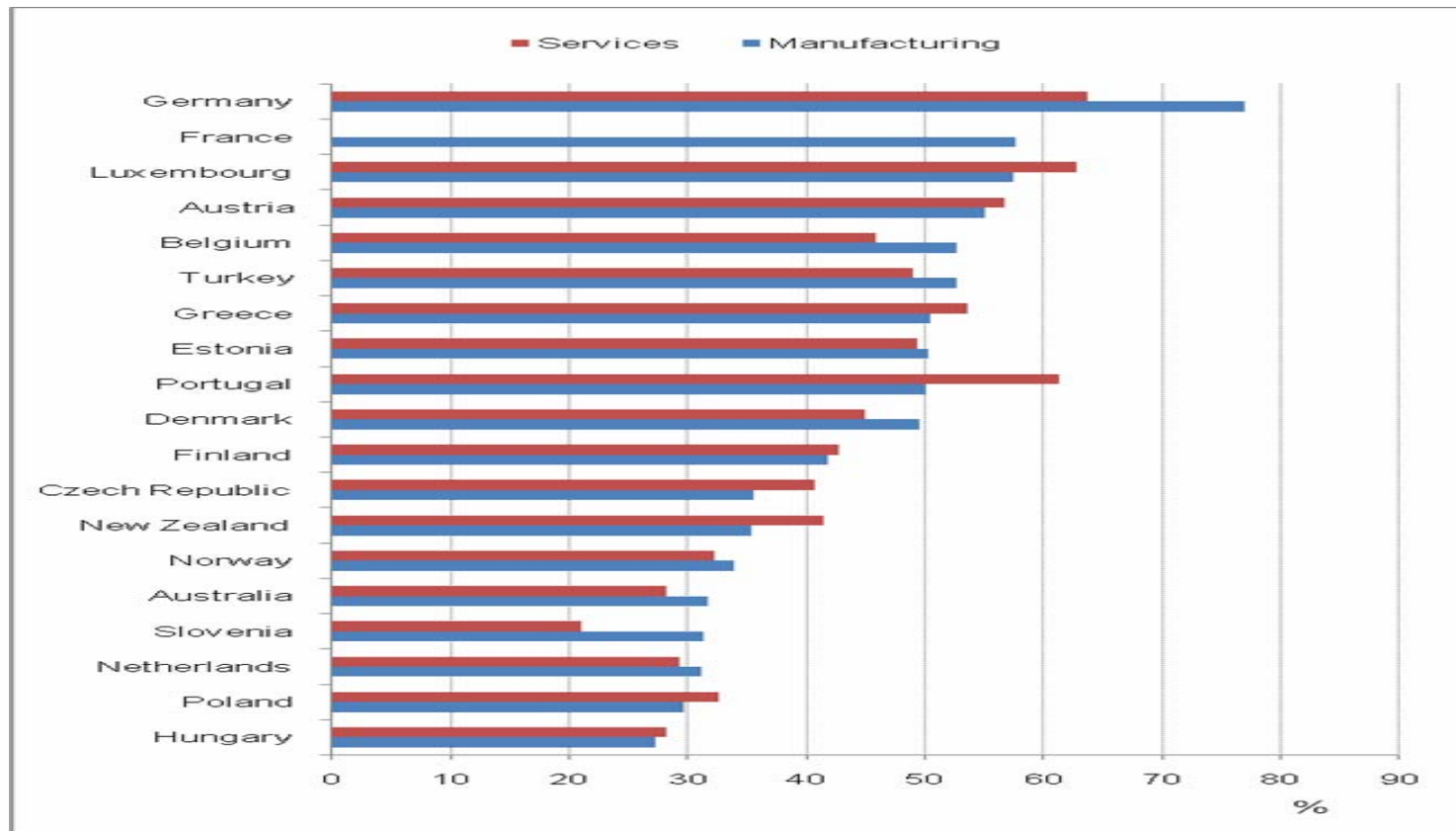
- Innovation has both technological and non-technological aspects.
- The commercialisation of new products often requires the development of new marketing methods. Similarly, a new production technique will increase productivity only if is supported by changes in organisation.
- Marketing and organisational innovations are important dimensions of many firms' innovation activities, particularly in services.
- Non-technological innovation is significantly more prevalent among large firms than among small and medium-sized enterprises (SMEs).

Non-technological innovators by size, 2004-06 (as % of all firms)



Non-technological innovators by sector, 2004-06

As a percentage of all firms



Is size a binding constraint?

- Significant differences in innovative performance have been shown to exist across firm size.
- Large service-sector firms (250 or more employees) appear to be considerably more innovative than small firms (fewer than 50 employees) and medium-sized firms (50-249 employees)
- Studies have also found that the relationship between firm size and innovation is weaker in services than in manufacturing.
- The latter finding suggests that economies of scale may be less important in the service sector.

Service sector R&D is highly concentrated

- In most countries, business services and post and telecommunications account for more than three-quarters of R&D intensity.
- Within these broad categories, computer and related services, R&D services and telecommunications services account for almost the entirety.
- These three sectors, and computer and related services in particular, account for most of the growth in R&D intensity over the last decade, attesting to the importance of the ongoing revolution in business services delivery and outsourcing.

Human capital remains a cornerstone of services innovation

- Reliance on human capital is crucial in the labor-intensive services sector.
- Skills upgrading and human capital enhancement are pillars of the innovation process.
- Employment in services is no longer considered low-skilled and low-paid, and the shift in employment towards services cannot be regarded as a move towards less desirable employment.
- In the OECD area, the share of employees with higher education is larger in services than in manufacturing.

Human capital remains a cornerstone of services innovation

- The importance of highly skilled labour for the service sector implies that policies to encourage service-sector innovation will need to emphasise education and training.
- This need goes beyond the training of human resources for science and technology that play a significant role in R&D to include a much larger segment of the working population.
- Labour adjustment is usually smoother in service industries, as knowledge is often less narrowly firm or sector-specific.
- Governments have a significant role to play in providing basic education and in increasing the share of national population with tertiary education, but co-operation with the private sector may also be necessary to ensure that education programmes remain relevant to industry needs and keep pace with developments in fast-moving fields, such as ICT or biotechnology.

What are some of the main policy requirements of an innovation agenda in services?

Open domestic services markets to create new job opportunities and foster innovation and productivity

- Further pro-competitive regulatory reform and steps to promote new entry of services markets will create fresh opportunities for firms to develop new services, meet emerging global demands and increase employment.
- It will also increase the incentives for companies to innovate and improve productivity growth.
- While much progress has been made in opening services markets, further steps are needed, *e.g.* in reducing the degree of public ownership in competitive industries such as air transport, in addressing anti-competitive practices in professional services, and in reducing barriers to entrepreneurship.

Open international markets to trade and investment in services

- The benefits of international trade and investment in services are highly significant. Policy makers can take unilateral steps to open markets to international competition, for instance by reducing barriers to foreign direct investment.
- At the same time, action is needed to ensure a broad opening of markets and a wide distribution of the benefits so that innovation can spill over into export markets and ensure broader diffusion.
- This can be done multilaterally at the WTO, notably by concluding the Doha Round. It can also involve neighbourhood responses via preferential liberalization à la CAFTA.

Adapt education and training policies to rapidly changing requirements for new skills

- Since most services involve direct contact with customers, human resources are key to services sector performance.
- Education policies are important to help workers adjust to globalisation and structural change and should help provide the qualifications that are needed in services.
- This will require improved incentives for private financing of life-long learning and actions to ensure equitable access to formal and on-the-job learning.

Remove impediments that prevent services firms from seizing the benefits of ICT

- To seize the benefits of ICT for services, governments should continue to encourage effective competition in ICT infrastructure, network services and applications, notably for broadband.
- They will also need to increase the trust in electronic business, e.g. by developing effective regulatory frameworks.
- Regulatory barriers, e.g. to digital delivery and digital content, also require reform, as they are not adapted to the new potential offered by electronic business.
- Moreover, governments can take action themselves, by developing public services and digital content.

Designing an innovation strategy for services

- Several countries have begun to implement policies to encourage innovation in specific service industries; most concentrate on development and use of ICT.
- Some focus on the establishment and maintenance of an ICT-related business environment, such as developing standards for e-commerce and encouraging public procurement via e-commerce. There is strong support for boosting software industries in some countries.
- Policy measures for human resource development in the service sector are also aimed at ICT-related sub-sectors, such as educational support to ICT-related human resources and training in ICT-related skills.
- Some countries focus on encouraging clustering and networking because knowledge acquisition is a major source of innovation in service sectors.
- Supporting small and medium-sized enterprises (SMEs) and encouraging entrepreneurship are also targets of government policy measures, most of which focus on IT industries.

What role for trade and investment
policy?

Direct and indirect policy effects

- Indirectly, trade and investment policy can be important in enhancing the business climate and in nurturing innovation-compatible environments
- Directly, there is much that engagement in trade and investment negotiations can do to complement domestic efforts at building an innovation strategy:
 - Market opening in agriculture, mining, fisheries or manufacturing can generate incentives for greater service sector innovation (intermediation function)
 - Investment rules are typically treated comprehensively in BITs and PTAs
 - In both PTAs and WTO, specific commitments are possible on all key services centrally concerned by an innovation agenda (the example of Mauritius is illuminating)
 - Disciplines on TRIPs may also help to address the IPR dimension of the services-innovation interface
 - Yet, expectations must be kept rational: trade negotiations are mercantilistic exercises and services talks rarely deliver beyond the status quo – they are instruments of periodic policy consolidation
 - It takes two to tango: some sectors are off limits in partner countries – i.e. health and education
 - For the above reasons, a country that is keen on pursuing an innovation agenda in services will likely need to be prepared for major doses of policy unilateralism

Muchissima gracias!

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