



St. Galler Business School

Iceberg Ahead or a Smooth Transition to New Horizons A Swiss Perspective on "Modern Education – Preparing Leaders to Face Challenges of Industry 4.0"

Input from Dr. Christian Abegglen

14.06.2018 Impact Hub Zürich

Agenda

I. Switzerland – A Success Story

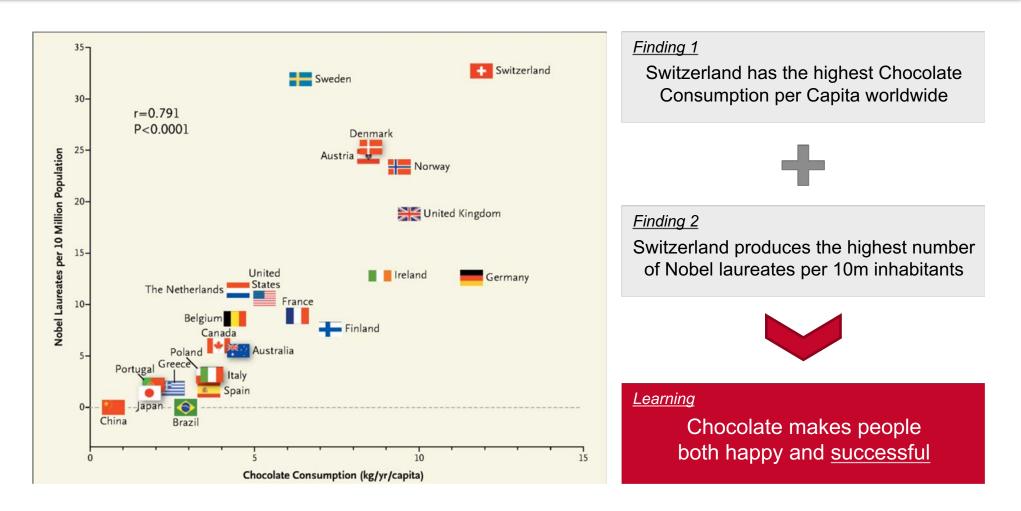
II. The Tradition of Industry and Services in Switzerland

III. The Current Education System in Switzerland

IV. Incorporating the Industry 4.0 Wave in Education

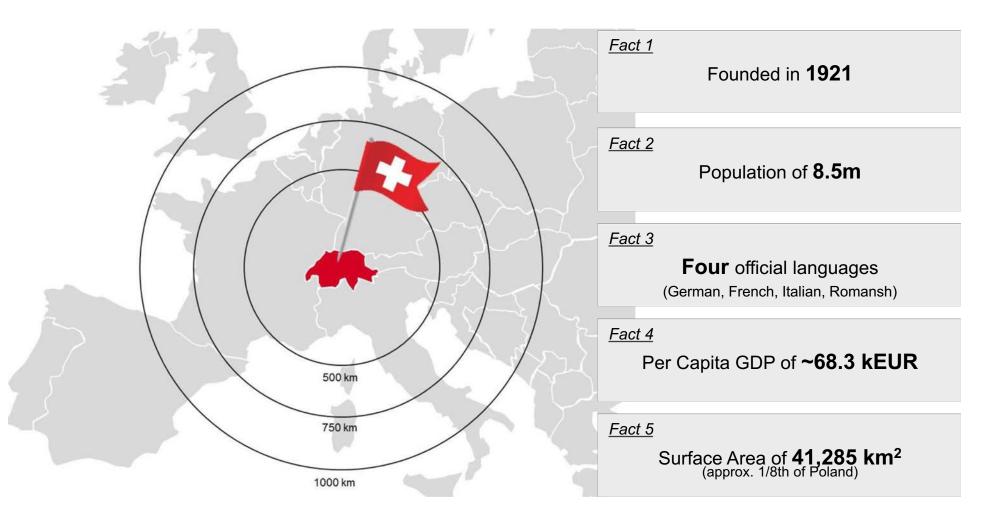
I. Switzerland – A Success Story

Chocolate - the Ultimate Success Factor?



Source: Franc Uffer, St.GallenBodensee Area, Department of Economic Affairs

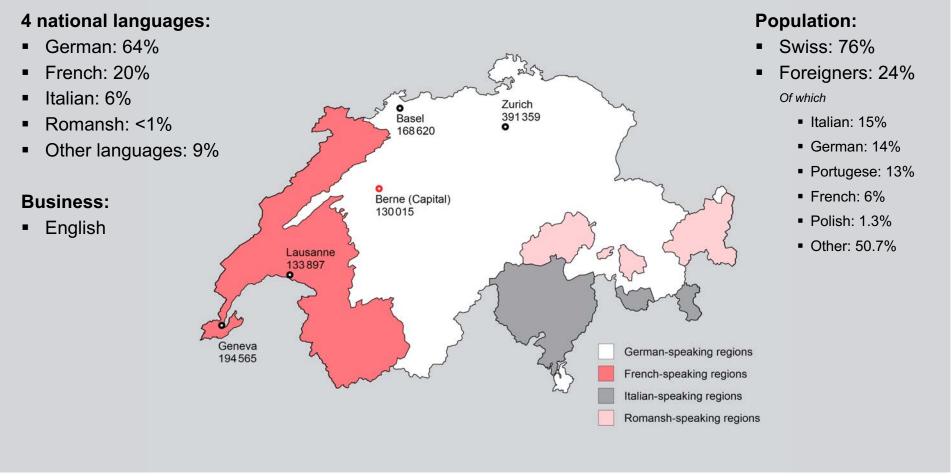
Switzerland – The Demographics (Macro)



Source: Federal Statistical Office, 2017

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Switzerland – The Demographics (Micro)



Source: Federal Statistical Office, 2017

General Facts – Switzerland...

...is among the 20 biggest nations worldwide in terms of GDP

<u>Fact 7</u>

Fact 6

...has the highest Index of Economic Freedom outside of APAC

<u>Fact 8</u>

... is bordering to Germany, France, Italy & Austria (53% of European GDP)

<u>Fact 9</u>

...has free trade agreements in force with 60 countries with a total world GDP share of 55%

<u>Fact 10</u>

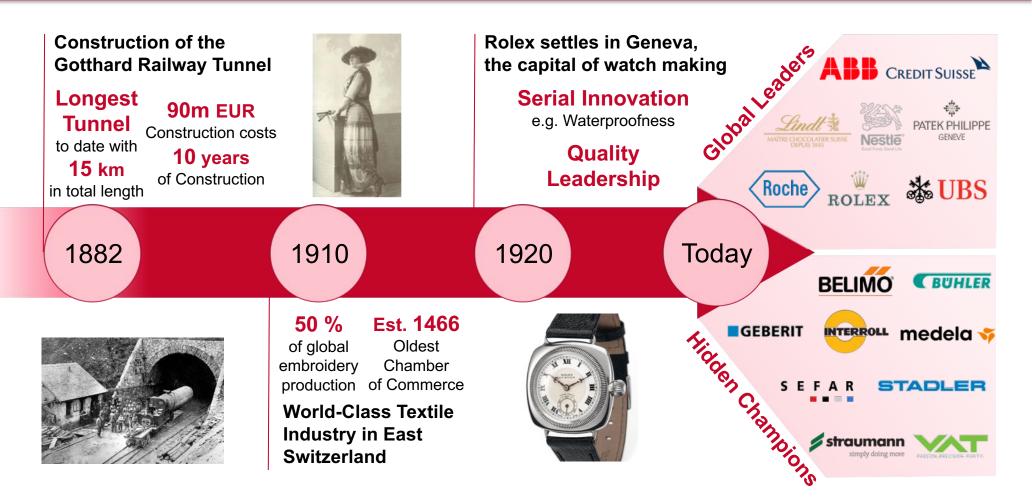
... has with double taxation agreements >100 countries

Source: Franc Uffer, St.GallenBodensee Area, Department of Economic Affairs

II. The Tradition of Industry and Services in Switzerland

URS

Long Tradition of Technological Leadership continues until today



Source: SGBS archive, Franc Uffer, St.GallenBodensee Area, Department of Economic Affairs

Case Study: The substantial impact of the Gotthard Tunnel in the 1900's

Tourism / Commerce

The Gotthard Tunnel connected Switzerland and facilitated cross-Europe travel

Switzerland's Tourist Industry profited heavily from being a **major country of transit**

Alfred Escher Railway Pioneer / Politician / Business Leader

Financial Services

Escher, the man behind the Gotthard project, also founded Credit Suisse and Swiss Re

Unparalleled size of project required creative **financing solutions by CS** (financiers from Switzerland, Italy and Germany)

The Tunnel also significantly increased Switzerland's role as a **European trade hub** Significant death tool of the project (~200 casualties) also **impacted the Insurance Industry** – with SwissRe in a leading role



Source: SGBS archive







Case Study: The substantial impact of the Gotthard Tunnel in the 1900's

Industry

Continuous increase in railway usage demanded steady innovations in drive technology SULZER



Pioneering work in adjacent means of transport, such as steamers



Source: SGBS archive (illustrations)

Trickle Down Effects of the Gotthard

The Gotthard Tunnel with its ensuing inflow of foreign money increased wealth and stipulated investments in other industries







Pharma Industry takes leading role

UNOVARTIS



Higher Education increases in importance



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Switzerland - The Current Economic Snapshot

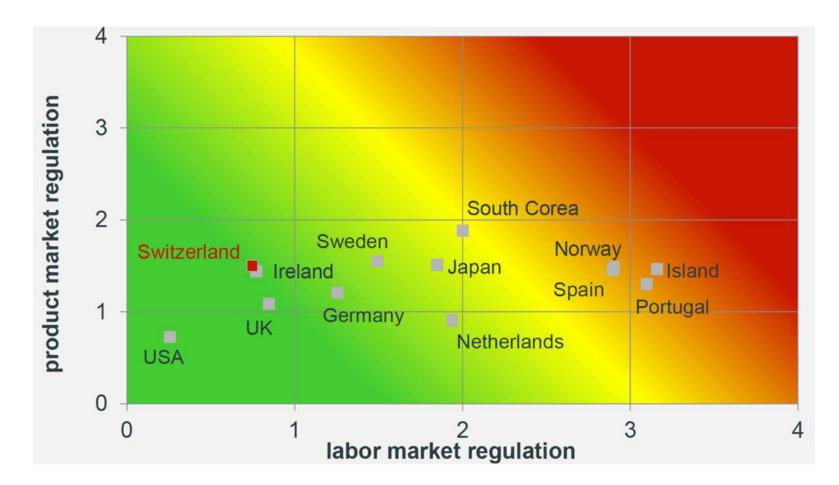


Source: Federal Statistical Office, 2014

Continuously ranked as the most competitive country worldwide

| Switzerland is ranked 1 st in the Global Competitiveness Index (for Among other topics, we lead the world in | or the seventh time in a row). |
|---|---|
| Highest quality of overall Infrastructure | 160+ Partner Institutes |
| Highest capacity for innovation | Business Executives |
| Highest capacity to attract and retain talents | 5,600+ International organizations' |
| Highest Quality of the educational system | ^{So} 114 ^{so} 12 Indicators ^{so} 118 ^{so} 000/ |
| Highest availability of research and training services Source: WEF – The Global Competitiveness Report 2017–2018 | economies 0 9970 of World GDP 99970 of World GDP |

Possible Success Factors (1/2)



Source: OECD, BAKBASEL 2014

Possible Success Factors (2/2)

| | Intra Company Comparison (Real Case) | |
|--|--------------------------------------|--------------|
| Example effective | Cormony | St.Gallen |
| labor cost production(in EUR) | Germany | BodenseeArea |
| Working days per year | 261 | 261 |
| Days absent (sickness, holiday etc.) | 58 | 38 |
| Effective working days | 203 | 223 |
| Working hours per day | 6.57 | 8.17 |
| Effective working hours per year | 1'333 | 1'822 |
| Hourly wage in EUR | 18.62 | 22.84 |
| Hours to be paid | 1'827 | 2'135 |
| Annual wage in EUR | 34'025 | 48'749 |
| Non-wage costs (GER 45.3% / CH 28.7%) | 49'438 | 62'726 |
| Effective costs per working hour in Euro | 37.09 | 34.43 |

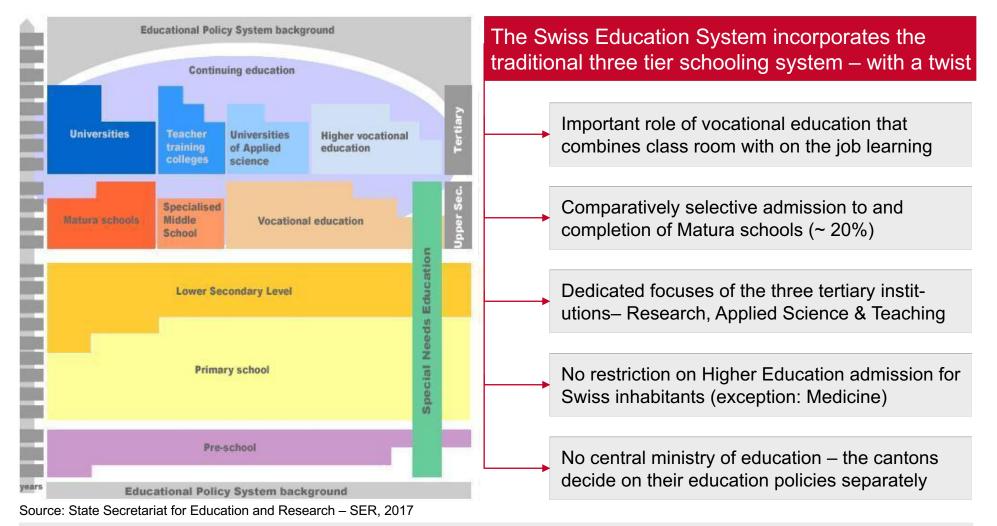
Source: Franc Uffer, St.GallenBodensee Area, Department of Economic Affairs

The Swiss Economy in an International Comparisons

| Strengths | Weaknesses |
|---|---|
| Located in the heart of Europe | Rather expensive |
| Most competitive country | Current uncertainties: |
| Very liberal business environment | Lacking self-confidence among political representatives Upcoming corporate tax changes |
| Stable political environment & direct democracy | Strong currency in the Swiss Franc |
| Low Taxes | Small domestic market |
| Switzerland's Stability and Eco it a popular hotspot for many in | KUEHNE®NAGEL |
| St. Caller Rusiness School Reconhergetrasso 36 CH 0000 S | St Gallen - 0041 (0)71 225 40 80 – www.sgbs.com - seminare@sgbs.com 16 |

III. The Current Education System in Switzerland

Overview of the Swiss Education Landscape



The Unique Vocational Training (VET) and its Value Added

compulsory school **3-4 years** of training on

average

2/3 of

students

enrol in VET after

VET Programs for >230 occupations

~100k

graduates

Each year

40% of companies offer VET programs



<u>Reason 1</u>

Strong emphasis on **collaboration with highly skilled industry veterans** conveys best practices and builds rapport with senior staff

Reason 2

Crosswalks and points of transfer between academic and vocational studies translates knowledge to practice

Reason 3

Students learn to **take on responsibility** – not only **on the job**, but also **personally** (e.g. time or fiscal management)

Reason 4

In several instances, VET directly **prepares students for federal examination** as a substitute for tertiary education (e.g. nursing)

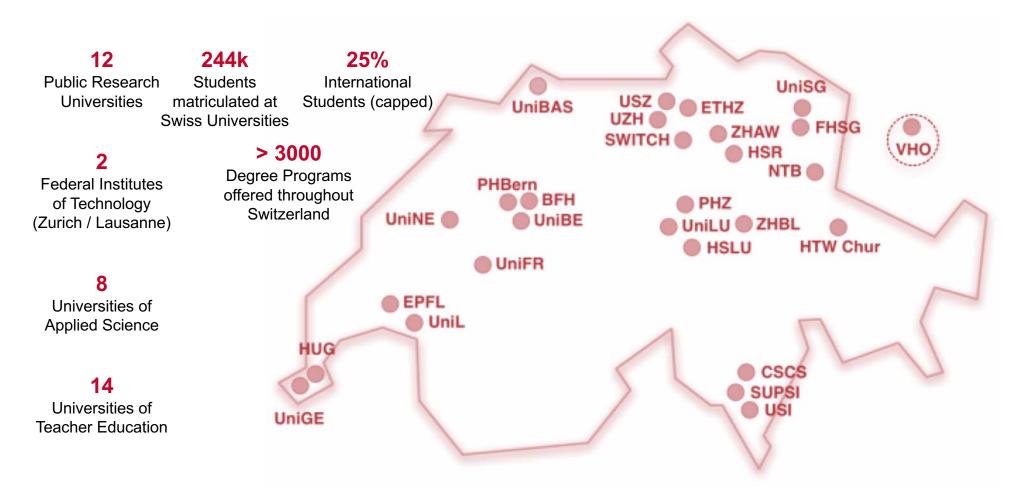


<u>Learning</u>

Vocational Training is "Win-Win" for both students and employers

Source: SER - Vocational and Professional Education and Training in Switzerland Facts and Figures 2017.

A Snapshot of the Swiss Higher Education Landscape



Source: swissuniversities - Studying in Switzerland 2017/18

Objectives of Tertiary Education (specifically Universities / UAS)

<u>Objective 1</u>

Provide high relevance to practice

Objective 2

Increase companies Innovative strengths

Objective 3

Provide the employment market with the experts it needs

Objective 4

Provide excellent job and career prospects for graduates

Objective 5

Comply with Swiss quality standards in the fields of education and research

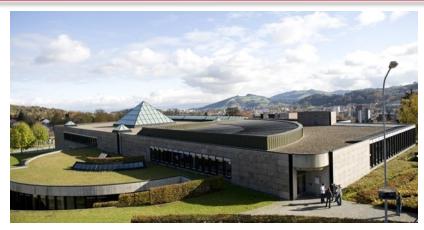
Objective 6

Lay the foundation for sustainable economic, cultural and social progress

Source: swissuniversities - Meet the Swiss Universities of Applied Sciences and Arts, 2010

World Class Institutions Actively Shape the Future





Top 10 ranked Master Programmes (*per Financial Times*)

Close Collaboration

with Industry Partners Ground-breaking Research In Management Science (e.g. SGMM)

30 Institutes

conduct research in business, economics, law and social science





One of the global leaders In engineering and

technology science

32 Nobel Prize

Winners are associated with ETH

Institutional Partnerships

with – among others – CERN and ESA

> 500 Professors involved in research

Continuing Education Constitutes an Important Fourth Pillar

Objective 1

Provide industry veterans with proven tools from academia to **efficiently manage organizations**

Objective 2

Prepare managers to assume more responsibilities and to showcase suitability for the job

Objective 3

Provide a **platform for fruitful discussions** on innovations, trends and best practices

Objective 4

Build a far-reaching network across functions and industries

Objective 5

Further supplement the research work of Universities with more input from practitioners







Continuing Education – How it is structured at the SGBS (as an example)

Management Training

- Cross-corporate management training and extension courses
- Leading training institution in the sector of Management programmes and seminars in the German-speaking world
- In-house Training
- Customised further training concepts and seminars worldwide conducted in German, English, French and Spanish
- Master's- & Diploma study courses SGBS
- Part-time study courses for working professionals with final diploma for experienced managerial staff
- Master's study courses
- Alumni Club SGBS
- Network of former diploma graduates/seminar participants with regional events in CH, D, A
- Annual Management & Alumni Congress
- International Programmes & Co-operations
- Seminares in Boston, London, Singapore, Krakow

Source: SGBS archive

Management Consulting

- Specialists for development and implementation of strategies and concepts
- Workshop steering for high-performance teams & companies
- Management Audits & Assessment Centers
- Fixed-term Management
- Management Development
- Focus points:
 - Strategy Audit
 - Business Development
 - Structure- & Process Management
 - Marketing & Distribution
 - Finances & Controlling
 - Leadership & Change Management
 - Turn-Around-Management
 - Executive Coaching

Research Projects

• Business Research Projects

- Own business projects under the leadership of Prof. Dr. Dres. h.c. Knut Bleicher and Dr. C. Abegglen on the basis of the St. Gallen Concept
- Co-operation with research institutes and professors of the University of St. Gallen and international centers of knowledge worldwide
- Membership of the St. Gallen society for Integrated Management (GIMSG)
- Business Studies & Case Studies for companies
- Company-specific case study development
- Market research & competition analyses
- Publications & Tools
- St. Gallen Business Books & Tools publishing house with its numerous publications
- Publisher of the collected writings of Prof. Dr. Knut Bleicher: Milestones in the Development of an Integrated Management
- Co-operation with publishing houses
- Own software tools for management

IV. Incorporating the Industry 4.0 Wave in Education

Leverage Technological Advances to Increase Cross-border Collaboration

Project "Class Unlimited": Integrated Term Abroad during VET at





Class-Room in Uzwil

Source: Dr. U. Renold - Bereiten wir auf die richtigen Berufe vor?, 2017

Apprentices in Satellite class room in China

Higher Education: Where BA Meets Digital Innovation – Evidence from HSG

START Global Summit

Student-Run Entrepreneurship and Tech Conference in Europe

> 2000 Participants

> 40 **Industry Partners**

Exchange with experts in IoT, AI and Healthtech (among others)





Source: START Global Website, HSG Center for Entrepreneurship

HSG roots, such Research

Support throughout the **Process by dedicated Faculty and Partners**

Provide Students with the Corresponding

STARTUP NAVIGATOR





Silicon Valley

| 4 | 16 |
|-----------|----------|
| Start-ups | Students |

Field Trip to Silicon Valley

Connect with **local** Founders and VCs



> 100

Start-Ups with

as N26

Continuing Education: Foster Exchange on Current Challenges of Industry 4.0



Source: SGBS archive

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Enabling Dialogues beyond Borders – the Case of the WEF in Davos

The Word Economic Forum





St. Galler Klosterplan TheTradition of Knowledge Sharing in Switzerland

Est. 1971 shape global, regional 3'000 Attendees 340 1'000 > 400 Political Member Work Sessions Leaders Companies

Input from Polish Prime Minster Morawiecki on:

2017: "The Fourth Industrial Revolution"

"How middle-income economies can take advantage of the fourth industrial revolution"

Source: WEF Summit Report 2017/2018

Conclusion: Swiss Education is Prepared to Face the Challenges of Industry 4.0

| <u>Fact 1</u> Healthy Mix of practically oriented and academic Degrees |
|--|
| Fact 2 Long Tradition of Strong Collaboration between Practice and Research enables relevant Education |
| Fact 3 Support for Students in taking Initiative to tackle Challenges of tomorrow |
| <u>Fact 4</u> Companies in Switzerland have strong desire to be at the forefront of technology, which demands Commitment to proper Training of new hires and staff |
| <u>Fact 5</u> Necessity to produce highly skilled, innovative Minds to remain competitive in light of high wage costs |



Thank you very much for Your Attention!

You are always welcome for a visit in either St. Gallen or Cracow