



Swiss Economy

Boosting Innovation – Accelerating Growth

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Switzerland's innovation output – past and present: strengths

- **Top performance in basic research**
 - Highest density of Nobel Prize winners
- **... and aR&D**
 - Worldwide highest patent activity per head
- **Still the most innovative economy in Europe**
 - Since the beginning of the 1990es
 - Service Sector and SMEs are particularly innovative
 - Intensive networking academia / business
 - International benchmark in professional education
 - One of the highest ICT-intensity in business and society



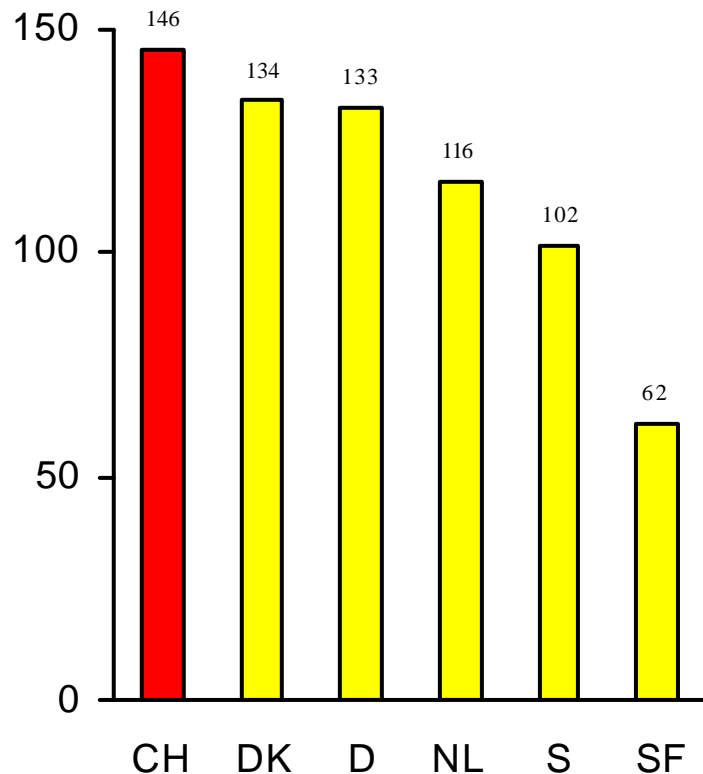
Switzerland's innovation output – past and present: weaknesses

- **R&D expenditure stagnates**
 - R&D share of GDP in Europe is behind SWE, Fin
 - Trend relative to EU is negative
- **Industry's lead in innovation is lost**
- **Ranking of innovative product's share in turnover dropped to no. 5 of EU**
- **Since 1990 lowest growth rate of GDP of OECD-countries**

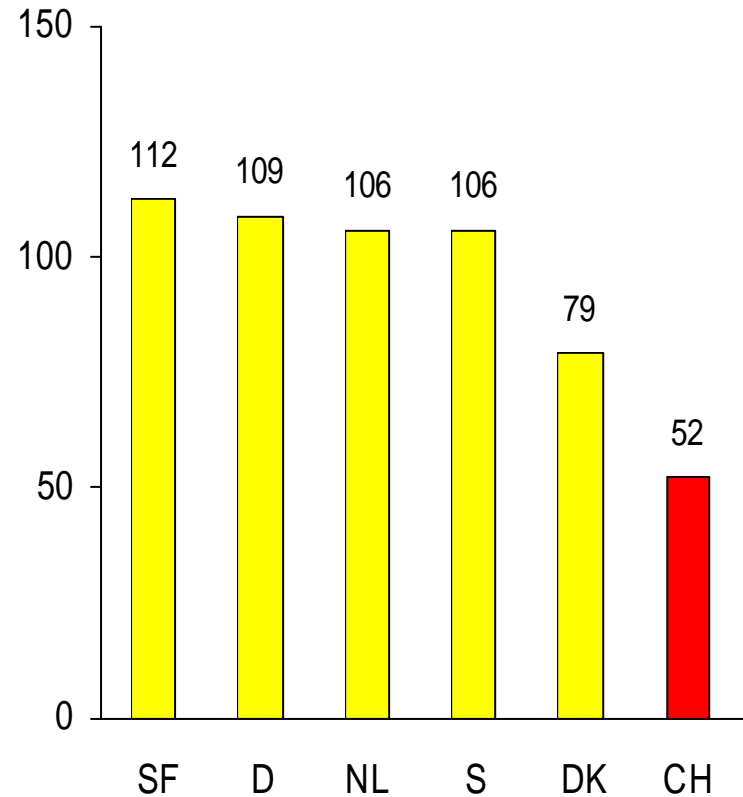


Intensity of SME-innovation best in Europe, but market novelties below average

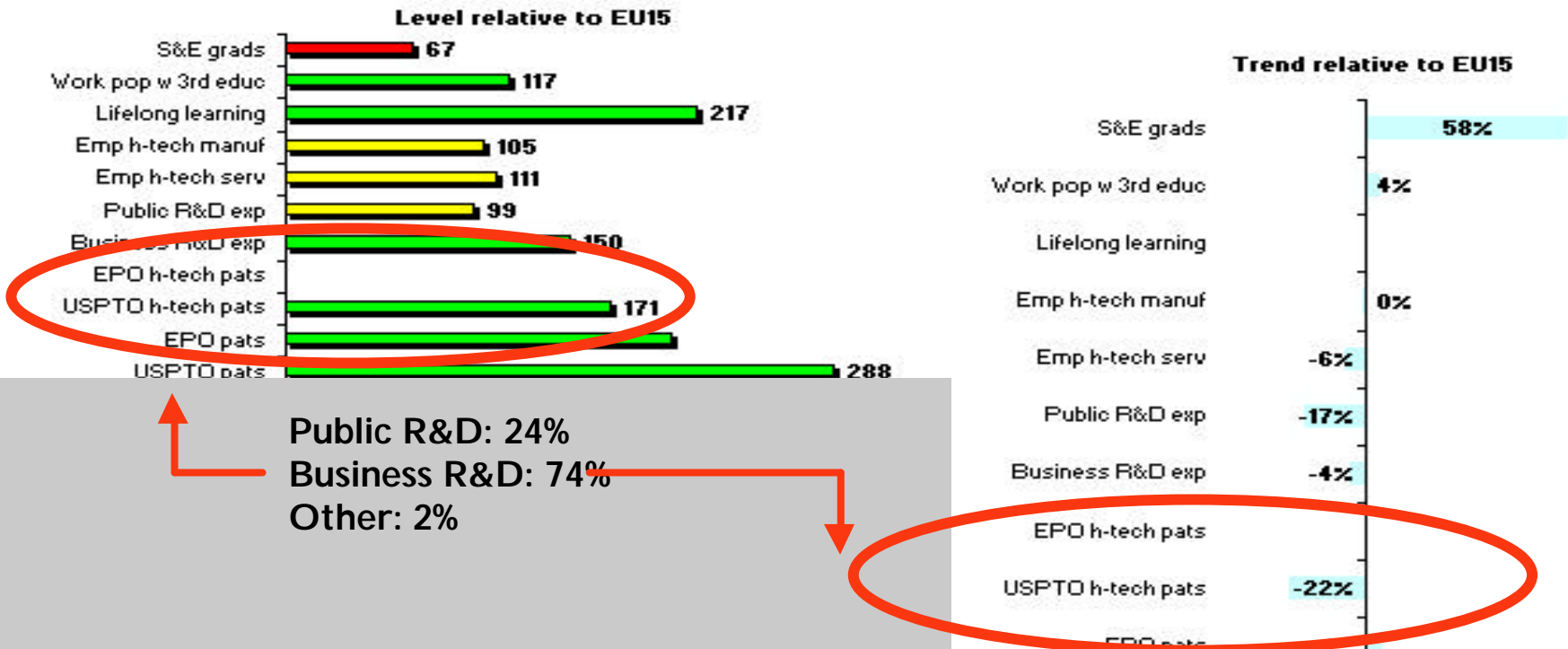
SME-Innovation Ratio 2002



Market Novelty 2002



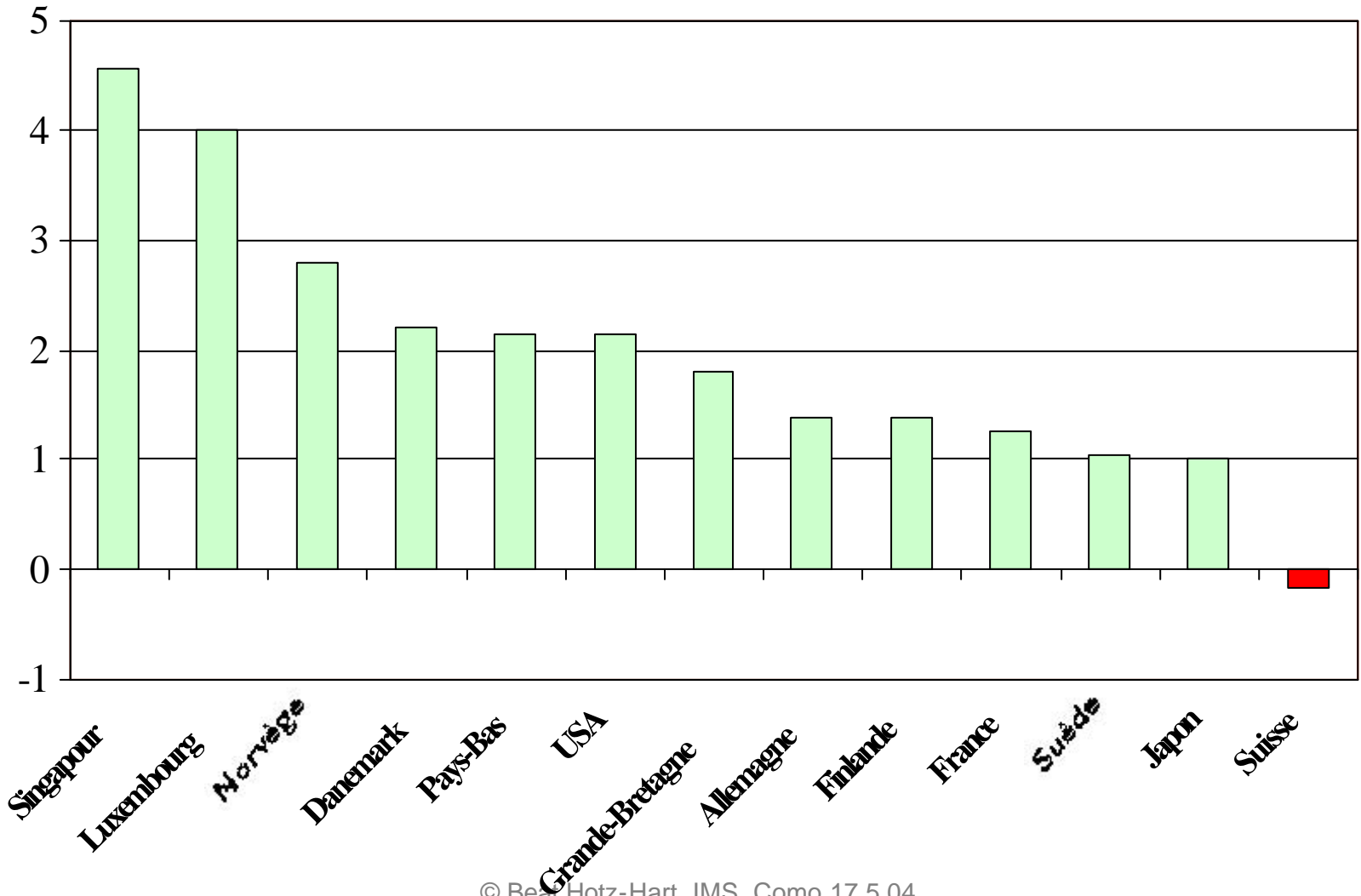
Swiss performance in R&D: comparison with EU trend



- Weak Position
- Strong Position
- Average Position



Growth of GDP per head 1990-1999 in %





Typical Swiss pattern of innovation

- **Swift and pragmatic application of new technologies in the medium and high-tech sector**
- **Focus on adaptation, consolidation, perfection → incremental innovation**
 - Process rationalisation; less product innovations
- **Swiss education system favours application orientation**
 - Universities of Applied Sciences yield particularly high 'return of investment' of human capital of their students
 - Professional education is an international benchmark



Switzerland's innovation output: trends

- **Leading edge in innovation is crumbling**
- **Main competitors are catching up**
- **Main reasons:**
 - **Slow pace in de-regulation in major sectors such as energy, telecommunication**
 - **Fast increase of the share of public sector spending on GDP mainly for the purpose of social welfare and traffic and transport**
 - **Stagnation expenditures in education and for R&D in public and private**
 - **Major restraints for innovation (survey 2002):**
 - **High costs and economic risks**
 - **Difficulties in raising money particularly for SME**
 - **Shortage of skilled labour**
 - **Poor business cycle and therefore defensive behaviour in business**



Challenges and chances (1)

- **Still excellent performances, but are we doing the right things?**
 - More dynamism in Switzerland's business portfolio, restructuring and concentration, developing new markets → product innovation
 - Build on industry / service clusters: medical-, bio-, nano-tech combined with engineering and business services, financial services, trade and commerce
 - More knowledge based and B2B-services

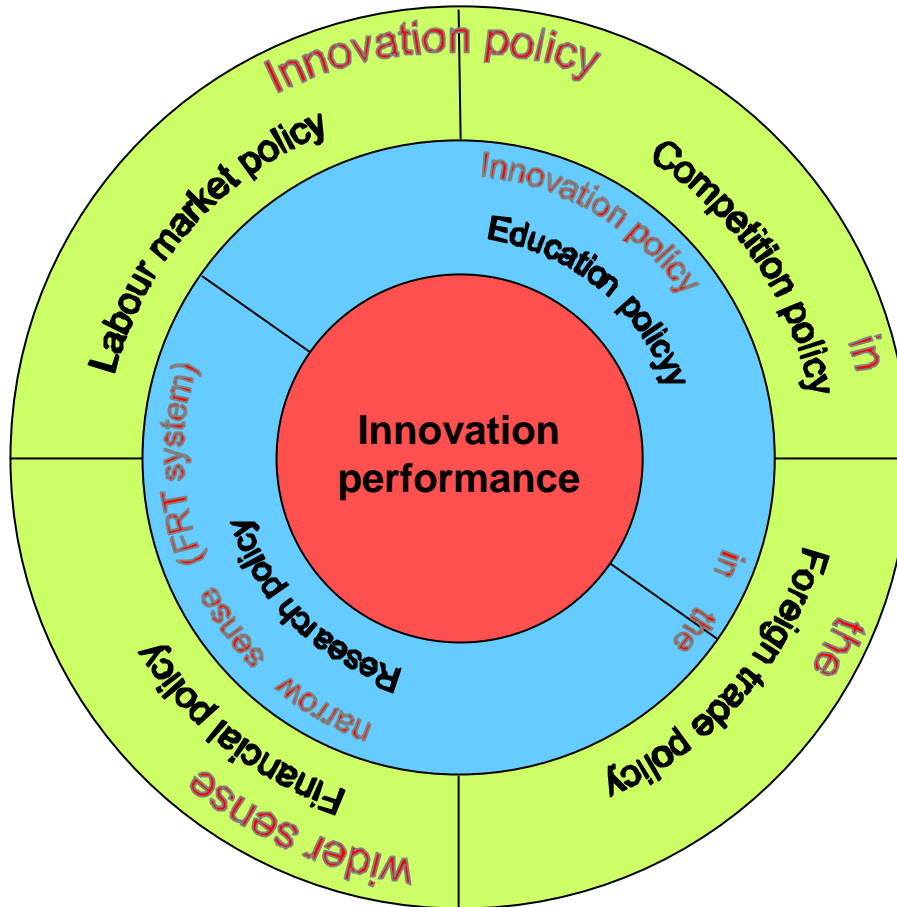


Challenges and chances (2)

- **A better exploitation of the knowledge base in science & technology**
 - More ‚science-based‘ products, faster ‘commercialization‘ of science-based activities; better adoption by SME
 - Making networks more effective
 - Improve risk management and financing for SME and new ventures



Framework of an innovation-oriented economic policy for Switzerland



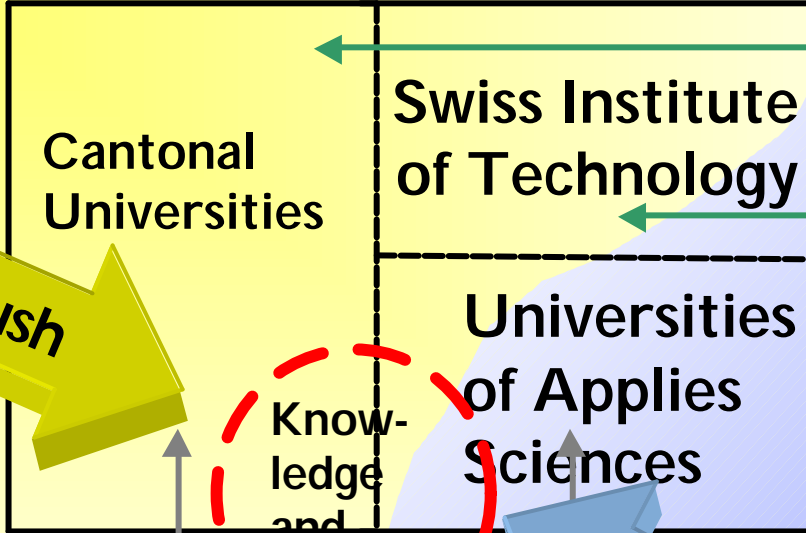
Promoting

1. Favourable economic framework (competition, financial, foreign trade policy)
 - Labour market
2. Education and science
3. Research
 - . Basic research
 - . Applied R&D,
 - . Knowledge transfer/Networking
4. New Ventures, Entrepreneurship
5. Awareness and policy learning
6. International cooperation

Home Affairs

Two complementary approaches in promoting the innovation process!

NSF



CTI

Business sector

Labour market

Educational system/ Academia

Professional education

Supply/push

Demand/pull

Ministry of Economics

Bring knowledge together with business needs



Swiss strategy to promote innovation

- **Promotion of the national system of science and education**
- **Intensification of exchange and interaction between scientific and economic sectors**
- **Support of new entrepreneurial initiatives**
- **Learning from other countries through benchmarking and evaluation**



CTI: Promotion of applied R&D, knowledge transfer and entrepreneurship

- **Support of Business – University collaboration in applied R&D projects**
- **Knowledge and people transfer through joint projects**
- **Co-funding by business partners required, at least 50% of project costs**
 - Risk sharing; avoid free-riding
- **Market driven, bottom-up generation of projects**



CTI: Promoting networks in selected fields

Priority setting becomes increasingly important

Through ...

Promotion of national and international networks in areas that are important for the economy, eg.

- Medical Technology**
- Software**
- Nanotechnology**
- Production engineering, Machine tools**



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Switzerland's Vision

**To be one of the most attractive places in
Europe for
innovative entrepreneurs and a qualified
workforce**