

Strategic Focus Area Advanced Manufacturing

Background and Overview of this Strategic Initiative and Funding Program of the ETH Board

Launch Event, 13 November 2017, Berne

Dr. Lars Sommerhäuser

An initiative of the ETH Board

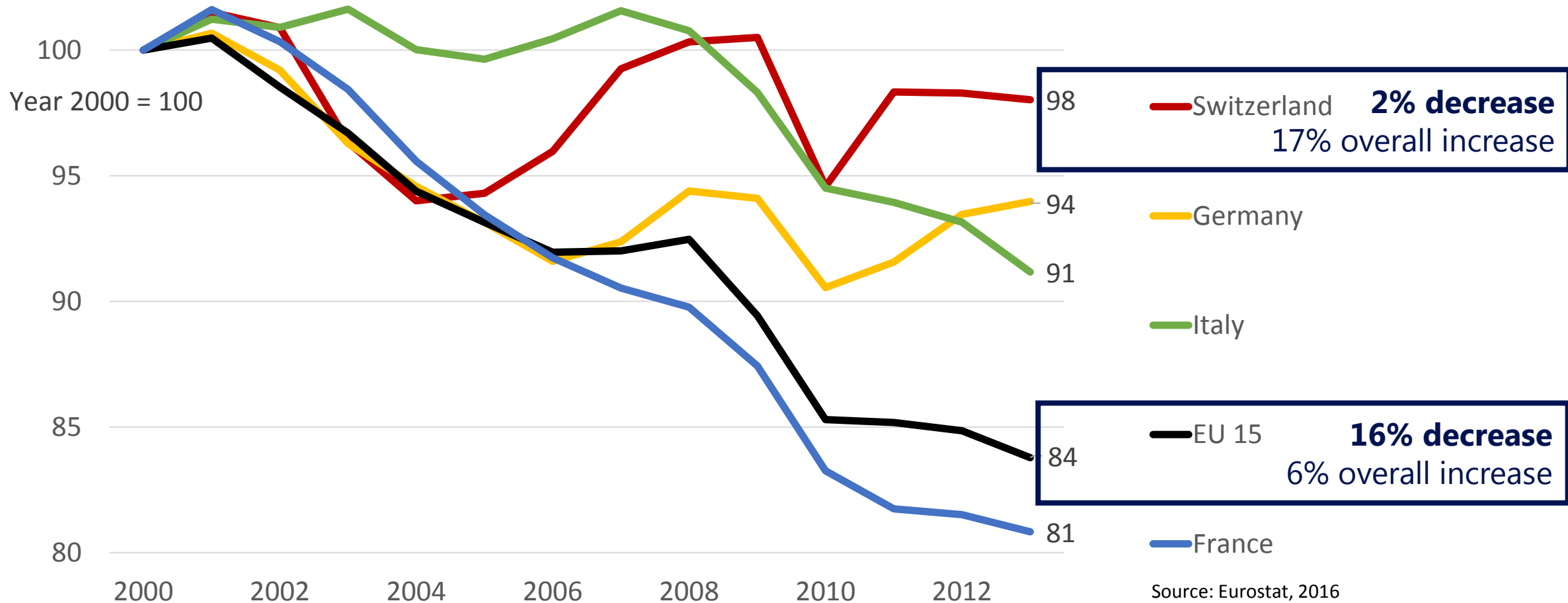


Participating ETH Institutions:



Employees Working in Industry*

Development in European countries since 2000



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4'955'000

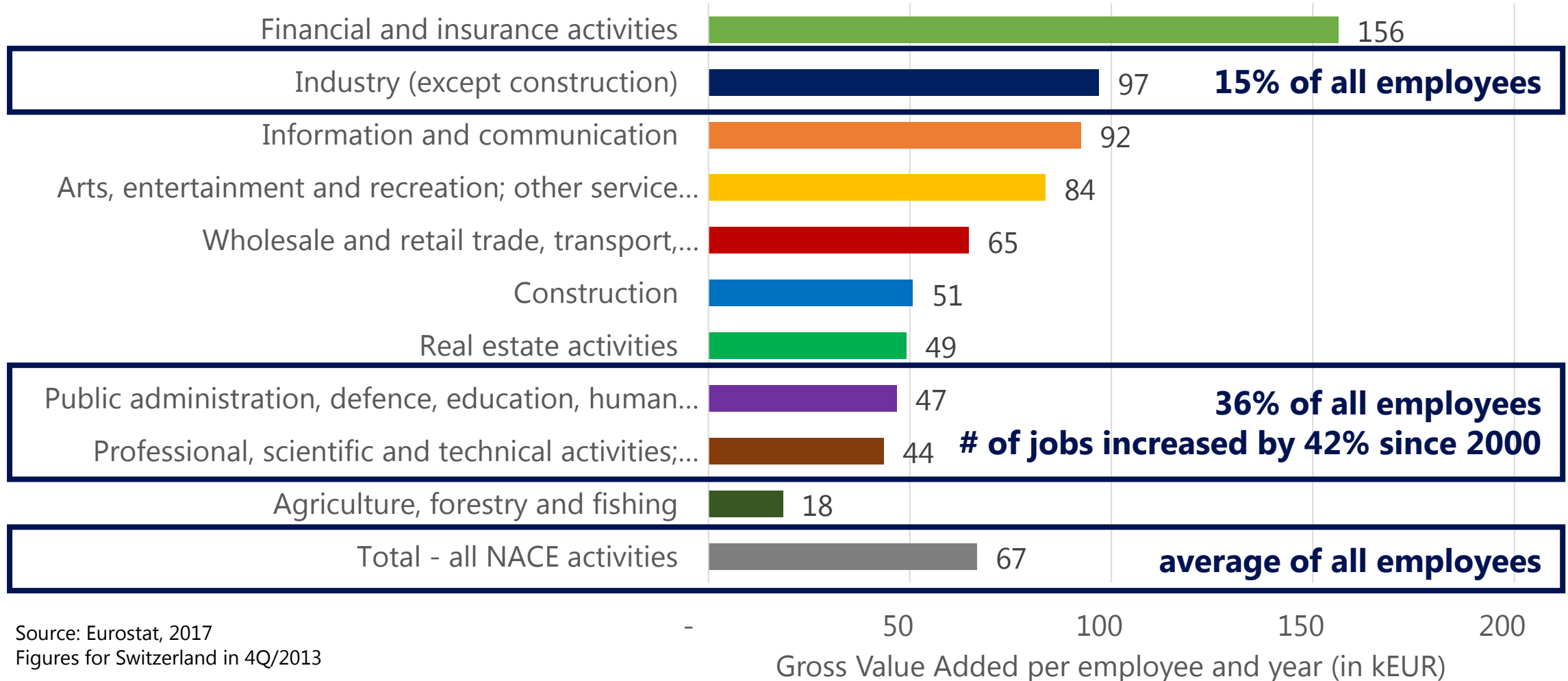
industry jobs lost
from 2000 to 2013 in the EU 15 countries¹

Source: Eurostat 2016

¹ Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom

Gross Value Added (GVA) per Person and Year

Big differences between the economic sectors in Switzerland



Gross Value Added (GVA) per Person and Year

Big differences between the economic sectors in Switzerland

A person working in industry generates

45%

more value (GVA)

than a Swiss employee generates in average

Source: Eurostat 2017

Gross Value Added (GVA) per Person and Year

Big differences between the economic sectors in Switzerland

A person working in industry generates

2.1

times the value _(GVA)
of a person working in the two big and fast growing service sectors

Source: Eurostat 2017



Decrease of purchasing power

- Shifting jobs from industry to service sectors (except finance) will decrease average salary levels. Consequently, purchasing power and GDP per person will decrease.



Additional loss of service jobs

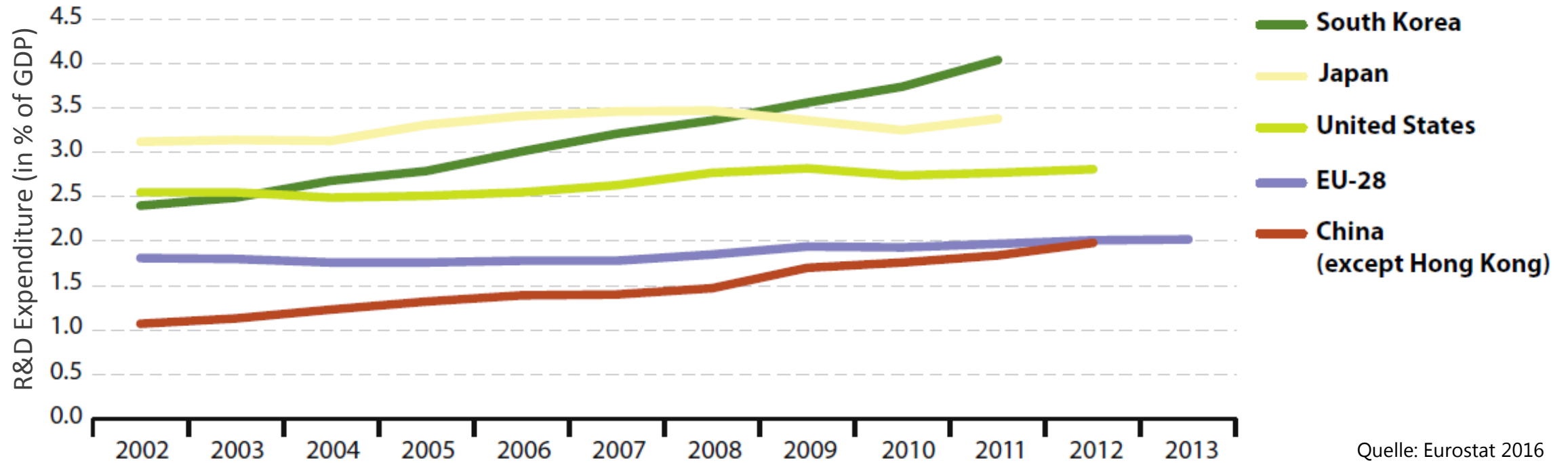
- Industry related services will be offered where industrial activities take place. Losing industry jobs will lead to a loss of jobs in industry related services, including R&D.



Need for investment in education, research and technology

- Switzerland and Europe are strong (Global Innovation Index, QS, ...)
- Other regions, in particular Asia, are investing and catching up
- We need to invest more in these areas, but where and how?

Possible Consequences and Counter Measures



Need for investment in education, research and technology

- Switzerland and Europe are strong (Global Innovation Index, QS, ...)
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- We need to invest more in these areas, but where and how?

Participating ETH Institutions

- ETH Zürich
- EPFL
- PSI
- Empa



Steering Committee – ETH Institutions

- ETHZ: Prof. Günther / Prof. Hierold
- EPFL: Prof. Mortensen / Prof. Enz
- PSI: Prof. Aeppli / Prof. Nolting
- Empa: Dr. Gröning / Dr. Sommerhäuser

Funding (20 MCHF)

- Initial Program (2017 – 2020)
 - 10 MCHF for research projects (RP)
- Expansion Program (2018 – 2021)
 - 4 MCHF for research projects (RP)
 - 6 MCHF for capacity build-up and technology platforms (CB&TP)

Steering Committee – Industry

- Rolex: Dr. Jacques Baur, Director / CTO
- Bühler: Calvin Grieder, Chairman
- Siemens (Schweiz): Siegfried Gerlach, CEO
- Phonak: Evert Dijkstra, Managing Director
- BASF: Dr. Andreas Hafner, Innovation Manager
- LakeSide Technology: Dr. Norbert Münzel, CEO

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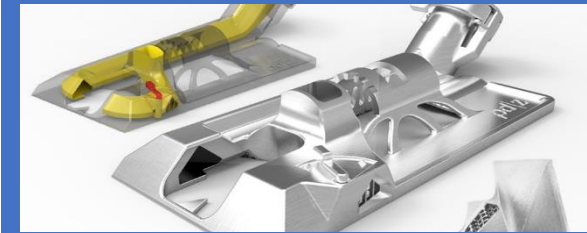
Technical Focus Areas of the Initial and the Expansion Program



TFA 1 – Precision
Free Form Manufacturing



TFA 2 –
Printable Electronics



TFA 3 – Sustainable Digital
Manufacturing and Design



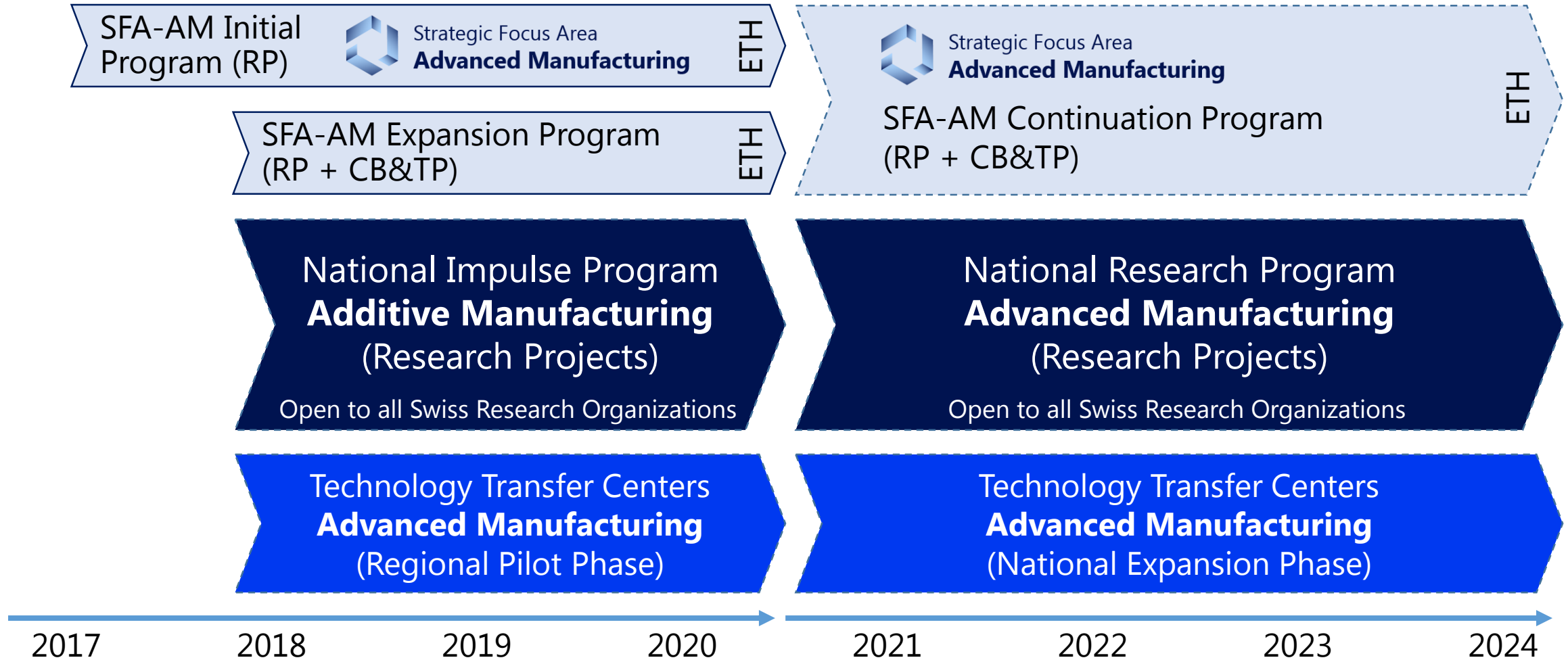
TFA 4 – Sensing Technologies (Expansion Program)



TFA 5 – Intelligent Systems and Advanced Automation (Expansion Program)

National Research Initiative Advanced Manufacturing

Program to Foster Pre-Competitive Technology Development and Transfer



What can we do to avoid a de-industrialization in Switzerland and Europe?

Science and industry need to work together more closely and build an active community in Advanced Manufacturing.

Politics need to support this closer collaboration.

But industry must be open, willing and contribute as well.

Thank you very much for your attention!

