



European
Commission



Joint Research Centre

the European Commission's
in-house science service

7 ways to boost digital innovation and entrepreneurship in Europe

Key messages from the **European innovation policies** for the **digital shift** project

JRC – Digital Economy Unit

Compiled by Daniel Nepelski

EURIPIDIS

European Innovation Policies for the Digital Shift

*How does digital innovation & entrepreneurship work?
... and when it does not work well enough, why?*

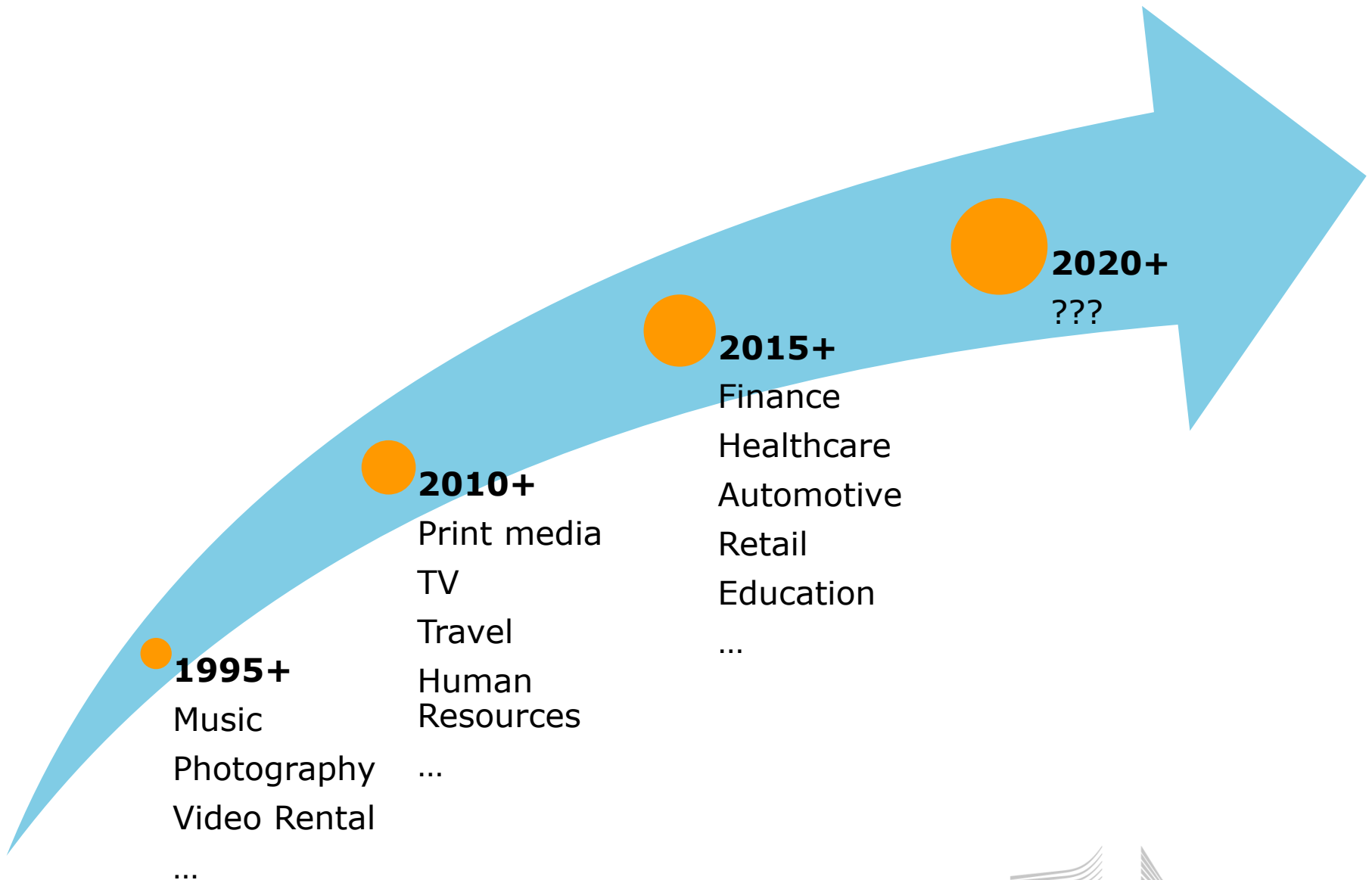
What is the digital innovation & entrepreneurship performance in the EU?

What should policy makers do to make digital innovation & entrepreneurship in the EU work better?

Digital Innovation & Entrepreneurship

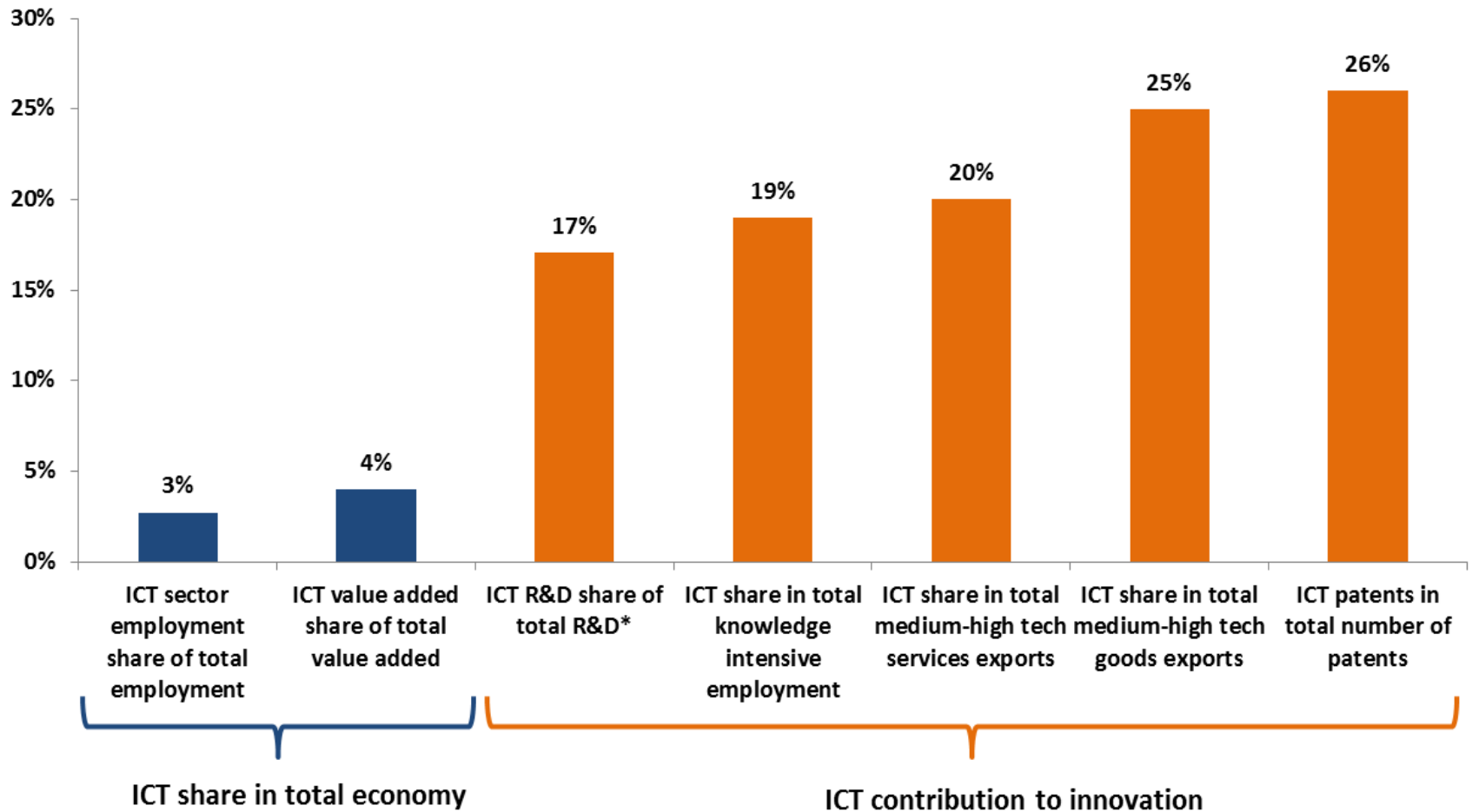
- **Transfer "the best research ideas" to markets**
- **Within and outside the ICT economic sector**

Digital disruption

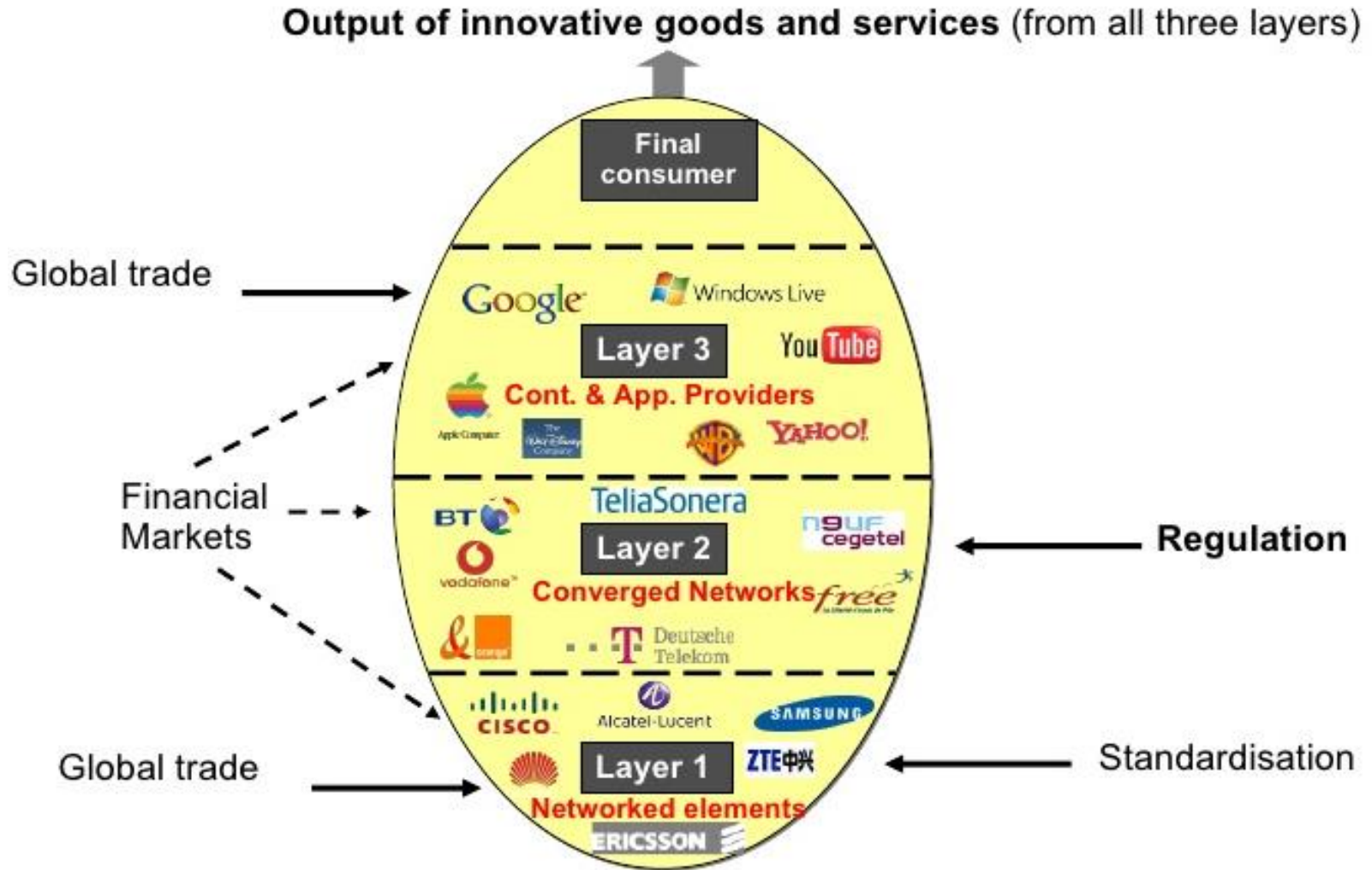


Digital technologies - the core of innovation

ICT contribution to innovation

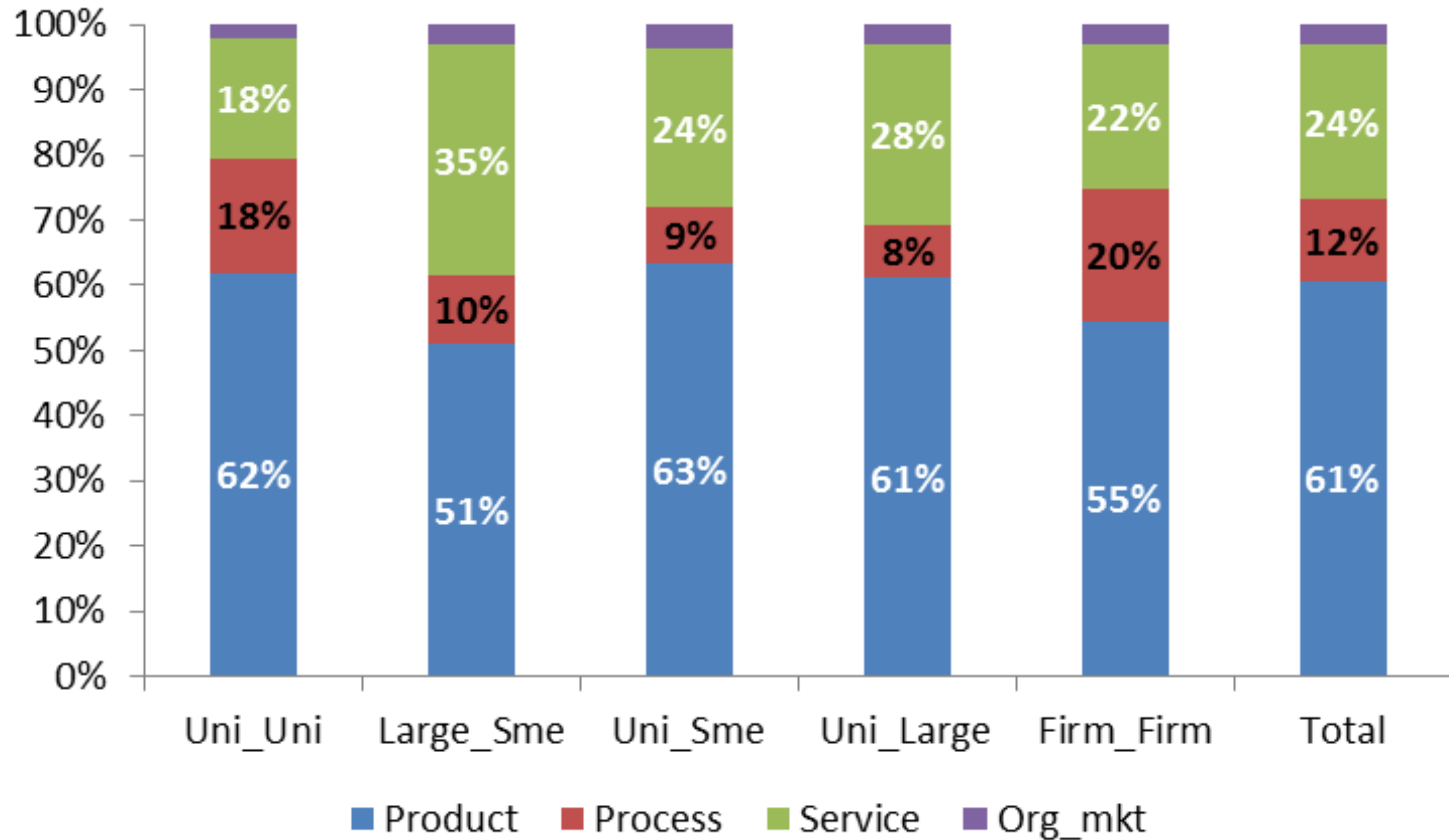


Digital innovation and entrepreneurship ecosystem



Mutual interdependencies

Sources of digital innovations in EU-funded research projects



High-tech entrepreneurship ≠ entrepreneurship

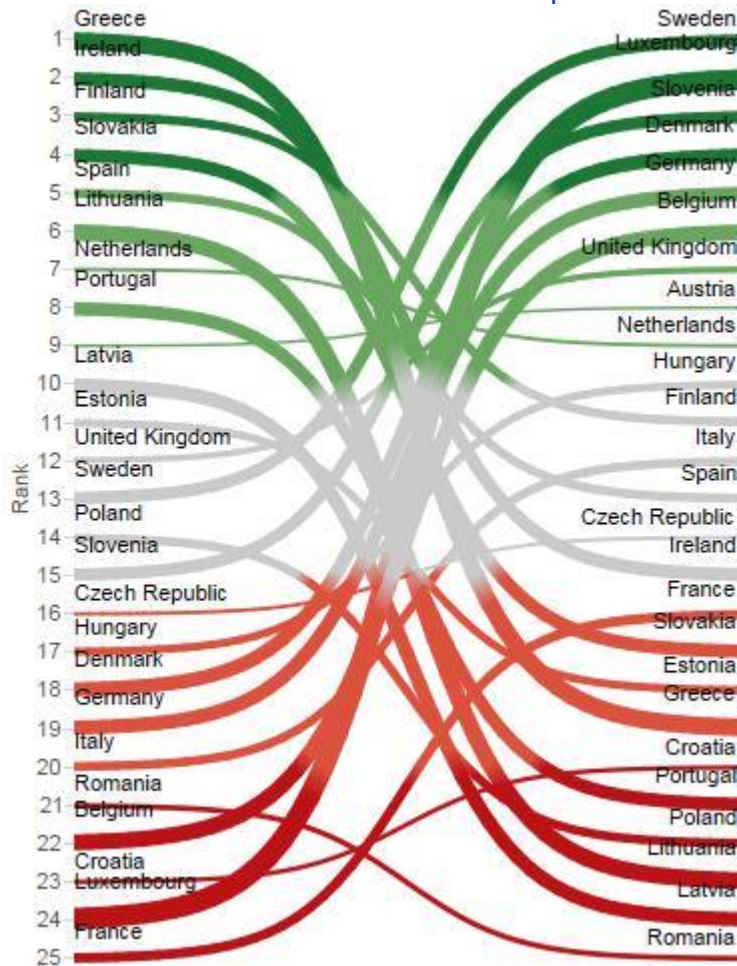
% of entrepreneurs in total population

% of high-tech entrepreneurs in total population of entrepreneurs

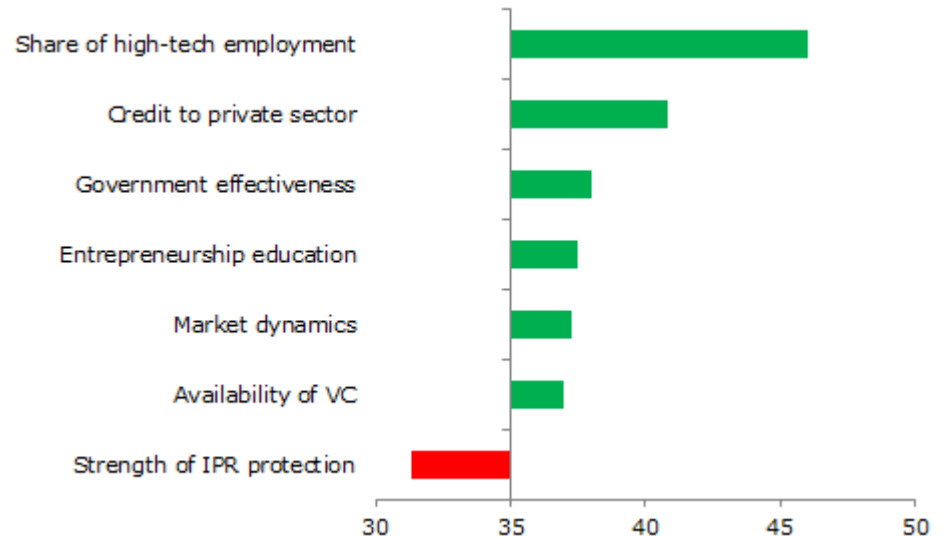
The confusion between SMEs, newly created firms and Entrepreneurship policies

"Policy references to entrepreneurship (a)re typically equated with SMEs in general or even numbers of self-employed. Neither of which fully captures the totality and complexity of entrepreneurship." OECD, 2011

But the EU perspective, which does integrate entrepreneurship in SME policies, is reflected in the EUROSTAT data gathering work



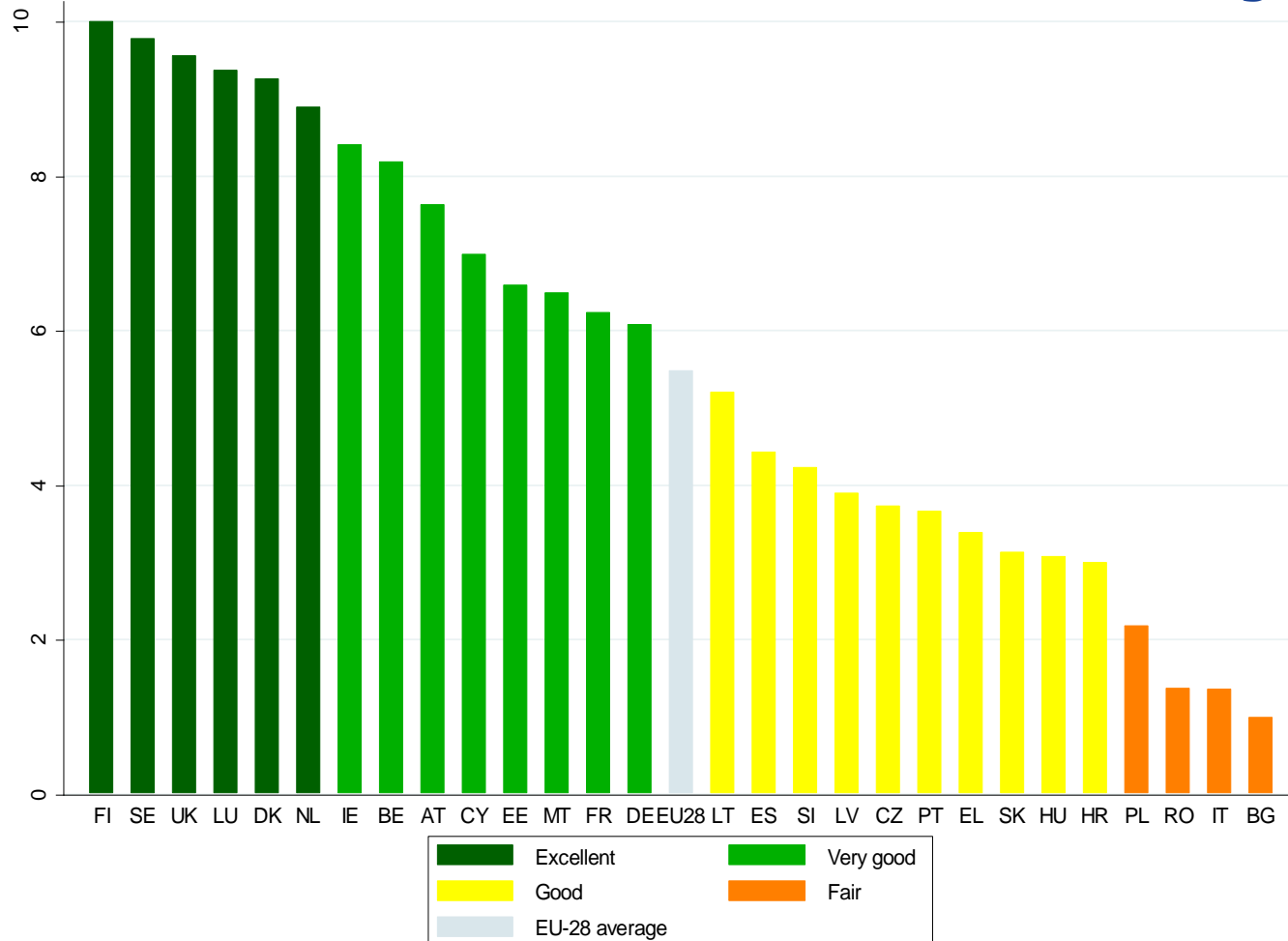
What drives high-tech firm creation?



7 Bogdanowicz, M. (2015). Digital Entrepreneurship Barriers and Drivers. European Union: Publications Office of the European Union - EUR 27679 EN
 Van Roy, V., & Nepelski, D. (2016). Determinants of high-tech entrepreneurship Scientific and Technical Research Reports: EC JRC

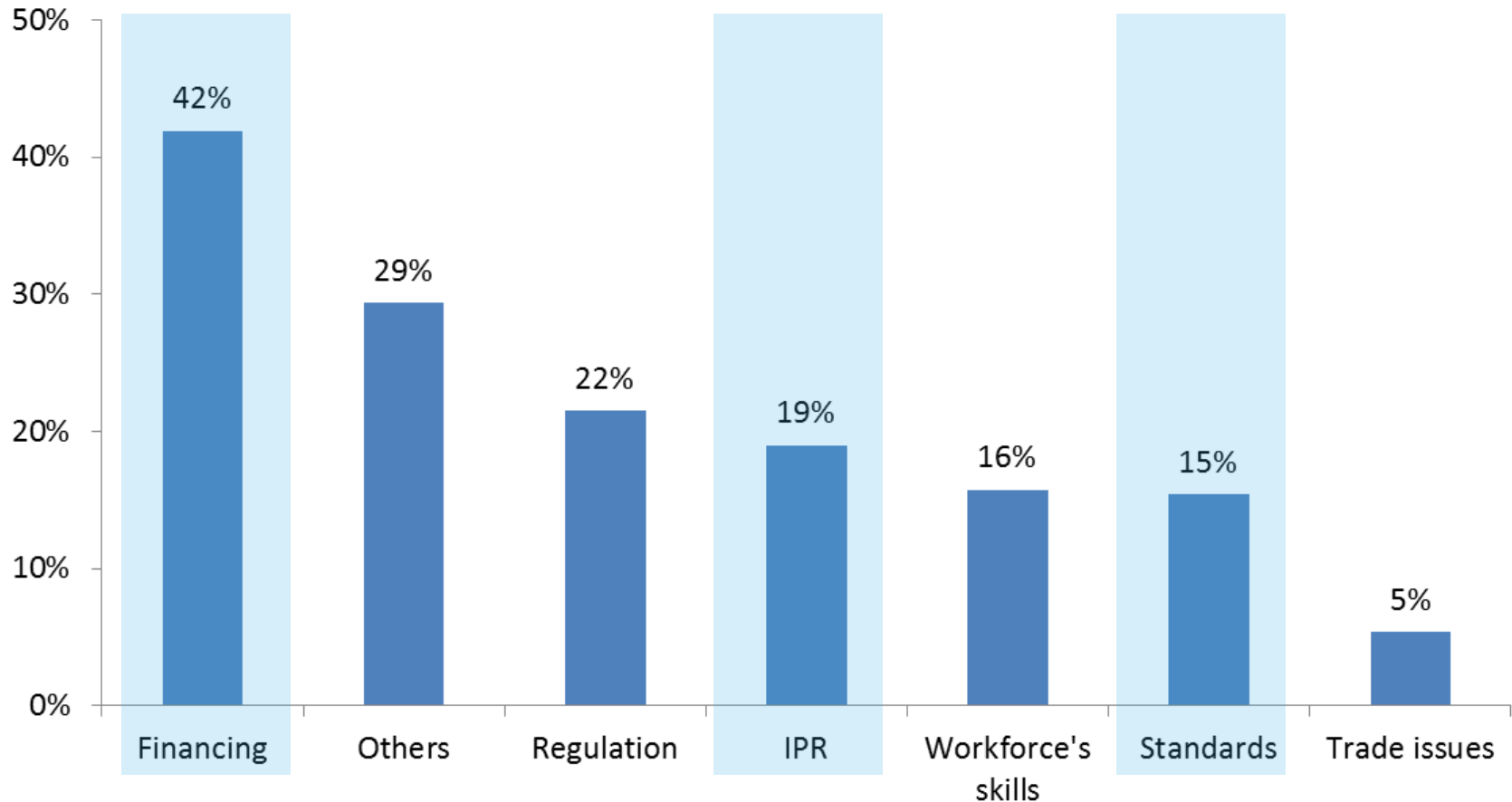
Strong divergence in framework conditions for firm growth in Europe

EU benchmark on framework conditions for firm growth

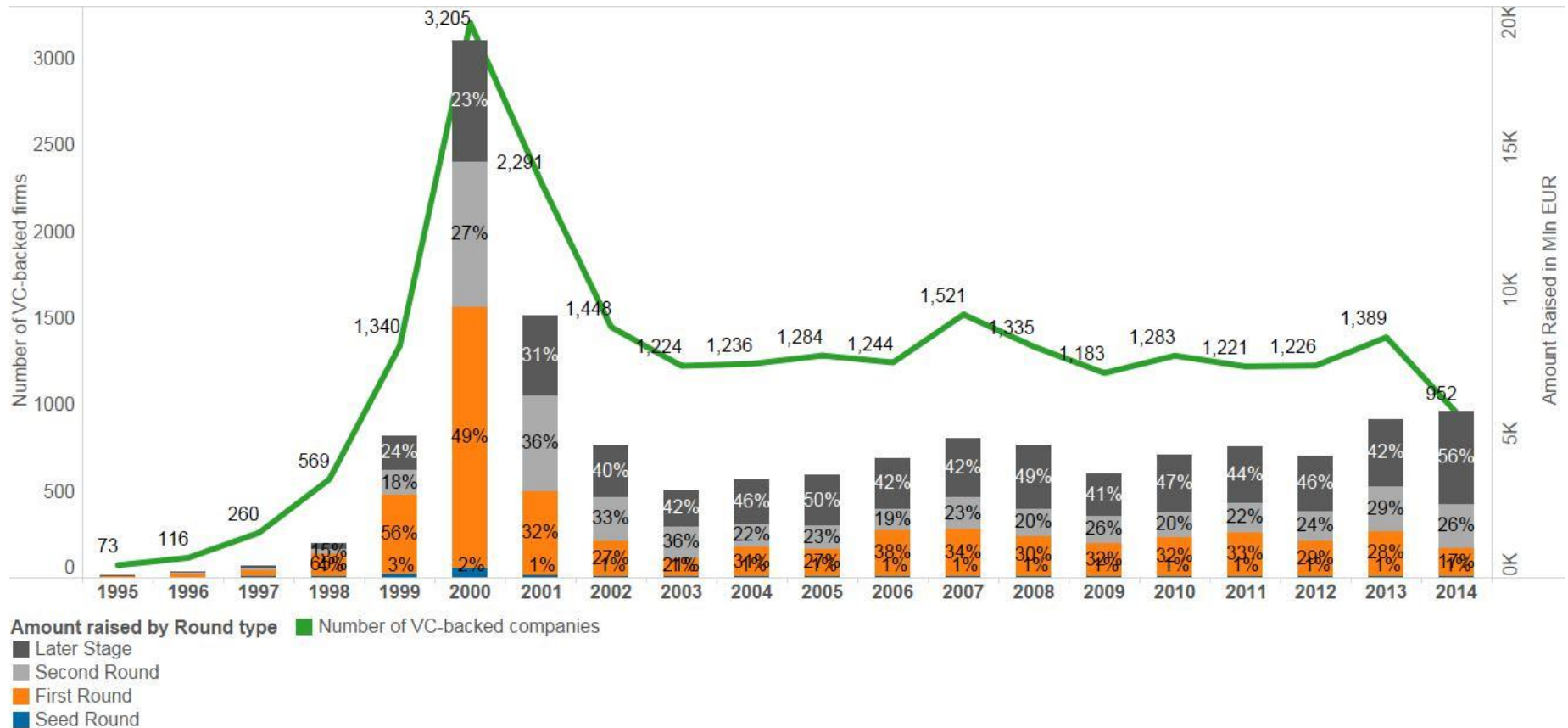


Framework conditions & the role of government matter

Bottlenecks to innovation exploitation

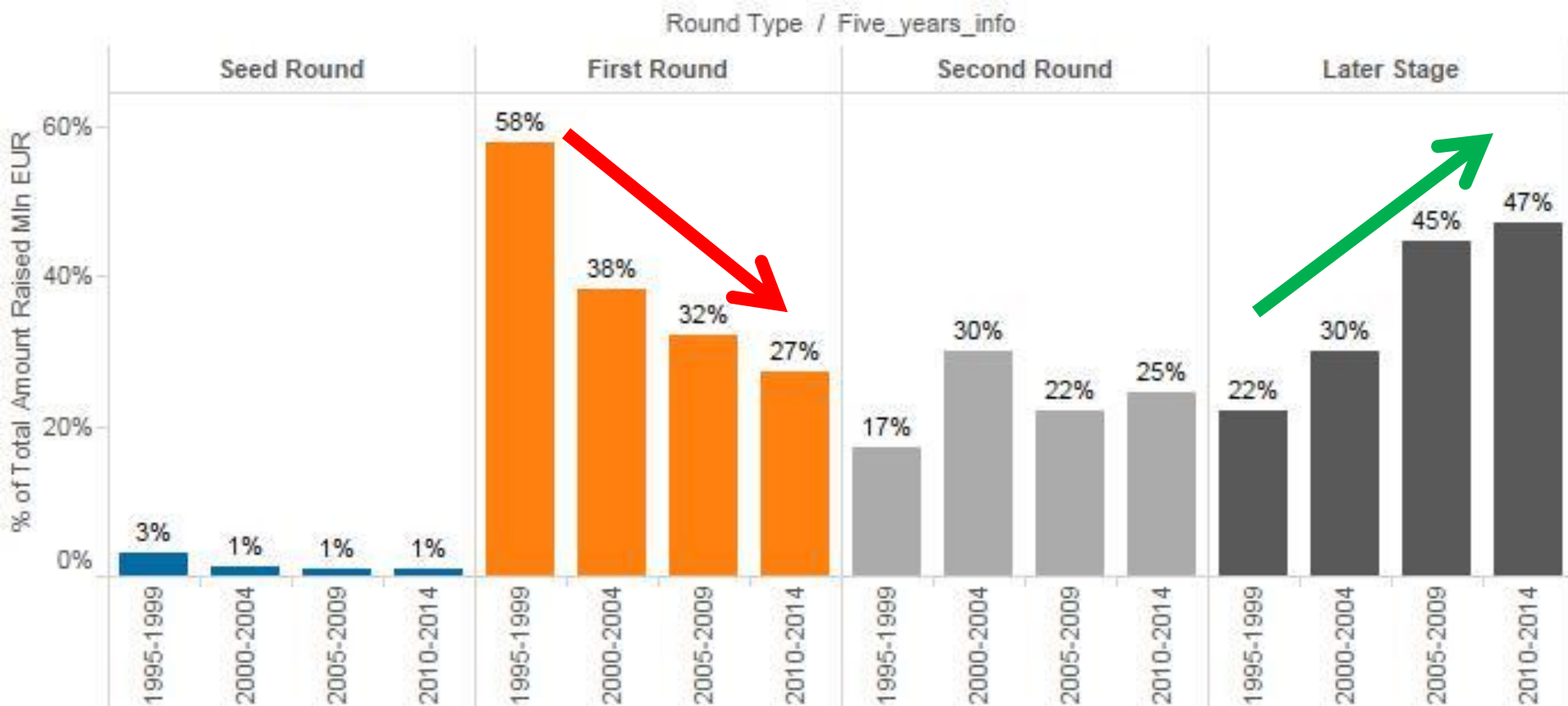


VC funding in Europe



The golden age for VC activity in Europe took place during the dot.com hype. In 2000, over 3,200 companies received 19 billion Euro from VC funds. After the dot.com burst, VC activity in Europe considerably decreased and has never come close to the levels of that period. In 2014, fewer than 1,000 European companies received 5.8 billion Euro from VC funds.

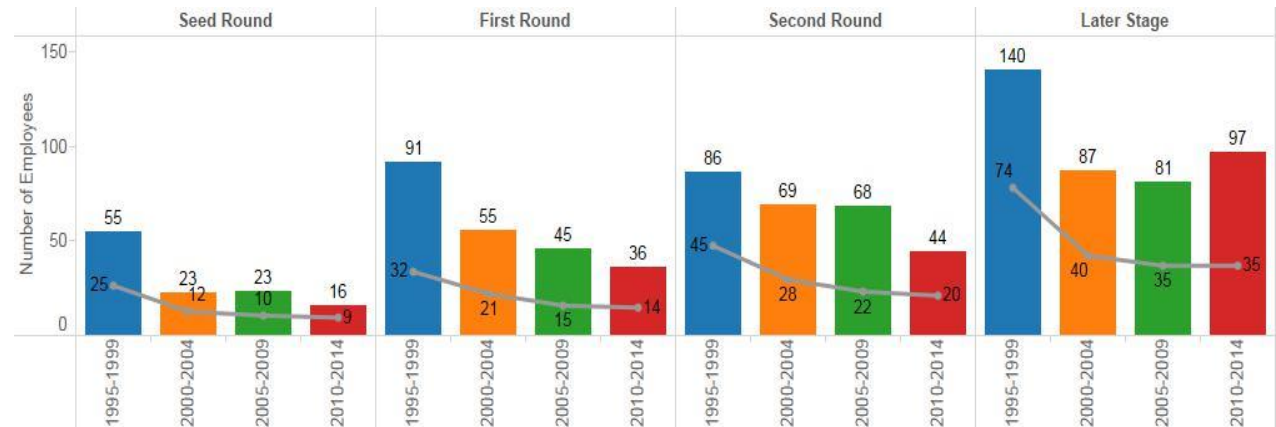
VC funds increasingly target mature companies



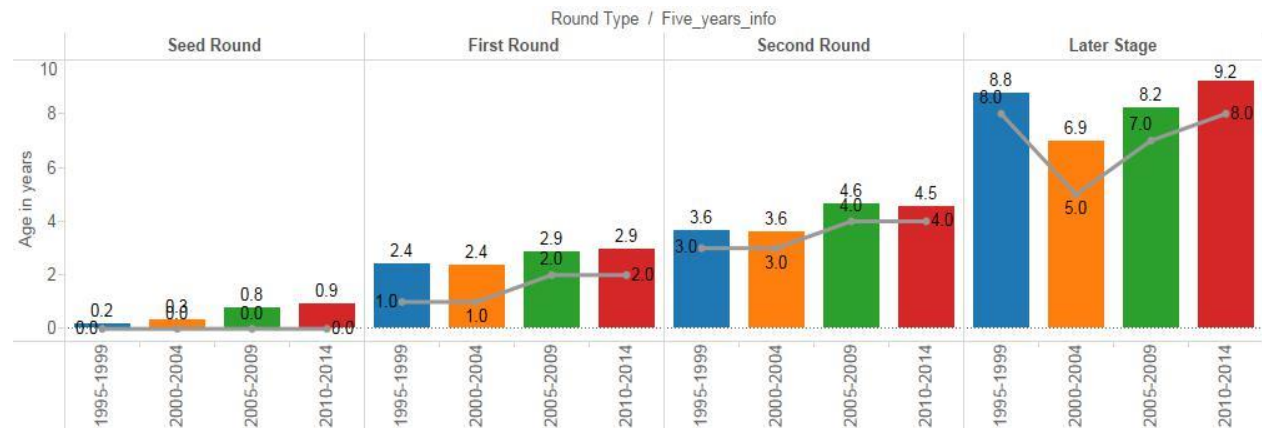
VC funds have also moved away from seed to the later stages of funding. Moreover, the median amount raised by VC-backed companies in Europe dropped or remained constant across all funding rounds except the later stage rounds.

European VC-backed firms get smaller & older

Size of VC-backed firms



Age of VC-backed firms



Average Median

The role of IPR...

- The digital sector strongly relies on IPR
 - Sources of competitive advantage and revenue,
 - Signalling growth potential of start-ups,
 - Facilitating collaboration and technology cross-licensing, e.g. FRAND.
- IPR and technological complexity and cumulativeness of innovation
 - Patent thickets – an ICT phenomenon
 - Quality of IPR protection
- Technology markets and patent assertion entities
 - Market solutions to coordination and value distribution

... and standardization

- The evolution of digital technologies relies on interoperability,
- Interoperability increases the network effects from a greater number of products and services
- Standard Setting Organizations facilitating the process of securing technological interoperability
- FRAND – fair, reasonable and non-discriminatory licencing terms
 - The process is dominated by large players, creating potential obstacles to start-ups and SMEs,
 - Interpretation issues by different jurisdictions
- Other ways of guarantying technical interoperability, e.g. Open Source licencing terms

7 ways to boost digital innovation and entrepreneurship in Europe

1. Target digital innovation and entrepreneurship
2. Embrace disruption and mitigate its negative impacts
3. Address the heterogeneity of digital innovation and entrepreneurship
4. Reinforce collaboration
5. Facilitate scaling-up
6. Create technology-related network effects and smooth exchange of IPR
7. Maintain balance between openness and incentives to innovate

tbc...

**RISES: Research on Innovation, Start-up
Europe and Standardisation
2017-2019**

Thank you !

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