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**Institute of Information Systems - Information Engineering**

October 2020

# Swiss Software Industry Survey 2020

## Current State, Emerging Trends, and Long-term developments

A Study of the University of Bern on behalf of ICTswitzerland

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**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.

Bern, November 2020

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# Preface

SARS-CoV-2 has severely affected all our lives in 2020 and will probably continue to affect us for quite some time. For us, this dramatic development was reason enough to take a closer look at the consequences of the COVID-19 pandemic for the local software industry in the sixth edition of the Swiss Software Industry Survey (SSIS). The present SSIS Report 2020, therefore, offers detailed analyses of the immediate effects of the COVID-19 pandemic and the long-term consequences for the Swiss software industry.

However, the present SSIS Report 2020 does not focus exclusively on the consequences of the COVID 19 pandemic. Being the most comprehensive study of its kind in Switzerland, it also provides a substantial overview of the current state, emerging trends, and long -term developments in the Swiss software industry.  Beyond that, it also provides initial insights into the importance of code or software reuse for Swiss software companies.

As in previous years, our goal was to be as close as possible to the Swiss software industry. Unfortunately, the uncertain situation in April made it impossible for us to organize another workshop with key executives and representatives of the Swiss software industry to gather feedback and suggestions from the field. Nonetheless, we again benefited from the support of ICTswitzerland as principal and sieber&partners as proven experts in the industry. Beyond that and for the first time in the SSIS history, we offered Swiss software companies to become official SSIS partners. It is, therefore, a great pleasure to welcome bbv Software Services AG and GARAIO as our premium supporters and Abraxas Informatik AG, adesso Schweiz AG, BEGASOFT, GARAIO REM AG, Ergon, JMC Software AG, and net-ceterea as our supporters. We feel honored to welcome these extremely successful Swiss software companies as our partners and thank them for their support in 2020. At this point, we would also like to thank our operational and advertising partners. Without all these partners, the SSIS 2020 would not have been possible.

We hope you enjoy reading this report!


Sincerely,

Dr. Thomas Hurni
Prof. Dr. Jens Dibbern

**Preface**

```
<!DOCTYPE html PUBLIC "-//W3C//DTD
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<head>
    <title>Hello World</title>
    <meta http-equiv="Content-Type
    <meta name="keywords" content
    <meta name="description" con
    <meta name="content-language
    <link rel="stylesheet" type
</head>
<body>
<div class="banner">
<div style="margin:0 au
```

# Executive Summary

Despite the COVID 19 pandemic, the Swiss software industry is cautiously optimistic about the economic outlook: Although the industry expects below-average sales growth of 2.7% and employee growth of only 6.0% in 2020, it expects a significant recovery to the level of previous years as early as 2021. Looking back at 2019, Swiss software companies reported a decline in the EBIT margin to 6.0%, but an increase in sales per employee to an impressive CHF 245,000. After a moderately successful year in 2018, the foreign business developed particularly well: about 21% of sales in 2019 were generated outside Switzerland.

## Decreasing Profitability but Higher Revenues per Employee

In 2019, the Swiss software industry's EBIT margin deteriorated by 2.2 percentage points to 6.0% compared to the previous year. In the same period, Swiss software companies were able to increase sales per employee to around CHF 245,000.

## Cautiously Optimistic Economic Outlook

For 2020, the software industry expects a meager 2.7% growth in sales and a 6.0% growth in employees. The expectations have thus more than halved compared to last year. However, already for 2021, the surveyed companies forecast a recovery with sales growth of 10.2% and employee growth of 11.6%.

## Successful Year for Foreign Business

In 2019, the Swiss software industry generated around 21% of its sales abroad. After an interim decline in 2018 to about 14%, this represents a return to the export ratio of 2017. Germany remains the most important export market with an export share of 54.8%, followed by the rest of Europe.

## High Investments in Home-Office Equipment

The Swiss software industry was well prepared for the lockdown. Only 10.2% had to make significant investments in their home office infrastructure (e.g., communication and collaboration tools or VPN). Nonetheless, 86.7% had to make significant investments in equipping their employees' home offices.

## Software Reuse Does Matter

The reuse of existing software or software knowledge to create new software is of utmost importance for Swiss software companies. 73.2% systematically store knowledge from past projects for reuse, 67.6% regard the reuse as critical, and an astonishing 50.3% even as one of their declared strategic goals.

## Principal

**ICTswitzerland** is the umbrella organization of the ICT industry. Founded in 1980, the association comprises 31 large and medium-sized companies and 21 associations. ICTswitzerland represents their concerns vis-à-vis the public, the authorities, and other associations, and aims to promote and further develop digital technologies as well as the education and training of ICT specialists. ICTswitzerland is also committed to the identification and prevention of cyber risks. www.ictswitzerland.ch

## Premium Supporters

**bbv Software Services AG** is a Swiss software and consulting company that advises and supports customers in realizing their visions and projects. bbv develops new solutions and business models that enable customers to create value quickly. With its expertise in leading technologies and its commitment to first-class quality, bbv provides IT strategy and innovation consulting, from IoT systems to e-commerce portals and in topics such as artificial intelligence or data science.

Since 1995, bbv has been active in Switzerland, Germany, Greece and Vietnam, strengthening companies in the digital transformation from idea generation to market success. bbv is certified as a Microsoft Gold Partner in Cloud Computing, Application Development and DevOps.

Since its foundation in 1994, the Swiss company **GARAIO** has developed into a leading software house. Long before digitization took a dominant place in business leaders' agendas, GARAIO was allowed to digitize processes for business customers. The benefits of working with GARAIO can be seen in the simplification and increased efficiency of demanding business processes, but most of all, in the measurable added value for customers.

## Supporters

**Abraxas Informatik AG** is the largest provider of integrated IT solutions for the public sector in Switzerland. The company, headquartered in St.Gallen, employs around 800 people in all language regions. Abraxas networks Swiss administrations, public authorities, companies, and the population with efficient, secure, and integrated IT solutions and services.

**adesso Schweiz AG** is an independent consulting and IT service provider focusing on companies' core business processes with consulting, individual software development, and software integration. The strategy of adesso is based on three pillars: comprehensive industry know-how of its employees, a broad technological competence, and proven methods in the implementation of software projects. The outcome are IT solutions that make companies more competitive. adesso employees think entrepreneurially and act with high communicative competence. adesso Schweiz AG was founded in 1985 and is a company of the adesso Group. The group employs over 4,200 people at numerous locations in Europe.

**BEGASOFT** is a software development and managed service provider company specialized in the operation of high availability IT solutions for customers and partners in private and public clouds. Our goal is to offer companies individual, flexible, reliable, and scalable operating platforms (PaaS, CaaS), complemented by our managed data center services and 24x7 support.

**Ergon** is a Swiss leader in leveraging digitalisation to create unique and effective client benefits, from conception to market, the result of which is the international distribution of globally revered products. We combine our extensive technological, security and business experience to design "smart" solutions from complex requirements. Anticipating tech trends, Ergon's highly-qualified experts develop and deploy user-friendly, custom software, as well as proven, off-the-shelf products, for many industries, worldwide. The company, which now employs 300 members of staff, was founded in 1984 and, on several occasions, has been named as one of the best employers in Switzerland.

**GARAIO REM AG** develops sophisticated business software in an optimal combination of innovation and professional expertise. As a leading technology partner of real estate management companies in Switzerland, we have one goal in mind: with GARAIO REM, our clients work measurably more successful.

For more than 15 years, GARAIO REM AG products have been shaping the digitalization in the Swiss real estate industry. Today, more than 1 million rental properties in Switzerland are managed with the Bern-based software company's management solutions. Every day, the GARAIO REM AG team supports companies on their way to efficient, digital processes - consistently along the value chain from the property owner to management and tenant.

Founded in 1996, **JMC Software AG** has been one of the leading providers of IT and software solutions in Switzerland for almost 25 years. The development of innovative software products and IT services with its own data center represent the company's core business. JMC Software AG is characterized by many years of experience, excellent technological know-how, and a comprehensive solution and integration competence.

As software and e-commerce specialists, we develop your digital strategy.

**Netcetera** is a global software company with cutting-edge IT products and individual digital solutions in the areas of secure digital payment, financial technologies, media, transport, healthcare and insurance. More than 2,000 banks and issuers, and 60,000 merchants rely on the digital payment solutions and globally certified 3-D Secure products of the market leader for payment security. The owner-managed company covers the entire IT lifecycle, from ideation and strategy to implementation and operation. The balanced combination of the latest technologies and proven standards ensures investment security, from large-scale projects to innovative start-ups. Founded in 1996, Netcetera is a holding company with 650 employees and is headquartered in Zurich, Switzerland, with additional locations across Europe, Asia and the Middle East.
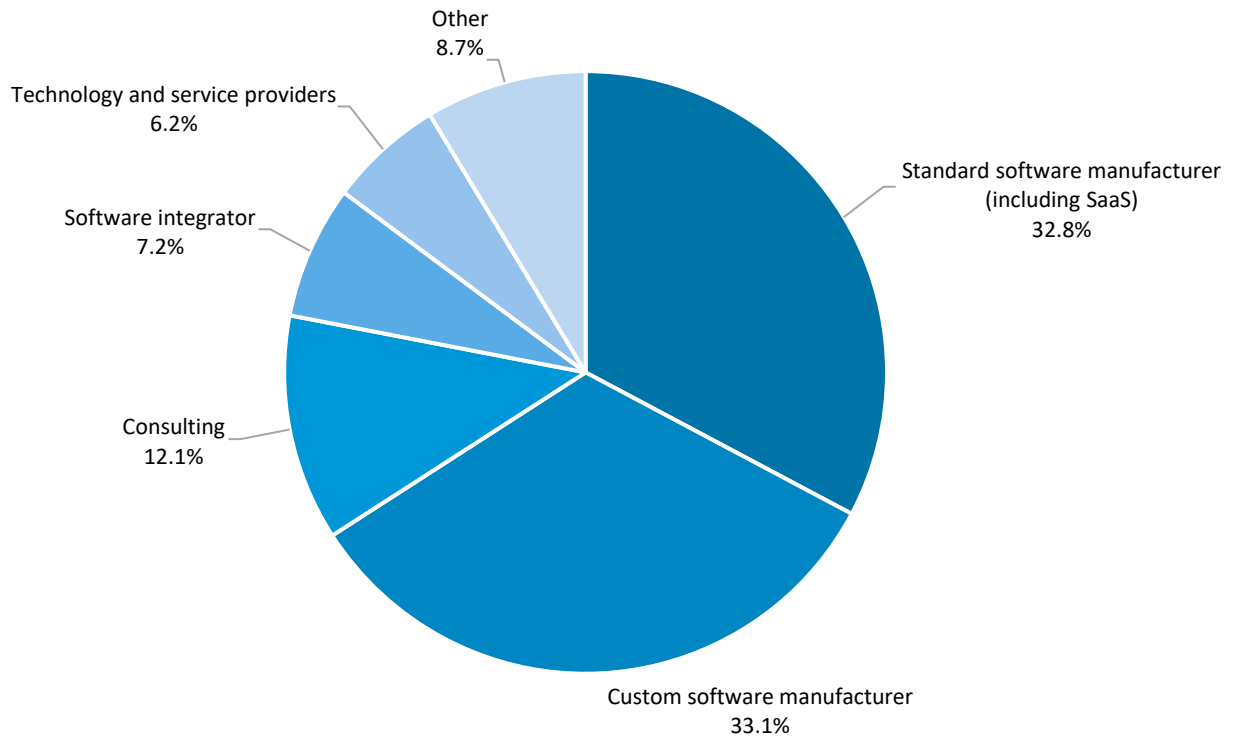
Further information: netcetera.com

# Spotlight on

# Revenue, Profitability & Future Growth

## Distribution of Participating Companies

Figure 1: Number of companies per sub-industry as percentage of total responses



Source: SSIS 2020                                                                 N = 601

## Sample, Projection Method, and Industry Revenue

As in previous years, the manufacturers of custom software and standard software dominate our sample. Both sub-industries account for about one-third of the answers. Consulting companies (12.1%), software integrators (7.2%), and technology and service providers (6.2%) follow at some distance (see Figure 1).
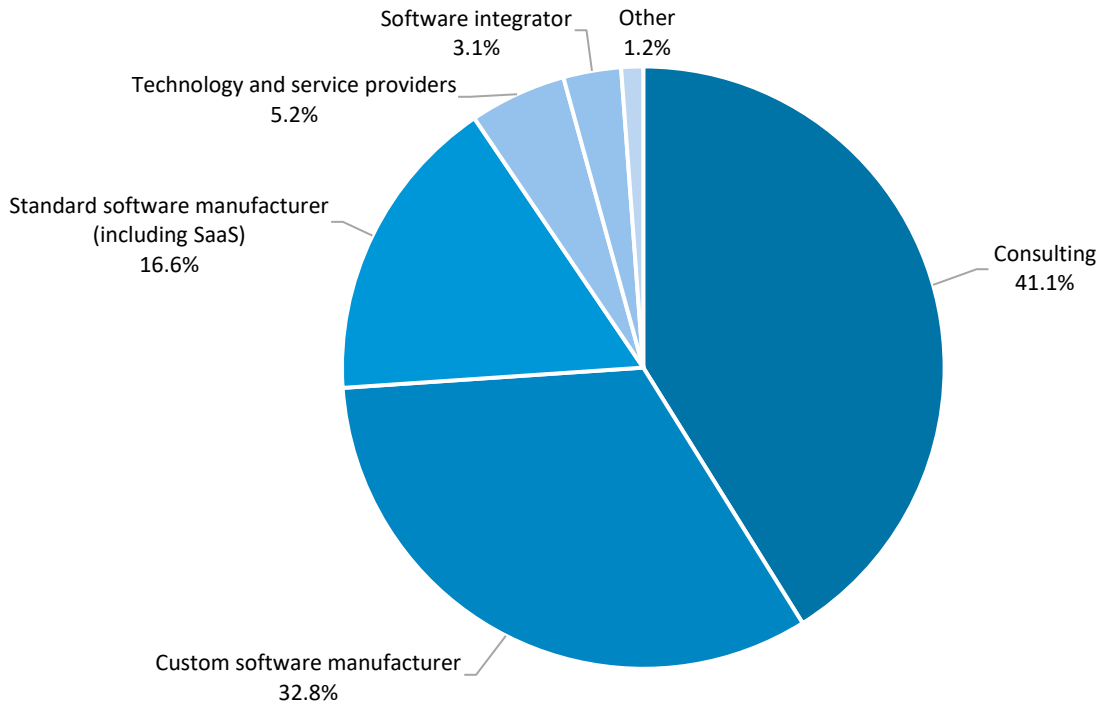
To make valid statements about the Swiss software industry, we have stratified this sample. This statistical procedure compares our sample with the software industry as a whole by taking into account official statistics on regions, sub-industries, and sales. If this procedure determines that individual participating companies are underrepresented in our sample, it assigns them higher weights to compensate for bias. The advantage of this procedure is that statements about the industry as a whole become more reliable. Beyond that, the SSIS 2020 is backward compatible as we applied the same statistical procedure to the SSIS 2019, 2018, and 2017 samples. The figures in this report are thus comparable with the figures in the three previous reports.

Figure 2 shows that consulting companies make the most considerable contribution to the industry's revenue (41.1%), followed by manufacturers of custom software (32.8%) and standard software (16.6%). Together, these three sub-industries account for more than 90.0% of the industry's revenue. Technology and service providers (5.2%) and software integrators (3.1%) thus contribute little to the industry's revenue.

Since software companies are generally active in a wide range of areas, i.e., consulting companies, not only "consult" but also generate sales through other activities such as the development of custom software, software integration, or maintenance and support. Figure 3 takes this diversity into account by showing revenues by field of activity. Here, consulting (31.9%), custom software manufacturing (24.0%), and standard software manufacturing (16.2%) contribute the most. Interestingly, software integration and the provision of software-related maintenance and support services account for almost 20% of the industry's revenue.

## Distribution of Revenue per Sub-Industry

Figure 2: Revenue per sub-industry as percentage of industry revenue



Software integrator
3.1%

Other
1.2%

Technology and service providers
5.2%

Standard software manufacturer
(including SaaS)
16.6%

Consulting
41.1%

Custom software manufacturer
32.8%

Source: SSIS 2020                                                                                                          N = 226

## Distribution of Revenue per Activity

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



Other
9.2%

Providing software-related
mainteneance services
7.3%

Consulting
31.9%

Software integration
11.4%

Standard software manufacturing
(including SaaS)
16.2%

Custom software manufacturing
24.0%
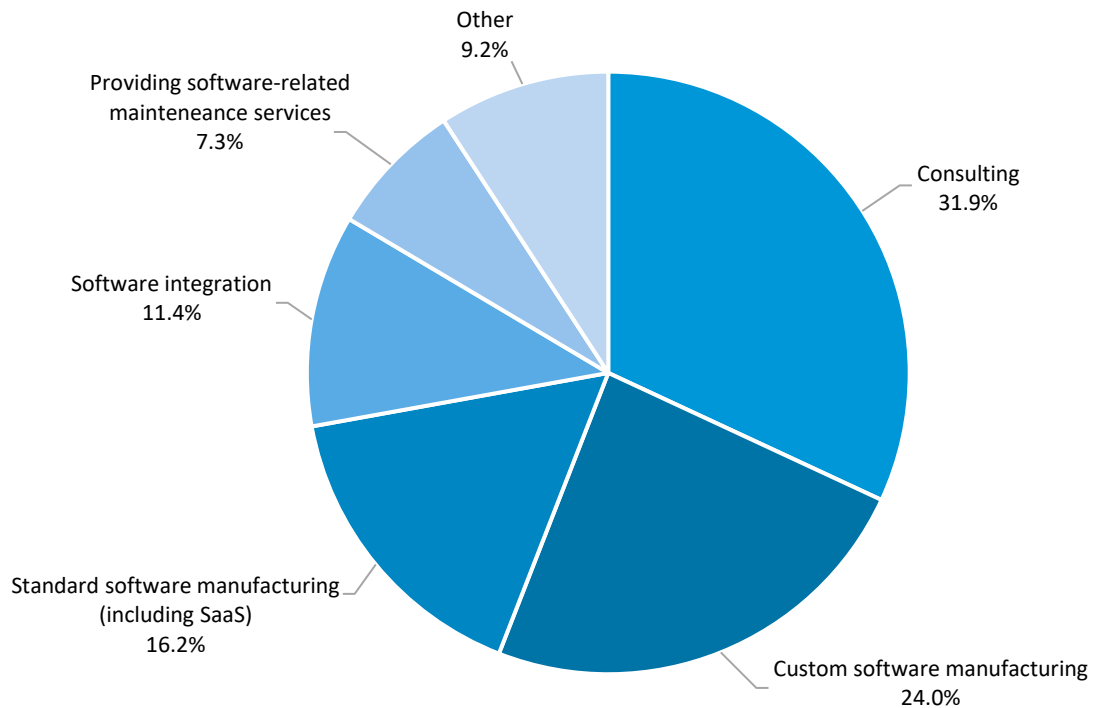
Source: SSIS 2020                                                                                                          N = 226

## Revenue per Employee

Figure 4: Average revenue per employee

■ 2018  ■ 2019



Custom software manufacturer: CHF 189'246.3 (2018), CHF 216'076.2 (2019)
Standard software manufacturer (including SaaS): CHF 248'156.3 (2018), CHF 270'779.3 (2019)
Consulting: CHF 241'173.9 (2018), CHF 246'157.3 (2019)
Software integrator: CHF 252'597.4 (2018), CHF 229'556.3 (2019)
Technology and service providers: CHF 239'221.1 (2018), CHF 309'844.0 (2019)
Software Industry: CHF 225'498.9 (2018), CHF 244'691.5 (2019)

Source: SSIS 2020                                                                 N = 226

## Growing Revenues per Employee

Figure 4 shows the revenue per employee in 2019 compared to 2018. Overall, revenue per employee in 2019 rose to CHF 244,691.5 compared to CHF 225,498.9 in 2018. As in previous years, the manufacturers of custom software generated the lowest revenue per employee (CHF 216,076.2), followed by software integrators (CHF 229,556.3), consulting firms (CHF 246,157.3), manufac-turers of standard software (CHF 270,779.3), and technology and service providers (CHF 309,844.0).

Figure 5 shows the distribution of employees. It reflects the allocation of revenues, i.e., consulting firms (42.9%), manufacturers of individual software (25.5%), and manufacturers of standard software (23.6%) account for more than 90.0% of the industry's revenue.

## Distribution of Employees

Figure 5: Number of employees per sub-industry as percentage of total employees



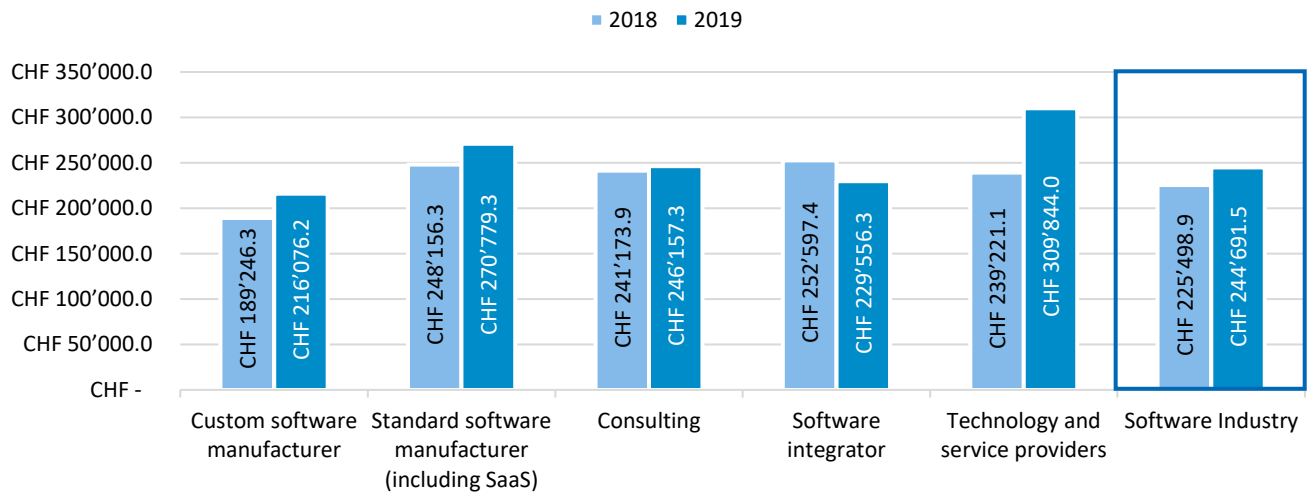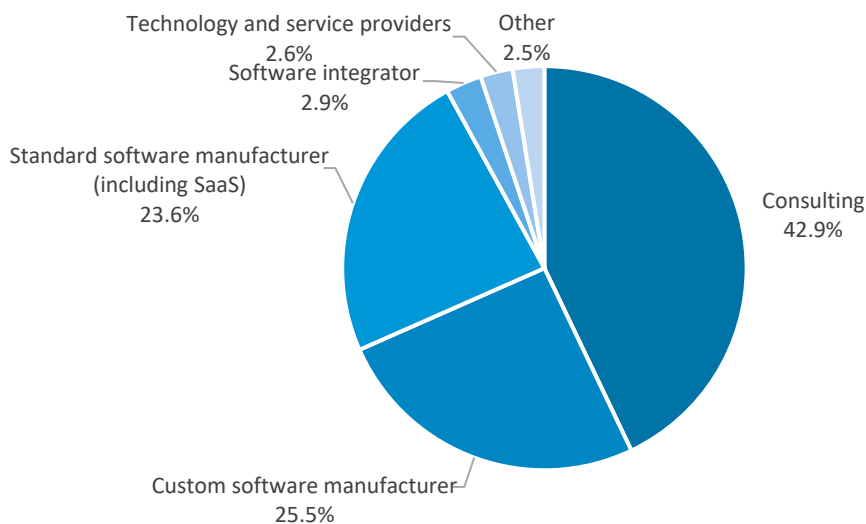Technology and service providers 2.6%
Other 2.5%
Software integrator 2.9%
Standard software manufacturer (including SaaS) 23.6%
Consulting 42.9%
Custom software manufacturer 25.5%

Source: SSIS 2020                                                                 N = 226
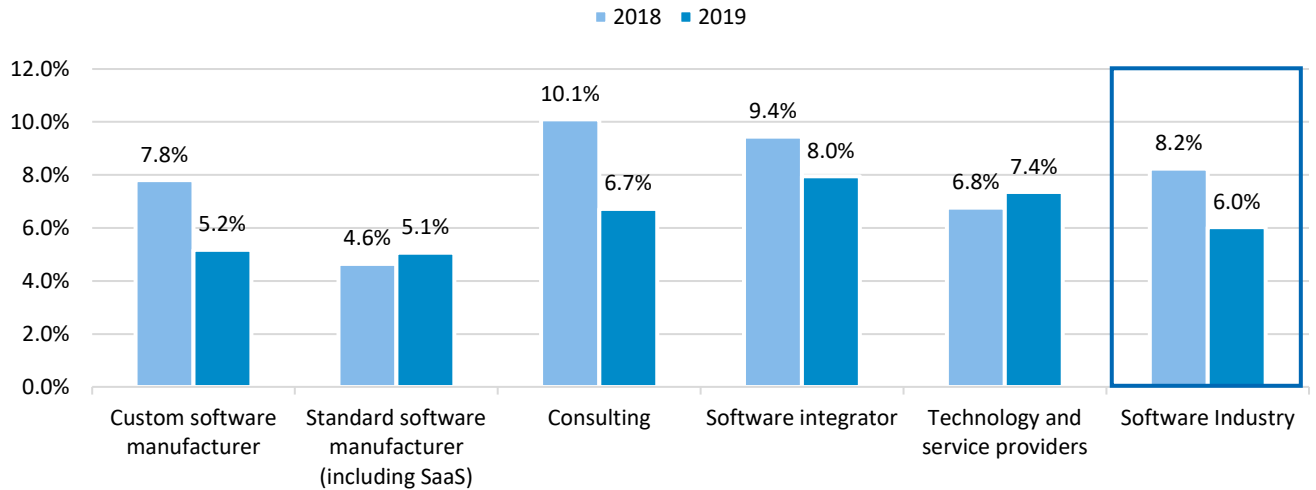
## EBIT Margins in the Swiss Software Industry

Figure 6: EBIT margins by sub-industries

■ 2018  ■ 2019



Source: SSIS 2020                                                                 N = 196

## Lower EBIT Margins

Figure 6 shows the EBIT margins of the sub-industries with an industry-wide decrease from 8.2 percent in 2018 to 6.0 percent in 2019. This downward trend applies to most sub-industries, except standard software manufacturers, which generated a higher margin (from 4.6% in 2018 to 5.1% in 2019) and technology and service providers (from 6.8% in 2018 to 7.4% in 2019).

Figure 7 shows the EBIT margins per activity. This figure reflects broadly the same pattern as Figure 6: compared to 2018, profitability has decreased overall. Again, this decrease is shown in most activities, except for standard software manufacturing, which has increased in profitability (from 4.4% in 2018 to 4.7% in 2019).

## EBIT Margins per Activity

Figure 7: EBIT margins per activity

■ 2018  ■ 2019
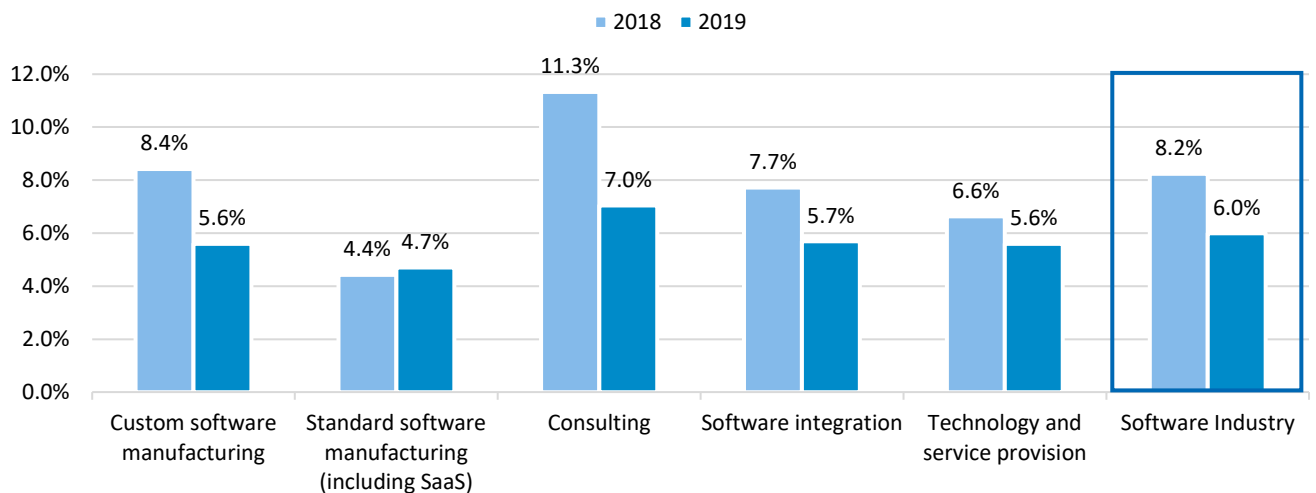


Source: SSIS 2020                                                                 N = 196

## Expected Growth in Revenue

Figure 8: Expected year-over-year revenue growth for 2020 and 2021



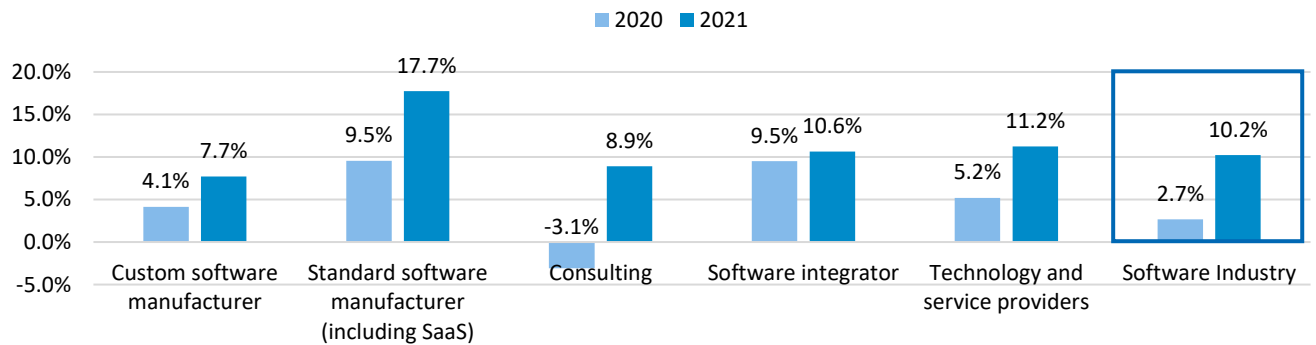Source: SSIS 2020                                                                                                          N = 154

### Cautiously Optimistic Sales Growth Expectations After a Slump in 2020

Figure 8 shows the revenue expectations of the Swiss software industry for the years 2020 and 2021. Compared to the optimistic expectations in prior years, Swiss software companies now expect a slump to 2.7% in 2020, a recovery to 10.2% as early as 2021.

In 2020, the manufacturers of standard software and software integrators (both 9.5%) expect the highest growth in revenue, followed by technology and service providers (5.2%) and manufacturers of custom software (4.1%). Consulting firms even expect a decline (-3.1%). In 2021, however, all sub-industries expect a return to the high revenue growth rates of previous years.

## Research and Development Investments

Figure 9: R&D investments in 2018 and 2019 as percentage of revenue
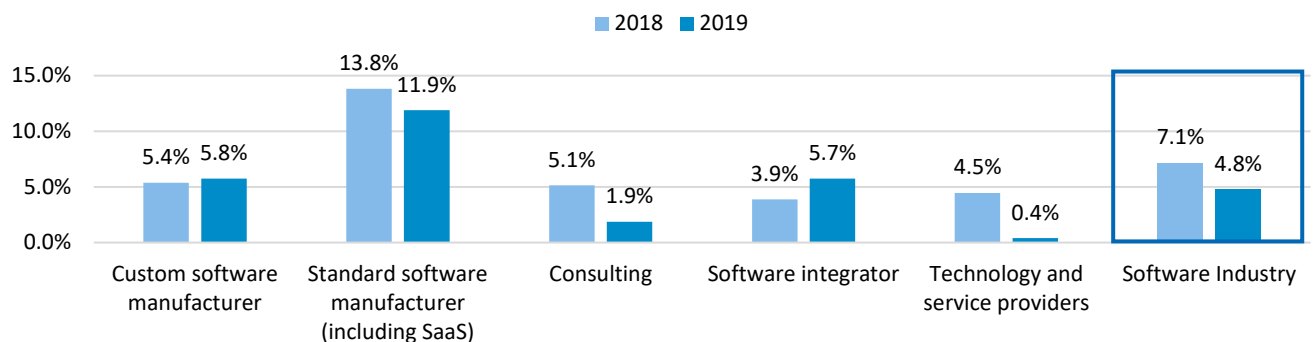


Source: SSIS 2020                                                                                                          N = 201

### Less Spending on Research and Development

Swiss software companies have spent a lower proportion of their revenues (4.8% in 2019 compared to 7.1% in 2018) on research and development compared to the previous year (see Figure 9).

However, as in previous years, the manufacturers of standard software spent in 2019 the most on research and development (11.9%). Besides, while manufacturers of custom software (5.8%) and software integrators (5.7%) have increased their spending on research and development slightly, consulting companies and technology and service providers have reduced them to less than 2.0%.

## Employee Growth Prospects

Figure 10: Expected year over year growth of workforce for 2020 and 2021
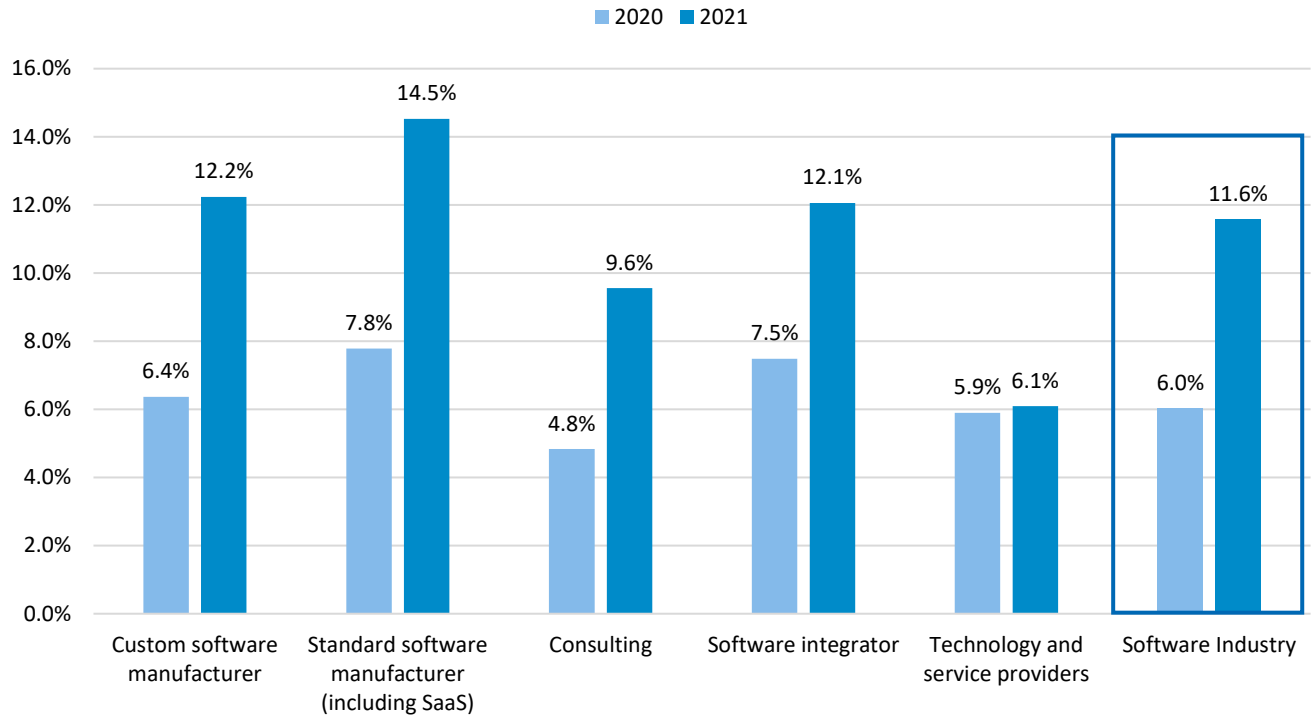


Source: SSIS 2020                                                                   N = 223

Expected employee growth of

# 6.0%

in 2020

## Major Drop in Expected Employee Growth

Figure 10 shows the expected growth of the number of full-time equivalents (FTE) in the Swiss software industry for 2020 and 2021. Similar to the expected changes in revenue for 2020 and 2021, Swiss software companies expect a significant drop to 6.0% in 2020 and a return to prior years' growth rates of 11.6% as early as 2021. The Swiss software industry is therefore not expecting any job cuts in the near future. However, the extent to which this optimism will prove to be true will depend very much on the course of the COVID-19 pandemic in the months to come.

All in all, no sub-industry is planning to reduce its workforce in the next two years. In 2020, the manufacturers of standard software expect the most substantial growth at 7.8 percent, followed by software integrators (7.5%), manufacturers of custom software (6.4%), technology and service providers (5.9%), and consulting firms (4.8%). However, compared to the industry's expectations in 2019, these expectations for 2020 are only half as high.

In 2021, the manufacturers of standard (14.5%) and custom software (12.2%) expect the most substantial growth in their workforce, followed by software integrators (12.1%) and consulting companies (9.6%). Only technology and service providers expect a sustained slump (6.1%). However, given the low number of responses within this sub-sector, these low expectations are not as robust as those for the industry as a whole.

# Spotlight on

# Sources of Revenue

## Industry Focus of Swiss Software Companies

Figure 11: Industry focus in terms of revenue
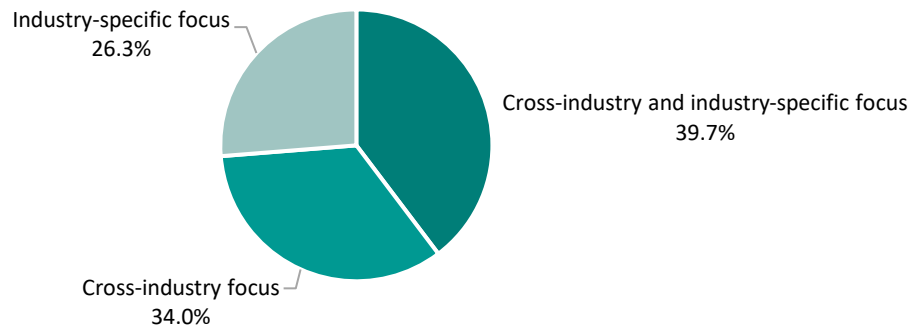


Source: SSIS 2020                                                                                       N = 335

## Most Important Industries for the Swiss Software Industry

Figure 11 shows whether Swiss software companies have an industry-specific focus (26.3%), a cross-industry focus (34.0%), or both an industry-specific and a cross-industry focus (39.7%). Thus, almost two-thirds of Swiss software companies focus on specific industries.

Figure 12 shows the most important industries for the 66.0% of Swiss software companies with such an indus-

try-specific focus. The most important industry for these companies is the financial industry, with a share of 18.6% of their revenues. The second most important sector is the manufacturing industry, with 18.0%. In third place is the insurance industry, with 12.0%, followed by public administration and the defense industry, with 10.1%. The remaining sectors each account for less than 10.0%.

## Most Important Industries for Swiss Software Companies

Figure 12: Most important industries for the Swiss software industry in terms of revenue
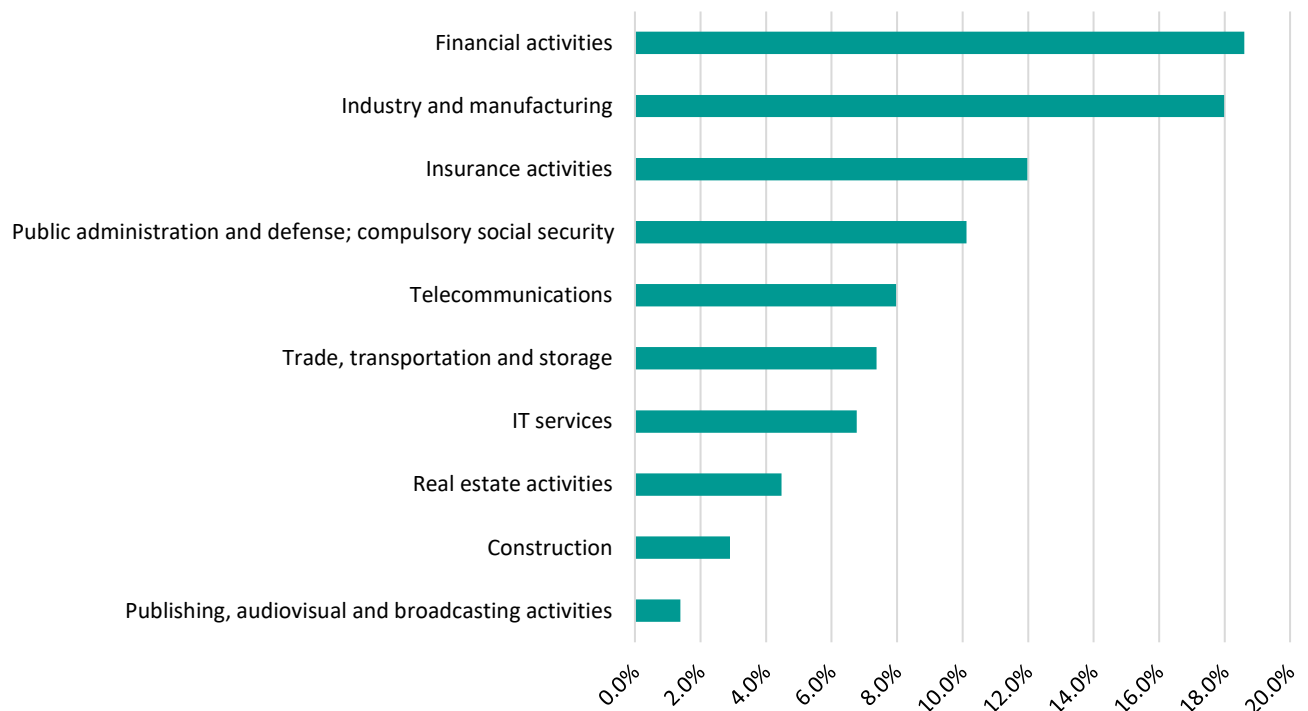


Source: SSIS 2020                                                                                       N = 149

## Sources of Revenue for Manufacturers of Standard Software

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



Customization (3rd-party standard software)
3.6%

Other
2.4%

Cloud solutions
13.1%

Royalties (own software licenses)
25.3%

Development of custom-made software
14.8%

Customization (self-developed standard software)
17.1%

Maintenance and support
23.7%
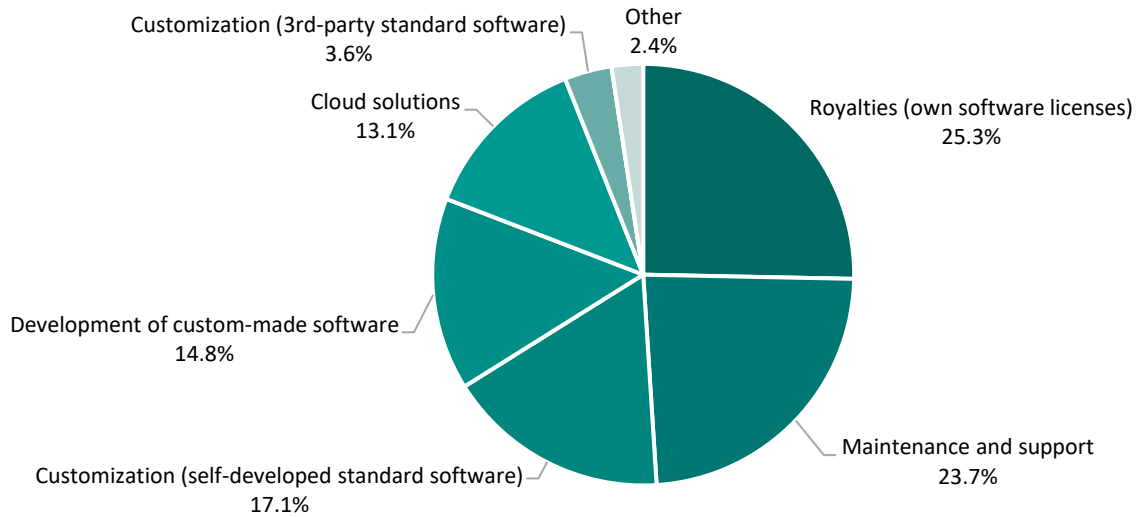
Source: SSIS 2020

N = 43

## Sources of Revenue

For the manufacturers of standard software (see Figure 13), royalties from own software licenses (25.3%), revenues from maintenance and support (23.7%), customization of self-developed standard software (17.1%), and development of customized software account for more than three-quarters of revenues.

For the manufacturers of custom software (see Figure 14), the development of custom-made software is the largest source of revenue (55.7%), followed by the revenues from the customization of third-party standard software (10.4%) and maintenance and support (10.0%).

## Sources of Revenue for Manufacturers of Custom Software

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



Embedded software
3.8%

Royalties (resale)
1.7%

Other
1.9%

Cloud solutions
4.4%

Customization (self-developed standard software)
5.9%

Royalties (own software licenses)
6.1%

Development of custom-made software
55.7%

Maintenance and support
10.0%

Customization (3rd-party standard software)
10.4%
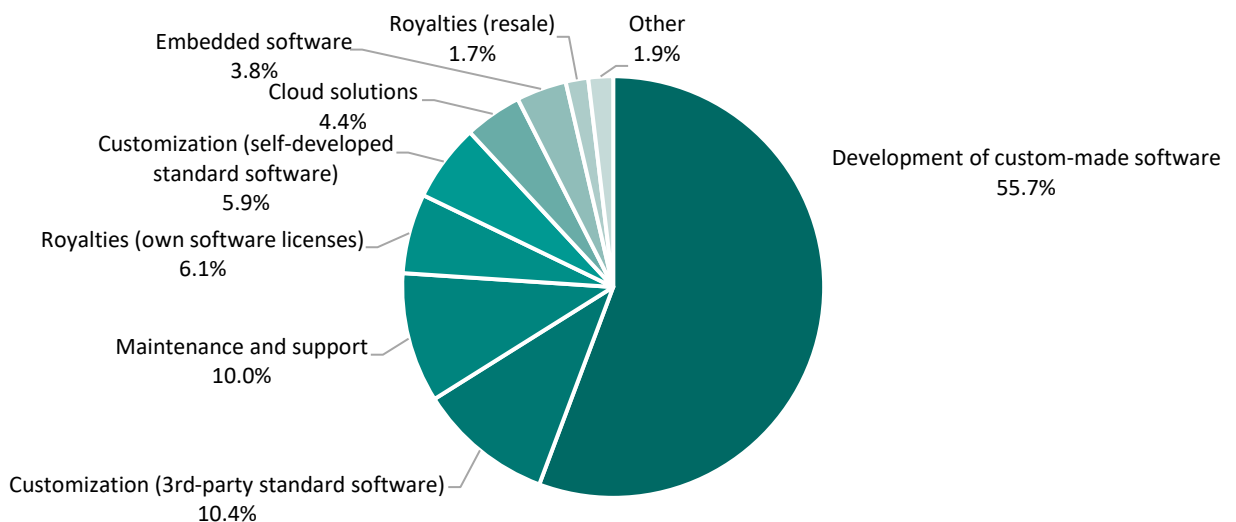
Source: SSIS 2020

N = 57

# Spotlight on

# Internationalization & Sourcing

## Degree of Internationalization and Target Markets

Figure 15: Distribution of international revenue
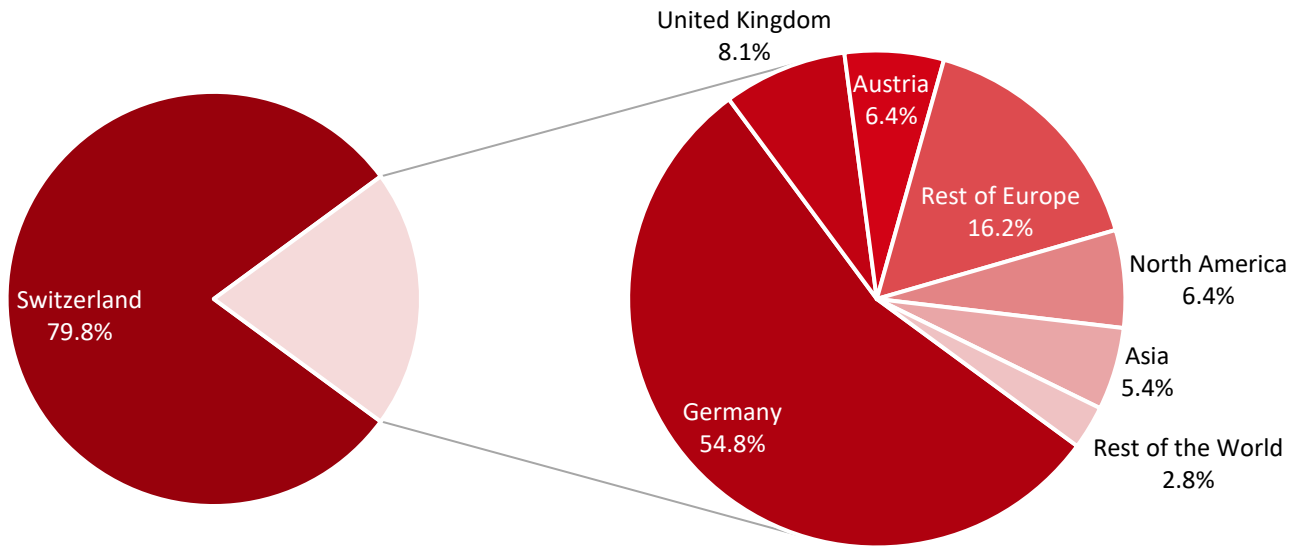


Source: SSIS 2020                                                                                    N = 223

## Successful Year for Foreign Business

Figure 15 shows the degree of internationalization and the target markets in 2019. Compared to 2018, the share of sales generated abroad by Swiss software companies has increased from 14.0 percent to 20.2 percent. This increase marks a return to the export ratio in 2017.
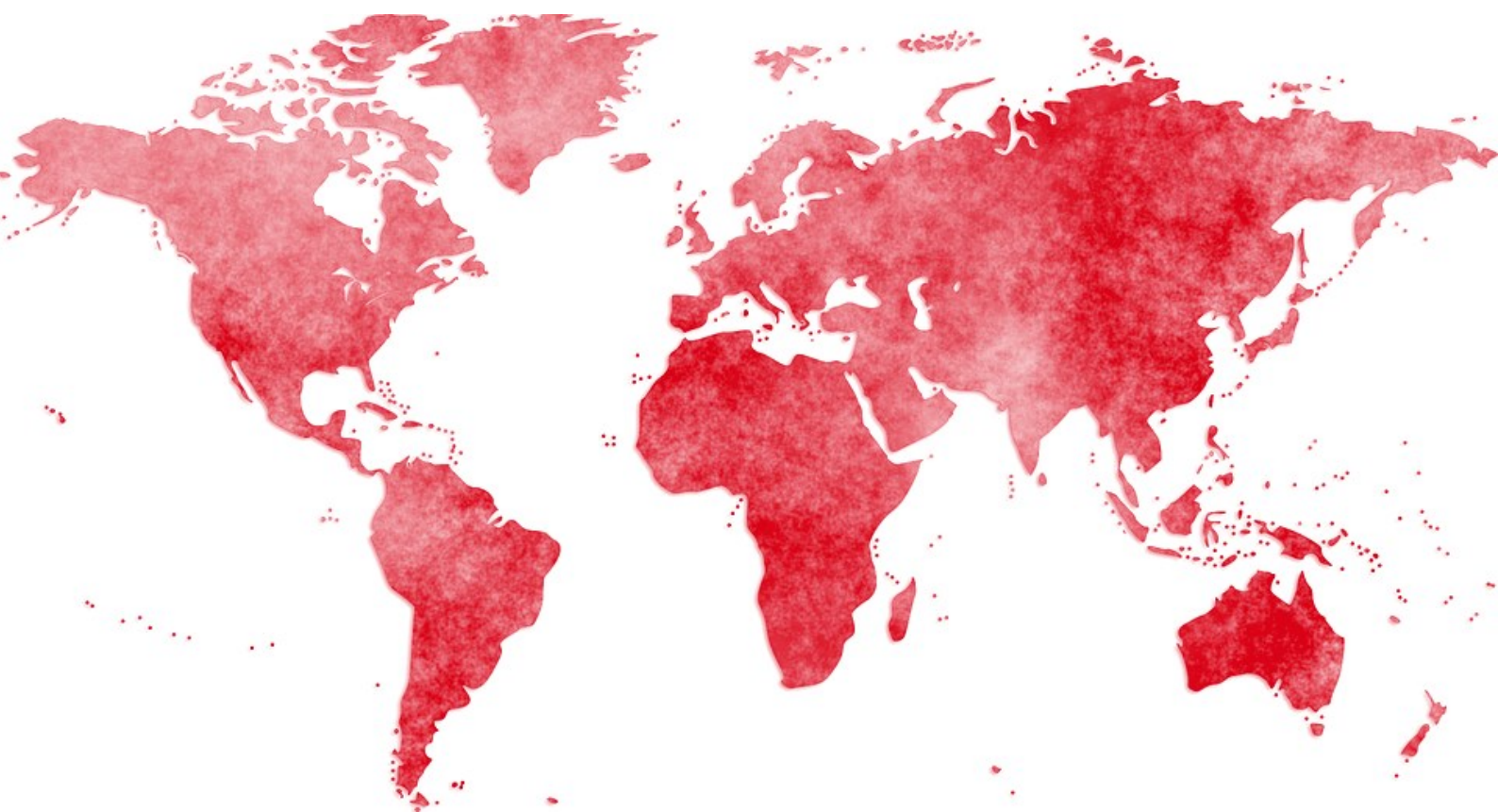
As in previous years, Germany remains the most important export market (54.8% of total exports). Compared to 2018, this is a remarkable increase and one possible explanation for the overall increase in exports. The second most important international market in 2019 was the United Kingdom, with 8.1 percent of total exports, followed by Austria, with 6.4 percent of total exports, and the rest of Europe, with 16.2 percent of total exports. Overseas export markets continue to be of little importance, accounting for only 14.6% of total exports.

Figure 15 shows the growth prospects of employees abroad compared to employees' growth prospects in Switzerland for 2020. At -1.0 percent for 2020, these growth prospects are significantly lower than the growth prospects in Switzerland (6.0% for 2020).

## Growth of Headcounts in Switzerland and Abroad

Figure 16: Expected growth in full-time equivalents in Switzerland and abroad for 2020



Source: SSIS 2020                                                                                    N = 226

## Outsourcing Yes—No
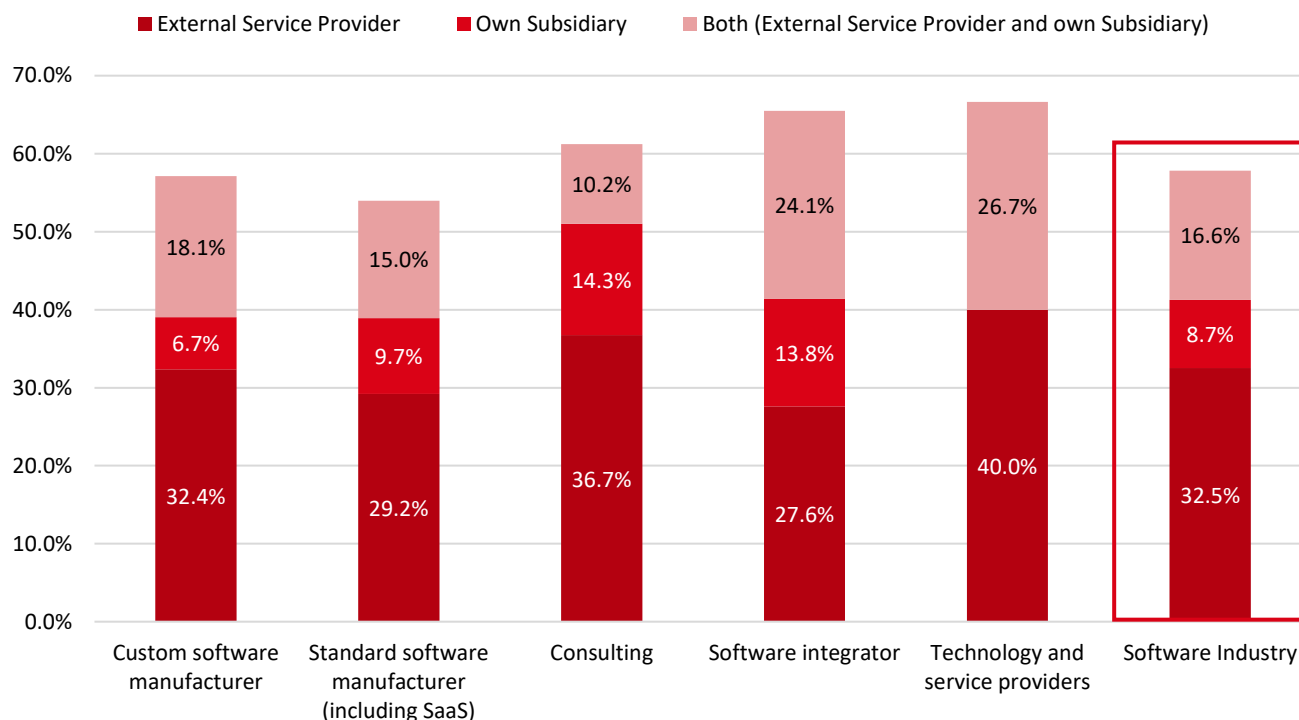
Figure 17: Percentage of companies that outsource by sub-industries



- External Service Provider
- Own Subsidiary
- Both (External Service Provider and own Subsidiary)

| | Custom software manufacturer | Standard software manufacturer (including SaaS) | Consulting | Software integrator | Technology and service providers | Software Industry |
|---|---|---|---|---|---|---|
| Both | 18.1% | 15.0% | 10.2% | 24.1% | 26.7% | 16.6% |
| Own Subsidiary | 6.7% | 9.7% | 14.3% | 13.8% | — | 8.7% |
| External Service Provider | 32.4% | 29.2% | 36.7% | 27.6% | 40.0% | 32.5% |

Source: SSIS 2020                                                                     N = 332

Among consulting companies

**36.7%**

do source products and/or services from external service providers

## Outsourcing in the Swiss Software Industry

Sourcing, that is the development, improvement, and operation of IT products and/or services by external service providers and/or subsidiaries, is crucial for Swiss software companies. Figure 17 shows Swiss software companies' propensity to source from external service providers, own subsidiaries, or both external service providers and own subsidiaries in 2019.

Our results show that the propensity to outsource is highest among technology and service providers (66.7%), software integrators (65.5%), and consulting firms (61.2%), followed by manufacturers of custom software (57.2%) and manufacturers of standard software (53.9%). Overall, about 57.8% of the companies surveyed source.

40.0% of technology and service providers source from external service providers, followed by consulting firms (36.7%), custom software manufacturers (32.4%), and standard software manufacturers (29.2%).

In contrast, the propensity to source from own subsidiaries is highest among consulting firms (14.3%), followed by software integrators (13.8%), and manufacturers of standard (9.7%) and custom software (6.7%).

When it comes to sourcing from both external service providers and own subsidiaries, technology and service providers had the highest propensity (26.7%), followed by software integrators (24.1%), manufacturers of custom software (18.1%), manufacturers of standard software (15.0%), and consulting firms (10.2%).

## Sourcing Locations for External Service Providers

Figure 18: Percentage of onshoring, nearshoring, and offshoring from external service providers

Legend: Onshore (External) · Nearshore (External) · Offshore (External)

| | Custom software manufacturer | Standard software manufacturer (including SaaS) | Consulting | Software integrator | Technology and service providers | Software Industry |
|---|---|---|---|---|---|---|
| Offshore (External) | 13.0% | 13.0% | 4.5% | | 10.0% | 9.3% |
| Nearshore (External) | 32.6% | 41.3% | 45.5% | 26.7% | 20.0% | 35.1% |
| Onshore (External) | 54.3% | 45.7% | 50.0% | 73.3% | 70.0% | 55.6% |
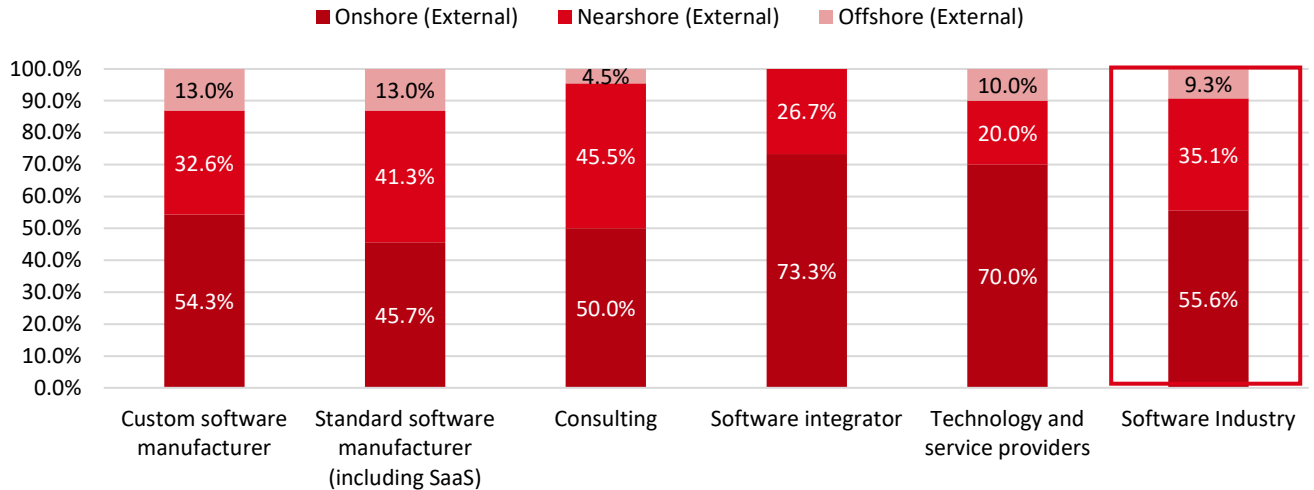
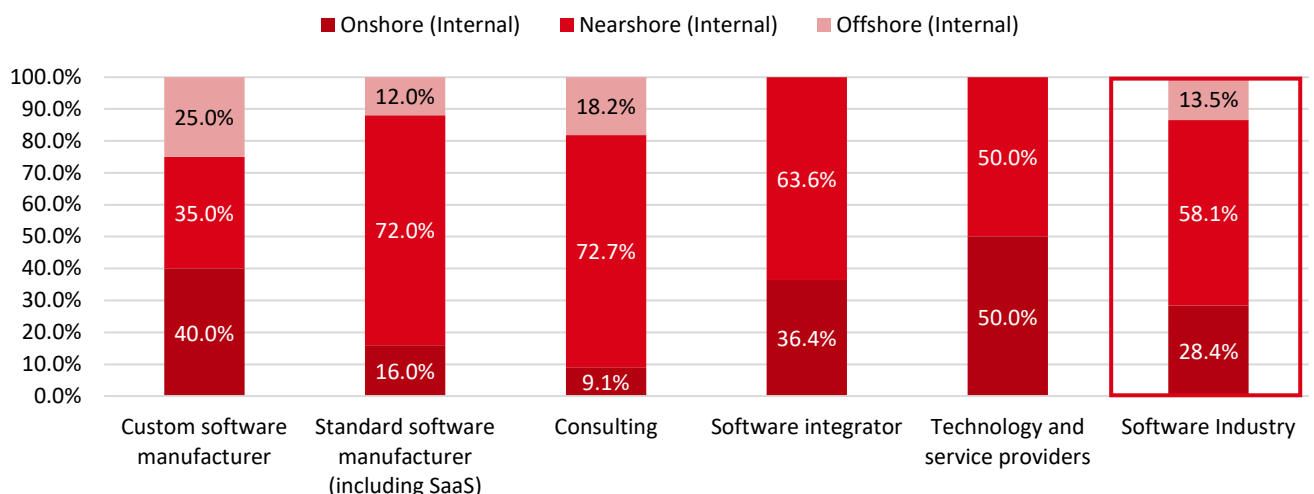Source: SSIS 2020                                                                 N = 225

## Locations of Outsourced Activities

Figure 18 shows the sourcing locations for external service providers in 2019. Standard and custom software manufacturers (both 13.0%) had the highest propensity to source products and/or services from offshore locations (i.e., more than 3000 km from Switzerland). In contrast, consulting companies (45.5%) focused on nearshore providers within a radius of 3000 km. Technology and service providers (70.0%) and software integrators (73.3%) relied mainly on Swiss service providers.

Figure 19 shows the locations of the subsidiaries of Swiss software companies in 2019. 25.0% of custom software vendors, 18.2% of consulting firms, and 12.0% of standard software vendors had subsidiaries in remote locations (i.e., more than 3000 km away from Switzerland). Interestingly, most Swiss software companies with subsidiaries had them in places within a 3000 km radius of Switzerland.

## Locations of Own Subsidiaries

Figure 19: Percentage of onshoring, nearshoring, and offshoring from internal service providers

Legend: Onshore (Internal) · Nearshore (Internal) · Offshore (Internal)

| | Custom software manufacturer | Standard software manufacturer (including SaaS) | Consulting | Software integrator | Technology and service providers | Software Industry |
|---|---|---|---|---|---|---|
| Offshore (Internal) | 25.0% | 12.0% | 18.2% | | | 13.5% |
| Nearshore (Internal) | 35.0% | 72.0% | 72.7% | 63.6% | 50.0% | 58.1% |
| Onshore (Internal) | 40.0% | 16.0% | 9.1% | 36.4% | 50.0% | 28.4% |

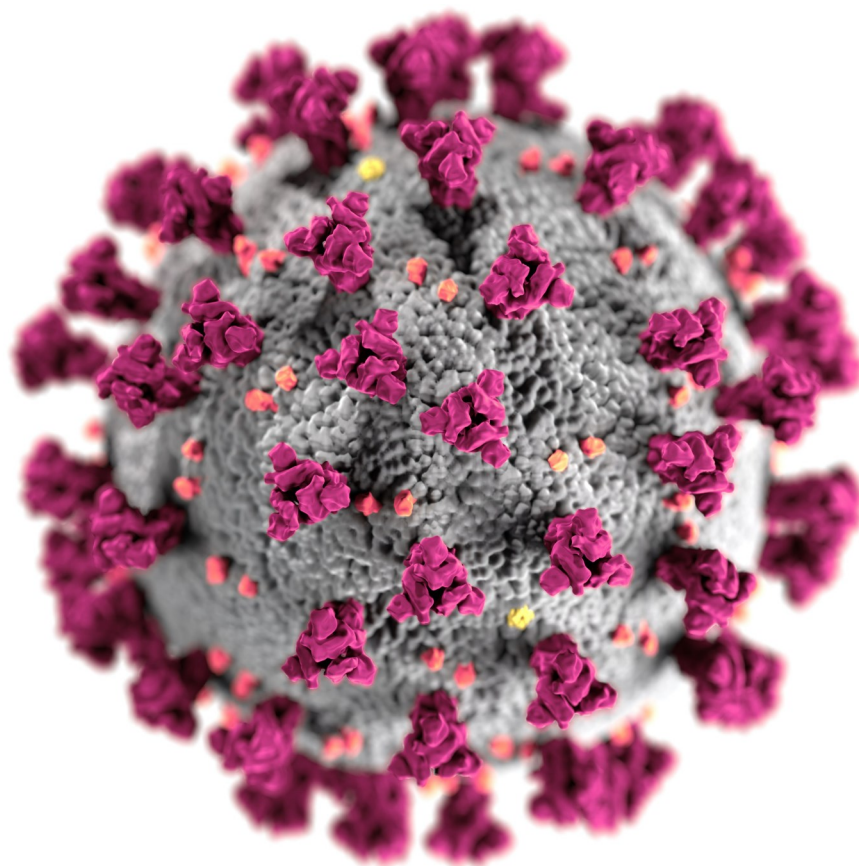Source: SSIS 2020                                                                 N = 151
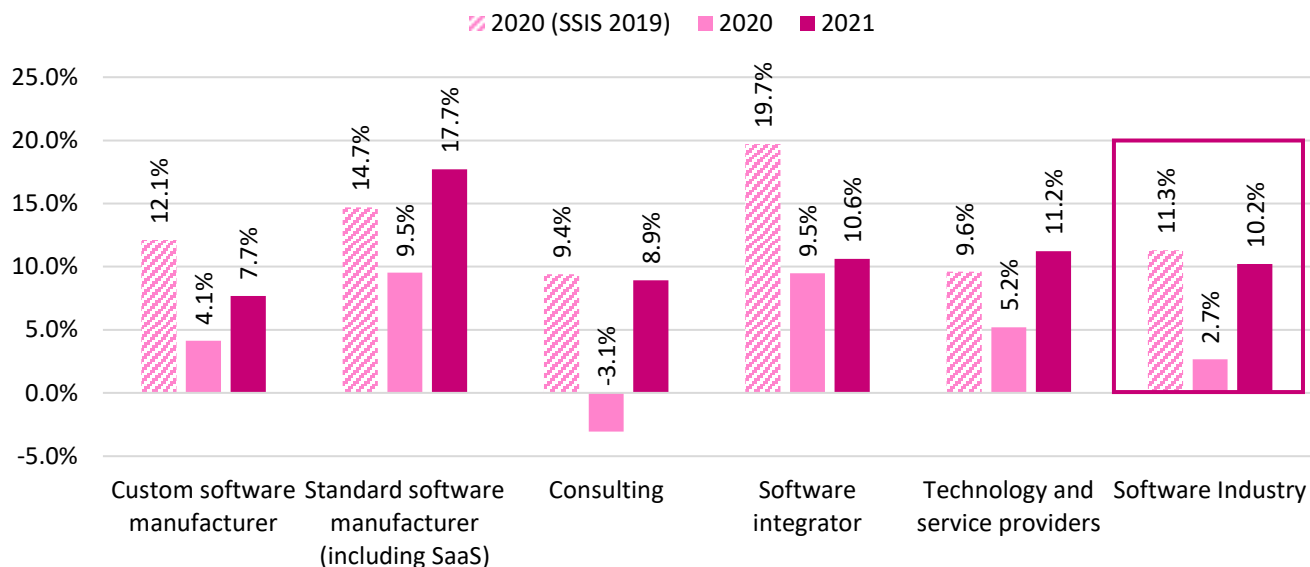
# Spotlight on

# Corona / SARS-CoV-2

## Sales Expectation in 2020 Compared With Sales Expectations in 2019

Figure 20: Expected year-over-year revenue growth for 2020 and 2021



Legend: 2020 (SSIS 2019) | 2020 | 2021

Data shown:
- Custom software manufacturer: 12.1%, 4.1%, 7.7%
- Standard software manufacturer (including SaaS): 14.7%, 9.5%, 17.7%
- Consulting: 9.4%, -3.1%, 8.9%
- Software integrator: 19.7%, 9.5%, 10.6%
- Technology and service providers: 9.6%, 5.2%, 11.2%
- Software Industry: 11.3%, 2.7%, 10.2%

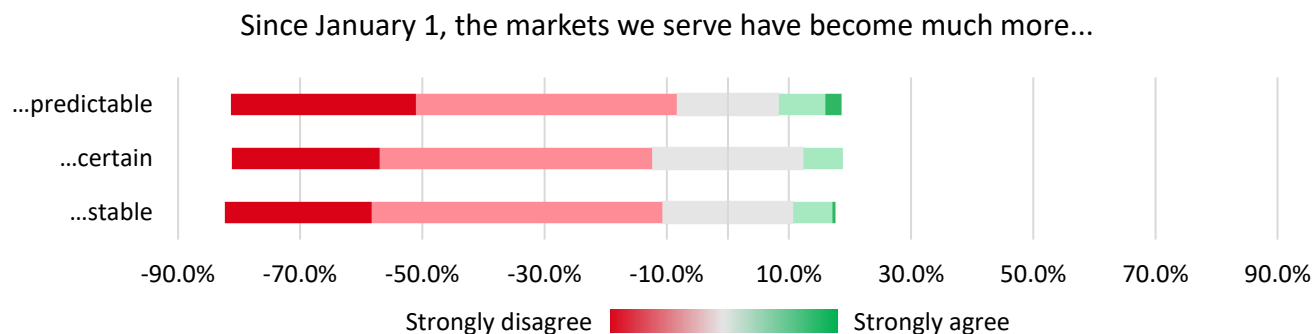Source: SSIS 2020                                                                 N = 154

## The Drastic Effects of the COVID-19-Pandemic

Figure 20 compares the expected growth in revenue for 2020 from the perspective of 2019 with the expectations from the perspective of 2020. Compared to 2019, the software industry expects revenue growth for 2020 of a mere 2.7 percent. This marks a decrease of almost ten percentage points, which applies to all sub-industries. Interestingly, however, all sub-industries are expecting a substantial increase in sales to the level of prior years as early as 2021. However, it remains to be seen to what extent this optimism will prove true.

Figure 21 shows the perceived market volatility since January 1, 2020. Almost 70 percent of all Swiss software companies perceived their market as much more unstable, uncertain, and unpredictable. In contrast, only about 10 percent of all Swiss software companies perceived their markets as stable, certain, and predictable. This increased market volatility can most likely be explained by the COVID-19-pandemic and could serve as an explanation for the low revenue expectations for 2020.

## Perceived Market Volatility

Figure 21: Perceived market volatility in percent

### Since January 1, the markets we serve have become much more...



Categories: ...predictable, ...certain, ...stable

Strongly disagree ————— Strongly agree
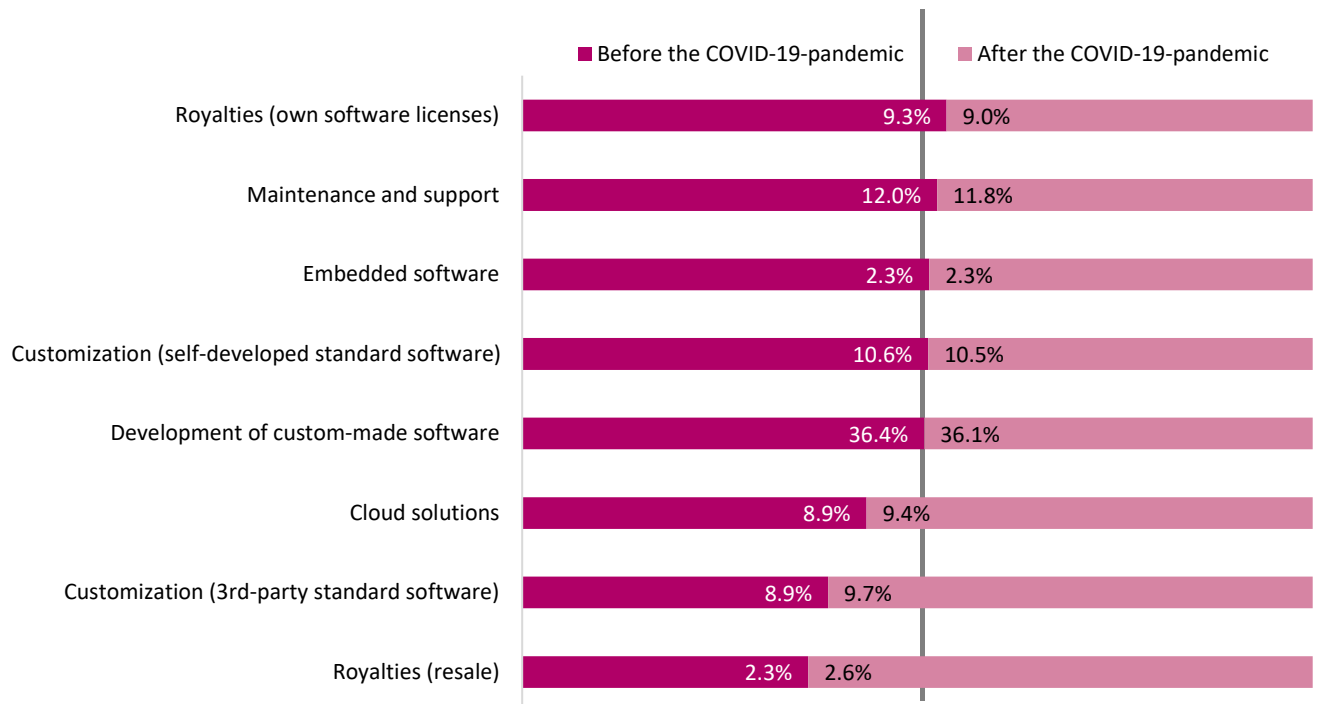
Source: SSIS 2020                                                                 N = 321

## Shift in Sources of Revenue From Before the Pandemic to During the Pandemic

Figure 22: Revenue sources before the pandemic compared to the revenue sources during the pandemic



| | Before the COVID-19-pandemic | After the COVID-19-pandemic |
|---|---|---|
| Royalties (own software licenses) | 9.3% | 9.0% |
| Maintenance and support | 12.0% | 11.8% |
| Embedded software | 2.3% | 2.3% |
| Customization (self-developed standard software) | 10.6% | 10.5% |
| Development of custom-made software | 36.4% | 36.1% |
| Cloud solutions | 8.9% | 9.4% |
| Customization (3rd-party standard software) | 8.9% | 9.7% |
| Royalties (resale) | 2.3% | 2.6% |

Source: SSIS 2020                                                                 N = 226

## Obvious Shifts Within the Sources of Revenue

Figure 22 shows the shifts within the sources of revenue from before to during the COVID-19-pandemic. While revenues from maintenance and support, embedded software, customizations of self-developed standard software and custom software developments remained nearly the same, revenues from cloud solutions, customizations of third-party standard software and resale royalties increased. Only the revenues from royalties for own standard software decreased notably.

Figure 23 shows the perceived disruption impact of the COVID -19-pandemic, which turned out to be rather low (about 15% of the respondents perceived a disruption).

## Perceived Disruption Impact

Figure 23: Perceived disruption impact in percent



The Corona/COVID-19-pandemic has a very negative impact on our...
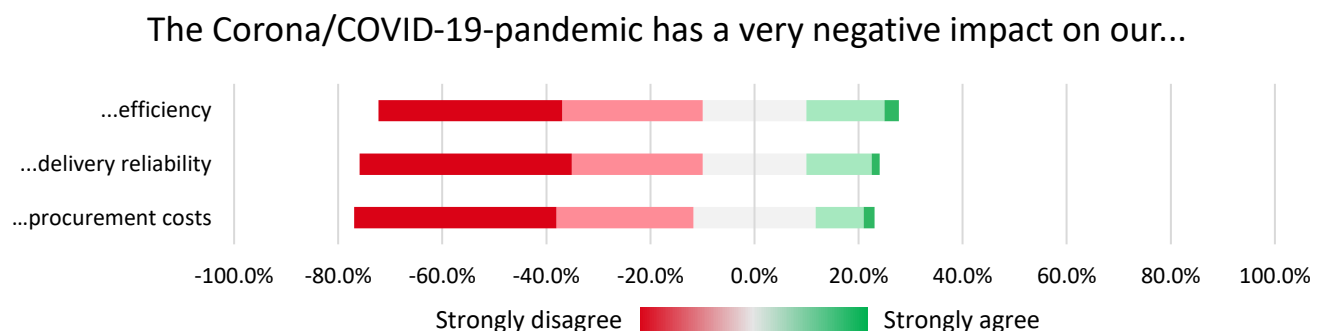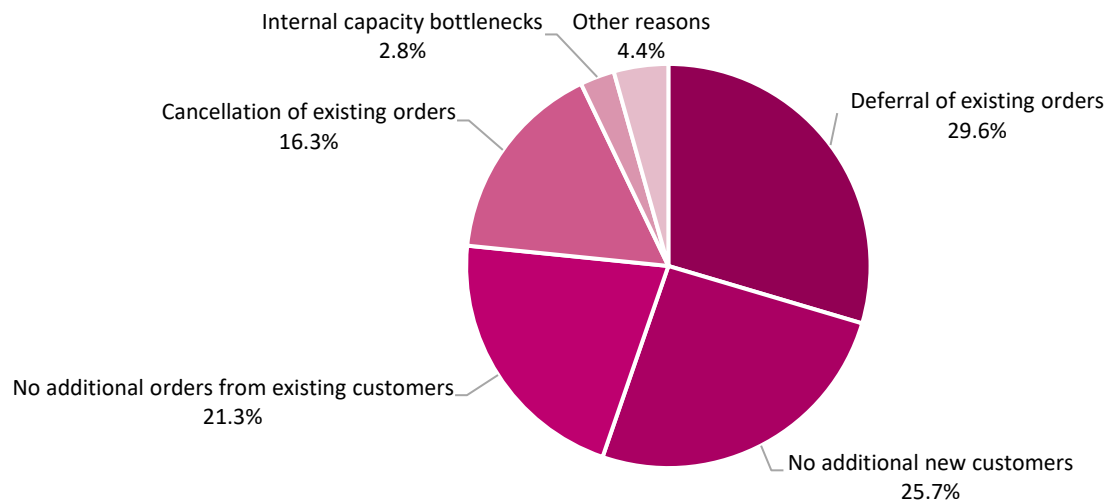
Source: SSIS 2020                                                                 N = 321

## Reasons for Decreasing Revenues Since the Beginning of the COVID-19-Pandemic

Figure 24: Reasons for decreasing revenues since the beginning of the COVID-19-pandemic in percent



Internal capacity bottlenecks
2.8%

Other reasons
4.4%

Cancellation of existing orders
16.3%

Deferral of existing orders
29.6%

No additional orders from existing customers
21.3%

No additional new customers
25.7%

Source: SSIS 2020                                                                                                     N = 436

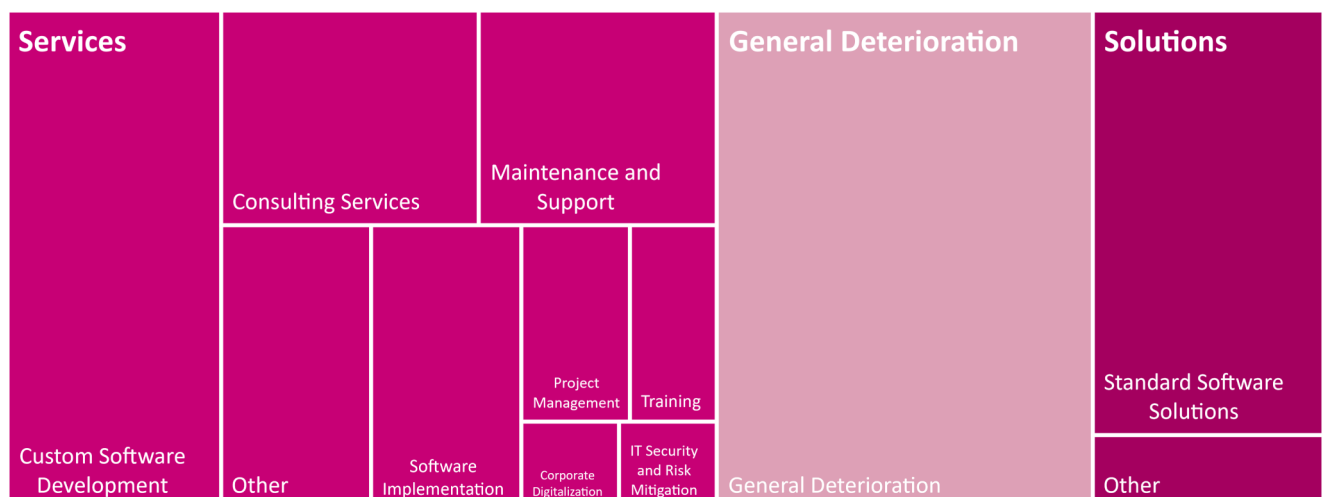## Postponement of Existing Orders and Lack of New Customers

Figure 24 shows the main reasons for why Swiss software companies experienced decreasing revenues since the beginning of the COVID-19-Pandemic in spring 2020. Most important reason for decreasing revenues was the deferral of existing orders with 29.6 percent, followed by the difficulty of acquiring new customers (25.7%) and additional orders from existing customers (21.3%). In

16.3% of cases, Swiss software companies were confronted with the cancellation of existing orders.

Figure 25 summarizes the named unsuccessful products and services since the beginning of the COVID-19-Pandemic. While a majority of Swiss software companies experienced a general deterioration, quite some struggled selling custom or standard software.

## Unsuccessful Products and Services During the COVID-19-Pandemic

Figure 25: Clustered unsuccessful product and services as measured by the number of mentions



Services | Consulting Services | Maintenance and Support | General Deterioration | Solutions
Custom Software Development | Other | Software Implementation | Project Management | Corporate Digitalization | Training | IT Security and Risk Mitigation | General Deterioration | Standard Software Solutions | Other

Source: SSIS 2020

## Reasons for Increasing Revenues Since the Beginning of the COVID-19-Pandemic

Figure 26: Reasons for increasing revenues since the beginning of the COVID-19-pandemic in percent



Other reasons
9.1%

Additional new customers
50.0%

Additional orders from existing customers
40.9%
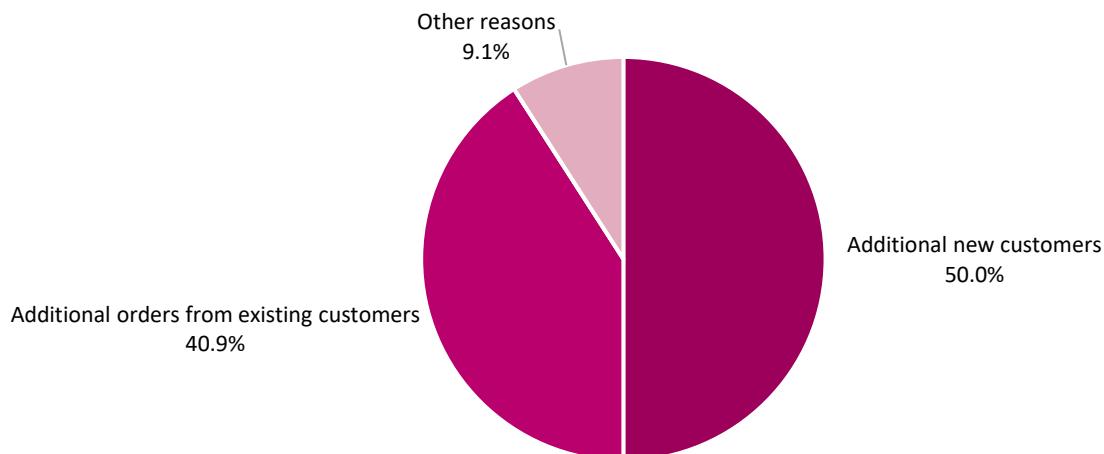
Source: SSIS 2020

N = 22

## Additional New Customers and Some Success with Remote Office Solutions

Figure 26 shows the main reasons for why few Swiss software companies experienced increasing revenues since the beginning of the COVID-19-Pandemic in spring 2020. Most important reason for increasing revenues were additional new customers with 50.0 percent, followed by additional orders from existing customers (40.9%).

Figure 27 summarizes the named successful products and services since the beginning of the COVID-19-Pandemic. Particularly successful were maintenance and support, remote office solutions, and consulting services.

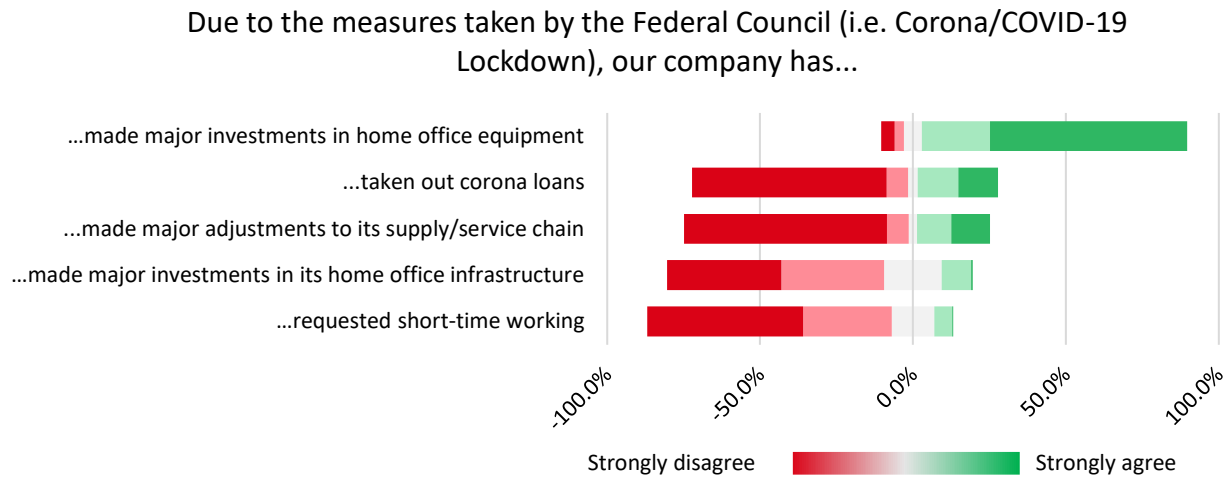## Successful Products and Services During the COVID-19-Pandemic

Figure 27: Clustered successful product and services as measured by the number of mentions



Services
Maintenance and Support
Consulting Services
Corporate Digitalization
Cloud Services
Remote Office Services
Other
Custom Software Development
IT Security and Risk Mitigation
Automization
Digital Learning Content

Solutions
Remote Office Solutions
E-Commerce Solutions
Other
Standard Software Solutions
Cloud Solutions
Digital Signature

Nothing Specific

Source: SSIS 2020

## Immediate Reactions to the COVID-19-Pandemic

Figure 28: Immediate reactions to the COVID-19-pandemic in percent approval



Due to the measures taken by the Federal Council (i.e. Corona/COVID-19 Lockdown), our company has...

Source: SSIS 2020                                                                 N = 321

## Major Investments in Home-Office Equipment

Figure 28 shows the immediate reactions of Swiss software companies to the COVID-19-pandemic. Interestingly, while Swiss software companies were generally well prepared for working remotely (only 10.2 percent had to invest significantly in their home-office infrastructure), 86.7 percent had to spend considerable amounts on home-office equipment for their employees. Other fascinating insights are that 26.2 percent took out corona loans and 23.8 percent had to make

major adjustments in their supply/service chain.

Figure 29 summarizes the measures named by Swiss software companies to maintain social interactions despite the lock-down. The most important measure were informal calls on a demand basis. Almost as important were planned, virtual coffee breaks and apéros. Yet, whether or not these digital interaction measures were able to hold their own over time will have to be examined in future studies.

## Measures to Sustain Social Interaction

Figure 29: Clustered measures to maintain social interaction as measured by the number of mentions
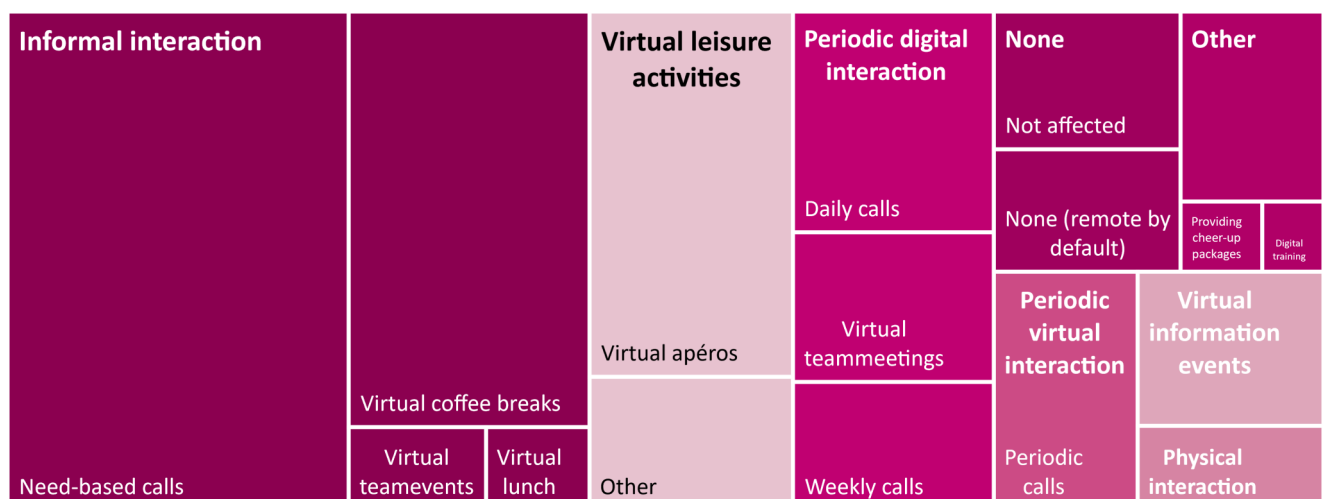


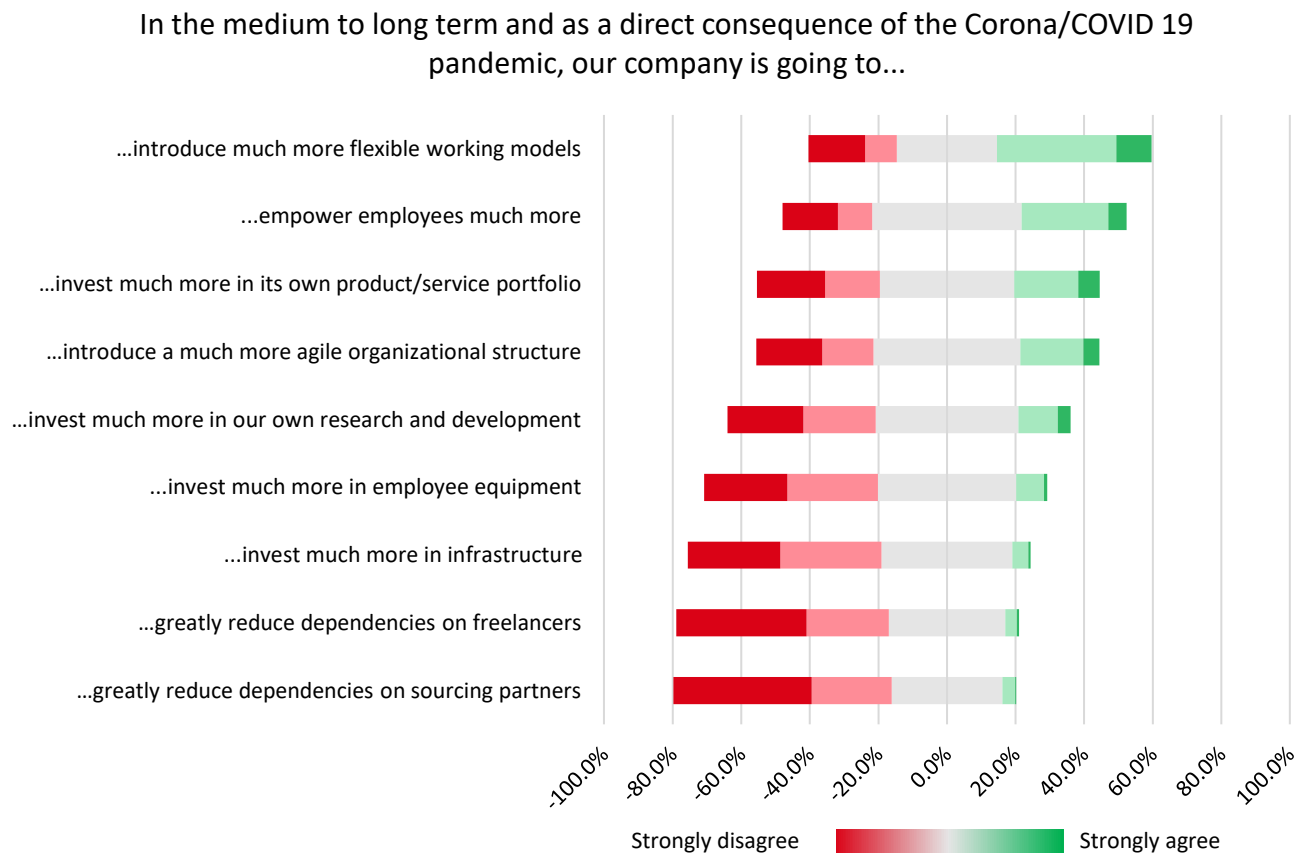Source: SSIS 2020                                                                 N = 286

## Longer-Term Responses to the COVID-19-Pandemic

Figure 30: Longer-term reactions to the COVID-19-pandemic in percent approval

**In the medium to long term and as a direct consequence of the Corona/COVID 19 pandemic, our company is going to...**



Strongly disagree ▬▬▬ Strongly agree

Source: SSIS 2020                                                                 N = 321

Among Swiss software companies

## 45.0%

plan to introduce more flexible working models

## Long-Term Flexibilization of Working Models

Figure 30 shows the longer-term reactions of the Swiss software industry to the COVID-19-pandemic. The most prominent reaction is the introduction of more flexible working models—45.0 percent of Swiss software companies stated, that they plan to such more flexible working models to be better prepared for similar events in the future. Closely related that, 30.5 percent of Swiss software companies plan to empower their employees much more and 23 percent strive for a much more agile organizational structure.

Interestingly, only 5.3 percent plan to invest much more in their infrastructure and only 4.0 percent of the companies intend to reduce their dependencies on freelancers and sourcing providers.
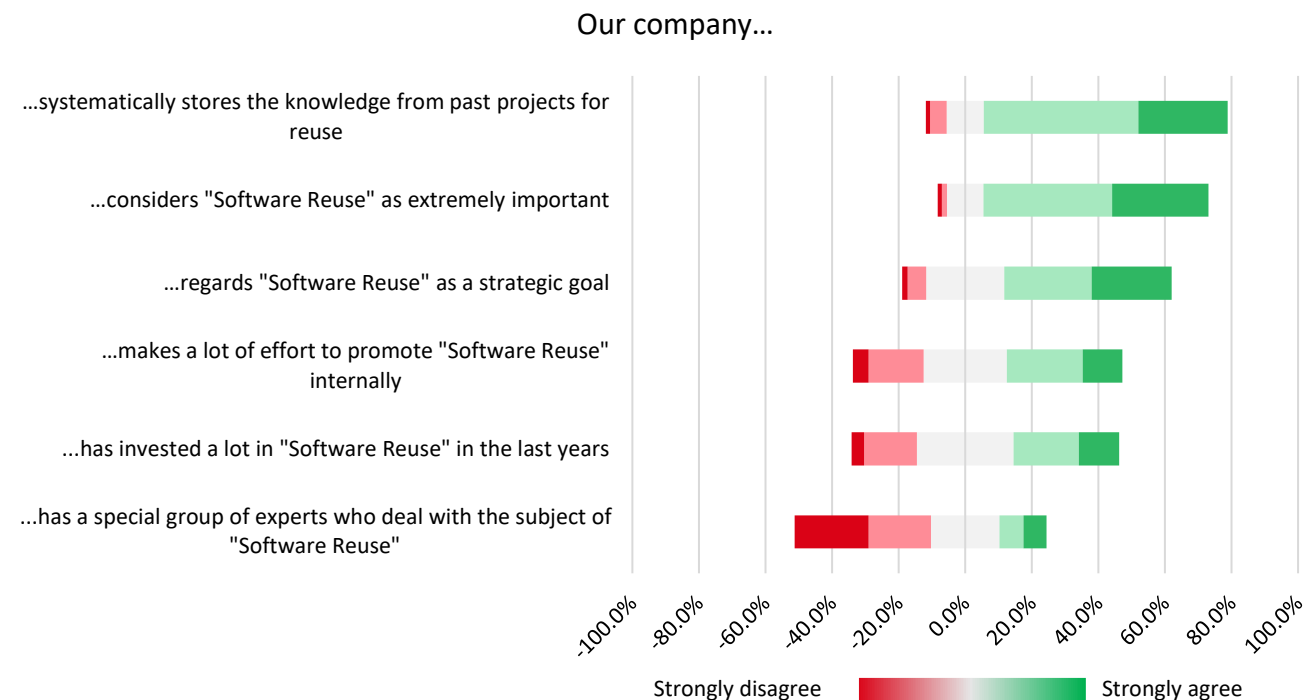
# Spotlight on

# Software Re-Use

## Reuse in Swiss Software Companies

Figure 31: The importance of reuse for Swiss software companies

### Our company…



…systematically stores the knowledge from past projects for reuse

…considers "Software Reuse" as extremely important

…regards "Software Reuse" as a strategic goal

…makes a lot of effort to promote "Software Reuse" internally

...has invested a lot in "Software Reuse" in the last years

...has a special group of experts who deal with the subject of "Software Reuse"

Strongly disagree          Strongly agree

Source: SSIS 2020                                                              N = XX

Among Swiss software companies

## 73.2%

systematically store knowledge from past project for reuse purposes

## The Strategic Potential of Software Reuse

The reuse of software or the use of existing software or software knowledge to create new software is of great importance for Swiss software companies. 73.2% of the Swiss software companies surveyed systematically store knowledge from past projects for reuse, 67.6% consider software reuse critical, and an astonishing 50.3% even regard it as one of their strategic goals. At the same time, only 7.2% of the Swiss software companies surveyed do not regard software reuse as a strategic goal, a mere 6.2% refrain from systematically storing knowledge from past projects for reuse, and just 2.8% consider software reuse to be completely unimportant. These impressive figures suggest that most Swiss software companies take advantage of software reuse to build more extensive and more complex systems that

are more reliable, cheaper, and delivered on time.

Despite the apparent importance of software reuse to Swiss software companies, only about a third of them actively promote software reuse among their employees, while 21.3% do not do so at all. The investments into software reuse reflect this trend—31.8% of the Swiss software companies surveyed have actively invested in the subject of software reuse in the last few years, while a staggering 19.6% have refrained from doing so altogether.

One way to actively promote the topic of software reuse is through special committees or boards. However, such committees or boards only exist in 14.1% of the Swiss software companies surveyed.
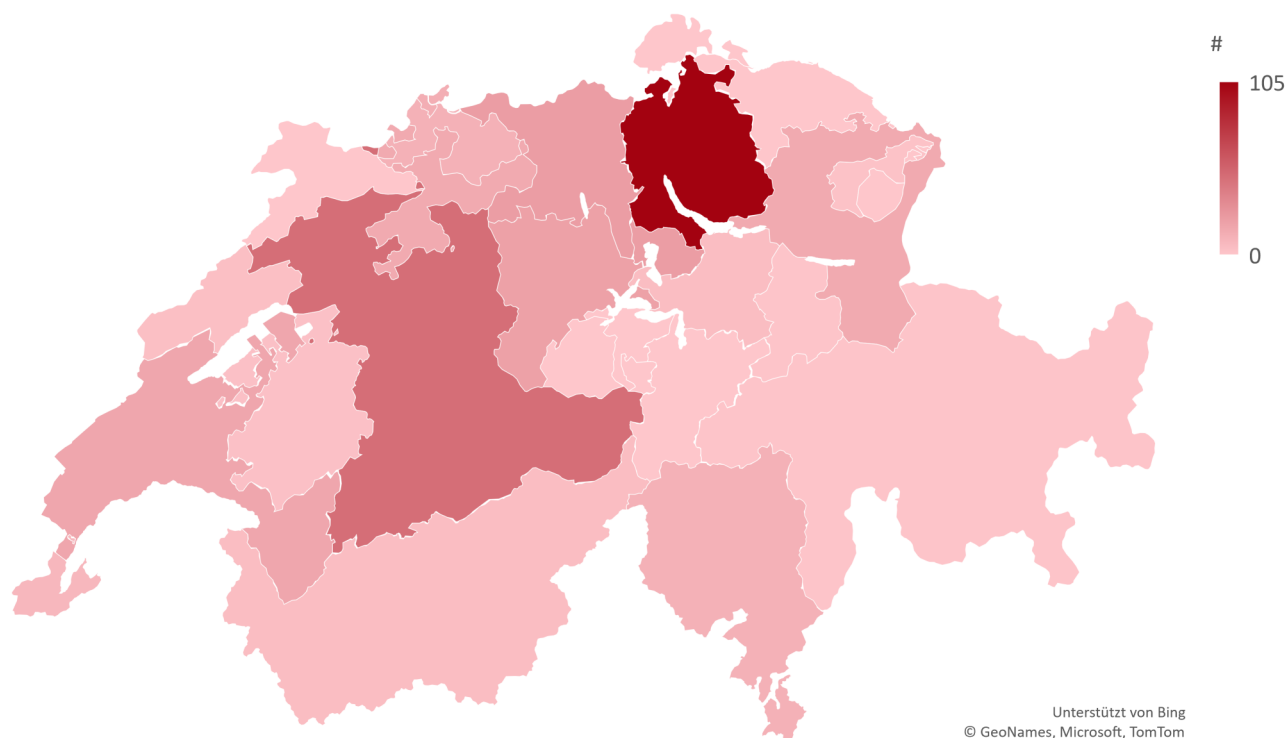
# Method and Official Statistics

# About the SSIS

## Geographical Distribution of the Participants in 2020

Figure 32: Participating companies per canton



Unterstützt von Bing
© GeoNames, Microsoft, TomTom

Source: SSIS 2020

## About the SSIS in 2020

This year we conducted the Swiss Software Industry Survey (SSIS) for the sixth time. With the sixth 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 survey 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 19 cantons (see Figure 32)

- …and builds on a large sample size with 723 participants, 336 complete responses, and 226 post-stratified 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

- …we relied on the extrapolation method developed for last year's SSIS, which builds on state-of-the-art econometrical procedures (post-stratification by region, sub-industries, company size, and revenue)

**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).

## Official Statistics - Employees and Added Value

Table 1: Distribution of Added Value in 2019 and distribution of Full-Time Equivalents in 2019 by industry

| Sections | Added Value | FTE |
|---|---|---|
| Mining and quarrying | 0.1% | 0.1% |
| Manufacturing | 18.9% | 15.8% |
| Energy supply, water supply, waste management | 1.8% | 1.1% |
| Construction | 4.9% | 8.4% |
| Trade; repair of motor vehicles and motorcycles | 15.0% | 13.0% |
| Transportation, storage, information and communication | 5.7% | 6.6% |
| **IT and other information services** | **2.8%** | **2.6%** |
| Accommodation and food service activities | 1.9% | 5.0% |
| Financial service activities | 5.5% | 2.6% |
| Insurance | 4.6% | 1.0% |
| Real estate activities, professional, scientific, technical and administrative activities | 17.9% | 16.2% |
| Public administration | 10.2% | 4.2% |
| Education | 0.6% | 6.0% |
| Human health and social work activities | 8.0% | 13.3% |
| Arts, entertainment, recreation and other services | 2.1% | 4.0% |

Source: BESTA , Added Value 2019, FTEs 2019

## 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 (i.e., 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 2.4% to the Swiss GDP (see Table 1) and employs almost 2.4% of all job-holders in Switzerland (see Table 1), and is one of the strongest growing sectors. Figures 33 and 34 show the official employee statistics.

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. Compatibility with official statistics is ensured by focusing on two NOGA codes (62, 63). Yet, we provide a richer picture of what is going on within these codes. Specifically, the report enables the following additional insights:

♦ Trend analysis of key performance indicators incl. EBIT, R&D expenditure, employee growth, and revenue growth

♦ Indicators on profitability and R&D investments

♦ Analyses along practically relevant categories (standard vs. custom software, maintenance vs. testing, etc.).
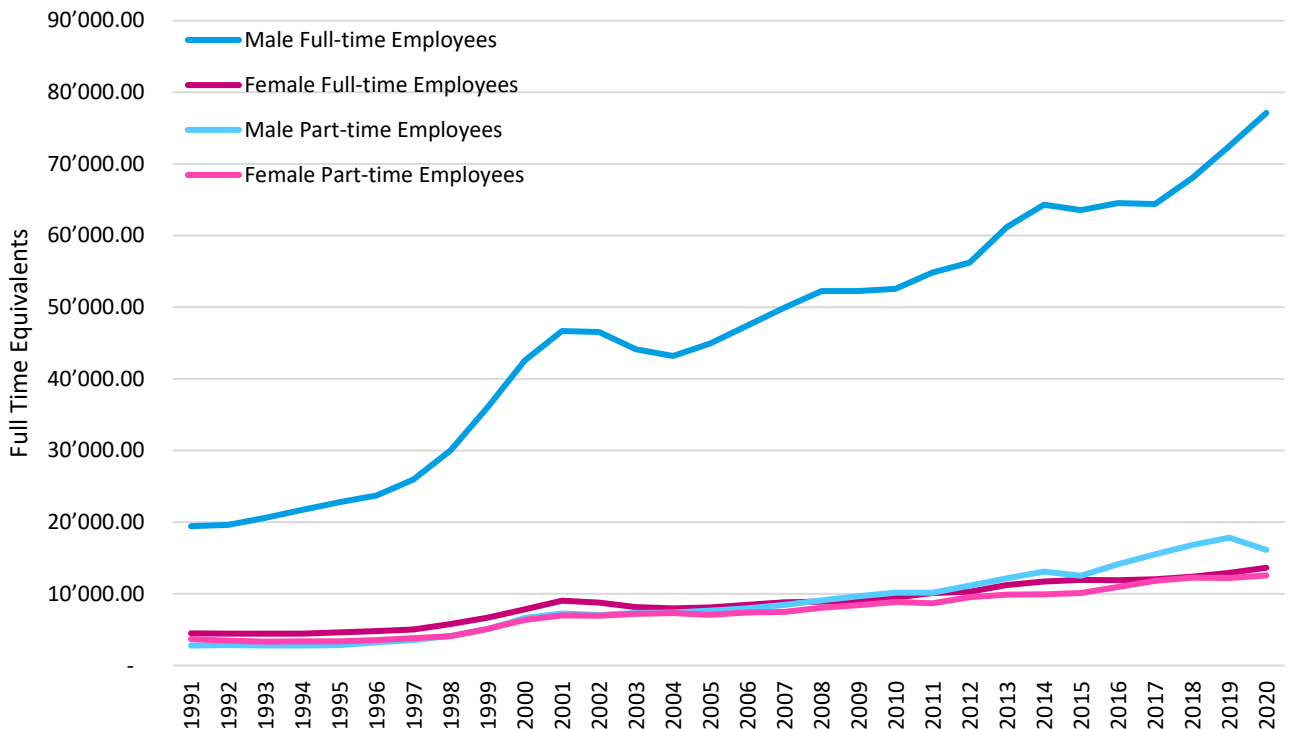
## Employees in the Swiss ICT Sector

Figure 33: Number of FTEs in NOGA 62 & 63 from 1991-2020
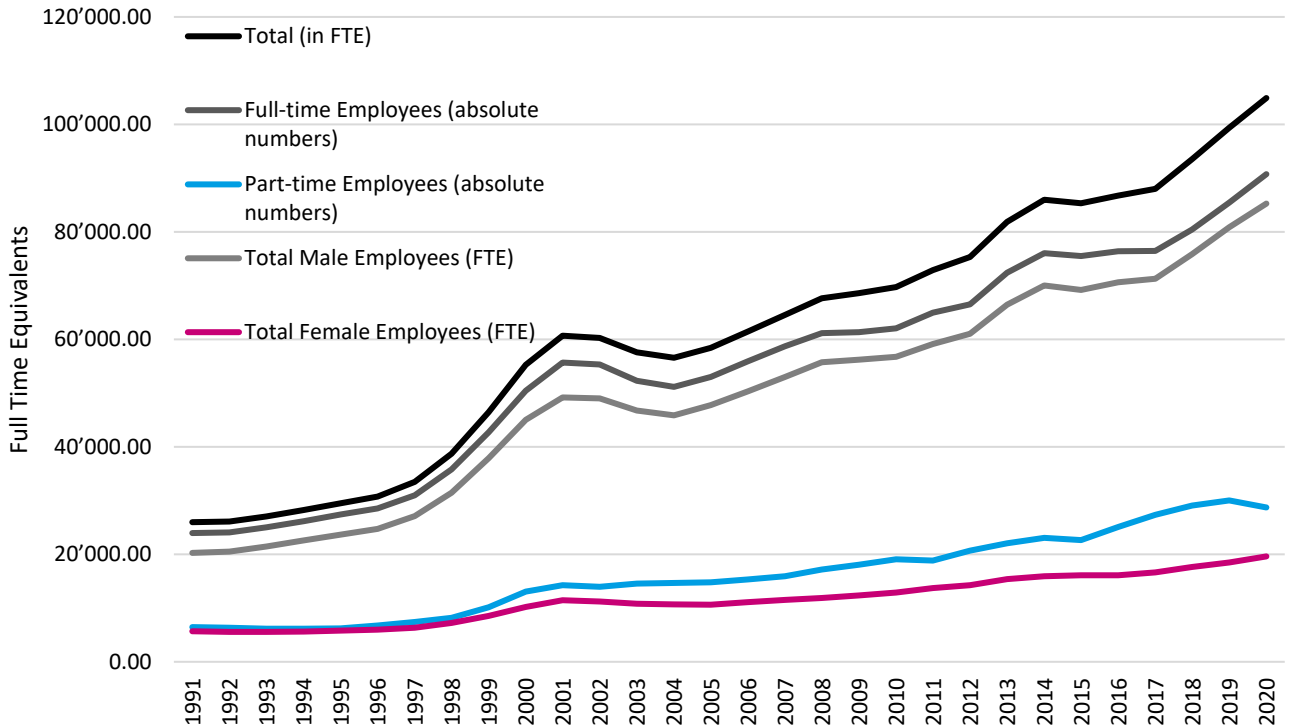


Source: BESTA 2020

## Part-Time Employees in the Swiss ICT Sector

Figure 34: Number of FTEs and Part-Time Employees in NOGA 62 & 63 from 1991 - 2020



Source: BESTA 2020