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WITH SUPPORT FROM YASMIN ABDULLAHI

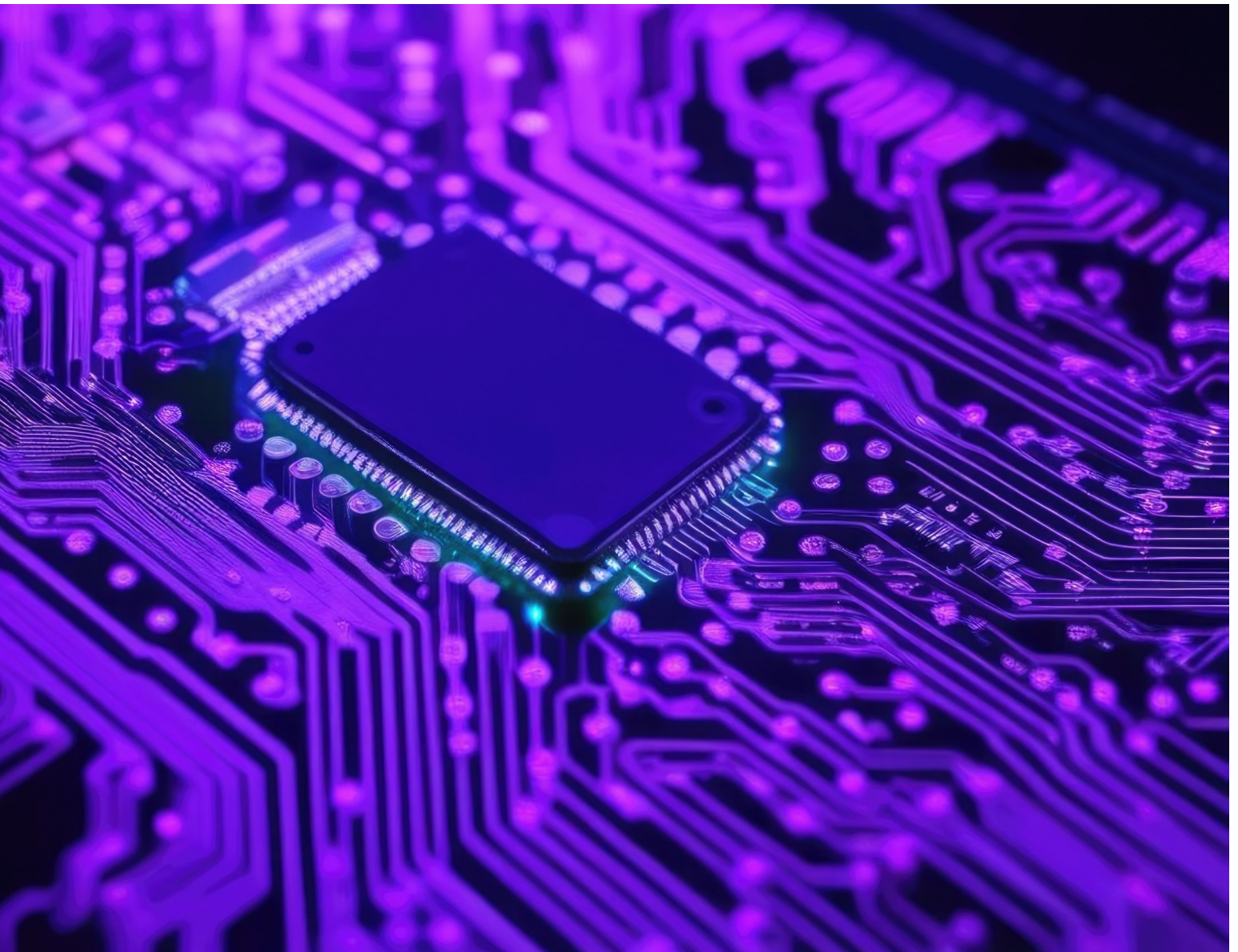
October 2024

Institute of Information Systems - Information Engineering

Swiss Software Industry Survey 2024

Current State, Emerging Trends, and Long-term Developments

A Study of the University of Bern on behalf of SWICO



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Bern, October 2024



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Preface

The development of artificial intelligence (AI) has increased rapidly in recent years and is influencing life in many ways. The Swiss software industry has also been strongly affected by this development.

How do software companies deal with the development of AI and how do they make use of it? The 10th edition of the Swiss Software Industry Survey (SSIS) addresses this question in software development.

However, the SSIS Report 2024 does not solely focus on artificial intelligence. As the most comprehensive study of its kind in Switzerland, it once again offers 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 fourth time under the patronage of Swico, the industry association for digital Switzerland. This patronage ensures the future of the SSIS for the years to come. Besides, it enables us to be as close as possible to the Swiss ICT industry.

In this regard, we would like to thank Swico and its Interest Group “Software, Services, and Consulting” for the trust they have placed in us and we are looking 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

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Prof. Dr. Jens Dibbern

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Executive Summary

In general, the expectations of the Swiss software companies are a slightly less optimistic than in previous years. They expect a revenue growth of 5.2% in 2024 and 8.3% in 2025. Expectations regarding employment growth are also less confident than a year ago, with 3.1% in 2024 and 9.6% in 2025. Swiss software companies are reporting a slight increase in the EBIT margin to 9.1% in 2023 compared to 8.8% in 2022. Additionally, the Swiss software industry generated 7.5% of its revenue abroad in 2023 (0.5 percentage points more than in 2022).

AI Adoption in the Swiss Software Industry

46.8% of the companies use AI for software development and documentation, while 41.5% rely on it for maintenance. AI is less common in design, testing, and analysis, and many lack knowledge in planning and integration. Despite interest, hesitation remains, with 58% not training AI on their data, limiting its potential. Additionally, 86.2% of AI users adopted it in the last 18 months, driven by the generative AI hype.

A Cautious Attitude Towards Governance

In terms of governance, the study shows that Swiss software companies tend to take a wait-and-see attitude. Informal governance practices, such as promoting exchange between departments or training employees, are widespread. On the other hand, formal governance practices, as for example clearly defined responsibilities, are less common.

Despite Recognized Potential: Lack of Strategic Direction in AI

The SSIS shows that companies recognize the potential of AI and that competitive advantages can arise from it. More than two-thirds of software companies see a substantial contribution to business operations through the use of AI. However, this is not reflected in the strategic efforts of companies: Only one-third have defined a concrete vision for the use of AI, and less than 30% of companies have formulated a corresponding strategy.

A Glimpse Into the Future Use of AI

Although the current use of AI is limited, most companies plan to increase their investment in the technology. About 70% intend to expand the use of AI in software development, and about 65% also want to increase their investment significantly. At the same time, two-thirds want to train their employees better in the use of AI to integrate the technology more effectively into their daily work.

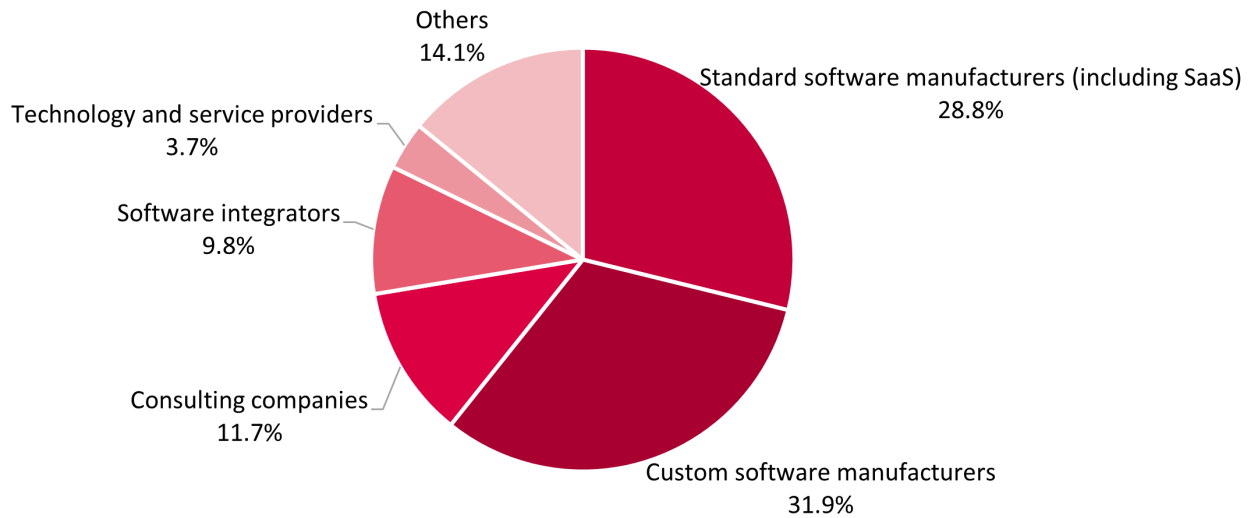
Spotlight on

Revenue, Profitability & Future Growth



Participating Companies

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



Source: SSIS 2024

N = 163

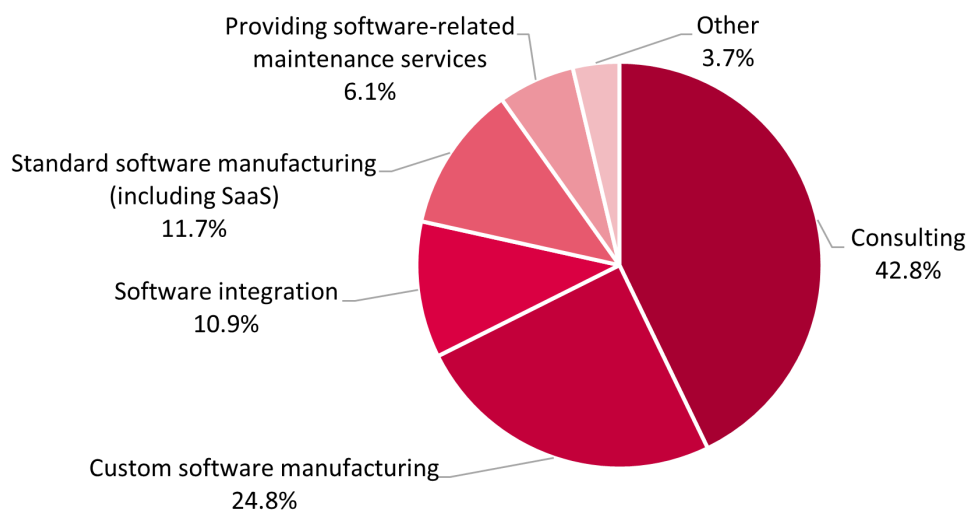
Software-Related Consulting as Main Source of Revenue

The distribution of companies participating in the SSIS 2024 is presented in Figure 1. Similar to previous years, the sample is dominated by the manufacturers of custom software (31.9%) and standard software sectors (28.8%). Our sample also includes companies in the following sectors: Consulting companies (11.7%), software integrators (9.8%), and technology and service providers (3.7%).

Figure 2 shows the weighted revenues by activity, demonstrating that software-related consulting is the largest source of revenue with 42.8%, followed by custom software manufacturing (24.8%). Next comes standard software manufacturing (11.7%) and software integration at 10.9%. The provision of software-related maintenance services makes up 6.1%, while other activities contribute to total revenue by 3.7%.

Revenues by Activity

Figure 2: Revenues of Swiss software companies by activity

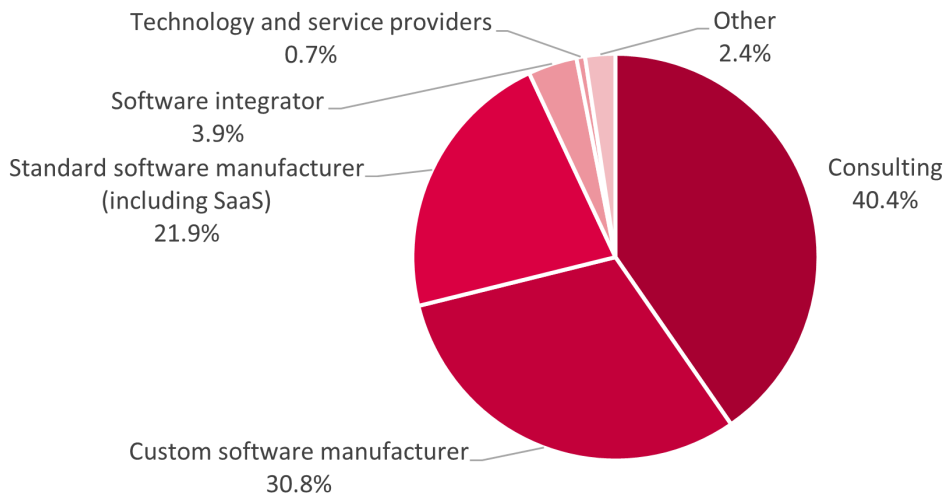


Source: SSIS 2024

N = 113

Number of Employees

Figure 3: Number of employees per sub-industry as percentage of total industry



Source: SSIS 2024

N = 154

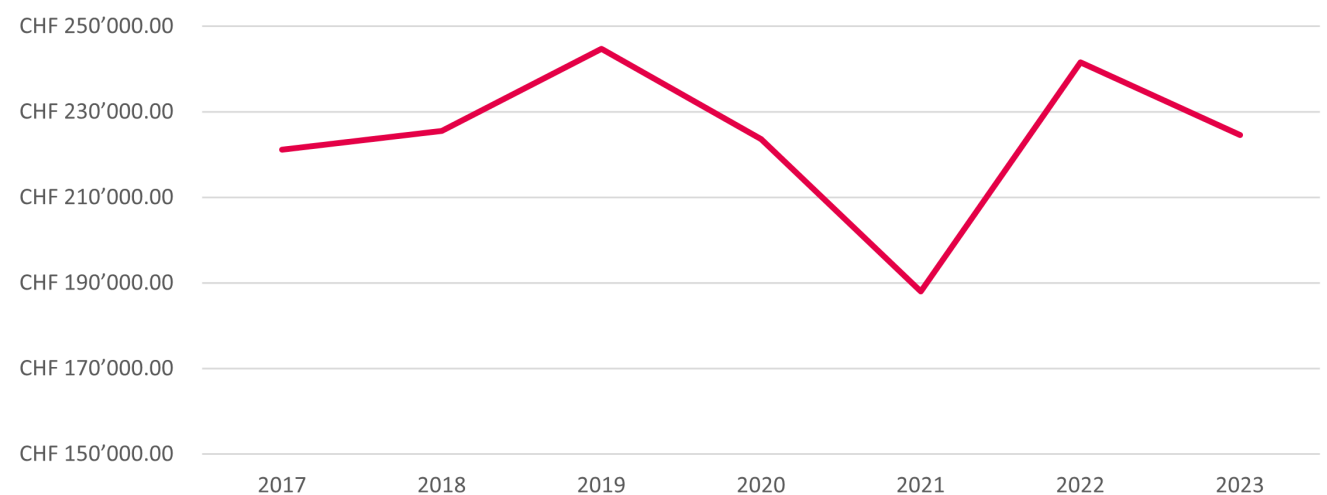
Revenue per Employee Back to Pre-COVID Level

Overall, firms in the area of consulting (40.4%), custom software manufacturers (30.8%), and standard software manufacturers (21.9%) include the majority of employees (see Figure 3). These three sub-industries account for over 90% of employment in the software industry.

Regarding the development of revenue per employee, a revenue per employee similar to the values before the COVID-19 pandemic is observable. As illustrated in Figure 4, after an increasing development since 2021, the values are slightly decreasing for the year 2023.

Revenue per Employee

Figure 4: Development of revenue per employee since 2017

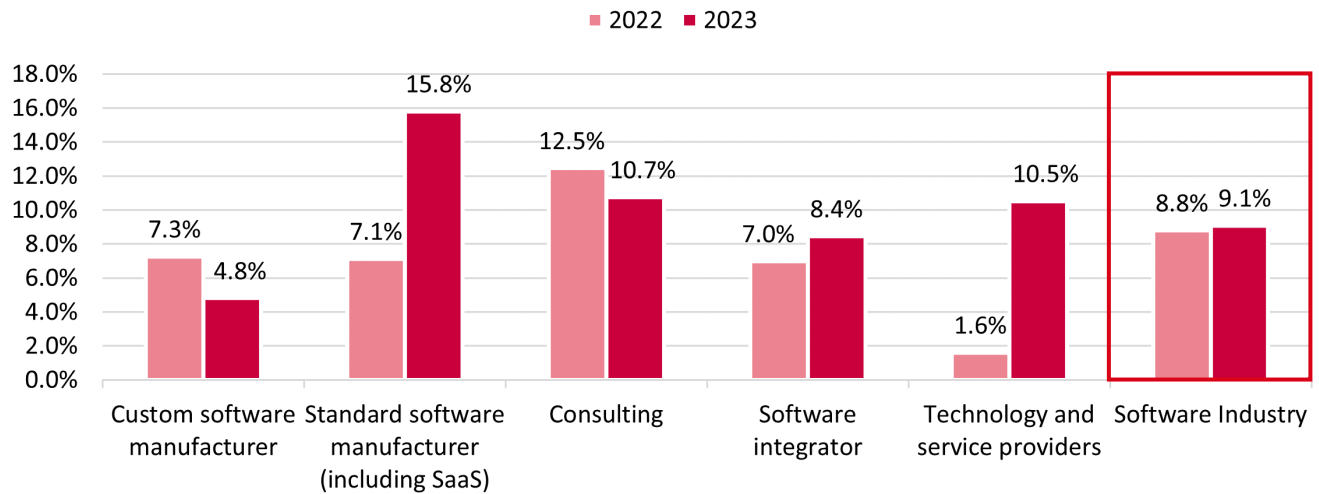


Source: SSIS 2024

N = 112

EBIT Margins

Figure 5: EBIT margins by sub-industries in 2022 and 2023



Source: SSIS 2024

N = 95

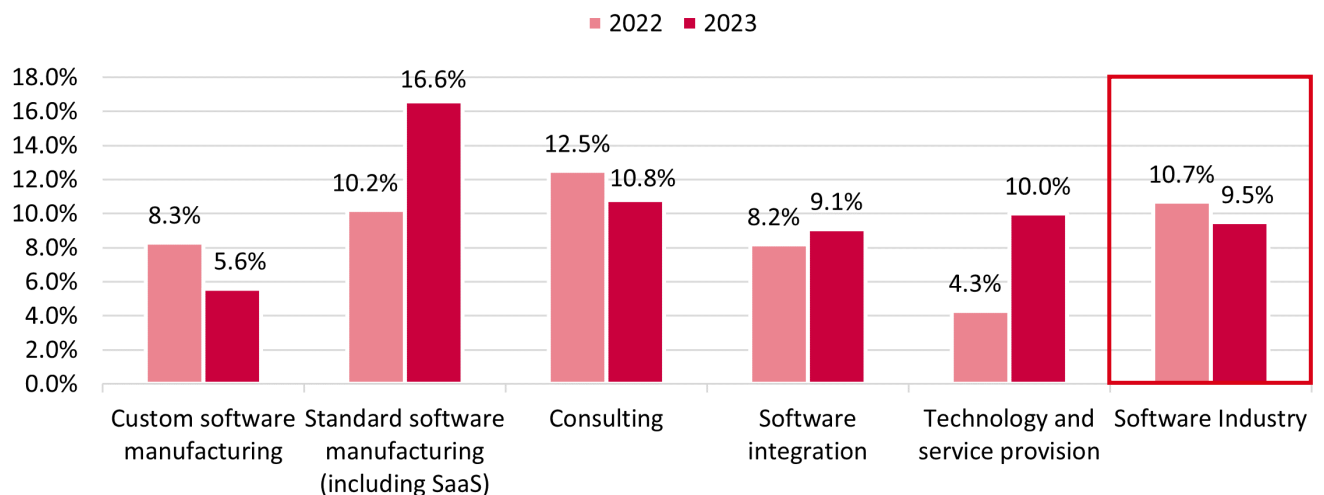
Slight Changes in EBIT and EBITDA Margins

Figure 5 shows the EBIT margins of the sub-industries with an industry-wide increase from 8.8% to 9.1%. This trend applies to standard software manufacturers (15.8%), software integrators (8.4%), as well as technology and service providers (10.5%). A decrease in the EBIT margins is observable for custom software manufacturers (4.8%) and for the sub-industry consulting (10.7%).

Figure 6 illustrates the EBITDA margins of the Swiss software industry with an industry-wide decrease from 10.7% to 9.5% in 2023. This trend applies to custom software manufacturers (-2.7%) and consulting firms (-1.7%), while the EBITDA margins for standard software manufacturers (+6.4%), software integrators (+0.9%), as well as technology and service providers (+5.7%) went up.

EBITDA Margins

Figure 6: EBITDA margins by sub-industries in 2022 and 2023

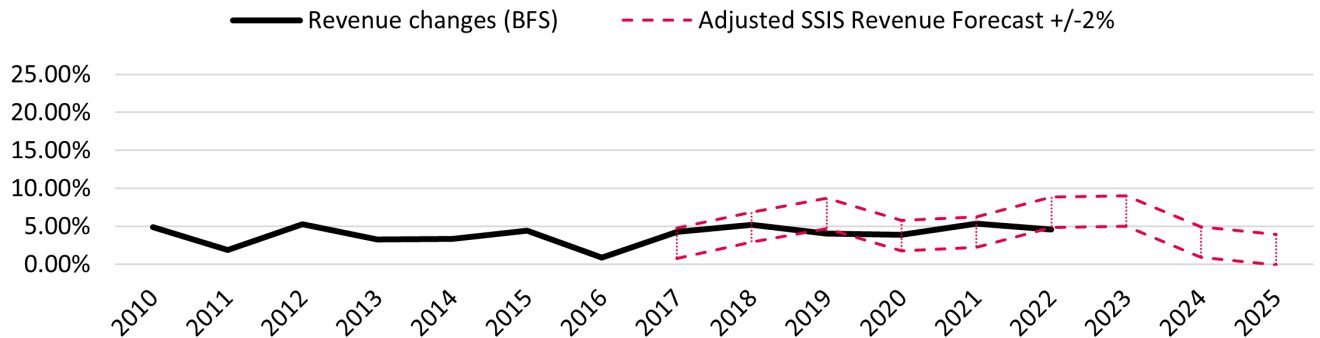


Source: SSIS 2024

N = 92

Revenue Growth Forecast

Figure 7: Expected year-over-year revenue growth



Source: SSIS 2024

N = 96

Revenue Growth Outlook Dims Compared to Previous Years

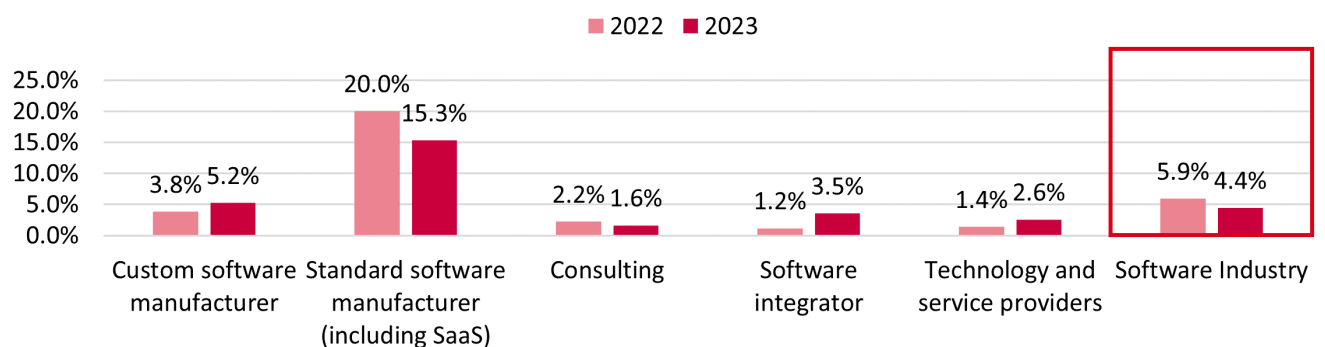
The projected revenue growth of the Swiss software industry represented as a target range with a margin of $\pm 2\%$, is illustrated in Figure 7. According to revised projections, the Swiss software industry is anticipated to have a revenue growth of 2.92% in 2024 and 1.93% in 2025.

The corridor has been corrected by the deviation from the official statistics of the federal statistical office (BFS).

Please be aware that this target range is merely an estimate and may be inaccurate, especially in the event of unforeseen external factors.

Research and Development Investments

Figure 8: R&D investments by sub-industries in 2022 and 2023 as percentage of revenue



Source: SSIS 2024

N = 96

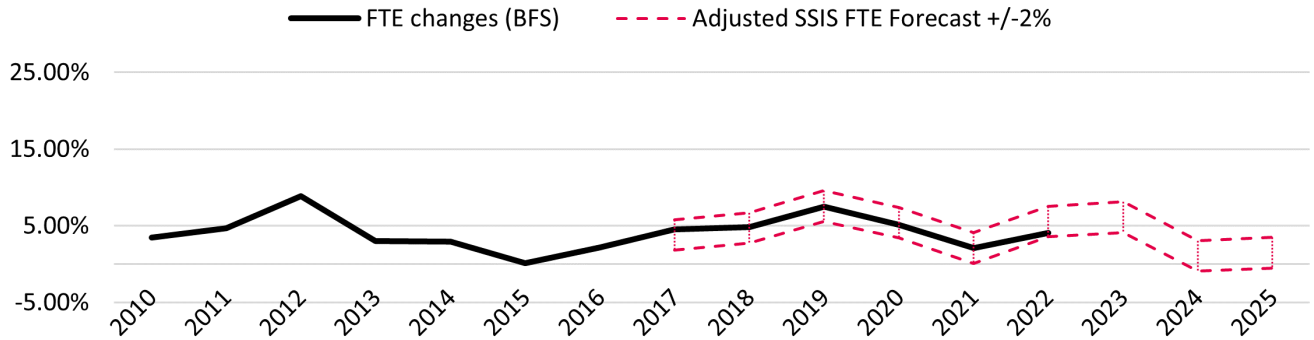
Decreasing Investments in Research and Development

Figure 8 presents the research and development (R&D) spending by Swiss software companies as a percentage of revenue in the year 2023 compared to the year 2022. Overall, Swiss software companies invest a smaller proportion (4.4%) of their revenue in R&D in 2023 (compared to 5.9% in 2022). Investments decrease for

standard software manufacturers (-4.7%) and for consulting firms (-0.6%). However, for custom software manufacturers (+1.4%), software integrators (+2.3%), as well as technology and service providers (+1.2%), expenditures in research and development increased in 2023 compared to 2022.

Employee Growth Forecast

Figure 9: Expected year-over-year growth of workforce



Source: SSIS 2024

N = 153

Lower Employee Growth Forecast

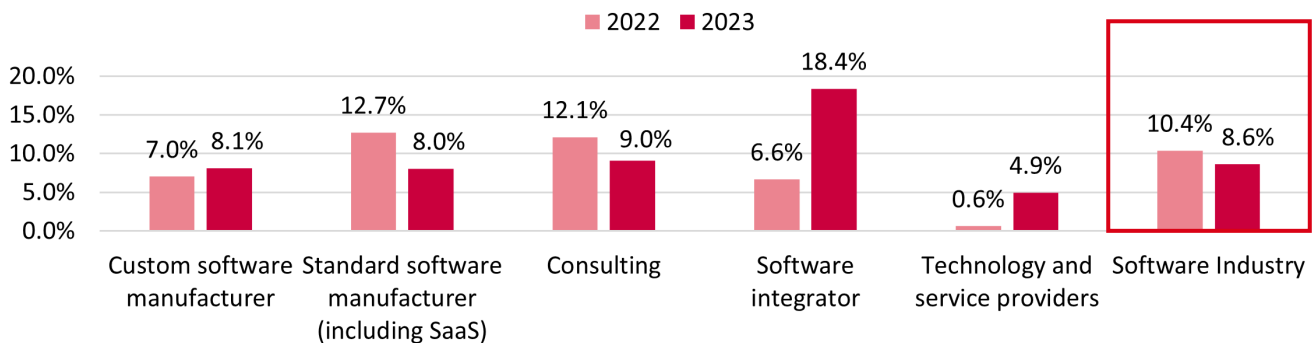
Figure 9 depicts the anticipated growth in the number of full-time equivalents (FTEs) in the Swiss software industry, represented as a target range with a margin of ± 2%. Based on the adjusted expectations (by the deviation from the official BFS statistics), the number of FTEs in the Swiss software industry is expected to decrease

by 1.06% in 2024 and grow by 1.46% in 2025 respectively.

Please be aware that this target range is merely an estimate and may turn out to be inaccurate, especially in the event of unforeseen external factors.

Employee Fluctuation

Figure 10: Employee fluctuation in 2022 and 2023 using the basic formula



Source: SSIS 2023

N = 95

Stable Employee Fluctuation

Figure 10 shows the employee fluctuation in the Swiss software industry using the basic formula $[(\text{exits} / \text{headcount at the beginning of a period}) * 100]$. Based on the results of the calculations, software integrators experienced the highest fluctuation in 2023 (18.4%). The fluctuation was relatively similar in custom software

manufacturing (8.1%), standard software manufacturing (8.0%), and consulting (9.0%). A smaller fluctuation resulted for technology and service providers (4.9%). To conclude, the employee fluctuation rate across the entire sector remains relatively stable at 8.6%.

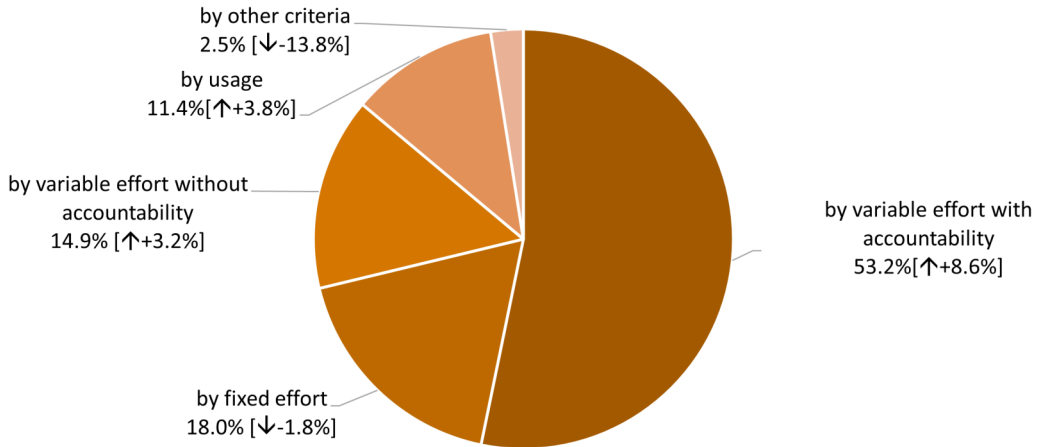
Spotlight on

Sources of Revenue



Billing Models

Figure 11: Billing models of the Swiss software industry as a percentage of industry revenue [compared to SSIS 2023]



Source: SSIS 2024

N = 99

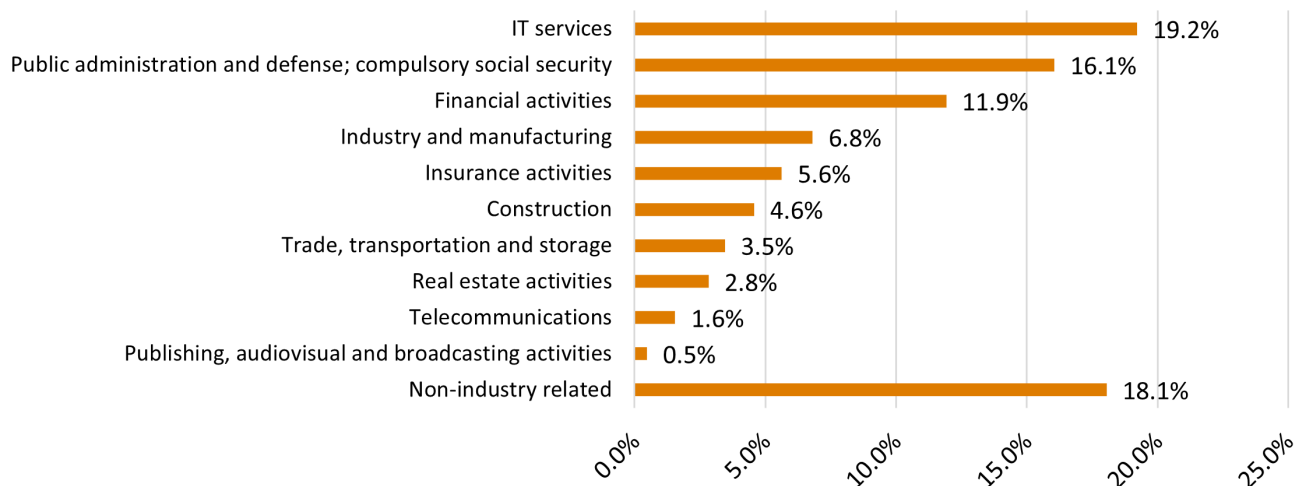
IT Services Industry: A Key Revenue Segment

Figure 11 highlights the main billing models in the Swiss software industry. Most revenue came from variable effort with accountability (53.2%), followed by fixed effort billing (18%) and variable effort without accountability (14.9%). Usage-based (11.4%) and other criteria-based (2.5%) had smaller contributions to total revenue. Figure 12 illustrates the primary client industries for the

Swiss software sector based on the revenue generated in each industry this year. The IT services sector is the largest client, contributing 19.2% of total revenues with a large share of consulting services. This is followed by non-industry related revenues, which account for 18.1% of total revenues. The public sector ranks third, accounting for 16.1% of total revenues.

Revenue per Industry

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

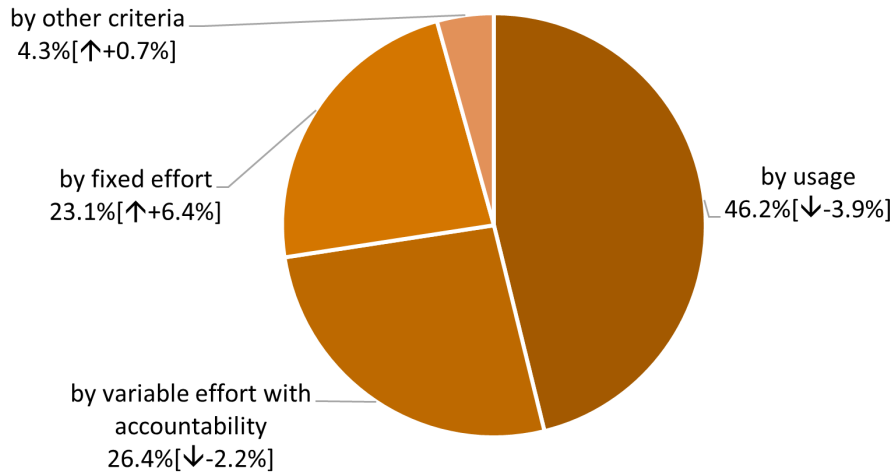


Source: SSIS 2024

N = 99

Billing Models of Standard Software Manufacturers

Figure 13: Billing models of standard software manufacturers as a percentage of the sub-industry revenue [compared to SSIS 2023]



Source: SSIS 2024

N = 26

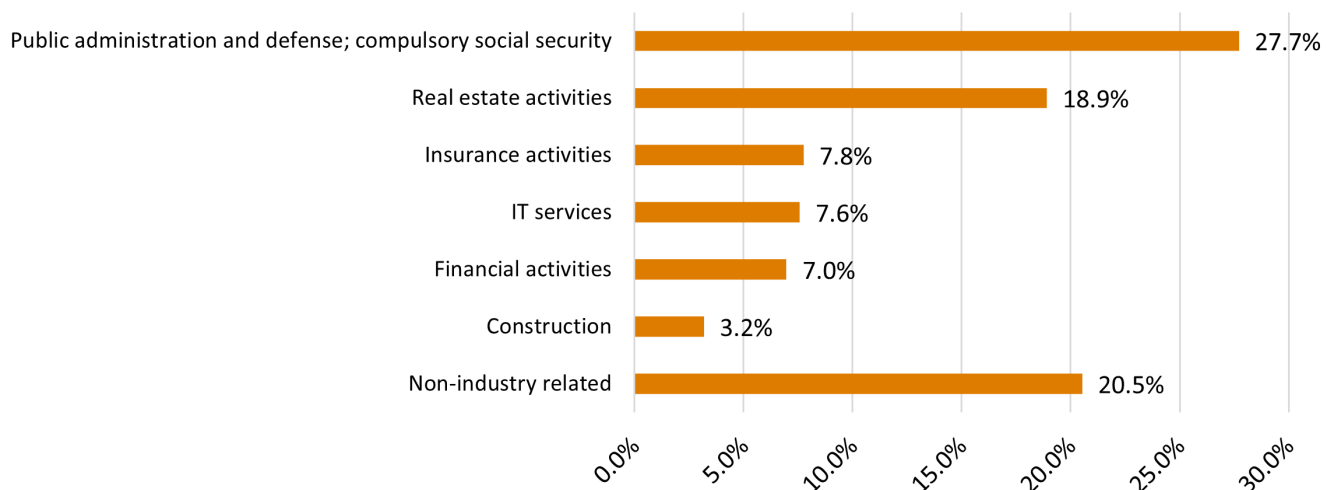
For Standard Software: Usage-Based Billing Models on the Rise

Usage-based billing is the most important model for standard software manufacturers, making up 46.2% (see Figure 13). This aligns with the growing importance of cloud solutions. Billing based on variable effort with accountability remains crucial, contributing 26.4%, while the remaining third is split among all other billing models.

The public sector represents the largest client industry for standard software manufacturers, making up 27.7% of total revenues (see Figure 14). Real estate activities come in second place at 18.9%. The other industries only follow with some distance, while approximately 20.5% of sales are not assigned to any specific industry.

Revenue per Industry for Standard Software Manufacturers

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

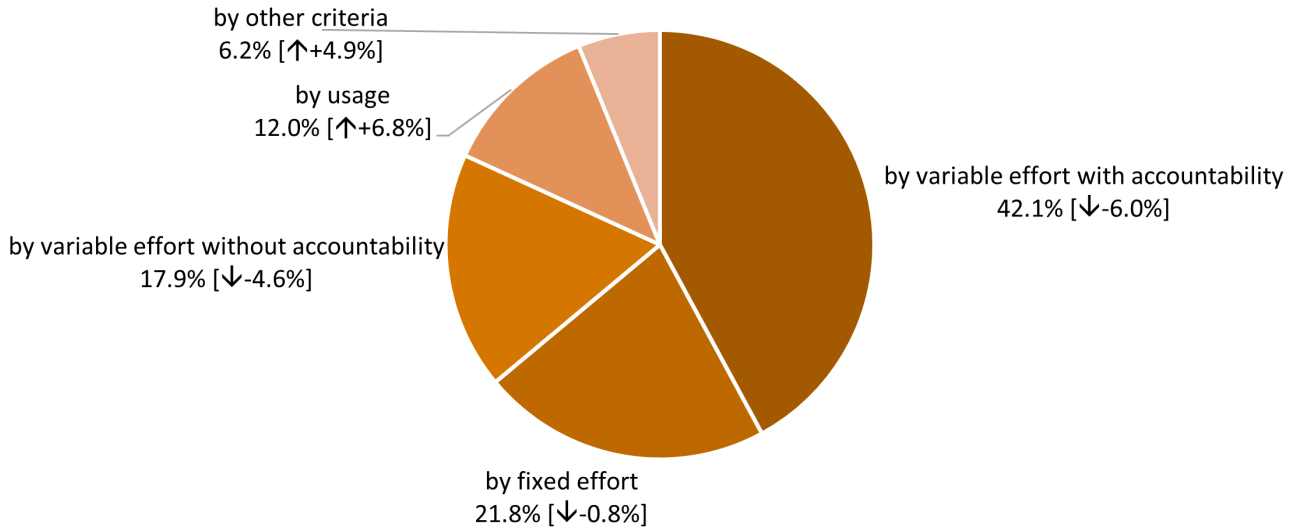


Source: SSIS 2024

N = 26

Billing Models of Custom Software Manufacturers

Figure 15: Billing models of custom software manufacturers as a percentage of the sub-industry revenue [compared to SSIS 2023]



Source: SSIS 2024

N = 37

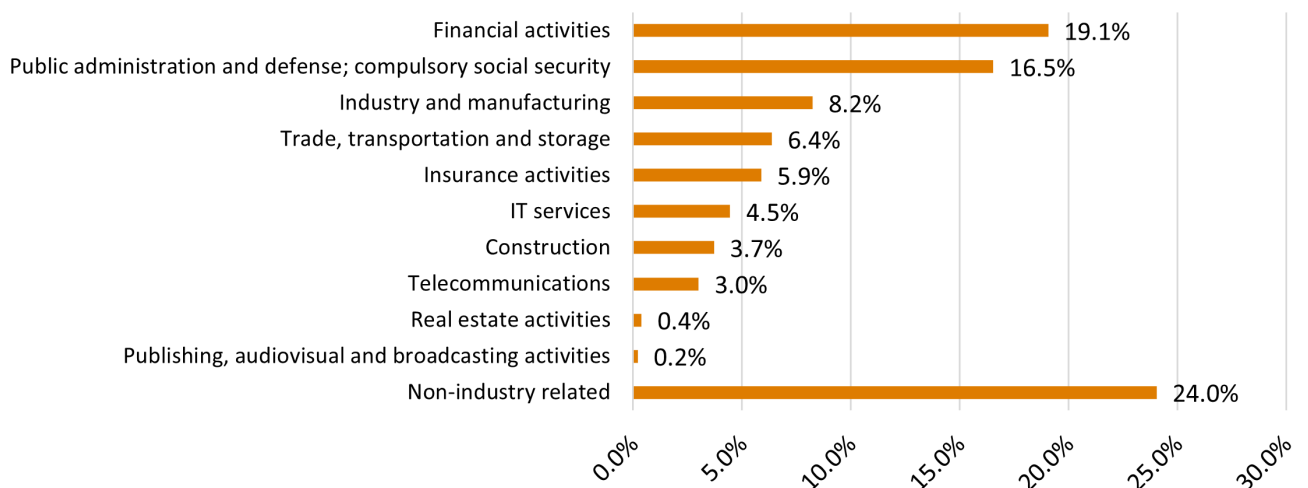
For Custom Software: High Importance of Variable Effort

The leading billing model for custom software manufacturers, as shown in Figure 15, is variable effort with accountability, contributing 42.1% of total revenues. Billing based on fixed effort (21.8%) and variable effort without accountability (17.9%) are also major contributors. Other billing models contribute only marginally.

Figure 16 shows the most important industries for custom software manufacturers. At 19.1%, the sector, including financial activities, is a major client for custom software manufacturers, followed by the public sector (16.5%). However, the largest portion, 24%, is not attributed to any specific industry.

Revenue per Industry for Custom Software Manufacturer

Figure 16: Most important industries for the custom software manufacturers in terms of revenue

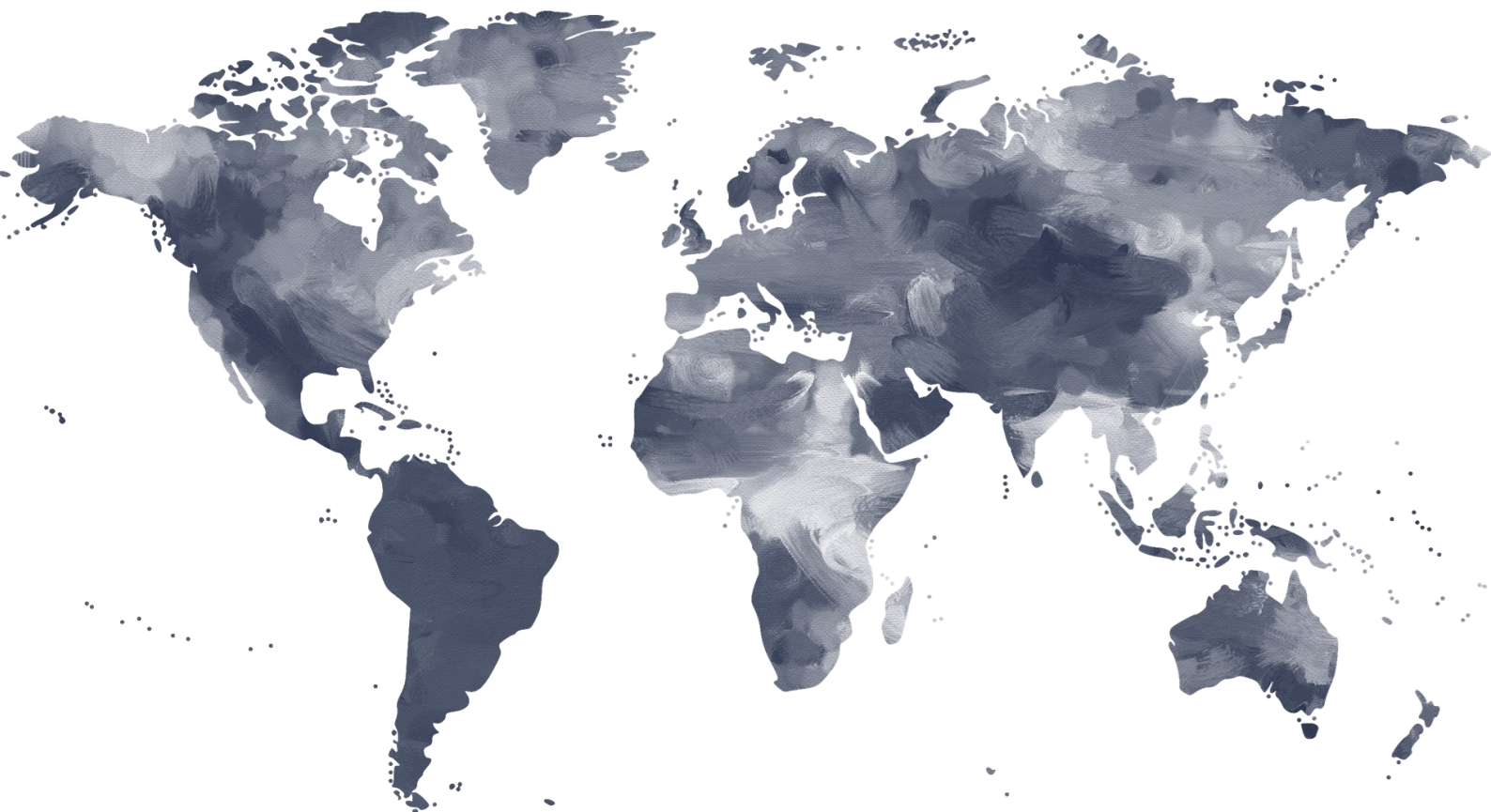


Source: SSIS 2024

N = 37

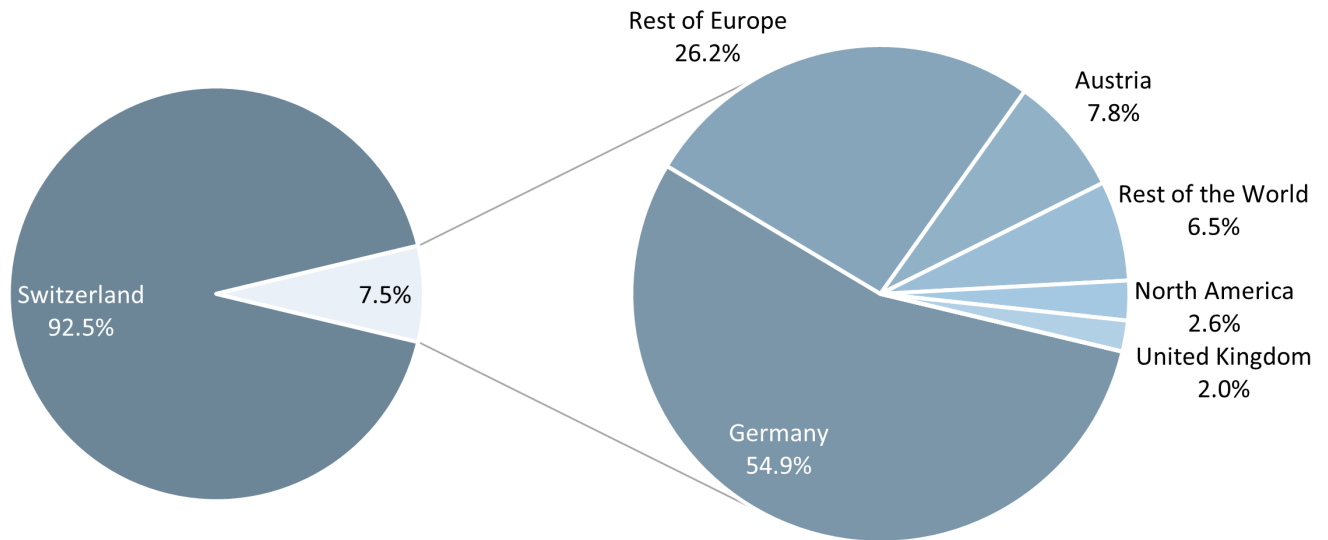
Spotlight on

Internationalization & Sourcing



Degree of Internationalization and Target Markets

Figure 17: Distribution of international revenue



Source: SSIS 2024

N = 98

The Swiss software industry generated **7.5%** of its revenue outside Switzerland

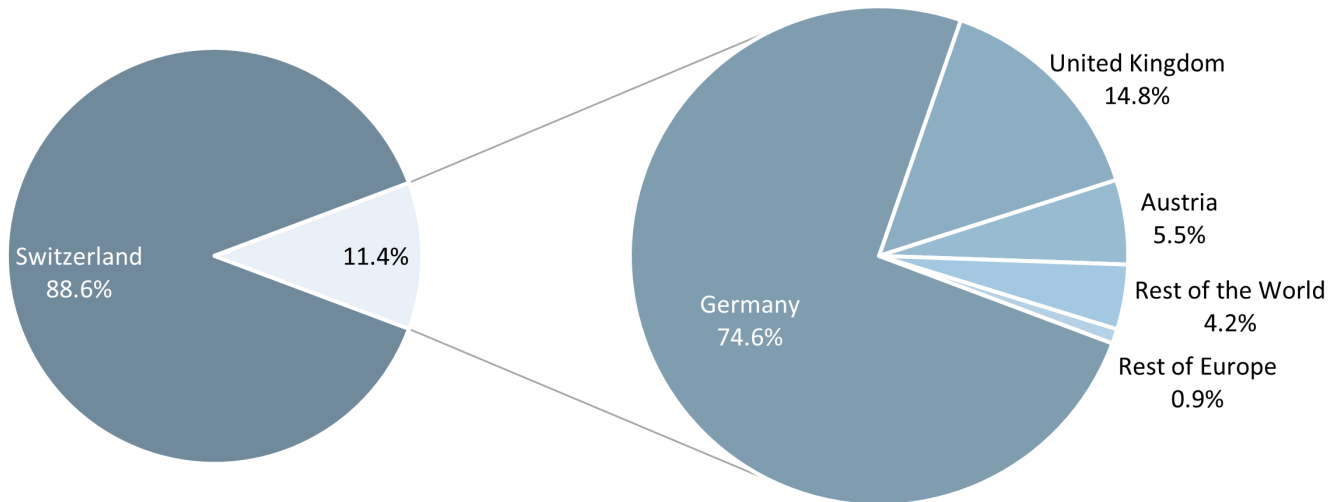
More Revenue From International Markets

Figure 17 illustrates the distribution of revenue generated by the Swiss software industry in 2023, highlighting its distribution between domestic and international markets. Compared to 2022, the share of revenues generated abroad has increased from 7% to 7.5%. As in previous years, Germany remains the most important

export market (54.9% of revenues generated abroad). The rest of Europe comes in second position (26.2%), including, for example, Italy, France, and many others. Lower shares of revenue were generated in Austria (7.8%), North America (2.6%), and the United Kingdom (2%).

Degree of Internationalization and Target Markets of Standard Software Manufacturers

Figure 18: Distribution of international revenue of standard software manufacturers



Source: SSIS 2024

N = 98

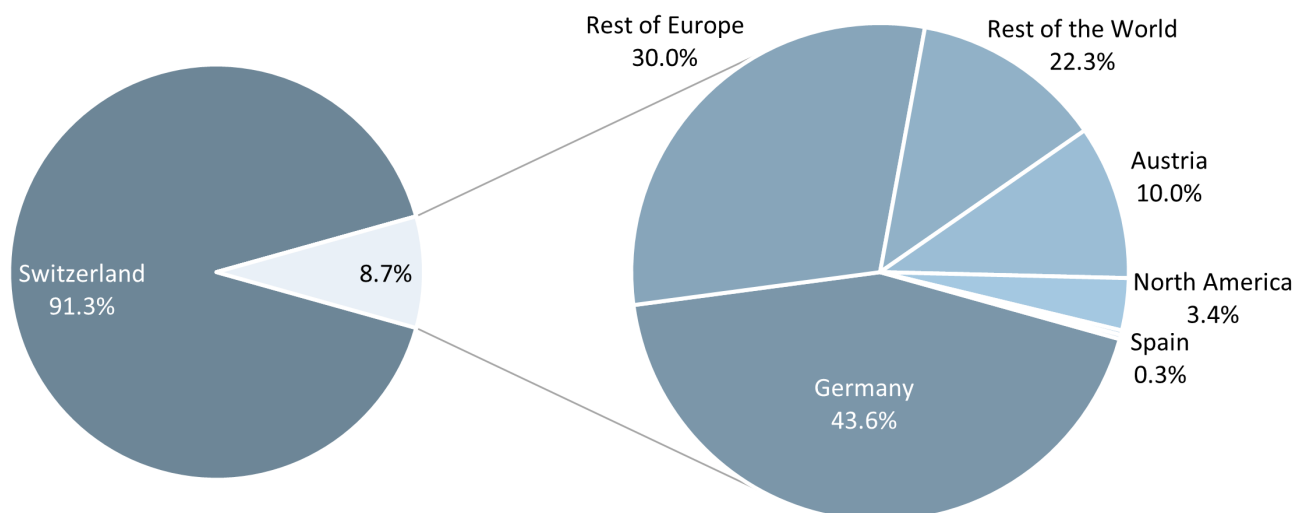
International Revenue of the Sub-Industries

In 2023, standard software manufacturers earned 11.4% of their total revenue from international markets (see Figure 18). Germany accounted for the most considerable portion, making up 74.6% of the revenue generated abroad. The United Kingdom contributed 14.8%, while Austria represented 5.5% of the revenue. Other global markets comprised 4.2%, and the rest of Europe

contributed 0.9%. As shown in Figure 19, custom software manufacturers earned 8.7% of their total revenue from international markets. After Germany with 43.6%, the rest of Europe was the largest export market, accounting for 30%, followed by the rest of the World with 22.3%, Austria with 10%, North America with 3.4%, and Spain with 0.3%.

Degree of Internationalization and Target Markets of Custom Software Manufacturers

Figure 19: Distribution of international revenue of standard custom manufacturers

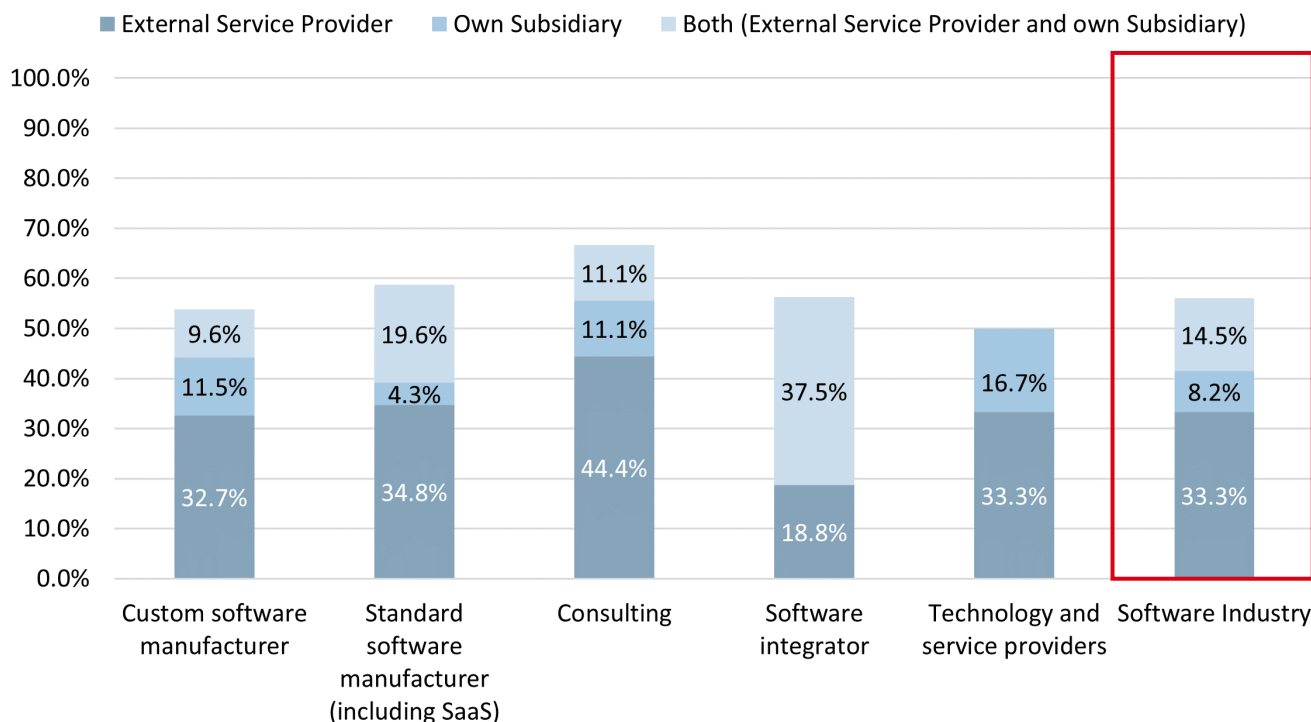


Source: SSIS 2024

N = 37

Outsourcing and Subsidiaries

Figure 20: Use of outsourcing in the Swiss software industry (in percentage)



Source: SSIS 2024

N = 159

Among Swiss software companies

56%

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 with external service providers, use own subsidiaries or both external service providers and their own subsidiaries in 2023.

The results show that the propensity to outsource is highest among consulting companies (66.7%), standard software manufacturers (58.7%), and software integrators (56.3%), followed by custom software manufacturers (53.8%) and technology and service providers (50.0%). Overall, around 56% of Swiss software companies engage in sourcing.

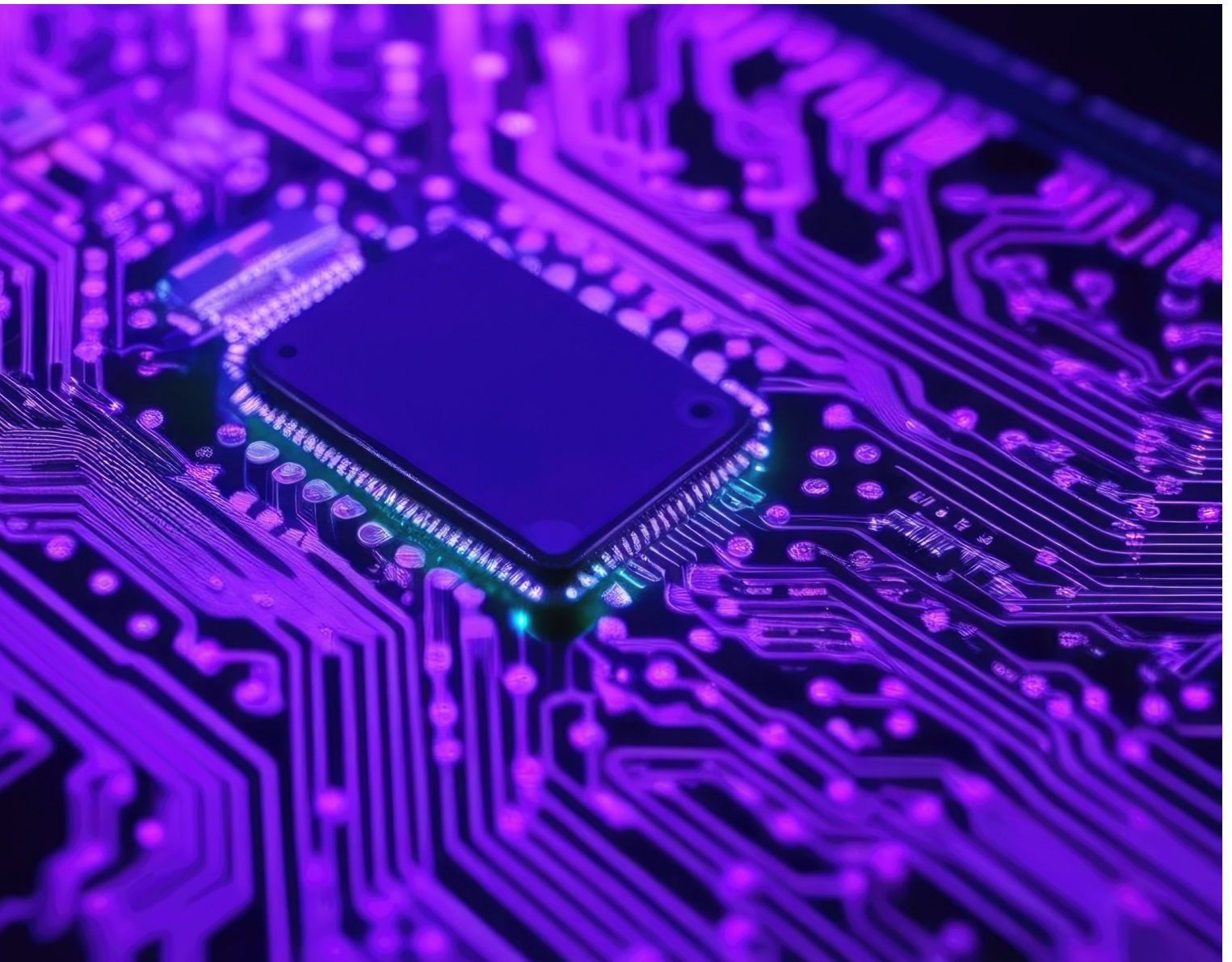
44.8% of consulting companies source from external service providers, followed by standard software manufacturers (34.8%), technology and service providers (33.3%), manufacturers of custom software (32.7%), and software integrators (18.8%).

In contrast, the tendency to procure services from their own subsidiaries is only widespread among technology and service providers (16.7%), consulting companies (11.1%), and custom software manufacturers (11.5%).

All sub-industries purchase services from both external service providers and their own subsidiaries, led by software integrators (37.5%).

Spotlight on

Artificial Intelligence



Introduction to the Special Topic

Technological advancements and the availability and cost-effectiveness of higher computing power were key factors that led to the development of new artificial intelligence tools with higher accuracy and predictive power that were not imaginable before.

Especially since the introduction of ChatGPT, AI has been on everyone's lips, and its popularity and usage have increased substantially, not only by private users but also by companies. More and more, AI-based technologies are implemented to support work processes. For example, AI-driven chatbots handle customer requests automatically, and AI-based prediction models, e.g. customer demands, are quickly advancing.

Also, in the software industry, AI has found great interest and is expected to have great potential by positively influencing the work processes of software developers (Amershi et al., 2019). For example, with the implementation of generative AI systems, such as ChatGPT or Microsoft Copilot, the productivity and code quality of software developers may be enhanced (Golzadeh et al., 2022; Peng et al., 2023). To gain the benefits of AI, a structured implementation and governance of such applications is indispensable. With the special topic of this year's Swiss software industry report, the current situation of Swiss software companies is aimed to be captured in this regard. Timely, with the report being conducted 18 months after the publication of ChatGPT, the report measures the reaction of Swiss software companies to the AI hype.

The Structure of this Chapter

The following chapter is structured as follows. First, we examine to what extent organizations use AI and how it varies among different processes. Next, the usage is analyzed in further detail by investigating to what extent software companies use AI to support their work, whether AI tools are trained with individual data, and when organizations started implementing AI technologies in their firms. Afterward, we examine the benefits and compatibilities of AI and the readiness of employees and organizations. Since the inclusion of top management is crucial for benefitting from AI, the support and participation of the top management are assessed. Following this, the competitive pressures of using AI, as well as different governance implications, are analyzed. To finalize the thorough investigation of AI implementation in Swiss software firms, we conclude the chapter with the expected future outlook of the companies.

Sources:

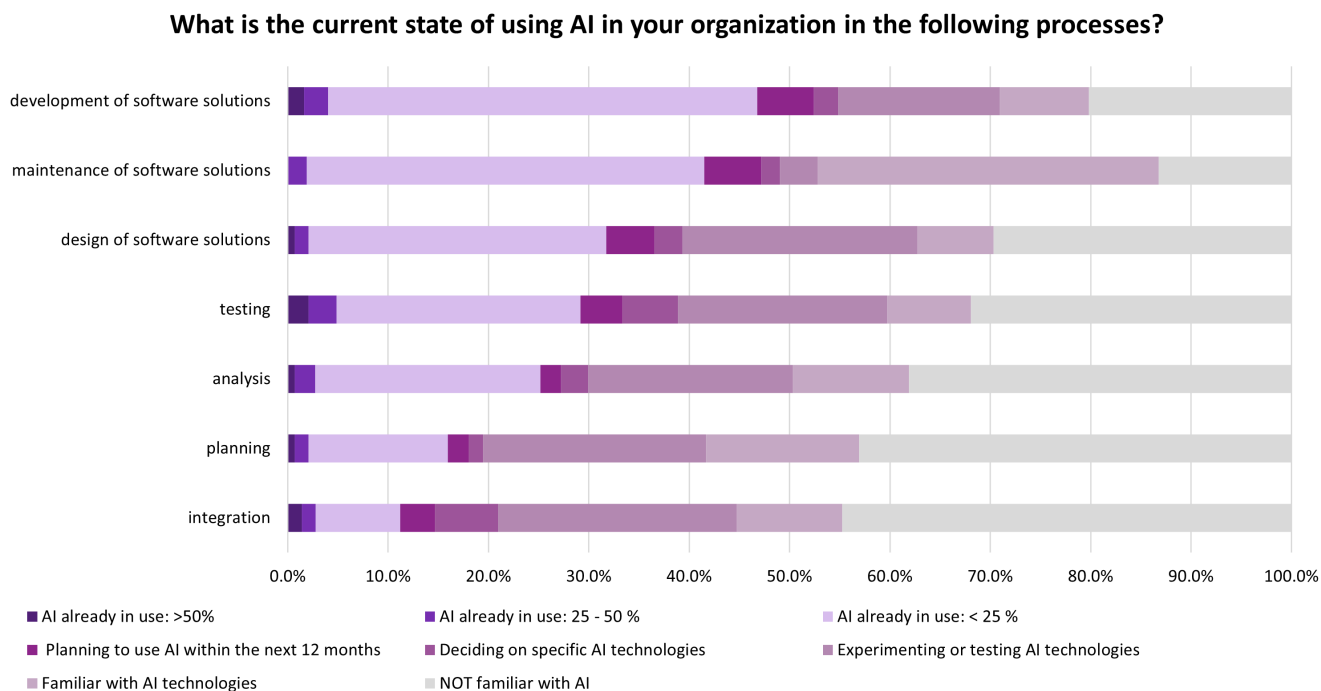
Amershi, S., Begel, A., Bird, C., DeLine, R., Gall, H., Kamar, E., ... & Zimmermann, T. (2019, May). Software engineering for machine learning: A case study. In *2019 IEEE/ACM 41st International Conference on Software Engineering: Software Engineering in Practice (ICSE-SEIP)* (pp. 291-300). IEEE.

Golzadeh, M., Mens, T., Decan, A., Constantinou, E., & Chidambaram, N. (2022). Recognizing bot activity in collaborative software development. *IEEE Software*, 39(5), 56-61.

Peng, S., Kalliamvakou, E., Cihon, P., & Demirer, M. (2023). The impact of ai on developer productivity: Evidence from github copilot. *arXiv preprint arXiv:2302.06590*.

Use of Artificial Intelligence

Figure 21: Current state of using AI



Source: SSIS 2024

N = 144

On average,

31.6%

are not familiar with AI technologies to support the different processes in software development

High AI Assimilation in Some of the Processes

To capture the usage of AI in the Swiss software industry, we used the concept of assimilation. This describes the integration of new technologies into the routines, processes, and structures of a company. This goes beyond mere adoption and also captures the extent to which a technology is embedded and used in daily operations to create value. As a first step, we asked Swiss software companies whether they use AI in software development. This was followed by a second question that explored the extent of use in the particular sub-processes and, in the case of companies that do not yet use AI, what stage they are at in decision making.

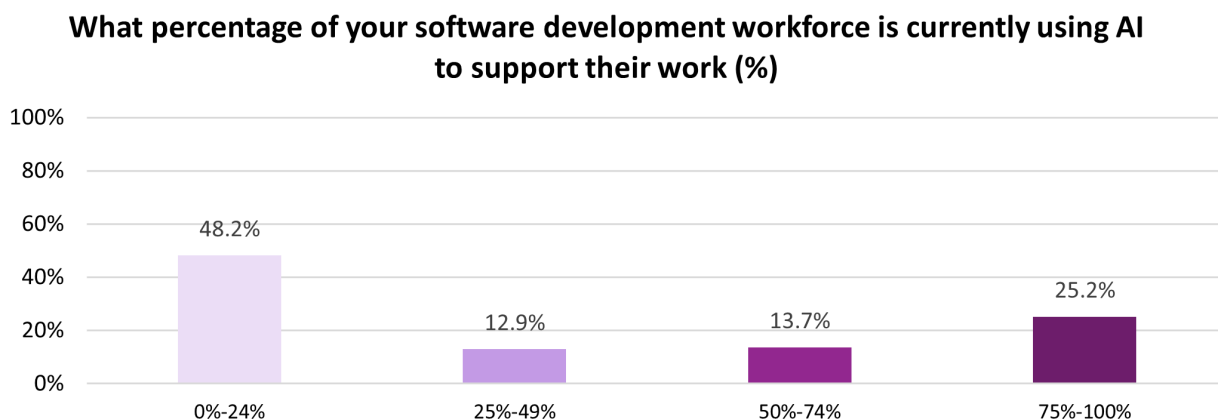
Figure 21 summarizes the outcomes to these questions and describes the assimilation of AI technologies in the Swiss software industry, divided according to the sub-

processes of the software development lifecycle.

AI is most widely used in software development, with 46.8% of software companies having productively integrated AI technology into their routines, processes, and structures. However, it is essential to note that for a large proportion of software companies (42.7%), AI supports less than 25% of the software development process. The use of AI in software maintenance is also widespread, with 41.5% of software companies using AI in less than 50% of the processes. Significantly fewer software companies use AI in design (31.7%), testing (29.2%), and analysis (25.2%). It is least widespread in planning and integration. Here, 44.8% in integration and 43.1% in planning need to become more familiar with AI technologies supporting the process.

Employees using Artificial Intelligence

Figure 22: Usage of AI by the software development workforce



Source: SSIS 2024

N = 139

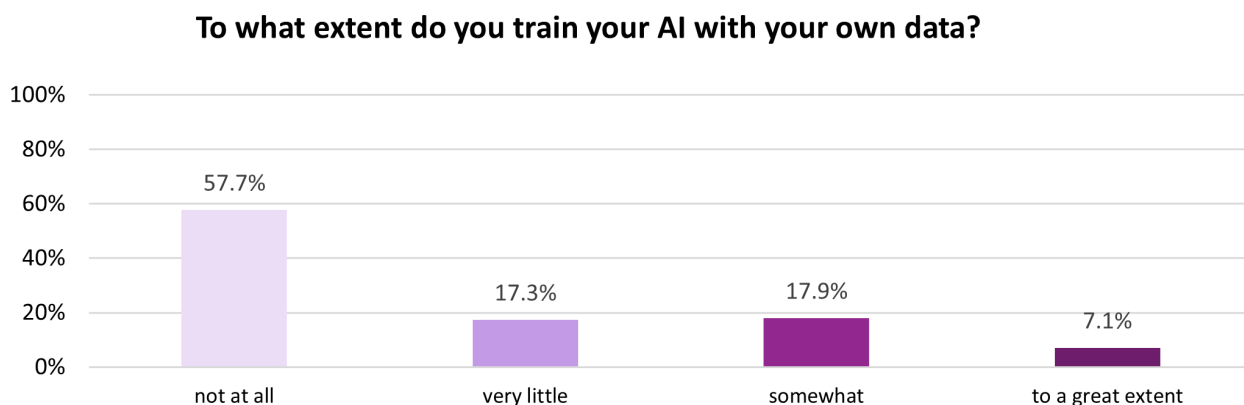
Use of Artificial Intelligence Among Employees Varies Across Companies

In addition to using AI in the various processes, we also assessed on estimate of the proportion of the software development workforce that use AI for their work (see Figure 22). 48.2% of software companies estimate that between 0% and 24% of their software development workforce uses AI to support their work. A large proportion, 25.2%, is estimated the workforce using AI to be more than 75%.

Training AI with a company's data aims to improve the use of the technology in a specific context. However, only a small proportion of Swiss software companies train AI with their own data (see Figure 23). Thus, 7.1% train AI with their own data to a large extent, 17.9% somewhat, 17.3% somewhat, and 17.3% very little. Most software companies (57.7%) do not train AI with their own data.

AI Training

Figure 23: AI training with own data

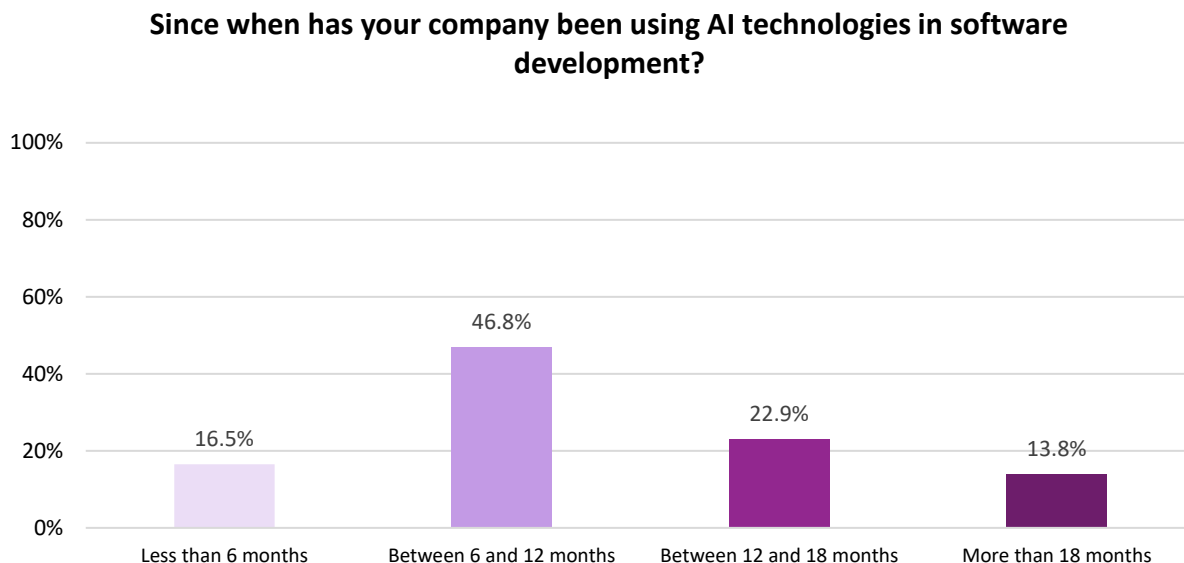


Source: SSIS 2024

N = 159

Time Since the Use of AI

Figure 24 : Time since the use of AI



Source: SSIS 2024

N = 109

More than,
86.2 %
of the companies are using AI since less than 18 months

Extensive Use Since ChatGPT Appearance

The survey results indicate that most Swiss software companies have only recently integrated AI into their development processes, reflecting the growing awareness and accessibility of AI technologies. This adoption trend suggests that many companies are still in the early stages of leveraging AI for their operations, with just 13.8% having used AI in software development for over 18 months. Most companies (86.2%) have been using AI for less than 18 months, with a noticeable distribution: 22.9% have integrated AI for 12 to 18 months, 46.8% for 6 to 12 months, and 16.5% for less than six months.

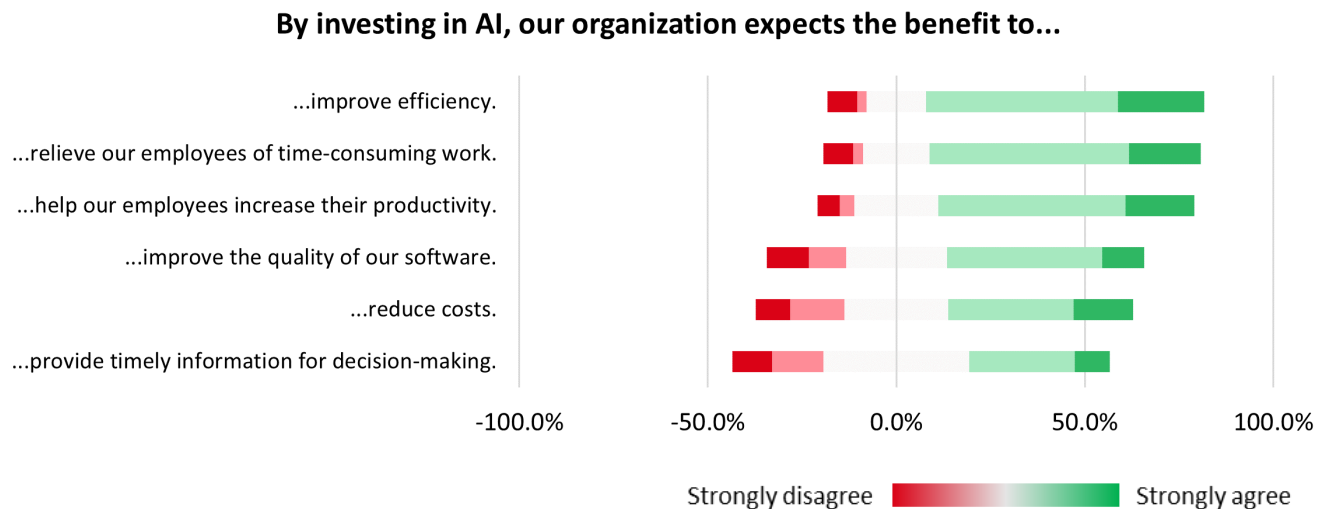
This relatively short adoption period is due to several

factors. AI technologies have only recently become more accessible, thanks to advancements in user-friendly tools and cloud-based services, which allow even smaller companies to implement AI. Previously, AI required specialized expertise and significant resources, limiting its use.

Additionally, growing awareness of AI's potential benefits—such as automation and innovation—has driven companies to adopt it. However, the complexity of AI implementation and the need for specialized skills still pose challenges, keeping many firms in the early stages of AI integration.

Expected Benefits from Artificial Intelligence Investments

Figure 25: Expected benefits from investing in AI



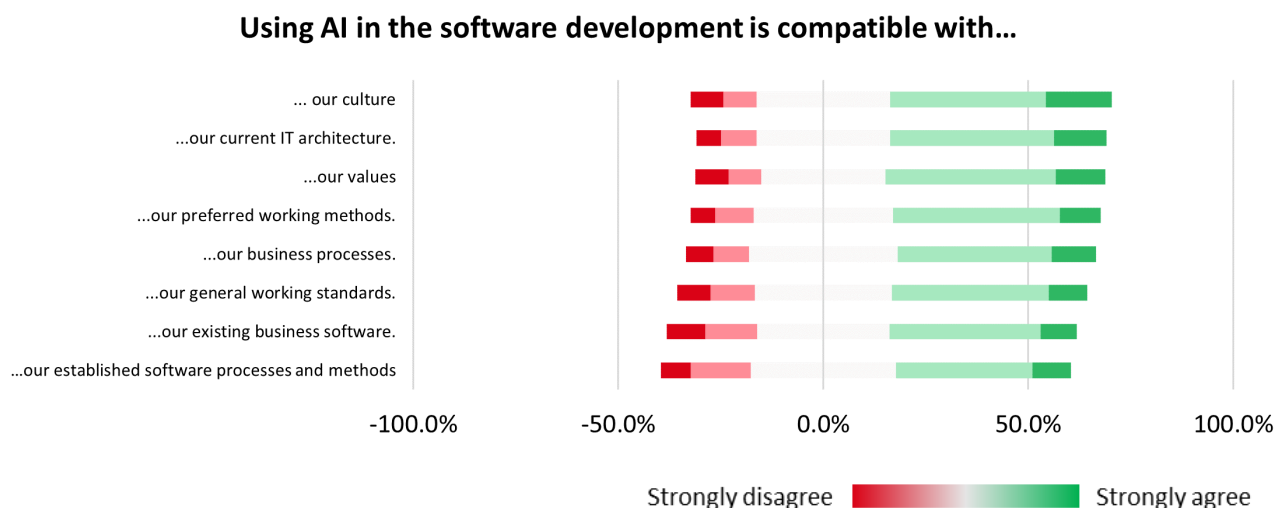
AI Investments with a Focus on Efficiency

The Swiss software industry's investments in AI are primarily intended to increase efficiency (73.9%), relieve employees of time-consuming tasks (71.9%) and improve employee productivity (68.0%). The objectives of improving software quality (52.3%), reducing costs (49.0%), and having timely information for decision-making (37.3%) are less critical (see Figure 25).

Software companies rate the compatibility of AI technologies with their company as very high (see Figure 26). In particular, they see high compatibility of AI with their culture (54.0%), IT architecture (52.7%), values (53.7%), and preferred working methods (50.7%). Some of the companies see less compatibility with their working standards (18.8%), existing company software (22.1%), and established processes (22.0%).

Compatibility of Artificial Intelligence

Figure 26: Compatibility of AI and software companies



Readiness of the Employees

Figure 27: The readiness of employees with regard to AI



Source: SSIS 2024

N = 150

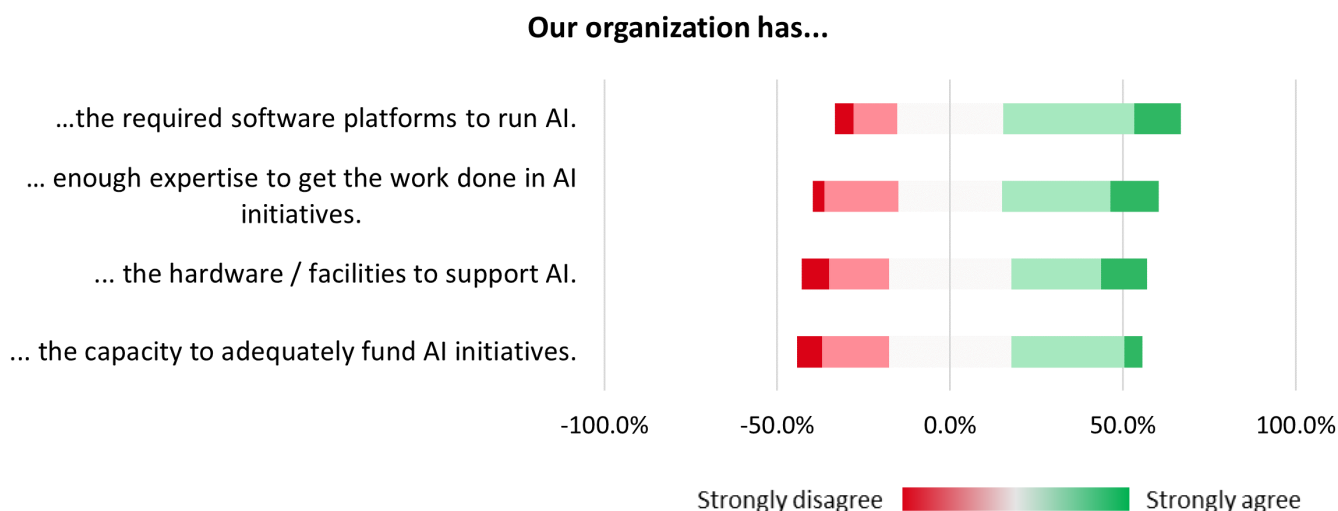
Organizations and Employees Well Equipped for the Use of AI

Figure 27 describes how employees deal with AI. 60.7% and 63.3% of software companies surveyed say it is generally easy for employees to acquire the necessary AI skills and learn how to use AI to support their work. Slightly fewer agree that it is easy for employees to integrate AI into their workflow (46.7%). An overall assessment of the results leads to the conclusion that employees are generally able to use the new AI tools well.

Figure 28 illustrates the prerequisites that companies have to meet to deal adequately with AI. The companies are generally well-equipped. A slight majority (51.3 %) have the software platforms to run AI. Furthermore, 45.3% indicate they have enough expertise to get the work done in AI initiatives. 39.3% of the surveyed companies have the hardware or facilities to support AI, and 38.0% have the capacity to fund AI initiatives adequately.

Organizational Readiness

Figure 28: The readiness of organizations with regard to AI

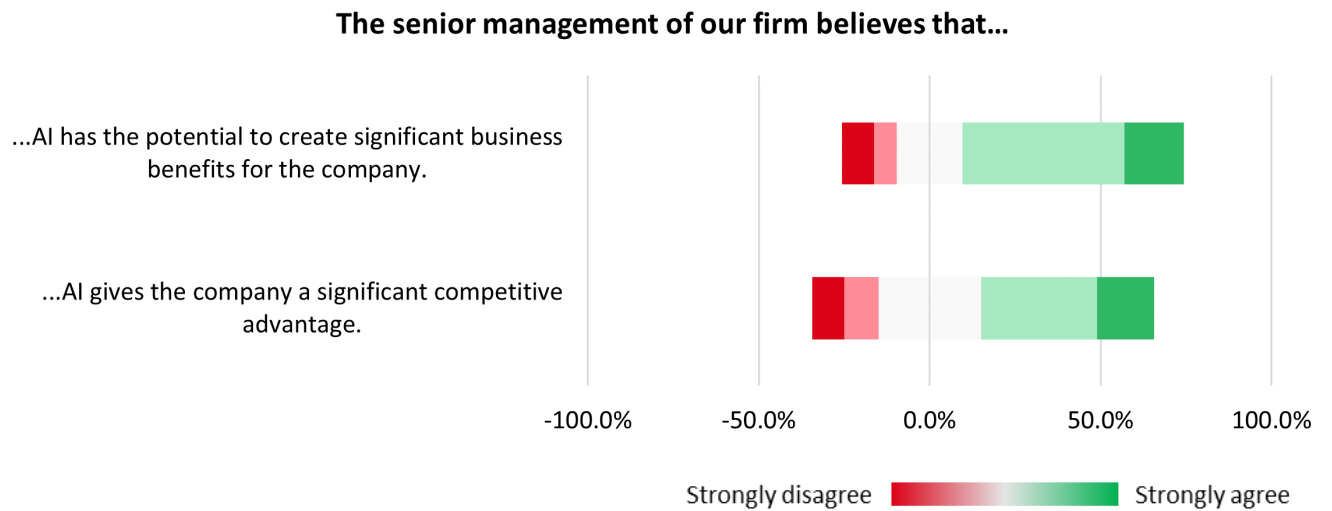


Source: SSIS 2024

N = 150

Beliefs of Top Management

Figure 29: Top management beliefs regarding AI



Source: SSIS 2024

N = 150

Strong Belief in the Potential of AI but Few Concrete Strategies and Goals

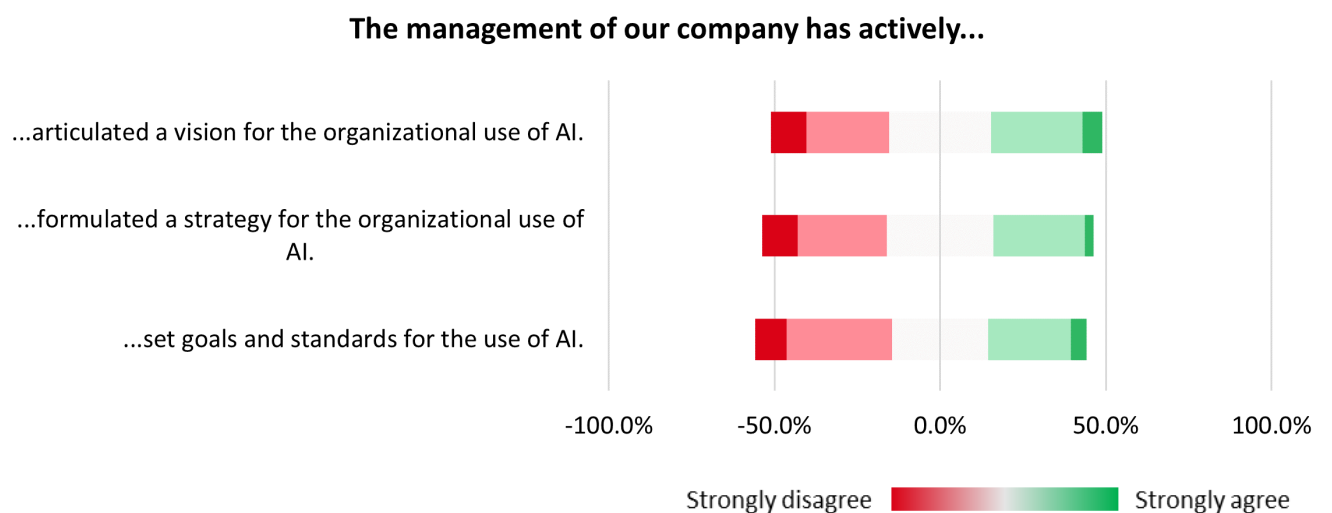
Figure 29 shows top management's beliefs about artificial intelligence. The potential of AI is generally recognized, and 64.7% find that AI has the potential to create significant business benefits for the company. In addition, 50.7% believe that AI gives the company a competitive advantage.

Figure 30 shows the activities of the management of the Swiss software companies surveyed with regard to AI.

Around a third have taken active measures, for example, articulated a vision for the organizational use of AI (33.6%), formulated a strategy for the organizational use of AI (30.2%), and set goals and standards for the use of AI (29.7%).

Top Management Actions

Figure 30: AI considerations in the strategic planning processes of Swiss software companies

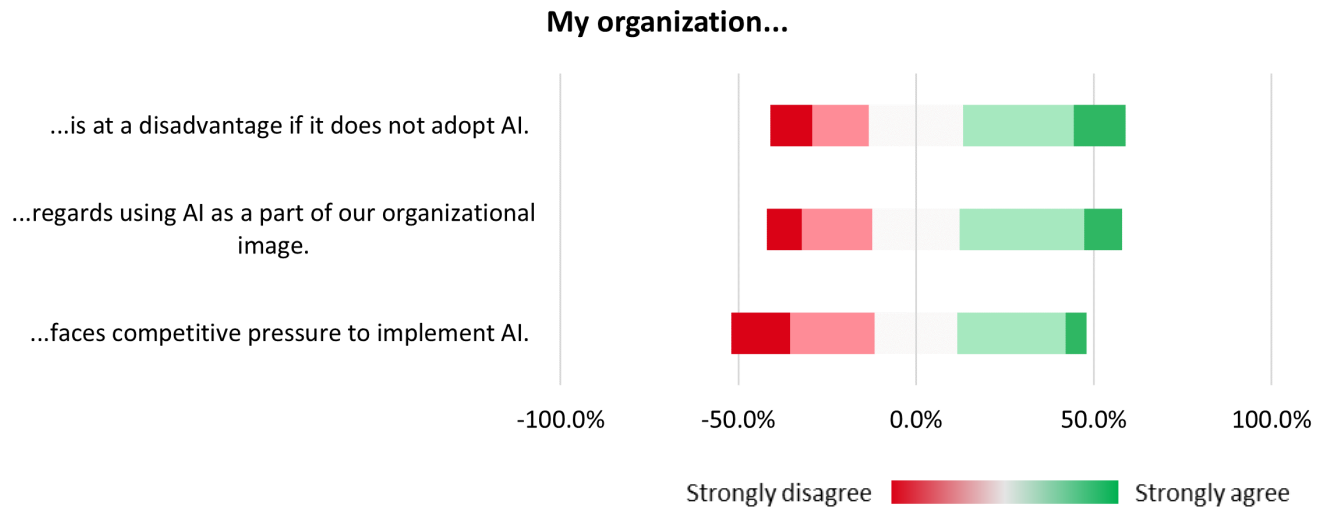


Source: SSIS 2024

N = 149

Competitive Pressure to Adopt AI

Figure 31: Perceived pressure to adapt AI among Swiss software companies



Source: SSIS 2024

N = 151

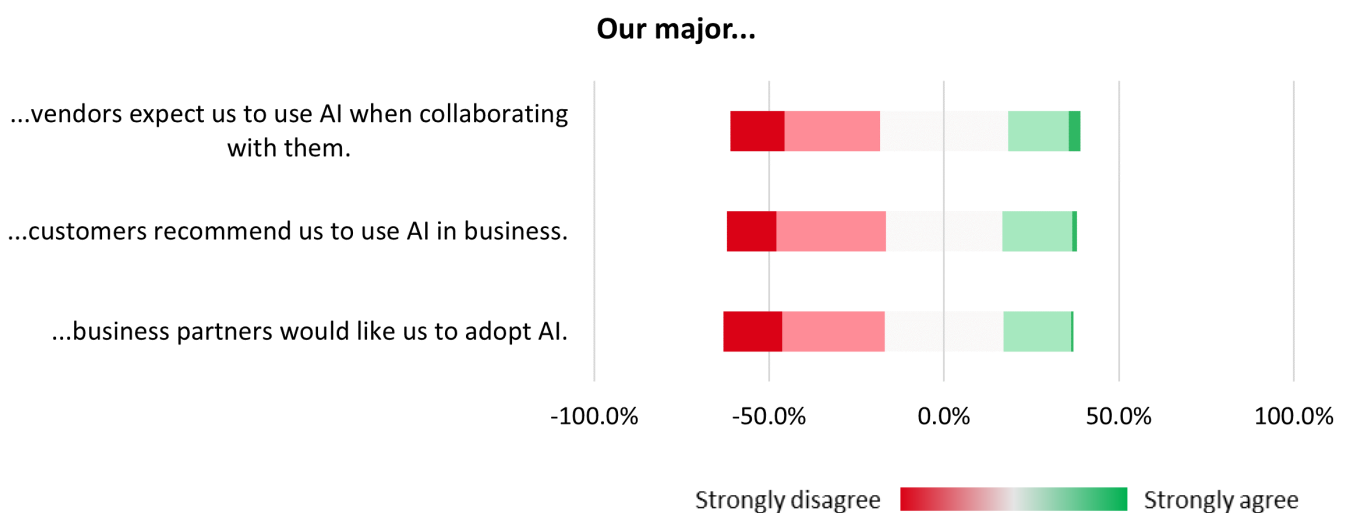
Little External Pressure to Adopt Artificial Intelligence

Figure 31 illustrates the competitive pressure perceived by Swiss software companies concerning AI. Over a third are experiencing competitive pressure to integrate AI into their operations (36.4%). Slightly less than half perceive the absence of AI as a disadvantage (45.7%) and view the adoption of AI as a reflection of their organizational image (45.7%).

The level of pressure from stakeholders to utilize AI technologies is not yet particularly pronounced. Indeed, only just under a fifth of respondents indicated that various stakeholders anticipate the deployment of AI. However, the majority of companies perceive no or very little pressure from vendors (45.3%), customers (46.0%), or business partners (42.7%). This is exemplified in Figure 32.

Competitive Pressure from Partners to Adopt AI

Figure 32: Perceived pressure by partners to adapt AI among Swiss software companies

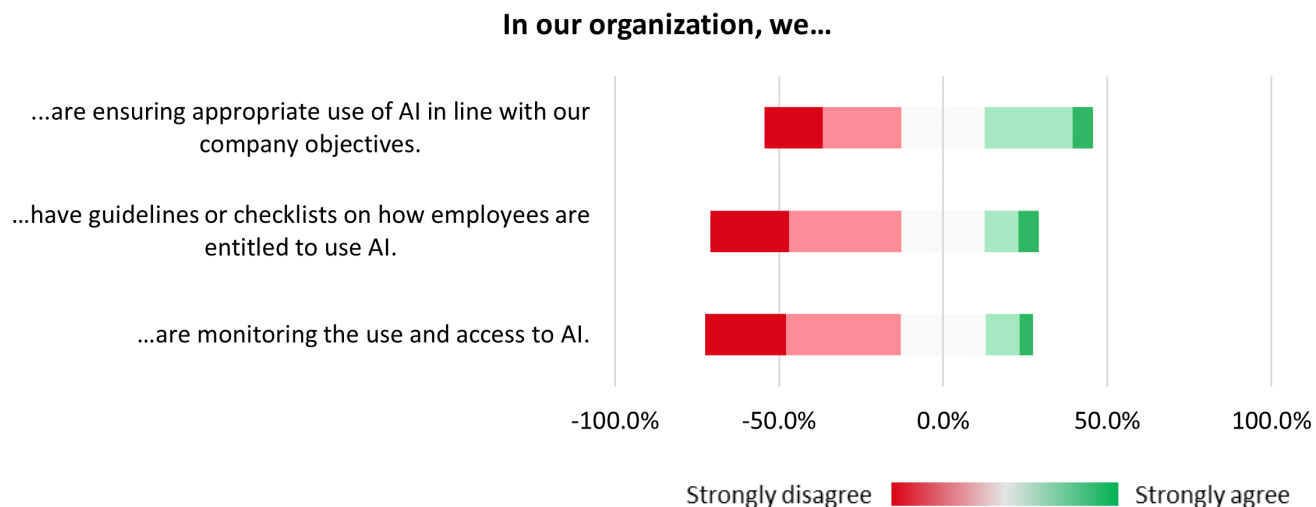


Source: SSIS 2024

N = 150

Governance: Procedural Practices

Figure 33: Procedural practices to govern AI



Source: SSIS 2024

N = 146

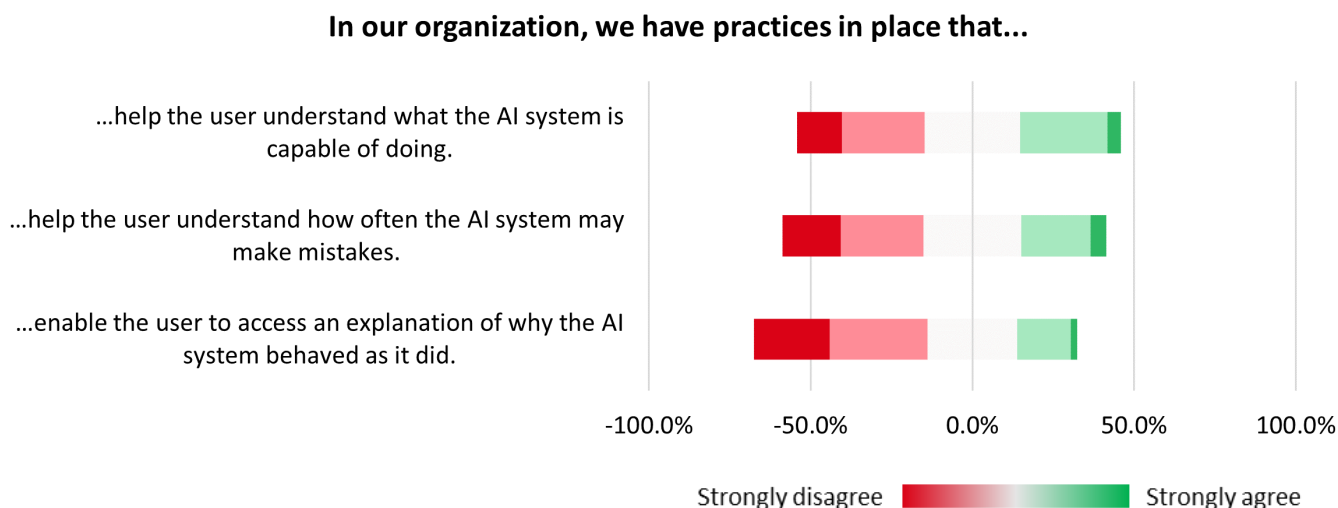
Little AI Governance

In this context, it is interesting to see how companies govern AI. This is illustrated in Figures 33 and 34. About one-third (32.9%) of the surveyed companies ensure the appropriate use of AI that aligns with their company objectives. Only a few state that they have guidelines or checklists on how employees are entitled to use AI (16.4%). Monitoring has also not yet been carried out by many companies. Thus, 14.4% state that they are

monitoring the use and access to AI. Furthermore, some companies have practices in place that help the users understand what the AI system is capable of doing (31.0%) and that AI systems may make mistakes (26.2%). A smaller proportion of companies state that they have practices in place that enable the user to access an explanation of why the AI system behaved as it did.

Governance: Guideline Practices

Figure 34: Guideline practices to govern AI



Source: SSIS 2024

N = 145

Structural and Relational AI Governance

Figure 35: Structural and relational AI governance practices



Source: SSIS 2024

N = 145

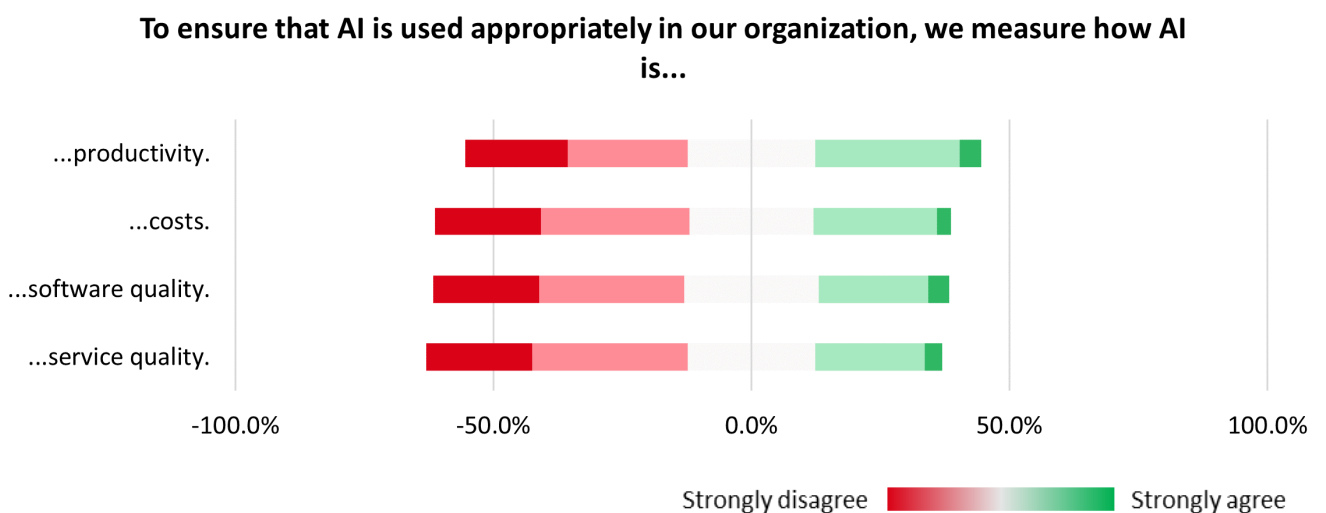
Hardly Anything is Measured in Terms of Artificial Intelligence

Relational practices are more common, such as communication within the organization (43.4%) and training of software developers (40.0%). Less common are structural practices, such as the introduction of a steering committee (12.4%), the precise definition of responsibilities and decision makers (31.0%), and cross-functional training (15.2%).

Figure 36 shows the measurement of AI use in the Swiss software industry. However, it should be noted that only a small proportion of Swiss software companies measure the impact on productivity (32.2%), costs (26.7%), software quality (25.3%) and service quality (24.7%).

AI Measurement

Figure 36: Measuring the use of AI in Swiss software companies

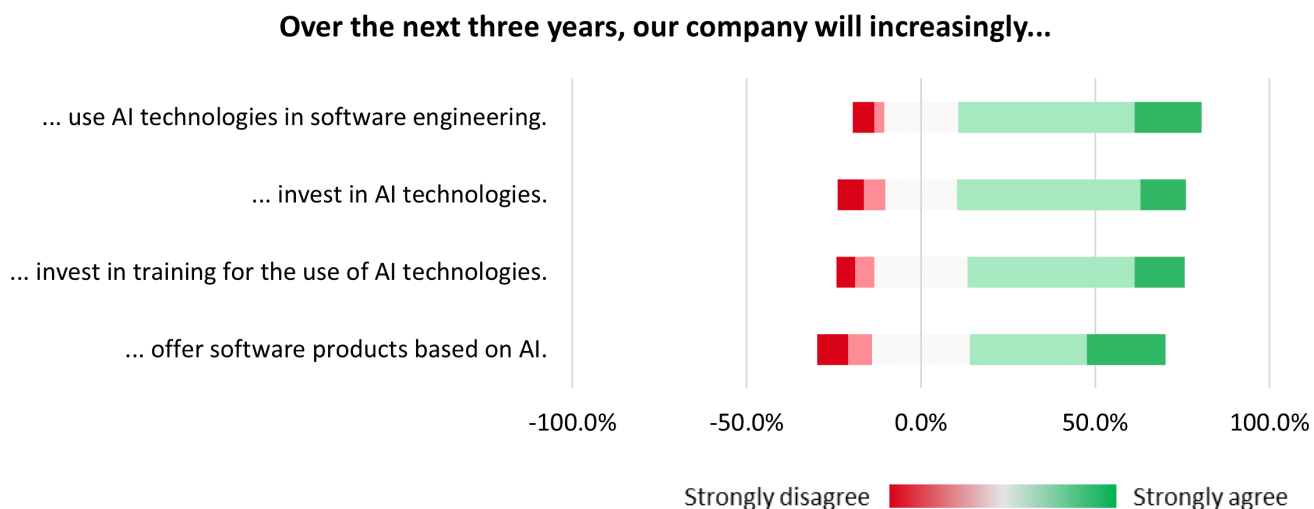


Source: SSIS 2024

N = 146

Artificial Intelligence Outlook

Figure 37: Intentions of the software development companies in the future



Source: SSIS 2024

N = 146

Future Outlook for the Use of Artificial Intelligence

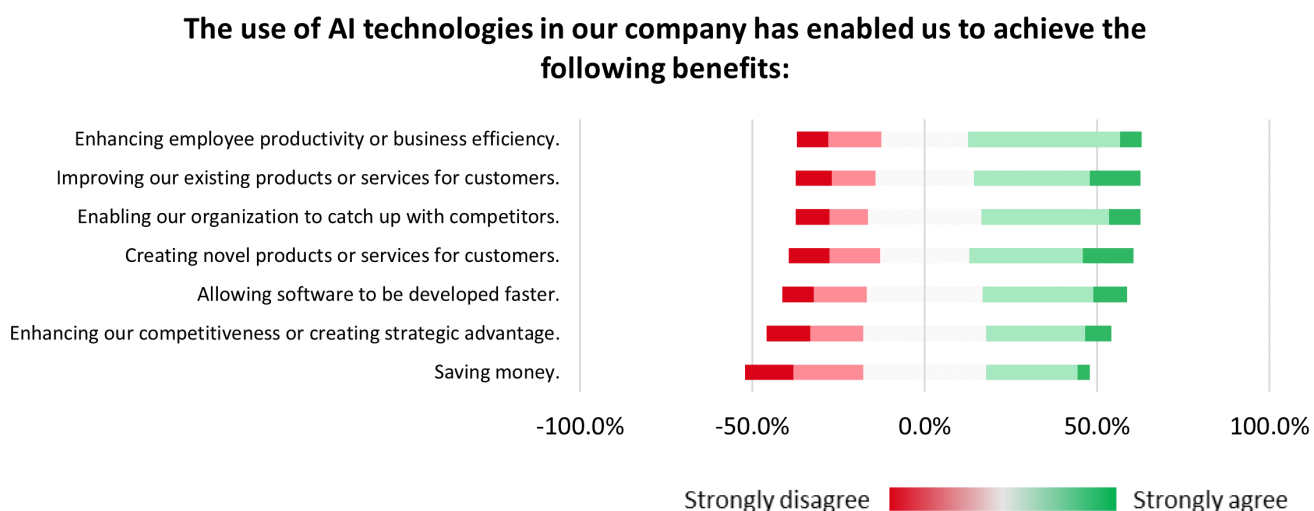
While some companies have yet to use AI extensively, the outlook for its future application is promising. Figure 37 illustrates that the majority (69.9%) will utilize AI technologies to a greater extent in software engineering, with almost two third (65.8%) planning to invest in AI technologies. Software companies also intend to invest increasingly in training for the use of AI (62.3%). Software companies are least likely to offer software

products based on AI (56.2%).

AI technologies are not currently anticipated to result in cost savings necessarily. Despite companies recognizing the potential for increased efficiency through AI, this does not necessarily result in reduced costs. This is likely due to the investment costs involved or the fact that AI cannot replace employees but makes their work more efficient and productive. The expected benefits are illustrated in Figure 38.

Benefits of Artificial Intelligence

Figure 38: Benefits through use of AI technologies



Source: SSIS 2024

N = 143

Method and Official Statistics

About the SSIS

Geographical Distribution of the Participants in 2024

Figure 39: Participating companies per canton



Source: SSIS 2024

N = 160

About the SSIS in 2024

This year we conducted the Swiss Software Industry Survey for the tenth time. With the tenth 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 4'500 validated Swiss software companies
- ...covers all Swiss language regions
- ...and builds on a large sample size with 368 participants, 120 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 now benchmark their performance over time (www.softwareindustrysurvey.ch).

Official Statistics - Employees and Added Value

Table 1: Distribution of added value in 2022 and distribution of full-time equivalents in 2023 by industry

Sections	Added Value	FTE
Mining and quarrying	0.12%	0.10%
Manufacturing	18.58%	15.11%
Energy supply, water supply, waste management	1.66%	1.14%
Construction	4.86%	8.06%
Trade; repair of motor vehicles and motorcycles	15.91%	12.32%
Transportation, storage, information and communication	5.11%	6.55%
Accommodation and food service activities	1.55%	4.80%
IT and other information services	2.94%	2.98%
Financial service activities	5.50%	2.61%
Insurance	3.87%	1.03%
Real estate activities, professional, scientific, technical and administrative activities	17.92%	16.80%
Public administration	10.18%	4.16%
Education	0.59%	6.18%
Human health and social work activities	7.95%	14.15%
Arts, entertainment, recreation and other services	2.31%	4.02%

Source: BESTA , Added Value 2022, FTEs 2023

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 almost 3% to the Swiss GDP (see Table 1) and employs 2.98% 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.).