

THOMAS HURNI, THOMAS L. HUBER & JENS DIBBERN
INSTITUTE OF INFORMATION SYSTEMS
INFORMATION ENGINEERING

Swiss Software Industry Survey 2017

Current State, Emerging Trends & Long-term
Developments in the Swiss Software Industry

A Study of the University of Bern on behalf of ICTswitzerland



Imprint

Principal
ICTswitzerland
Aarberggasse 30
CH - 3011 Bern



Authors

Thomas Hurni
Dr. Thomas L. Huber
Prof. Dr. Jens Dibbern
University of Bern
Institute of Information Systems
Department of Information Engineering
Engehaldenstrasse 8
CH - 3012 Bern
www.iwi.unibe.ch



inside-it.ch



Methodological, substantial and editorial support:

Andreas Kaelin (Director ICTswitzerland)
Dr. Pascal Sieber (Dr. Pascal Sieber & Partners AG)
Nils Braun-Dubler (Institut für Wirtschaftsstudien Basel)

Promotion & Statistical Support:

inside-it.ch
Institut für Wirtschaftsstudien Basel
topsoft
Alp ICT

Support

Jonas Brüniger
Stephanie Elliott
Jonas Rothen

Picture Credits:

Cover: Pexels.com; 4: StockSnap.io; 6: StockSnap.io; 13: Pexels.com; 16: StockSnap.io; 21: StockSnap.io; 27: Pexels.com

November 2017



u^b

^b
UNIVERSITÄT
BERN

Note regarding use

No use of this publication may be made for resale or any other commercial purpose whatsoever.

Additional remarks

The report reflects the view of the authors which does not necessarily correspond with the views of the principal or of the support group.



Thomas Hurni



Dr. Thomas Huber



Prof. Dr. Jens Dibbern

Preface

Three years have passed since we kicked-off the Swiss Software Industry Survey (SSIS). For the third year in a row, the SSIS provides you with in-depth information about the current state, emerging trends, and long-term developments of the Swiss software industry.

We have taken the third anniversary of the SSIS as an opportunity to reflect on its achievements and to identify potential for improvement. A major achievement was and still is the size of the SSIS, which remains the largest study of its size. Another major achievement is that the SSIS was able to secure the long-term support of strong partners. Most importantly, ICTswitzerland continues to act as the principal of the SSIS and together with Sieber & Partners they provide invaluable support without which this study would not be possible. We are also proud that over the past three years we were able to continuously improve our SSIS benchmarking website. This benchmarking website has become central to the value proposition of the SSIS because it delivers actionable information for participating companies.

In line with the maxim “standstill is regression”, it was of major importance for us that the third SSIS would again make a leap forward. First, we conducted a workshop with key executives and representatives of the Swiss software industry. The goal was to identify improvement potentials so that the SSIS better meets the needs of software professionals. This has led to a number of improvements such as more granular future-oriented indicators for growth and R&D investments. Second, the feedback from this workshop has also resulted in an extension of our recurring questions on internationalization. In the past years, this section has focused on internationalization of sales, i.e., exports. This year, for the first time, the SSIS includes additional questions on the internationalization of the software value chain, i.e., sourcing. Third, we increased the sample size of the survey (+14% in responses) and together with IWSB we implemented a new method for statistical projection.

This year’s special theme on the role of Swiss software companies in the digital transformation also heavily builds on the feedback from software executives. The special theme explores in which of the key areas related to the digital transformation, Swiss software companies are active. The special section also explores the strengths and weaknesses of the Swiss software industry regarding the skills and competencies required to successfully transform businesses and society. Finally, we identify the key benefactors and showstoppers of the digital transformation from the perspective of Swiss software companies.

Thomas Hurni

Dr. Thomas Huber

Prof. Jens Dibbern

Preface

5 Executive Summary

6 Industry Revenue, Profitability & Future Growth

13 Sources of Revenue

16 Internationalization and Outsourcing

21 Digital Transformation

27 About SSIS

Distribution of Revenue, Profitability, and R&D

The development, customization and maintenance of software are responsible for more than two thirds of the industry revenue. The profitability of the Swiss software industry remains robust with an EBIT margin of 9.1%. The Swiss software industry invests 8.2% of its revenue in research and development (R&D). Manufacturers of standard software (15.5%) and manufacturers of custom software (10.8%) invest by far the most in R&D—all other subindustries invest only moderately.

9.1% EBIT Margin

8.2% R&D

Bright Growth Expectations

This year the SSIS for the first time analyzes growth expectations not only for the current but also for the subsequent year. Overall, growth expectations for the Swiss software industry are bright. Expected industry growth is 8.4% in 2017 and 14.2% in 2018. The Swiss software industry also plans to extend its workforce considerably. Expected employee growth for 2017 is 5.9% and for 2018 even 11.3%. The even higher expected growth of the workforce abroad (18.7%) does not come at the expense of lower domestic workforce growth.

14.2% Revenue Growth

11.3% Employee Growth

Internationalization and Outsourcing

The export share of the Swiss software industry has slightly increased to 14.5%. Germany remains the most important export market by a wide margin (45%) but overall export dependency from individual countries has decreased.

Development (5.3%) and operations (6.1%) are the only activities that are outsourced to a substantial extent whereas planning, operations, and project management are mainly conducted in-house. Overall, Swiss software companies have a strong preference for onshoring, followed by near- and offshoring.

14.5% Export Share

3.5% Outsourcing Share

Digital Transformation

Swiss software companies are active in classic fields such as “Worker enablement” but not so much in newer fields such as “digital globalization” that are key for a successful digital transformation. Likewise, Swiss software companies are strong in classic software-related skills but relatively weak in newer competency areas such as data analytics. From the perspective of Swiss software companies, the digital transformation is mainly driven by economic rather than technical factors. The main barrier to the digital transformation are conservative corporate cultures.

Enabler Economical Factors

Barrier Traditionalism

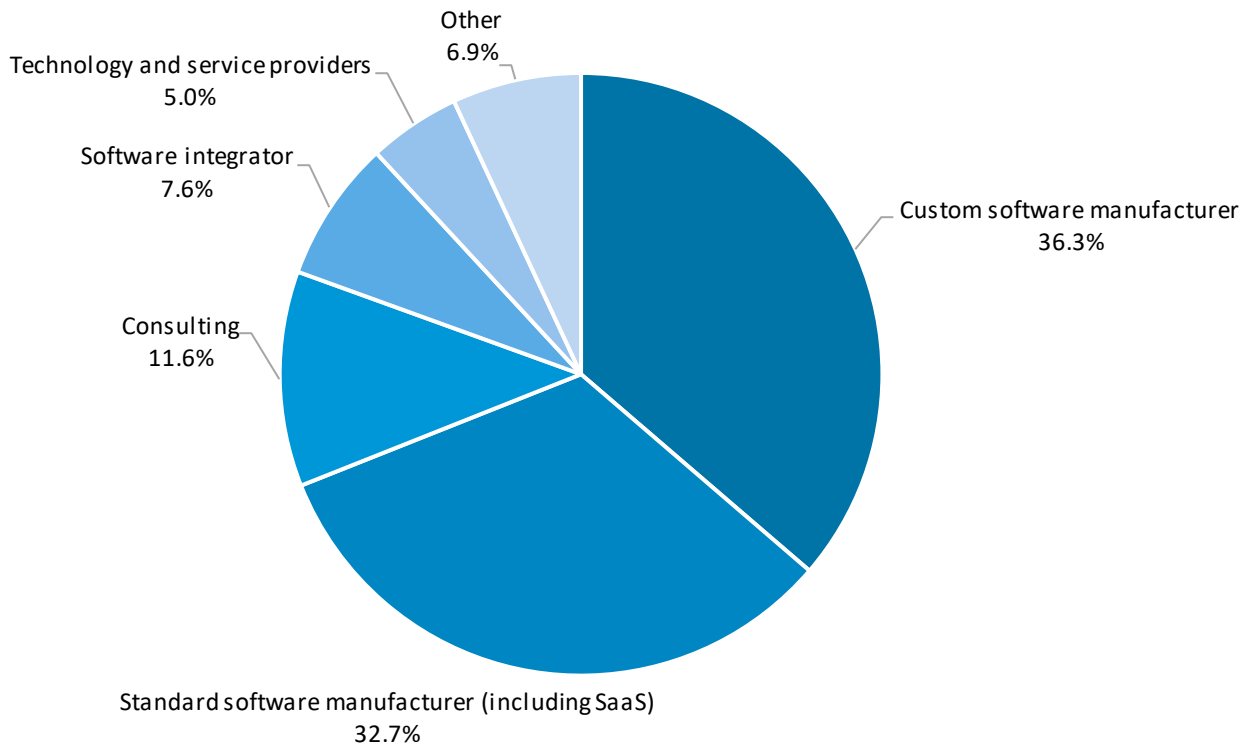
Spotlight on

Revenue, Profitability &
Future Growth



Distribution of Participating Companies

Figure 1: Number of companies per subindustry as percentage of total responses



Source: SSIS 2017

N = 303

A New Projection Method & Distribution of Industry Revenue

Like in recent years, custom software and standard software manufacturers dominate our sample—each accounting for about one third of responses. Also, as in recent years consulting companies (11.6%), software integrators (7.6%), and technology and service providers follow at some distance (5%) (see Figure 1).

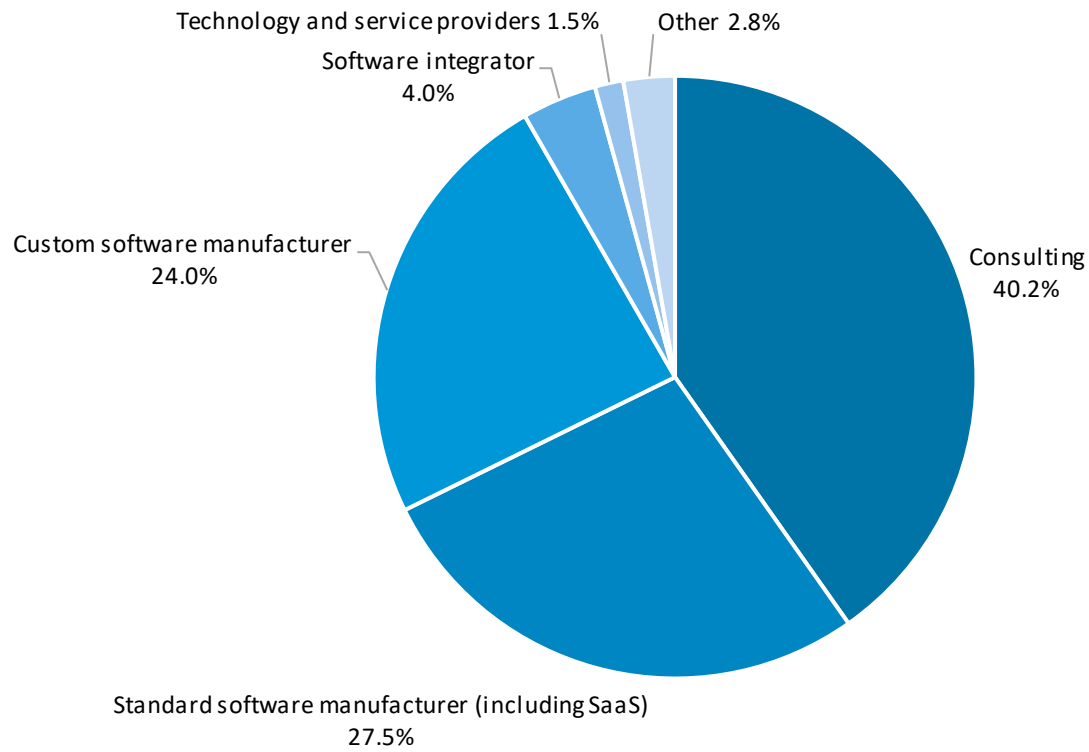
Like in the previous years, this distribution is not representative of the Swiss software industry. Specifically, the share of consulting companies and the share of very small companies in our sample is smaller than in the Swiss software industry as a whole. This year, we have decided to address this challenge by using a statistical procedure called post-stratification. This procedure compares our sample with the software industry as a whole in regards to region, sub-industry, company size, and revenue. If the procedure finds that in our sample some companies are under-represented (e.g., very small companies), then, it will assign a higher weight to these under-represented subgroups to adjust for biases resulting from under-representation.

The advantage of this procedure is that statements about the industry as a whole become more reliable. The disadvantage is that we have lost backwards-compatibility: All figures in this report on the distribution of revenue and the distribution of employees cannot be compared with past SSIS reports. Not affected by this issue of backwards-compatibility are all figures related to growth, such as growth of revenue and growth of employees. They are backward-compatible.

Figure 2 shows that consulting companies are the main contributors to industry revenue (40.2%), followed by manufacturers of standard software (27.5%), and manufacturers of custom software (24%). Software companies are usually diversified, i.e., a consulting company does not only “consult” but also create revenue through other activities such as software integration. Therefore, Figure 3 shows revenue by activities. Consulting and standard software manufacturing remain the most important sources of revenue but they lose in importance compared to software integration and “other activities”.

Distribution of Revenue per Subindustry

Figure 2: Revenue per subindustry as percentage of industry revenue

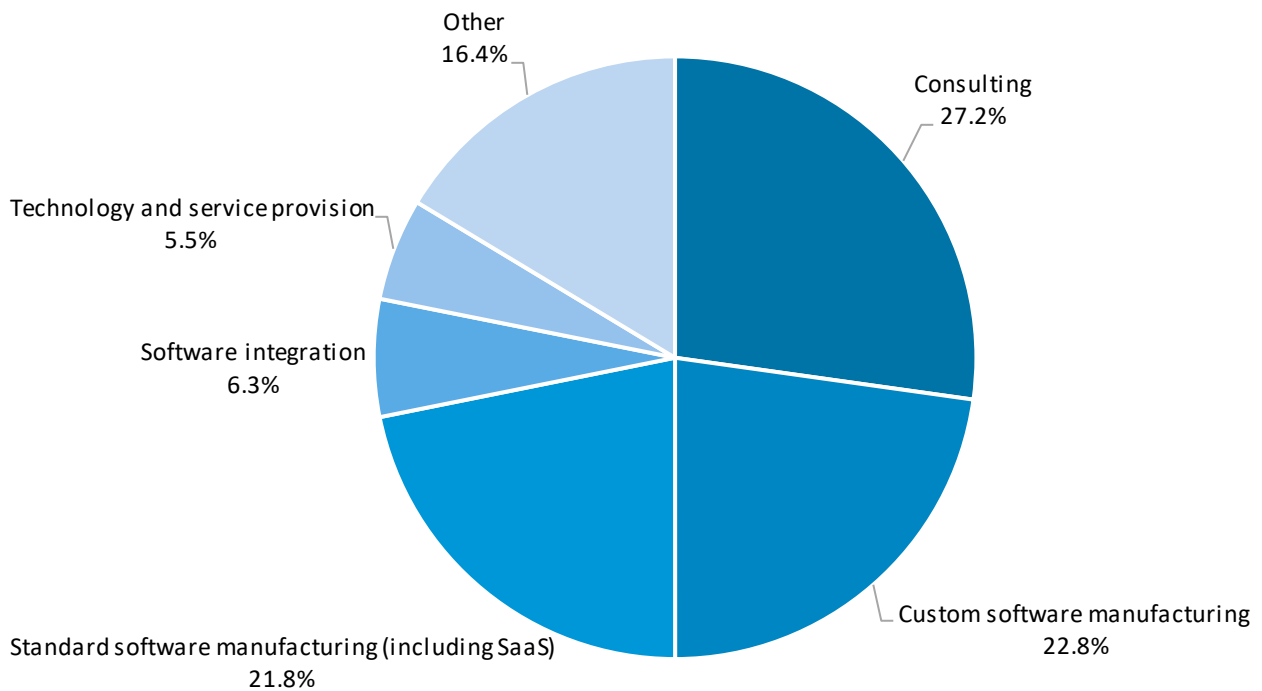


Source: SSIS 2017

N = 235

Distribution of Revenue per Activity

Figure 3: Revenue per field of activity as percentage of industry revenue

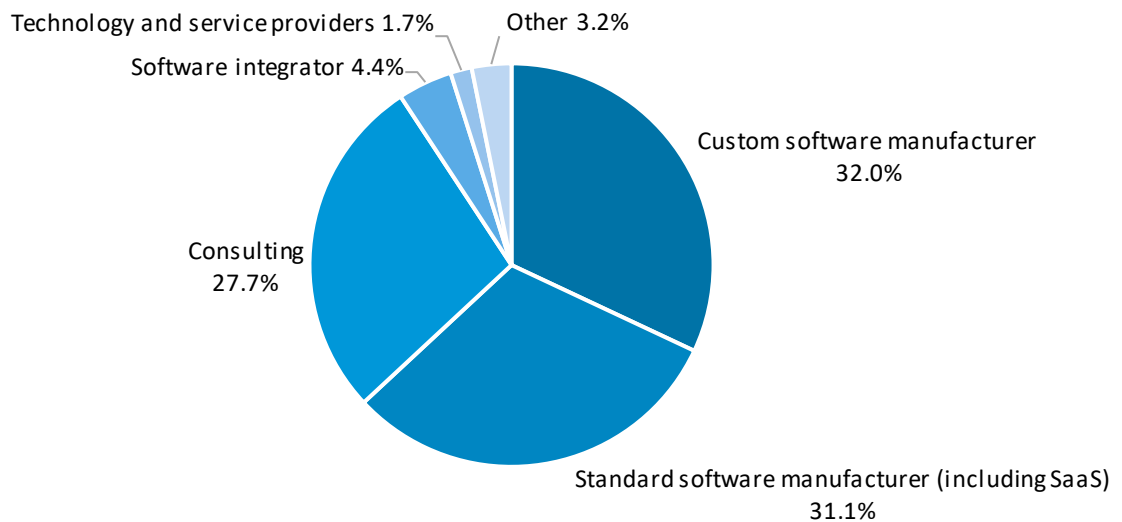


Source: SSIS 2017

N = 235

Distribution of Employees

Figure 4: Number of employees per subindustry as percentage of total employees



Source: SSIS 2017

N = 233

Custom and Standard Software Manufacturers Employ Majority of Employees

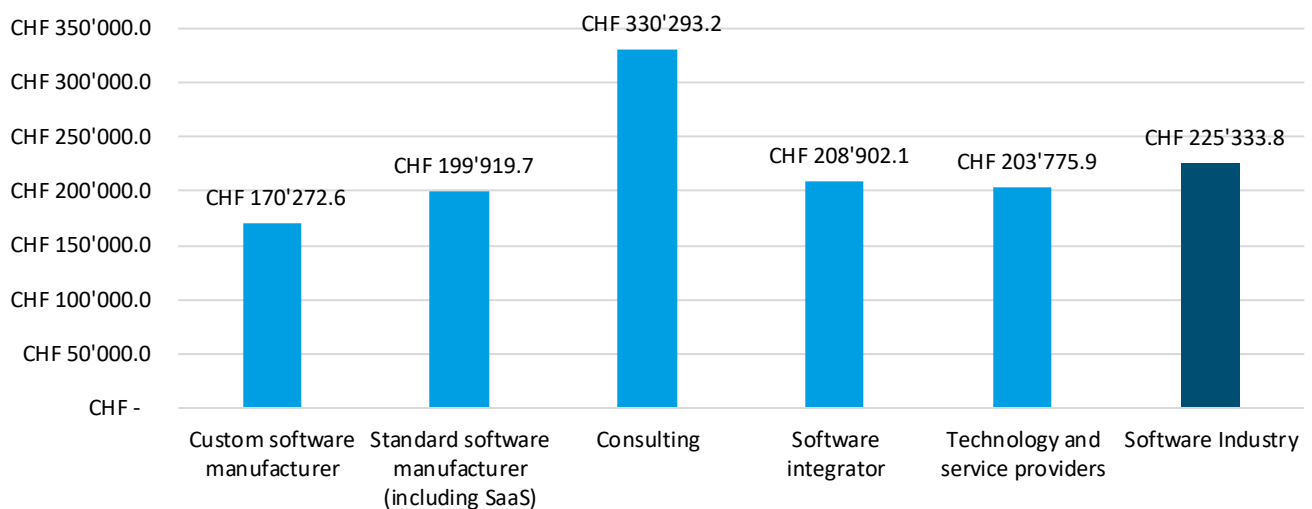
Looking at employee distribution (see Figure 4), custom and standard software manufacturers both account for approximately one third of employees in the Swiss software industry—while consulting only employs 27.7%. Thus, consulting companies employ fewer and manufactures of standard and custom software

employ more employees than one would expect from their respective revenue share.

This also shows in Figure 5, which plots the average revenue per employee. Consulting companies rise to the top, whereas manufacturers of custom and standard software make the lowest revenue per employee.

Revenue per Employee

Figure 5: Average revenue per employee

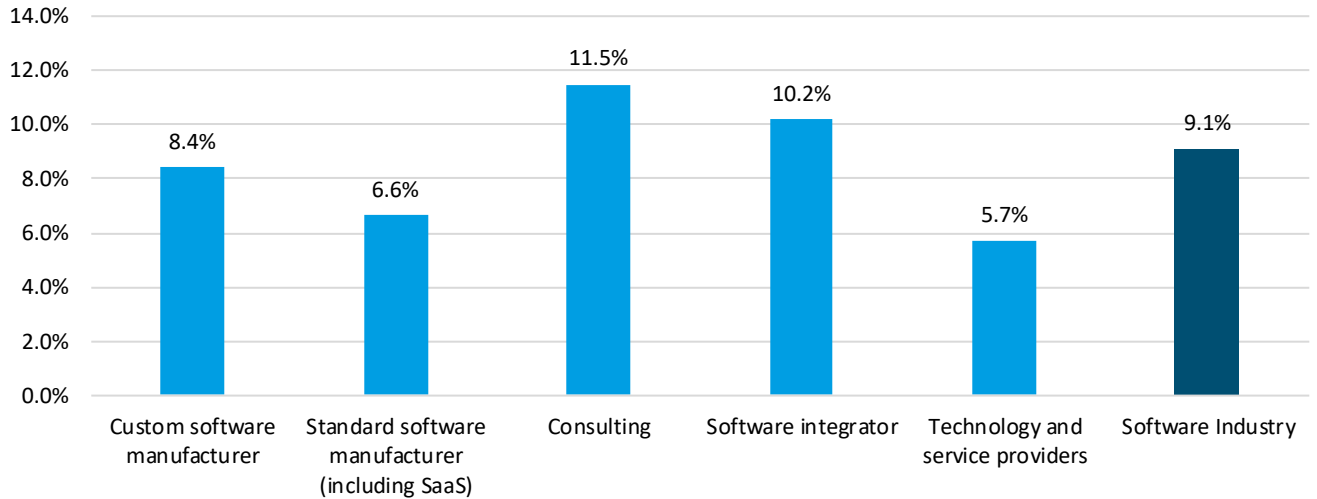


Source: SSIS 2017

N = 233

EBIT Margins in the Swiss Software Industry

Figure 6: EBIT margins by subindustries



Source: SSIS 2017

N = 164

Robust Profitability

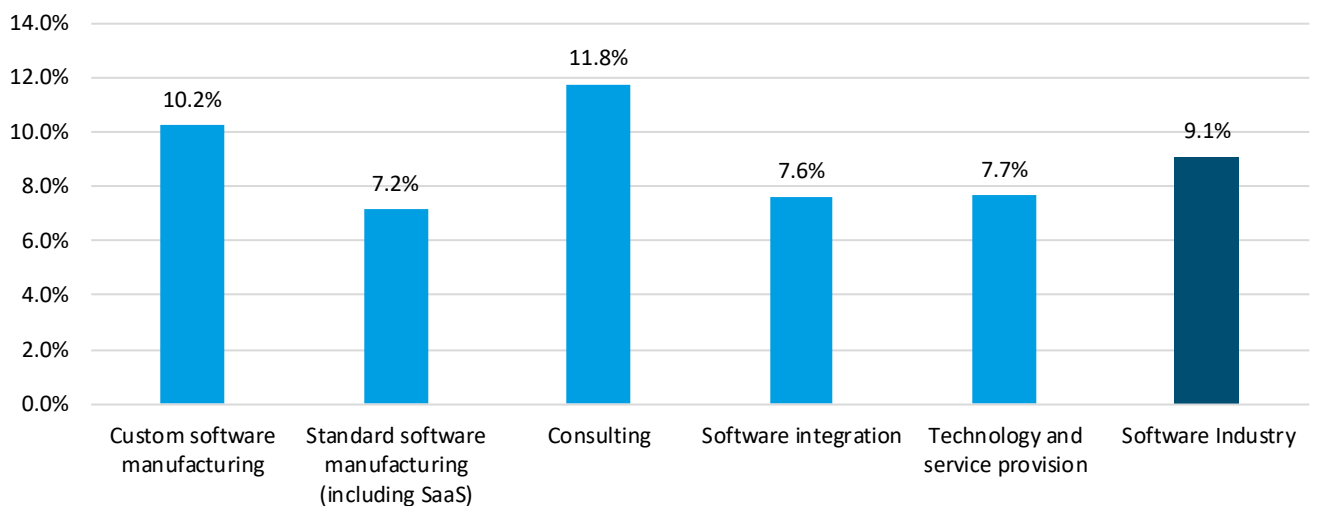
With an EBIT margin of 9.1%, the Swiss software industry has a robust profitability. Consulting companies (11.5%) and software integrators (10.2%) are particularly profitable. They are followed by custom software manufacturers (8.4%), standard software manufacturers (6.6%), and technology and service providers (5.7%) (see Figure 6).

Figure 7 shows profitability by activities. This figure

reflects broadly the same pattern as Figure 6—with two notable exceptions. Custom software manufacturers are less profitable than expected for companies that focus on custom software manufacturing and vice versa for software integrators. This suggests that custom software manufacturers diversify into less profitable and software integrators into more profitable businesses.

EBIT Margins per Activity

Figure 7: EBIT margins per activity

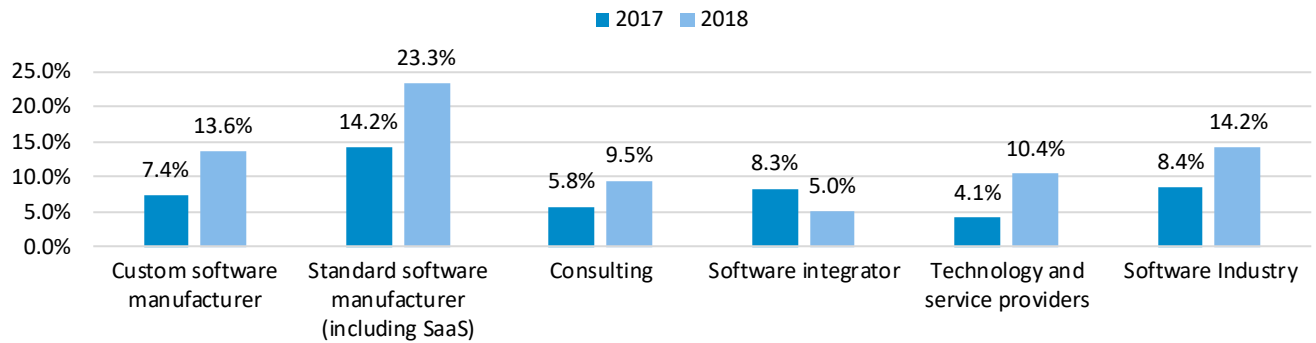


Source: SSIS 2017

N = 173

Expected Growth in Revenue

Figure 8: Expected year over year revenue growth in revenue for 2017 and 2018



Source: SSIS 2017

N = 224

Bright Revenue Growth Expectations

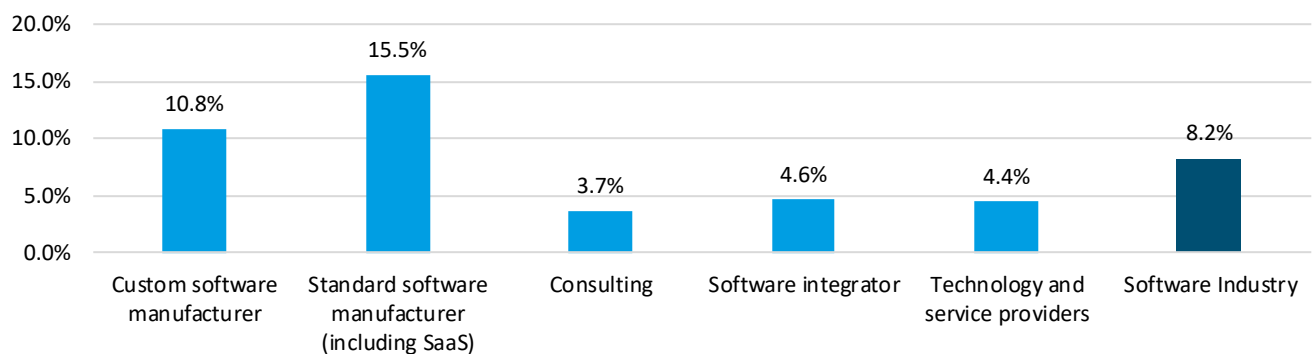
Revenue expectations of the Swiss software industry are bright. In 2017, revenue is expected to grow by 8.4%, in 2018 even by 14.2%. All subindustries expect to grow by more than 4% in 2017 and by more than 5% in 2018.

In both years, standard software manufacturers expect

to grow the fastest (2017: 14.2%, 2018: 23.3%). Custom software manufacturers take the number two spot with 7.4% and 13.6%, respectively. While technology and service providers have the cloudiest growth expectations in 2017 (4.1%), they take the number three spot in 2018 (10.4%).

R&D Investments

Figure 9: R&D investments in 2017 as percentage of revenue



Source: SSIS 2017

N = 202

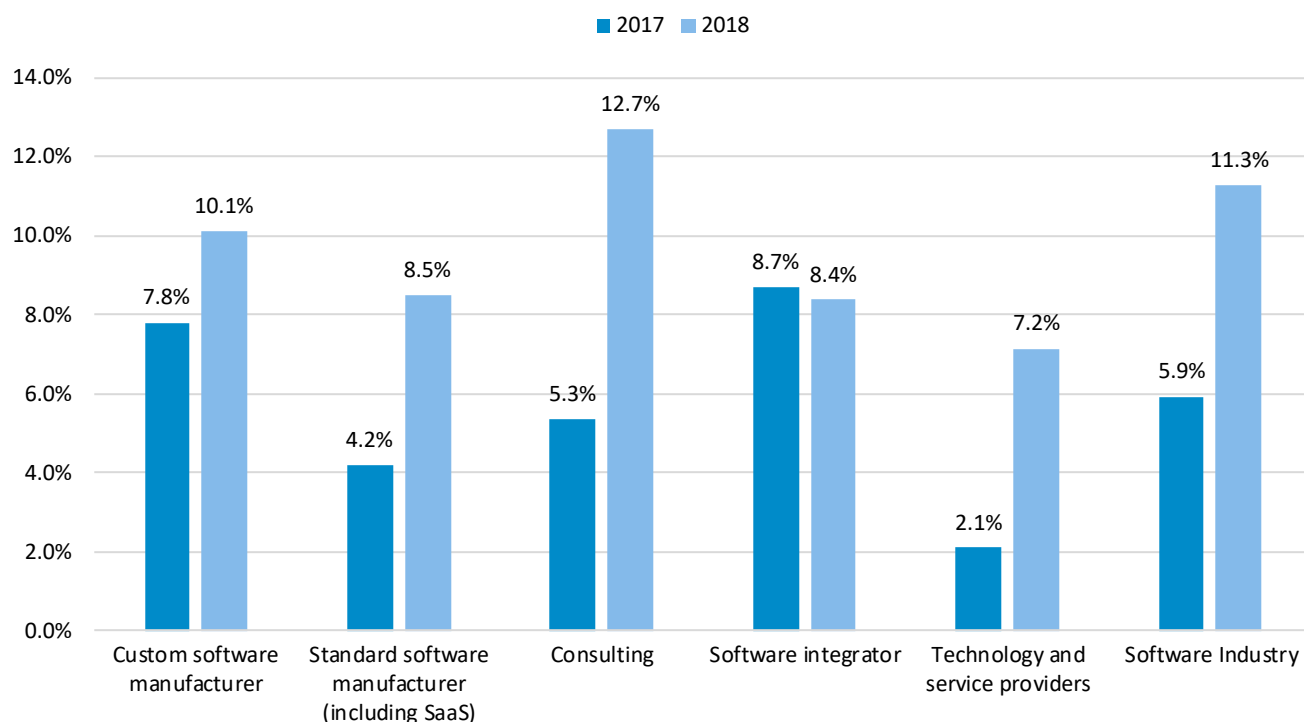
Software Manufacturers Lead Investments in R&D

The Swiss software industry invests 8.2% of its revenue in R&D. Like in the previous years, manufacturers of standard software have the highest expenses for R&D by a wide margin (15.5%). Custom software manufacturers also invest a considerable amount of money (10.8%).

All other subindustries invest less than 5% of their revenue into R&D. Particularly consulting companies—which represent the most profitable subindustry—invest the lowest amount of money into their future (3.7%).

Employee Growth Prospects

Figure 10: Expected year over year growth of workforce for 2017 and 2018



Source: SSIS 2017

N = 232

Expected employee growth of

11.3%

In 2018

Revenue Growth Through Employee Growth

In lockstep with the bright expectations for revenue growth, the Swiss software industry plans to extend its workforce considerably in 2017 and 2018. In 2017, the Swiss software industry expects to hire 5.9% additional employees. In 2018, this growth is expected to rise to 11.3%.

In both years, none of the subindustries plan to reduce their workforce. In 2017, software integrators plan the steepest increases in their workforce (8.7%), closely followed by manufacturers of custom software (7.8%). Consulting companies (5.3%), standard software manufacturers (4.2%), and technology and service providers (2.1%) are on the slower end of growth.

However, for those subindustries that were on the slower end of growth in 2017, growth expectations clear up the strongest: Consulting companies expect to grow their workforce by 12.7%, standard software manufacturers by 8.5%, and technology and service providers by 7.2%.

The growth expectations of custom software manufacturers are also considerably more positive in 2018 (10.1%), whereas the growth expectations of software integrators remain mainly roughly stable (8.4%).

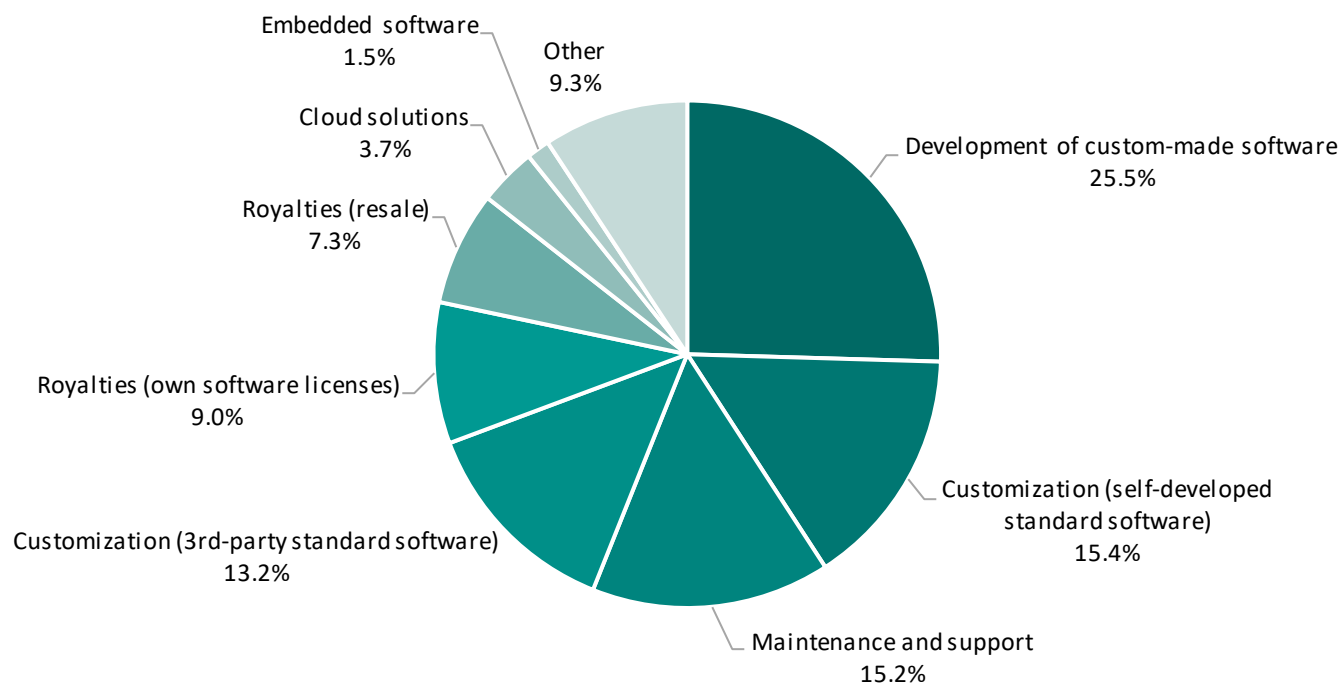
Spotlight on

Sources of Revenue



Sources of Revenue

Figure 12: Revenue from different revenue sources as percentage of industry revenue



Source: SSIS 2017

N = 235

Among the participants,

25.5%

develop custom software

Sources of Revenue

The development of custom-made software remains the largest source of revenue with a share of 25.5%. However, if the two customization categories are combined—i.e., customization of self-developed and of 3rd-party software—they are responsible for an even larger share of 28.7%. Maintenance and support follows with 15.2%. Thus, together the development, customization and maintenance of software are responsible for more than two thirds of the industry revenue (see Figure 12). Traditional software royalties follow at some distance with 9%. Revenue from cloud-based software services is still only responsible for 3.7% of industry revenue.

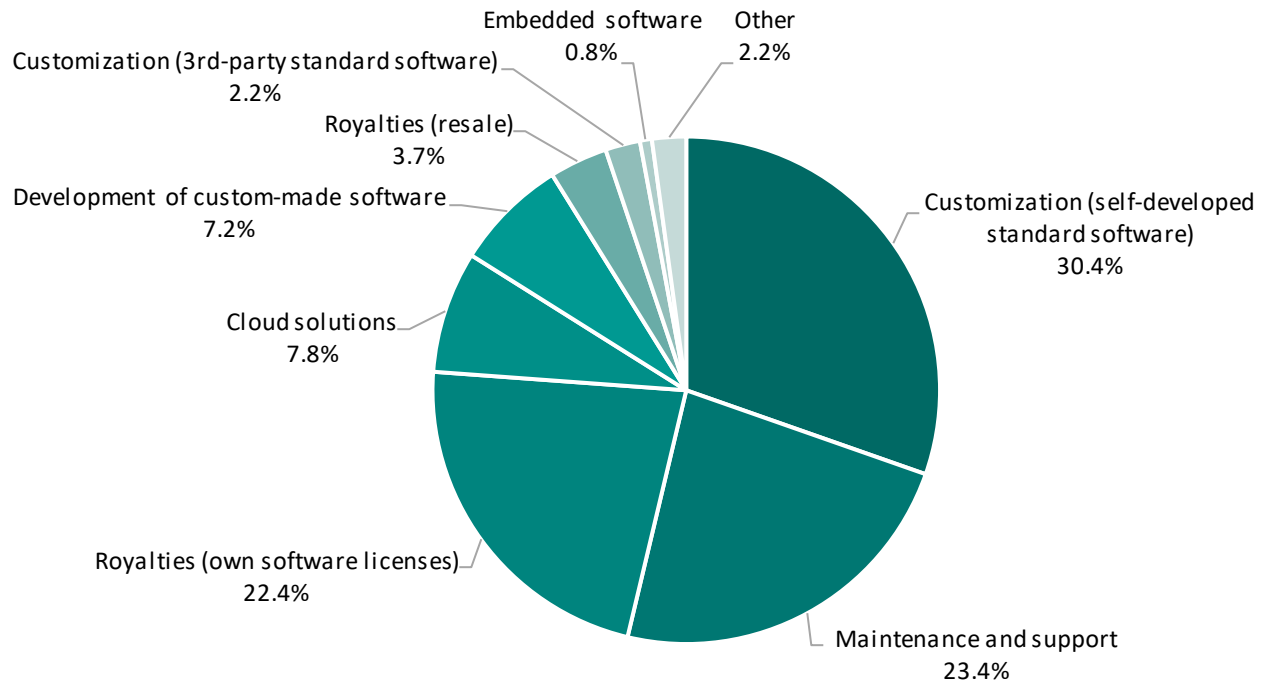
If the sample is split by manufacturers of standard vs.

custom software, the sources of revenue change dramatically. For manufacturers of standard software, customization remains the largest stream of revenue (30.4), followed by maintenance and support (23.4%), software royalties (2017: 22.5%), and cloud-based solutions (2017: 7.7%).

For custom software manufacturers, the development of custom software is by far the largest source of revenue (52.9%, 2016: 60.7%). Maintenance and support (11.9%), and software customization (8.5%) follow at some distance. The development of embedded software (4.0%), cloud-based solutions (2.3%), and software royalties (1.8%) are still minor sources of revenue.

Sources of Revenue for Manufacturers of Standard Software

Figure 13: Revenue from different revenue sources as percentage of standard software manufacturer revenue

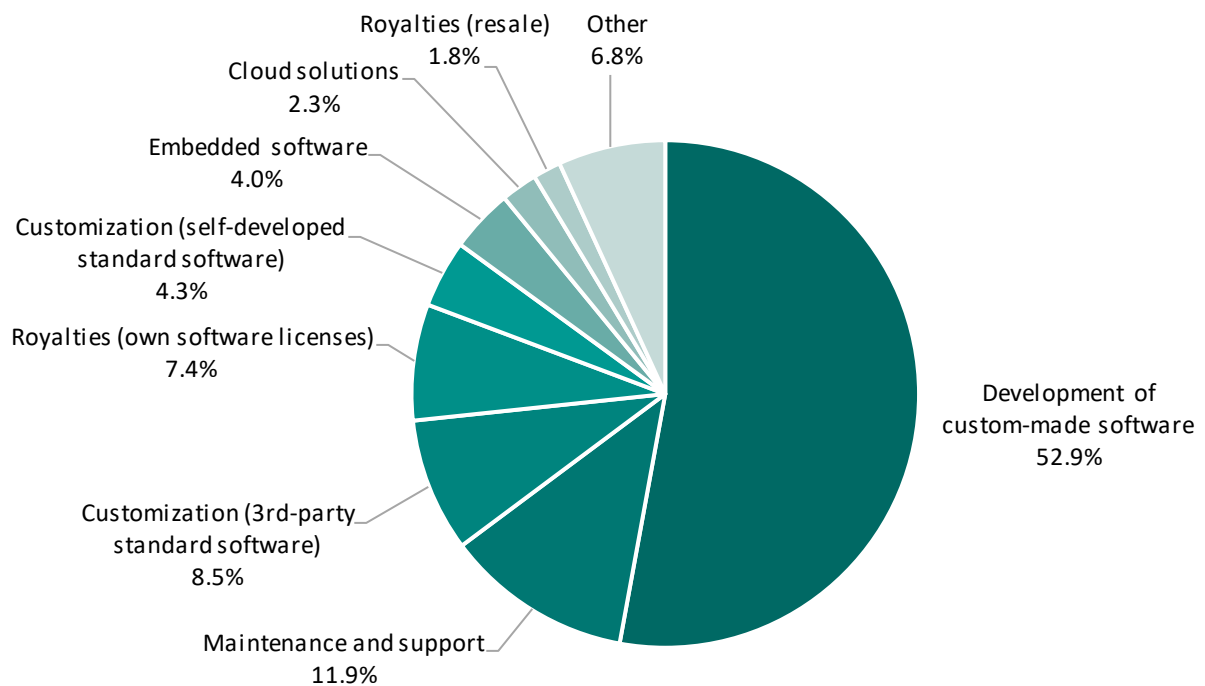


Source: SSIS 2017

N = 72

Sources of Revenue for Manufacturers of Custom Software

Figure 14: Revenue from different revenue sources as percentage of custom software manufacturer revenue



Source: SSIS 2017

N = 89

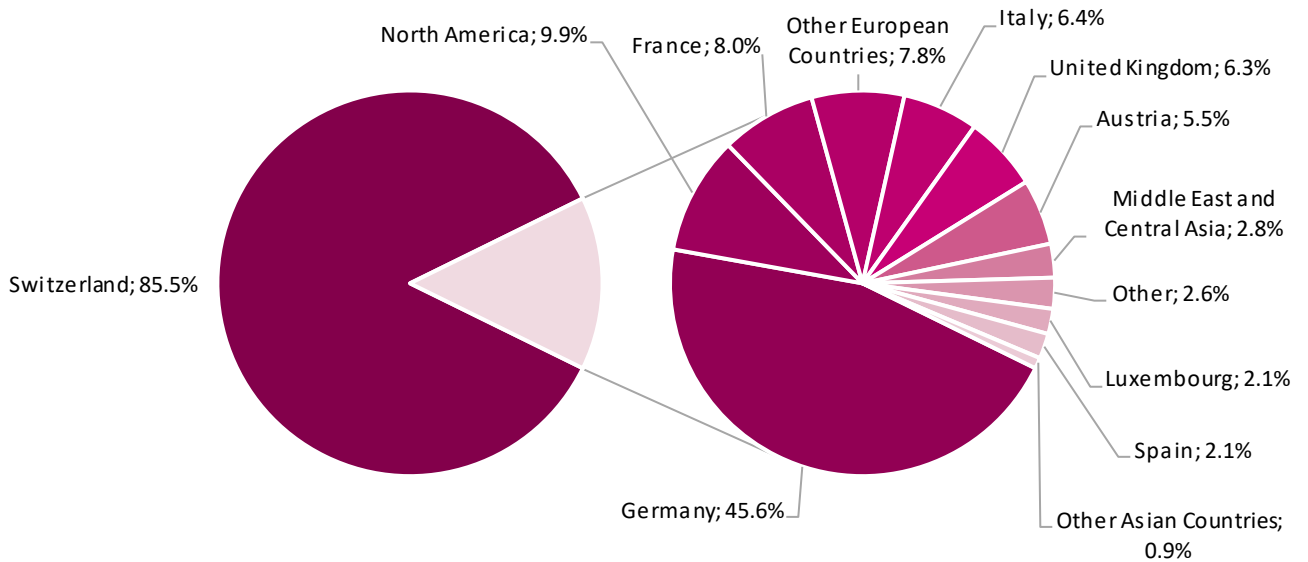
Spotlight on

Internationalization and Outsourcing



Degree of Internationalization and Target Markets

Figure 15: Distribution of international revenue



Source: SSIS 2017

N = 212

Internationalization of Swiss Software Companies

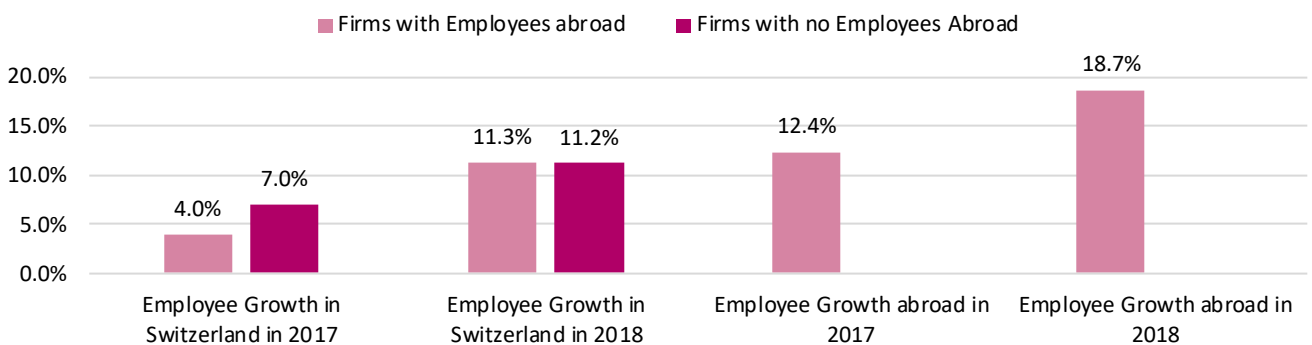
14.5% of the revenue of the Swiss software industry comes from countries other than Switzerland. Germany remains the most important export market by a wide margin. More than 45% of the export revenue comes from Germany. North America is now the number two export market for Swiss software companies (2017: 9.9%, 2016: 6.7%). Switzerland’s neighboring countries France (8.0%), Italy (6.4%), and Austria (5.5%) remain important export markets. The large export shares to the U.K. (6.3%) and Luxembourg (2.1%) are also striking. They can be traced back to a few software companies that specialize in solutions for

the financial services industry.

Software products and services are not only increasingly exported, the value chain is also internationalizing. Accordingly, Swiss software companies increasingly employ employees abroad (see Figure 16). While the foreign workforce is growing at faster pace than the local workforce, there are no signs that this growth is reached by shrinking the local workforce. The growth of the domestic workforce of those companies that outsource is equal to the growth of those companies that exclusively rely on Swiss employees.

Growth of Headcounts

Figure 16: Percentage of growth in headcounts of employees in Switzerland and abroad



Source: SSIS 2017

N = 232

Outsourcing in the Swiss Software Industry

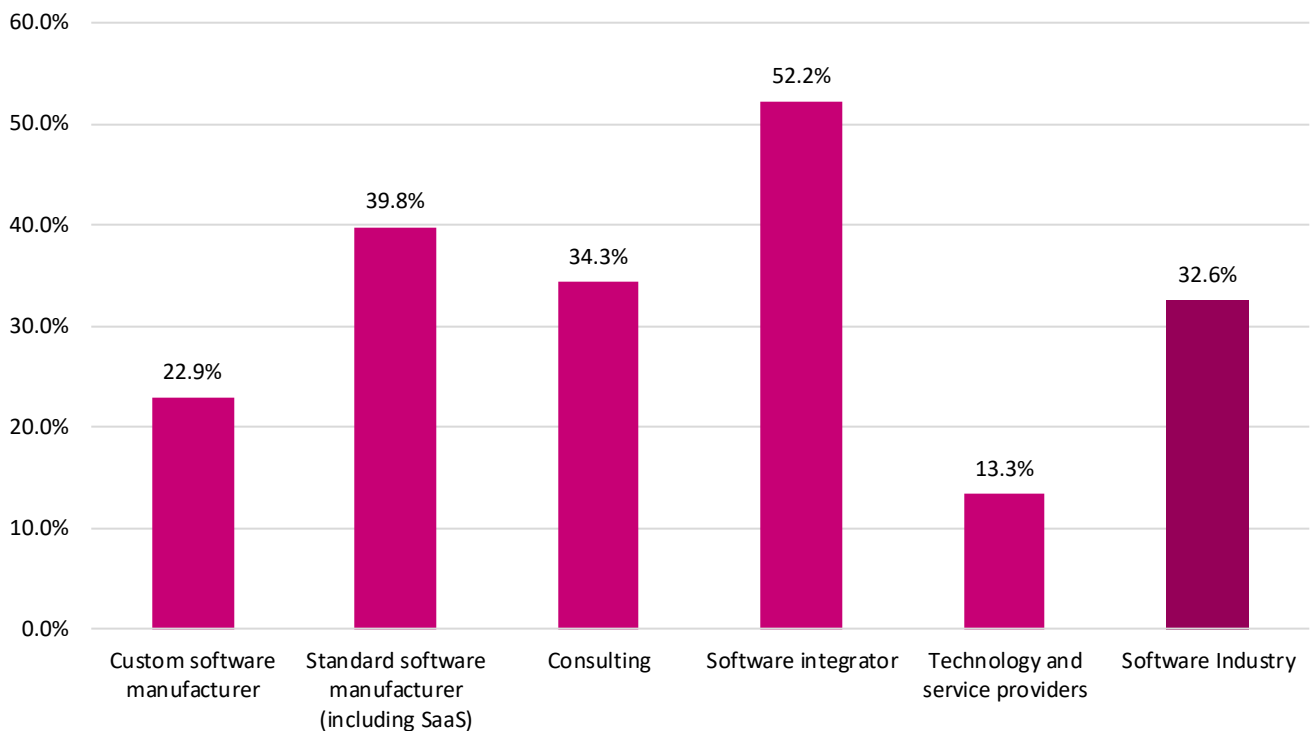
A major trend in the IT industry is outsourcing, i.e., the development, improvement, and operation of IT products and services through external vendors. The SSIS 2017 for the first time analyzes outsourcing in the Swiss software industry.

Our results show that the propensity to outsource is

highest among software integrators. More than 50% of those companies affirm to outsource. They are followed by standard software manufacturers (~40%), consulting companies (~34%), custom software manufacturers (~23%), and technology and service providers (~13%).

Outsourcing Yes—No

Figure 17: Percentage of companies that outsource by subindustries



Source: SSIS 2017

N = 301

What is Outsourced and to What Extent?

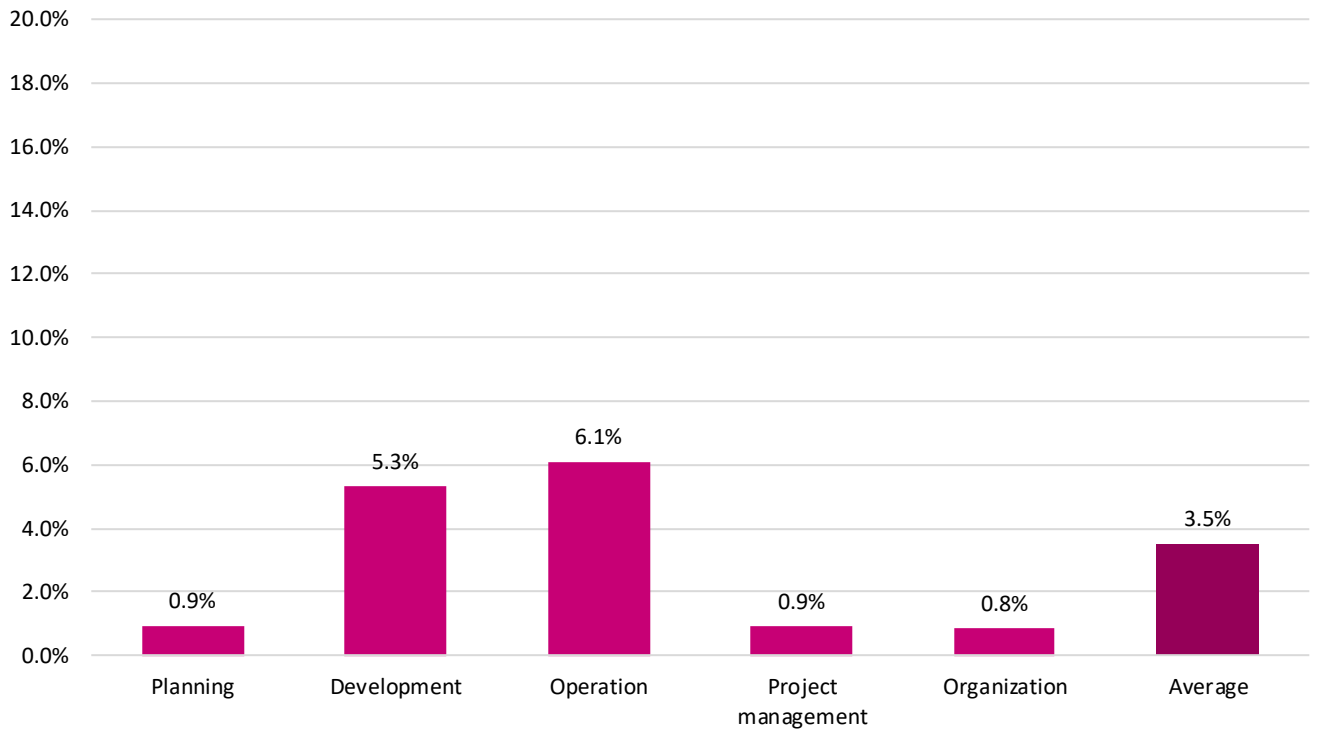
Different activities are outsourced to different extents. About 6.1% of all operation activities and 5.3% of development activities are outsourced—whereas “planning”, “organization”, and “project management” are only outsourced to a very small extent (all <3%) (see Figure 18).

To a large extent these low numbers can be explained by the fact that many companies do not outsource at all. Figure 19 shows the extent of out-

sourcing by activities of only those companies that do outsource. This changes the picture dramatically: Companies that outsource, outsource 17.3% of development, and 16.6% of operations.

Extent of Outsourcing in the Swiss Software Industry

Figure 18: Percentage of outsourced activities for all software companies

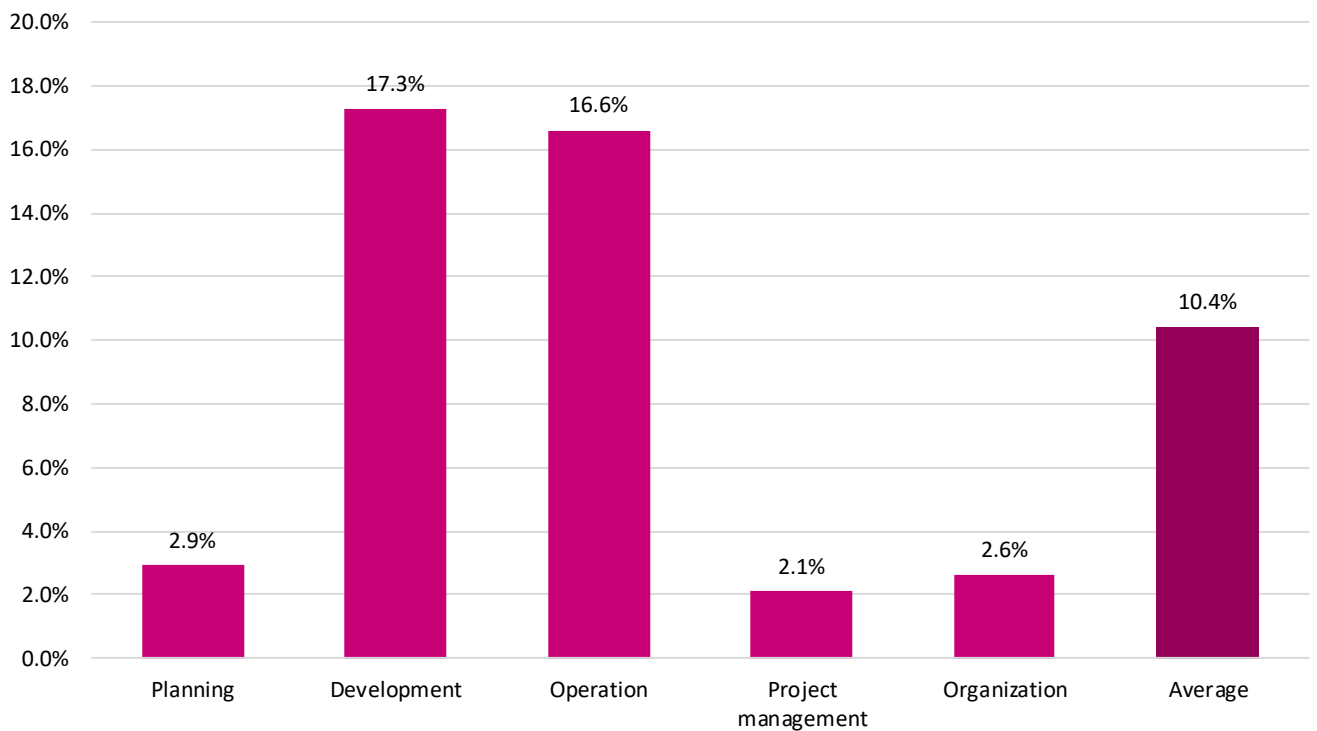


Source: SSIS 2017

N = 301

Extent of Outsourcing in the Swiss Software Industry—Outsourcing Companies Only

Figure 19: Percentage of outsourced activities for those companies that outsource

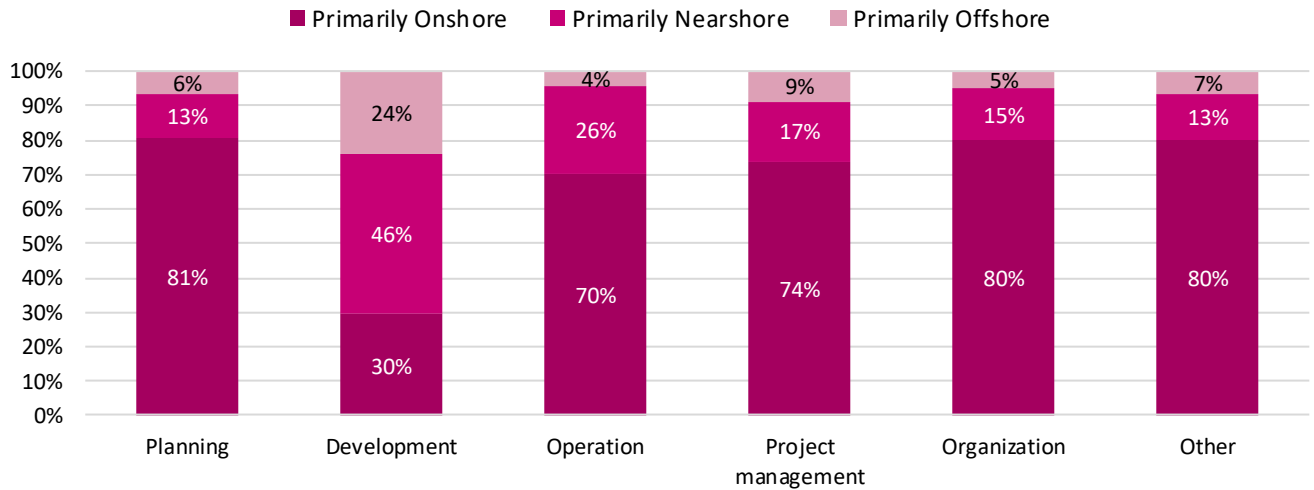


Source: SSIS 2017

N = 153

Locations of Outsourced Activities

Figure 20: Percentage of onshoring, nearshoring, and offshoring by activities



Source: SSIS 2017

N = 153

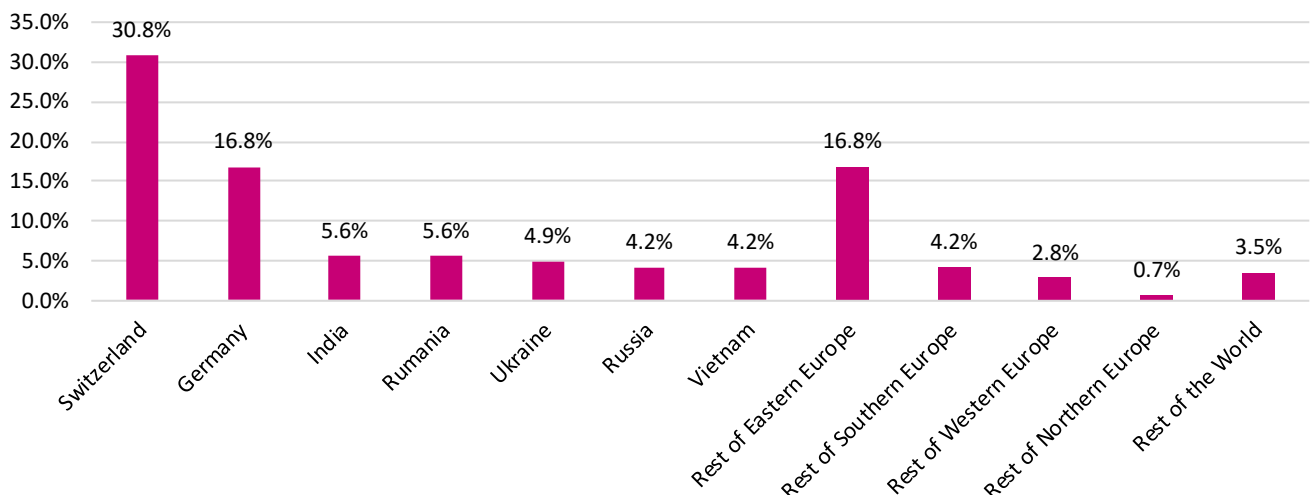
To Which Locations do Swiss Software Companies Outsource?

For most activities the top outsourcing destination is Switzerland. Planning, organization, and project management are first and foremost sourced to service providers in Switzerland (all >74%) (see Figure 20). The notable exceptions are “operations” and to an even stronger degree “development”. Only 30% of development activities are sourced to Switzerland while 46% are nearshored, and 24% offshored.

We also asked participants to name the top outsourcing countries. Again, Switzerland reached the top spot, followed by Germany, India, Rumania, Ukraine, Russia, and Vietnam (see Figure 21). Overall, Western European countries dominate this list (>45%), followed by Eastern European (>30%), and Asian countries (>10%). Southern Europe and the rest of the world are of minor importance.

The Most Popular Countries for Sourcing

Figure 21: Percentage of companies that mention the following countries as favorite sourcing destination

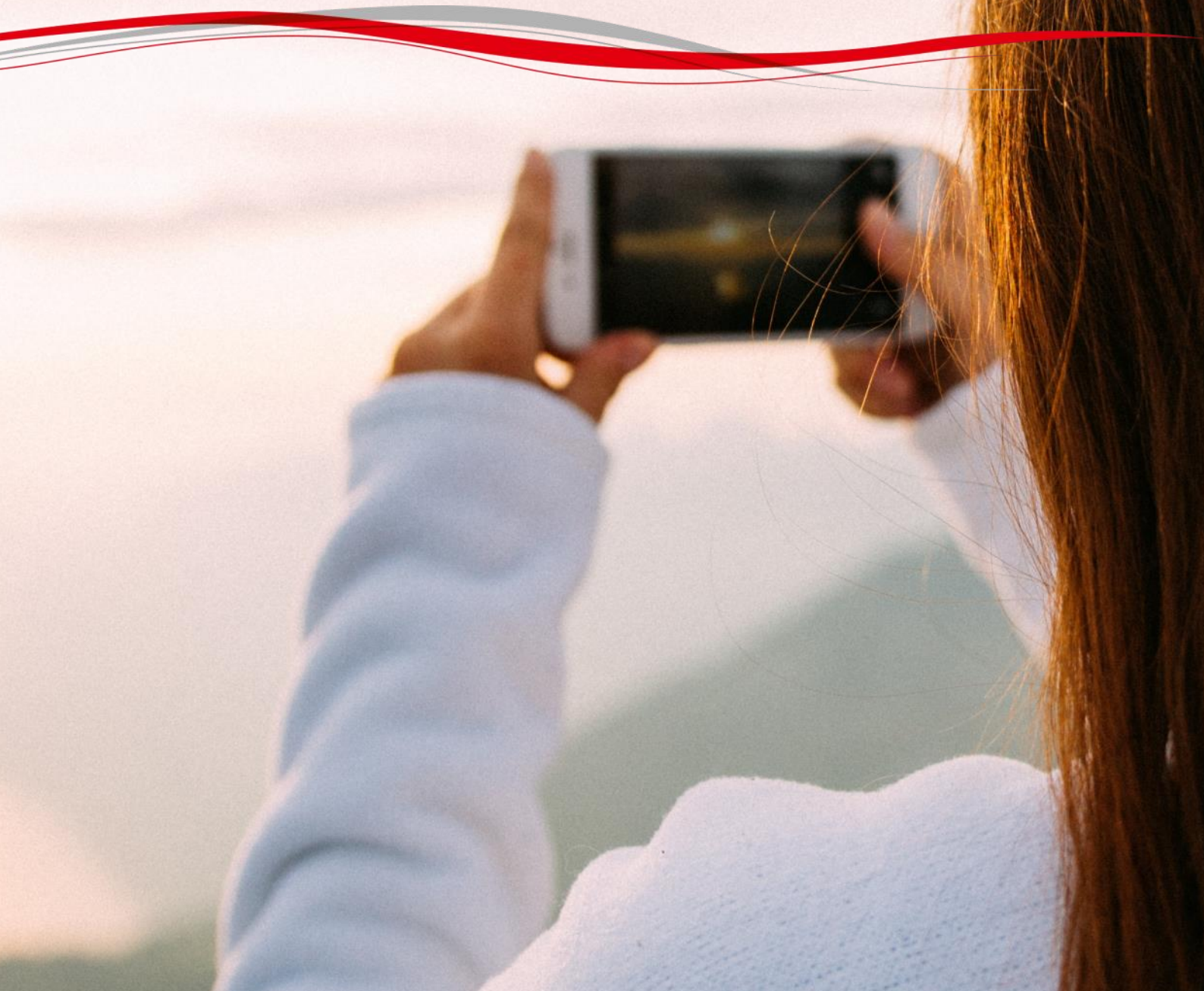


Source: SSIS 2017

N = 91

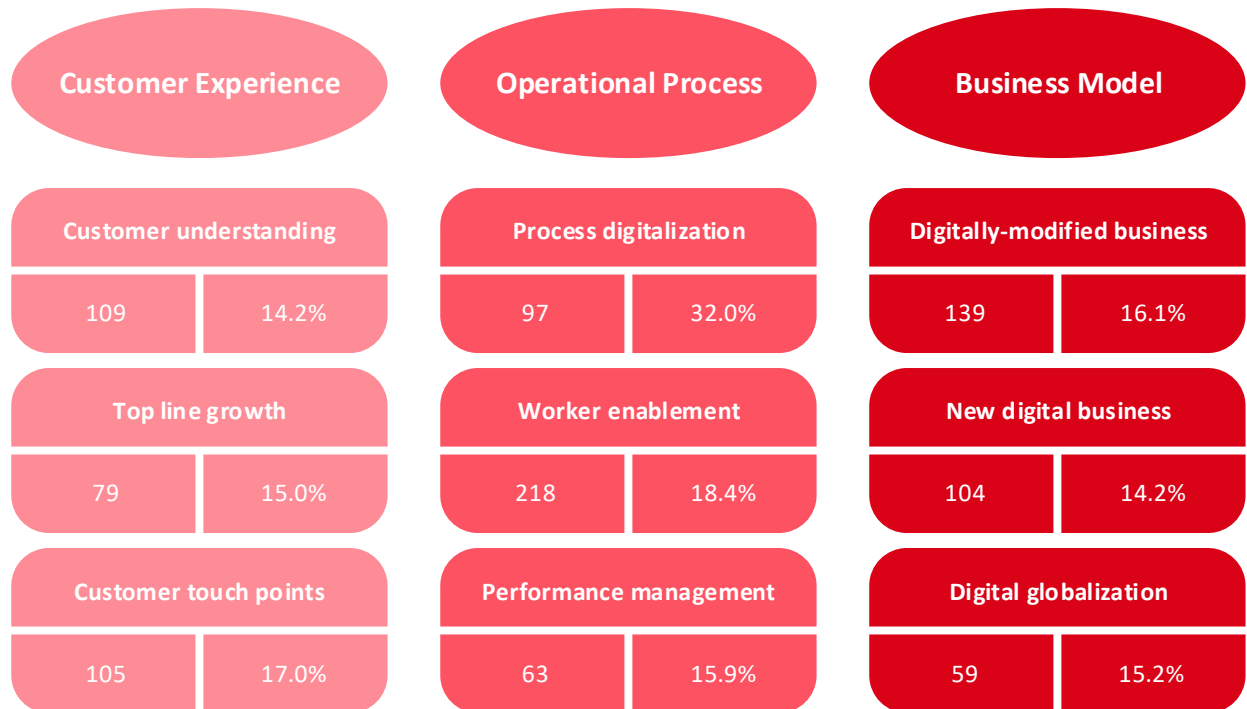
Spotlight on

Digital Transformation



Supported Areas of Digital Transformation

Figure 22: Number of companies that mention to be active in this area and percentage of cost spent in this area



Source: SSIS 2017, Original Framework from MIT & Capgemini, Digital transformation; A roadmap for billion-dollar companies

N = 261

Software Companies as Digital Transformation Agents

The digital transformation is often described as the change associated with the application of digital technology in all aspects of human society. Software is at the core of this transformation that will fundamentally change the way we work and collaborate. Hence, software companies have the opportunity to become key players in process of digitally transforming business and society.

The goal of this special section is to better understand how well-prepared Swiss software companies are to act as effective agents to bring about the digital transformation. For this purpose, we asked in a first step in which of the nine key areas of digital transformation, Swiss software companies are already active (see Figure 22). Those areas further to the right in Figure 22 represent more novel business

opportunities for software companies. By far the most frequently mentioned area is “worker enablement” in the middle of the figure. The least frequently mentioned areas are “digital globalization” (59) (right) and “performance management” (63) (middle).

Beyond identifying in which digital transformation areas Swiss software companies are active, we wanted to understand how much of their total cost companies that are active in a given area is spent for this area. Here process digitalization takes the top spot with more than 32%, whereas for all other key areas expenses are in the range of 14-18% of total cost. It appears, as if this area is particularly resource binding.

The Skills Required to Make the Digital Transformation a Success

We also reviewed the literature and conducted a workshop to identify the seven key skills and capabilities required to successfully transform businesses and society.

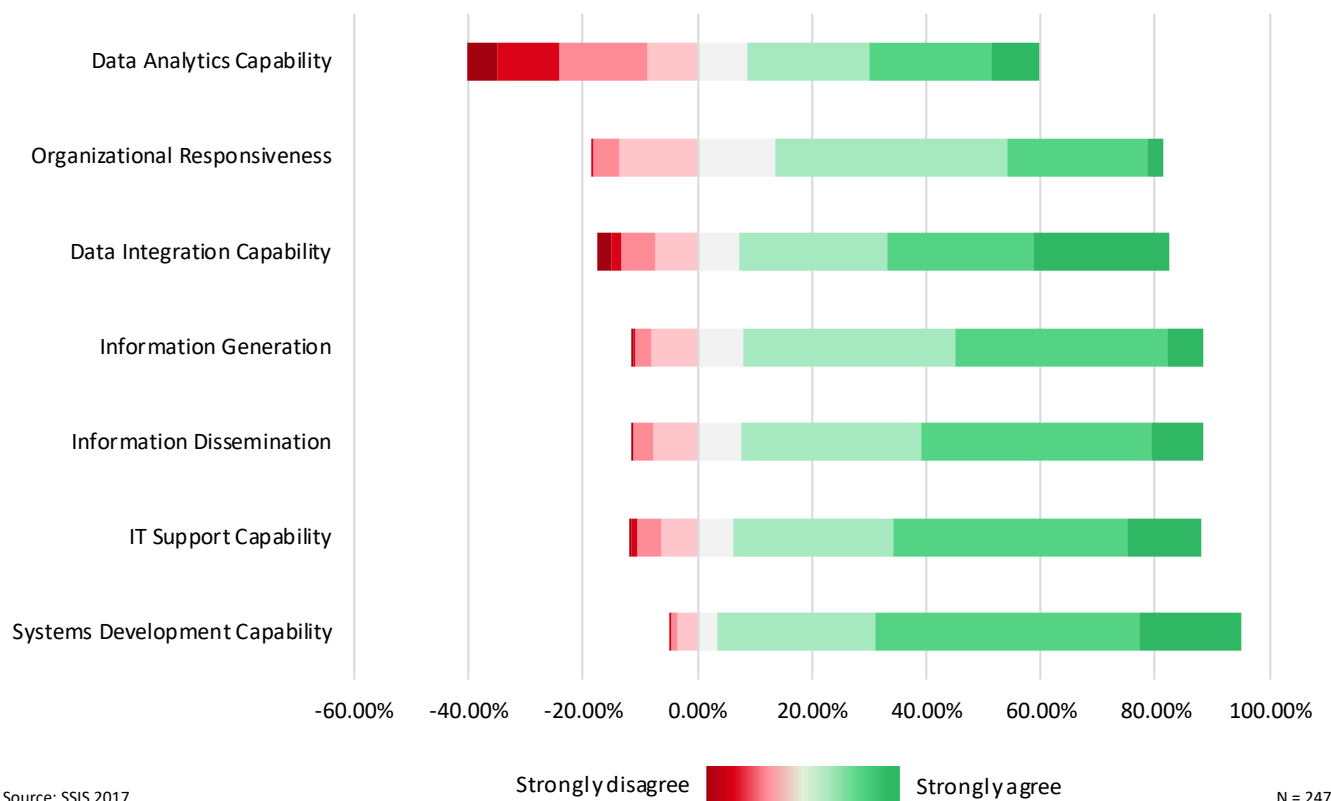
We asked the software companies to self-assess these skills and capabilities. Figure 24 shows the results of this assessment. The further to the right each bar, the more competent the Swiss software industry sees it-

self regarding the respective capability.

The figure shows that Swiss software companies are already strong regarding the classic software-related skills such as systems development and IT support. However, they lack strong data analytics and integration skills and also appear to be weaker in responding to new business opportunities and closeness to their customers.

Overview Digital Transformation Skills

Figure 23: Percentage of favorite outsourcing destinations



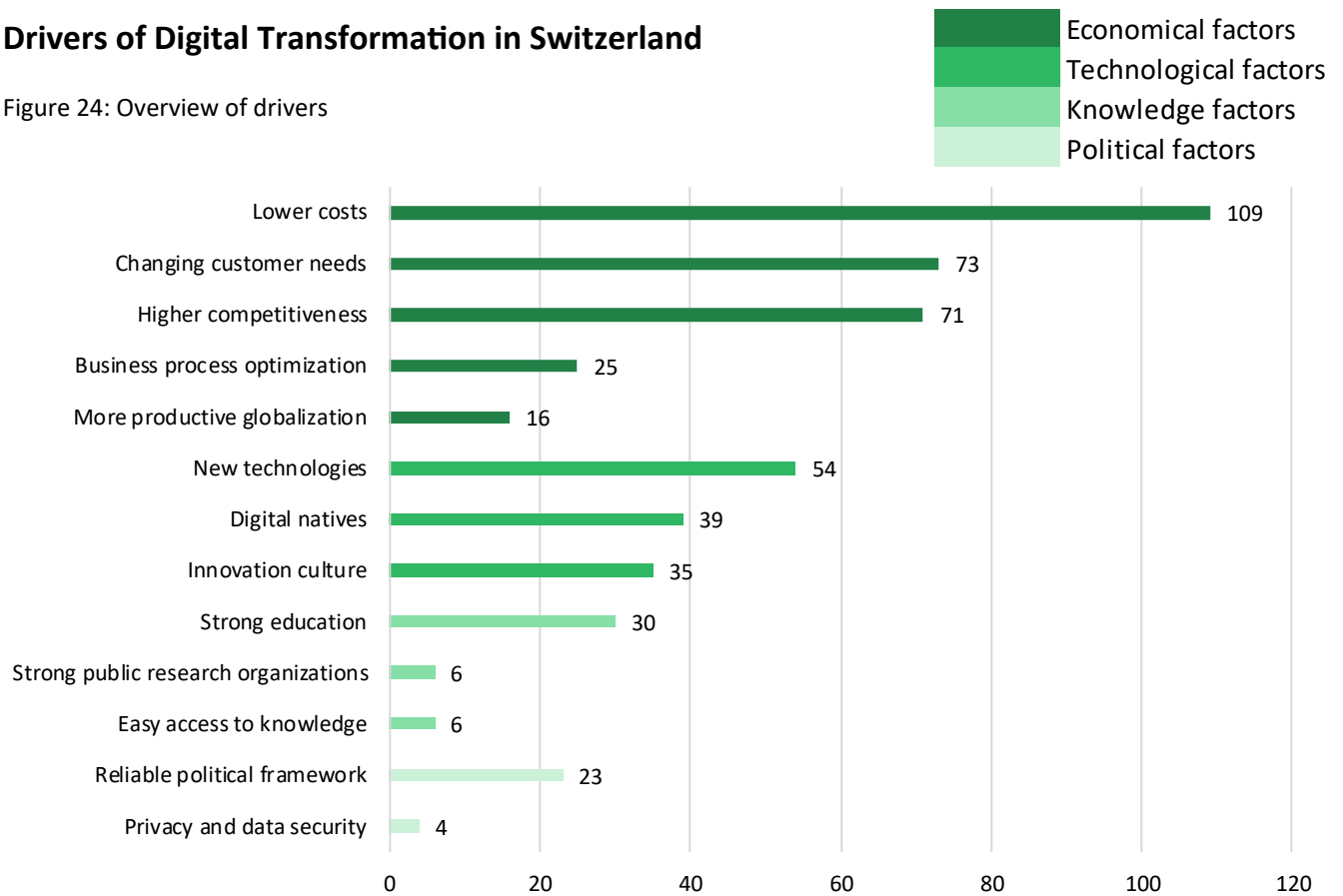
Drivers of and Barriers to Digital Transformation

We also asked an open question on digital transformation: What are the main drivers of and barriers to digital transformation in Switzerland. We coded each answer and created categories (see Table 1 and Table 2 for detailed descriptions of each category). Economical factors such as the promise of lower costs and changing customer needs are the most frequently mentioned drivers, followed by technological factors and knowledge factors. Political fac-

tors such as Switzerland's reliable political framework were also mentioned as drivers—but considerably more often political factors such as restricting regulation were mentioned as a barrier. By far the most frequently mentioned barrier, however, was traditionalism and particularly conservative corporate cultures. The only economic factor frequently mentioned as a barrier was insufficient financing.

Drivers of Digital Transformation in Switzerland

Figure 24: Overview of drivers

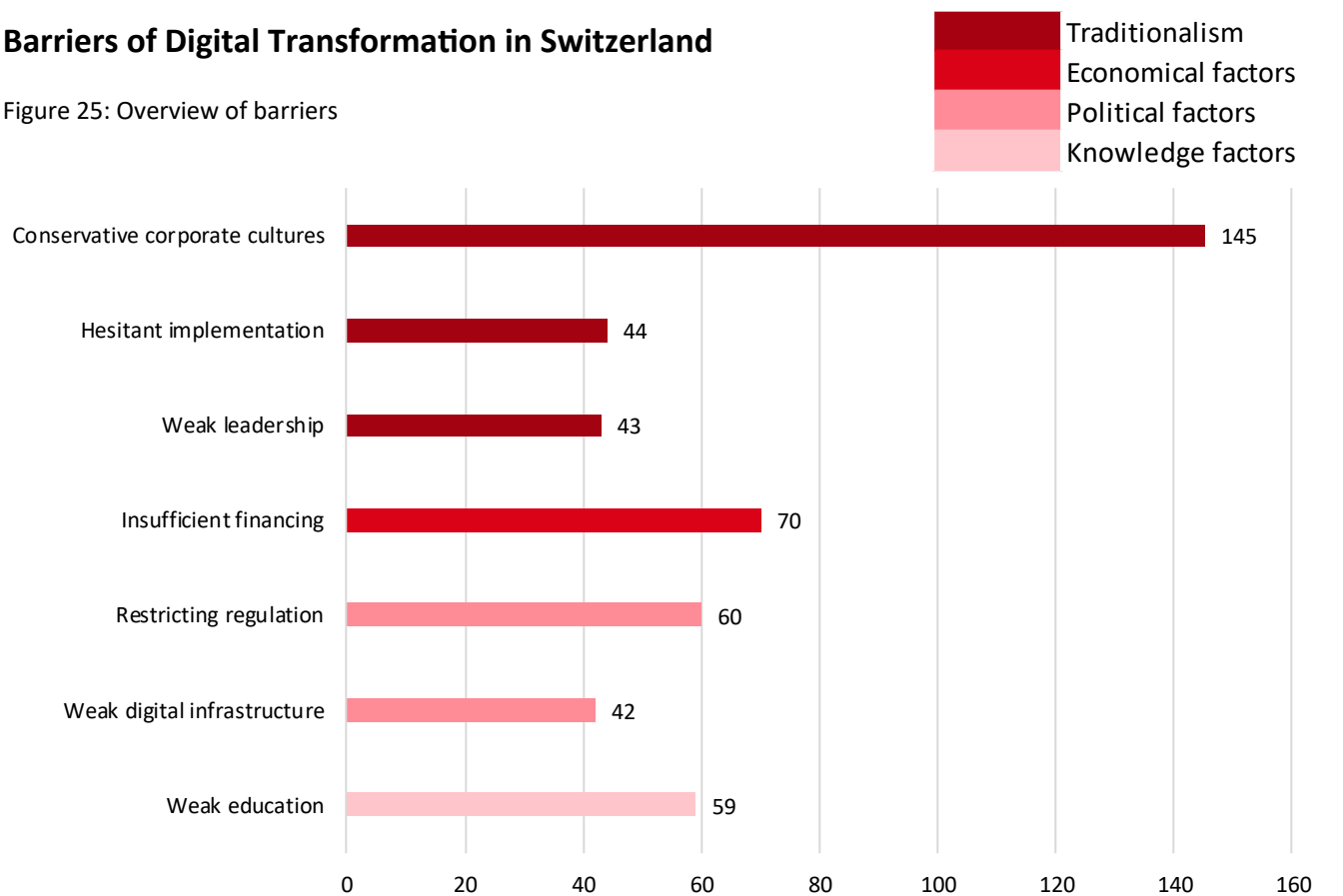


Source: SSIS 2017

N = 373

Barriers of Digital Transformation in Switzerland

Figure 25: Overview of barriers



Source: SSIS 2017

N = 388

Table 1: Drivers of Digital Transformation

Economical factors	Lower costs: Digital transformation promises increases in productivity & efficiency / lower labour costs
	Higher competitiveness: Digital transformation helps Swiss companies to improve competitive position
	More productive globalization: Many Swiss companies are global companies with operations, customers, and partners distributed all over the world / digital transformation improves collaboration in global companies
	Changing customer needs: Increasingly strong demand for digital products and services
	Business process optimization: Digital transformation helps Swiss companies improve, optimize, and automate business processes
Technological factors	New technologies: New technologies like smartphones, the "cloud", and artificial intelligence have become powerful enough to change businesses and society
	Innovation culture: The innovative spirit of Swiss people and companies fosters development and adoption of digital innovations
	Digital Natives: Younger generations have grown up in world of ubiquitous digital technologies and are competent in using them
Knowledge factors	Strong education: Many employees with high levels of education / many skilled workers hold higher educational degrees related to digitalization
	Strong public research organizations: Switzerland has many renowned universities and research centres / research organizations conduct cutting-edge research and education
	Easy access to knowledge: Many people in Switzerland have ready access to information about digital transformation / strong infrastructure to gather, store, and disseminate knowledge
Political factors	Reliable political framework: Businesses and society can rely on a reliable and strong policy framework that is innovation-friendly
	Privacy and data security: Strong privacy and data protection regulations promote feelings of safety despite increasing digitalization

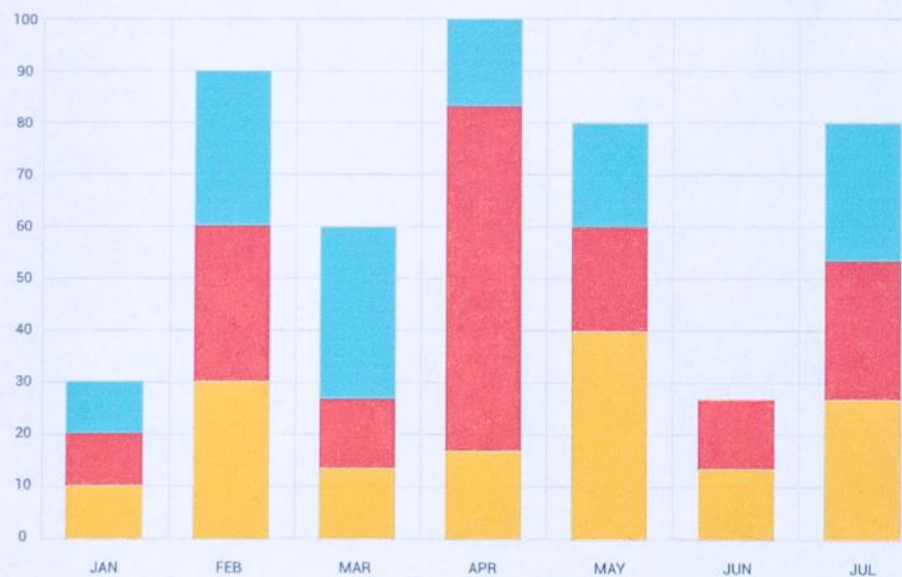
Table 2: Barriers to Digital Transformation

Traditionalism	Conservative corporate cultures: Managers and employees are risk averse and often hold a critical view towards technological change and prefer tried-and-tested technologies / companies are reluctant to take on the costs associated with technological change
	Weak leadership: Key executives responsible for digital transformation are old digital immigrants / ambiguous responsibilities for the introduction of new digital technologies
	Hesitant implementation: Companies acknowledge the need to change but adopt and implement new technologies too slow
Economical factors	Insufficient financing: Many companies lack the financial resources to invest in new technologies
Political factors	Weak digital infrastructure: The government does not provide adequate digital infrastructure that can be used as a springboard for digital transformation (e.g., electronic signature)
	Restricting regulation: Legal provisions are too narrow to let digital transformation thrive
Knowledge factors	Weak education: Not enough employees with high levels of education / not enough experts who hold higher degrees related to digitization

Method and Official Statistics

About SSIS

Our company



Business items

100

Official Statistics - Employees and Added Value

Table 3: Distribution of Added Value in 2014 and distribution of Full-Time Equivalents in 2014 by industry

	Added Value	FTEs
Energy and Water Supply	1.61%	2.03%
Construction	5.35%	8.57%
Other Industries	19.46%	17.02%
Trading and Automotive	14.93%	14.08%
Hotels and Restaurants	1.77%	4.94%
Computer Programming & Information Services (NOGA 62, 63)	2.23%	2.29%
Financial and Insurance Services	9.85%	4.32%
Public Administration	10.79%	4.26%
Education	0.56%	5.50%
Healthcare and Social Services	7.58%	11.97%
Transport and Communications	5.91%	6.70%
Business-Related Services	10.89%	15.46%
Other Sectors	9.07%	3.81%
Total	100%	100%

Source: BESTA , Added Value 2015, FTEs 2015

The SSIS as Complement to Official Statistics

Data about the Swiss software industry is provided as part of official statistics nested in the broad categories of “Computer programming, consultancy and related activities” and “Information service activities” (NOGA codes 62 & 63).

The respective data on added value (~revenue) and number of employees from Swiss Statistics emphasize the major importance of the Helvetic Information Technology and Information Services sector. With more than 20 billion Swiss francs it adds roughly 2.5% to the Swiss GDP (see Table 3) and employs almost 2.5% of all jobholders in Switzerland (see Table 3).

While the Information Technology and Information Services sector is already of major importance, it also grew at a significantly faster pace than other major

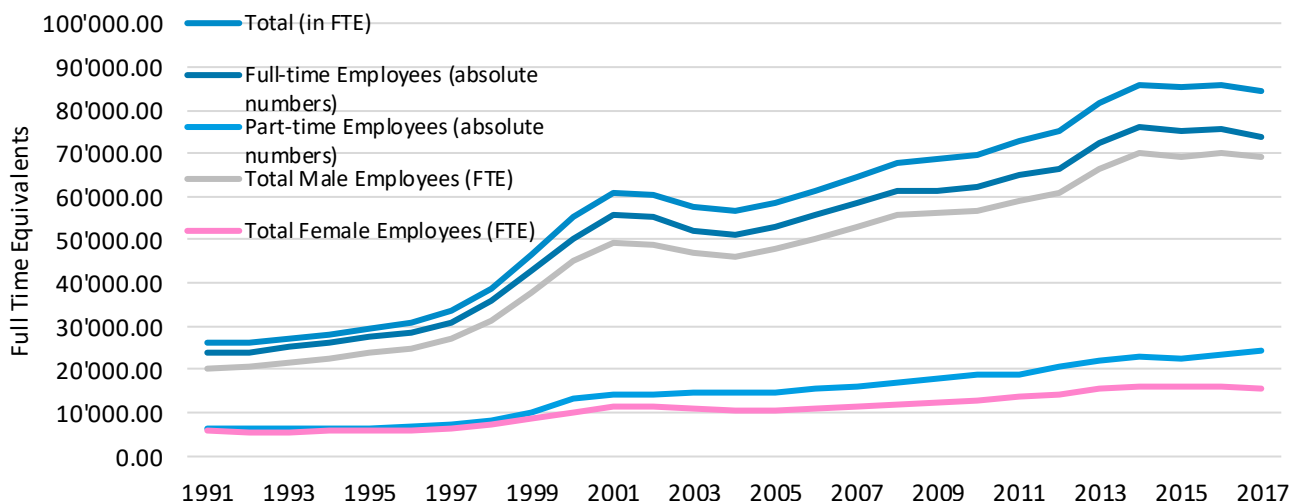
industries in Switzerland. Figure 27 illustrates this massive growth showing that the number of jobholders in this industry nearly tripled between 1995 and 2014.

Official statistics provide reliable information about the size and growth of the overall IT sector. However, they do not draw a very detailed picture about the Swiss software industry.

Therefore, the SSIS positions itself as a complementary study that enriches official statistics. This is made possible by focusing on two NOGA codes (62, 63) and thereby ensuring compatibility with official statistics, while at the same time providing the reader with a richer picture of what is going on within these codes.

Employees in the Swiss ICT Sector

Figure 26: Number of FTEs in NOGA 62 & 63 from 1995 - 2017



Source: BESTA 2017

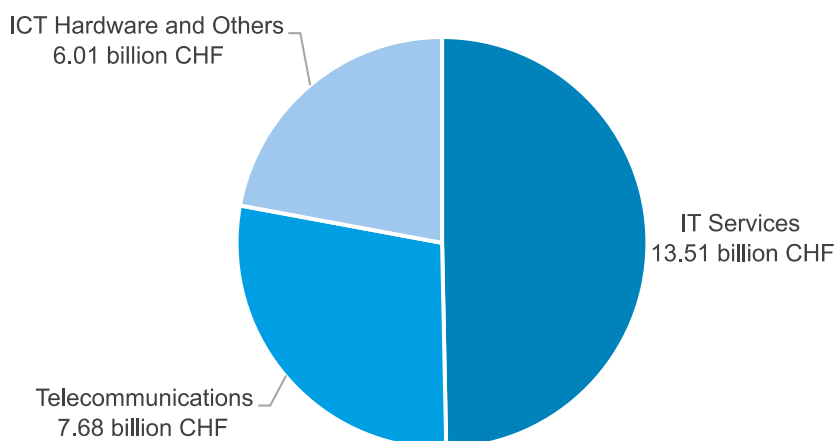
Drawing a Richer Picture of the Swiss Software Industry

This report provides you with a more detailed picture of the Swiss software industry. In particular, the SSIS focuses on IT Services (see Figure 28) and enables the following additional insights:

- ◆ Trend analysis on employee and revenue growth for 2017 and 2018
- ◆ Novel indicators about the industry’s profitability and R&D investments
- ◆ Analyses along practically relevant categories (e.g., standard vs. individual software, permanent employees vs. freelancers)

Value Added of ICT Sector in 2013

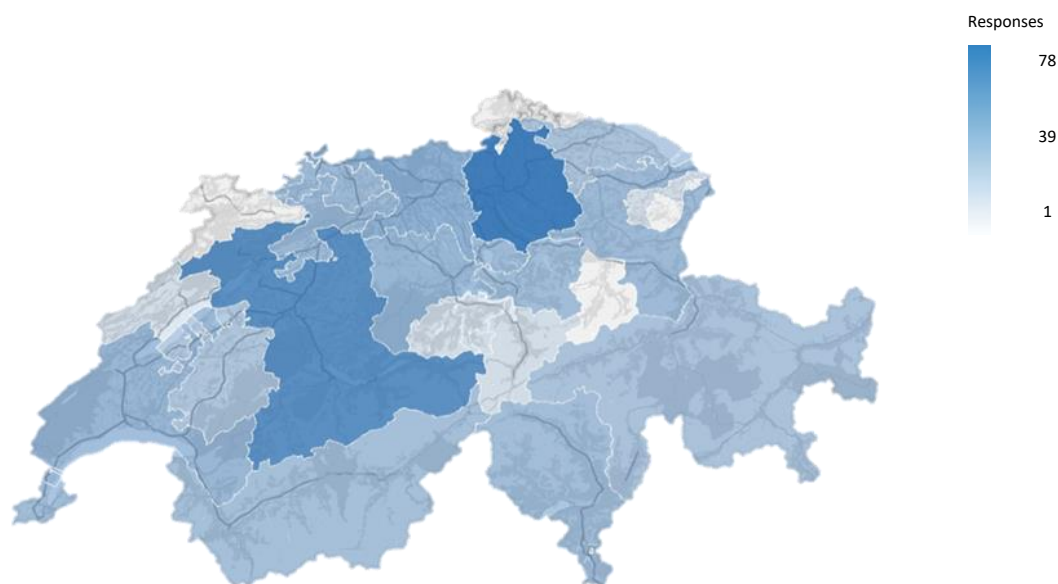
Figure 27: Value Added of ICT Sector in 2013 in billion CHF



Source: BFS VGR 2013, BFS Informationsgesellschaft 2015, revised series due to changes in the national accounts. Calculus: IWSB

Participants in 2017—Geographical Distribution

Figure 28: Participating companies per canton



Source: SSIS 2017

About the SSIS in 2017

This year we conducted the Swiss Software Industry Survey (SSIS) the third time. With the third iteration, the SSIS managed to defend its pole position in terms of size, geographical reach, and methodological rigor:

Reach of the survey: The Swiss software industry aims to represent the entire Swiss software industry—rather than only a couple of large companies. Therefore, the SSIS...

- ◆ Builds on an extended and refined high-quality contact database with approximately 5'000 validated Swiss software companies
- ◆ Covers all Swiss language regions
- ◆ Covers 24 cantons (see Figure 29)
- ◆ Builds on a large sample size with 692 participants, 303 complete responses, and 256 data points on revenue and profitability

Rigor of the survey: To meet highest research standards...

- ◆ ... we developed, refined, and assessed new constructs by following state-of-the-art procedures for construct development
- ◆ ... IWSB has developed a new extrapolation method using state-of-the-art econometrical procedures (post-stratification by region, sub-industries, company size, and revenue)
- ◆ ... only made year-over-year comparisons if results were consistent with and without the new extrapolation method

Additional benefits for participating companies: All participants of the survey can compare their own performance against other companies using our benchmarking website. In addition: Companies which participate regularly can now benchmark their performance over time (www.softwareindustrysurvey.ch)

