SSIS
Swiss Software Industry Survey

UNIVERSITÄT BERN

SIMON PERRELET, MAYRA NINA SPIZZO, AND JENS DIBBERN
WITH SUPPORT FROM NOAH WERDER

Institute of Information Systems - Information Engineering

October 2023

Swiss Software Industry Survey 2023

Current State, Emerging Trends, and Long-term Developments

A Study of the University of Bern on behalf of SWICO

Principal:

Swico - der Wirtschaftsverband für die digitale Schweiz
Lagerstrasse 33
CH - 8004 Zürich

Operational partners:

Advertising partners:

Authors:

Simon Perrelet
Mayra Nina Spizzo
Prof. Dr. Jens Dibbern
University of Bern
Institute of Information Systems
Department of Information Engineering
Engehaldenstrasse 8
CH - 3012 Bern
www.iwi.unibe.ch

Support:

Noah Werder

Picture Credits:

Cover: designed by Freepik; 6: Pixabay; 11: Pixabay; 15: Pixabay; 20: Pixabay

Bern, October 2023

UNIVERSITÄT BERN

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.

Simon Perrelet

Mayra Nina Spizzo

Prof. Dr. Jens Dibbern

Preface

In our increasingly digital world, software plays a pivotal role in our daily lives. Yet, with this growth comes a growing concern: sustainability. But how are software and sustainability related? Software not only has the power to promote sustainability but can also be sustainable itself, touching on three dimensions of sustainability: economic, ecological, and social. The ninth edition of the Swiss Software Industry Survey (SSIS) takes the opportunity to look at the topic of sustainability within the Swiss software industry. Notably, however, this SSIS Report 2023 does not solely focus on sustainability. Being the most comprehensive study of its kind in Switzerland, the report once again provides an in-depth overview of the current state, emerging trends, and long-term developments in the Swiss software industry.

This year, the SSIS was conducted for the third time under the patronage of Swico, the association of the ICT and internet industry in Switzerland.
This patronage ensures the future of the SSIS for the years to come. Besides, it enables us to stay at the pulse of the Swiss software industry.
In this sense, we would like to thank Swico and its Interest Group “Software, Services, and Consulting” for the trust they have placed in us and look forward to working with them in the years to come. As in previous years, we would also like to thank our partners sieber&partners, tranengineering, and the Institute for Business Studies Basel (IWSB) as important supporters of the SSIS.

We hope you enjoy reading this year’s SSIS Report.

Yours sincerely,

Simon Perrelet

Mayra Nina Spizzo

Prof. Dr. Jens Dibbern

TABLE OF CONTENTS

Executive Summary

Swiss software companies are looking positively into the future. They expect a growth in revenue of 10.2% in 2023. This is despite a slight decline in EBIT and EBITDA margins in 2022. The positive outlook is also reflected in employee growth, which is estimated at 8.7% in 2023. Furthermore, exports increase slightly from 6.3% to 7.0%. The study shows that a change in billing models is taking place. Standard software manufacturers, in particular, are increasingly relying on usage-based models. This reflects the current trends towards more cloud-based solutions and a spread of usage-based billing models.

Sustainability - An Important Topic for Software Companies

Swiss software companies seem to regard sustainability as an important topic. A large proportion of the companies have defined sustainability as a core value and established corresponding sustainability measures. This is also reflected in the strategic measures and the high level of management support.

Established Practices, But Still Room for Improvement

Swiss software companies apply a wide range of practices in software development that are directed towards sustainability. However, there is also room for improvement: in particular, practices that impact environmental sustainability are not yet widespread, such as energy-efficient programming languages and platforms, or energy efficiency control. Furthermore, accessibility of software is only consciously considered by very few software companies.

Sustainable Technologies for Customers

Swiss software companies are notable for promoting sustainable technologies and providing customers with sustainable software products. However, only a few companies use information systems to document their sustainability.

Little Pressure for Swiss Software Companies

A key influence for the implementation of sustainability measures is the pressure from the company's environment. Although some pressure is felt from customers, regulatory organizations and other actors exert less noticeable pressure on Swiss software companies.

Sustainability Measures Offer Advantages

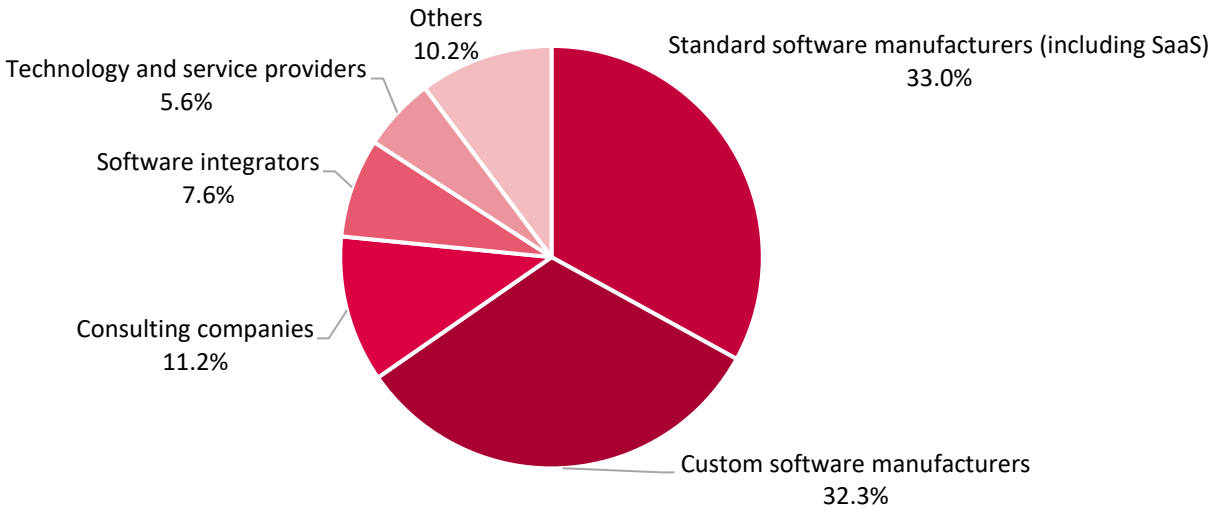
This year's SSIS showed that the implementation of sustainability measures is positively associated with organizational benefits, such as a better image, reduction of costs and more successful implementations of innovations.

Spotlight on

Revenue, Profitability & Future Growth

Participating Companies

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



Source: SSIS 2023

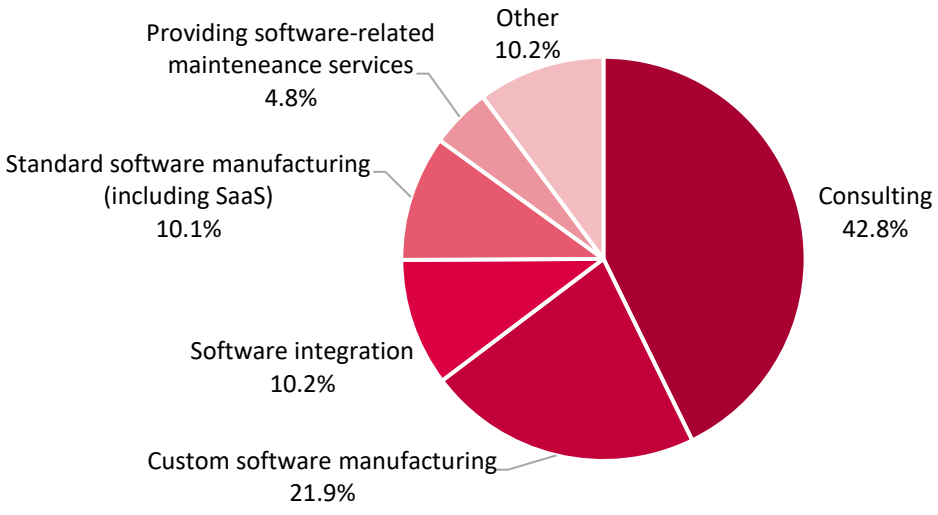
N = 303

Software-related Consulting, the Main Source of Revenue

Figure 1 shows the distribution of companies participating in the SSIS 2023. As in previous years, custom and standard software manufacturers dominated our sample. Both sub-industries account for approximately two-thirds of the answers. Consulting companies (11.2%), software integrators (7.6%), as well as technology and service providers (5.6%) follow at some distance.
Figure 2 shows the weighted revenues by activity, with software-related consulting making up the largest source of revenue, with 42.8%. The second largest source of revenue is the manufacturing of custom software, with 21.9%. This is followed by software integration with 10.2% and the production of standard software with 10.1%. The provision of software-related maintenance services accounts for 4.8%, and other activities account for 10.2%.

Revenues by Activity

Figure 2: Revenues of Swiss software companies by activity

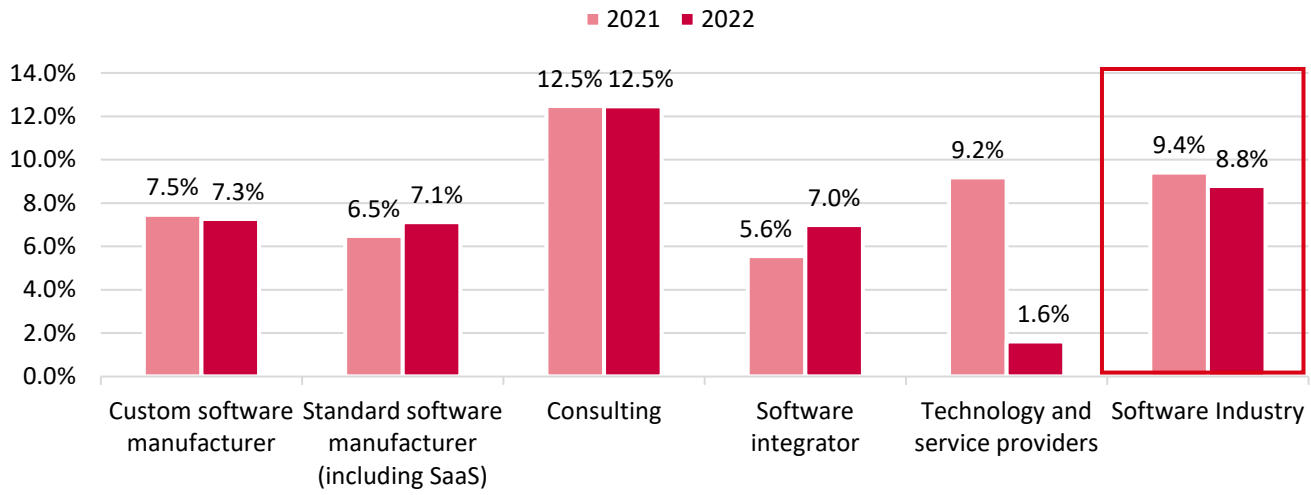


Source: SSIS 2023

N = 114

EBIT Margins

Figure 3: EBIT margins by sub-industries in 2021 and 2022



Source: SSIS 2023

N = 96

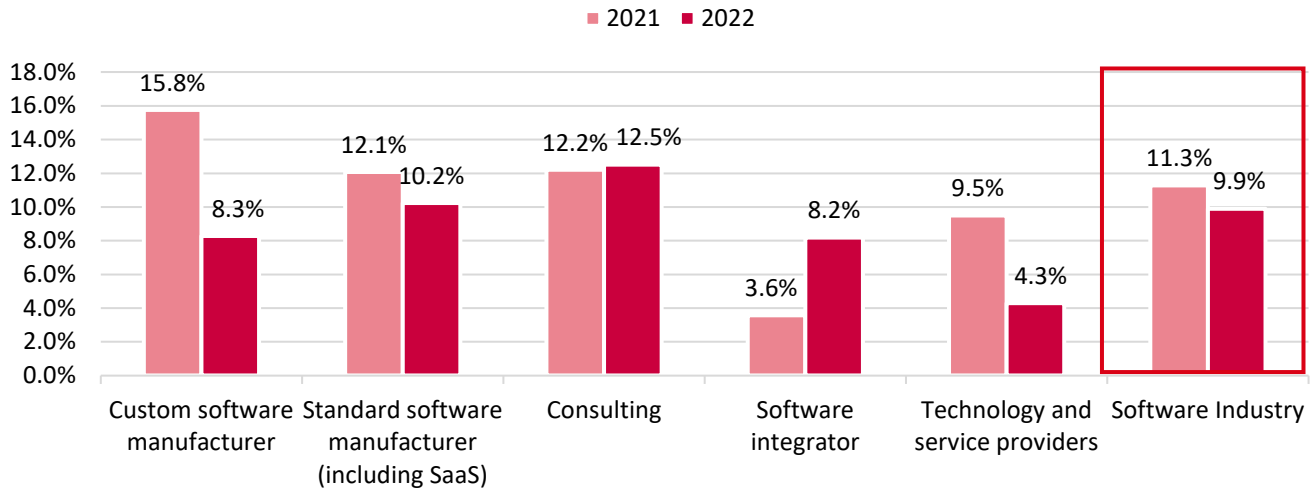
Lower EBIT and EBITDA Margins

Figure 3 shows the EBIT margins of the sub-industries with a slight industry-wide decrease to 8.8%. This decline applies to custom software manufacturers (7.3%), and especially, technology and service providers (1.6%), while the EBIT margins for consulting stayed the same. The standard software companies and software integrators increased their EBIT to 7.1% respectively 7%.

Figure 4 shows the EBITDA margins of the Swiss software industry, with an industry-wide decrease from 11.3% in 2021 to 9.9% in 2022. This trend applies to custom software manufacturers (-7.5%), standard software manufacturers (-1.9%) and technology and service providers (-5.2%), while the EBITDA margins for consulting firms (+0.3%), and software integrators (+4.6%) increased.

EBITDA Margins

Figure 4: EBITDA margins by sub-industries in 2021 and 2022

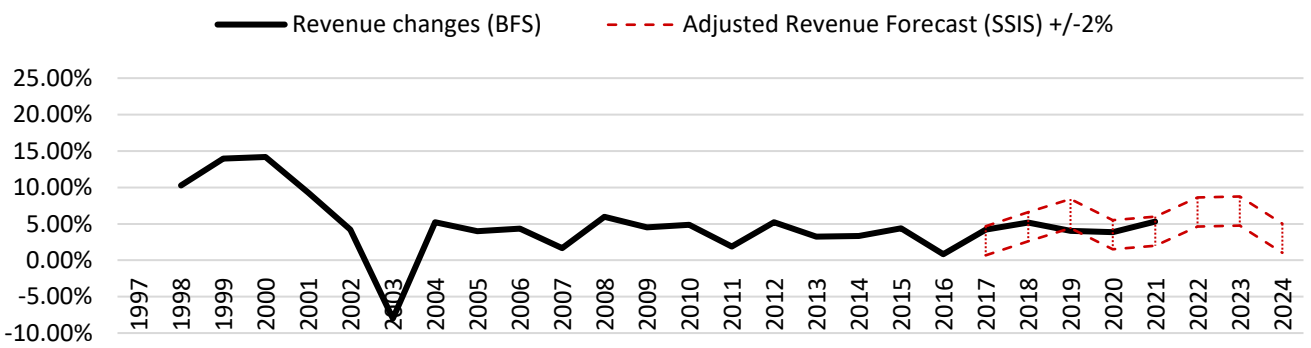


Source: SSIS 2023

N = 94

Revenue Growth Forecast

Figure 5: Expected year-over-year revenue growth



Source: BFS / SSIS 2023

N = 154

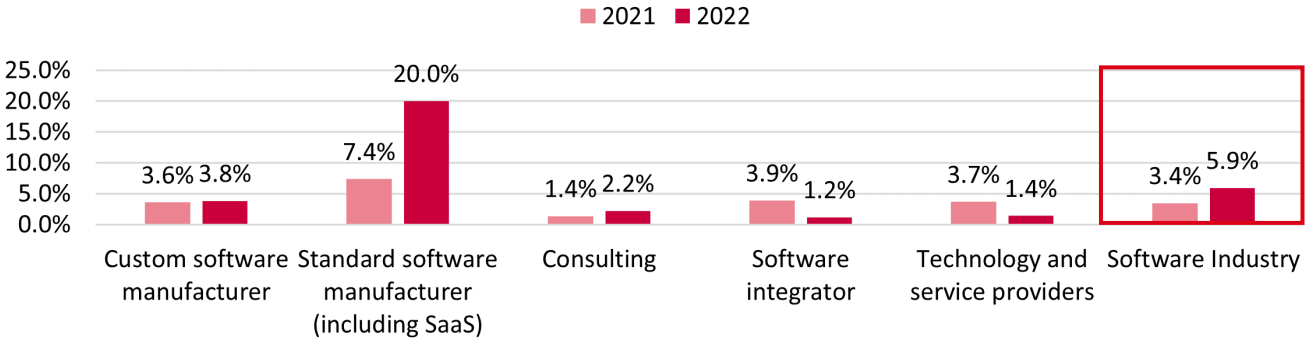
Back to Normal - Revenue Growth Expected to Exceed 10%

The Swiss software industry is looking positively to the future and expects growth of 10% in 2023 and 10.2% in 2024. Figure 5 shows the expected revenue growth of the Swiss software industry in the form of a target corridor of +/- 2%. This corridor has been corrected by the deviation to the official statistics of the BFS. Corrected by this deviation, a revenue growth of 6.75% in 2023 and 3% in 2024 can be expected.

Please note that this target corridor is only an estimate, which may prove to be incorrect, in particular due to unexpected external influences.

Research and Development Investments

Figure 6: R&D investments by sub-industries in 2021 and 2022 as percentage of revenue



Source: SSIS 2023

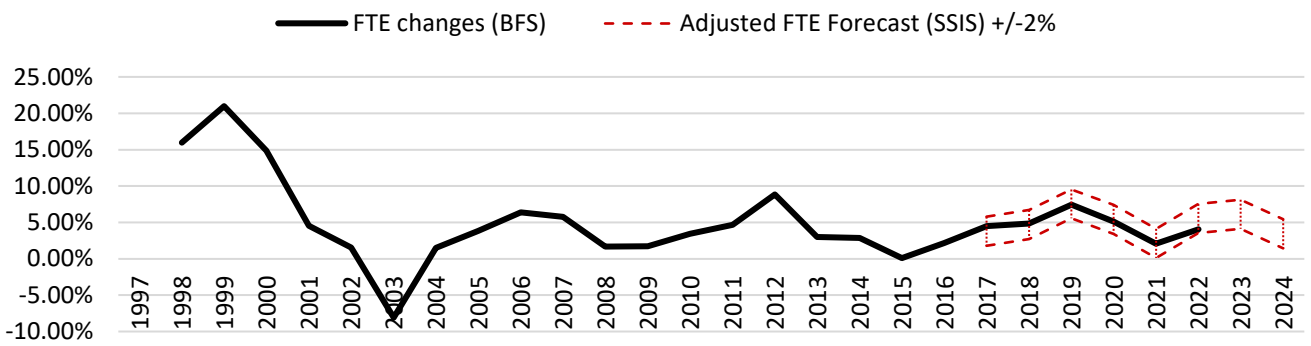
N = 100

Increasing Investments in Research and Development

Figure 6 shows the spending on research and development (R&D) by Swiss software companies as a percentage of revenues in 2022 compared to 2021. Swiss software companies spent a higher proportion of their revenues (5.9%) on R&D in 2022 (3.4% in 2021). Particularly noteworthy is the significant increase in R&D investments of standard software manufacturers from 7.4% in 2021 to 20% in 2022. Less striking is the increase among manufacturers of custom software (+0.2%) and consulting (+0.8%). Only software integrators and technology and service providers decreased their R&D investments from 2021 to 2022.

Employee Growth Forecast

Figure 7: Expected year-over-year growth of workforce



Source: BFS / SSIS 2023

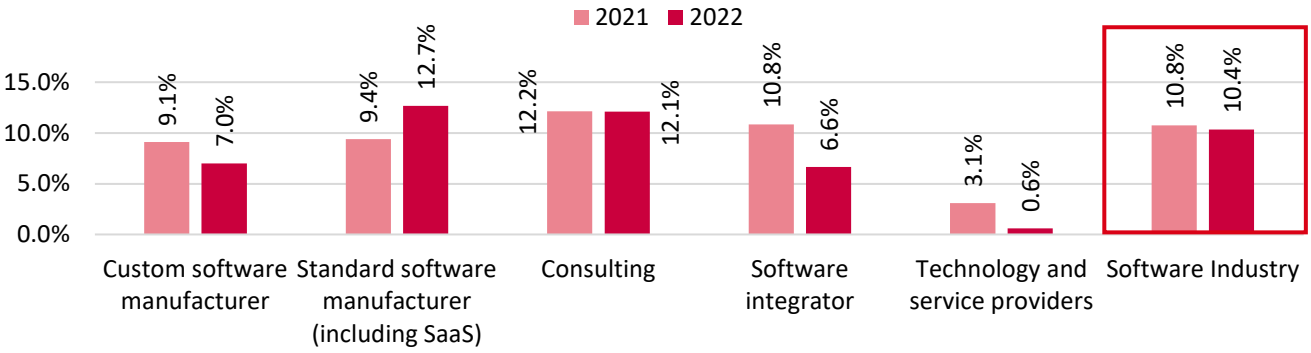
N = 114

Optimistic Employee Growth Prospects

The Swiss software industry is also looking positively to the future in terms of employee growth and expects the number of full-time equivalents (FTEs) to grow by 8.7% and 11.3% in 2023 and 2024 respectively. Figure 5 shows the expected growth in the number of full-time equivalents (FTEs) in the Swiss software industry in the form of a target corridor of +/- 2%. The corridor was adjusted by the deviation from the official statistics of the BFS. Based on the adjusted expectations, the number of full-time equivalents in the Swiss software industry is expected to grow by 6.12% and 3.43% in 2023 and 2024, respectively.

Employee Fluctuation

Figure 8: Employee fluctuation in 2021 and 2022 using the basic formula



Source: SSIS 2023

N = 110

Stable Employee Fluctuation

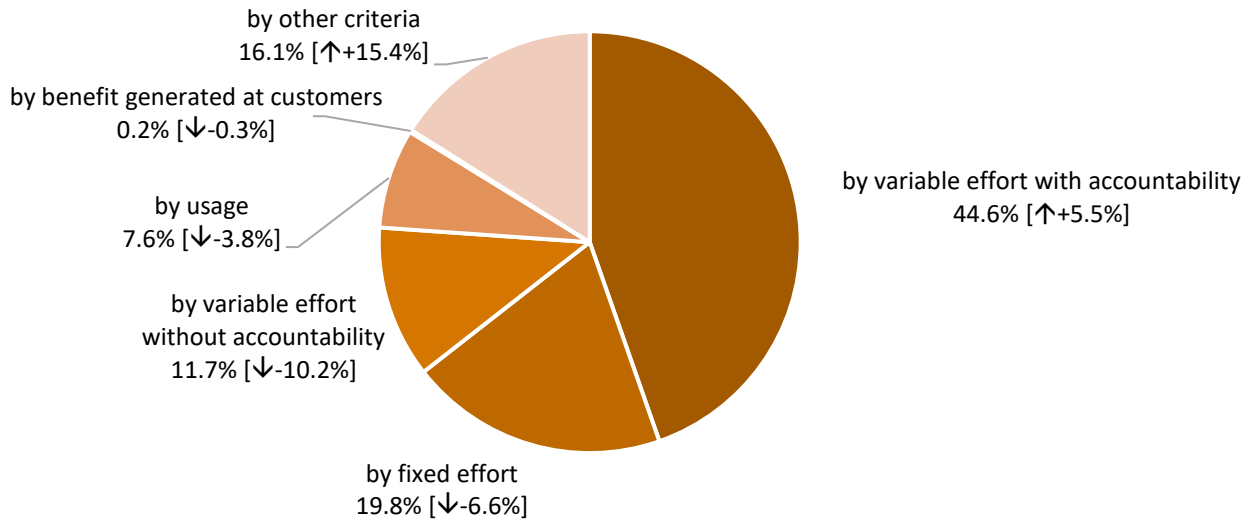
Figure 8 shows the employee fluctuation rate in the Swiss software industry in 2022, calculated using the basic formula [(leavers / number of employees at the beginning of a period) * 100]. Based on this calculation, employee fluctuation remains relatively stable, slightly decreasing from 10.8% in 2021 to 10.4% in 2022. Standard software manufacturers recorded the highest fluctuation in 2022 (from 9.4% to 12.7%). The technology and service providers, in turn, were able to essentially minimize their employee fluctuation (from 3.1% to 0.6%). All other sub-industries could stabilize their fluctuation.

Spotlight on

Sources of Revenue

Billing Models

Figure 9: Billing models of the Swiss software industry as a percentage of industry revenue [compared to 2022]



Source: SSIS 2023

N = 114

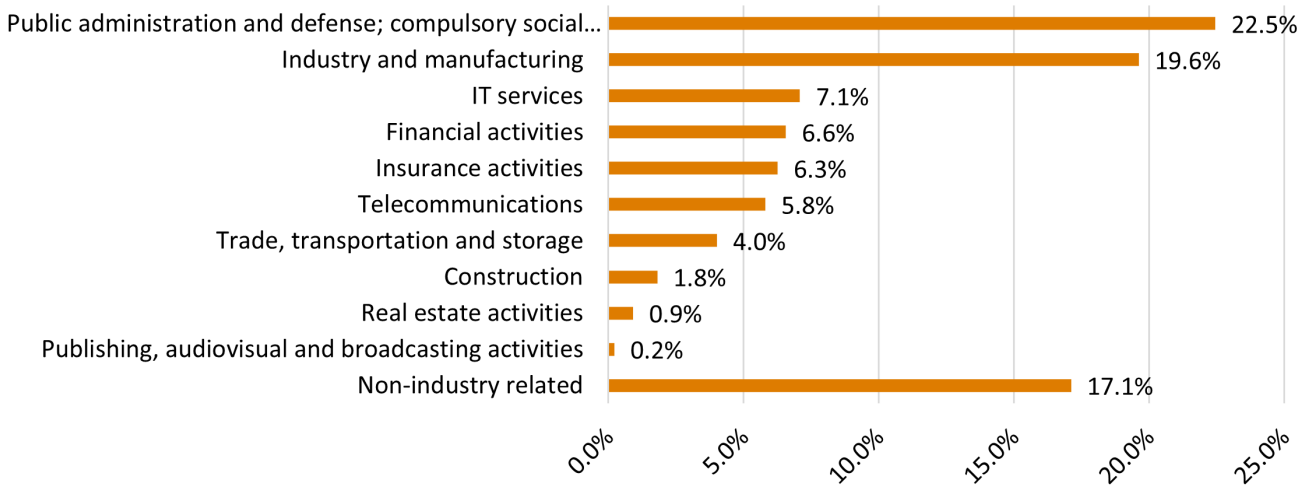
Focus on the Public Sector

Figure 9 shows the most important billing models in the Swiss software industry. By far, the most revenue was billed by variable effort with accountability (44.6%), followed by revenue billed by fixed effort (19.8%) and variable effort without accountability (11.7%). Revenue from billing models based on usage (7.6%) or benefits generated by customers (0.2%) remained low.

Figure 10 shows the most critical client industries for the Swiss software industry - this year in terms of the revenues generated in each industry. The most crucial client industry for the Swiss software industry is the public sector (22.5%). Around a sixth of revenue is not attributable to any particular industry.

Revenue per Industry

Figure 10: Most important industries for the Swiss software industry in terms of revenue

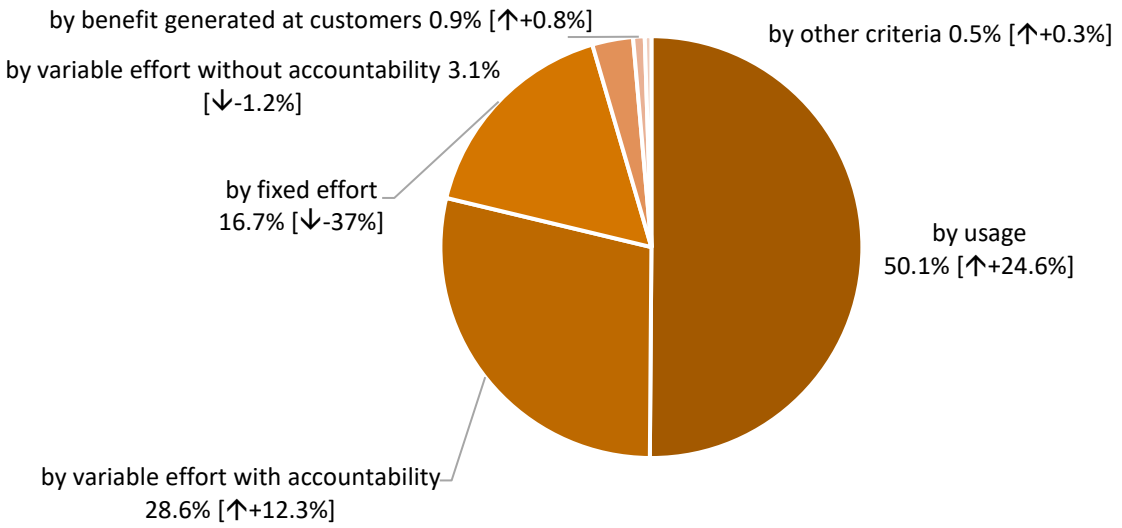


Source: SSIS 2023

N = 113

Billing Models of Standard Software Manufacturers

Figure 11: Billing models of standard software manufacturers as % of the sub-industry revenue [compared to 2022]



Source: SSIS 2023

N = 43

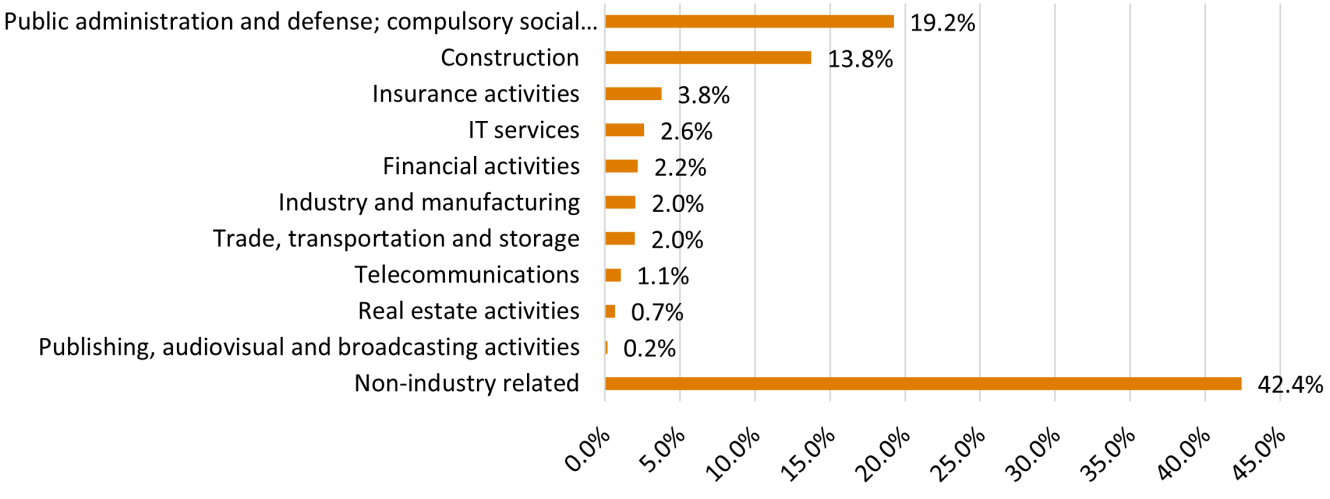
Usage-based Billing Models on the Rise

At 50.1%, the most important billing model for standard software manufacturers is billing based on usage (see Figure 11). This is no surprise, given the increasing importance of cloud solutions. Billing by variable effort with accountability is still very important with 28.6%. All other billing models share the remaining third.

At 19.2%, the public sector is the most important client industry for standard software manufacturers (see Figure 12). Construction is a close second place with 13.8%. The other industries only follow with great distance. However, around 42.4% of sales cannot be allocated to any specific industry.

Revenue per Industry for Standard Software Manufacturers

Figure 12: Most important industries for the standard software manufacturers in terms of revenue

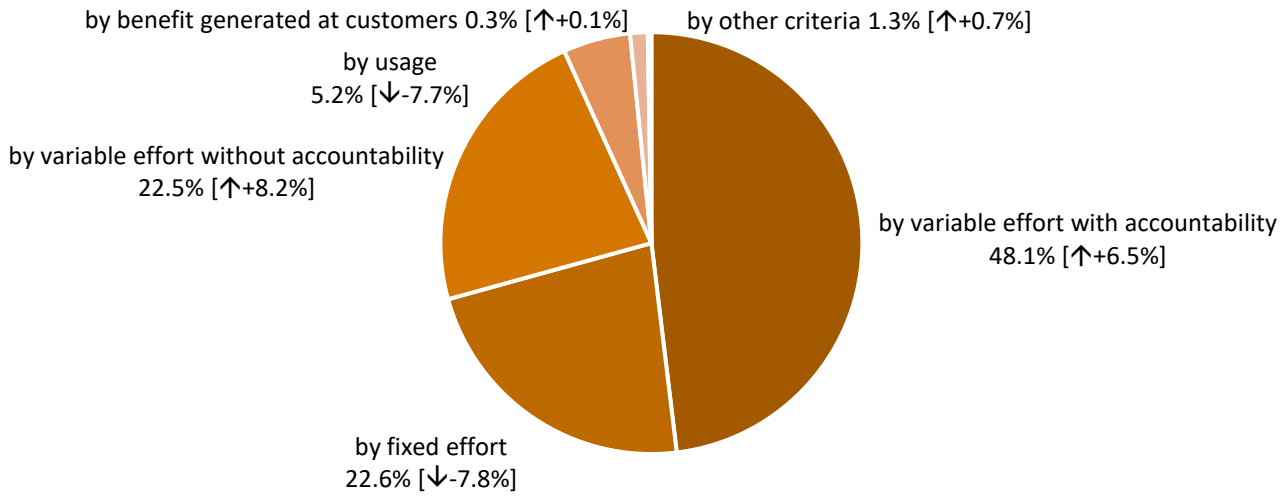


Source: SSIS 2023

N = 43

Billing Models of Custom Software Manufacturers

Figure 13: Billing models of custom software manufacturers as % of the sub-industry revenue [compared to 2022]



Source: SSIS 2023

N = 47

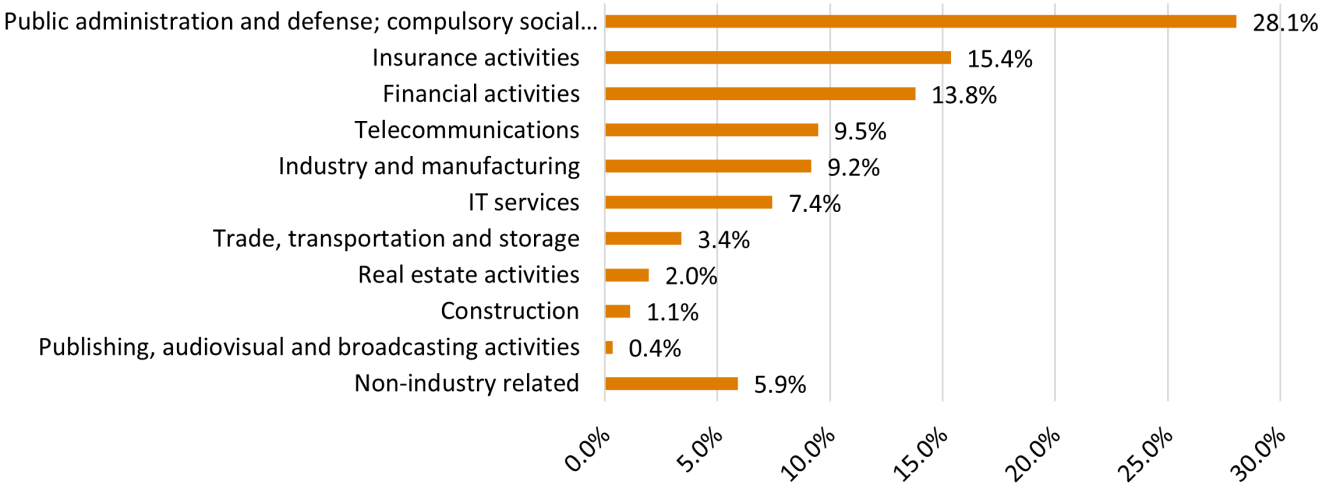
Revenue per Industry

At 48.1%, custom software manufacturers' most important billing model is billing by variable effort with accountability (see Figure 13). At 22.6% and 22.5%, respectively, billing by fixed effort and billing based on variable effort without accountability is also important. Other billing models are only of minor importance.

Figure 14 shows the most critical industries for custom software manufacturers. At 28.1%, the public sector is the most essential client industry for custom software manufacturers, followed by the insurance sector (15.4%) and the financial sector (13.8%).

Revenue per Industry for Custom Software Manufacturer

Figure 14: Most important industries for the custom software manufacturers in terms of revenue

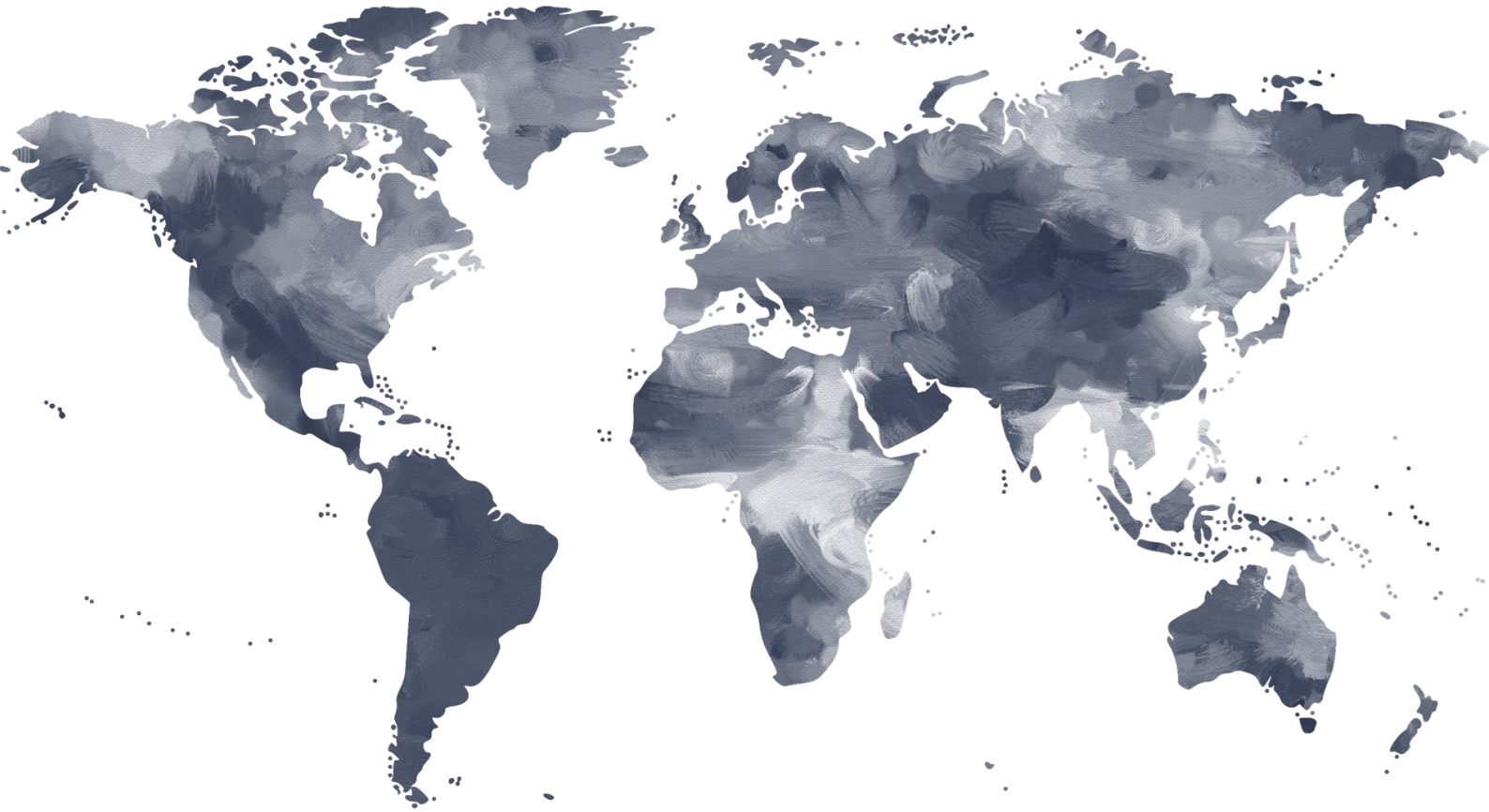


Source: SSIS 2023

N = 33

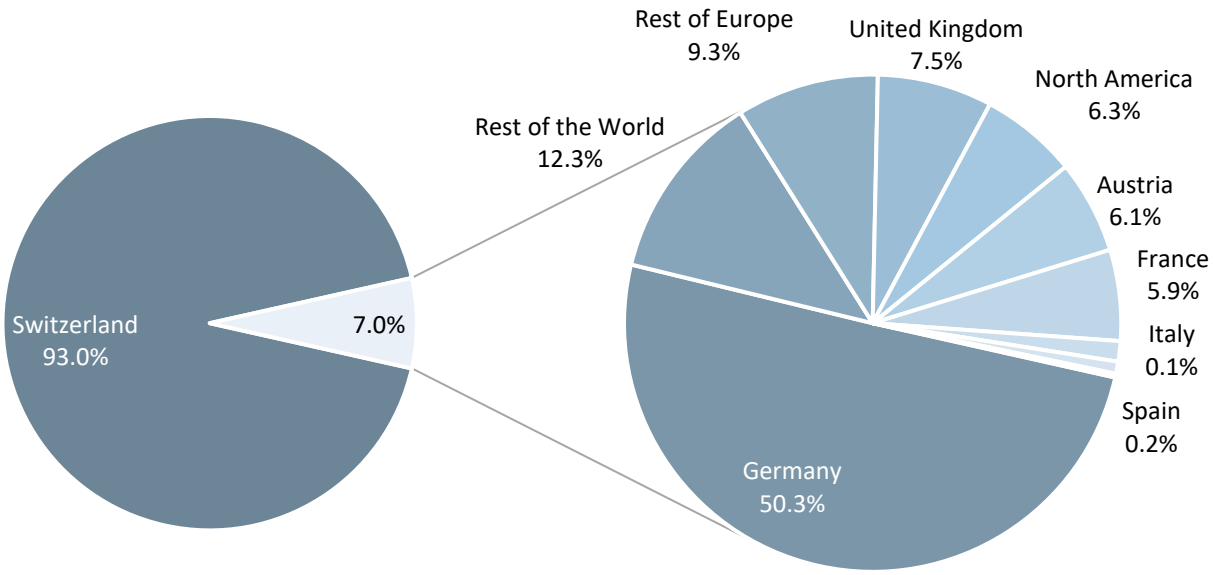
Spotlight on

Internationalization & Sourcing



Degree of Internationalization and Target Markets

Figure 15: Distribution of international revenue



Source: SSIS 2023

N = 113

The Swiss software industry generated

7.0%

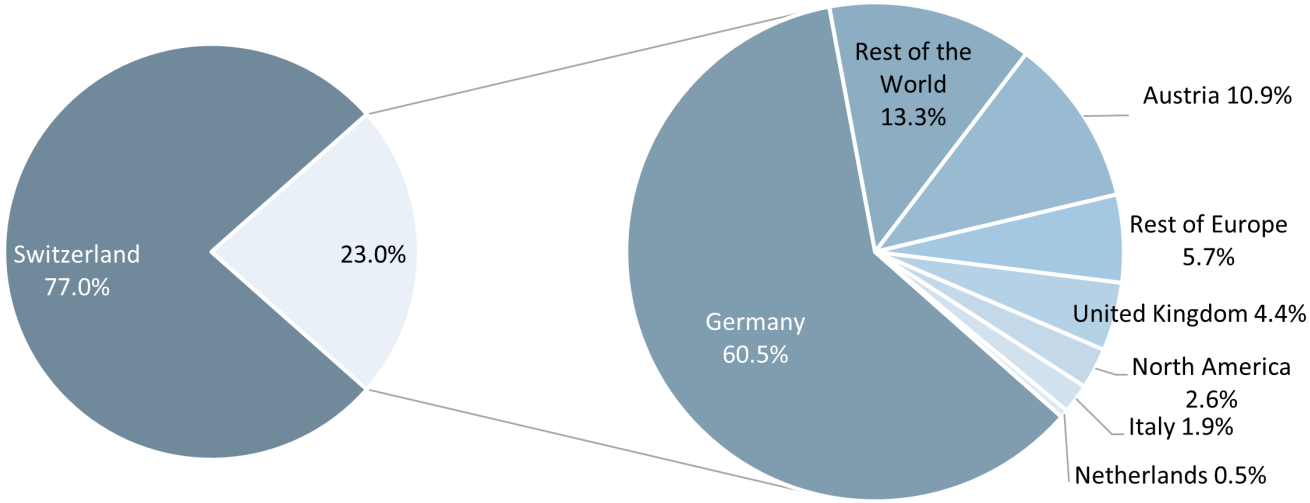
of its revenue outside Switzerland

Higher Revenue From International Markets

Figure 15 shows the distribution of the revenues of the Swiss software industry in the domestic market and the international markets in 2022. Compared to 2021, the share of revenues generated abroad has increased from 6.1% to 7%. As in previous years, Germany remains the most important export market (50.3% of revenues generated abroad). Lower shares of revenue were generated in the United Kingdom (7.5% of revenues generated abroad), North America (6.3% of revenues generated abroad), and Austria (6.1% of revenues generated abroad).

Degree of Internationalization and Target Markets of Standard Software Manufacturers

Figure 16: International revenue distribution of the standard software manufacturers as a percentage



Source: SSIS 2023

N = 43

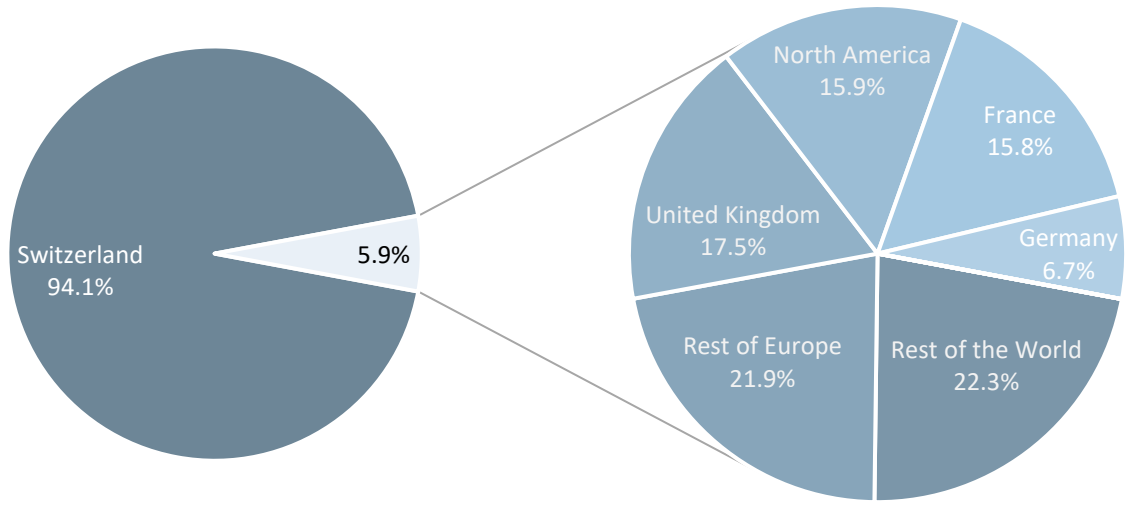
Revenue per Industry

In 2022 standard software manufacturers (see Figure 16) generated 23% of their revenue abroad. The most important export market was Germany (60.5% of revenues generated abroad). Lower shares of revenue were generated in Austria (10.9% of revenues generated abroad). The rest of the world makes up another 13.3%.

In contrast, custom software manufacturers (see Figure 17), generated only 5.9% of their revenues abroad. The most important export market was the United Kingdom (17.5% of revenues generated abroad) followed by North America (15.9% of revenues generated abroad), France (15.8% of revenues generated abroad), and Germany (6.7% of revenues generated abroad).

Degree of Internationalization and Target Markets of Custom Software Manufacturers

Figure 17: International revenue distribution of the custom software manufacturers as a percentage

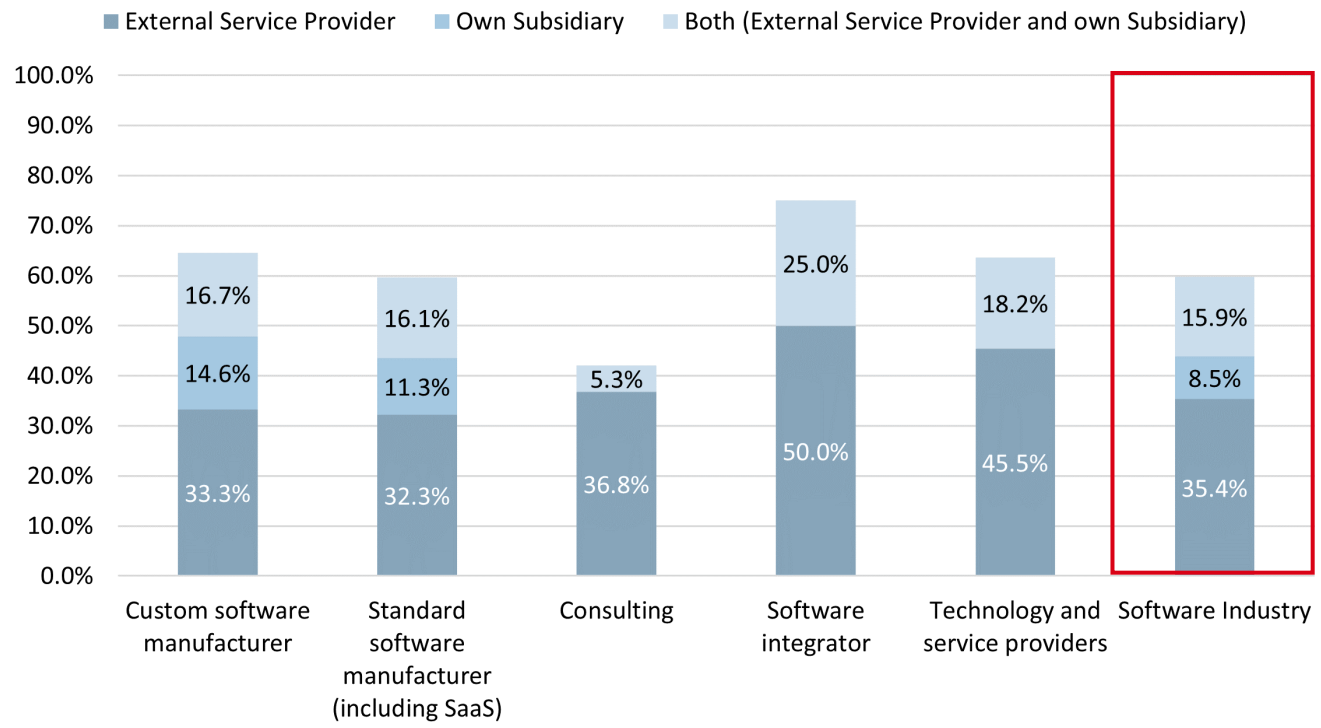


Source: SSIS 2023

N = 33

Outsourcing and Subsidiaries

Figure 18: Percentage of companies that outsource by sub-industries



Source: SSIS 2023

N = 165

Among Swiss software companies

60%

do source products and/or services.

Outsourcing in the Swiss Software Industry

Sourcing, i.e. 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 18 shows the propensity of Swiss software companies to contract external service providers, their own subsidiaries or both external service providers and their own subsidiaries in 2022.

Our results show that the propensity to outsource is highest among software integrators (75%), individual software vendors (64.6%) and technology and service providers (63.7%), followed by standard software vendors (59.7%) and consulting firms (42.1%). Overall, around 60% of Swiss software companies engage in sourcing.

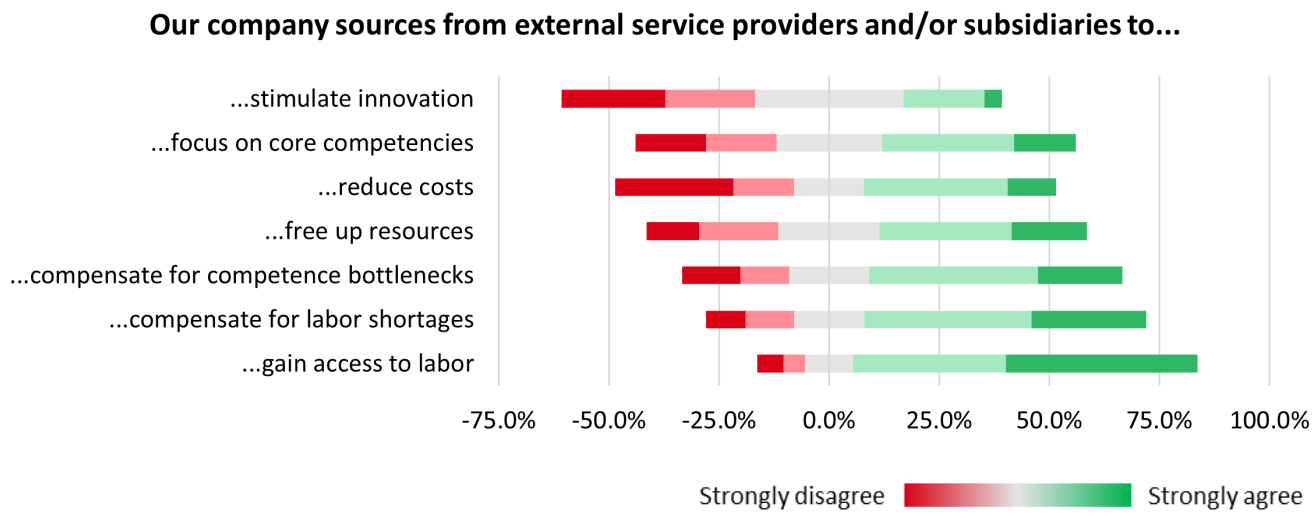
50% of software integrators source from external service providers, followed by technology and service providers (45.5%), consulting firms (36.8%), manufacturers of standard software (33.3%) and manufacturers of custom software (32.3%).

In contrast, the tendency to procure services from their own subsidiaries is only widespread among individual software manufacturers (14.6%) and standard software manufacturers (11.3%).

All sub-industries purchase services from both external service providers and their own subsidiaries, led by software integrators (25%).

Reasons Why Swiss Software Companies Source

Figure 19: Reasons why Swiss software companies choose to source from external service providers and / or subsidiaries



Source: SSIS 2023

N = 101

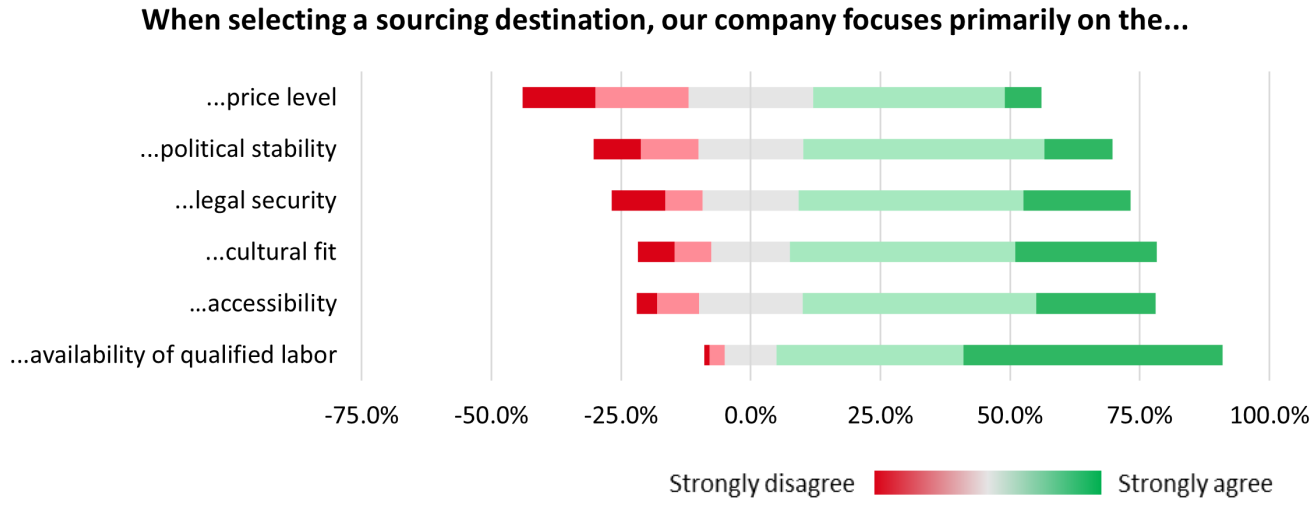
Reasons and Criteria for Sourcing

Figure 19 shows why Swiss software companies choose to outsource to external service providers and/or subsidiaries. The top reasons include access to labor (78.2% agreement) and the compensating for labor shortages (64% agreement) or competence bottlenecks (57.6% agreement). Cost reductions (43.6% agreement) and the desire to focus more on core competencies (44% agreement) hardly matter. Interestingly, there was even disagreement that stimulating innovation is a reason for sourcing (43.9% disagreement).

Figure 20 shows why Swiss software companies favor certain sourcing destinations. In line with the reasons for outsourcing, the availability of qualified labor is the most important factor (86% agreement). Accessibility (68% agreement), cultural fit (70.7% agreement), legal security (63.9% agreement) and political stability (59.6% agreement) follow. Interestingly, price level seems to be hardly of importance (44% agreement).

Criteria of Swiss Software Companies in the Selection of Sourcing Destinations

Figure 20: Criteria why Swiss software companies select specific sourcing destinations



Source: SSIS 2023

N = 100

Spotlight on

Sustainable Software

Introduction to the Special Topic

In an age where sustainability has evolved beyond a simple catchphrase to an irrefutable principle guiding our actions and thoughts, the digital realm and, more specifically, the software industry emerges as a focal point of such discussions. Digital technologies, seen as the backbone of contemporary economies, have inevitably taken center stage in sustainable advancements. While pivotal for organizations, nations, and societies to meet sustainability objectives, these technologies are also sources of emissions, escalating resource demands, and various socio-economic concerns. Notably, while the software industry stands at the nexus of these digital advances, it is entangled in an intricate tapestry of benefits and challenges.

In this report, we delve deep into the Swiss software industry, seeking to discern its awareness and ongoing endeavours in sustainability, be it directly associated with sustainable software or the broader perspective of software and sustainability. Through the lens of academic research and practical implications, this exploration intends to shed light on the pivotal role of the software industry in steering the sustainability narrative and how it can shape the future trajectory of digital transformation in Switzerland.

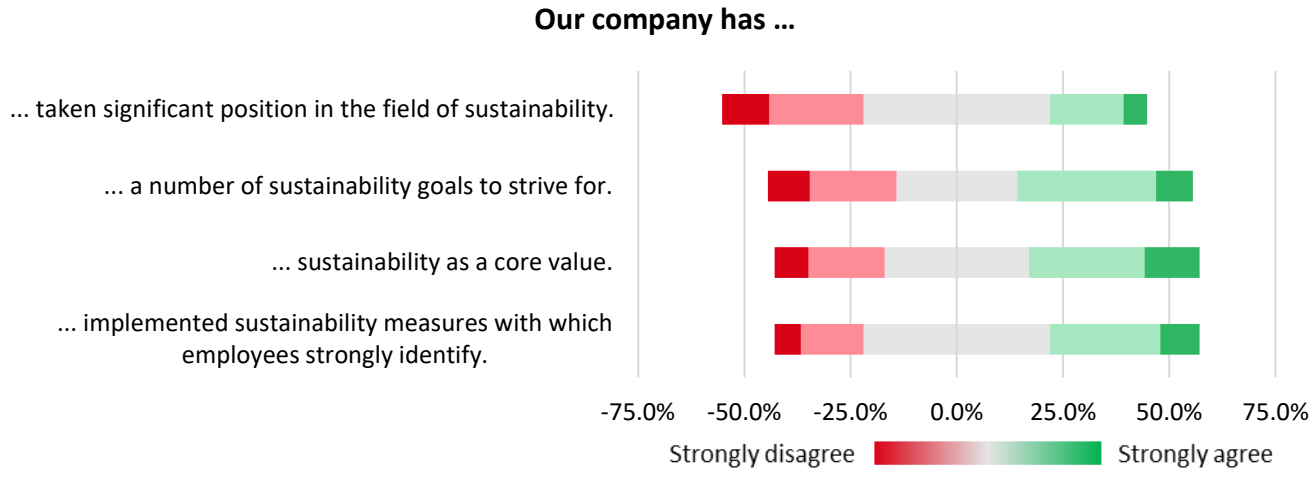
To obtain a holistic picture of sustainability, we are guided by the Brundtland Commission's definition of sustainability: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." This should consider social, environmental, and economic sustainability objectives equally.

Strong Sustainablity Orientatation of Swiss Software Companies

Swiss software companies consider sustainability to be an essential topic (see Figure 21). Accordingly, 32.5% of software companies take sustainability measures with which their employees identify. Furthermore, 41.2% of the companies have sustainability as a core value, and 41.4% have specific sustainability goals. 22.8% of the software companies see themselves as having a decisive position in sustainability.

Sustainability Orientation of Swiss Software Companies

Figure 21: Sustainability orientation of Swiss software companies



Source: SSIS 2023

N = 162

Top Management Support

Figure 22: The top management support for sustainability

Source: SSIS 2023

N = 163

Strategic Embeddedness of Sustainability

Figure 22 shows the management support for sustainability in Swiss software companies. More than half of the top managers support sustainability measures and see the strategic opportunities of sustainability. Around a third of Swiss software companies show a high commitment, consider the implementation of the sustainability strategy as an essential factor, and respond quickly to early signals regarding opportunities for sustainability.

Figure 23 shows how sustainability is incorporated into strategic planning processes. In particular, sustainable projects are supported (39.5% agreement), and sustainable aspects are integrated into the strategy (39.5% agreement). But only a minority of companies have defined concrete key figures (16% agreement), concrete goals (12.3% agreement), and measurement methods (14.2% agreement) for sustainability.

Strategic Sustainability

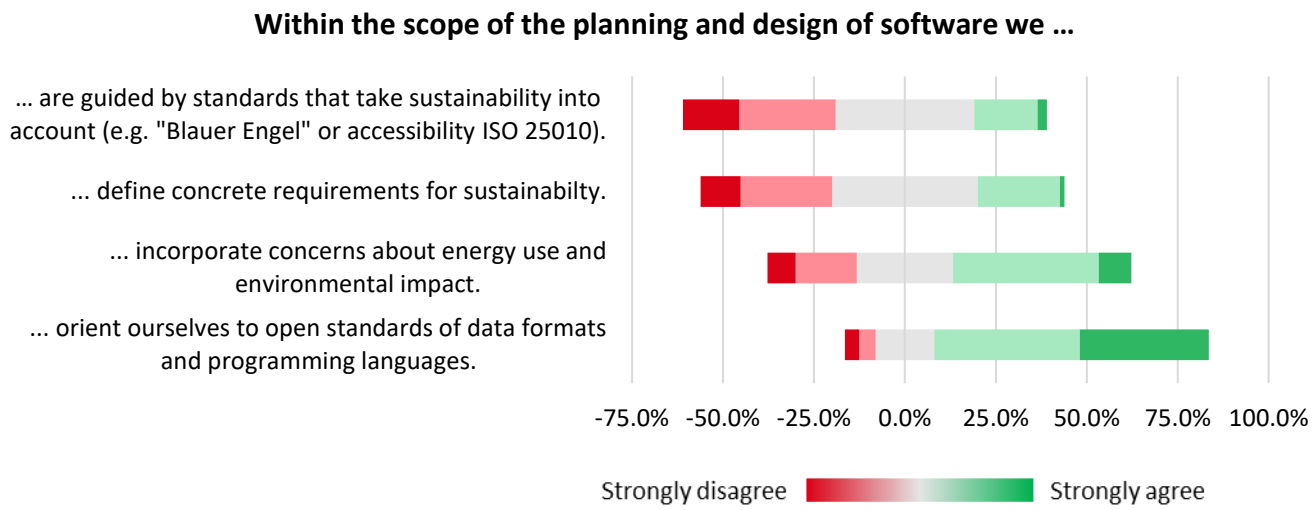
Figure 23: Sustainability considerations in the strategic planning processes of Swiss software companies

Source: SSIS 2023

N = 162

Software Design

Figure 24: Sustainable practices in the design and planning of software



Source: SSIS 2023

N = 155

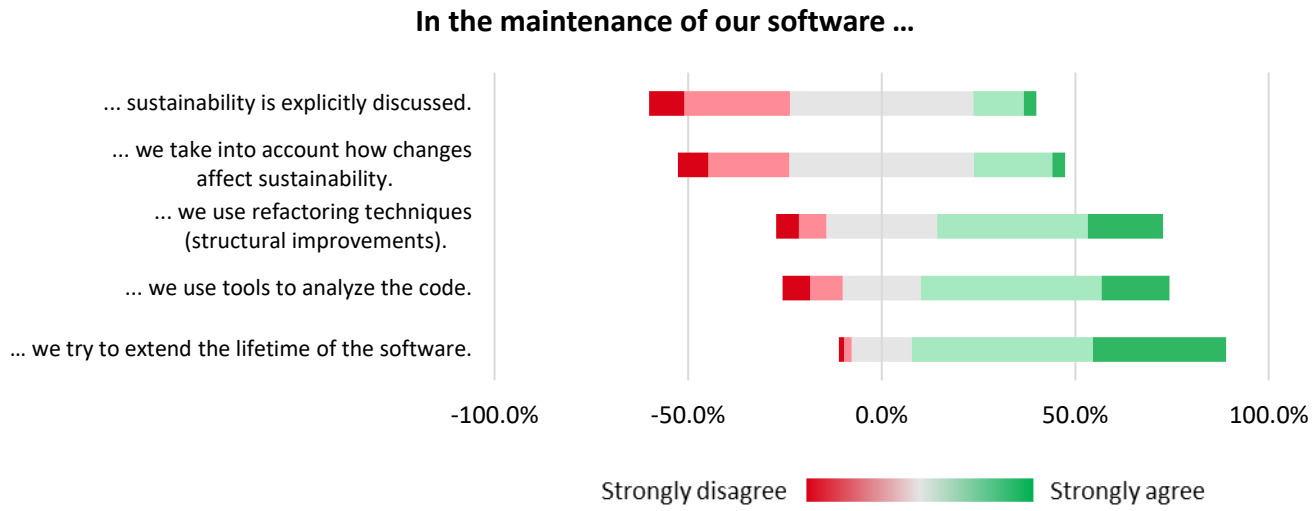
Sustainable Practices in the Design and Maintenance of Software

Figure 24 shows the extent to which practices regarded as sustainable are implemented by Swiss software companies in the design and planning of software projects. In particular, open standards and programming languages are taken into account by more than three-quarters of the software companies. Nevertheless, most software companies do not rely on sustainability frameworks and concrete sustainability requirements.

Figure 25 shows which sustainable practices are applied by Swiss software companies in software maintenance. Extending the life cycle of the software is particularly important. The majority of software companies also uses code analysis and refactoring techniques. However, sustainability is essentially not explicitly discussed, and sustainability is not considered when changes are made.

Software Maintenance

Figure 25: Sustainable practices in the maintenance of software

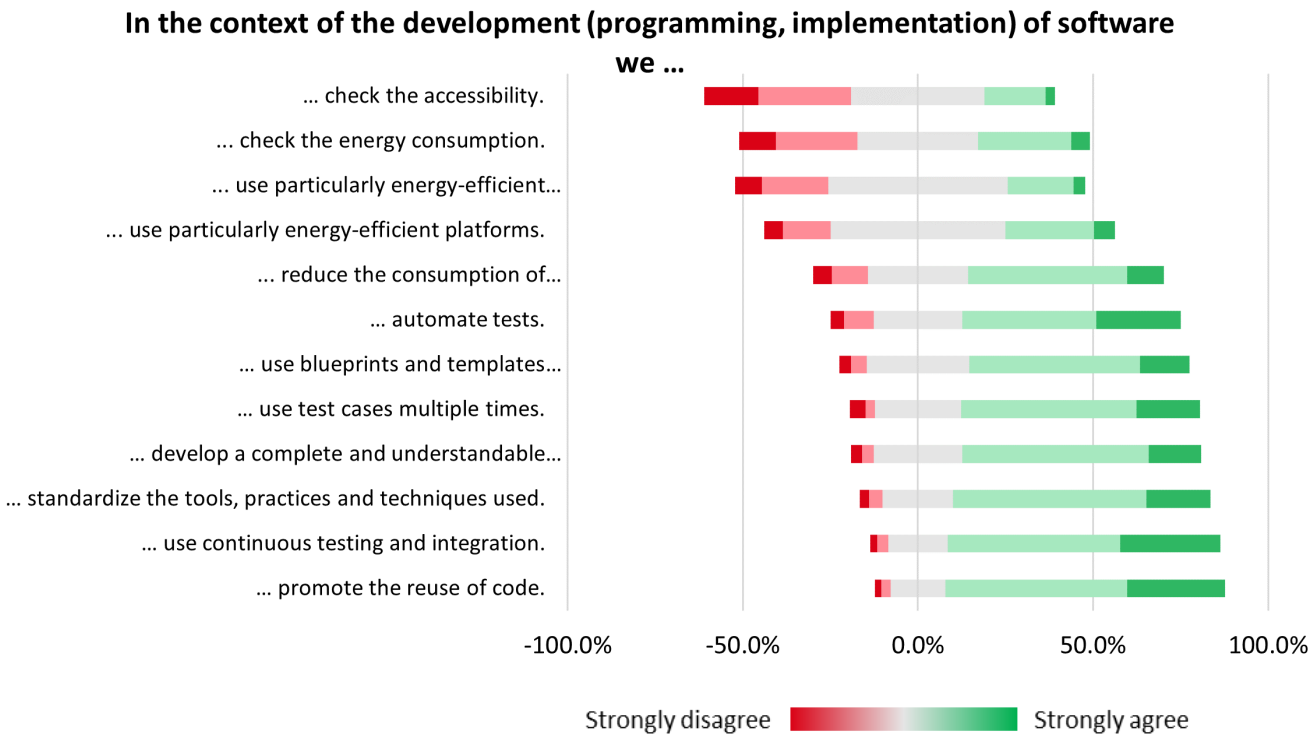


Source: SSIS 2023

N = 153

Sustainable Software Construction Practices

Figure 26: Sustainable practices in development of software



Source: SSIS 2023

N = 154

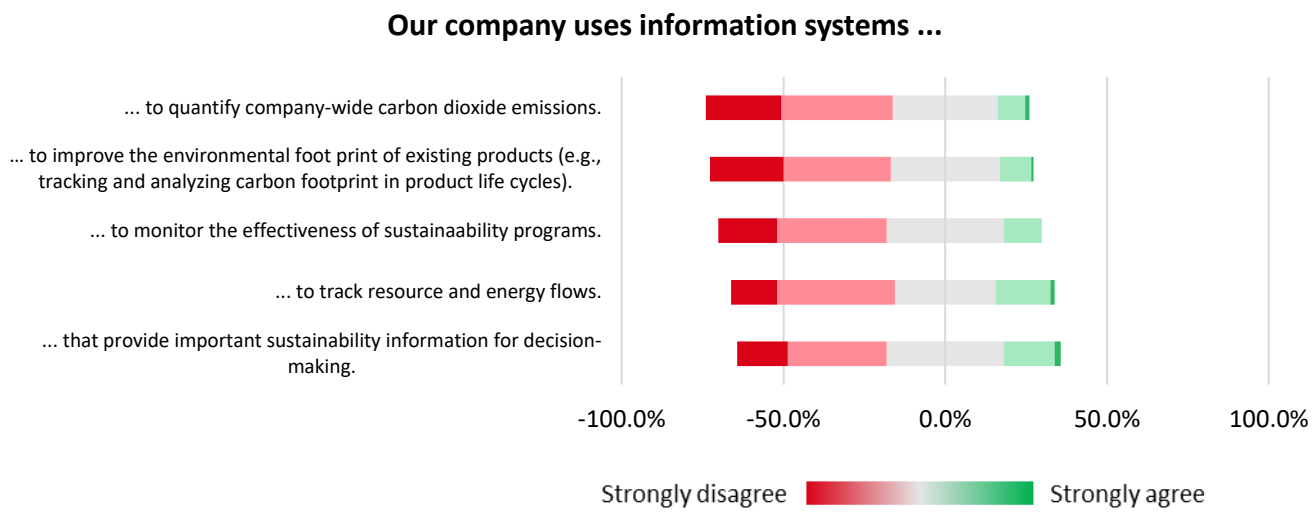
Many Sustainable Software Construction Practices

Figure 26 shows which practices the Swiss software companies employ to develop software. The practices are considered sustainable in the scientific literature and are supposed to positively impact one or more of the three sustainability goals (social, economic, and ecological).

In particular, practices such as code reuse, continuous testing and integration, as well as standardization of tools, practices, and techniques are common. Optimizing the use of hardware resources also seems to be an essential issue. However, other practices that impact environmental sustainability are less common, such as using energy-efficient programming languages or auditing energy consumption. Accessibility testing also seems to be less widespread in software development.

Information Systems and Sustainability

Figure 27: The use of information systems for sustainability



Source: SSIS 2023

N = 154

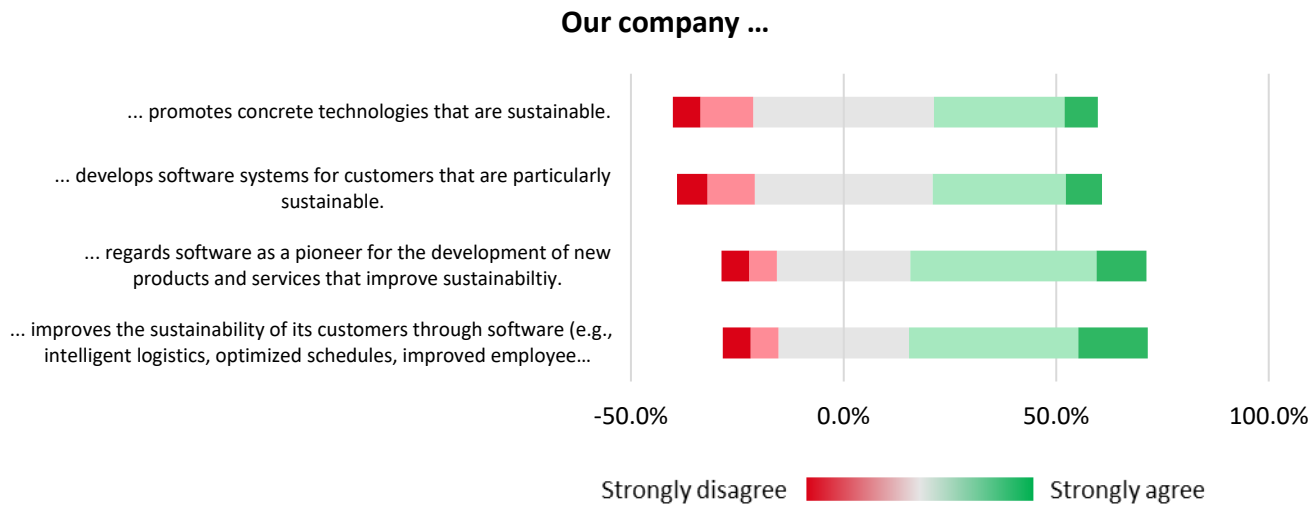
Sustainable Software for the Customers

Figure 27 shows the use of information systems by Swiss software companies to record and improve their sustainability performance. Only a small proportion of software companies use systems to track and monitor sustainability information and make decisions based on this information.

Figure 28 shows how technologies and solutions are used by Swiss software companies to provide customers with sustainable software. Many companies see software as an enabler for sustainability and use their software to improve their customers' sustainability. Most companies also develop particularly sustainable software solutions and promote corresponding technologies.

Sustainable Technologies and Solutions

Figure 28: The promotion of sustainable technologies in Swiss software companies



Source: SSIS 2023

N = 153

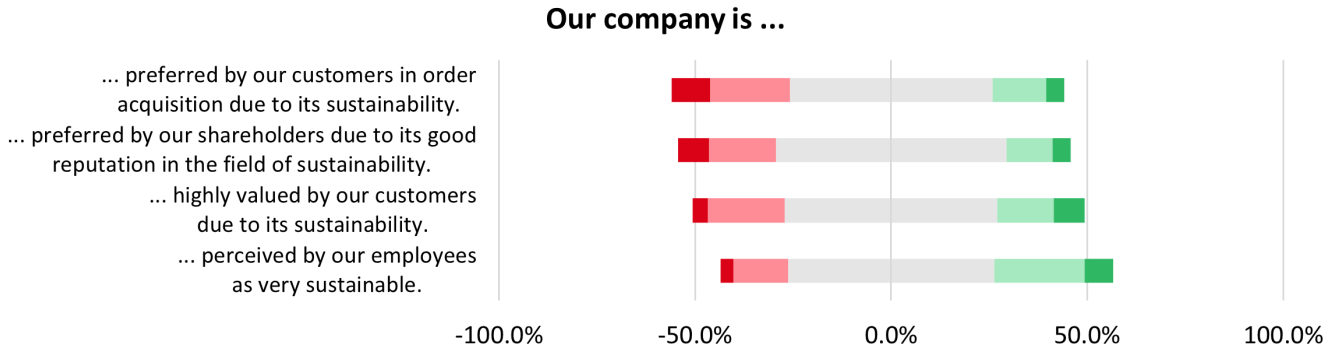
Benefits of Sustainability Measures

Besides being environmentally friendly, sustainable practices in information systems can also generate organizational benefits. We understand organizational benefits as consisting of three dimensions: cost reductions, corporate reputation, and sustainable innovation capabilities.

Figure 29 shows the perceived reputation benefits of having sustainability practices. It is interesting that software firms are undecided whether sustainability measures bring reputation benefits. The same seems to be the case for innovation capabilities as figure 30 shows. In addition, the firms do not perceive themselves as particularly competent in the field of sustainability management. However, figure 31 shows that there is agreement that taking sustainability measures help to decrease costs.

Reputation

Figure 29: Reputation benefits of sustainability measures

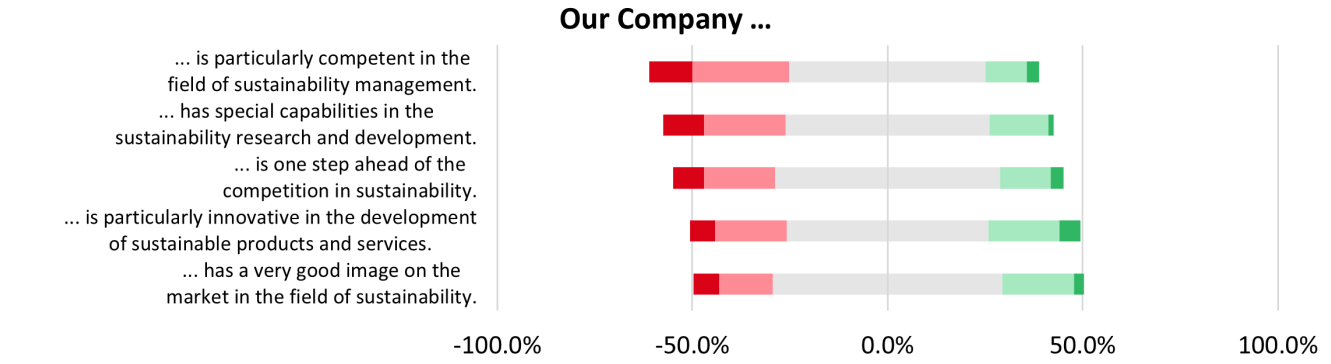


Source: SSIS 2023

N = 152

Innovation Capabilities

Figure 30: Innovation capabilitites benefits of sustainability measures

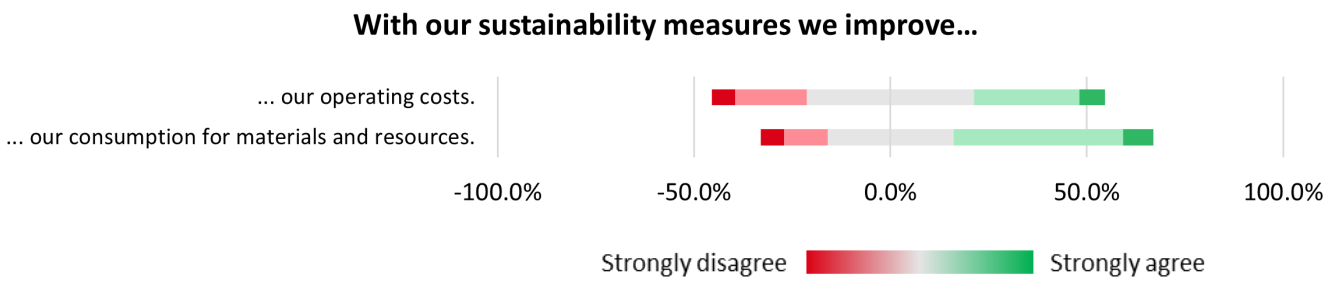


Source: SSIS 2023

N = 153

Cost Benefits

Figure 31: Cost benefits of sustainability measures

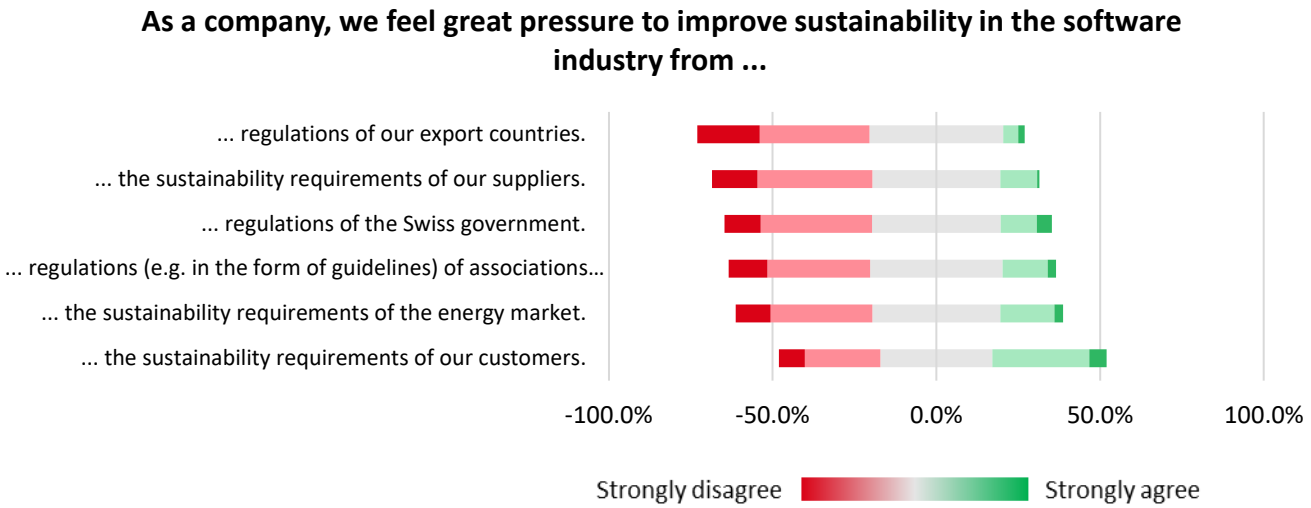


Source: SSIS 2023

N = 153

Pressures to Improve the Sustainability

Figure 32: Pressures for the Swiss software industry



Source: SSIS 2023

N = 153

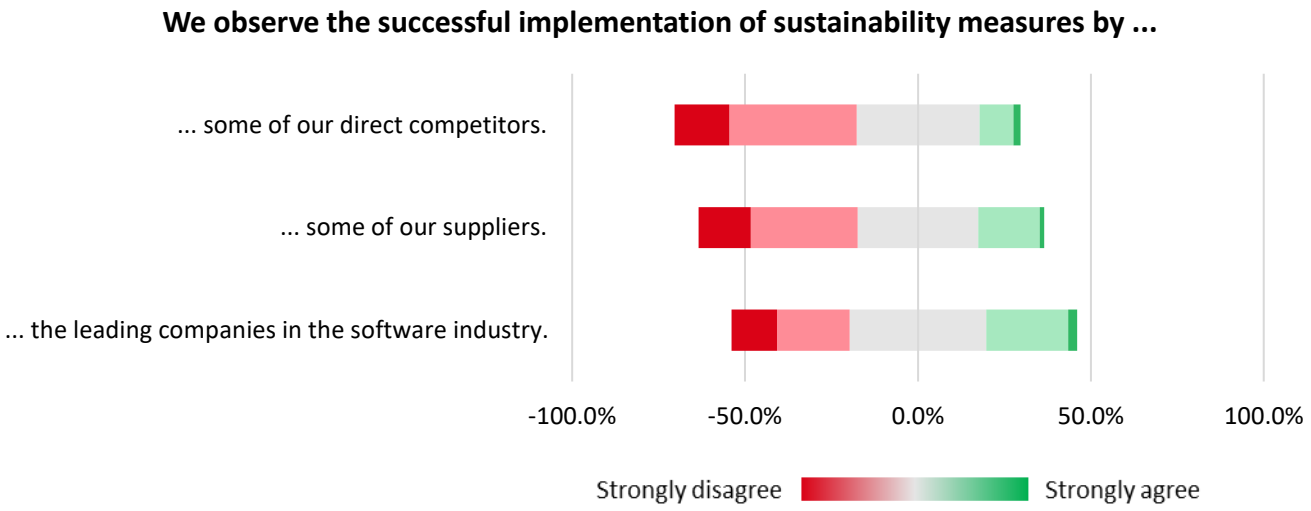
Little Pressure to Improve the Sustainability

Figure 32 shows where Swiss software companies perceive pressure to adopt sustainability measures. Noticeably, the most pressure comes from customers (34.9% agreement). Swiss software companies feel little or no pressure from regulatory authorities - such as the Swiss government (15.7% agreement), from exporting countries (6.6% agreement), or from other organizations (16.3% agreement).

Figure 33 shows what mimetic pressure Swiss software companies feel from peers, i.e., they observe others and feel pressure to imitate them. Swiss software companies observe successful implementations of sustainability measures mostly by leading software companies, followed by suppliers and direct competitors.

Little Mimetic Pressure for Swiss Software Companies

Figure 33: The perceived mimetic pressure by Swiss software companies



Source: SSIS 2023

N = 152

Inhibitors for the Swiss Software Industry

Figure 34: Inhibitors that prevent the Swiss software industry from improving their sustainability

Source: SSIS 2023

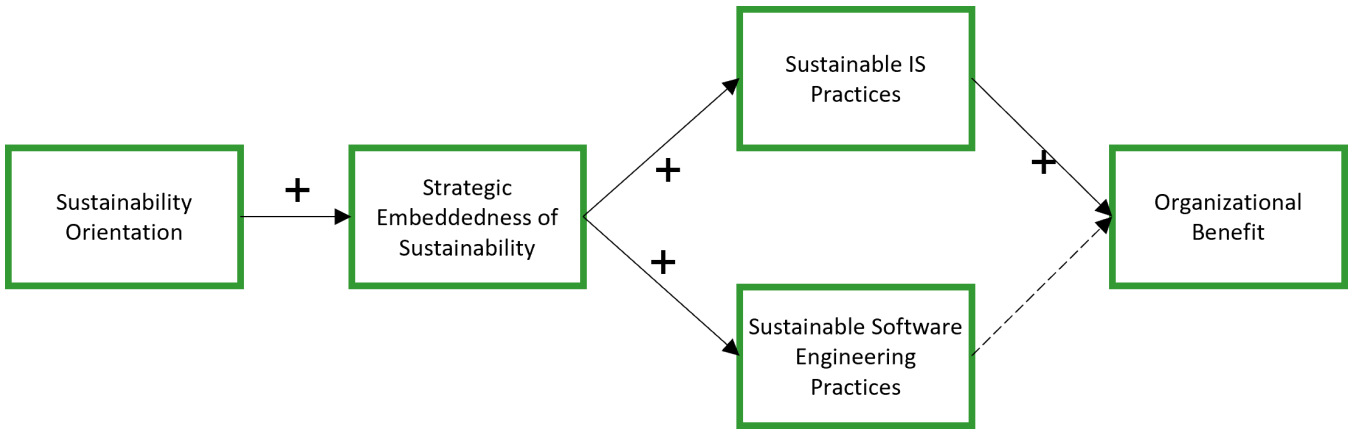
N = 149

What Keeps Companies Away from Integrating Sustainability Measures

Figure 34 shows what companies see as key inhibitors to sustainability measures. The top two inhibitors are lack of time (45.3% agreement) and the lack of measurability of sustainability (38.3% agreement). There are some other possible inhibitors. However, there was no explicit agreement on whether the lack of financial resources, technological complexity, or expertise are inhibitors. Interestingly, there is a 22.9% agreement that the lack of intrinsic motivation to want to act sustainably is an inhibitor for companies. Also, the surveyed companies disagreed that the lack of integration of sustainability in the corporate strategy (34.2.% disagreement) or the risk of introducing new, more sustainable applications (45.6% disagreement) keeps them from being sustainable.

A Model about Beliefs, Actions, and Outcome

Figure 35: The positive impact of sustainability actions on the organizational benefit



Source: SSIS 2023

N = 154

How Orientation, Practices, and Benefits Are Connected

The previous figures show strong agreement and disagreement regarding sustainability orientation, how strong sustainability measures are supported, practices, and what enables or hinders companies to be sustainable. Even more interesting is how these different components are connected. Figure 35 shows a model of how different key elements are linked together. In all but one of these relations, we could identify a positive correlation. That means that companies that are very sustainability-oriented have strategies in which sustainability is embedded. And companies that have great strategic embeddedness of sustainability do have sustainable IS and software engineering practices. Also, sustainable IS practices positively influence the perceived organizational benefits. We could not show a correlation (positive or negative) between sustainable software engineering practices and organizational benefits.

In addition, figure 36 shows that the demand to imitate other players in the market which implement sustainability initiatives already is positively associated with more sustainable practices in software maintenance and design. Further, the demand to satisfy stakeholders is positively associated with more sustainable practices in software maintenance.

Association of Demand and Sustainable Practices

Figure 36: The positive association of demand from stakeholders and to imitate others on sustainability actions

Source: SSIS 2023

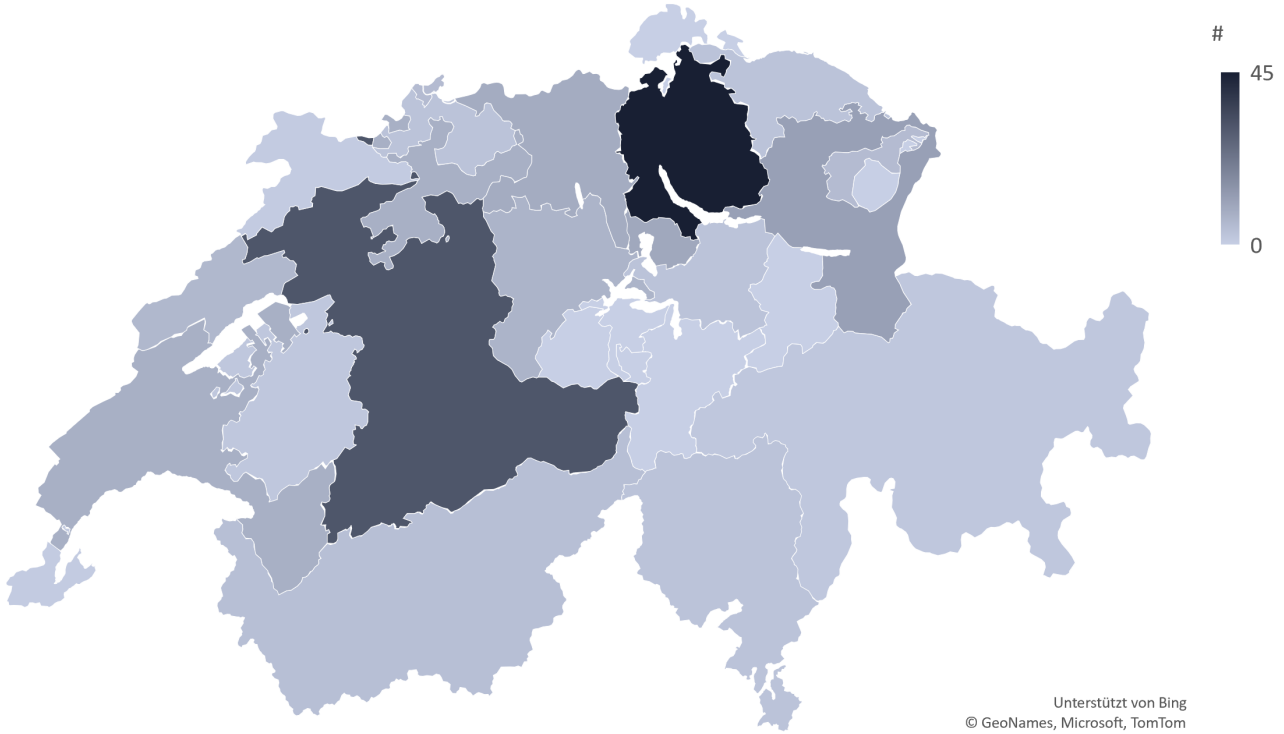
N = 154

Method and Official Statistics

About the SSIS

Geographical Distribution of the Participants in 2023

Figure 36: Participating companies per canton



Source: SSIS 2023

N = 168

About the SSIS in 2023

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

Reach of the survey: The SSIS 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 4'500 validated Swiss software companies
- ...covers all Swiss language regions
- …and builds on a large sample size with 404 participants, 128 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, 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 benchmark their performance over time (www.softwareindustrysurvey.ch).

Official Statistics - Employees and Added Value

Table 1: Distribution of added value in 2021 and distribution of Full-Time Equivalents (FTE) in 2022 by industry

Sections	Added Value	FTE
Mining and quarrying	0.14%	0.11%
Manufacturing	19.86%	15.28%
Energy supply, water supply, waste management	1.49%	1.12%
Construction	5.08%	8.29%
Trade; repair of motor vehicles and motorcycles	15.35%	12.46%
Transportation, storage, information and communication	4.81%	6.58%
Accommodation and food service activities	1.10%	4.79%
IT and other information services	3.03%	2.84%
Financial service activities	5.69%	2.62%
Insurance	3.68%	1.02%
Real estate activities, professional, scientific, technical and administrative activities	18.23%	16.51%
Public administration	10.6%	4.16%
Education	0.59%	6.12%
Human health and social work activities	8.19%	13.91%
Arts, entertainment, recreation and other services	2.16%	4.2%

Source: BESTA , Added Value 2021, FTEs 2022

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 data on added value (i.e., revenue) and FTEs (i.e., number of full time equivalents) provided by the Federal Statistical Office emphasize the major importance of the local information technology and information services sector. With more than 20 billion Swiss francs it adds 3% to the Swiss GDP (see Table 1) and employs 2.79% of all jobholders in Switzerland, and is one of the strongest growing sectors.

These official statistics provide reliable information about the size and growth of the IT sector. Yet, they do not draw a detailed picture about the 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, EBITDA, R&D expenditure, employee growth, and revenue growth
- Indicators on profitability
- Analyses along practically relevant categories (standard vs. custom software, maintenance vs. testing, etc.).