

**Business from technology**

**Innovative Entrepreneurship Workshop, Wednesday 26th October, Dublin**  
**Entrepreneurship and Related Policies in Finland**

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VTT Innovation Policy Studies

## Content



- Notions on entrepreneurship and innovation
- Structural changes of Finnish economy
- Entrepreneurship in innovation system
- Entrepreneurship in recent policy programs
- International entrepreneurship comparisons  
-- Global Entrepreneurship Monitor
- Conclusions

## *Innovative* entrepreneurship

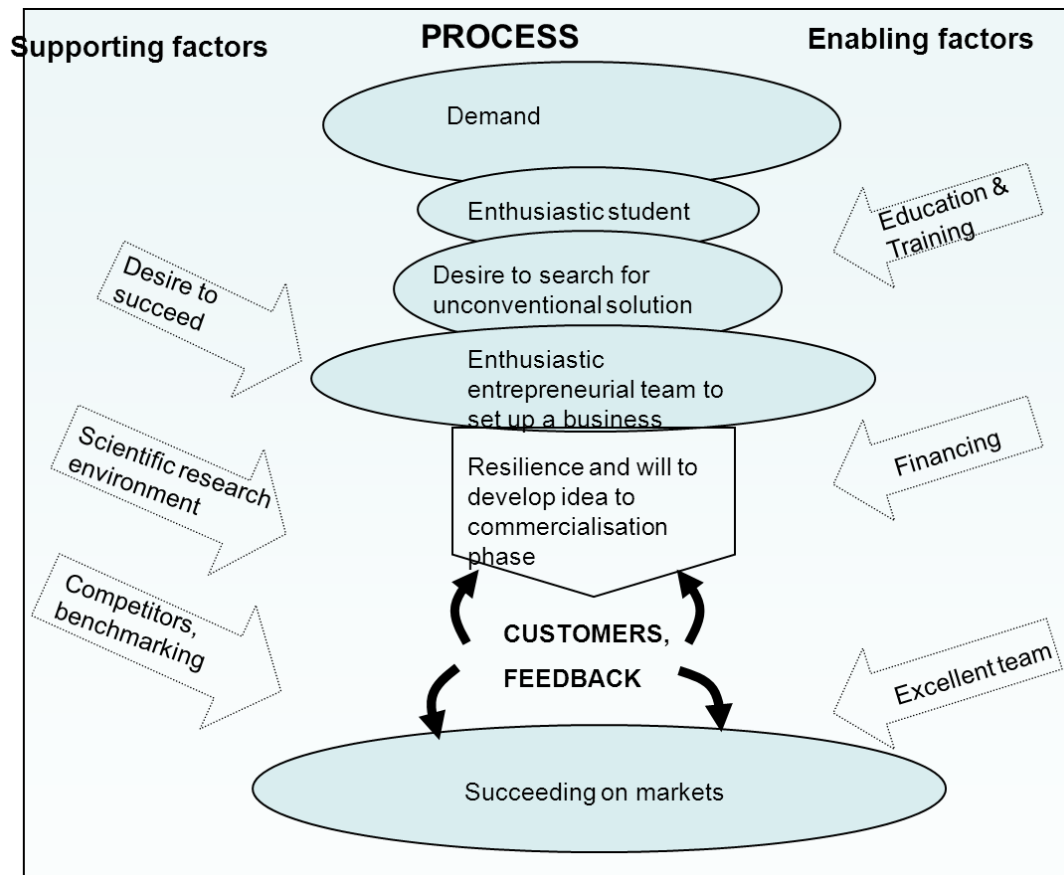
## What is entrepreneurship? A rich hodgepot!

- New entry (Lumpkin & Dess, 1996)
- Creation of a new enterprise (Low & MacMillan, 1988)
- Creation of new organizations (Gartner, 1988)
- Purposeful activity to initiate, maintain and aggrandize a profit-oriented business (Cole, 1949)
- Taking advantage of opportunity by novel combinations of resources in ways which have impact on the market (Schumpeter, 1934/Wiklund, 1998)
- Process by which individuals – either on their own or inside organizations – pursue opportunities without regard to the resources they currently control (Stevenson & Jarillo, 1990)
- The process of creating something different with value by devoting the necessary time and effort; assuming the accompanying financial, psychological, and social risks; and receiving the resulting rewards of monetary and personal satisfaction (Hisrich & Peters, 1989)
- [the process by which] opportunities to create future goods and services are discovered, evaluated, and exploited (Venkataraman, 1997)

## Different types of startups

1. Lifestyle startups: known customer, known product, paid for passion
2. Small business startups: known customer, known product, income for the family, profitable and steady
3. Scalable startup: searches for business model; an unknown customer, unknown product features; grows BIGGER
  - Usually needs risk capital
4. Buyable startup: same as 3, but solves something interesting for a larger company, like gaming apps (e.g. Rovio's Angry Birds)
5. Social Entrepreneurship startup: solve social problems, social innovation, new strategies

## Example from Finland

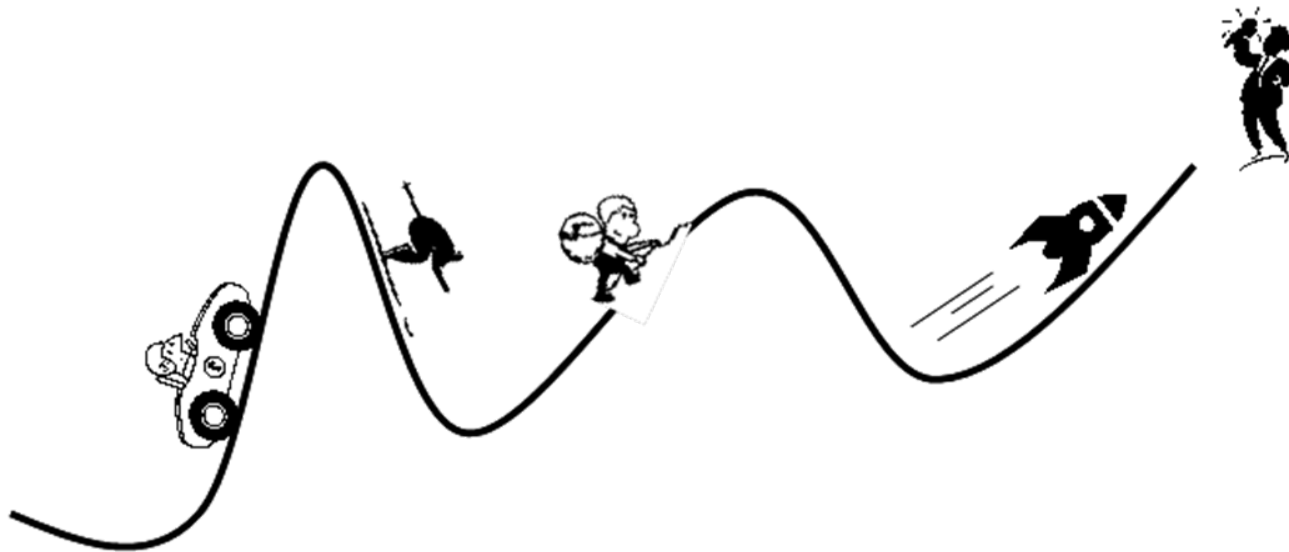


Innovative startup in medical devices

Established in 1983 as university spin-off (idea originated from dissertation in the department of physics).

Picture drawn by CEO of the company whose father and grandfather have both been entrepreneurs, having a small shop at the countryside.

## Another Finnish example



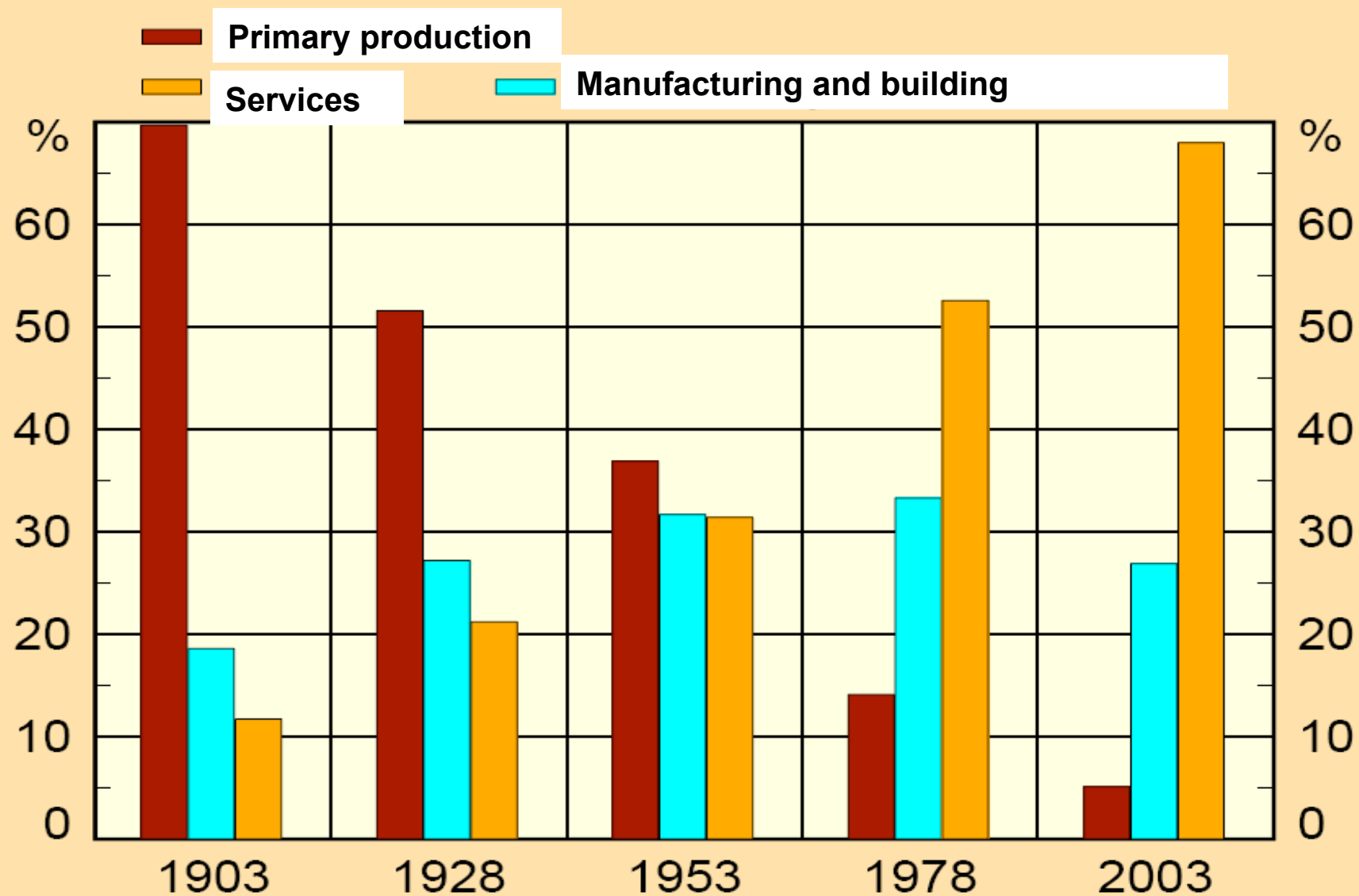
**"Se on kuin vuoristorataa, välillä mennään pieniä askeleita ylöspäin ja tullaan vauhdilla alas kunnes vihdoon jossain vaiheessa saavutetaan menestystä", kuvaa eräs haastatelluista yrityksensä innovaatioprosessia.**

**"It is like a roller-coaster, sometimes we go up with small steps and come down with speed, untill at some point of time we reach success", interviewee at a young innovative nanotechnology company.**

## Structural changes of Finnish economy

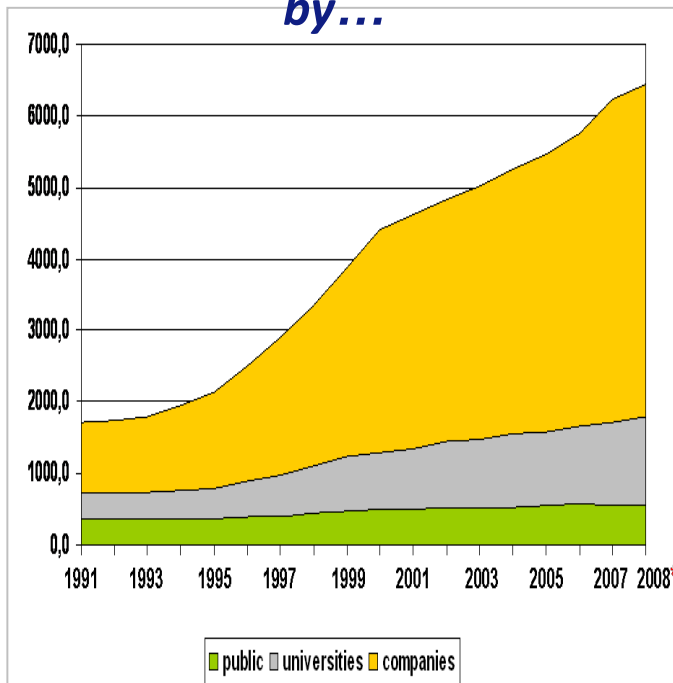


## Share of labour force by sectors



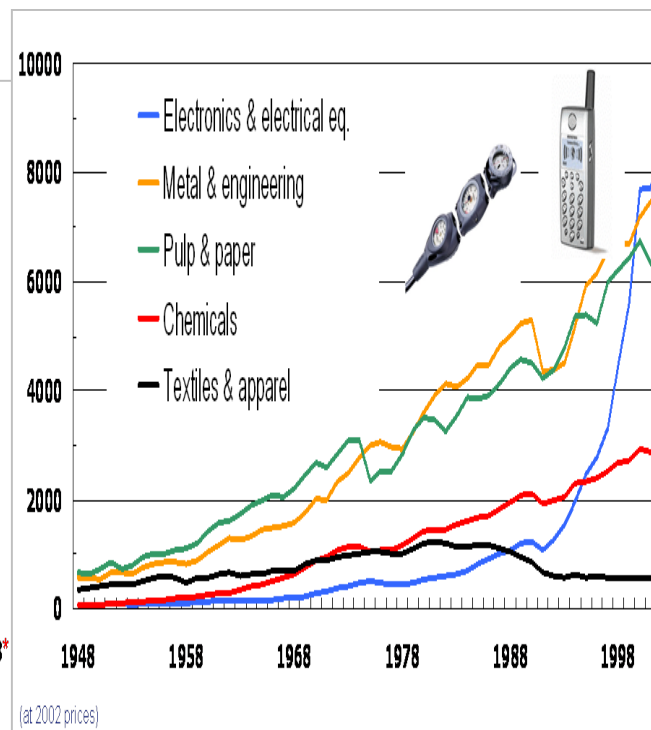
In 1991-93 major economic depression, followed by...

*... a strong policy response with essential private and public R&D investments, followed by...*

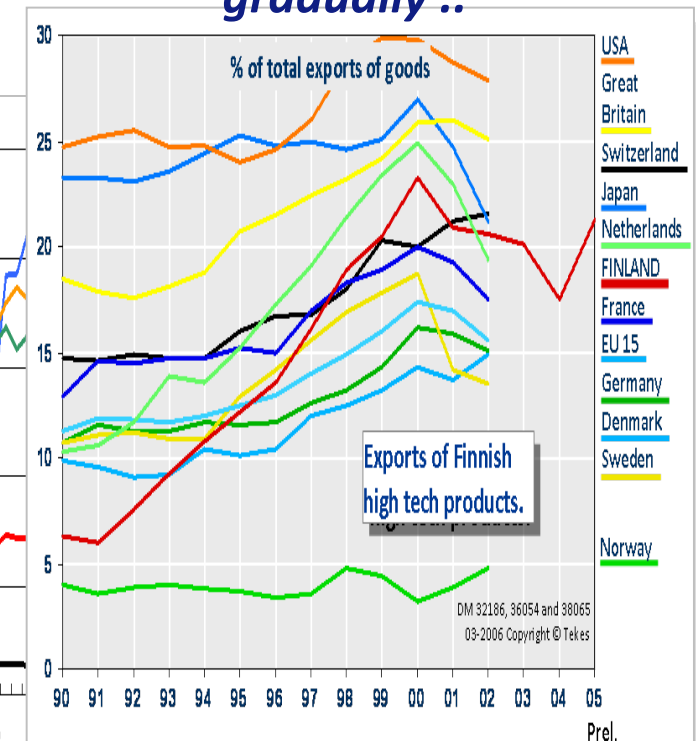


Source: Statistics Finland

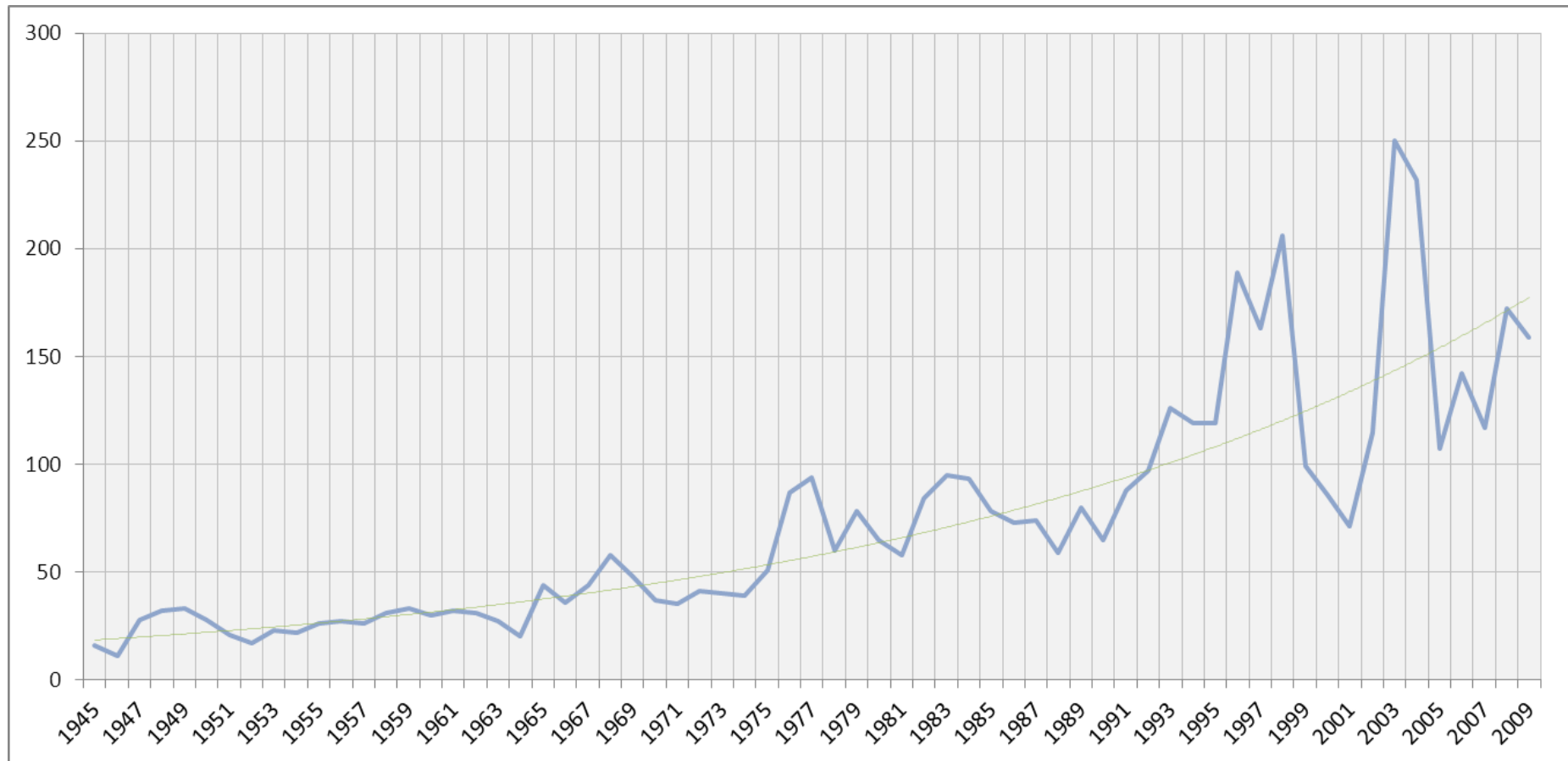
*...rapid structural change of the economy in 1990s and...*



*....by increase in high-tech exports, and gradually ..*



## ...by success of the innovation system in spawning innovations



Source: VTT SFINNO™ Database

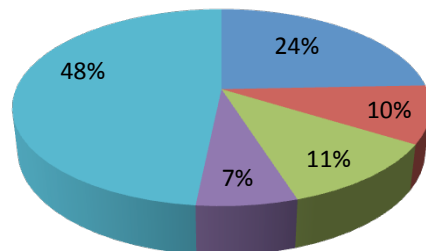
Note: Excluding innovations in the metal industries for 2008 and 2009, in the data before 2008, these amount to 5,4% of innovations in SFINNO

Trendline fit:  $R^2 = 0,8495$

## Structural change in Finnish economy: an *innovative entrepreneurship* perspective

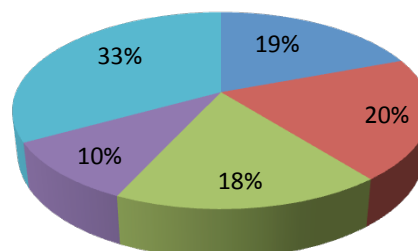
### 1985 - 1990

■ 0-2 yrs ■ 3-5 yrs ■ 6-10 yrs ■ 11-15 yrs ■ > 15yrs



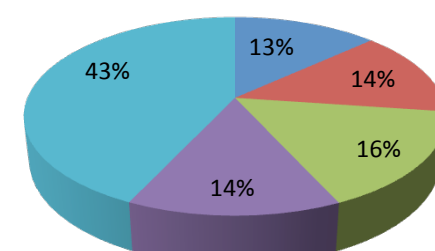
### 1991 - 1999

■ 0-2 yrs ■ 3-5 yrs ■ 6-10 yrs ■ 11-15 yrs ■ > 15yrs



### 2000 - 2007

■ 0-2 yrs ■ 3-5 yrs ■ 6-10 yrs ■ 11-15 yrs ■ > 15yrs



Source: VTT SFINNO™ Database

## ...and by success of Finland in performance comparisons of innovation systems

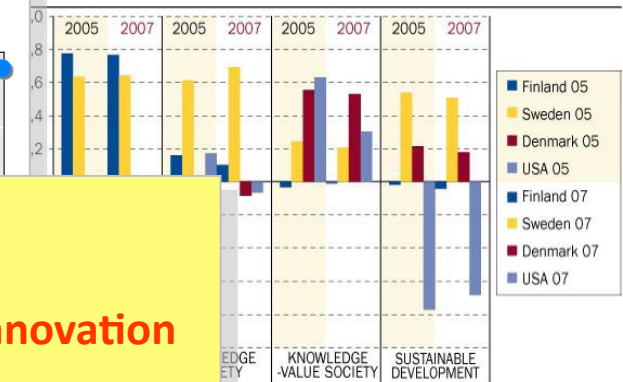
Comparisons: Total Ranking of Competitiveness 2003-2005

	WEF Growth competitiveness			WEF Business competitiveness		
	2005	2004	2003	2005	2004	2003
Finland	1	1	1	2	2	2
USA	2	2	2	1	1	1
Sweden	3	3	3	12	12	12
Denmark	4	5	4	4	4	4
Taiwan	5	4	5	14	14	14
Singapore	6	7	6	5	5	5
Iceland	7	10	8			
Switzerland	8	8	7			
Norway	9	6	9			
Australia	10	14	10			
Netherlands	11	12	11			
Japan	12	9	11			
Great Britain	13	11	13			
Canada	14	15	14			

Growth and present competitiveness

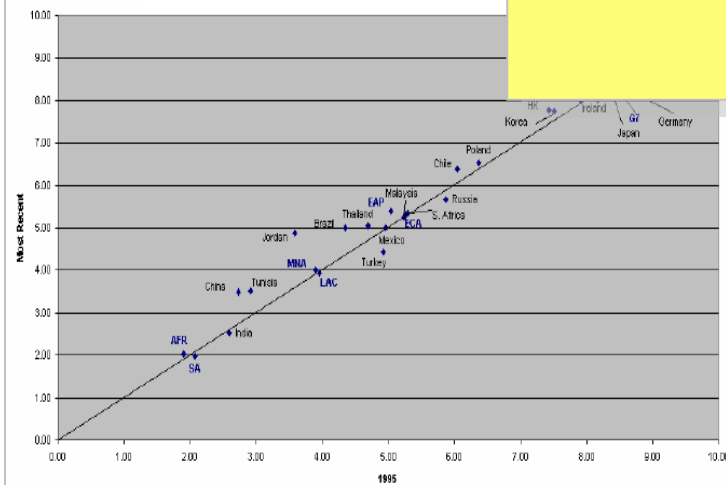


TekBaro – Indicator-based Comparison

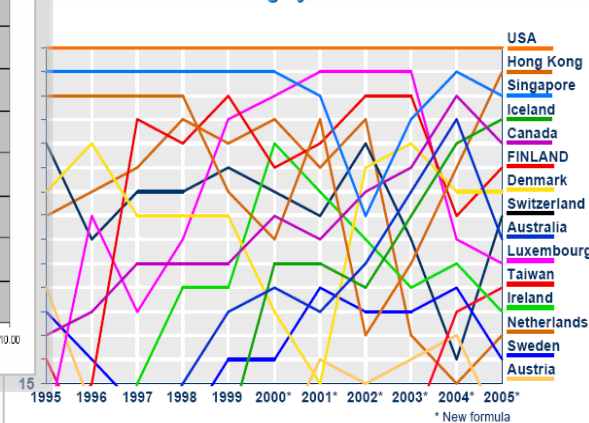
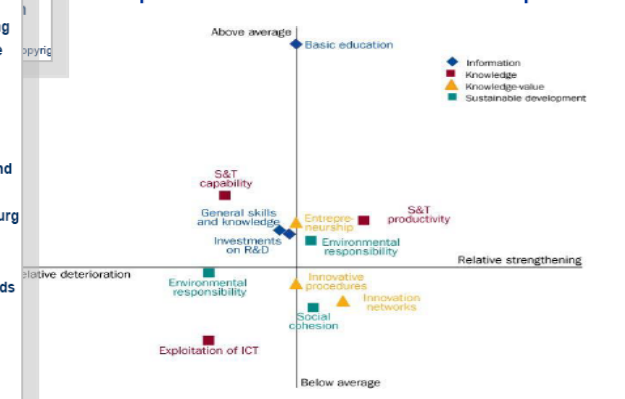


...which raises the question  
how to maintain and further develop innovation  
system?

Knowledge economy index by World



Ranking by IMD

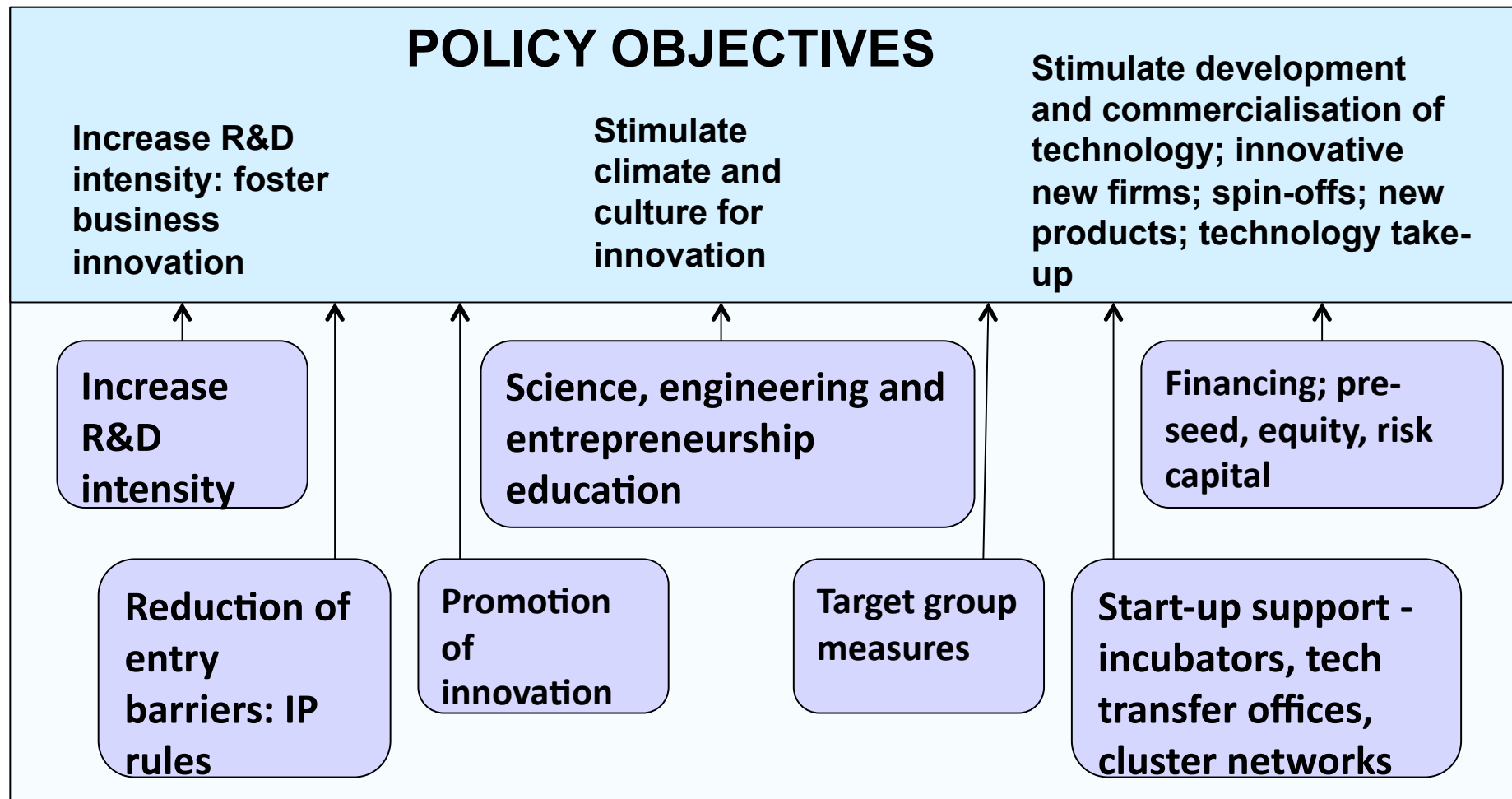
TekBaro  
Strengths and Weaknesses of Finland in  
Comparison to Reference Group

## Entrepreneurship and public policy

## Goals of public policy

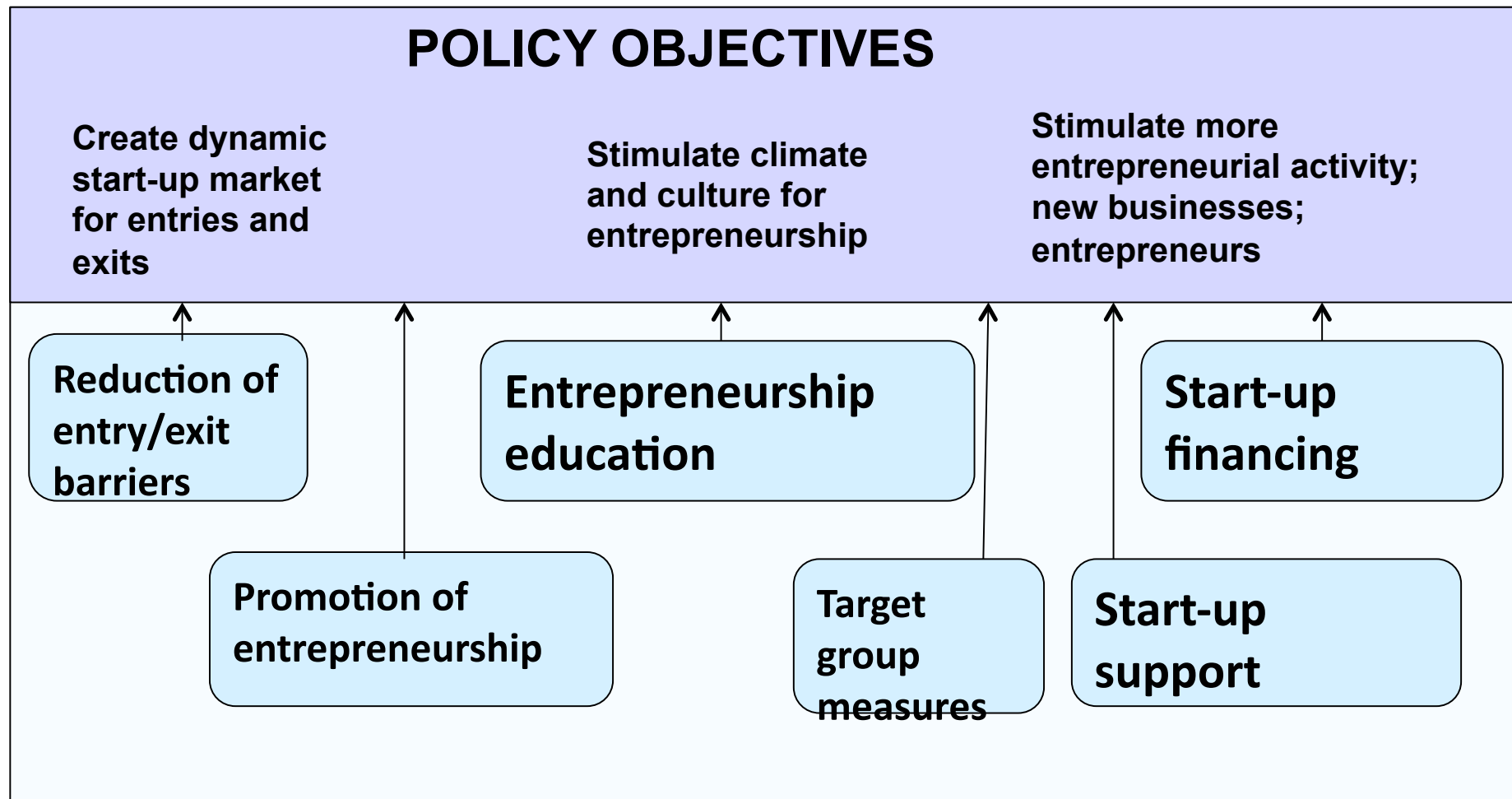
- Increasing opportunities for entrepreneurs, and creating an environment that fosters entrepreneurship
- Encouraging establishment of supporting institutions (e.g. Bayh-Dole Act in U.S.; public organizations; tax-laws, etc.)
- Providing financial + non-financial assistance for entrepreneurs  
(Gnyawali & Fogel, 1994 p.59)
- Increase the level of resources available in the entrepreneurs' environment (knowledge, capital, labor,.....) (Woolley & Rottner, 2008)

## Innovation policy areas





## Entrepreneurship policy areas

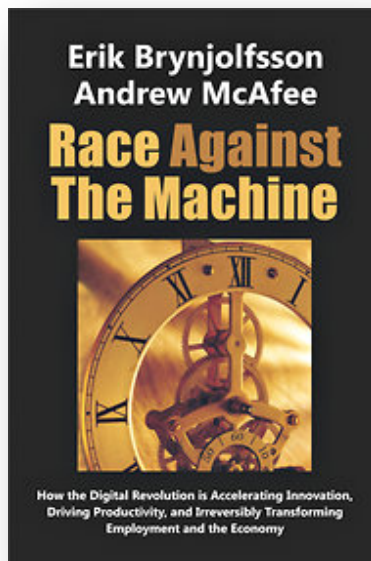


## Pulling both oars together

David Audretsch' hypothesis based e.g. on impacts of Bayh-Dole Act: traditionally investing in new plants and equipment resulted in growth and jobs [see next slide], but current investments in knowledge do not automatically lead to results. Instead knowledge investments have to go through "*the knowledge filter*" to become valuable and bring returns, i.e. knowledge investments' outcomes need to be commercialized. The missing link between knowledge investments and returns is entrepreneurship, which serves as a mechanism or "a conduit" by which knowledge investments bring the expected fruits (Audretsch 2008)

...Indeed, it is one thing for technological opportunities to exist, but an entirely different matter for them to be discovered, exploited and commercialized (Acs and Varga, 2002)

## A quick note on productivity

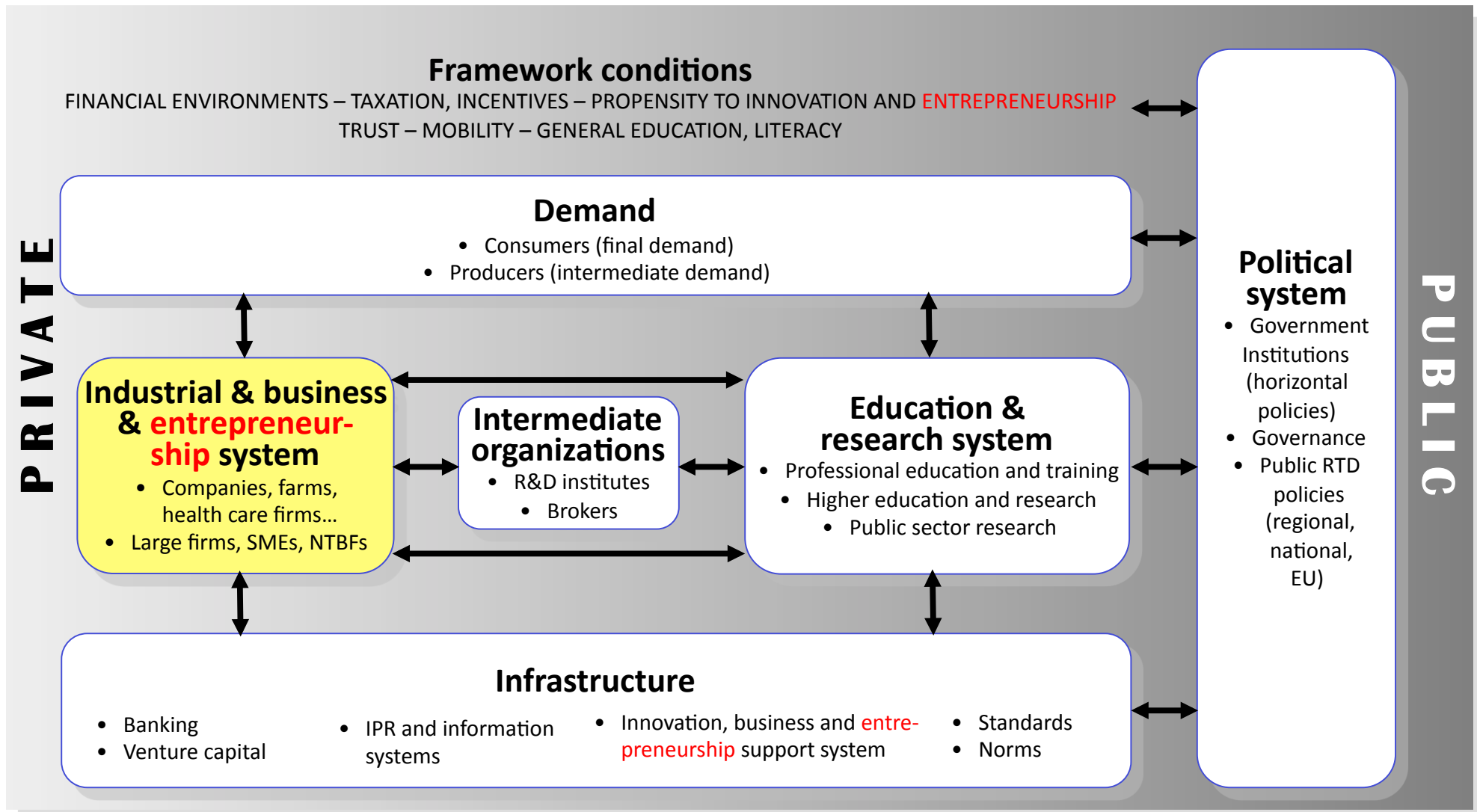


**“There’s never been a better time to be a talented entrepreneur or a worse time to be a worker with no special skills.**

During the last recession, the authors write, one in 12 people in sales lost their jobs, for example. And the downturn prompted many businesses to look harder at substituting technology for people, if possible. Since the end of the recession in June 2009, they note, corporate spending on equipment and software has increased by 26 percent, while payrolls have been flat.

Corporations are doing fine. The companies in the Standard & Poor’s 500-stock index are expected to report record profits this year, a total \$927 billion, estimates FactSet Research.

## Entrepreneurship in the innovation system



Source: Adapted from  
Boekholt et al. 2001

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## Critique on the Finnish NIS

- Tax policy: make the taxation treatment of equity income more favourable to entrepreneurial risk-taking and creation of potential HGEFs.
- The Ministry of Employment and the Economy and the Ministry of Finance should publicly assume joint operational responsibility for policies that aim at promoting entrepreneurship and knowledge-based HGEFs. ...both the governance and cost-effectiveness of the support system could be improved by reducing its complexity.
- The Finnish innovation system suffers from a mismatch between 1) the growing demand by Finnish HGEFs for global insight, foreign expertise, international networks, and 2) an insufficient supply of inward foreign spillovers due to the scarcity of world class human capital, foreign R&D and cross-border venture capital within Finland's borders.
- Small number of active VC funds, sized above €50 million + alternative supply of angel investment is limited.

But, reform is on the way...

## Cabinet of PM Kiviniemi (2008-10): Policy programme for employment, entrepreneurship and worklife e.g.

- Support measures undertaken in the individual administrative sectors to encourage entrepreneurship and to remove the impediments to the growth of firms and companies...
- entrepreneur training will be promoted, tax incentives increased and the social security of entrepreneurs improved...
- additionally, inputs will be made to promote management and business skills in support of innovations
- ...and similar focus areas also in the agenda of current Cabinet of PM Katainen



## Program of PM Katainen's Cabinet (22.6. 2011): Strengthening entrepreneurship, e.g.

- Government will target generation of new enterprises and promotion of growth and internationalisation of the existing businesses... The **corporate tax** rate will be **lowered**.
- Efforts will be made to increase interest in and preparedness for entrepreneurship by means of **training at various levels of education**. Entrepreneur training programmes will be intensified in order to find **successors for businesses**. To foster growth entrepreneurship, the **business skills of SMEs** will be enhanced... Entrepreneur training will be developed all the way up to business training at a high international level..
- The employment and entrepreneurship of **educated young people** will be promoted with the help of **business incubator** and **accelerator** activities
- The possibility of interrupting business activity will be clarified f.ex. by alleviating the requirements to sell the equipment as a condition for eligibility to unemployment benefits after a relevant working group has made its proposals
- Problems related to **debt settlement situations** of entrepreneurs will be looked into. The position of **self-employed** persons and **micro enterprises** will be improved... The **administrative burden** on entrepreneurs will be alleviated, and the processes associated with payments and taxes will be intensified. Public and publicly-funded business services and transactions between businesses and the authorities will be brought together and operate on a one-stop-shop principle.

## And moreover...

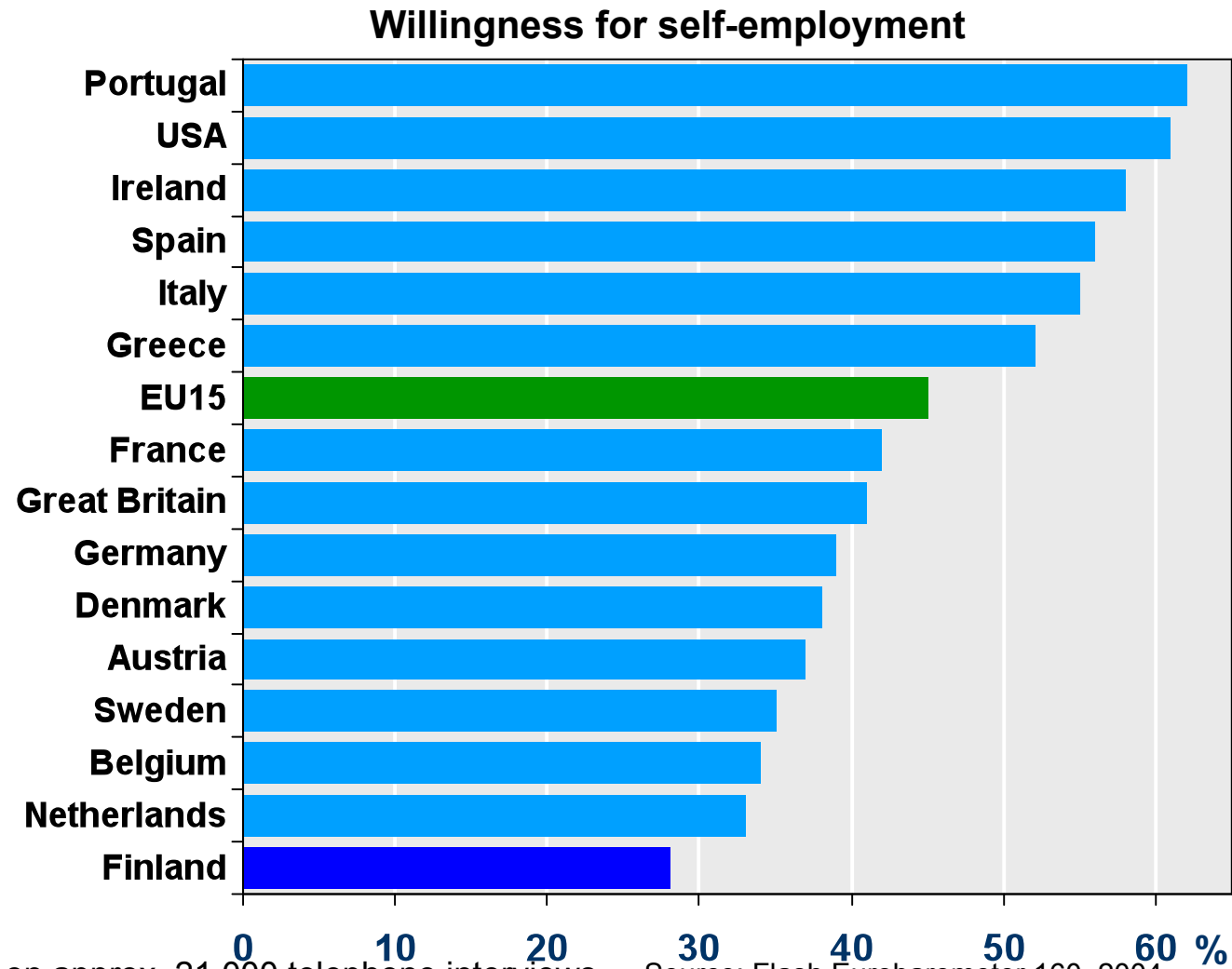
The reform of the Finnish university sector and the creation of Aalto University present an important and timely opportunity to create world class infrastructure for entrepreneurial education, training and research accessible to both Finnish and collaborative foreign interests involved in growth oriented and new knowledge based enterprise. (Evaluation of the Finnish National Innovation System – Full Report [www.evaluation.fi](http://www.evaluation.fi))





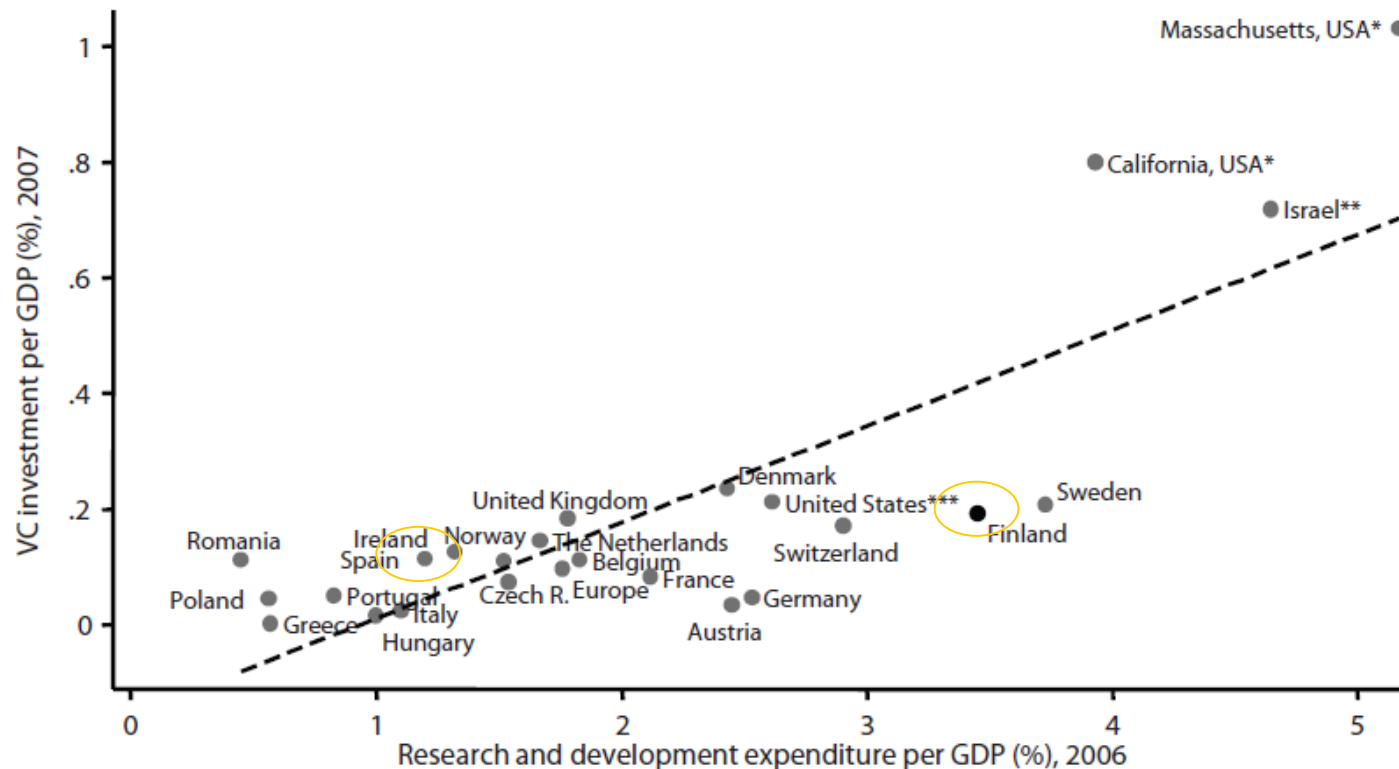
## International entrepreneurship comparisons

## Inclination for entrepreneurship



The survey is based on approx. 21 000 telephone interviews Source: Flash Eurobarometer 160, 2004

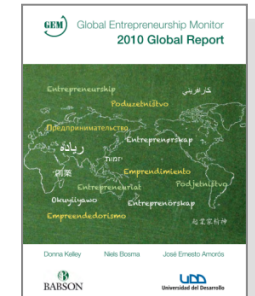
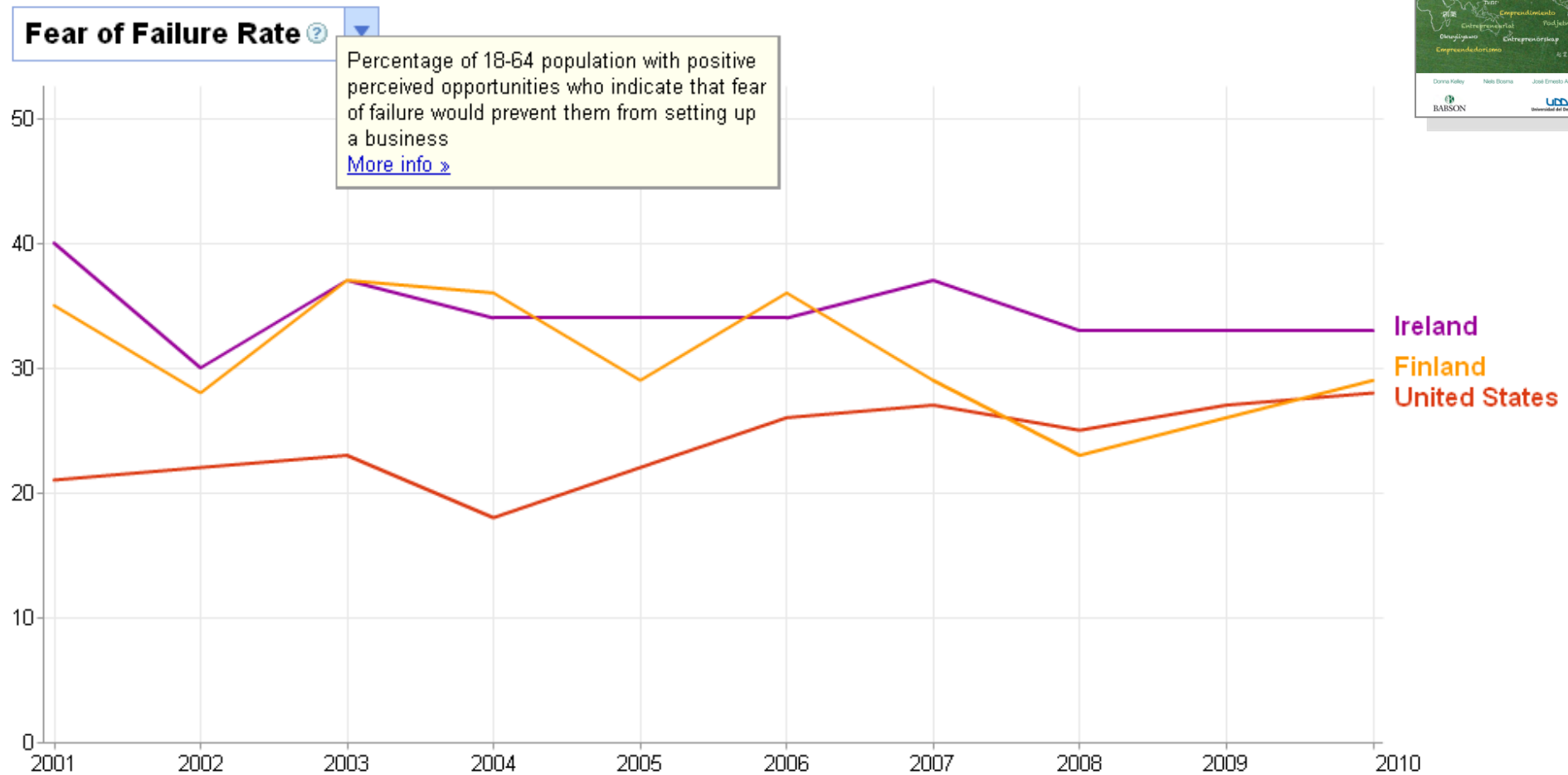
Figure 5.1. National VC investments versus R&D investments: an international comparison



Notes: Sources are EVCA, PEREP Analytics, and OECD (for R&D). \* NVCA/PwC MoneyTree and Bureau of Economic Analysis (for R&D). \*\* IVC Research Center. \*\*\* NVCA/PwC MoneyTree. R&D refers to gross domestic expenditure on R&D. VC investment has been defined according to the country of destination approach in 2007 (Italy 2005; California, Massachusetts, Switzerland 2004).

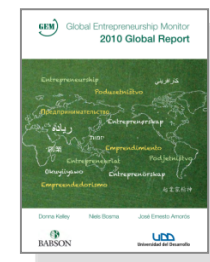
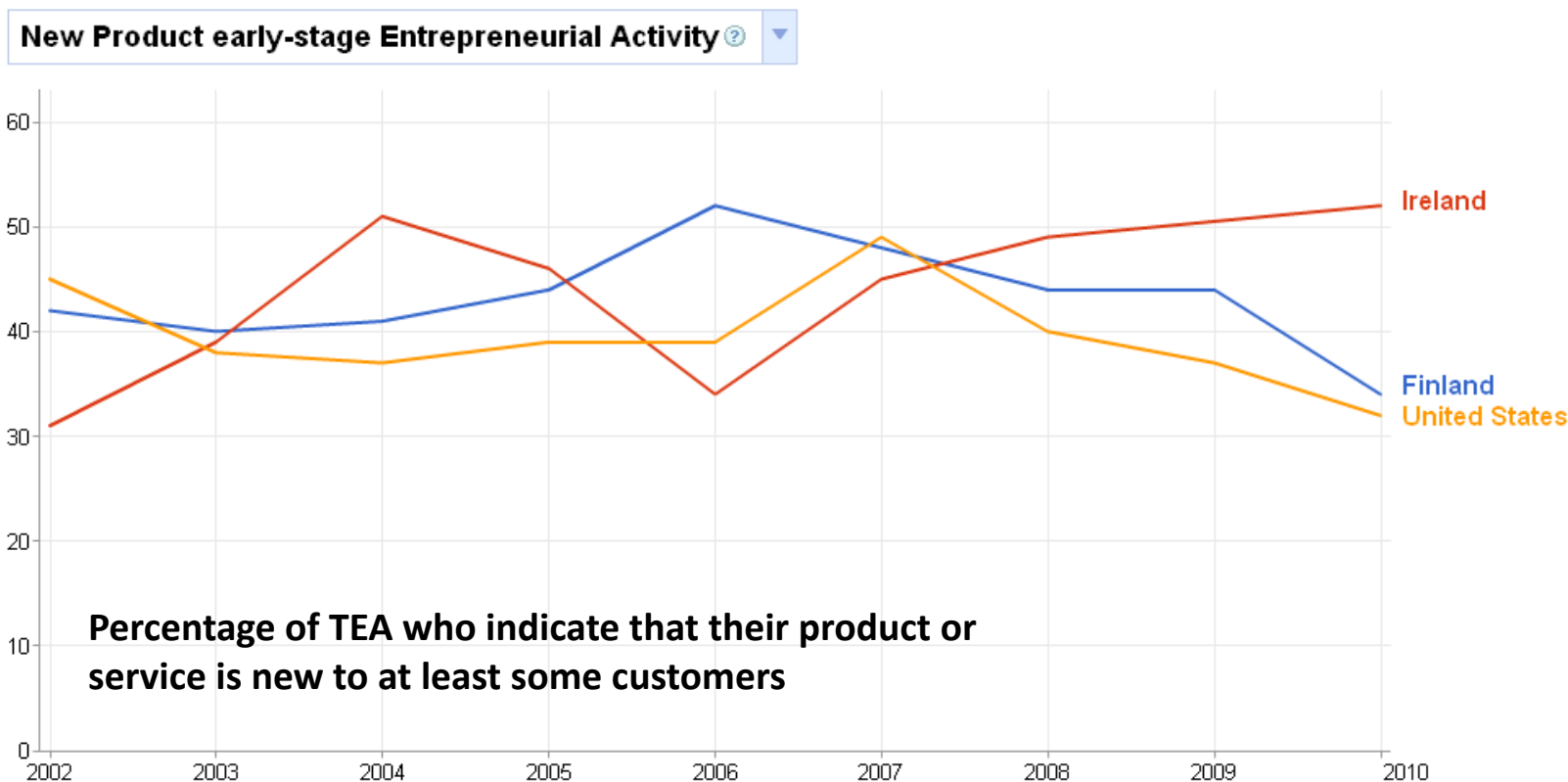
From: Evaluation of the Finnish  
National Innovation System – Full  
Report [www.evaluation.fi](http://www.evaluation.fi)

## Global Entrepreneurship Monitor Fear of failure rate



Source: Google Public Data Explorer – GEM data

## Global Entrepreneurship Monitor Innovation in Early-Stage Entrepreneurship Activity, 2002–2010



Source: Google Public Data Explorer – GEM data

# Conclusions

## Conclusions on entrepreneurship and innovation

- If you want to have innovation, you've got to have entrepreneurship!!
- Truly innovative entrepreneurs with scalable, buyable businesses are scarce, and they have a really difficult time – make their life as easy as possible.
- Effective linking of entrepreneurship and innovation is much a culture and place-related issue – more developed in US than Europe (e.g. analyses of Audretsch), and you can't just copy
- It's hard....but worth the try!!



## VTT creates business from technology

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<http://www.vtt.fi/proj/sfinno/>

<http://www.vtt.fi/innovationstudies>

See also:

[www.aaltoes.com](http://www.aaltoes.com)

["Three Things"](#) that entrepreneurs do for our economy

<http://steveblank.fi>