

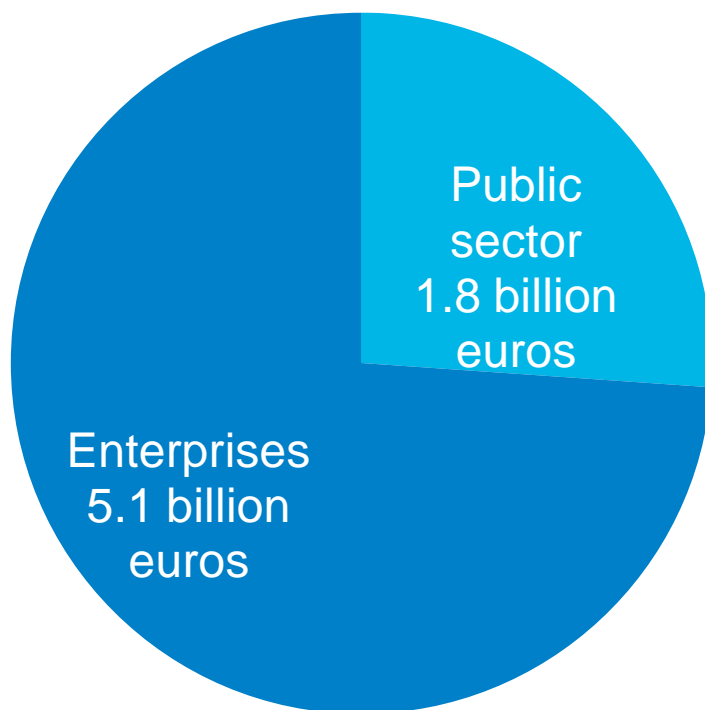
# Boosting productivity and economic growth through innovation

Kari Komulainen  
3 June 2010



# R&D input in Finland

**Total 6.9 billion euros, 3.7 percent of the Gross Domestic Product (GDP) in 2008**



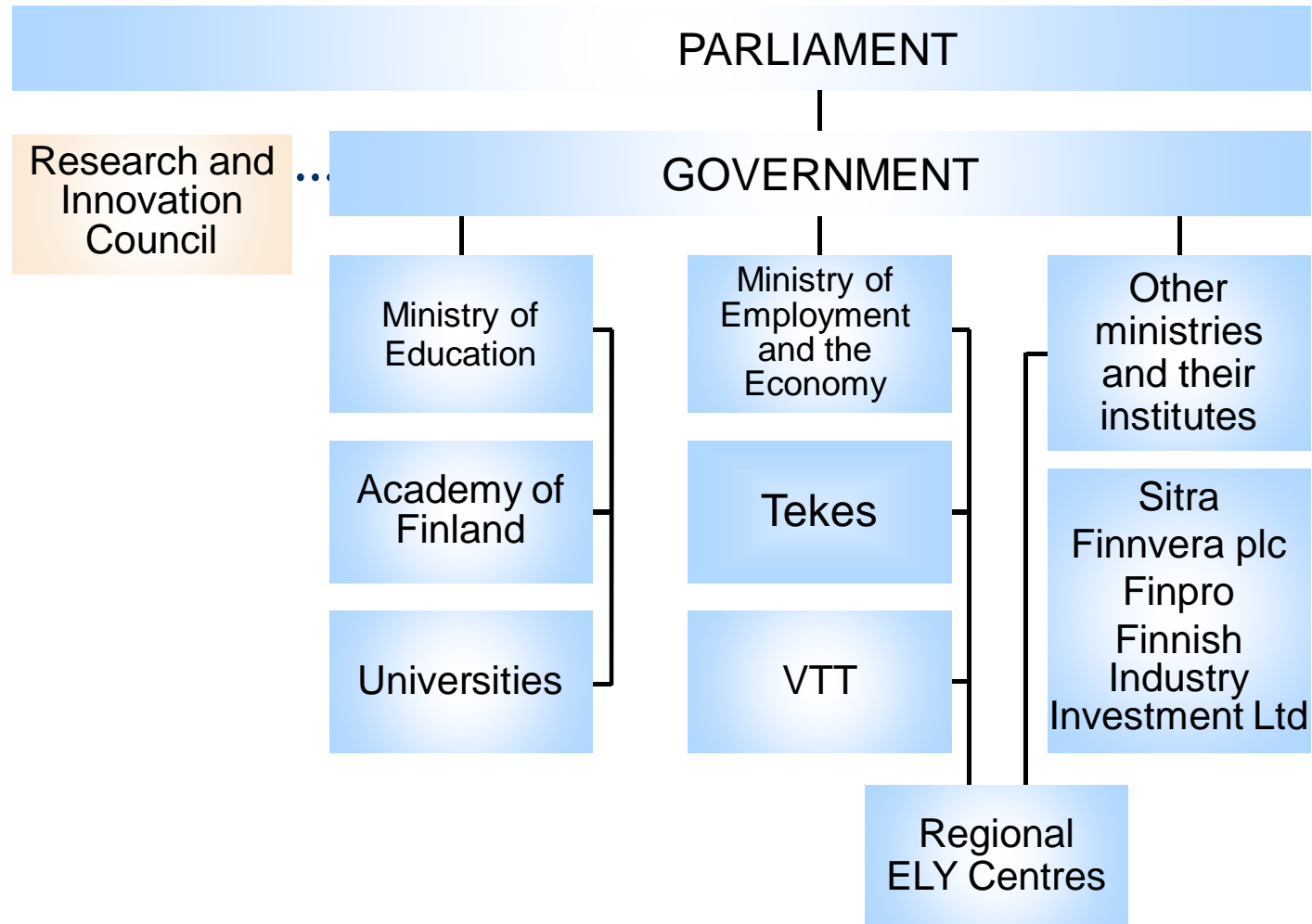
In 2008 Tekes allocated 523 million euros for R&D projects.  
Sources: Statistics Finland and Tekes

# Milestones of Finnish innovation policy

- 2010 Founding of the Centres for Economic Development, Transport and the Environment (ELY Centres)
- 2010 **New Universities Act**; the Aalto University started
- 2009 Evaluation of the Finnish National Innovation System
- 2008 **The National Innovation Strategy**
- 2008 Founding of the Ministry of Employment and the Economy
- 2007 **Strategic Centres for Science, Technology and Innovation**
- 2006 Finnish second Presidency of the EU (first in 1999)
- 2002 Preparation of the European Research Area
- 1999 Finnish R&D funding exceeds 3 % of GDP
- 1997 Founding of Employment and Economic Development Centres
- 1996 Government decision to increase R&D funding
- 1995 Finland becomes a member of ESA
- 1995 Finland becomes a member of the EU
- 1992 Founding of Finland's EU R&D secretariat
- 1992 Finland the chair country for EUREKA
- 1991 Finland becomes a member of CERN
- 1986 EU framework agreement on research cooperation
- 1985 EUREKA started
- 1984 Technology programmes started
- 1983 Founding of Tekes
- 1982 Council of State resolution on technology policy
- 1976 National technology committee



# Public sector activities of R&D in Finland



# What is innovation?

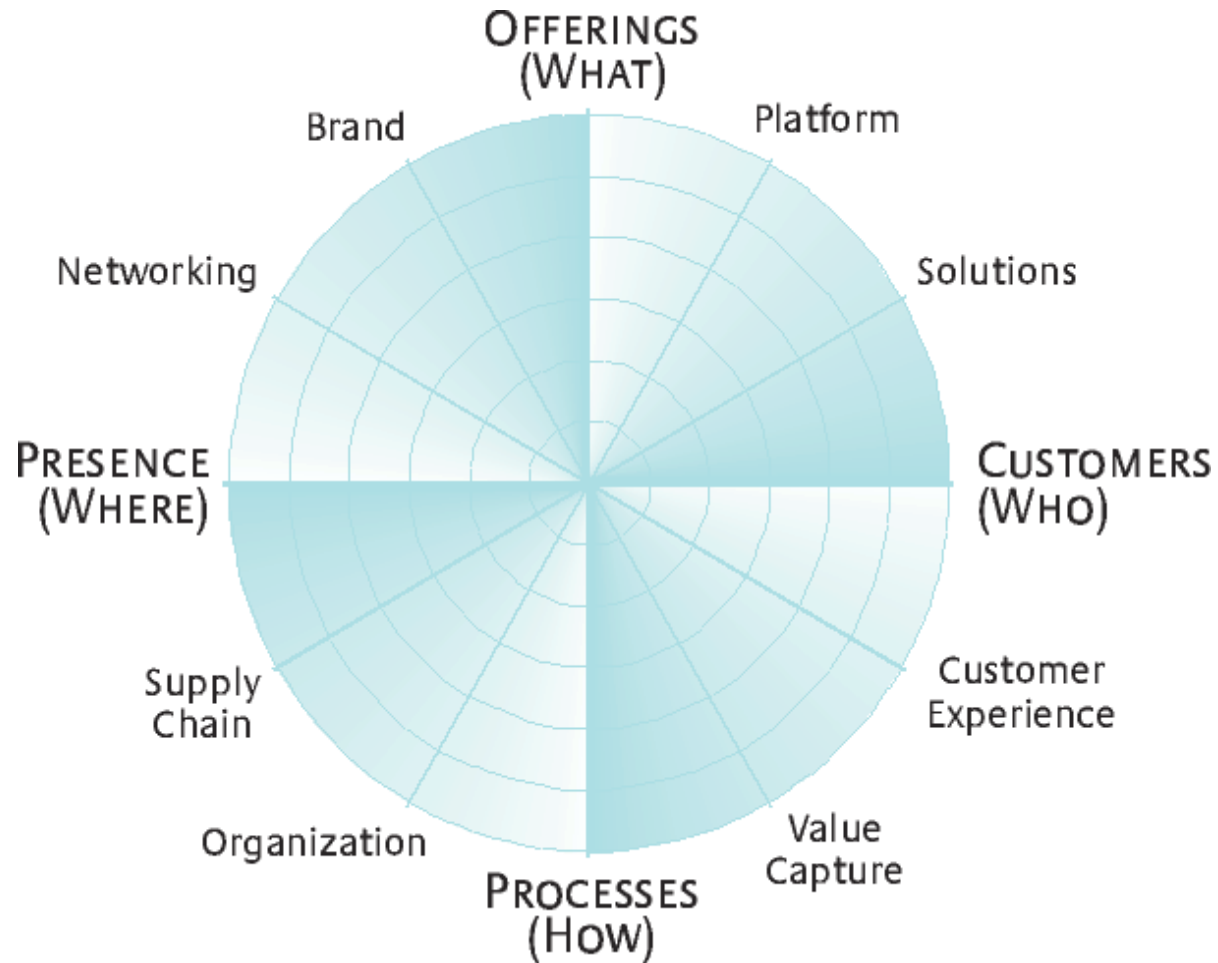
- § **Product innovation:** This involves a good or service that is new or significantly improved. This includes significant improvements in technical specifications, components and materials, incorporated software, user friendliness or other functional characteristics. In the education sector, a product innovation can be a new or significantly improved curriculum, a new educational software, etc.
- § **Process innovation** involves a new or significantly improved production or delivery method. This includes significant changes in techniques, equipment and/or software. In education, this can for example be a new or significantly improved pedagogy.
- § **Marketing innovation** involves a new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing. In education, this can for example be a new way of pricing the education service or a new admission strategy.
- § **Organisational innovation** involves introducing a new organisational method in the firm's business practices, workplace organisation or external relations. In education, this can for example be a new way organization of work between teachers, or organizational changes in the administrative area.

Source: OECD



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# Example: Innovation Radar – a broader definition of RDI



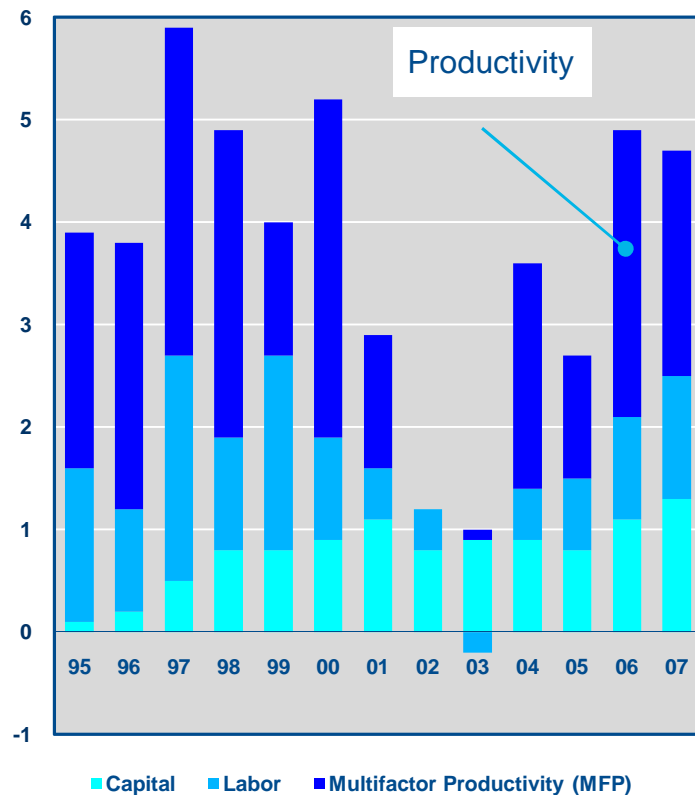
Source: Mohanbir Sawhney et al., Northwestern University, Kellogg School of Management



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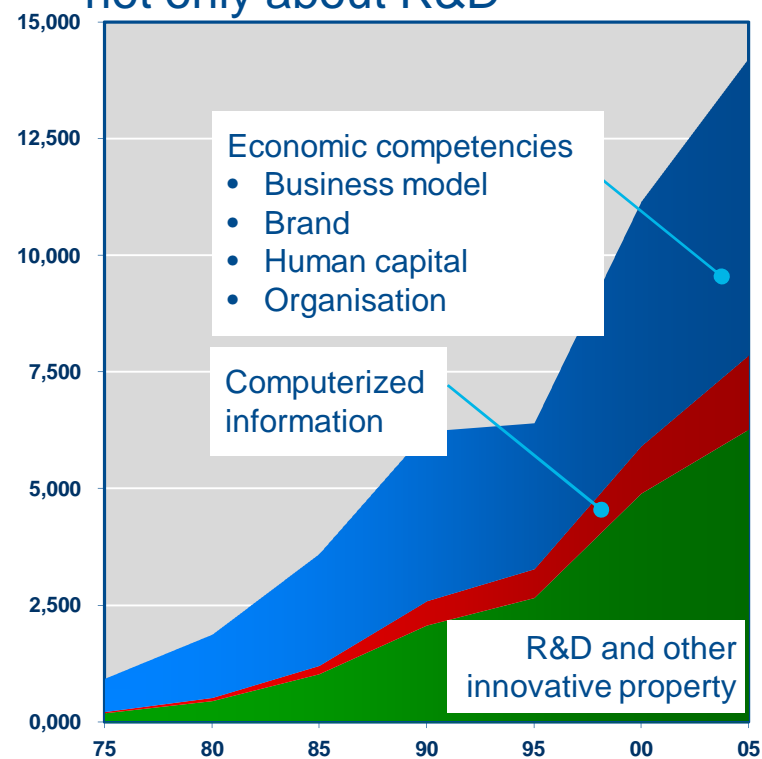
# Future economic growth is based on intangible investments

Sources of added value in Finland

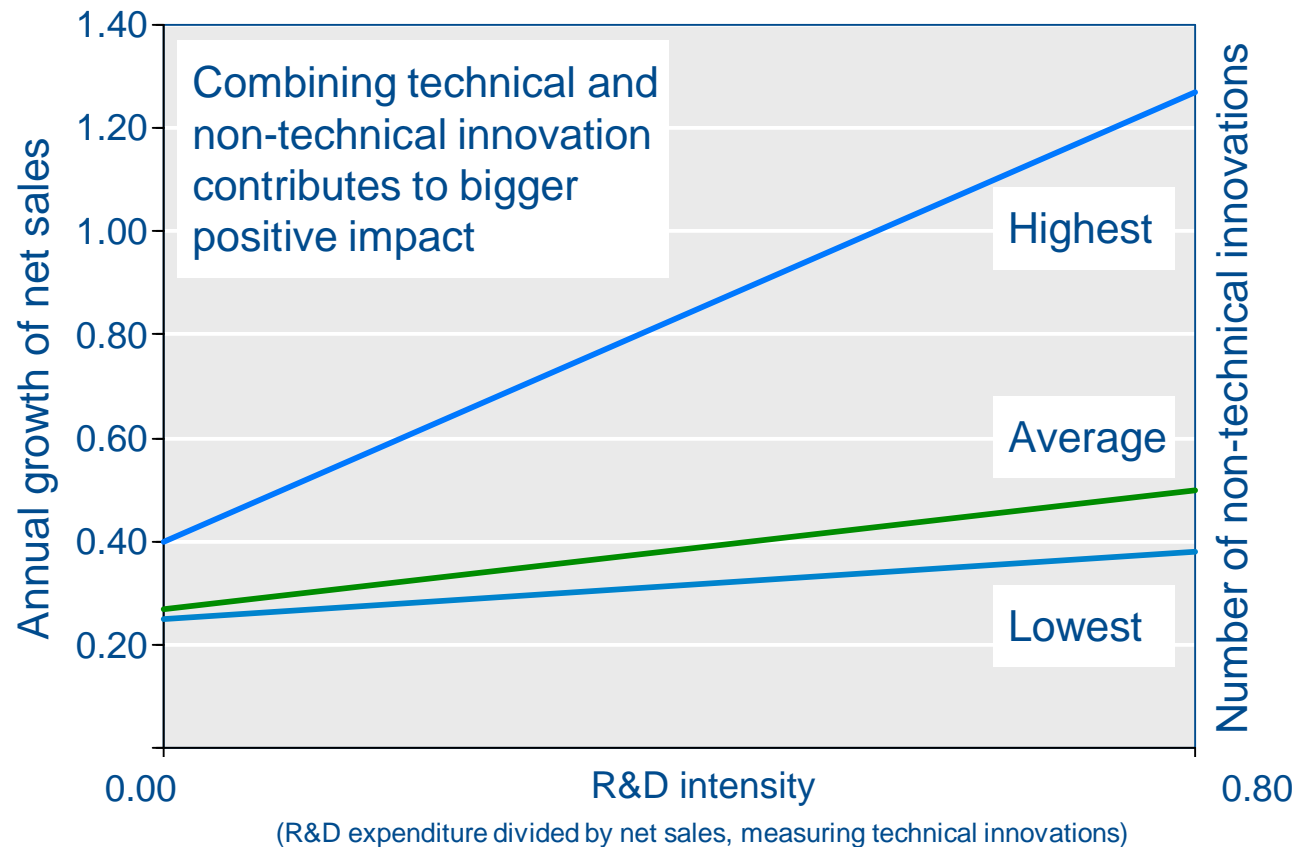


Source: Statistics Finland

Intangible business investments: not only about R&D



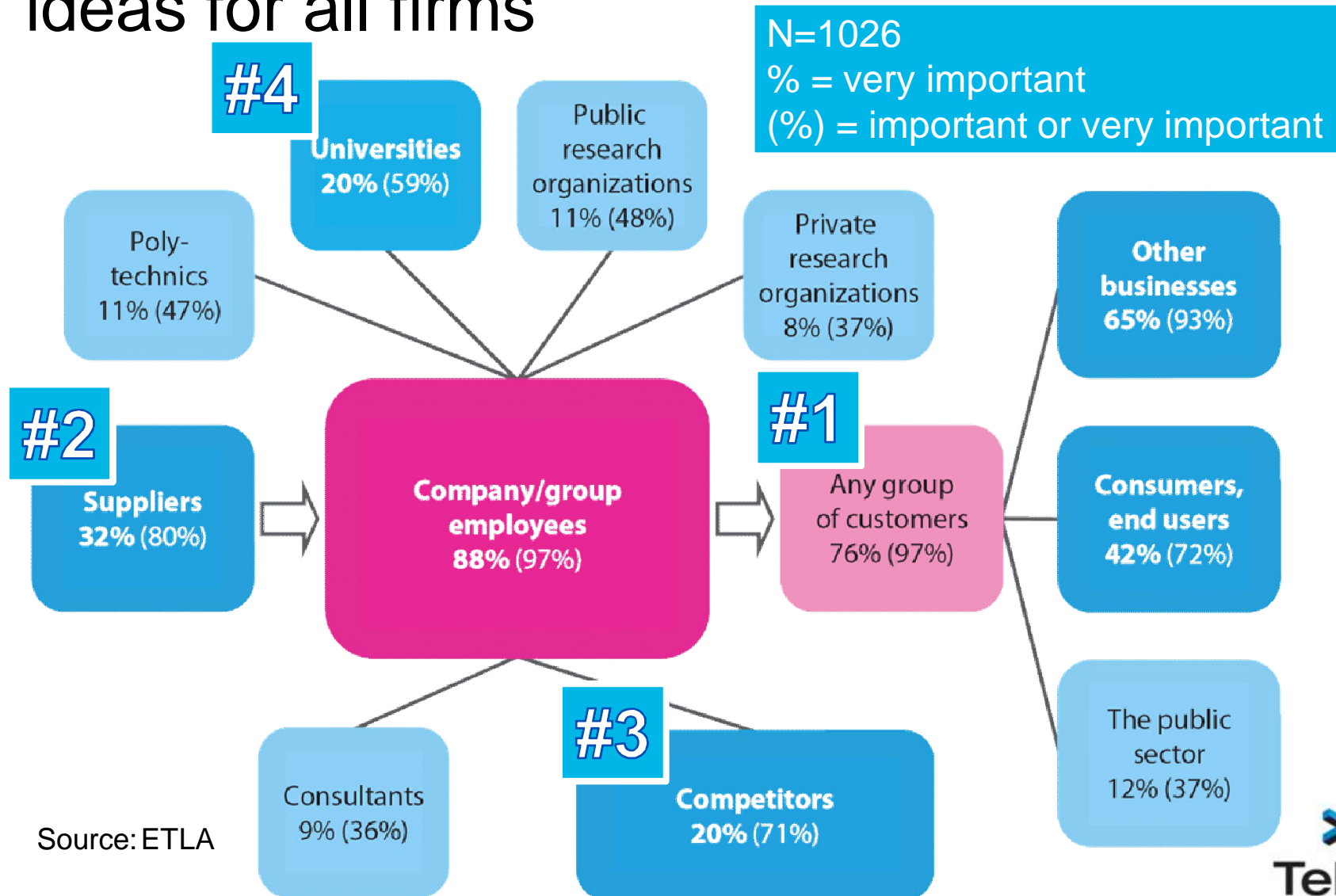
# Company growth as a function of non-technical innovations and R&D intensity



Source: The Research Institute of the Finnish Economy, Discussion paper 1165 (Jyrki Ali-Yrkkö, Olli Martikainen). Study population consists of Finnish software industries.



# Customers are an important source of new ideas for all firms



Source: ETLA

# Tekes: Expertise and networks for innovations

## § Tekes's services

- Funding for innovative R&D and business
- Networking Finnish and global companies and researchers
- Tekes is non-profit and takes no equity or ownership on intellectual property.

## § Customers

- Finnish and international companies located in Finland
- Universities, research institutes, hospitals etc.

## § Resources

- Budget: 600 million euros annually
- Personnel: 360 in Finland and abroad
- Public agency under the Ministry of Employment and the Economy



# How do we work?

## § Tekes encourages companies to do challenging R&D

- We accept more risks than private financiers

## § Tekes facilitates collaboration and networking

- between small and large businesses
- industry and the academia
- globally – nationally – regionally

## § Confidentiality

- applications are evaluated in-house
- companies may submit applications anytime

## § Intellectual property

- All IPR belongs to the recipient of funding



# In 2009, Tekes supported 2177 projects with 579 M€

§ 53% (298 M€) to Tekes programs and to Strategic Centres for RDI

§ 50% (165 M€) of funding for corporate R&D to service businesses

§ 41% (243 M€) to non-technical innovations

§ 41% (238 M€) energy and climate change related RDI

§ 37% (212 M€) to ICT technologies and services

§ 9% (53 M€) to health and well-being innovations

§ 2,5% (14 M€) to work-place, management and organisational innovations

§ 61% to SME and 87% to <500 person firms



# Tekes funding and services to promote growing international business of Finnish companies

## Tekes services



## For what purposes is funding available?



# Impacts of R&D funding

Tekes' s clients have experienced more **rapid growth** than companies in the business register in general.

*Business Aid Database Creation: Final Report by the Working Group (2006)*

R&D funding increases the growth, activeness in seeking **patents** and demand for labour of companies and reduces the likelihood of business closures and mergers.

*Hovi et al. (2006)*

R&D funding has increased the growth of **productivity** and improved **employment** in companies with a well compensated R&D.

*Piekkola (2006)*

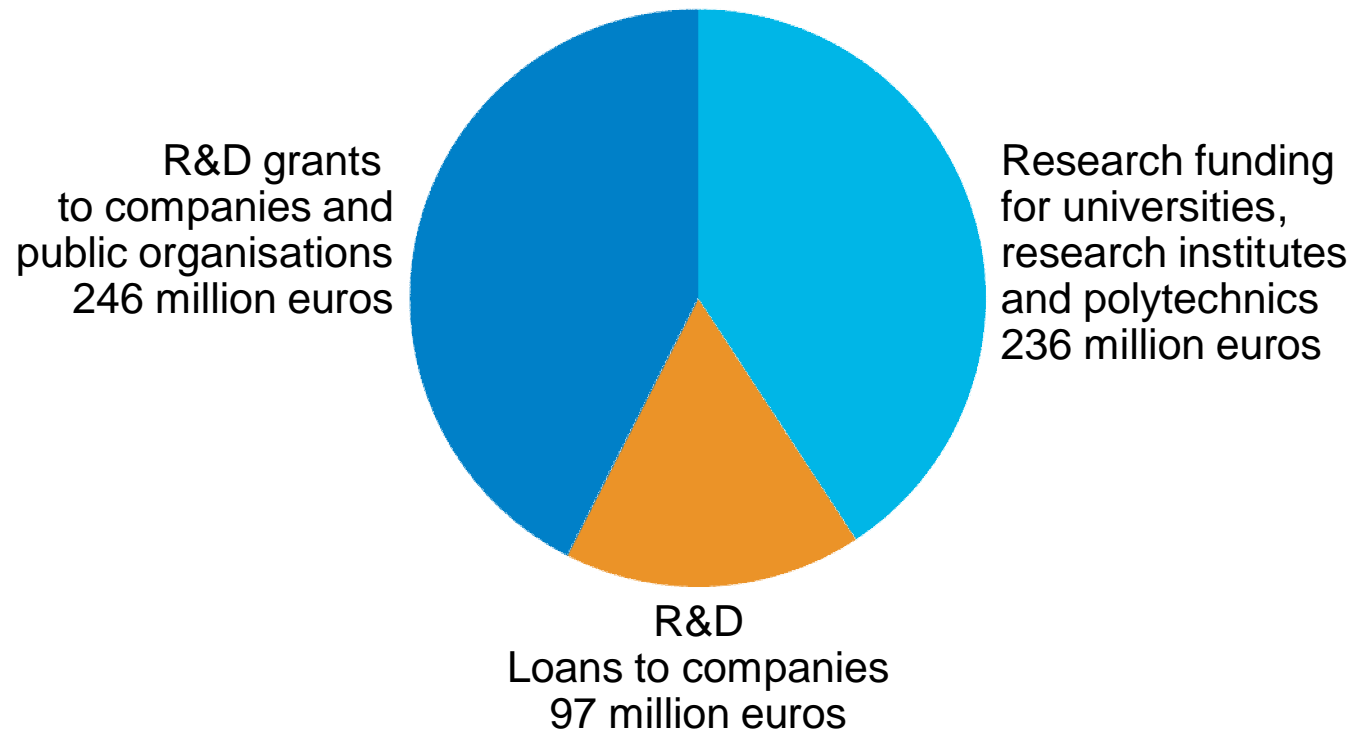
Nearly two in three companies perceived Tekes funding to have helped the company increase its net **sales**.

*Pekkanen et al. (2004)*



# Tekes R&D funding in 2009

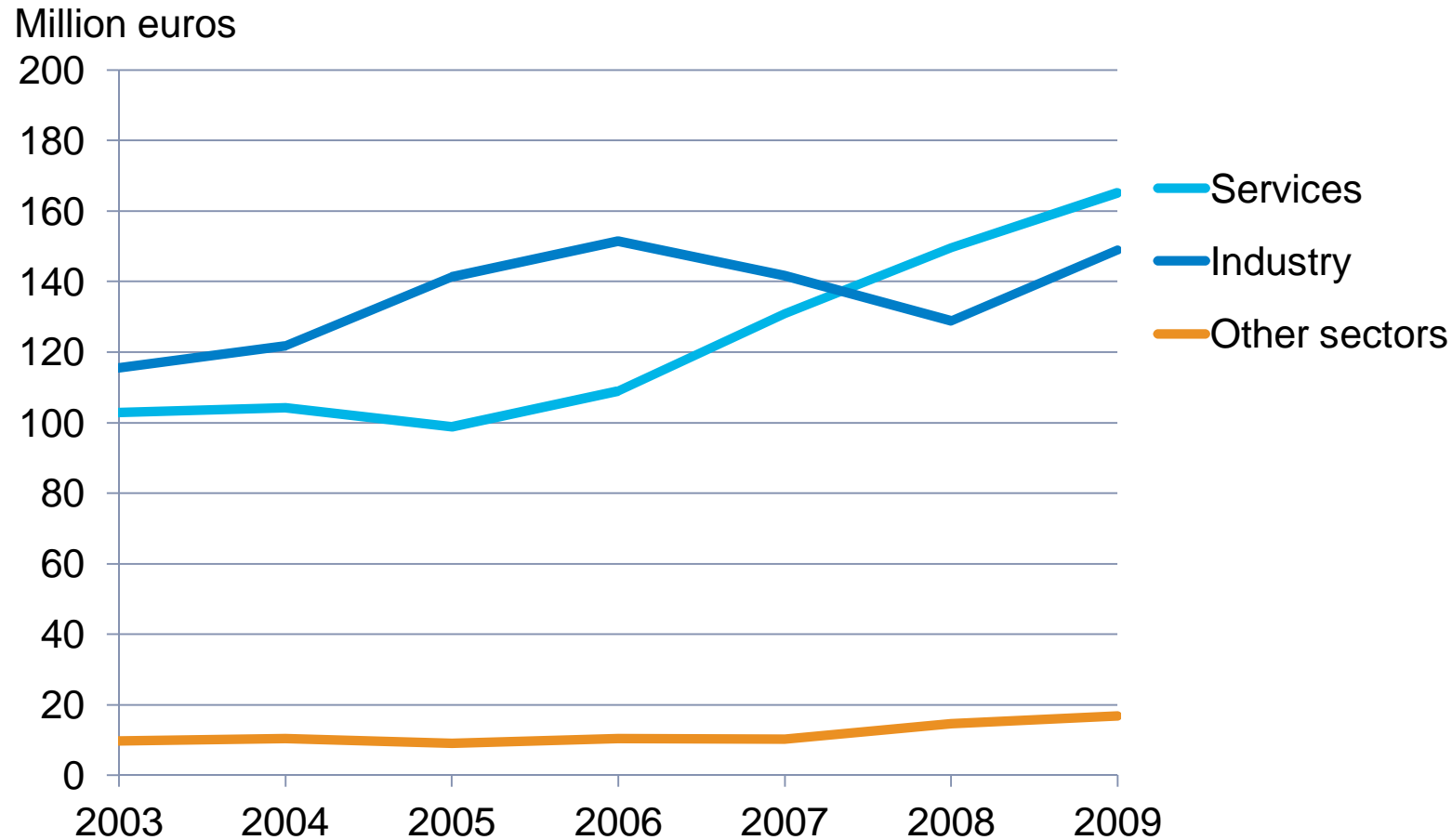
Total 579 million euros and 2,177 projects



Figures include 12 million euros from the Workplace Development Programme TYKES and 22 million euros funding from EU Structural Funds.



# Tekes R&D funding by sectors



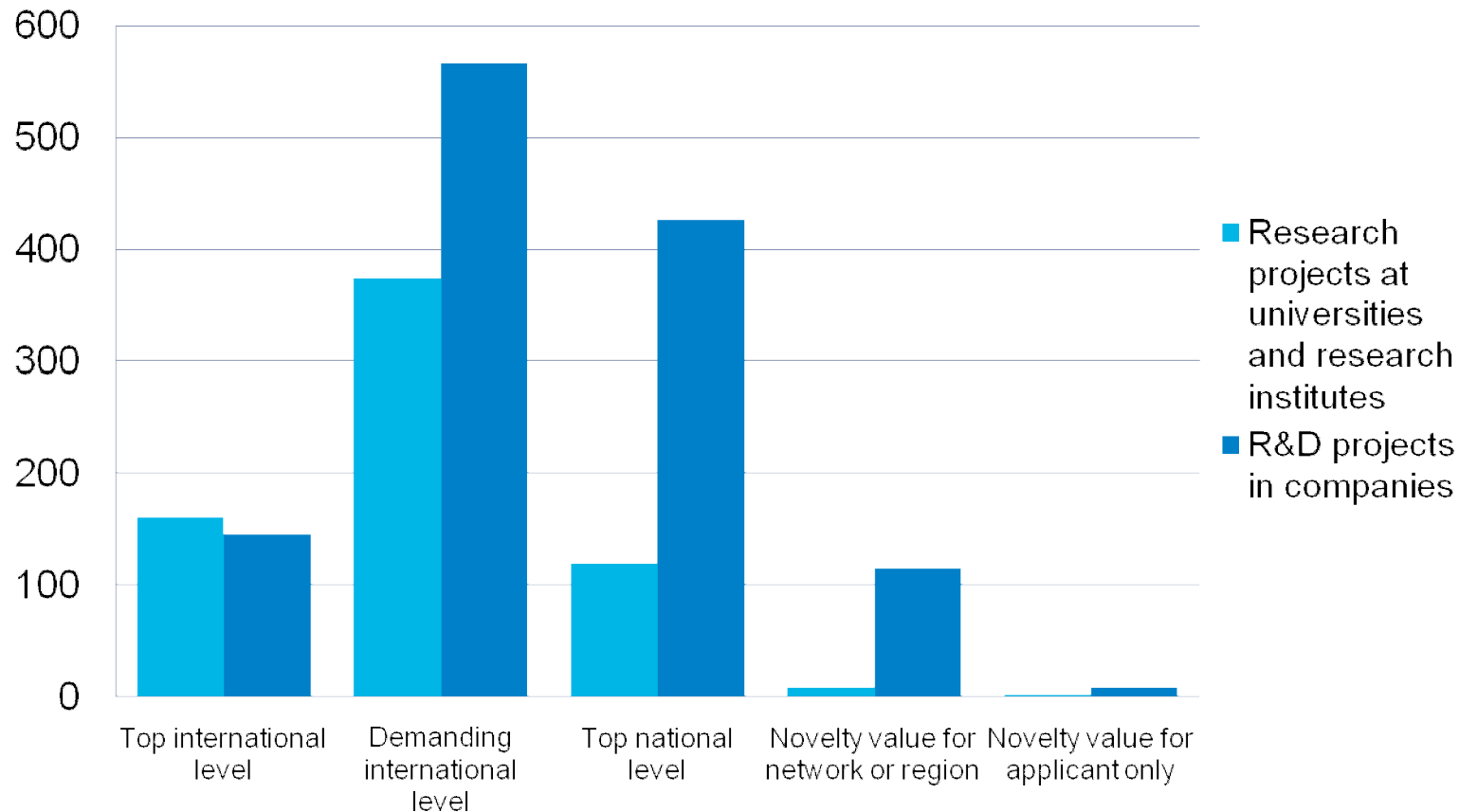
In addition Tekes funded workplace development through the TYKES-programme with 12 million euros. Construction is included in the industrial figures.





# Degree of challenge in R&D projects funded by Tekes

Number of projects in 2009

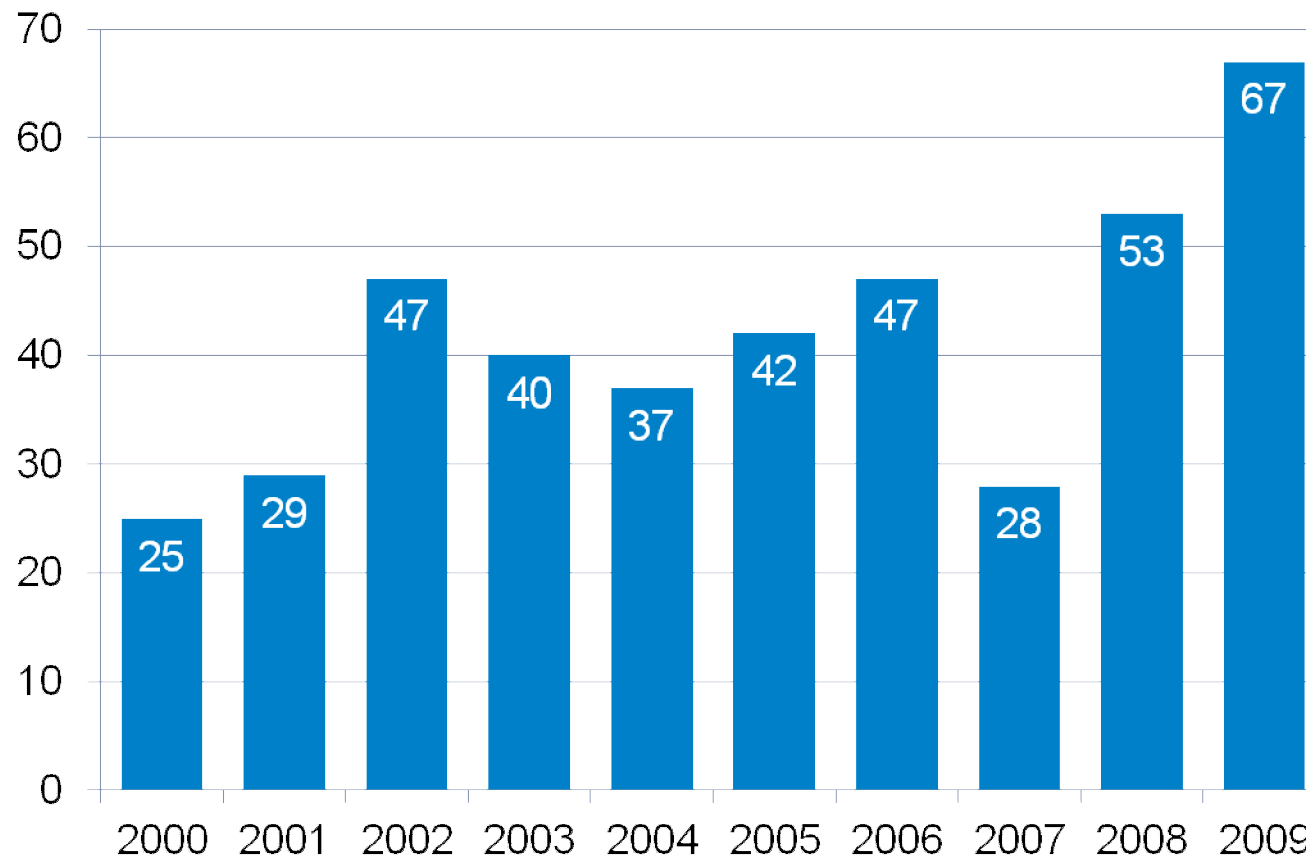


The risk of failure is high in R&D. The job of Tekes is to share in this risk and accept greater uncertainty than other financial backers.



# Tekes customers declaring bankruptcy

Number of companies

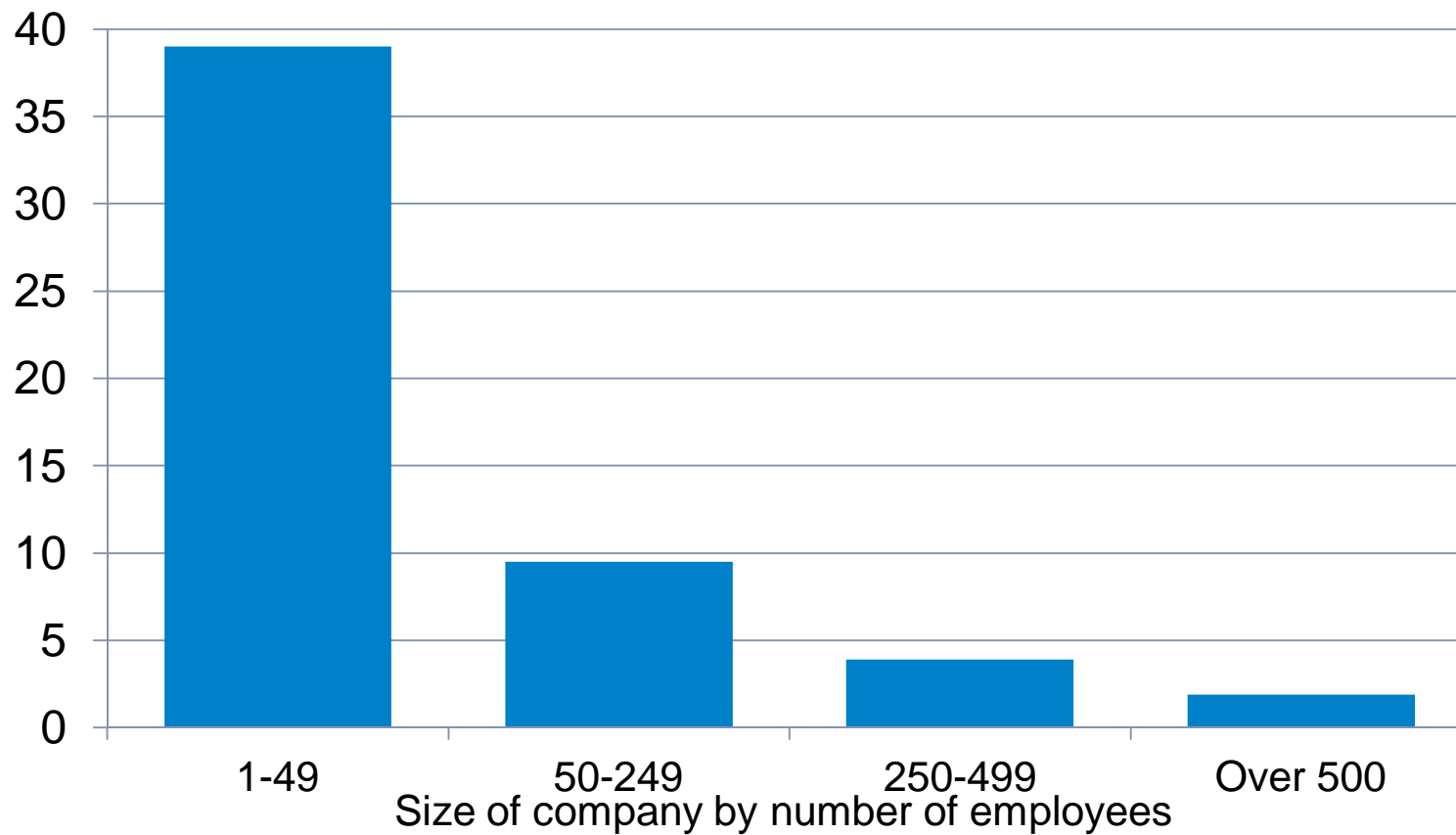


Annual number of customers declared bankrupt for which Tekes has paid funding during five years preceding bankruptcy or which still had Tekes R&D loan left when bankruptcy was declared. Of the 4,500 companies funded in the last five years, app. 1%, i.e. 25-50 companies ended up bankrupt each year. About 1.3 % of all Finnish companies face bankruptcy yearly.

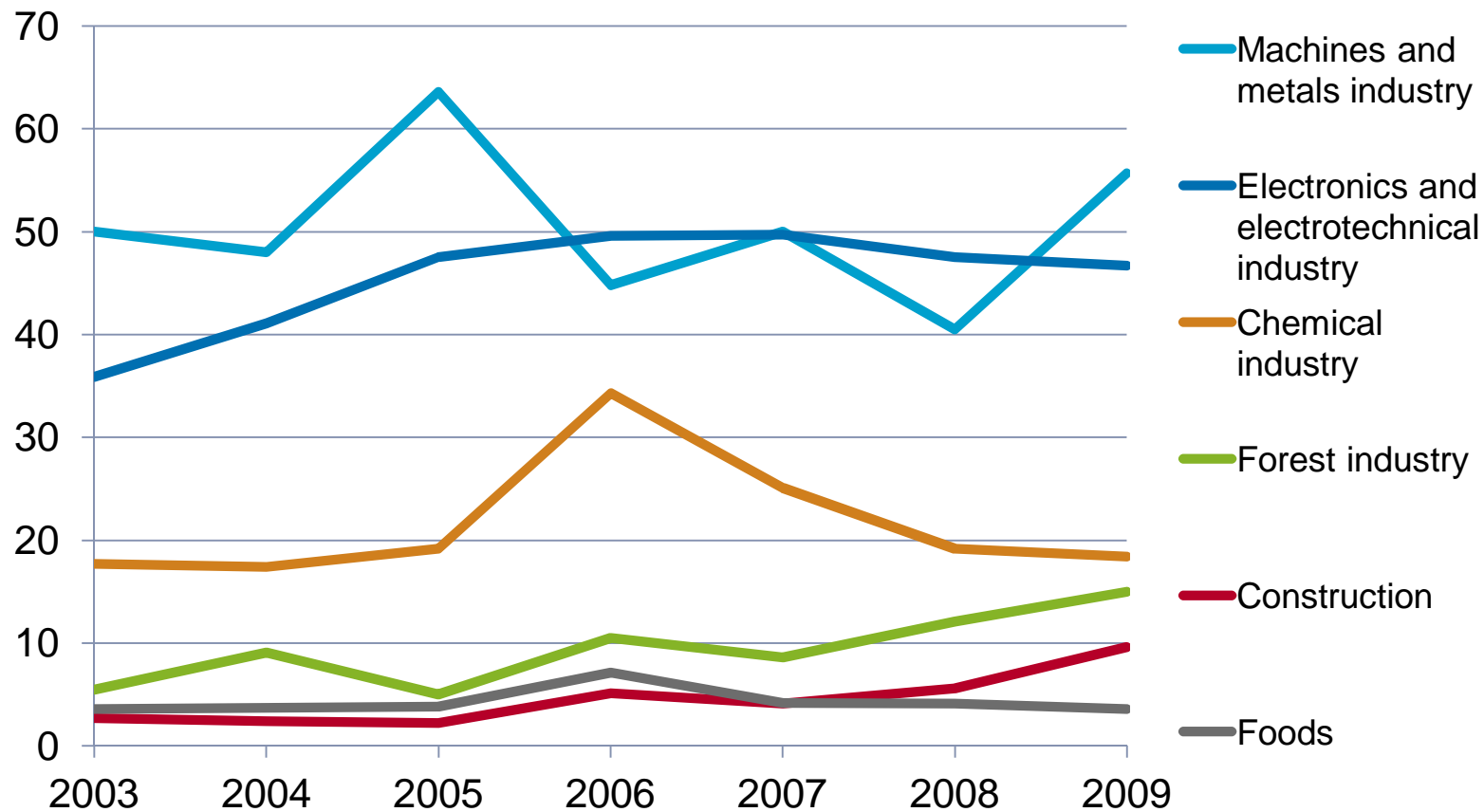


# Tekes funding is heavily concentrated on R&D in small companies

Share of Tekes funding in 2008, %



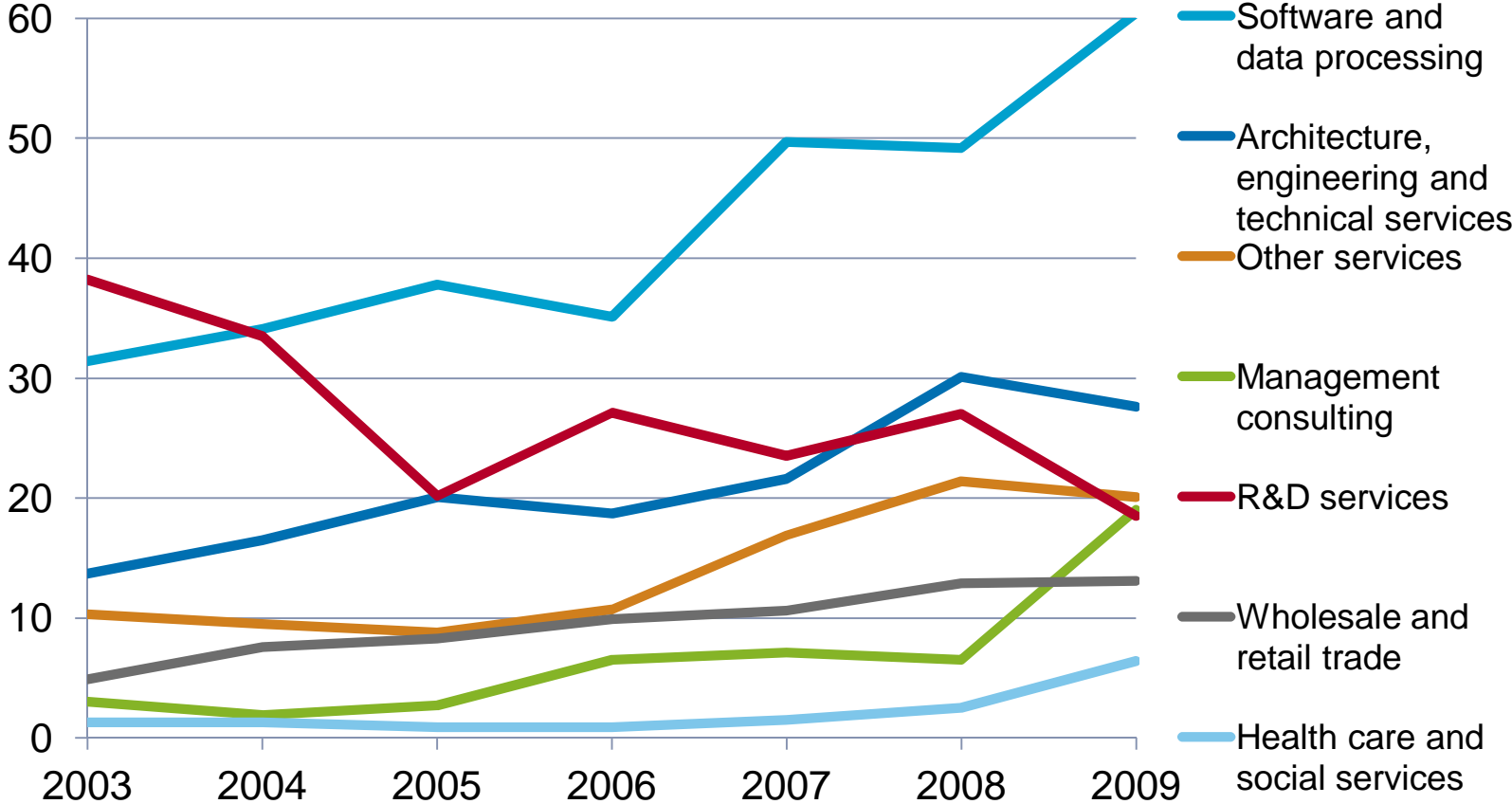
# Tekes R&D funding by industry



In addition Tekes funded workplace development through the TYKES-programme with 12 million euros.



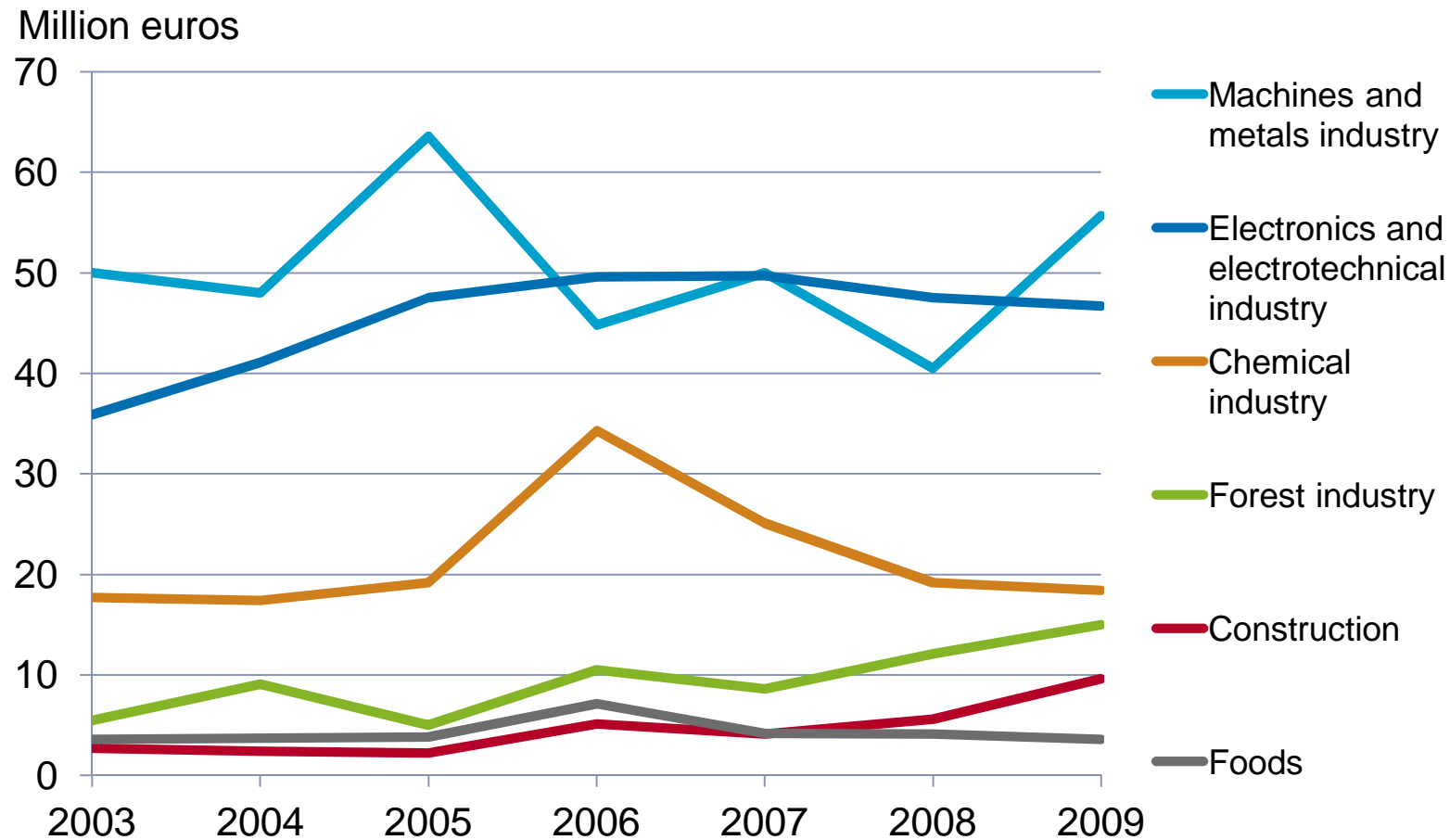
# Tekes R&D funding for services



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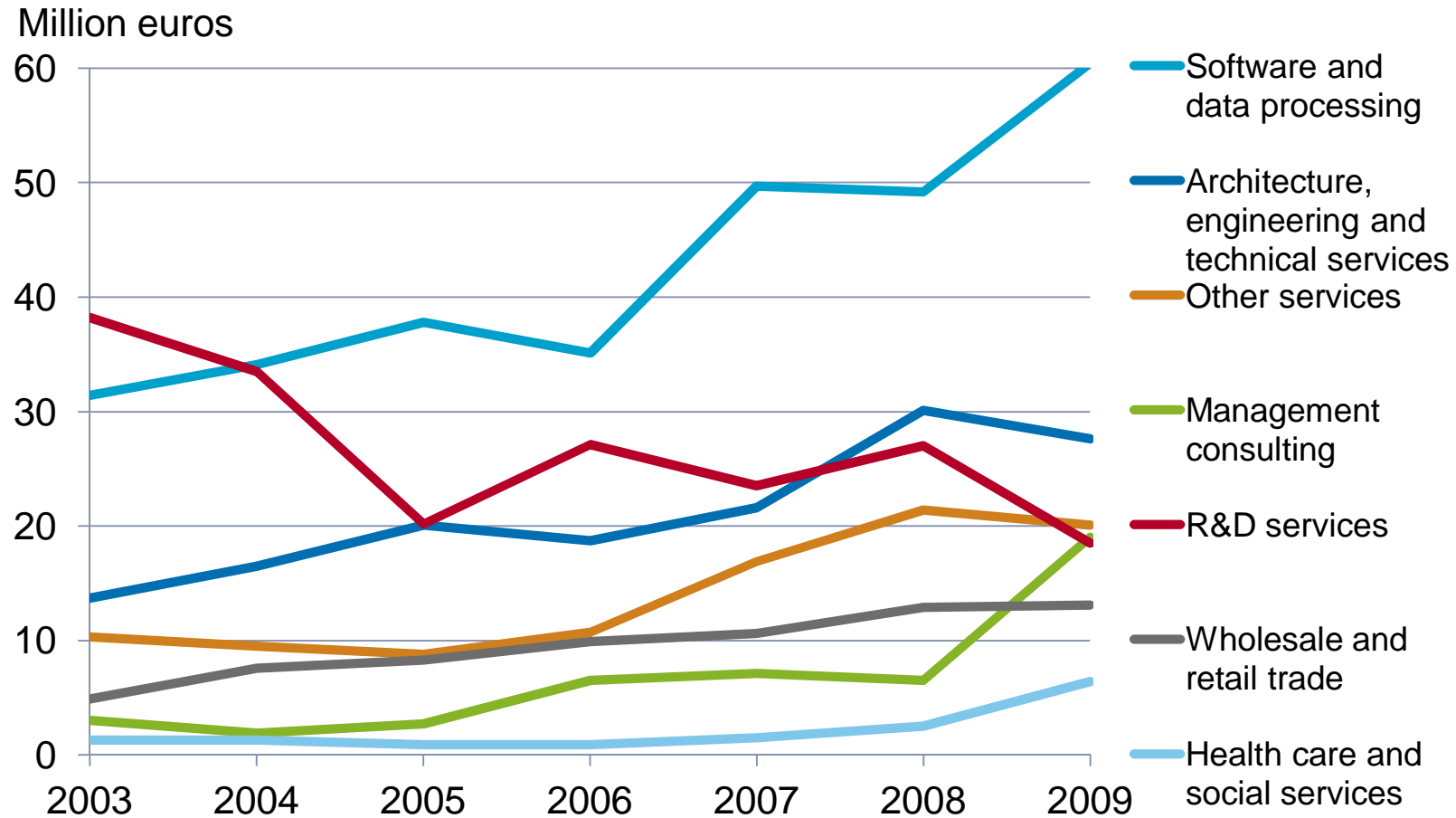
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# Tekes R&D funding for services



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# Keep in touch!

Information about Finnish innovation environment, Tekes's activities interesting publications and research and development projects

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