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IFZ FinTech Study 2023

An Overview of Swiss FinTech

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Preface

Financial technology, also known as FinTech, has changed the way financial services are offered and used. Over the last few years, FinTech companies have become important providers to the Swiss financial sector by developing and offering innovative, technology-based solutions for the traditional financial service industry. Since the initial survey of the sector in 2016, it has been changing continuously. While the first few years were characterised by growth, last year's evaluation saw the first contraction in the number of FinTech companies based in Switzerland. In 2022, however, the Swiss FinTech sector successfully returned to a path of growth.

At the end of 2022, Switzerland was home to a total of 437 FinTech companies, which corresponds to a growth of 14 percent compared to the previous year. This positive development is not least due to the good conditions in Switzerland — also in international comparison — which seem to be materialising again. It is also expressed in the increasing investment volumes in the Swiss FinTech sector, which, in contrast, have decreased at the global level. The dynamism of the sector is also reflected in the companies' business models, which is exemplified by the increasing focus on sustainability.

The aim of this study is to assess the state and the evolution of the Swiss FinTech sector, drawing upon the methodology established in prior editions. The study endeavours to examine trends in the sector as a whole and in the specific business models of domestic FinTech companies and may offer insights for a diverse range of stakeholders within the Swiss financial sector, including FinTech companies, traditional financial institutions, and political decision-makers.

The study follows the following structure: Chapter 1 provides an introduction to the topic and the methodology used and delineates the scope of the study. Chapter 2 discusses the results of the empirical analysis of the business models of Swiss FinTech companies, including a focus on sustainable FinTech solutions and perceived challenges in the sector. An analysis of the business models of globally leading FinTech companies follows in Chapter 3, while Chapter 4 assesses the framework conditions of various global FinTech locations. The regulatory and legal environment for FinTech solutions in Switzerland is specifically addressed in Chapter 5. Chapter 6 provides a deep dive into the developments of the crypto assets investment ecosystem in Switzerland, and Chapter 7 contains an evaluation of financing activities in the FinTech sector as well as an analysis of the performance of listed FinTech companies. The impact of FinTech solutions on traditional financial institutions is discussed in Chapter 8. Chapter 9 provides an overview of the state of Open Finance in Switzerland, and Chapter 10 concludes the study.

At this point, we would like to thank all the companies that participated in our survey (see Chapter 11), but also the guest authors for their valuable contribution. Our special thanks go to the sponsors of this study, namely, e.foresight, Finnova, SIX, and Swiss Bankers Prepaid Services for their monetary and content-related support.

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1. Definition and Framework of the FinTech Ecosystem

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Although advances in technology have always influenced and shaped business models in banking and finance, the term "FinTech", as a hybrid word between finance and technology, has only been in common use for a few years. Measured by the global relative search interest for the term "FinTech" via Google, the corresponding topic has steadily established itself in the past years. This is illustrated in Figure 1.1, which shows the relative search interest for all web searches on Google as well as news coverage. Both time series show continuous growth since the year 2015 and reach their peak in 2022, which underlines the current relevance of the topic. Only in 2020 is there some decline in the relative interest in FinTech, especially in the news, which could be due to the Covid-19 outbreak on which (media) attention was temporarily focused.

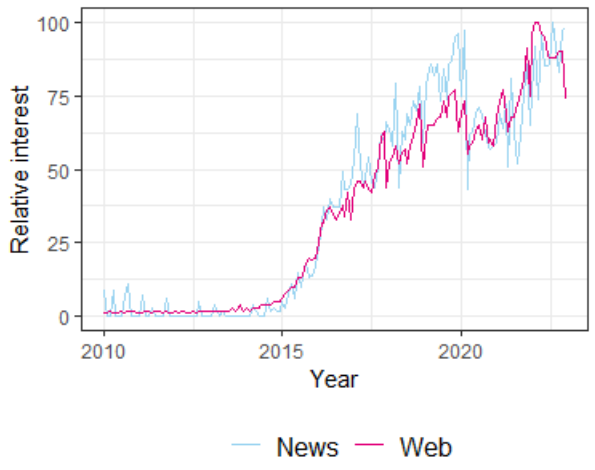

Figure 1.1: Relative search interest via Google (source: Google Trends (online))

A more detailed analysis furthermore shows that the query "what is FinTech" is the third most related query to the term (Google Trends, online). This could also be due to the fact that there is no generally accepted definition of "FinTech", which has made it difficult to compare studies by different authors on this topic so far.

The definition used in this study has not changed significantly over the course of the different editions, which allows for good comparability of their findings. Specifically, the term "FinTech" is defined as follows:

> FinTech is defined as technology-based solutions for innovative products, services, and processes in the financial industry, improving, complementing, and/or disrupting existing offerings. Hence, FinTech companies are firms whose main activities, core competencies, and/or strategic focus lie in developing those solutions.

FinTech solutions, therefore, have three main characteristics. First, they are enabled to a crucial extent by the application of *technology*. Second, they must have a certain *innovation* content that allows existing solutions to be improved, complemented, and/or disrupted. And third, they must relate specifically to the *financial industry*, which is why, for example, technology-driven solutions in the insurance or legal sectors are not the subject of this study. Note that these criteria are not all objectively assessable to the same extent. In particular, the assessment of the innovation content is subjective in nature, which is why the criterion is interpreted rather generously. If a company focuses on offering products or services that meet these criteria, it is considered a FinTech company. Contrary to other studies, the age of a company does not play a role in this classification.

However, another criterion limits the core scope of this study. As it focuses, in particular, on FinTech developments in Switzerland, only companies legally incorporated in Switzerland are considered. Where this regional scope is extended, a clear specification is given in each case.

In order to be able to provide a structured overview of the diverse FinTech sector, this study uses the FinTech grid, as in previous editions. This again enables comparability with previous findings. The framework is illustrated in Figure 1.2 and distinguishes between two main dimensions. The vertical indicates the main product areas of banking, into which FinTech solutions can also be classified. These include *Payment*, *Deposit & Lending*, *Investment Management*, and *Banking Infrastructure*.

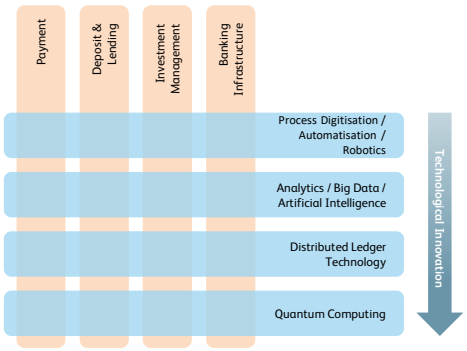

Figure 1.2: FinTech grid

The technology categories, as the second dimension in the FinTech grid, are presented horizontally in increasing order of innovation degree. They describe the applied technologies or technological concepts that can underlie FinTech solutions. The framework distinguishes between the technology categories *Process Digitisation / Automatisation / Robotics* (deemed the least innovative category), *Analytics / Big Data / Artificial Intelligence*, *Distributed Ledger Technology*, and *Quantum Computing* (deemed the most innovative category).

While the grid has proven to be a good overview framework of the FinTech sector, it does not provide a structured basis for evaluating concrete business models of relevant companies. The Business Model Canvas by Osterwalder and Pigneur (2010) is used for this purpose. It is based on nine different building blocks, which include key partners, key resources, key activities, value propositions, customer relationships, distribution channels, customer segments, revenue streams, and cost structures of a company. In this study, customer relationships and distribution channels are treated as a single block due to their similarity, and the cost structures are neglected for confidentiality reasons. Both the FinTech grid and the Business Model Canvas serve as the basis for the standardised presentation of the factsheets of all Swiss FinTech companies that participated in the survey of this study in Chapter 11.

In addition to the two frameworks mentioned, additional methodological approaches are also situationally used in the following. These are introduced and discussed in more detail in the corresponding chapters.

2. Swiss FinTech Companies

By Thomas Ankenbrand, Denis Bieri, Timon Kronenberger & Levin Reichmuth, Institute of Financial Services Zug IFZ

This chapter provides an overview of the current state and developments in the Swiss FinTech sector. The scope of the analysis encompasses all companies that meet the definition of FinTech outlined in Chapter 1 and are legally registered in Switzerland. The analysis is based on a proprietary database, which was constructed through the following five steps:

Step 1: Continuous maintenance and updating of a proprietary database on the FinTech sector throughout the year based on information from public sources (e.g., newsletters, commercial registry, and company websites).

Step 2: Identification of Swiss FinTech companies relevant to this study in the database according to the definition in Chapter 1 and classification in the FinTech grid.

Step 3: Creation of factsheets on each company based on the proprietary database. In addition to public information, the factsheets also contain information from previous surveys in this study series.

Step 4: Survey of the Swiss FinTech sector by sending individual factsheets to all 437 identified Swiss FinTech companies, including a sentiment questionnaire to identify challenges in the sector. The survey was open for participation between 25 November 2022 and 10 February 2023.

Step 5: Update of the proprietary database with new or revised information from the factsheets returned by the companies surveyed (see Chapter 11) and from data provided via e.foresight's Swiss FinTech Map[1].

It should be noted that the analysis of the general figures on the Swiss FinTech sector (Section 2.1.1) is based on public sources such as the commercial registry and company websites. However, only verified information is included in the evaluation of the companies' specific business models. Two exceptions are the classification of the companies into the FinTech grid in Figure 2.7, which is also based on public information, and the analysis of companies' web traffic in Figure 2.13, which is based on data from Semrush (online).

2.1. Overview of Swiss FinTech Companies

In the following subsections, general figures on the Swiss FinTech sector as a whole (Section 2.1.1) and in-depth information on the companies' business models are given (Section 2.1.2 et seq.).

2.1.1 General Figures on the Sector

In the previous edition of the IFZ FinTech Study, a reduction in the size of the Swiss FinTech sector was recorded for the first time, with a total of 384 active companies at the end of 2021. In 2022, however, this trend has reversed again. A total of 437 Swiss FinTech companies were identified at the end of the year, which is an all-time high and represents an annual growth of 14 percent. A comparison with the absolute number of Swiss companies in the tertiary sector (Federal Statistical Office, 2020b) shows that FinTech companies account for around 0.1 percent of them. Hence, about one in 1,000 Swiss companies in the tertiary sector qualifies under the definition of FinTech in Chapter 1.

The annual development of the number of Swiss FinTech companies is shown in Figure 2.1, with a break-

[1] The map is available at https://fintechmap.ch/.

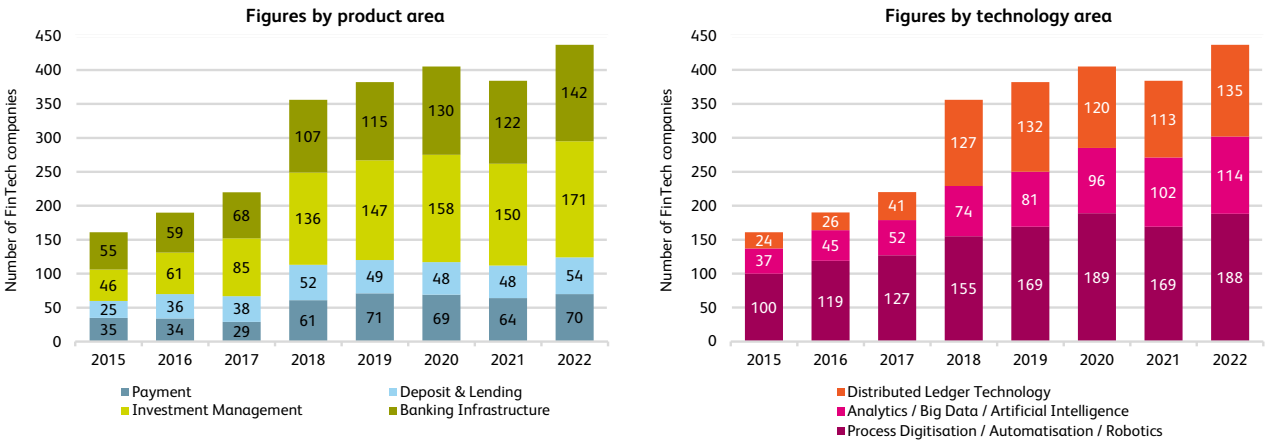

Figure 2.1: Number of FinTech companies by year, and by product area (left-hand graph) and technology category (right-hand graph) (n_{2022}=437)

down by product area (left-hand graph) and a breakdown by technology category (right-hand graph). The figure generally shows that after a year of contraction, the Swiss FinTech sector has returned to a path of growth. The breakdown by product area shows that the growth in 2022 is mostly attributable to the increase in FinTech companies in the *Investment Management* area (+21; +14.0 %), followed by *Banking Infrastructure* (+20; +16.4 %), and *Deposit & Lending* and *Payment* (+6 each; +12.5 % and 9.4 %, respectively). In addition, the technology perspective reveals that the largest absolute and relative growth in 2022 is recorded in the category *Distributed Ledger Technology* (+22; +19.5 %). The second largest increase in absolute terms is accounted for by *Process Digitisation / Automatisation / Robotics* (+19; +11.2 %) and in relative figures by *Analytics / Big Data / Artificial Intelligence* (+12; +11.8 %). The latter category is also the only one that has shown growth each year since the first assessment of the Swiss FinTech sector in 2015.

The absolute change in the number of Swiss FinTech companies from 384 at the end of 2021 and 437 at the end of 2022 is broken down in Figure 2.2 and highlights that a total of 36 companies were excluded from the database during the year 2022. Such exclusions can have different reasons, such as business closure or change to a business model not compatible with the definition of FinTech in Chapter 1. Furthermore, a total of 75 companies which were founded prior to 2022 were included in the database. Reasons for their inclusion only in 2022, despite their existence already in 2021, are, for example, the fact that many newly founded companies were not yet publicly active (stealth mode) in 2021 and, therefore, could not be identified or the fact that some initially non-FinTech companies only ventured into the sector in 2022. Finally, 14 FinTech companies newly incorporated in 2022 were included in the database.

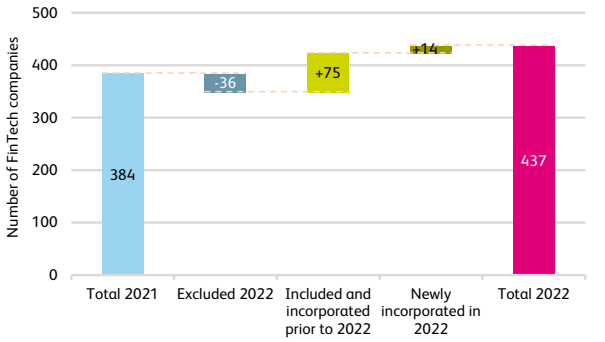

Figure 2.2: Year-over-year change in the total number of Swiss FinTech companies

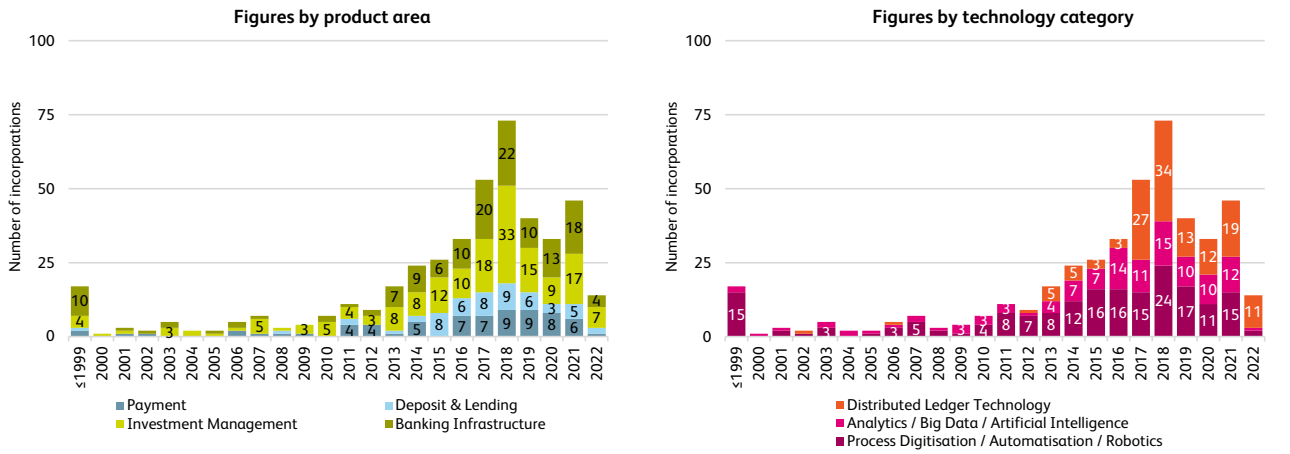

Figure 2.3: Number of FinTech company incorporations per year by product area (left-hand graph) and technology category (right-hand graph) (n=437)

These 14 companies are also included in Figure 2.3, which shows the number of incorporations of Swiss FinTech companies per year by product area (left-hand graph) and technology category (right-hand graph). It shows that the number of foundations rose steadily between the years 2008 and 2018, with a peak of 73 companies, and has since shown lower figures. However, 2021 records a higher number of registrations compared to 2019 and 2020, which could indicate a trend reversal. The comparatively few 14 FinTech company foundations in 2022 should be taken with caution, as many of these still very young companies do not yet appear publicly but are working on their offerings. Therefore, this figure is likely to be revised upwards in the coming years.

With regard to the product areas of the companies founded in 2022, the left-hand graph of Figure 2.3 shows that seven of them are assigned to *Investment Management*, four to *Banking Infrastructure*, two to *Deposit & Lending*, and one to *Payment*. The technology-related breakdown in the right-hand graph furthermore illustrates that of the 14 company foundations in 2022, eleven are assigned to the category *Distributed Ledger Technology*, two to the category *Process Digitisation / Automatisation / Robotics*, and one to the category *Analytics / Big Data / Artificial Intelligence*. The recently founded FinTech companies, therefore, seem to be focusing in particular on technologies related to blockchain again, which already experienced a boom, especially in 2017 and 2018. It, therefore, comes as no surprise that ten of the 14 newly founded companies are based in the canton of Zug, a global hot spot for blockchain technology. The other four companies were registered in the cantons of Jura, Obwalden, Thurgau, and Zurich (1 each).

In terms of foundations, it can also be noted that women are under-represented as founding members at Swiss FinTech companies. Of the 164 companies that commented on this within the scope of the survey conducted for this study, only 17, or ten percent in relative terms, have at least one female founding member. If compared to the 20 percent share of female founders across all sectors (Startup Campus, online), the share in the Swiss FinTech sector is only half as large.

In addition, an under-representation can be witnessed for the share of female members in the management teams and boards of Swiss FinTech companies, as highlighted in Figure 2.4. At the end of 2022, only eleven percent of management team members and eight percent of board members were female. By comparison,

Swiss retail banks have a proportion of women in their management teams of ten percent, which is minimally lower than that of Swiss FinTech companies, and in their boards of directors of 27 percent (Dietrich, Amrein, Lengwiler, & Passardi, 2022), which is significantly higher than that of Swiss FinTech companies. However, the increase in both proportions illustrated in Figure 2.4 indicates that the gender gap in the Swiss FinTech sector has tended to narrow slowly in recent years.

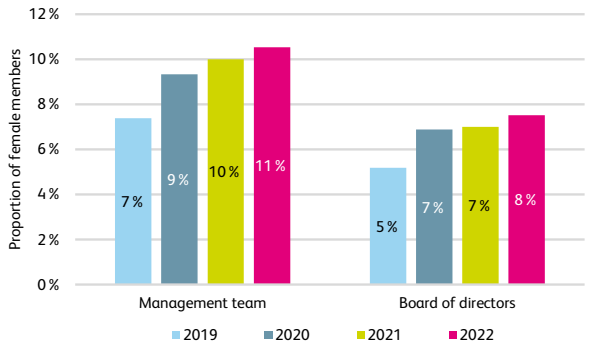

Figure 2.4: Proportion of female members of management team and board of directors by year

A cantonal classification of all 437 Swiss FinTech companies is presented in Figure 2.5, including the year-over-year change for each canton. Zurich emerges as the largest canton in terms of the number of resident FinTech companies, with a total of 164. Zug ranks second with 123 companies, followed, by some distance, by Geneva with 42 companies. The remaining companies are located in the cantons of Vaud (29), Schwyz (12), Lucerne (11), Berne (9). St. Gallen (7), Ticino (7), Basel-City (6), Aargau (5), Basel-Country (3), Obwalden (3), Schaffhausen (3), Valais (3), Appenzell Outer-Rhodes (2), Neuchâtel (2), Thurgau (2), Appenzell Inner-Rhodes (1), Fribourg (1), Grisons (1), and Jura (1). No FinTech companies are located in the cantons Glarus, Nidwalden, Solothurn, and Uri. In terms of growth, Zurich (+22) and Zug (+20), in particular, made gains last year. The canton of Vaud shows the third-largest absolute growth with four additional companies. At this point, it should be pointed out again that these growth figures are not only due to new company foundations but also, as shown in Figure 2.2, to companies that are older but have only been publicly active in the FinTech sector since 2022.

The distribution of companies among the cantons by product area and technology category shows a relatively uniform pattern. One clear exception is the canton of Zug, which is home to an above-proportional number of companies in the *Distributed Ledger Technology* category.

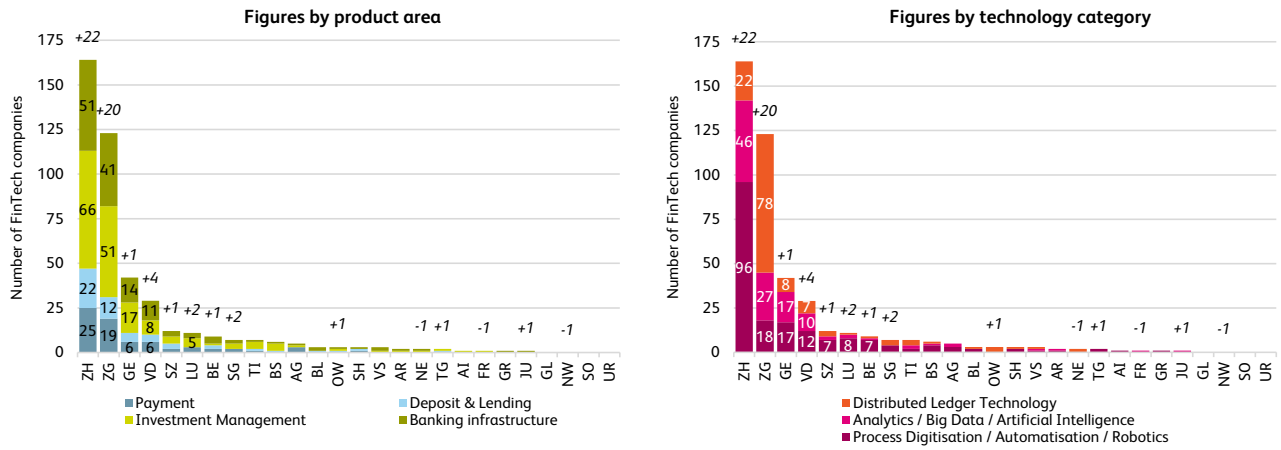

Figure 2.5: Number of FinTech companies by canton, and by product area (left-hand graph) and technology category (right-hand graph) (n=437)

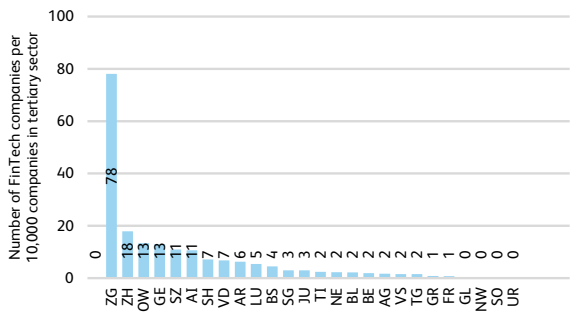

Figure 2.6: Number of FinTech companies by canton per total 10,000 companies in the tertiary sector

The canton of Zug is, moreover, the clear leader when it comes to the relative density of FinTech companies, as shown in Figure 2.6. With around 78 companies per 10,000 companies in the tertiary sector (Federal Statistical Office, 2020a), Zug leads clearly ahead of Zurich, with about 18 companies. While Zurich is evidently home to the most FinTech companies, the gap is smaller in this relative view compared to the cantons of Obwalden (13), Geneva (13), Schwyz (11), and Appenzell Inner-Rhodes (11), which follow behind.

After the overview of the status and developments in the Swiss FinTech sector as a whole, the following subsections look more specifically at the business models pursued. The structure of the subsections follows the Business Model Canvas by Osterwalder and Pigneur (2010), a widely used model for describing corporate business activities.

2.1.2 Value Propositions

The value proposition of a business model can be described as the reason why customers choose the company's products and/or services. Hence, it outlines the value that a company brings to the market, including what it offers. Since the business models in the Swiss FinTech sector are heterogeneous, a structured comparison of them is challenging. In order to obtain at least a higher-level assessment of the general finance-related areas of activity as well as the technologies used by the companies, the FinTech grid presented in Chapter 1 is considered. The corresponding classification of all 437 Swiss FinTech companies is illustrated in Figure 2.7.

The FinTech grid shows that most Swiss FinTech companies are active in the *Investment Management* product area (171 companies; 39 %), followed by *Banking Infrastructure* (142; 32 %), *Payment* (70; 16 %), and *Deposit & Lending* (54; 12 %). The significant role of the first two areas may have to do with Switzerland's global leadership in asset management. Therefore, a large market exists for FinTech companies in Switzerland for innovative and technology-based solutions in investment management and as providers of infrastructure for related products and services.

From a technological perspective, it can be seen that comparatively established concepts from the category *Process Digitisation / Automatisation / Robotics* (188 companies; 43 %) are used most frequently, followed by the *Distributed Ledger Technology* category (135; 31 %). 114 FinTech companies, or 26 percent in relative terms, are based on concepts from the *Analytics / Big Data / Artificial Intelligence* category, which is the only one to have grown steadily every year since 2015 (see Figure 2.1). Notice that, as in all past editions of this study, no FinTech company is (yet) using quantum computing as its technology foundation.

Moreover, Figure 2.7 shows the number of FinTech companies that are located in the individual intersections between product areas and technology categories. This reveals that the application of technological concepts from *Analytics / Big Data / Artificial Intelligence* in the area of *Investment Management* is most common in the Swiss FinTech sector, with 65 companies. Corresponding applications include, for example, quantitative investment solutions, algorithmic trading strategies, AI-driven ESG scoring system for investments, or extensive visualisation tools for performance and risk monitoring. The second and third most popular intersections correspond to FinTech companies using technological concepts from the category of *Process Digitisation / Automatisation / Robotics* in *In-*

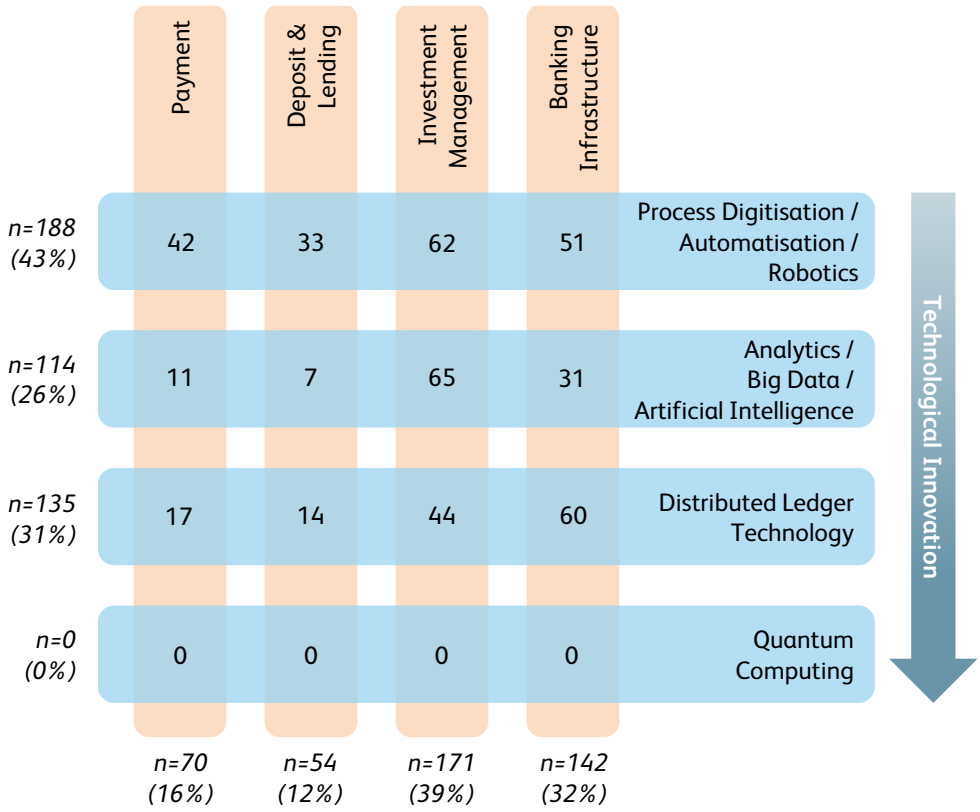

Figure 2.7: Distribution of Swiss FinTech companies according to the FinTech grid (n=437)

vestment Management and companies from the *Distributed Ledger Technology* category providing solutions in the *Banking Infrastructure* area, with 62 and 60 observations, respectively. While the former includes applications such as robo advisers and digital retirement savings and investment solutions, the latter includes, for example, crypto exchanges, crypto wallets, and crypto banks. The least frequent combination of product areas and technology categories, apart from those involving quantum computing, is found in the intersection between *Deposit & Lending* and *Analytics / Big Data / Artificial Intelligence* with only seven companies.

2.1.3 Key Resources

Key resources are critical components that enable a company to offer its value proposition to customers. In the following, key resources include financial resources (i.e., funding) and human resources (i.e., the number of employees). Physical assets are neglected.

The temporal development of the median values for the number of employees (in full-time equivalents, right scale) and the total funding volume (in million Swiss francs, left scale) of Swiss FinTech companies are presented in Figure 2.8.

It reveals that the median number of FTEs employed has generally increased over the years but stagnated in 2022 at 20. For the next year, however, most of the existing companies expect an increase in the number of employees. Of the 111 Swiss FinTech companies that made an estimate on the development of the workforce for 2023 (on a scale of strongly negative, negative, unchanged, positive, strongly positive), 22 percent expect strong growth, 68 percent moderate growth, and only ten percent zero growth.

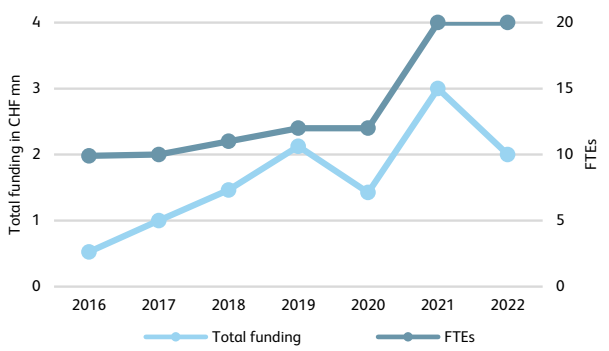

Figure 2.8: Median total funding (n_{2022}=71) and number of employees (n_{2022}=153) by year

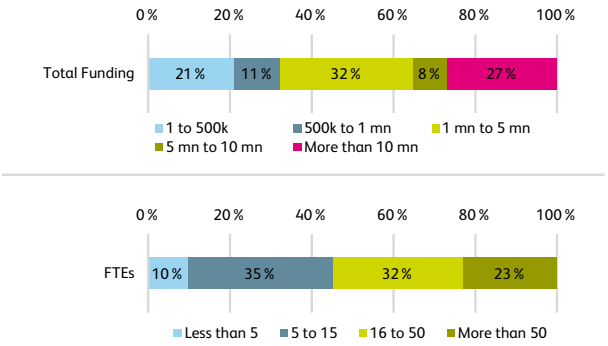

Figure 2.9: Total funding (n_{2022}=71) and number of employees (n_{2022}=153) in 2022

For the level of financial capitalisation of FinTech companies, there is a decrease in the median value from CHF 3 million to CHF 2 million for the year 2022. This does not necessarily have to be a negative indicator for the sector. Rather, this decline may be due to the comparatively high number of foundations in 2021, i.e., young companies with typically still rather small funding. This is also consistent with the relatively strong increase in Seed funding rounds and also volumes in 2022.[2]

The distribution of the total funding and the number of employees of Swiss FinTech companies in 2022 into different size categories is presented in Figure 2.9. It shows that about one-third of the companies have funding of less than CHF 1 million and, therefore, have comparatively few financial resources. About another third has between CHF 1 million and CHF 5 million. The last third has funding of more than CHF 5 million, of which 27 percentage points even have more than CHF 10 million.

The breakdown of the workforce shows that ten percent of Swiss FinTech companies have less than five employees. At 35 percent, companies with five to 15 employees make up the largest group, followed by those with a workforce of between 16 and 50 employees with 32 percent. Comparatively large companies with more than 50 employees account for 23 percent of all Swiss FinTech companies.

In terms of employee location, the evaluation shows that Swiss FinTech companies have a significant proportion of employees abroad. Of all FinTech companies that have provided corresponding information, this share is around 48 percent and has increased over the past years. Especially larger companies are more active abroad compared to smaller companies.

2.1.4 Key Partners

Key partners are another resource of FinTech companies that can help deliver a value proposition to customers. These partners may include suppliers, distributors, or other companies that play an important role in the production and/or delivery of a company's products or services. The most relevant partners in the Swiss FinTech sector are Microsoft (14 mentions), SIX (10), Avaloq (7), PostFinance (7), Swisscom (7), and Synpulse (7) of all the 122 Swiss FinTech companies that provided corresponding information.

2.1.5 Key Activities

Key activities are the actions a company takes to produce and deliver its value proposition to customers and are crucial to executing the company's business model. The relevant key activities for FinTech companies can be summarised as programming and engineering of

[2] See Section 7.1 for more details on funding activities in the Swiss FinTech sector in 2022.

the solution, marketing and finding clients, and operations and serving clients. Note that a company can focus simultaneously on a multiple of these three activities. The proportions of Swiss FinTech companies that are engaging in these key activities are illustrated in Figure 2.10.

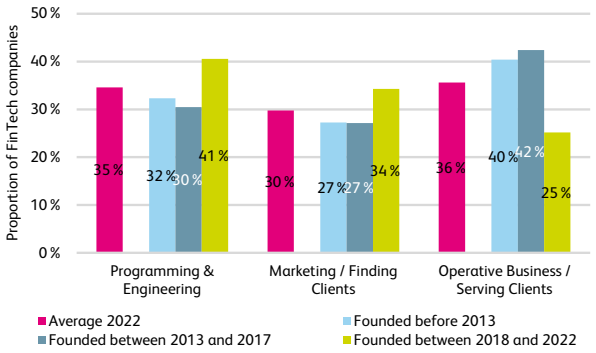

Figure 2.10: Proportion of FinTech companies by key activities (n=162, multiple answers possible)

The figure shows the percentage mention of each of the key activities across all Swiss FinTech companies (magenta bar) and for companies of different founding year groups. According to the survey, operational business is the most relevant key activity in the Swiss FinTech sector (36 %), closely followed by programming and engineering of products and services (35 %) and customer acquisition (30 %). However, these priorities differ considerably depending on the age of a company. While companies founded in the last five years, i.e., in the years from 2018 to 2022, are more active in developing and marketing solutions, companies founded prior to the year 2018 conduct day-to-day business more strongly.

2.1.6 Customer Segments

Customer segments refer to the different groups of customers that a company targets with its products or services. For FinTech companies, these can be either private customers (B2C) or business customers (B2B), although a business model can also encompass both of these customer segments. Furthermore, the orientation of a company can be exclusively on the domestic market or also internationally. Hence, this study distinguishes between the six possible customer segments "national B2B", "international B2B", "national B2C", "international B2C", "national B2B & B2C", and "international B2B & B2C". Note that in this context, an international orientation also includes the home market.

As shown in Figure 2.11, only 25 percent of Swiss FinTech companies target the home market exclusively, while 75 percent have an international orientation. At 52 percent, around half pursue a pure B2B business model, 40 percent target business and private customers, and eight percent only private customers. Figure 2.11 also reveals that companies targeting business clients exclusively or in combination with private individuals are mostly active internationally, while the majority of B2C-only business models are targeted at the Swiss market.

	B2B	B2B & B2C	B2C	*Total*
National	13 (8 %)	18 (11 %)	10 (6 %)	***41 (25%)***
International	71 (44 %)	47 (29 %)	4 (2 %)	***122 (75%)***
Total	***84 (52%)***	***65 (40%)***	***14 (8%)***	***163 (100%)***

Figure 2.11: Proportion of FinTech companies by customer segments (n=163)

With regard to the product areas and technology categories it can be observed that companies in *Deposit & Lending* (57 %) and *Process Digitisation / Automatisation / Robotics* (37 %), respectively, have a significantly stronger focus on the Swiss market. With regard to customer types, the data shows that the *Banking Infrastructure* area (71 %) and the *Analytics / Big Data / Artificial Intelligence* category (62 %), in particular, rely disproportionately on business customers only.

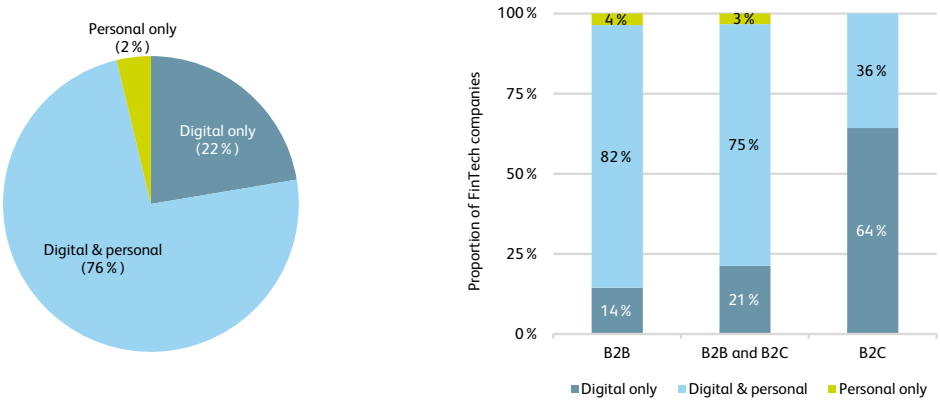

Figure 2.12: Proportion of FinTech companies by channels (n=161)

2.1.7 Customer Relationships/Channels

Customer relationships and channels refer to the ways in which a company interacts with and reaches its customers. It includes the methods by which the company communicates with customers, provides customer support, and delivers its products and/or services. The form of interaction can generally take three forms, namely purely personal (e.g., by phone, email, or in person), purely digital (e.g., self-service via a website or a mobile application), or a combination of personal and digital approaches.

The proportion of Swiss FinTech companies for the three different forms of interaction are illustrated in Figure 2.12. The left-hand graph reveals that over three-quarters of Swiss FinTech companies pursue a hybrid strategy with both personal and digital channels. 22 percent offer digital-only interaction, and only two percent offer purely personal exchange with customers. The form of the channels offered is determined by the targeted customer segments, as can be seen in the right-hand graph of Figure 2.12. While FinTech companies in the B2B, and B2B and B2C segments predominantly offer personal and digital interaction options, the majority of companies with a purely B2C-oriented business model operate purely digitally to enable scalability of services.

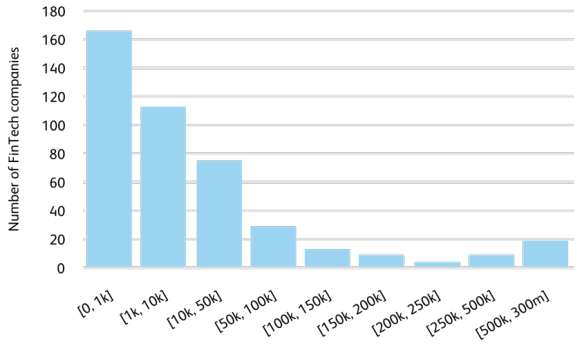

Figure 2.13: Global web traffic of Swiss FinTech companies in 2022 (n = 437) (source: Semrush (online))

One of the most important digital channels often is a company's website, therefore, the global web traffic of Swiss FinTech companies is illustrated in Figure 2.13 for the year 2022. To derive the global web traffic of a company, 31 domain extensions of its main website were taken into account. After reviewing the active domains of a company manually, the global web traffic was retrieved from Semrush (online) and aggregated for companies maintaining more than one domain extension. Figure 2.13 shows a histogram with several intervals of web traffic (measured in clicks) on the x-axis and the number of FinTech companies in the respec-

tive interval on the y-axis. 64 percent of the 437 Swiss FinTech companies are included in the first two intervals, and also the median of the distribution is located in the second interval at approximately 2,900 visitors for the year 2022. The high proportion of companies with relatively low web traffic may be due to the fact that the majority of Swiss FinTech companies are active in the B2B sector and, therefore, in contrast to B2C business models, often do not have a very large number of customers. FinTech companies with highly frequented websites stretch the distribution to the right. 19 companies (4 %) report web traffic larger than 500,000 visitors in 2022. Most of these companies have an international business model, targeting B2B and B2C customers. 32 percent of the FinTech companies are found in between the previously described extreme values of the distribution, however, the large majority of this subgroup is reporting web traffic of 10,000 to 100,000 website visitors.

2.1.8 Revenue Models

Revenue models refer to the ways in which a company generates income from its products and/or services. For FinTech companies, this can generally be done on the basis of traditional bank revenue models such as commission, interest, and trading business, but also on the basis of revenue models from the IT industry, such as software-as-a-service (SaaS) and licence fees. In addition, alternative models such as revenue generation through advertising or the sale of (analysed) data are possible.

The temporal development of the relevance of the different revenue models in the Swiss FinTech sector is presented in Figure 2.14. While the traditional banking revenue models, i.e., interest, commission, and trading, account for 37 percent of all revenue models pursued by Swiss FinTech companies in 2022, the IT-driven models, i.e., SaaS and licence fees, account for 51 percent and hence reveal the largest relevance. Advertising and the sale of (analysed) data combine a total of twelve percent. It is also evident that the commission business has lost relevance to the IT-driven revenue models over

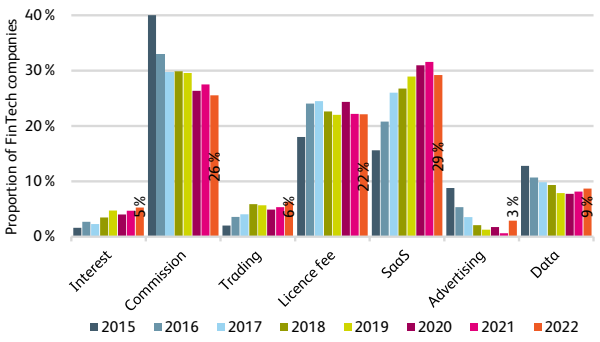

Figure 2.14: Proportion of FinTech companies by revenue models and by year (n_{2022}=164, multiple answers possible)

time and that their level of importance has settled at a high level. In addition, it can be seen that although the interest and trading business has a comparatively low relevance, this has risen continuously over the last few years and that the data business, after an initial decline, is once again gaining slightly in importance.

The breakdown of revenue models of Swiss FinTech companies by product area and technology category is shown in Figure 2.15. The left-hand graph highlights that the relevance of the different revenue models varies depending on the product area. While the commission business is the mostly applied revenue model in the *Deposit & Lending* (95 % of the companies), and *Investment Management* (59 %) areas, the SaaS model is leading in *Banking Infrastructure* (84 %) and *Payment* (71 %). From a technological perspective shown in the right-hand graph, the SaaS model is the most heavily used in the two categories *Analytics / Big Data / Artificial Intelligence* (84 %) and *Process Digitisation / Automatisation / Robotics* (65 %), while the commission business is predominant in the *Distributed Ledger Technology* category (72 %). In addition, it can be observed that revenue generation through the sale of data is mainly carried out by companies in the *Analytics / Big Data / Artificial Intelligence* category and trading business in particular by companies in the *Distributed Ledger Technology* category. Another cluster is found

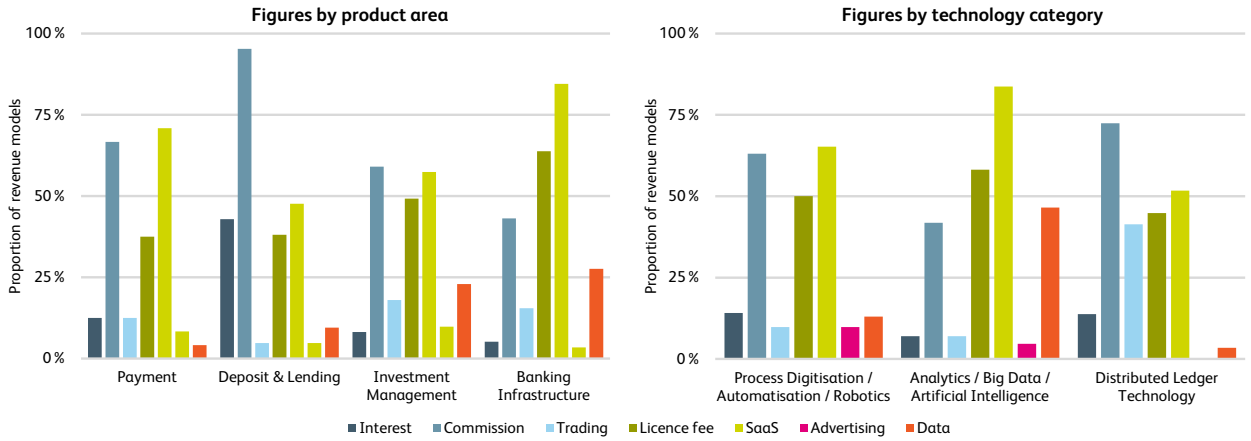

Figure 2.15: Proportion of revenue models used in the Swiss FinTech sector by product area (left-hand graph) and technology category (right-hand graph) (n=164, multiple answers possible)

in the *Deposit & Lending* product area for the interest business.

On average, Swiss FinTech companies pursue 2.3 different revenue models. This value has increased in recent years. In 2015, it was 1.8, and in 2021 it was 2.1. This increase illustrates that the business models of individual Swiss FinTech companies are becoming increasingly diversified.

2.2. Sustainability of Swiss FinTech Companies

By Nadine Berchtold, Institute of Financial Services Zug IFZ & Stefano Ferrazzini, e.foresight

Recent years have witnessed a growing interest in the incorporation of sustainability in the FinTech sector. This topic has gained considerable relevance, as evidenced by its prominence on the agenda of the World Economic Forum (WEF) in Davos, where discussions centred around the ten most pressing global risks, out of which six are environmental risks and two were social (World Economic Forum, 2023). Although FinTech companies do not, for example, directly provide new clean technologies for addressing climate change (which then would classify as a CleanTech rather than a FinTech company), they can still play a role in promoting sustainable practices and supporting the achievement of the Sustainable Development Goals (SDG). The Swiss FinTech ecosystem has already been evolving over some time now and has developed from simply adapting sustainable aspects to existing financial products to leveraging new sustainability data points and finally trying to better align consumer behaviour with a sustainable coexisting with our planet and social expectations. Sustainable FinTech companies may channel financial funding toward environmental and social initiatives or companies, they may increase renewable energy trading efficiency, they can provide relevant data and analytics to improve transparency and data interpretation, or they may promote financial inclusion with the goal of equality or protection of the disadvantaged.

2.2.1 Definition of Sustainable FinTech

In order to comprehend the meaning of a sustainable FinTech company, a definition was developed in the previous edition of this study. This definition encompasses the three integral components of sustainability, finance, and technology. The existing definition of Fin-

Tech, as outlined in Chapter 1, must be supplemented with the dimension of sustainability to fully capture the concept of a sustainable FinTech. The extended definition reads as follows:

> **Sustainable** FinTech is defined as technology-based solutions for **sustainable** innovative products, services, and processes in the financial industry, improving, complementing, and/or disrupting existing offerings. Hence, **sustainable** FinTech companies are firms whose main activities, core competencies, and/or strategic focus lie in developing those solutions **with the principal goal to contribute to sustainable development**.

Differentiating between sustainable and non-sustainable FinTech companies is not trivial. It is noteworthy that according to the stated definition, a FinTech company cannot be considered sustainable merely by offering a single sustainable product or service as an option. Rather, the company's overall vision and objectives must unequivocally reflect a commitment to contributing to sustainable development. The previously established definition also highlights that simply conducting business in a sustainable manner, such as reducing waste or providing favourable working conditions, does not qualify a FinTech company as sustainable unless the services or products it offers specifically target the sustainability challenge.

It is important to consider greenwashing when defining sustainability in any field. In December 2022, the Federal Council released a statement on preventing greenwashing in the financial sector, defining greenwashing as "a financial instrument or service is portrayed as having sustainable characteristics or pursuing sustainability goals, and this portrayal does not adequately reflect reality" (Federal Council, 2022). FinTech companies, as players in the financial industry, are, therefore, affected by such regulation as well. For example, according to the Federal Council's positioning paper, it requires alignment with one or multiple of the SDGs to be considered truly sustainable in sustainable investments. Reducing sustainability risks alone for improved investment performance is not sufficient unless an SDG is being pursued alongside.

This study's narrow definition of sustainable FinTech already minimises the risk of greenwashing based on the Federal Council's definition. However, the following analysis is based on self-reported data and on the websites of Swiss FinTech companies, which is why verification of their claims is limited to publicly available data. In the next subsection, different categories of sustainable FinTech and their eligibility criteria are introduced.

2.2.2 Eligibility

Compared to last year's evaluation, this year's analysis refines the eligibility requirements and transparently displays them in the following. In general, the analysis distinguishes between "social", "green" (also known as "environmental"), and "supporting activities" FinTech companies which support sustainability within the financial industry.

To operationalise the understanding of social, green, and supporting activities FinTech companies, specific categories are established for each of the three dimensions. In particular, each category encompasses a range of use cases, which, however, are not exhaustive and may evolve over time as new research provides evidence on how to address sustainability issues. Hence, as new FinTech companies emerge and address previously unaddressed topics, new categories and use cases may be added.

The current categories and use cases are based on existing sustainability rating frameworks for large corporations[3], as well as on academic research papers (Escrig-Olmedo, Fernández-Izquierdo, Ferrero-Ferrero, Rivera-Lirio, & Muñoz-Torres, 2019; Berg, Koelbel, & Rigobon, 2022). These frameworks were not specifically designed for FinTech companies. They typically evaluate different dimensions of sustainability

[3] See, for example, the MSCI Materiality Map (MSCI, 2023a) or Standard & Poor's Key Sustainability Factors (Standard & Poor Global, 2023).

and assign criteria to the dimensions. Some frameworks group similar issues into one category, while others evaluate each issue separately. Despite their differences, the underlying criteria for these frameworks largely overlap. The following understanding of sustainable FinTech is a consolidated version of these different approaches. Although FinTech companies may not directly participate in sustainability activities, their business models can support environmental and social development goals.

FinTech companies are considered sustainable if their offered products and services

(i) support the goals toward the defined social, green, and supporting activity categories; and

(ii) do neither directly nor indirectly harm the goal of one or more of the social, green, and supporting activity categories.

Hence, the "Do No Significant Harm" (DNSH) principle is applied in (ii), which was introduced in the European Union's Taxonomy on Sustainable Finance. This principle emphasises that pursuing one sustainability goal should not come at the cost of harming others. The same principle also applies to the understanding of sustainable FinTech. Therefore, the following analysis counts all Swiss-based FinTech companies as sustainable if their offered products and services comply with both (i) and (ii).

The European Union taxonomy for sustainable activities has clearly defined the environmental aspect of business sustainability, providing a comprehensive framework for businesses to reference. However, navigating the content can prove challenging. As presented in Figure 2.16, the green dimension is further broken down into the four distinct categories "Pollution & Waste Reduction", "Environmental Innovation", "Natural Capital Protection", and "Climate Change Mitigation" in this study. Each of the categories has two to four underlying use cases.

The social dimension supplements the environmental dimension of sustainability. Unlike the green dimension, there is no official social taxonomy available at present. The Platform on Sustainable Finance issued a final report and proposed a social taxonomy in February 2022, but it is still being developed and has not yet been implemented. For this study, and as shown in Figure 2.17, five categories for the social dimension were identified based on existing frameworks. They are "Equality", "Fairness", "Human Capital Promotion", "Disadvantaged & Defenceless Protection", and "Social Innovation". All five categories comprise one to four use cases.

GREEN			
Pollution & Waste Reduction	Environmental Innovation	Natural Capital Protection	Climate Change Mitigation
Waste reduction	Use of renewable energy	Energy efficiency augmentation	Fight against climate change
Circular economy	Sustainable travel and transportation	Efficient usage of non-renewable resources and raw material	Reducing carbon emissions
	Environmental-friendly housing	Protection of biodiversity and reduction of land use	
		Efficient and responsible use of water	

Figure 2.16: Green sustainability categories and use cases

SOCIAL				
Equality	Fairness	Human Capital Promotion	Disadvantaged & Defenceless Protection	Social Innovation
Financial & other inclusion, diversity	Market ethics	Human capital development & training	Protection of human rights	Social housing
Non-discriminat. & promotion of equality	Privacy & data security	Education about sustainability	Rights of indigenous people	
		Protection of labour rights	Animal protection	
		Health & safety		

Figure 2.17: Social sustainability categories and use cases

While directly contributing to both the green and the social dimensions has a real positive impact, there are other supporting activities that do not fit clearly into either category yet still facilitate green and social efforts.

As illustrated in Figure 2.18, these supporting activities comprise of "Transparency & Data Provision", "Analytics", and "Engagement" and enhance the decision-making process by offering data and analytical insights for sustainability assessments in the financial sector. Additionally, they may aid in achieving social and environmental objectives through engagement. Hence, these supporting activities can be helpful for achieving various environmental and social goals without directly addressing them.

SUPPORTING ACTIVITIES		
Transparency & Data Provision	Analytics	Engagement
Sustainability data	Evaluation of sust. aspects of fin. instruments	(Stakeholder) engagement
Environmental transparency and reporting	Reduction of environmental risks	
Social transparency and reporting		

Figure 2.18: Sustainability supporting activities categories and use cases

2.2.3 Market Overview of Sustainable FinTech in Switzerland

As of the end of 2022, 32 Swiss-based FinTech companies that are sustainable and meet the eligibility criteria were identified. Figure 2.19 shows the total number of sustainable FinTech companies according to their founding year.[4]

Overall, last year's study reported 4.4 percent of the total sample as sustainable FinTech companies, while this year's study already reports a share of 7.3 percent. The sustainability focus of the 32 FinTech companies in the sample as of 2022 can be divided into ten green FinTech companies, three social FinTech companies, eight social-green FinTech companies, and eleven

[4]Note that even if these were considered sustainable as per the end of 2022, this does not necessarily indicate that they have been consistently sustainable since their foundation.

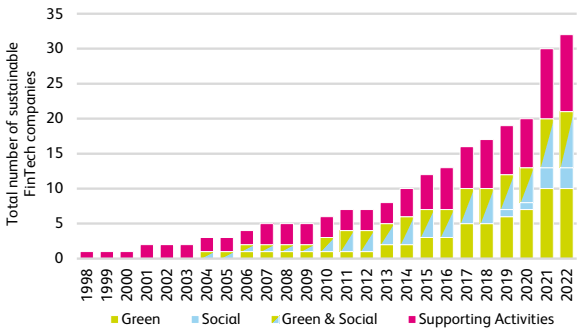

Figure 2.19: Cumulative number of sustainable FinTech company incorporations by year (n=32)

FinTech companies, which provide sustainability supporting activities.

The eleven companies in the supporting activities dimension are all active in "Transparency & Data Provision", "Analytics", or both. Currently, there is no FinTech which is active in "Engagement". Furthermore, there are another ten FinTech companies in the green dimension, which all support "Climate Change Mitigation", with six of which also active in "Natural Capital Protection", mostly because of their involvement in the energy sector. Another two green FinTech companies additionally contribute to "Pollution & Waste Reduction". There are an additional eight FinTech companies in Switzerland, which are not only contributing to the green dimension, but also to the social dimension. Most of these companies are active in investment management and are aligned with environmental and social investment objectives. One of the companies connects payment solutions with the supports of social as well as environmental projects. Currently, only three FinTech companies in Switzerland can be associated with the social dimension exclusively. Two of these are concerned with female investing and are therefore associated with the "Equality" category. One FinTech is an impact investing platform which is concerned with "Disadvantaged & Defenceless Protection" in addition to "Equality".

At this point, it should be noted that e.foresight's Swiss FinTech Map[5] offers a filter function to select all green, social, and supporting activity FinTech companies in the Swiss FinTech universe.

2.2.4 Business Focus and Technology

With a total of 21 sustainable Swiss FinTech companies, the majority operates in the *Investment Management* product area of the FinTech grid introduced in Chapter 1. Six of those offer sustainability data and analytics to investors. Five further FinTech companies offer investments in clean energy or sustainable forests, while eight are sustainable investing platforms connecting investors with suitable products based on their sustainability preferences. Two sustainable FinTech companies focus on promoting female investing. In the *Banking Infrastructure* product area, there are currently six sustainable FinTech companies, with the majority (4) providing transparency and data solutions. One supports capital raising for climate finance and one promotes sustainable Bitcoin mining. Four sustainable FinTech companies are classified into the *Payment*, and currently, there is only one in the *Deposit & Lending* area. They support the issuance of digital bonds for sustainable infrastructure development using decentralised finance. 16 of the sustainable FinTech companies are based on technologies from the *Analytics / Big Data / Artificial Intelligence* category, highlighting the ongoing demand for not only more data but also for advanced data interpretation in sustainable finance. Ten out of the total 32 sustainable FinTech companies are allocated to the *Process Digitisation / Automatisation / Robotics are technologies technology category*. The category *Distributed Ledger Technology* reveals the lowest number of sustainable FinTech companies (6).

2.2.5 Green FinTech Taxonomies

Along with the development of sustainable FinTech, different taxonomies have emerged and adapted to the continuous evolution of the space. The work of the Green Digital Finance Alliance (GDFA), which in May 2022 launched what it claims is the world's first Green FinTech taxonomy together with the Swiss Green FinTech Network (GFN), deserves special mention. It builds upon previous FinTech taxonomies and reports such as the ones by the World Economic Forum (2015b), the Financial Stability Board (2017), Ernst & Young (2019), or the Bank for International Settlements (2020). These taxonomies are intended to give green FinTech companies more visibility and help policymakers, investors, and other market players with analyses and segmentation.

The GDFA is a non-profit foundation from the United Nations Environment Programme (UNEP) and AntGroup, which was established at the WEF. Its goal is to enable sustainable change across sectors and regions and close innovation gaps. The Switzerland-based Green FinTech Network (GFN) was established in 2020 with the help of the State Secretariat for International Finance (SIF) and consists of a network of startups and experts that support the Federal Council's goal of positioning Switzerland as a global leader in digital and sustainable financial services. In 2021, GFN also published its "Green FinTech Action Plan" with 16 concrete proposals for future development in the green FinTech sector to further strengthen the link between sustainability, digital technology, and the Swiss financial centre. The corresponding taxonomy includes the following categories (GDFA & GFN, 2021):

- **Green digital payment and account solutions** are software that leverages payment data and enriches it with insights, such as the carbon footprint of each purchase a user makes.
- **Green digital investment solutions** or a green robo-advisory platform selects investments based on the preferences entered by the investor.
- **Digital ESG-data and -analytics solutions** offer a wide range of information such as automated ESG company ratings, green asset ratings, or automated carbon accounting.
- **Green digital crowdfunding and syndication platforms** offer capital raising and syndication

[5] The map is available at https://fintechmap.ch/.

whereby funds are raised in order to fund green businesses, green projects, or green transition.

- **Green digital risk analysis and InsurTech solutions** leverage AI and IoT data capabilities and satellite images to facilitate climate and nature physical risk modelling, forecasting, and scenario projections which, in turn, help underwriters understand and evaluate climate and nature-related risks and price these risks.

- **Green digital deposit and lending solutions** to finance green projects and green companies living up to green loan regulatory standards of the jurisdiction.

- **Green digital asset solutions** offering tokenisation of green assets, which involves the digital representation of real (physical) assets and of immaterial assets such as a carbon or biodiversity credit, or the issuance of traditional green asset classes in tokenised form. The category includes green security token offering (STO) platforms, which are offering tokenised security issuances to offer fractionalised green asset ownership.[6]

- **Green RegTech solutions** are used by financial service institutions for the five use cases of AML, fraud prevention, prudential reporting, ICT security, and creditworthiness assessment.

Compared to the GFN taxonomy, the present study narrows the definition of FinTech further and deliberately excludes areas such as InsurTech and RegTech.

2.2.6 Outlook

The concept of sustainable FinTech has gained significant relevance in recent years, mainly due to pressing sustainability, such as climate change. Sustainable FinTech companies aim to contribute to sustainable development by providing innovative products, services, and processes in the financial industry.

There is no definitive taxonomy for sustainable FinTech companies, however, sustainability issues can be grouped into different dimensions and categories. The study identifies 32 Swiss-based FinTech companies that meet the eligibility criteria, with a focus on the three dimensions: environmental, social, and supporting activities.

As the sustainable FinTech ecosystem continues to evolve, growth in the variety of business opportunities and a better understanding of sustainable practices in the financial industry can be expected in the future.

2.3. Sentiment Analysis of Swiss FinTech Companies

By Thomas Ankenbrand, Denis Bieri & Timon Kronenberger, Institute of Financial Services Zug IFZ

Over the years, various challenges have emerged for the Swiss FinTech sector. Monitoring their development is important not only for the sector but also, for example, for other stakeholders of the ecosystem in order to be able to positively influence the environment for the respective companies. As part of the survey for the present study, all Swiss FinTech companies were asked about the urgency of nine different challenges. Six of them are based on the survey on the access to finance of enterprises by the European Central Bank (2021). In addition, three other challenges were added, one on the impact of the Covid-19 pandemic, one on the pressure to expand internationally, and one on the pressure to operate sustainably. Specifically, the companies were asked to evaluate the nine challenges on a scale from one (not pressing) to ten (extremely pressing). The corresponding average values per challenge are visualised in Figure 2.20.

It can be seen that the two challenges related to finding customers (6.9) and the availability of skilled staff or experienced managers (6.5) are perceived as comparatively particularly strong. Difficulty in hiring and retaining staff does not only apply to FinTech companies but also to other companies from other sectors, as a survey by the SMB Group shows (SMB Group, 2022). The challenges regarding the costs of production and labour (5.6), the expansion to international markets (5.5), competition (5.4), and regulation (5.2) differ only slightly from each other in terms of urgency. Access to financing follows in the seventh position with an aver-

[6] For more information on crypto assets activities in Switzerland, see Chapter 6.

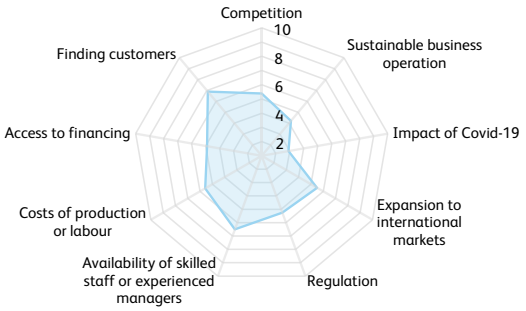

Figure 2.20: Average scores of selected challenges in the Swiss FinTech sector (n=163)

age value of 4.9. The challenge of sustainable business operations (4.2) is rated as the second least pressing, followed by the impact of Covid-19 (2.9), which reveals the lowest level of urgency.

The year-over-year change in the average values of eight of the nine challenges is presented in Figure 2.22.[7] It reveals that there has been a comparably larger increase in urgency with regard to two challenges. In particular, access to financing has increased the most (+17 %) in urgency, followed by the challenge related to finding customers (+8 %). The largest decrease is evident in the impact of Covid-19. The average value of said challenge decreased by 28 percent year-over-year, indicating that the pandemic has lost significant relevance for the Swiss FinTech sector in 2022. The remaining five challenges in Figure 2.22 have not changed substantially in their urgency.

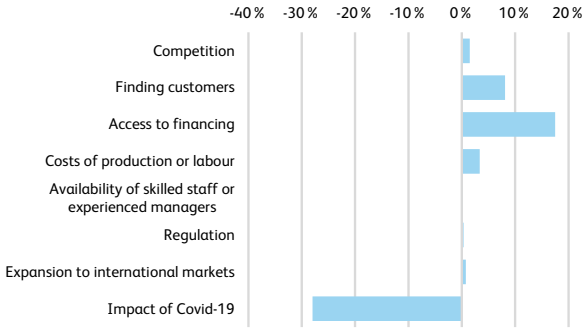

Figure 2.22: Year-over-year change in average values of selected challenges in the Swiss FinTech sector (n=163)

Figure 2.21 highlights that perceptions of some challenges vary across product areas and technology categories. The left-hand graph reveals that the largest

[7] As the challenge related to sustainable business operation was not assessed in 2021, no change compared to the previous year can be calculated. Therefore, this challenge is not included in Figure 2.22.

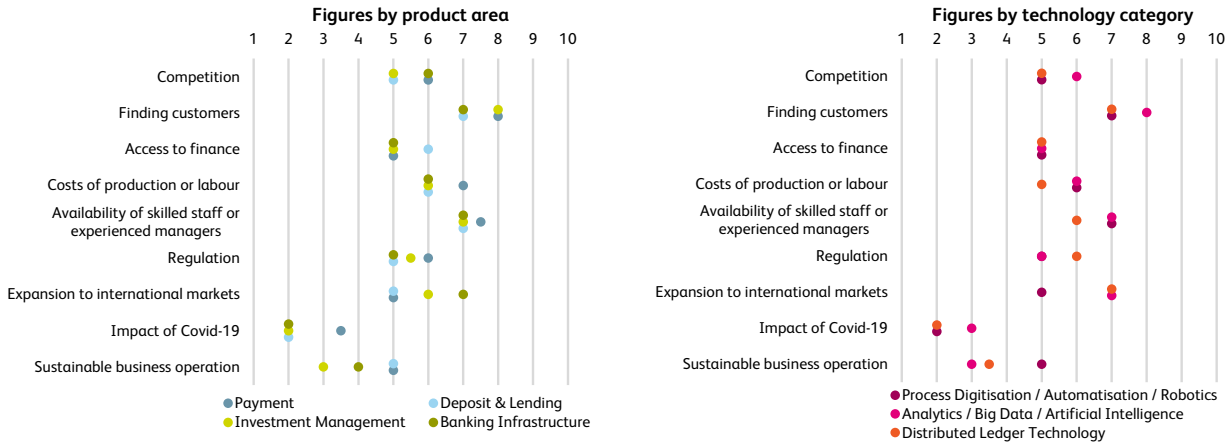

Figure 2.21: Median values of selected challenges in the Swiss FinTech sector by product area (left-hand graph) and technology category (right-hand graph) (n=163)

discrepancy of two points in the median values is observed for the challenges related to the expansion to international markets and sustainable business operations. The former is more urgent for companies in the *Banking Infrastructure* area, compared to the *Payment* and *Deposits & Lending* areas. However, companies from these two latter areas perceive the challenge regarding sustainable business operations most urgently, while companies from *Investment Management* perceive it as comparatively less pressing.

The right-hand graph of Figure 2.21 takes the technology perspective, with the same two challenges showing the greatest discrepancy. International expansion is perceived as more urgent by companies that use technological concepts from the categories *Analytics / Big Data / Artificial Intelligence* and *Distributed Ledger Technology* than by companies in the *Process Digitisation / Automatisation / Robotics* category. The reverse holds true for the challenge regarding sustainable business operations.

3. Global FinTech Companies

By Moreno Frigg & Timon Kronenberger, Institute of Financial Services Zug IFZ

This chapter gives a summary of the top FinTech companies worldwide. The companies are evaluated based on their business model, year of founding, headquarters location, and main target markets. Additionally, the leading global FinTech companies are compared to the Swiss FinTech sector described in Chapter 2 to discern any potential distinctions.

In order to identify the preeminent FinTech companies on a global scale, the rankings from the two data providers CBInsights (2022a) and Crunchbase (2022) are combined, as both rankings strive to showcase such international companies. This methodology is consistent with previous years' editions of this study, thus enabling a comparison.

The two rankings mentioned use distinct methods to determine these FinTech companies. CBInsights employs a methodology to select the top 250 FinTech companies from a pool of over 12,500 companies. The selected companies are chosen based on various factors such as the proprietary Mosaic scores[1], financing, market potential, business relationships, investor profile, news sentiment analysis, competitive landscape, team strength, and technical novelty (CB Insights, 2022a). In contrast to CBInsights' annual ranking, Crunchbase's ranking is constantly updated and is based on the "Crunchbase Rank". This ranking is determined by an algorithm that considers various factors, such as a company's connections on the Crunchbase platform, its engagement with the platform community, and information related to funding, articles, and acquisitions. The analysis in this chapter is based on all companies that are among the top 250 ranked FinTech companies in each of these two rankings as of November 9, 2022.

Prior to analysing the sample, three data-cleaning procedures were conducted. In the first step, the sample of 500 collected entries was examined for duplicates. A total of 33 entries were removed, representing a decrease of 55 companies compared to the previous year's analysis and indicating a potential decrease in the heterogeneity of these rankings. Whilst the number of duplicate entries is rather small, a possible explanation for these duplications may be that the two data providers employ different inputs and methodologies to identify leading FinTech companies or that there is no universally accepted definition of the term "FinTech". In the second step, 26 companies whose focus lies on insurance and three companies operating as private equity or venture capital funds were removed. Finally, eight companies no longer active were removed from the sample, resulting in a final sample of 430 global FinTech companies. Note that although some companies were eliminated due to their business model (i.e., private equity and venture capital firms), this does not necessarily mean that all remaining companies meet all aspects of the definition of "FinTech" outlined in Chapter 1.

After the data cleansing process, selected information was collected based on publicly available data that allows analysing the respective business models. More precisely, it enables to assign each company to the FinTech grid presented in Chapter 1, to derive the customer segments they serve and the countries where the companies are headquartered. In line with the analysis of Swiss-based FinTech companies in Chapter 2, each company was assigned to one of the four FinTech product areas, i.e., *Payment*, *Deposit & Lending*, *Investment Management*, or *Banking Infrastructure*, and to one of the four technology categories, i.e., *Process Digitisation / Automatisation / Robotics*, *Analytics / Big Data / Ar-*

[1] These scores are determined by a machine learning algorithm which takes, besides traditional data, also unstructured and semi-structured data into account and intends to measure the overall health and growth potential of a company (CB Insights, online).

tificial Intelligence, *Distributed Ledger Technology*, or *Quantum Computing*. In addition, a distinction was made between business (B2B), individual (B2C) customers, and a combination of both. Finally, a breakdown of the geographic focus of a company in the domestic or international market was made.[2]

Figure 3.1 positions the 430 identified leading FinTech companies worldwide in the FinTech grid. The classification shows that with 45 percent (192 companies), most companies belong to the product area *Banking Infrastructure*, followed by *Payment* with 24 percent (104 companies) and *Deposit & Lending* with 16 percent (71 companies). The proportion of companies engaged in *Investment Management* amounts to 15 percent (63 companies). With regard to the technologies used by the companies, the majority relies on comparatively mature concepts from the category *Process Digitalisation / Automatisation / Robotics* (68 %; 294 companies). 16 percent respectively (68 companies) specialise in technologies from the *Analytics / Big Data / Artificial Intelligence* and *Distributed Ledger Technology* category. As in last year's study, no company is represented in the *Quantum Computing* technology category.

A detailed analysis of the intersections of product areas and technology categories in Figure 3.1 reveals that the largest number of companies (25 %; 109 companies) is assigned to the product area *Banking Infrastructure* in combination with the technology category *Process Digitisation / Automatisation / Robotics*. A second large cluster (20 %; 88 companies) is found in the intersection of *Payment* and *Process Digitisation / Automatisation / Robotics*. This is followed by 13 percent (58 companies) of companies operating in the *Deposit*

[2]Note that if a company serves customers internationally, it is assumed that it also serves its domestic market.

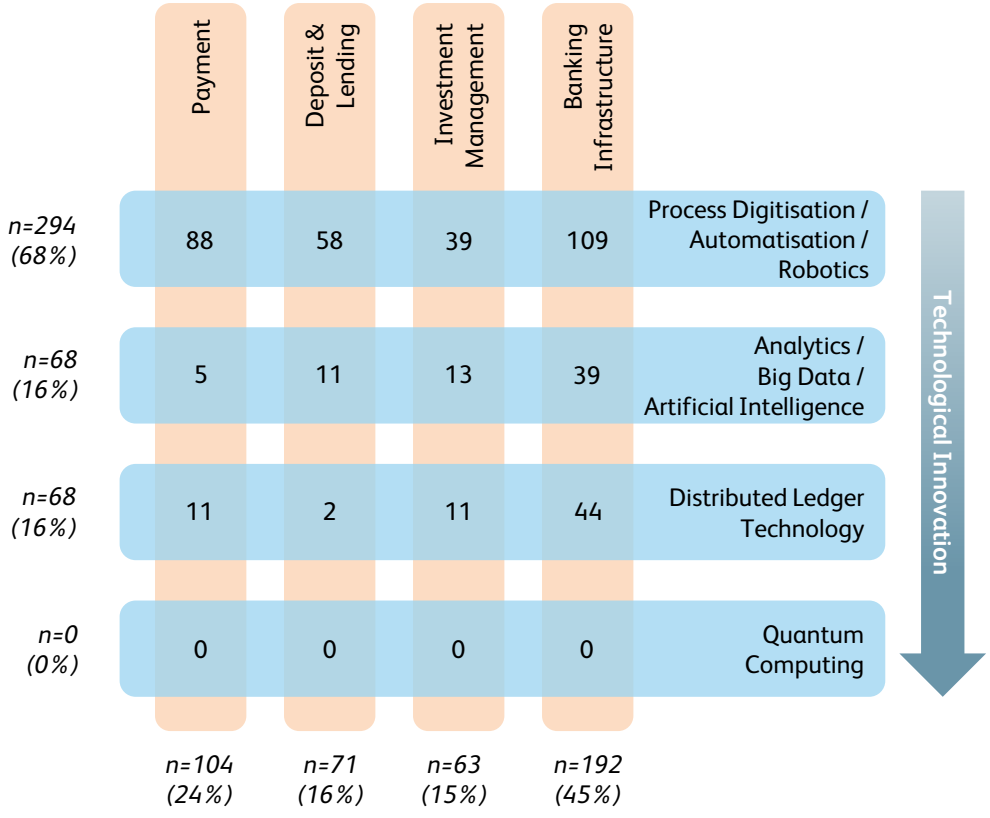

Figure 3.1: Distribution of globally leading FinTech companies according to the FinTech grid (n=430)

& Lending area using concepts from the *Process Digitisation / Automatisation / Robotics* category. The three most common combinations for global FinTech leaders have not changed during the last two years.

Comparing the results of Figure 3.1 with the analogous classification of the Swiss FinTech sector in Figure 2.7, it becomes evident that Swiss FinTech companies are significantly more active in the product area of *Investment Management*, while their presence in the *Banking Infrastructure* area is notably lower. This could be due to Switzerland's reputation as one of the world's leading locations for investment management, particularly wealth management, making the location attractive for FinTech companies in that area. From a technological perspective, Swiss FinTech companies tend to rely more heavily on relatively innovative concepts in the categories of *Analytics / Big Data / Artificial Intelligence* and *Distributed Ledger Technology* than globally leading FinTech companies. The concentration of companies in the latter technology category may be due to the emergence of the "Crypto Valley", which has developed in and around the canton of Zug in recent years. For global FinTech companies, the focus is on the *Process Digitisation / Automatisation / Robotics* technology category. It is also noteworthy that neither a Swiss FinTech company nor a globally leading FinTech company currently applies quantum computing. To some extent, this may be due to the still immature nature of the technology.

Figure 3.2 illustrates the number of company foundations per year of the sample companies. Prior to the year 2000, ten company foundations were recorded. From 2000 to 2007, the number fluctuated at a low level with no clear trend. However, from 2007 to 2012, there was a steady increase from eight to 32 companies. The year 2013 shows a slight stagnation in the strong growth seen in the previous years. From 2014 to 2018, there was a notable high number of company foundations, peaking in 2015 with a total of 47. Although the number of company foundations is substantial during this period, it is evident that it decreases steadily to twelve companies in 2021. Only two of the identified leading global FinTech companies were founded in 2022. A decline in company foundations in the last years of the observation period is expected, as the rankings aim to identify industry leaders who typically need to be active in the industry for several years before achieving such a status.

By analysing the number of company foundations by year with regard to the product areas (left-hand graph) it can be observed that the highest values of company foundations vary in the different areas. While the num-

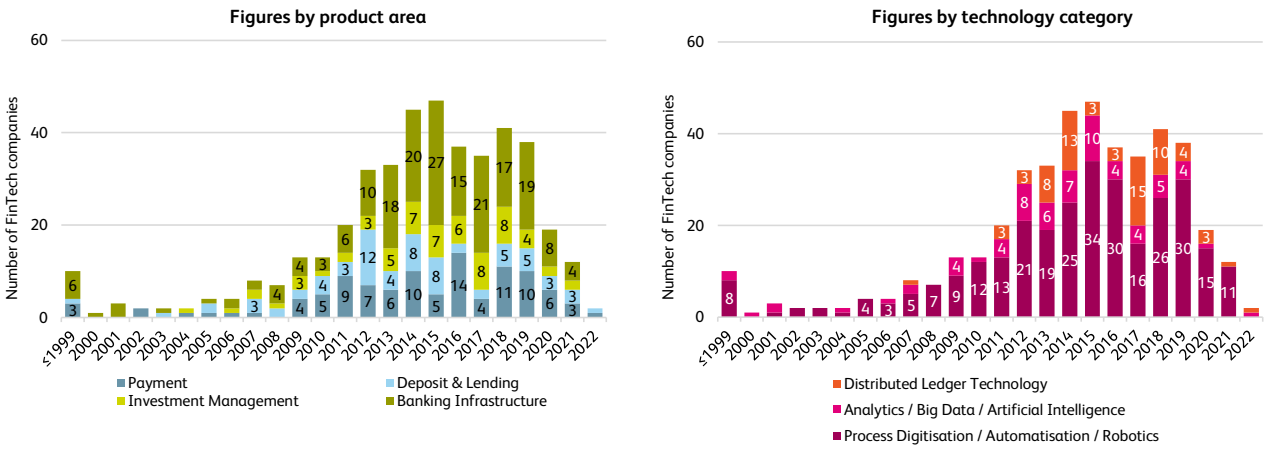

Figure 3.2: Number of globally leading FinTech company incorporations per year by product area (left-hand graph) and technology category (right-hand graph) (n=430)

ber of company foundations in *Payment* is highest in 2016 with 14 companies, for *Investment Management*, the top is reached in 2017 and 2018 with eight companies each. For *Deposit & Lending*, a peak can be observed in 2012 with twelve companies, followed by 2014 and 2015 with eight companies each. Finally, the area of *Banking Infrastructure* is usually leading in the respective years and reached a peak in 2015 with 27 companies. With regard to the technology categories (right-hand graph), two main findings emerge. First, the increase of companies in the *Distributed Ledger Technology* category in 2017 is evident, accounting for 43 percent of all companies founded in said year. The total number of companies using said technology, however, amounts to only 16 percent. Second, the *Process Digitisation / Automatisation / Robotics* category is leading in terms of company foundations throughout the sample period.

No significant changes are observed when comparing these findings with the ones from last year's edition of this study.[3] Since 57 more companies were included in the research compared to last year's study, by definition, the absolute numbers have increased. However, the distribution of the categories did not substantially change.

The distribution of the headquarters of the world's leading FinTech companies is shown in Figure 3.3. As in last year's study, the high proportion of companies headquartered in the United States is striking (53 %[4]; 227 companies). It should be noted, however, that this high proportion may be due to a home bias, as this analysis is based on the rankings of two data providers, CBInsights and Crunchbase, both of which are headquartered in the United States. The United States is followed by the United Kingdom with 50 companies (12 %) and India with 33 companies (8 %). The order of the first three countries is the same as in last year's evaluation. Singapore and Germany follow with 15 and ten companies (3 % and 2 %), respectively. Switzerland, France, and Israel rank next with eight companies each (2 %). Canada and Brazil complete the graph with seven and six companies (2 % and 1 %), respectively. The number of the world's leading FinTech companies from other countries, which are grouped together as "Others", amounts to 13 percent (58 companies).

Considering the countries of the headquarters in combination with the product areas (left-hand graph), fur-

[3] The absolute numbers of the individual product areas and technology categories have changed between zero and two percent.

[4] The percentages are rounded to integers.

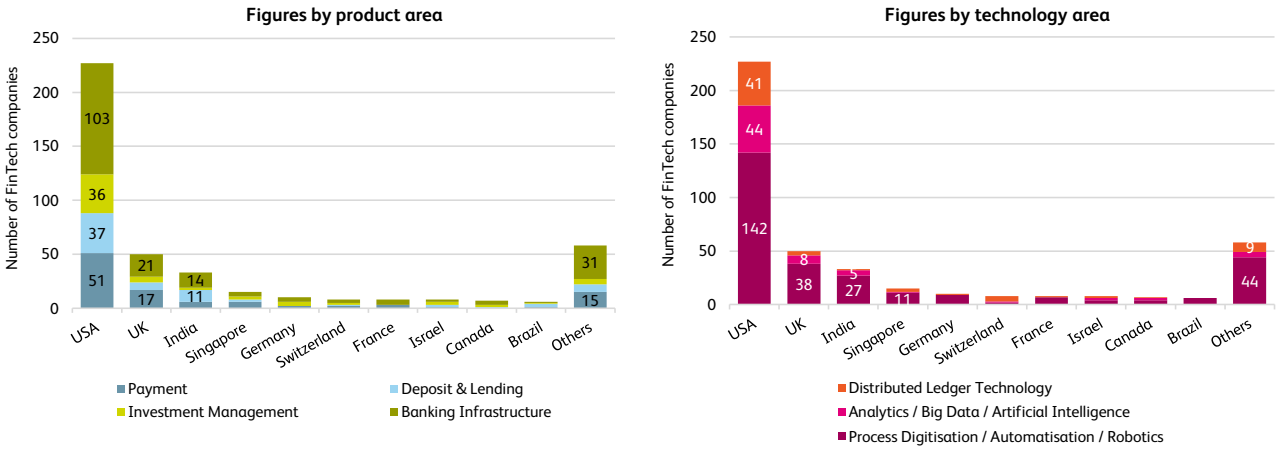

Figure 3.3: Number of globally leading FinTech companies by country of headquarters, by product area (left-hand graph), and technology category (right-hand graph) (n=430)

ther insights emerge. For the three largest FinTech hubs observed (in terms of the number of companies), the distribution varies with regard to the product areas. While the one for the United States seems to be in line with the entire sample, deviations can be observed for the United Kingdom and India. With regard to the United Kingdom, companies engaged in *Payment* are slightly over-represented, while the areas *Deposit & Lending* and *Investment Management* are under-represented. For India, the proportion of companies in *Payment* is similar as in the whole sample, but in *Deposit & Lending*, the relative number of companies is twice as large. Consequently, *Investment Management* and *Banking Infrastructure* are both under-represented. When analysing the combination of the headquarters of the world's leading FinTech companies with the technology used, it is noticeable that the United States hosts as many companies from the *Distributed Ledger Technology* category as can be expected from the global distribution. In contrast, only eight percent of the companies in the United Kingdom and three percent in India apply concepts of this technology, compared to the 14 percent in the entire sample. Finally, of the eight identified companies from Switzerland, five are assigned to the *Distributed Ledger Technology* category, two to the *Process Digitisation / Automatisation / Robotics* category, and one to the *Analytics / Big Data / Artificial Intelligence* category.

Compared to last year, some of the countries represented in the top ten have changed. While, as already mentioned, the United States, the United Kingdom, and India remain at the top, Singapore has gained two, and Canada has lost five places. Brazil also dropped a few places (from 7th to 10th). Switzerland (from 8th to 6th) and France (from 9th to 7th), in contrast, have shifted up two places, and Germany consolidated its fifth place. Moreover, last year's edition included Mexico in the top ten countries, which has been replaced by Israel in this year's edition.

Figure 3.4 depicts the distribution of customer segments served by the identified globally leading FinTech companies. Overall, two-thirds of the companies serve international customers and one-third focus on the domestic market. Distinguishing between business customers (B2B), private individuals (B2C), and a combination of both shows that 55 percent target business customers, while 22 percent focus on private individuals. A combination of both segments is served by the remaining 23 percent of companies. A more detailed analysis of the customer segments reveals that most of the companies in the sample (41 %) focus on business customers in a cross-border context. This is followed

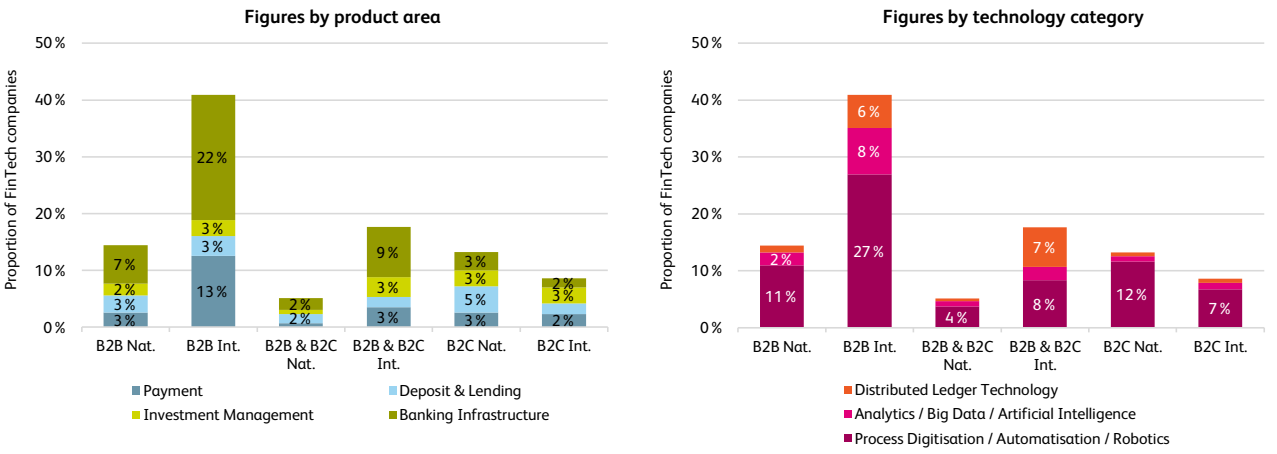

Figure 3.4: Proportion of leading FinTech companies by customer segments, by product area (left-hand graph), and technology category (right-hand graph) (n=430)

by 18 percent of companies targeting both business and private customers abroad and 15 percent serving business customers in their home market. In addition, 14 percent of companies focus on private individuals in their home market and nine percent on retail clients abroad. Finally, companies serving a combination of domestic business and private customers account for five percent.

When analysing technology categories in combination with customer segments (right-hand graph), the large proportion from the *Distributed Ledger Technology* category that serves both business customers and private individuals internationally is striking. This share can be explained by the functionality of the technology, as public blockchain networks are typically accessible to everyone. However, there are also two companies in the sample that use the said technology but focus exclusively on the domestic market. Such a restriction of business activity to the domestic market may, in some cases, be related to regulatory requirements, for example.

The findings from the examination of the consumer segments for the leading FinTech companies globally are similar to those from last year's examination. A majority of companies provide services to business clients in an international setting. In comparison to the previous year's study, the individual segments only fluctuated by a maximum of two percentage points. The only variation is an increase of four percentage points in the proportion of firms catering to domestic business clients.

An examination of Figure 3.4 in conjunction with the business model of Swiss FinTech firms suggests that global leaders place more emphasis on their domestic market. This may be due to the size of the domestic market, as Figure 3.3 indicates that the majority of leading FinTech companies are based in the United States, the United Kingdom, and India, and therefore have a larger domestic market than Swiss FinTech companies. In terms of clientele, it can be stated that Swiss and leading global FinTech companies primarily serve business clients.

In summary, the majority of the world's 430 leading FinTech firms are mostly engaged in the *Banking Infrastructure* product area. In terms of technologies employed, over two-thirds fall under the category of *Process Digitisation / Automatisation / Robotics*. Analysing the companies by their year of establishment reveals that most were founded in 2015, with a decline in foundations following this peak. The United States is home to the majority of leading FinTech companies. In addition, most companies serve business clients on an international level. Compared to Swiss FinTech firms, they tend to use less advanced technologies and focus stronger on solutions in the *Banking Infrastructure* product area. Additionally, they have a higher proportion of companies that only serve their domestic market than Swiss FinTech companies.

4. FinTech Hub Ranking

By Thomas Ankenbrand & Denis Bieri, Institute of Financial Services Zug IFZ

In order to evaluate the attractiveness of different locations for FinTech companies as well as possible shifts in their competitiveness, the seventh edition of the FinTech hub ranking is presented in this chapter. One of the core findings of the past rankings was that Switzerland offers good framework conditions for the FinTech sector. The FinTech hub ranking presented in the following can help to monitor developments in the framework conditions for FinTech companies and thus enables the identification of weaknesses and appropriate correction in order to maintain competitiveness in the long term.

4.1. FinTech Hub Ranking

The FinTech hub ranking is an evaluation of the attractiveness of 35 different locations for FinTech companies. The focus is on evaluating these locations against the four different dimensions of the PEST framework, i.e., the political/legal, economic, social, and technological dimension, which provides a structured assessment of the environmental factors that influence an industry. The performance of a location in the individual dimensions is carried out on the basis of publicly available indicators. Compared to last year's assessment, the composition of these indicators has changed slightly, as some of them are no longer updated and would therefore show an outdated picture of the actual attractiveness of a location. Specifically, all indicators that had not been updated for more than two years were excluded and, where possible, replaced with a new indicator that measured a similar metric to the excluded one. In contrast, indicators that have not been updated but are not older than two years have been left in the ranking.

Specifically, exclusion, lack of update without exclusion, and new inclusion refer to the following indicators:

- **Exclusions** (older than two years): *Global Cities Competitiveness Index* (economic), *Ease of Paying Taxes Index* (political/legal), *FinTech Adoption Index* (economic), *Global Entrepreneurship Index* (economic), *Global Skills Index*, *ICTS and New Organizational Model Creation Index* (technological).

- **No update** (not older than two years): *Expat Ranking* (social), *Global Cities Index* (social), *Human Capital Index* (social), *Infrastructure Quality Index* (social).

- **Inclusions**: *Economic Competitiveness Index* (economic), *Entrepreneurship Policies and Culture* (economic), *Network Readiness Index* (economic), *Digital Skills Index* (social), *GitHub Commits* (technological).

In total, the ranking takes into account 73 different indicators. Of these, eleven are at the city level and 62 at the country level. This means that although the hub ranking is conducted at the city level, the majority of the indicators measure the performance of an entire country. As a consequence, locations in the same country typically tend to show very similar performance in the FinTech hub ranking.

Deriving the performance of the 35 cities considered in this year's ranking and calculating their overall scores requires the following methodological steps:

Step 1: Each of the 73 performance indicators is classified according to its affiliation with one of the four PEST dimensions.[1]

Step 2: For each indicator, an individual ranking of all 35 in-scope cities is created, resulting in 35 individual scores ranging from 1, the worst-performing city, to 35, the best-performing

[1] The list of all indicators, their sources, and their affiliation to one of the PEST dimensions can be found in the Appendix.

city. Missing values are replaced by the average rank of all available indicators of the corresponding city in the respective PEST dimension.

Step 3: For each of the four PEST dimensions, a sub-ranking score is calculated for each city under investigation by taking the average of the associated indicator rankings. This score is bound between 1 (when a city performs worst on each indicator) and 35 (when a city performs best on each indicator).

Step 4: The total score for each city in the hub ranking is obtained by aggregating its subscores for the PEST dimensions from step 3. As a consequence, the total score for each city is bound between 4 and 140.

The final FinTech hub ranking is shown in Figure 4.1. As in previous editions of the ranking, Singapore takes the leading position. The city-state is followed by the two Swiss cities, Zurich and Geneva, on positions two and three, respectively. Compared to last year's ranking, Geneva overtakes Stockholm, which now occupies the fourth place. The top ten is completed by New York City, San Francisco, Amsterdam, London, Hong Kong, and Toronto. The biggest improvement in the top ten can be attributed to San Francisco, which gained two places compared to last year.

In general, the total scores in Figure 4.1 show that there are multiple city clusters in the top ten. The first cluster is Singapore alone, which has a clear lead over the pursuing cities. A second group is formed by the two Swiss cities of Geneva and Zurich, as well as Stockholm, all of which show very similar performances. A third group includes New York City, San Francisco, Amsterdam, and London. For their part, Hong Kong and Toronto form a group with several other cities outside the top ten. The relatively similar results of the cities within a group thus

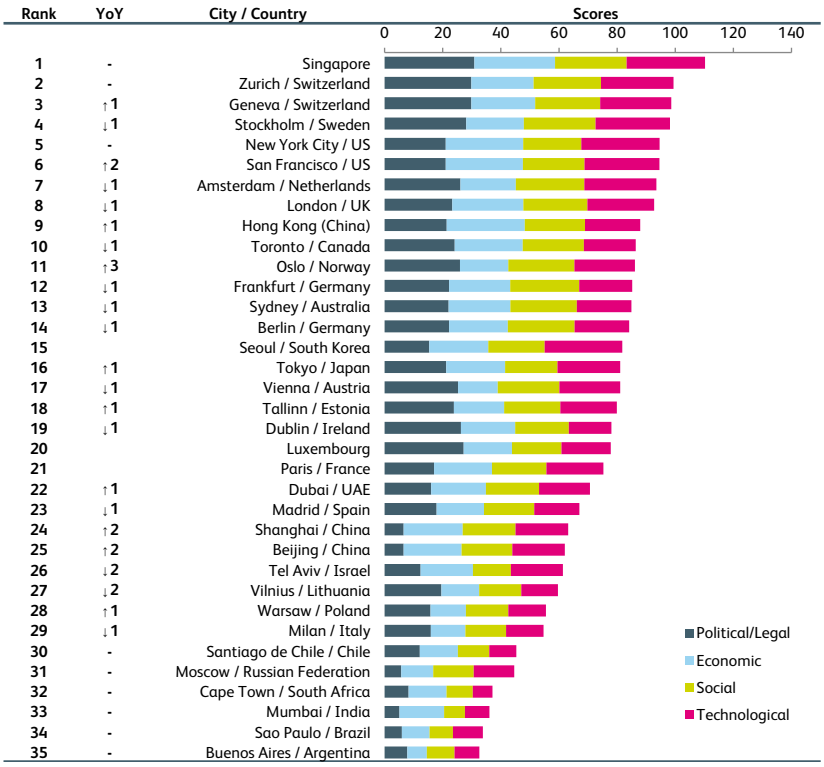

Figure 4.1: FinTech hub ranking

show that changes in position within a group should be interpreted with caution.

The changes in the position of this year's top ten across all editions of the FinTech hub ranking are shown in Figure 4.2.

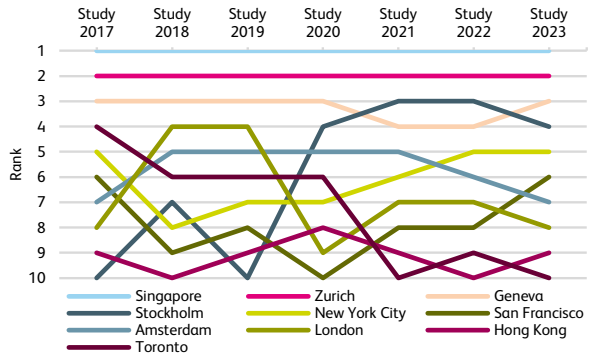

Figure 4.2: FinTech hub ranking by year

The figure reveals that Singapore and Zurich have been consistently in the top two positions since the first ranking in 2017. It also shows that this year, Geneva has regained the third place it lost to Stockholm in 2021, which was still in tenth place in the first ranking. In more recent years, New York City and San Francisco can be seen as winners alongside Stockholm, while Toronto, in particular, has been steadily losing ground. Comparing this year's ranking with the first one from 2017, only two cities have changed positions. While Stockholm gained six ranks, Toronto lost six ranks. Note that in the intermediate years, however, there is considerable variation in the ranking.

The rankings of the individual PEST dimensions of this year's top ten are shown in Table 4.1, with the change in ranking compared to the first FinTech hub ranking of 2017 in brackets. Again, it becomes clear that Singapore takes the leading role, with the exception of the social dimension, in which Stockholm takes first place. Singapore is followed by Geneva and Zurich from a political/legal perspective, Hong Kong from an economic perspective, and New York City from a technological perspective. Compared to the first ranking in 2017, the biggest deterioration is recorded for Hong Kong in the political/legal dimension, where it lost twelve places, followed by Toronto, which dropped ten places in the social dimension. Singapore and Stockholm, by contrast, show the greatest improvements in the social dimension, with an advance of eight and six places, respectively.

From a Swiss perspective, the political/legal environment appears to be very favourable for FinTech companies. The greatest potential for improvement for Zurich is in the economic dimension, where it ranks eighth, and for Geneva, in the social dimension, where it ranks ninth. In general, the social dimension is the one in

	Rank (change since 2017)			
City (overall change)	**Political/Legal**	**Economic**	**Social**	**Technological**
Singapore (±0)	1 (±0)	1 (↑3)	2 (↑8)	1 (↑1)
Zurich (±0)	2 (±0)	8 (↓1)	5 (↓4)	6 (↑3)
Geneva (±0)	2 (±0)	7 (↑1)	9 (↓7)	8 (↑2)
Stockholm (↑6)	4 (↑3)	17 (↓1)	1 (↑6)	5 (↑1)
New York City (±0)	18 (↓3)	3 (↓1)	15 (↓7)	2 (↑3)
San Francisco (±0)	18 (↓3)	4 (↑1)	12 (↓9)	4 (↓1)
Amsterdam (±0)	7 (±0)	18 (↓5)	4 (↑1)	7 (↓4)
London (±0)	12 (↓3)	5 (↑1)	10 (↑3)	9 (↓2)
Hong Kong (±0)	16 (↓12)	2 (↓1)	14 (↑1)	15 (↑2)
Toronto (↓6)	10 (↓5)	6 (↓3)	13 (↓10)	22 (↓7)

Table 4.1: PEST-dimension rankings and changes since 2017

which the two Swiss cities have deteriorated the most compared to the first ranking in the year 2017. By contrast, the greatest improvement for both cities is recorded in the technological dimension.

At the level of indicators, it can be seen that Swiss cities have the greatest strengths in the political/legal dimension in terms of the lack of restrictions on financial services, while visa restrictions are the greatest weakness. From an economic perspective, the high purchasing power and the relatively large domestic stock market are among the strengths, while the high wage level can be seen as a disadvantage from a business perspective. From a social point of view, the high quality of the workforce and the environment for talent are an advantage of Zurich and Geneva, but the high costs of living have a negative impact on their attractiveness. Finally, an evaluation of the technological indicators shows that Swiss cities import comparatively few telecommunications, computer, and information services, but the use of such services by the population is comparably high. In addition, Switzerland seems to offer a favourable environment for the registration of patents and the protection of intellectual property.

4.2. Input and Output Comparison

While the FinTech hub ranking assesses the quality of the environment for FinTech companies in different locations, it does not consider the actual output of the industry. In this section, the performance of the FinTech sector in different locations is measured by the following three indicators:

1. Number of FinTech companies by location per capita.

2. Number of jobs in FinTech companies by location per capita.

3. Total funding of FinTech companies by location per capita.

The corresponding data is provided by Crunchbase (2022) and collected at the country level. As a result, the number of locations considered shrinks from 35 cities in the FinTech hub ranking to 31 countries, as China, Germany, Switzerland, and the United States are represented by two cities in the ranking in Section 4.1. A total of 17,724 FinTech companies are counted in the 31 countries considered, employing a total of 2,423,062 people and with a total financing volume of USD 410 billion.

For each of the three output indicators, an individual ranking of the 31 countries studied is compiled, with the best country being assigned a value of 31 and the worst a value of one. The total output score for each country is then derived by adding up its indicator ranks. As a consequence, the output score is bound between three and 93.

Table 4.2 lists the top ten countries as assessed by the output score, in addition to the countries' indicator subrankings. As in the FinTech hub ranking in Section 4.1, Singapore takes the lead, followed by Luxembourg and Estonia in positions two and three, respectively. A year-over-year comparison reveals that both Luxembourg and Estonia have gained ranks and hence have increased their FinTech-related output relatively stronger than other countries. Hong Kong and the United Kingdom complete the top five. The sixth place is occupied by the two countries Israel and Switzerland, both achieving an identical output score. While the former lost three places year-over-year, the latter improved in the rankings by the same amount. The United Arab Emirates, which improved the most in a year-over-year comparison, and Canada are ranked in positions eight and nine, while Ireland, Sweden, and the United States share the tenth place. From a regional perspective, Table 4.2 shows that of the top ten ranks, six locations are from Europe, four are from Asia, and two are from North America.

Among the subindicators, Estonia takes the lead in the number of FinTech companies and FinTech jobs per capita, while funding per capita is highest in Singapore. In fourth place, Switzerland achieves the highest subranking in terms of the number of FinTech companies per capita, while it has the eighth-highest amount of

	Subrankings				
Location	**FinTechs per capita**	**Jobs per capita**	**Funding per capita**	**Output score**	**Total rank (YoY)**
Singapore	2	3	1	90	**1** (–)
Luxembourg	3	2	6	85	**2** (↑3)
Estonia	1	1	12	82	**3** (↑2)
Hong Kong	5	6	5	80	**4** (↓2)
United Kingdom	7	10	2	77	**5** (↓1)
Israel	6	8	7	75	**6** (↓3)
Switzerland	4	9	8	75	**6** (↑3)
United Arab Emirates	10	4	9	73	**8** (↑6)
Canada	11	7	10	68	**9** (↓2)
Ireland	9	5	15	67	**10** (↓1)
Sweden	14	12	3	67	**10** (↑1)
United States	12	13	4	67	**10** (↓2)

Table 4.2: Top ten countries of the output ranking

FinTech funding per capita and the ninth-highest number of FinTech jobs per capita.

To assess the average relationship between the quality of the surrounding factors and the size of a FinTech sector, the average linear relationship between the input and output scores of the in-scope countries is estimated using a random effects model.[2] The output score is considered as the dependent variable, and the input score[3] as the independent variable. Unlike a pooled regression, the random effects model assumes that the input score has a fixed relationship with the output score across all observations but that these fixed effects may vary from one country to another.[4] The results of the random effects model are given in Table 4.3. It shows that, after allowing for country-specific effects, there is a significant linear relationship at the 95 percent significance level between a country's input score and its output score. Thus, a higher quality of a location's surrounding factors tends to be associated with a relatively larger FinTech sector. It should be noted, however, that no causal chains can be derived from this, as no lead-lag effects are included in the model.

	Dependent variable:
	Output
Input	0.538**
	(0.122)
Constant	8.766
	(9.551)
Observations	120
R^2	0.141
Adjusted R^2	0.134
F Statistic	19.390***
Note:	HC standard errors are used; *p<0.1; **p<0.05; ***p<0.01

Table 4.3: Random effects model estimation

As there is a statistically significant linear relationship between the quality of the environment and the relative size of a country's FinTech sector, identifying po-

[2] Note that according to the Hausman test, the random effects model is preferable to a fixed effects model.

[3] For the countries China, Germany, Switzerland, and the United States, which are represented by more than one city in the FinTech hub ranking in Section 4.1, the average of the input scores of the respective cities is used as a proxy for the country value.

[4] Note that according to the Breusch-Pagan testing procedure, there are only significant country-specific effects but no time effects.

Political/Legal		
Indicator	**Correlation**	**Leading Location(s)**
Regulatory Quality	0.78	Singapore
Corruption Perception	0.72	Norway, Singapore, Sweden
Financial Restrictions	0.70	Australia, Switzerland

Economic		
Indicator	**Correlation**	**Leading Location(s)**
Venture Capital Deals	0.92	Hong Kong, Israel, Luxembourg, Singapore
Joint Venture Deals	0.80	Canada
Starting a Business	0.62	Canada

Social		
Indicator	**Correlation**	**Leading Location(s)**
Tertiary-Level Inbound Mobility	0.74	Luxembourg, United Arab Emirates
Talent Competitiveness	0.69	Singapore, Switzerland
Digital Skills	0.68	Singapore

Technological		
Indicator	**Correlation**	**Leading Location(s)**
GitHub Commits	0.79	Hong Kong, Singapore
Mobile App Creation	0.60	Israel
Digital Competitiveness	0.60	United States

Table 4.4: Correlations between the output rank and individual input indicators

tential influencing factors could be of interest to stakeholders such as policymakers. One approach to this is to calculate correlation values of the indicators underlying the FinTech hub ranking in Section 4.1 and the (inverse[5]) output rank in Table 4.2.

Table 4.4 reveals the three indicators with the highest correlation with the output ranking for each PEST dimension, along with the leading locations. With regard to the political/legal environment, the quality of a location's regulation shows the greatest correlation with the sector's output (correlation coefficient of 0.78). The second and third-largest correlation indicators in the political/legal dimension are corruption perception (0.72) and financial restrictions (0.70). Hence, locations with low perceived corruption and only little restrictions for financial services tend to have more sizeable FinTech sectors in relative terms.

In the economic dimension, the three most correlating indicators are venture capital (0.92) and joint venture-activity (0.80), as well as the ease of starting a business (0.62), with the former two revealing the largest correlation coefficients of all indicators.

From a social perspective, the tertiary-level inbound mobility (0.74), i.e., the number of students from abroad studying in a given location, the competitiveness of the talent pool (0.69), and the digital skill level of a population (0.68) reveal the highest correlation with the output rank.

With regard to the technological environment, the indicators correlating the largest with the output performance of a location are GitHub activity (0.79), mobile app creation (0.60), and the digital competitiveness of a location (0.60).

An assessment of the leading countries of the twelve indicators mentioned yields that Singapore takes the leading position in six indicators, followed by Canada, Hong Kong, Israel, Luxembourg, and Switzerland (2 indicators), and Australia, Norway, Sweden, the United Arab Emirates, and the United States (1 indicator).

[5] We use the inverse output rank because, unlike the individual input scores, it measures performance in ascending order in its original form (i.e., the first rank for the country with the largest relative FinTech output). This results in positive and, therefore, more logically interpretable correlation coefficients if the country ranking for one of the indicators is highly similar to the output ranking.

5. Political and Legal Environment

By Daniel Haeberli & Alexander Wherlock, Attorneys-at-Law, Homburger AG

FinTech companies, which are domiciled in Switzerland or approach Swiss-based clients, need to analyse financial market regulation, in order to determine whether their activities trigger regulatory requirements under the applicable Swiss regulatory framework. Switzerland's[1] regulatory[2] framework governing activities of FinTech companies consists of various federal laws and implementing ordinances. This subchapter outlines the key elements of the relevant Swiss financial market regulations.

- The *first part* provides an overview of the Financial Services Act (Section 5.1.1) and the Financial Institutions Act (Section 5.1.2), governing the provision of financial services, offering financial instruments and the respective licensing requirements in Switzerland
- The *second part* then discusses Switzerland's FinTech specific regulation (Section 5.2.1) as well as select federal laws, which may apply to FinTech related activities (Section 5.2.2).
- Finally, the *third part* outlines the *FINMA* categorisation of tokens (Section 5.3.1) and summarises the cornerstones of the Swiss DLT Law, which entered into force in 2021 (Section 5.3.2).

5.1. Swiss Financial Market Architecture – FinSA and FinIA

The Financial Services Act ("FinSA") sets out the supervisory framework governing the provision of financial services and the offering of financial instruments in Switzerland. The Financial Institutions Act ("FinIA") provides for a comprehensive supervisory licensing regime applicable to portfolio managers, trustees, managers of collective investment schemes, fund management companies and securities firms.

FinSA and FinIA apply to both "traditional" financial service providers and FinTech companies. For FinTech companies, in particular the following elements of the Swiss supervisory framework may be of relevance:

- The provision of portfolio management or investment advice may trigger requirements to comply with rules of conduct (Section 5.1.1.2.2) or organisational rules (Section 5.1.1.2.3) under FinSA, even if such services are provided into Switzerland on a strict cross-border basis. In addition, the performance of portfolio management activities may trigger licensing requirements under FinIA (Section 5.1.2).
- Companies trying to obtain funding in Switzerland through the issuance of (tokenised) equity rights and/or bonds may need to comply with the prospectus regime set out under FinSA (Section 5.1.1.2.6).

5.1.1 Financial Services Act (FinSA)

With regard to FinSA, FinTech companies need to in a first step assess whether their activities are within the scope of application of FinSA (Section 5.1.1.1). If this is the case, a series of requirements and duties may apply, in particular with regard to client segmentation, rules of conduct, organisational requirements and prospectuses (Section 5.1.1.2). Non-compliance with FinSA requirements may lead to criminal sanctions and fines.[3] Furthermore, if the relevant individual or legal entity is

[1] This chapter does not discuss any regulatory frameworks of jurisdictions other than Switzerland.

[2] This chapter focuses on regulatory aspects. There are other legal aspects which may be relevant for FinTech companies and FinTech related activities such as questions concerning tax law, contract law, intellectual property or data protection. Such legal aspects are not covered herein.

[3] Articles 89 et seqq. FinSA.

subject to prudential supervision in Switzerland, non-compliance may also have regulatory implications.

5.1.1.1 Scope of Application

FinSA applies to financial service providers, client advisers as well as producers and providers of financial instruments.[4]

Individuals as well as legal entities that qualify as a *Financial Service Provider* are subject to FinSA, if they provide Financial Services (see definition below) on a commercial basis in Switzerland or to Swiss-based clients.[5] Consequently, a FinTech company must in particular assess the following:

1. Are Financial Instruments (see definition below) involved and do the activities constitute Financial Services?

2. Are such Financial Services provided on a *commercial basis*?

3. Are such Financial Services provided *in Switzerland* or *to Swiss-based clients*?

When assessing whether a specific activity qualifies as a Financial Service under FinSA, in particular the following definitions are of relevance:

- *Financial Instruments* within the meaning of FinSA are equity and debt securities, including bonds, units in collective investment schemes, structured products, derivatives and certain types of structured deposits ("Financial Instruments").[6] Cryptocurrencies do, for example, not qualify as financial instruments.

- *Financial Services* within the meaning of FinSA are the following activities: (1) acquisition or disposal of Financial Instruments, (2) receipt and transmission of orders in relation to Financial Instruments, (3) management of Financial Instruments (portfolio management), (4) provision of personal recommendations relating to transactions regarding Financial Instruments (investment advice), and (5) granting of loans to finance transactions regarding Financial Instruments ("Financial Services").[7]

The mere offering of Financial Instruments does, in principle, not qualify as a Financial Service. However, there is only limited guidance with regard to the question under which circumstances a specific activity would be considered as a mere offer and hence not a Financial Service.

A commercial activity is an independent economic activity pursued on a permanent and for-profit basis. Financial Services are presumed to be provided on such *commercial basis* if the relevant Financial Service Provider (i) either provides Financial Services to more than 20 clients or (ii) promotes the provision of Financial Services in advertisements, prospectuses, circulars or electronic media (irrespective of whether such Financial Service Provider services 20 or less clients).

Financial Services are deemed to be provided *in Switzerland* if the Financial Service Provider is either (i) domiciled in Switzerland or registered in the Swiss commercial register or (ii) domiciled abroad but provides the relevant services to clients based in Switzerland. To the extent a Financial Service Provider domiciled abroad performs Financial Services on behalf of Swiss clients, FinSA will apply, also on a strict cross-border basis, irrespective of whether the relevant Financial Service Provider maintains a physical presence in Switzerland.

The latter, in particular, has an impact on FinTech companies domiciled abroad, which engage in activities in the Swiss market without maintaining a physical presence in Switzerland. For example, a foreign FinTech company providing portfolio management services or investment advice to Swiss-based clients via an online application will be subject to FinSA and certain requirements set-out thereunder. In this context, it must be

[4] Article 2 para. 1 FinSA.
[5] Article 3 let. d FinSA.
[6] Article 3 let. a FinSA.
[7] Article 3 let. c FinSA. Note: Article 3 para. 3 FinSO exempts from the definition of Financial Services the provision of advice regarding the structuring or raising of capital as well as the provision of advice in the context of mergers and acquisitions or the acquisition or sale of participations and the services related to such advice.

noted that the requirements under the FinSA largely mirror requirements set out in corresponding regulations of the European Union ("EU")[8], but that there are nonetheless notable differences and therefore a FinTech company compliant with EU rules is not automatically compliant with Swiss rules.

However, there are certain exemptions under FinSA, specifically applicable to Financial Service Providers domiciled outside of Switzerland. Pursuant to a *reverse-solicitation* exemption, the FinSA does not apply to:

- Financial Services provided by a foreign Financial Service Provider as part of a previously existing client relationship (e.g., an existing portfolio management or investment advisory agreement) that was entered into at the express initiative of a Swiss-based client; and

- Financial Services provided by a foreign Financial Services Provider that have been expressly requested by a Swiss-based client on such client's own initiative.[9]

5.1.1.2 Key Elements

Key elements set out under FinSA relate to client segmentation (Section 5.1.1.2.1), rules of conduct (Section 5.1.1.2.2), organisation (Section 5.1.1.2.3), client advisers (Section 5.1.1.2.4), the ombudsman scheme (Section 5.1.1.2.5) and prospectuses (Section 5.1.1.2.6).

5.1.1.2.1 Client Segmentation – Retail / Professional / Institutional

If a FinTech company qualifies as a Financial Service Provider, it must allocate each of its clients – as part of the onboarding process – to one of the following client segments: retail, professional or institutional:[10]

1. *Retail Clients*, also referred to as private clients, are all clients that do not qualify as Professional Clients (as defined below).

2. *Professional Clients* are: (a) financial intermediaries licensed under the Swiss Banking Act, the Swiss Financial Institutions Act or the Swiss Collective Investment Schemes Act; (b) insurance companies licensed under the Swiss Insurance Supervision Act; (c) foreign clients subject to prudential supervision equivalent to the financial intermediaries and insurance companies within the meaning of let. (a) and let. (b); (d) central banks; (e) public entities with professional treasury operations; (f) occupational pension schemes, and other institutions whose purpose is to serve occupational pensions, with professional treasury operations; (g) companies with professional treasury operations; (h) large companies (companies which exceed two of the following parameters: (1) balance sheet total of CHF 20 million, (2) turnover of CHF 40 million and (3) equity of CHF 2 million); and (i) private investment structures with professional treasury operations created for high-net-worth Retail Clients.

3. *Institutional Clients* are Professional Clients as defined in 2. (a)-(d) above, as well as national and supranational public entities with professional treasury operations.

Depending on the client segment, different duties and hence different levels of "client protection" will apply. Consequently, in order to limit the impacts of FinSA, a FinTech company may opt to restrict its offering to Professional Clients and / or Institutional Clients.

Certain clients may declare that they waive certain client protection provisions (so-called "opting out"), whereas certain other client types may declare that they want to benefit from a higher level of protection (so-called "opting in").[11] Any such declaration to "opt-out" or "opt-in" must be in writing (e.g., a physical letter) or in another manner verifiable by text (e.g., an email or WhatsApp message).[12]

[8] MiFID II, Prospectus Directive, PRIIPs.
[9] Article 2 para. 2 FinSO.
[10] Article 4 FinSA.
[11] Article 5 FinSA.
[12] Article 5 para. 8 FinSA.

5.1.1.2.2 Rules of Conduct

The FinSA sets out rules of conduct, which namely cover A) information duties, B) suitability and appropriateness checks, C) documentation and accountability duties as well as D) duties regarding transparency and due care.

A) Information Duties
The information duties aim at providing clients a comprehensive and transparent overview of the services and products offered by the Financial Service Provider. There are general and specific duties and information may be provided either in writing or electronically, e.g., via a website. If provided electronically, it must be ensured that clients may at all times access, download and save such information to a durable medium (e.g., a hard disk).[13]

Depending on the respective client segmentation, the following will apply:

1. In constellations in which Financial Services are provided to Retail Clients, the information duties apply to the full extent.

2. Professional Clients, on the other hand, may waive the *general* information duties.[14]

3. In constellations in which Financial Services are provided to Institutional Clients, the information duties set out under FinSA are not applicable.[15]

B) Suitability and Appropriateness
If a FinTech company provides portfolio management services or renders investment advice, it must meet the appropriateness or suitability test requirements set out under FinSA, also if such services are (in whole or in part) provided through an automated or semi-automated "robo-advice" system.

1. *Suitability*: When providing portfolio management services or rendering investment advice under consideration of the client's entire portfolio (so-called "Portfolio-Related Investment Advice"), a Financial Service Provider must enquire about the relevant client's financial situation and investment objectives as well as its knowledge and experience and must based on such information assess whether the investment in question is suitable for such client.[16]

2. *Appropriateness*: When rendering investment advice for individual transactions without taking into account the client's entire portfolio (so-called "Transaction-Related Investment Advice"), a Financial Service Provider must obtain information on the client's knowledge and experience and must based on such information assess whether the investment in question is appropriate for such client.[17]

3. *Execution-only*: If a Financial Service Provider is only involved in the mere execution or transmission of a client order, the Financial Service Provider is not required to conduct such suitability or appropriateness checks.[18] Nevertheless, prior to providing mere execution or transmission services, the client needs to be informed that no appropriateness or suitability checks will be performed.[19]

In constellations in which the relevant Financial Services are provided to Retail Clients, these duties outlined above apply to the full extent. With regard to Professional Clients, certain alleviations are set out under FinSA: a Financial Service Provider may, unless there are indications to the contrary, in particular, assume that Professional Clients have sufficient knowledge and experience as well as the capacity to bear the risks underlying the Financial Service in question when conducting the suitability and appropriateness checks.[20] For Institutional Clients, FinSA provides for a blanket non-application of the information duties.[21]

[13] Article 9 para. 3 FinSA and article 12 FinSO.
[14] Article 20 para. 2 FinSA.
[15] Article 20 para. 1 FinSA.
[16] Article 12 FinSA.
[17] Article 11 FinSA.
[18] Article 13 para. 1 FinSA.
[19] Article 13 para. 2 FinSA.
[20] Article 13 para. 3 FinSA.
[21] Article 20 para. 1 FinSA.

C) Documentation and Accountability Duties

FinSA namely requires Financial Service Providers to record and document (i) the information collected from the client and the services provided in Switzerland or to clients in Switzerland as well as (ii) the results of suitability and appropriateness checks.[22] Generally, Financial Service Providers are free to decide on how they organise such documentation, and purely digital solutions are possible.[23] In any case, a Financial Service Provider must be in a position to render account to a client within, as a rule, ten business days after a client requested to obtain his / her files. Furthermore, the relevant records and documents must be stored for at least ten years.[24]

If Retail Clients are involved, the duties concerning documentation and accountability apply to the full extent. Professional Clients may declare that he / she waives its rights under the documentation.[25] For Institutional Clients, the FinSA provides for a blanket non-application of the information duties.[26]

D) Transparency and Due Care

Financial Service Providers must implement systems and procedures that are appropriate with regard to their size, complexity and business activities and ensure the protection of clients' interests and the equal treatment of their clients when executing transactions orders. In particular, they must ensure (i) that client orders are registered and allocated promptly and correctly, (ii) that comparable orders are executed in the order in which they were received, unless this is not in the client's interest or not possible due to the nature of the client's order or the market conditions, (iii) that in case orders are pooled, the interests of the clients involved are safeguarded and (iv) that Retail Clients are informed of any material difficulties which could affect the correct execution of their orders.[27]

Financial Service Providers must ensure the best execution of client orders in terms of cost (taking into account, *inter alia*, any inducements provided by third parties), timing and quality. In order to satisfy the best execution requirement, Financial Service Providers must define and annually review the criteria necessary for the selection of the execution venue (in particular, the price, costs, efficiency and probability of the execution and settlement) and implement appropriate internal directives.[28]

If Retail Clients or Professional Clients are involved, the duties concerning transparency and due care apply to the full extent. For Institutional Clients, FinSA provides for a blanket non-application of the information duties.[29]

5.1.1.2.3 Organisational Requirements

Financial Service Providers must have adequate internal regulations and an appropriate organisation of operations in order to ensure compliance with all applicable duties under FinSA. They must namely (i) define and implement internal rules that are appropriate with respect to their size, complexity and legal form, as well as in relation the Financial Services they offer and the risks associated therewith; and (ii) select their employees carefully and ensure that they receive training in the rules of conduct as well as in the skills they need to carry out their specific tasks.[30] Furthermore, FinSA provides for organisational requirements with regard to outsourcing,[31] conflicts of interest,[32] payments from third parties ("inducements" or "kick-backs"),[33] and employee transactions.[34]

Whilst FinSA does not set-out an express exemption, it remains disputed in the relevant Swiss legal doctrine whether the organisational requirements set out under FinSA apply to Financial Service Providers providing their services to Swiss clients on a strict cross-border basis.

[22] Article 15 para. 1 FinSA; Dispatch FinSA I FinIA, 8959. Cf. article 25 paras. 5 et seqq. MiFID II.
[23] Dispatch FinSA I FinIA, 8959 et seq.; Pre-consultation report FinSO, 27.
[24] Article 18 FinSO; Dispatch FinSA I FinIA, 8959 et seq.
[25] Article 20 para. 2 FinSA.
[26] Article 20 para. 1 FinSA.
[27] Article 17 FinSA and article 20 FinSO.
[28] Article 18 FinSA and article 21 FinSO.
[29] Article 20 para. 1 FinSA.
[30] Article 21 et seq. FinSA and article 23 FinSO.
[31] Article 23 et seq. FinSA.
[32] Article 25 FinSA.
[33] Article 26 FinSA.
[34] Article 27 FinSA.

5.1.1.2.4 Client Advisers

FinSA makes a clear distinction between "Client Advisers" and "Financial Service Providers": Client Advisers are *natural persons* (i.e., not legal entities) that render Financial Services either on behalf of a Financial Service Provider or in their own capacity as a Financial Service Provider.

With regard to Client Adviser, the following aspects must be considered:

- *Knowledge and Expertise of Client Advisers*: If a FinTech company qualifies as a Financial Service Provider, its Client Advisers will need to possess the required knowledge with regard to the Swiss rules of conduct (see Section 5.1.1.2.2 above) and a level of expertise appropriate for their activities. If a foreign Financial Services Provider acts on a strict cross-border basis, such Swiss requirements regarding knowledge and expertise are, in our view, only applicable to Client Advisers that actually render Financial Services to Swiss-based clients. Nonetheless, most foreign Financial Service Providers will likely need to establish a "Swiss Desk", i.e., designate specific employees / Client Advisers that are familiar with the Swiss rules of conduct and meet all requirements set out under FinSA.

- *Client Adviser Register*: The following Client Advisers are required to be registered in the so-called Client Adviser Register (*Beraterregister*) in order to be permitted to carry out Financial Services in Switzerland: (i) Client Advisers of *Swiss* Financial Service Providers, which are not subject to prudential supervision (i.e., independent client advisers) and (ii) Client Advisers of *foreign* Financial Service Providers, which (aa) are not subject to prudential supervision abroad or (bb) provide Financial Services to Swiss-based Retail Clients.[35]

Persons having only very limited contact with clients or potential investors do not qualify as Client Advisers and are thus not subject to the requirements regarding knowledge and expertise as well as the Client Adviser Register. The same applies to employees of a Financial Service Providers that merely support the provision of Financial Services. Examples of such supporting activities include, *inter alia*, the dispatch of product documentation following the expression of interest by a client, the arrangement of meetings with his / her Client Adviser or the support of technical procedures with respect to electronic customer portals or websites of a Financial Service Provider.

5.1.1.2.5 Ombudsman Scheme

Financial Service Providers are required to accede to the Swiss ombudsman scheme.[36]

5.1.1.2.6 Prospectus Requirements

FinSA sets-out a comprehensive prospectus regime, which *inter alia* provides for an ex-ante approval requirement for prospectuses if Financial Instruments are publicly offered or admitted to trading in Switzerland. To date BX Swiss AG and SIX Exchange Regulation AG have been approved by *FINMA* as Reviewing Bodies, tasked with the review and approval of prospectuses.

In principle, the requirement to publish an approved prospectus applies to all public offerings in or into Switzerland and to all securities (incl. DLT securities) that are to be admitted to trading on a trading venue (see Section 5.2.2.2 below) or a DLT trading facility (see Section 5.3.2.2 below) in Switzerland.[37] However, FinSA contains a number of exemptions and there is for example no requirement to prepare a prospectus to the extent the public offer is addressed exclusively at Professional Investors or if it is directed at fewer than 500 retail investors.

Under FinSA, an offer is any invitation to purchase a Financial Instrument, if such invitation contains sufficient information on the terms and conditions of the

[35] Client Advisers of foreign Financial Service Providers that are subject to prudential supervision abroad are exempted from this registration requirement to the extent that their activities in Switzerland are directed exclusively at Institutional Clients and / or Professional Clients (Article 31 FinSO).

[36] Article 77 FinSA.

[37] Article 35 FinSA.

offer and the Financial Instrument itself.[38] Therefore, FinTech companies providing information relating to Financial Instruments on an internet-based platform must in particular take into account the following:

- The mere publication of information relating to Financial Instruments on a platform in itself should not *per se* be regarded as an offer but the manner in which access to the platform is structured will be decisive.

- If information on the Financial Instrument can only be accessed by the interested client / investor on an internet-based platform via a search entry (e.g., when searching for ISIN / Valor or product name), no offer within the meaning of FinSA will be deemed to have been made by the FinTech company operating such internet-based platform. The result of the search should not have any other legal consequences than an (oral or written) information on a financial instrument at the request of an interested investor.

- Also, if the client / investor must first log in with his / her password on an internet-based platform, it can be argued that no offer will be made by the FinTech company operating such internet-based platform.

- However, it must be noted that in both scenarios mentioned above, a reverse solicitation constellation will only be at hand if no advertising by the "provider" or one of its representatives in relation to the specific Financial Instrument preceded the actions of the investor.[39]

5.1.2 Financial Institutions Act (FinIA)

FinIA sets out a comprehensive licensing regime for financial institutions. *Financial Institutions* within the meaning of FinIA are: (1) portfolio managers; (2) trustees; (3) managers of collective assets; (4) fund management companies and (5) securities firms (formerly securities dealers).

Instead of a sectorial approach, FinIA provides for a "pyramid approach", implementing a rather light touch regulation for portfolio managers and trustees and increasingly stricter regimes for managers of collective assets, fund management companies and securities firms.

FinIA defines common core requirements that must be met by all Financial Institutions. All Financial Institutions regulated under FinIA must for example implement an appropriate organisation (risk management, effective internal control system, etc.) and must be effectively managed in Switzerland. Furthermore, both the Financial Institution itself as well as the persons in charge of their administration and management must meet the regulatory fit and proper test and must therefore have a good reputation and ensure proper business conduct.

For FinTech companies, the key aspects of FinIA are the following:

- *Portfolio managers* (e.g., independent external asset managers) are subject to prudential supervision. Such supervision will be conducted by an independent supervisory organisation (*Aufsichtsorganisation*) that itself will be licensed by *FINMA* for this purpose. In July 2020 *FINMA* authorised the first supervisory organisations for portfolio managers.[40]

- *Securities firms* require a license from *FINMA* and are subject to supervision as well as a series of specific regulations. A FinTech company will qualify as a securities firm within the meaning of FinIA if it engages, on a commercial basis, in either (a) dealing in securities in its own name but for its clients' account, or (b) short-term transactions in securities for its own account and either thereby potentially affects systemic stability, acts as a participant on a trading venue or operates as an organised trading facility, or (c) market making activities by engaging in short-term transactions in securities while setting public bid and ask

[38] Article 3 let. g FinSA.
[39] Article 3 para. 6 let. a FinSO.
[40] See FINMA (online).

prices (permanently or on request).[41] Depending on the relevant business model and activities, FinTech companies may in particular qualify as own-account dealers.

As far as regulatory licensing requirements are concerned, the Swiss regime is largely based on the so-called principle of territoriality (*Territorialitätsprinzip*). Therefore, as long as a FinTech company is domiciled abroad and provides Financial Services into Switzerland on a strict cross-border basis, i.e., without establishing a physical presence in Switzerland, such activities (with a few exceptions) will not trigger Swiss regulatory licensing requirements under FinIA. Such activities may, however, be subject to the requirements under FinSA (see Section 5.1.1 above).

5.2. Other Key Regulation

This subchapter outlines key elements of the Swiss FinTech Specific Regulation (Section 5.2.1) and provides an overview on select Swiss federal laws (Section 5.2.2), which may – besides FinSA and FinIA (see Section 5.1 above) – be applicable to FinTech related activities.

5.2.1 FinTech Specific Regulation

The Swiss FinTech specific regulation comprises three "pillars": the so-called FinTech license (Section 5.2.1.1), a regulatory innovation area ("sandbox") (Section 5.2.1.2) and the settlement accounts exemption (Section 5.2.1.3).

5.2.1.1 FinTech License

Since 1 January 2019 the Swiss Banking Act ("BA") provides for two licensing categories (i) the regular banking license and (ii) the FinTech license pursuant to Article 1b BA, (also referred to as "banking license light").

Prior to the FinTech license being introduced, only formally licensed banks were permitted to (i) accept deposits from the public on a professional basis or to (ii) recommend themselves for such deposit taking activities. Given that as a general rule all repayment-liabilities vis-à-vis clients qualify as *deposits* and since accepting deposits from more than 20 persons will qualify as acting on a *professional basis* (see Section 5.2.2.1 below), certain business models of FinTech companies would have required a regular banking license under the BA.

With the FinTech license, companies not engaging in the classic banking business (interest rate differential business; *Zinsdifferenzgeschäft*), e.g., by using short-term deposits for long-term lending or investment activities, now have a viable alternative. The FinTech license is attractive for companies that are mainly active in the financial sector, but which (i) limit their operations to accepting either deposits of less than CHF 100 million or crypto assets (*kryptobasierte Vermögenswerte*)[42] and which (ii) do not invest the accepted funds nor pay interest thereon. Hence, the license may for example be attractive for companies offering payment services or platform funding services.

However, there are a number of aspects that have to be taken into account when considering applying for a FinTech license. In order to obtain the license from *FINMA*, the company must go through a rather lengthy (depending in particular on the complexity of the business model and the quality of the license application) approval process[43], which is, however, less burdensome than the licensing process for a regular banking license. In this process, the company will namely be required to evidence that it meets requirements regarding (i) organisation and financial and regulatory audits, (ii) corporate governance (the board of directors must for example consist of at least three persons) and (iii) capital (e.g., minimum capital of 3 percent of the deposits accepted from the public, i.e., up to CHF 3 million, but at least CHF 300,000).

Furthermore, once the FinTech license has been granted by *FINMA*, any deposits or crypto assets held by the company must be either (i) segregated from the assets of the company or (ii) recorded in the company's

[41] Article 41 FinIA.

[42] In the sense of article 5a BO.

[43] See the FINMA guidelines for FinTech licence applications (FINMA, 2018a) (version of 2 August 2021), which are available in German, French as well as English.

books in such a manner that they can be shown separately from the company's own funds at any time (if the company opts for the latter option, a more comprehensive audit is required).[44]

If the maximum deposit threshold of CHF 100 million is exceeded, the company must notify *FINMA* within 10 days and must submit a regular bank license application within 90 days.[45]

Finally, holders of a FinTech license are required to comprehensively inform their clients about the risks of their business model, their services and the technologies used. Furthermore, the company's clients must be informed that their deposits with the company are not protected by the Swiss deposit insurance regime. Solely mentioning this information in general terms and conditions is insufficient and if the information is made available electronically, it must be ensured that clients may at any time view, download and save such information. Also, the information must be made available *prior* to entering into the agreement with the client and the client must have had enough time to understand the information prior to concluding the contract.[46]

5.2.1.2 "Sandbox"

The "sandbox" exemption allows engaging in activities which under former regulation would have triggered bank licensing requirements. Companies accepting deposits from the public are deemed *not* to be acting on a commercial basis, provided

(i) the deposits or crypto assets accepted do not exceed the threshold of CHF 1 million;

(ii) the company does not engage in the interest rate difference business (*Zinsdifferenzgeschäft*); and

(iii) the clients are informed prior to depositing the funds that the company accepting the funds is not supervised by *FINMA* and that the funds are not protected by the Swiss deposit insurance regime.[47]

Under the current regulation, it is allowed to invest the deposits accepted, provided that the threshold of CHF 1 million is not exceeded and that the company does not engage in the interest rate difference business.

If the deposit or crypto asset threshold of CHF 1 million is exceeded, the company must notify *FINMA* within 10 days and must – in each case depending on the respective activities – either submit a regular bank license application or a FinTech-license application within 30 days. During the interim period between the filing of the license application and *FINMA's* decision on the request, the other conditions still need to be met, i.e., no interest may be paid on such deposits and the information duties vis-à-vis depositors must be satisfied. Also, *FINMA* may on a case-by-case basis decide that no further deposits may be accepted until the end of the license application process.[48]

If the company decides to satisfy its regulatory disclosure obligations relating to its supervisory status and the deposit protection via its website, certain requirements must be met. First, the information must be displayed separately from other information. Therefore, solely mentioning it in general terms and conditions is insufficient. Second, this information must be displayed in text and in reproducible form. Third, the company's customers need to expressly confirm that they took note of the information.

The "sandbox" exemption is designed to create a regulatory safe harbour, in which FinTech companies are able to test their business ideas and provide certain financial services without becoming a regulated entity under Swiss banking regulation. However, it must be noted that companies engaging in activities within the "sandbox" are still likely to be subject to Swiss anti-money laundering regulations (see Section 5.2.2.4 below) and may therefore nonetheless need to adhere to certain regulatory requirements under Swiss law.

[44] Article 14f BO.
[45] Article 1b para. 6 BA.
[46] Article 7a BO.
[47] Article 6 para. 2 BO.
[48] Article 6 para. 4 BO.

Therefore, the "sandbox" should not be misunderstood as a "regulation free" area.

5.2.1.3 Settlement Accounts Exemption

Funds held in customer accounts of securities firms, DLT trading facilities, precious metal dealers, portfolio managers or similar companies which exclusively serve the purpose of settling customer transactions do not qualify as deposits within the meaning of the BA and therefore do not trigger bank licensing requirements, provided the funds are not interest-bearing and are forwarded within 60 days. The exemption, in particular, facilitates the operation of funding platforms.

5.2.2 Selected Federal Laws

The Swiss regulatory framework relevant for FinTech companies is, apart from the FinSA (see Section 5.1.1 above) and FinIA (see Section 5.1.2 above), in particular shaped by the following federal laws and their implementing ordinances:

- the *Banking Act* ("BA"), which regulates banking activities / deposit taking as well as the supervision of banks and of holders of FinTech licenses (see Section 5.2.1.1 above);
- the *Financial Market Infrastructure Act* ("FMIA"), which governs the organisation, supervision and operation of financial market infrastructures (*inter alia*, trading venues and payment systems) and the conduct of financial market participants in securities and derivatives trading;
- the *Anti-Money Laundering Act* ("AMLA"), which regulates the prevention of money laundering and terrorist financing and the due diligence in financial relationships and transactions;
- the *Consumer Credit Act* ("CCA"), which governs consumer credits, i.e., loans granted on a professional basis to individuals for purposes other than business or commercial activities; and
- the *Collective Investment Schemes Act* ("CISA"), which on a product level governs the licensing and supervision of collective investment funds in Switzerland, including the approval requirements and process for the offering of non-Swiss collective investment funds in Switzerland.

The following sub-chapters provide a high-level overview of this regulatory framework applicable to banks (Section 5.2.2.1), trading facilities (Section 5.2.2.2), payment systems (Section 5.2.2.3), anti-money laundering (Section 5.2.2.4), consumer credits (Section 5.2.2.5) and collective investment schemes (Section 5.2.2.6).

5.2.2.1 Banks

In Switzerland, only licensed banks and holders of FinTech licenses (see Section 5.2.1.1 above) are permitted to accept deposits from the public on a professional basis or to recommend themselves for such deposit taking activities.[49] Furthermore, only licensed banks (not holders of a FinTech license) may use or refer to the term "bank" or "banker" in their company name, their company purpose or in their corporate and marketing documentation.[50] Any unauthorised acceptance of deposits or advertising of such services may be subject to criminal sanctions.[51]

Generally, a company is considered to be a bank, if it[52]:

(i) is mainly active in the financial sector; and

(ii) accepts deposits from the public in an amount *higher* than CHF 100 million on a professional basis or recommends itself publicly for such deposit taking activities[53]; or accepts deposits from the public in an amount of *up to* CHF 100 million on a professional basis or recommends itself publicly

[49] Articles 1a and 1b BA.
[50] Article 1 para. 4 BA.
[51] Articles 46 and 49 BA; Article 44 FINMASA.
[52] Companies are also considered to be banks if they refinance themselves significantly with loans from several banks that do not own any qualified / significant shareholdings in them in order to finance any number of persons or companies with which they do not form an economic unit of their own and in any manner possible; see article 1a let. c BA.
[53] Article 1a let. a BA.

for this purpose and reinvests these deposits or pays interest thereon.[54]

A company is considered to be *active in the financial sector* if it renders or procures financial services, in particular, by engaging in the deposit taking or lending business, securities trading, investment or portfolio management or accepting crypto assets for itself or for third parties.[55] Deposit taking is generally deemed to be performed on a professional basis (see "sandbox" exemption; Section 5.2.1.2 above), if an individual or legal entity (a) continuously accepts more than 20 deposits from the public or crypto assets in collective custody or (b) recommends itself publicly for such deposit or crypto asset taking activities (regardless of whether the company actually continuously holds more than 20 deposits from the public or crypto assets or not).[56]

Generally, all repayment-*liabilities* via-à-vis clients qualify as deposits within the meaning of the BA.[57] There are, however, a number of exemptions. Amongst others, the following liabilities do not qualify as deposits:[58]

- funds provided in consideration of a contract providing for the transfer of property or the rendering of a service (e.g., prepayments that form part of the consideration for a purchase agreement are exempt, but granting a loan with a duty to repay is not exempt);
- funds which are transferred as a security;
- credit balances on client accounts of securities firms, DLT trading facilities, precious metal dealers, portfolio managers or similar companies which solely serve the purpose of the settlement of client transactions, provided no interest is paid on these funds and provided they are forwarded within 60 days;
- funds that to a small extent are transferred to a payment instrument or a payment system and that are exclusively used for future purchases of goods or services, provided no interest is paid on these funds; and
- bonds and other debt instruments that are standardised and issued *en masse* or uncertificated rights with the same function (book-entry securities) if, at the time of the offer, investors are informed in publicly available document form[59] about (1) the name, registered office and the purpose of the issuer as set out in a brief description, (2) the interest rate, issue price, subscription period, payment date, maturity and redemption terms, (3) the most recent annual financial statements and consolidated financial statements together with the audit report and, if more than six months have passed since the balance sheet date, the interim financial statements, if any, of the issuer and the guarantor, (4) the collateral provided and (5) the representation of bondholders, insofar as this is included in the investment conditions.

Furthermore, the following deposits are *not* considered to be deposits *from the public*:[60]

- deposits from domestic and foreign banks or other companies under regulatory supervision;
- deposits from qualified shareholders (owning more than 10 % of the share capital or the voting rights) of the debtor and any parties affiliated or related with such shareholders; and
- deposits from institutional investors with professional treasury operations.

Activities of FinTech companies may include regulated deposit taking within the meaning of the BA (e.g., if

[54] Article 1a let. b BA.
[55] Article 4 para. 1 let. a BO. Furthermore, holding companies owning predominantly participations in companies active in the financial sector are themselves considered active in the financial sector; article 4 para. 1 let. b BO. Finally, significant group companies (Wesentliche Gruppengesellschaften) as defined in article 3a BO are deemed to be active in the financial sector too; article 4 para. 1 let. c BO.
[56] Article 6 para. 1 BO.
[57] Article 5 para. 1 BO; FINMA-Circular 2008/3, para. 10.
[58] Article 5 para. 3 BO.
[59] See article 64 para. 3 FinSA. E.g., electronically via the issuer's website.
[60] Article 5 para. 2 BO.

a FinTech company accepts funds from investors and subsequently transfers funds to its clients). In order to reduce the risk of becoming subject to a licensing requirement under the BA:

- FinTech companies may decide to refrain from accepting any third party funds in the first place.
- If deposits are involved, the FinTech company may want to stay within the scope of application of the "sandbox" exemption (see Section 5.2.1.2 above) or it may want to avoid accepting more than 20 deposits from the public or crypto assets in collective custody and refrain from recommending itself publicly for this purpose.[61]
- If deposits are involved, the FinTech company can try to ensure that only exempt liabilities are accepted. This would, for example, be the case if credit balances on client accounts solely serve the purpose of the settlement of client transactions and if no interest is paid on these funds.[62]
- FinTech companies can also decide to issue bonds or other debt instruments and, at the time of the offer, to inform investors in compliance with article 5 para. 3 let. b BO as well as article 64 para. 3 FinSA (see above).
- Finally, FinTech companies can consider obtaining a FinTech license (see Section 5.2.1.1 above), which allows them to accept deposits from the public up to CHF 100 million and crypto assets.

5.2.2.2 Trading Facilities

Trading venues, i.e., stock exchanges and multilateral trading facilities, are regulated financial market infrastructures under FMIA.[63] They require a license from *FINMA*[64] and are subject to a series of specific regulations.

- A stock exchange is an institution for multilateral securities trading *where securities are listed* and whose purpose is the simultaneous exchange of bids between several participants and the conclusion of contracts based on non-discretionary rules.[65]
- A multilateral trading facility is an institution for multilateral securities trading whose purpose is the simultaneous exchange of bids between several participants and the conclusion of contracts based on non-discretionary rules *without listing securities*.[66]

Under Swiss law, "securities" (*Effekten*) are instruments, which are:

(i) standardised;

(ii) suitable for mass trading and;

(iii) either certificated securities (*Wertpapiere*), uncertificated securities (*einfache Wertrechte*), ledger-based securities (*Registerwertrechte*), derivatives[67] or intermediated securities (*Bucheffekten*).[68]

Typical examples of securities include not only shares, bonds, notes and other debt instruments, but may for example also include participations and / or sub-participations in a loan if such participations and / or sub-participations are standardised and suitable for mass trading.

An instrument is deemed to be standardised and suitable for mass trading if it is (a) either publicly offered and has the same structure (interest, maturity) and denomination (amount) or (b) if it is placed with more than 20 investors and has not been specifically created for a particular counterparty / investor.[69] It is impor-

[61] Whether for example the mere publication of credit requests via crowdlending platforms constitutes a public recommendation to accept deposits is still open. To our knowledge, FINMA does not seem to be interpreting the law this way.
[62] Article 5 para. 3 let. c BO; See also the FINMA Fact sheet Crowdfunding (2020).
[63] Article 2 let. a sec. 1 and 2 FMIA.
[64] Article 4 para. 1 FMIA.
[65] Article 26 let. b FMIA.
[66] Article 26 let. c FMIA.
[67] Derivatives are "financial contracts whose value depends on one or several underlying assets and which are not cash transactions". See article 2 let. c FMIA and article 2 paras. 2 to 4 of the Financial Market Infrastructure Ordinance ("FMIO").
[68] Article 2 let. b FMIA and article 3 let. b FinSA.
[69] See article 2 para. 1 FMIO.

tant to note that not only listed instruments but also unlisted instruments qualify as securities.

Even if no securities are traded, an institution or trading platform can still qualify as a so-called organised trading facility ("OTF"). OTFs[70] within the meaning of FMIA are establishments for:

- multilateral trading in securities or other financial instruments whose purpose is the exchange of bids and the conclusion of contracts based on discretionary rules;
- multilateral trading in financial instruments other than securities whose purpose is the exchange of bids and the conclusion of contracts based on non-discretionary rules;[71] and
- bilateral trading in securities or other financial instruments whose purpose is the exchange of bids.

FinTech companies operating a platform that allows for trading of shares, standardised debt instruments or other financial instruments, including securities issued in the form of tokens (see Section 5.3 below), may qualify as regulated trading venues. Should a particular business model include such activities, the main question will oftentimes be whether the relevant FinTech company qualifies as an MTF (if securities are involved) or as an OTF, and hence requires a license as a bank, securities firm, DLT trading facility or trading venue.[72]

5.2.2.3 Payment Systems

Payment systems are regulated financial market infrastructures under FMIA.[73] A payment system is "an entity that clears and settles payment obligations based on uniform rules and procedures".[74]

Specific duties of payment systems (e.g., regarding settlement and liquidity) have been set out in the implementing ordinance of the FMIA.[75] A payment system requires a license from *FINMA*[76] if (a) this is necessary for the proper functioning of the financial market or the protection of financial market participants and (b) if the payment system is not operated by a bank.

Operating a payment system may involve deposit taking. However, there is a "safe harbour rule"[77] which may be applicable to FinTech companies in this context. Funds that to a small extent are transferred into a payment instrument or a payment system and that are exclusively being used for future purchases of goods or services may not qualify as deposits, provided no interest is paid thereon. The following requirements must be met:[78]

(i) the funds may only be used for future purchases of goods or services;

(ii) the maximum account balance per customer may not exceed CHF 3,000 at any time; and

(iii) no interest may be paid thereon.

If these requirements are met, the liabilities involved do not qualify as deposits and hence no banking license is required.

5.2.2.4 Anti-Money Laundering

Ensuring compliance with anti-money laundering regulation, i.e., the Anti-Money Laundering Act ("AMLA") and implementing regulations, often constitutes one of the key regulatory challenges for FinTech companies, both from an organisational and financial perspective. Swiss anti-money laundering regulation is based on three key elements:

- supervision of financial intermediaries either directly by *FINMA* or by self-regulatory organisations, which are themselves *FINMA*-supervised;

[70] Article 42 FMIA.
[71] The term "non-discretionary rules" means that the operator of the trading facility has no discretion as to how interests may interact. Hence, the operator of the trading facility does not have discretion over how a transaction is to be executed.
[72] Article 43 para. 1 FMIA.
[73] Article 2 let. a sec. 6 FMIA.
[74] Article 81 FMIA.
[75] Article 82 FMIA i.c.w. article 66 et seqq. FMIO.
[76] Article 4 para. 2 FMIA.
[77] Article 5 para. 3 let. e BO.
[78] FINMA-Circular 2008/3, para. 18.1.

- due diligence, reporting, identification and record-keeping requirements applying to all financial intermediaries; and

- sanctions in case of non-compliance.

Article 305bis of the Swiss Criminal Code ("SCC") contains the criminal provision that prohibits all forms of money laundering. It stipulates that "any person that carries out an act that is aimed at preventing the identification of the origin, the tracing or the forfeiture of assets which he knows or must assume originate from a felony or aggravated tax misdemeanour is liable to a custodial sentence not exceeding three years or to a monetary penalty".

Financial intermediaries are divided into two groups:

- Financial intermediaries belonging to the "*banking sector*" if they are subject to comprehensive, prudential regulation under special legislation covering the whole range of their activities. Under these specific laws, a financial intermediary is supervised by the appropriate regulatory authority designated in each of these laws. Such financial intermediaries are for example banks, holders of a FinTech license, portfolio managers, trustees, securities firms, DLT trading facilities, insurance companies or licensed payment systems.[79]

- Financial intermediaries belonging to the "*non-banking sector*" if they "on a professional basis accept or hold on deposit assets belonging to third parties or assist in the investment or transfer of such assets".[80] This definition covers, in particular, persons who: (i) carry out credit transactions (in particular in relation to consumer loans or mortgages, factoring, commercial financing or financial leasing), (ii) provide services related to payment transactions, in particular by executing electronic transfers on behalf of other persons, or who issue or manage means of payment such as credit cards, (iii) trade for their own account or for the account of others in banknotes and coins, money market instruments, foreign exchange, precious metals, commodities and securities (stocks and shares and value rights) as well as derivatives relating thereto, (iv) make investments as investment advisers or (v) hold securities on deposit or manage securities.[81] Before engaging in business activities, such financial intermediaries must join a self-regulatory organisation recognised by *FINMA*.[82]

Many activities typically conducted by FinTech companies, as for example business models involving holding or depositing assets on behalf of clients, are subject to the anti-money laundering regulation. FinTech companies should namely take into account that the assistance provided in connection with the transfer of virtual currencies are services related to payment transactions subject to AMLA, if such services are provided in the context of a permanent business relationship. In principle, there are four approaches for FinTech companies to ensure compliance with anti-money laundering laws:

(i) they can completely refrain from financial intermediation activities;

(ii) they can cooperate with a regulated financial intermediary, such as a bank, as far as financial intermediation activities are required;

(iii) they can join a self-regulatory organisation and comply with anti-money laundering regulations; or

(iv) if they are financial intermediaries belonging to the "*non-banking sector*"[83], they can structure their business model in such way that they provide their services only to financial intermediaries belonging to the "*banking sector*"[84] or to foreign

[79] Article 2 para. 2 AMLA.
[80] Article 2 para. 3 AMLA.
[81] The Anti-Money Laundering Ordinance ("AMLO") and FINMA-Circular 2011/1 set out further details as to when the professional practice of financial intermediation is subject to supervision.
[82] Article 14 para. 1 AMLA.
[83] Article 2 para. 3 AMLA.
[84] Article 2 para. 2 AMLA.

financial intermediaries that are subject to equivalent supervision.

Apart from a limited number of exceptions[85], all *professional* financial intermediaries are subject to the AMLA and the requirements set-out thereunder. A financial intermediary is generally deemed to engaging in financial intermediation on a professional basis if:[86]

- its activity generates a gross revenue of more than CHF 50,000 per calendar year;
- it enters into business relationships with more than 20 contracting parties per calendar year that are not limited to a one-time activity or if it maintains at least 20 such relationships per calendar year;
- it has unlimited power to dispose over assets belonging to others exceeding CHF 5 million at any point in time; or
- it executes transactions of a total volume exceeding CHF 2 million per calendar year.

The financial intermediaries' duties are set out under AMLA[87] and the implementing ordinances and regulations.[88] The key duties are:

- duty to personally identify the client, i.e., the contracting party;
- duty to identify the beneficial owner / economic beneficiary of the assets;[89]
- duty to re-identify the beneficial owner / economic beneficiary of the assets in certain circumstances;
- specific clarification / verification duties amongst others with regard to transactions or business relationships with heightened risks;
- duties relating to documentation of transactions and verifications as well as relating to record keeping;
- duty to implement organisational measures, e.g., regarding training of employees and controls; and
- duty to report cases of suspicions of money laundering to the *Money Laundering Reporting Office Switzerland* ("MROS").

Under certain circumstances and provided that specific requirements are met reduced duties may apply.

5.2.2.5 Consumer Credits

The Consumer Credit Act ("CCA") applies to consumer credits, i.e., loans granted to individuals on a professional basis for purposes other than business or commercial activities. Further, loans granted on a non-professional basis are subject to the CCA, provided they are granted in cooperation with a crowdlending broker (*Schwarmkredit-Vermittler*), e.g., an operator of a crowdlending platform.[90]

Therefore, FinTech companies may be subject to the regulations relating to consumer credits. The following duties / rights under the CCA may be of particular importance:

- duty to obtain a license in order to be allowed to grant or broker loans to consumers on a professional basis;[91]
- restrictions relating to the advertisement for consumer credits;[92]
- requirements regarding the form and content of consumer credit agreements;[93]

[85] Article 2 para. 4 AMLA.
[86] Article 7 para. 1 AMLO.
[87] See article 3 et seqq. AMLA.
[88] The agreement relating to the Swiss banks' code of conduct with regard to the exercise of due diligence (VSB 16) is of particular importance. It contains a detailed set of rules in connection with the identification of clients and beneficial owners.
[89] Pursuant to the revised AMLA (that is expected to enter into force mid 2022) the financial intermediary will not only have to establish the identity but also have to verify the identity of the beneficial owner (article 4 para. 1 revised AMLA).
[90] Article 2 let. b CCA.
[91] Article 39 CCA.
[92] Article 36 et seqq. CCA.
[93] Article 9 et seqq. CCA.

- duty not to exceed the maximum effective annual interest rate set by the *Swiss Federal Council*;[94] and

- duty to check the consumer's creditworthiness[95] as well as the right to access the information made available by the Credit Information Office (*Informationsstelle für Konsumkredit*).[96]

FinTech companies should take into account that the CCA applies to all consumer credits granted to consumers domiciled in Switzerland, irrespective of whether the lender and/or lending platform has a physical presence in Switzerland. The CCA provides for significant sanctions in case of a breach, namely a loss of the claim to interest payments and repayment claim in case of a serious violation of the duty to conduct credit-checks.

5.2.2.6 Collective Investment Schemes

Collective investment schemes are "funds raised from investors for the purpose of collective investment, and which are managed for the account of such investors".[97] Generally, collective investment schemes regulation must be considered whenever a particular business model of a FinTech company entails the pooling of funds or risks in connection with an investment.

An entity or a financial product qualifies as a collective investment scheme if the following criteria are met: (1) funds (2) that are raised from (more than one) investors (3) for the purpose of being collectively managed (4) for the account of such investors, (5) whereby the investors' investment needs are met on an equal basis.

The licensing requirements as well as the supervision of fund management companies and managers of collective assets is governed by FinIA. Furthermore, the rules regarding the acquisition or disposal of units in collective investment schemes as well as the offering of such financial instruments will, subject to phase-in periods, be governed by FinSA. It must be noted, however, that units in collective investment schemes are the only Financial Instrument covered by the FinSA that will be subject to additional product-specific supervisory rules under CISA.

5.3. DLT and Blockchain – Swiss Regulatory Framework

Recently, Switzerland saw remarkable developments in distributed ledger technology ("DLT") and blockchain related business activities:

- In August 2018, *FINMA* granted the first asset manager of collective investment schemes license to a company focusing on investment management in the area of crypto assets (*Crypto Fund AG*).

- In November 2018, the world's first exchange traded product for investments in crypto assets was launched on the *Swiss stock exchange SIX* (by *21Shares AG* (f.k.a. *Amun AG*)).

- In August 2019, *FINMA* granted banking as well as securities dealer licenses to two companies focusing on products and services relating to digital assets (*Sygnum Bank AG* and *SEBA Bank AG*).

- In October 2019, the *Swiss stock exchange SIX* announced a cooperation with the *Swiss National Bank*, which aims at exploring technological options to make *digital central bank money* available for the trading and settlement of tokenised assets.[98]

- In September 2021, *SIX Digital Exchange AG (SDX)*, an affiliate of the *Swiss securities exchange SIX Swiss Exchange*, formally received the regulatory approval as a central securities depository from *FINMA*, while the associated company *SDX Trading AG* was approved to act as a securities exchange.[99] The obtained licenses enabled *SDX* to go live with a "fully regulated, integrated

[94] Article 14 CCA.
[95] Article 22 CCA, article 28 et seqq. CCA.
[96] Article 23 et seqq. CCA.
[97] Article 7 CISA.
[98] See SIX Media Release of 8 October 2019 (SIX, 2019).
[99] See FINMA Press Release of 10 September 2021 (FINMA, 2021c).

trading, settlement, and custody infrastructure" based on the blockchain technology.[100]

- Later in September, *FINMA* has approved the first crypto fund (*Crypto Market Index Fund*) under Swiss law.[101]

- Finally, in November 2021, *SDX* was launched by issuing the world's first digital bond in a fully regulated environment.[102]

The attitude of Switzerland's federal government, the *Federal Council*, and *FINMA* towards developments such as DLT and blockchain remains positive. However, those novel technologies have paved the way for the emergence of Decentralised Finance (DeFi), which increasingly challenges the current financial market regulation - also in Switzerland (see excursus on page 52).

In December 2018, the *Federal Council* published a detailed report covering the legal framework for DLT and blockchain in Switzerland. The report concluded that the existing Swiss legal framework is, in principle, "fit" for technical developments such as DLT and blockchain. Nonetheless, a need for selective improvements was identified.

Only a few months later, the *Federal Council* had an initial draft law prepared, which then went through a comprehensive public consultation process. Based on feedback received, the *Federal Council* published the finalised draft law concerning DLT and blockchain on 27 November 2019.

In September 2020, the draft of the DLT Law was approved by the *Swiss Parliament* and partly entered into force on 1 February 2021. The second part of the DLT Law as well as the associated blanket ordinance (DLT Ordinance) entered into force on 1 August 2021. The DLT Ordinance sets out the necessary adjustments to ten existing ordinances.

This subchapter first discusses certain aspects of the *FINMA* categorisation of tokens (Section 5.3.1). Then the cornerstones of the DLT Law are summarised (Section 5.3.2).

5.3.1 *FINMA* Categorisation of Tokens

A key element of the Swiss regulatory framework applicable to DLT and blockchain is the categorisation of tokens introduced by *FINMA* in its "ICO Guidelines" of 16 February 2018.[103] *FINMA* distinguishes the following categories of tokens:

- *Payment tokens* (according to *FINMA*, synonymous with "pure" cryptocurrencies), are tokens which are intended to be used, now or in the future, as a means of payment for acquiring goods or services or as a means of money or value transfer. Such cryptocurrencies do not give rise to a claim against an issuer or a third party. Consequently, according to the prevailing view, these tokens are "purely factual intangible assets". Examples of such cryptocurrencies are bitcoin (including numerous "altcoins" built upon the basic technical framework used for bitcoin) or Ether.

- *Utility tokens* are tokens that are intended to provide digital access to an application or service by means of a DLT-based infrastructure.

- *Asset tokens* represent assets such as a debt or equity claim against the issuer. Asset tokens promise, for example, a share in future company earnings or future capital flows. In terms of their economic function, such tokens may therefore qualify as equities, bonds or derivatives. Tokens which enable physical assets to be traded on a DLT-infrastructure also fall into this category according to *FINMA*.

FINMA has clarified that tokens may fall into more than one of these three basic categories: such *hybrid* tokens are, for example, asset tokens or utility tokens, which at the same time qualify as payment tokens.

[100] See SIX Media Release of 10 September 2021 (SIX, 2021a).
[101] See FINMA Press Release of 29 September 2021 (FINMA, 2021d).
[102] See SIX Media Release of 18 November 2021 (SIX, 2021b).
[103] See Guidelines for enquiries regarding the regulatory framework for initial coin offerings (ICO's), published 16 February 2018 (FINMA, 2018b).

Excursus: Decentralised Finance – Regulatory Challenges and Perspectives

The current financial market regulation is increasingly challenged by the rapid growth of Decentralised Finance (DeFi). This excursus aims to briefly present the most basic regulatory issues – the solutions are still being discussed.

- *Whom should regulators address?* The current regulatory regime focuses on the person or entity in control of an operation. In the DeFi context, as a rule no such person or entity exists, as blockchain technology and smart contracts in many case replace the involved financial intermediary. Therefore, the regulators lack personal regulatory point of entry. Furthermore, the identification of users, developers and, in particular, operators may complicated by the pseudonymous nature of DeFi and the distribution of the network. Finally, even if operators could be identified, the chances would be high that they lack the ability to modify the relevant DeFi protocol or transaction due to the autonomous and decentralised nature of DeFi.

- *Which regulator is responsible for the regulation and supervision of a particular DeFi-application?* DeFi is a globalised system with hardly any territorial touchpoints, while regulators are generally limited to act within the borders of their country (*Territorialitätsprinzip*). One could argue that the responsibility to regulate a particular DeFi-application therefore either falls to no specific regulator or to all regulators at the same time. This legal uncertainty has negative effects on all parties involved and stands in the way of innovation.

- *How can clients be protected and the proper functioning of the market be ensured?* The diverse DeFi-use cases do most of the time not fit into the current regulatory framework and cannot be qualified under the traditional regulatory licensing categories and provisions. There is a wide range of possible approaches for future regulation, although Switzerland is still far from finding a consensus on the correct way forward. In any case, it remains questionable whether national approaches are the most suitable form of regulation for DeFi applications – an international collaboration seems to have better chances of success.

On 11 September 2019, *FINMA* published a supplement to its "ICO Guidelines", which focused exclusively on "stable coins" ("Stable Coins Guidelines").[104] The Stable Coins Guidelines were published against the background of a request of the *Libra Association*, i.e., a not-for-profit entity domiciled in Switzerland, which fostered the development of the planned global currency Libra.[105] The *Libra Association* had asked *FINMA* for an assessment of how the Libra project, in particular the issuance of the Libra "stable coin", would likely be treated under Swiss financial market laws. *FINMA* took this opportunity to not only provide its initial views on Libra, but to publish the comprehensive Stable Coins Guidelines, which indicate how *FINMA* will assess projects involving tokens linked to an underlying asset.

FINMA stated that it will continue to apply a "substance over form" approach as a general principle, also with regard to "stable coins", just as it did and still does with regard to any other kind of token. *FINMA* furthermore mentioned that the design and the technical details of "stable coins" vary substantially. Nonetheless, according to *FINMA*, "stable coins" may on a high-level be categorised based on (i) the type of "underlying" or asset underlying the coin and (ii) the rights which holders of such coins have:

- *Currency backed coins*: If a stable coin is backed by currencies and the holders of such a coin have a redemption claim against the issuer at a fixed price (e.g., 1 coin for 1 CHF), such issuer may be deemed to be engaging in regulated deposit taking subject to a licensing requirement under the BA (see Section 5.2.2.1 above). If a coin is backed by a *basket* of currencies and if the holders of such coin have a redemption claim against the issuer at the current value of such a basket (net asset value), such coin may qualify as a unit in a collective investment scheme and hence trigger licensing requirements under the CISA (see Section 5.2.2.6 above). Also, such currency backed stable coins might constitute a payment system (see Section 5.2.2.3 above).

- *Commodities backed coins*: If a stable coin is backed by commodities, the regulatory consequences depend on the type of commodity and whether the holders of such a coin have only (i) a contractual claim against an issuer or (ii) whether they have a right *in rem* with regard to the underlying commodity. In the latter case, financial market regulation does generally not apply and the stable coin does, in particular, not qualify as a security, if certain requirements are met. If the coin only grants a contractual claim, however, this likely triggers requirements under the BA (if the commodities are precious metals) or the coin may qualify as a security or a derivative (if the commodities are other commodities than precious metals). Furthermore, such commodity backed stable coins may possibly also constitute units in collective investment schemes.

- *Real estate backed coins*: If a stable coin is backed by real estate, such coin will likely be qualified as a unit in a collective investment scheme, hence triggering a licensing requirement under CISA (see Section 5.2.2.6 above).

- *Securities backed coins*: If a stable coin is backed by a single security (e.g., shares of a particular company), the coin as such will likely qualify as a security, and may, depending on the specifics of the individual case, constitute a derivative or even a structured product. If the coin is backed by a *basket* of securities, however, it will in most cases constitute a unit in a collective investment scheme within the meaning of CISA (see Section 5.2.2.6 above).

It must be noted that these *FINMA* guidelines are of an indicative nature only and not legally binding. In any case, however, the specifics of each "stable coin" project will need to be assessed based on the relevant

[104] See FINMA media release of 11 September 2019 (FINMA, 2019).

[105] See the Libra White Paper (Libra, 2019). In April 2020, the Libra Association applied to FINMA for a payment system license. However, the focus of the project was shifted to the USA, whereupon the Diem Association (the former Libra Association) suspended the license application in May 2021; see FINMA Press Release of 12 May 2021 (FINMA, 2021a).

details of the envisaged design of the token and the legal relationships between the parties involved.

With regard to the questions, whether a particular token (or coin) is a Financial Instrument (see Section 5.1.1.1 above) for the purposes of the FinSA, the following must be noted:

- Whether a token qualifies as a Financial Instrument or not depends on its economic function and, derived from this, which rights are represented by or linked to such particular token. Consequently, it must be assessed on a case-by-case basis whether a token qualifies a Financial Instrument or not.

- *Asset tokens*, *hybrid tokens* and *stable coins* granting their holders for example participation and voting rights in a corporation or rights to the repayment of debt are likely to qualify as Financial Instruments within the meaning of FinSA.

- *Payment tokens* are to date not treated as securities by *FINMA* and are generally[106] not deemed to be Financial Instruments within the meaning of FinSA.

- *Utility tokens* are currently also not treated as securities by *FINMA*, provided (i) their sole purpose is to confer digital access rights to an application or service and (ii) the tokens can actually already be used in this manner when they are issued. Such "pure" utility tokens, which neither partially nor exclusively function as an investment in economic terms, are also no Financial Instruments for the purposes of the FinSA. For an example see the legal qualification of user tokens in connection with liquidity pools on decentralised exchanges in the excursus on page 55.

[106] Payment tokens may constitute deposits (Einlagen) and could therefore potentially be in scope of article 3 let. a ciph. 6 FinSA: "Financial Instruments are (…) deposits whose redemption value or interest is risk- or price-dependent, (…)".

5.3.2 DLT Law

The cornerstones of the DLT Law of 25 September 2020 are the introduction (i) of so-called Uncertificated Register Securities (*Registerwertrechte*) (Section 5.3.2.1), (ii) of a new license category for operators of DLT trading facilities (*DLT Handelsplattformen*) (Section 5.3.2.2) and (iii) of rules governing the segregation of crypto assets and data in insolvency proceedings (Section 5.3.2.3).

The DLT Law was approved by Swiss Parliament in September 2020. Whilst the provisions allowing for a creation of Uncertificated Register Securities were enacted 1 February 2021 (see Section 5.3.2.1), the additional aspects of the DLT Law entered into force on 1 August 2021.

5.3.2.1 Uncertificated Register Securities

The DLT Law introduced a new concept of so-called "Uncertificated Register Securities" (*Registerwertrechte*), which aims at increasing legal certainty in connection with the "tokenisation" of rights and financial instruments (see excursus on page 58). Based on the DLT Law, Swiss law now provides for the possibility of an electronic registration of rights and claims that has the same functionality and entails the same protection as a negotiable security.

Legal positions admissible as underlying rights of such Uncertificated Register Securities include rights against issuers, such as contractual claims or membership rights (e.g., shares in a corporation). Consequently, asset tokens, utility tokens, hybrid tokens as well as "stable coins" (see Section 5.3.1 above) may be issued in the form of Uncertificated Register Securities. Payment tokens, i.e., cryptocurrencies can, however, not be issued in the form of Uncertificated Register Securities since they do not give rise to any claims, which could serve as an underlying right.

Excursus: Liquidity Pools on Decentralised Exchanges[107]

A decentralised exchange (DEX) is an exchange, which enables immediate and direct trading of crypto assets based on smart contracts. Instead of an order book, that centralised exchanges (CEX) use to match bid and ask offers, DEX use liquidity pools to ensure a liquid market in a specific crypto asset. A liquidity pool is an asset pool that is filled with (usually two different) coins in a certain ratio, which enables swaps between the two coins without having to rely on a counterparty willing to enter into a trade. Instead, a trader sends his / her coins to the liquidity pool and receives the paired coins from the liquidity pool in return. This system relies on liquidity providers. In return for making their tokens available to the liquidity pool, liquidity providers receive a passive income, usually in the form of transaction fees paid by traders for a swap in the respective pool.

One Swiss use case involves a service provider offering tokenisation services. In order to ensure a liquid market for such tokens, the service provider creates a liquidity pool and issues a user token on a DEX that can be purchased by investors against payment of a specific cryptocurrency. The user token enables the investor to participate in and contribute to the respective liquidity pool that pairs the cryptocurrency with the token created on the tokenisation platform. Interested buyers and sellers can then trade those tokens on the DEX in a liquid manner.

If the service provider is domiciled in Switzerland, it may potentially be subject to Swiss financial market laws:

- Anti-Money Laundering Act: Persons or entities that provide services related to payment transactions qualify as financial intermediaries (see Section 5.2.2.4 above), if they assist in the transfer of virtual currencies, such as cryptocurrencies, if such service provider (i) maintains a permanent business relationship with its counterparties or (ii) may exercise control over the virtual currencies.[108] Fully autonomous systems that do not enter into a permanent business relationship with their users are excluded from the scope of the AMLA. Typically, the service provider will therefore not qualify as a financial intermediary as long as it does not exercise control over the tokens.

- Legal Qualification and Prospectus Requirement: Pursuant to FinSA, a person publicly offering securities (*Effekten*) to retail investors in Switzerland is required to prepare and publish a prospectus (see Section 5.1.1.2.6 above). Accordingly, if the user tokens qualify as securities, the service provider will generally be required to publish a prospectus. User tokens, which merely grant an investor access to the liquidity pool, will typically be deemed "pure" utility tokens and as such do not qualify as securities. Furthermore, this qualification requires that there are no monetary claims of the token holder against the service provider and that the service provider does not have any influence on the functionality of the smart contract or custody of the tokens. Otherwise, a banking or FinTech license may be required.

However, in order to determine the applicability of the Swiss financial market laws, it is necessary to analyse the situation on a case-by-case basis. In view of the numerous possibilities of implementation, the views expressed above may differ in practice and are limited to the described constellation.

[107] For further details see Wherlock and Haeberli (2021).
[108] Article 4 para. 1 let. b AMLO.

In order to create Uncertificated Register Securities, the involved parties (e.g., the issuer of an instrument as debtor and the holders of the instrument as creditors) must enter into a registration agreement (*Registrierungsvereinbarung*). Based on this agreement the relevant right (i) is entered into the so-called "Register of Uncertificated Securities" (*Wertrechteregister*) and (ii) may exclusively be asserted based on and transferred via this register.[109]

The register must meet certain minimum requirements in order to qualify as a Register of Uncertificated Securities within the meaning of the DLT Law:

(i) the register must, by means of technical procedures, grant the creditors, but not the debtor, actual power of disposal (*Verfügungsmacht*) over their rights;

(ii) the register's integrity must be ensured by implementing the appropriate technical and organisational protective measures that prevent unauthorised changes to the register (e.g., joint administration by several independent parties);

(iii) the content of the registered rights, the functioning of the register itself and the registration agreement must be recorded either directly in the register itself or in accompanying data linked to the register; and

(iv) creditors must be able to view the information and data relating to themselves and they must be able to verify, without third party support or intervention, the integrity of the content of the register relating to themselves.[110]

In its dispatch of the DLT Law, the *Federal Council* mentions certain existing DLT-systems that are currently deemed suitable to fulfil the statutory minimum requirements. Both permissionless (e.g., Ethereum) as well as permissioned (e.g., Corda, Hyperledger Fabric) systems are mentioned in this (non-exhaustive) list.

The DLT Law also allows to bridge the new framework with the "traditional" book-entry securities (*Bucheffekten*) concept. In particular, it is possible to register Uncertificated Register Securities with a "*traditional*" *custodian* (e.g., *a bank*) and to subsequently book them into a "traditional" securities account. Hence, Uncertificated Register Securities can easily be transferred to the "old world" of book-entry securities, if desired.

5.3.2.2 DLT Trading Facilities

Under former Swiss law, there were only three categories of trading facilities: stock exchanges, multilateral trading facilities and organised trading facilities (see Section 5.2.2.2 above). For a number of reasons, these categories were deemed unsuitable for trading of crypto assets, e.g., because retail clients do not have direct access to regulated stock exchanges and multilateral trading facilities. Instead, these trading venues are only open to holders of a securities firm license and certain other regulated participants.[111]

Under the DLT Law, a new license category for (centralised) financial market infrastructures was introduced. These so-called "DLT Trading Facilities" (*DLT-Handelssysteme*) may offer services in the areas of trading, clearing, settlement and custody of DLT-based assets not only to regulated financial market participants but also to unregulated corporates as well as individuals, potentially including retail clients.

A license as a DLT Trading Facility can be obtained by trading venues that allow for the simultaneous exchange of offers between several participants and the conclusion of contracts based on non-discretionary rules and, in addition, provide for: (1) the admission of unregulated corporates or individuals; (2) the custody of DLT Securities based on uniform rules and procedures; or (3) the clearing and settlement of trades in DLT Securities based on uniform rules and procedures.[112]

"DLT Securities" (*DLT-Effekten*) are securities that are suitable for mass trading and are issued in the form of

[109] Article 973d para. 1 CO.
[110] Article 973d para. 2 CO.
[111] Article 34 para. 2 FMIA.
[112] Article 73a FMIA.

Uncertificated Register Securities (*Registerwertrechte*) and which, by means of technical procedures, grant the creditors, but not the debtor, the actual power of disposal over the uncertificated securities.[113]

Payment tokens as well as (mere) utility tokens that do not serve an investment purpose do not constitute DLT Securities. However, a DLT Trading Facility may also permit the trading of payment and utility tokens that do not qualify as DLT Securities.

The licensing requirements for DLT Trading Facilities are largely modelled on the requirements for traditional trading venues (i.e., stock exchanges and multilateral trading facilities). However, specific rules with respect to the admission of participants and the admission of DLT Securities have been added.[114] Furthermore, additional requirements for certain types of DLT Trading Facilities have been established, e.g., for DLT Trading Facilities that admit retail investors as participants and therefore require higher standards of customer protection.[115] On the other hand, relief from certain requirements applicable to DLT Trading Facilities that are considered "small" in terms of number of participants or trading and custody volume, respectively, have been granted.[116]

5.3.2.3 Insolvency

Crypto assets such as cryptocurrencies and tokenised financial instruments are often stored with third party custodians, such as exchanges or wallet providers.

Under former Swiss law it was unclear whether crypto assets held by a custodian on behalf of a client would be segregated in the bankruptcy of the custodian, especially if the creditor or investor did not hold (any) private key(s). The DLT Law therefore introduced a new segregation regime that allows the segregation of crypto assets for the benefit of the relevant creditors or investors in the bankruptcy of the custodian, if certain requirements are met, including, in particular, the following:

- First, the relevant custodian must have an obligation vis-à-vis the relevant creditor or investor to hold the crypto assets available for him at all times. This means that the custodian may, for example, not use such crypto assets for proprietary business or own-account transactions.

- Second, the crypto assets are only segregated if they can be either (i) unambiguously allocated to the individual creditor or investor (however, there is no need that such allocation occurs directly on the relevant DLT-system itself) or (ii) allocated to a group of investors or creditors and it is evident what share of the joint holdings belongs to a given creditor or investor. The latter option allows a pooling of crypto assets held for several creditors or investors.

In addition, the access to data in insolvency in general is governed by the DLT Law. Under ancient Swiss law it was not clear whether digital data stored by a third party custodian (e.g., a cloud provider) could be segregated from the bankruptcy estate of such custodian. The DLT Law introduced a right to request segregation of digital data regardless of whether such data has any (market) value or not (e.g., a holiday picture) in the bankruptcy proceedings of a custodian. The person requesting such segregation must show that it has a specific entitlement to the data for which the segregation is being requested (e.g., a statutory or contractual claim). Furthermore, the person requesting segregation may be required to pay a fee in advance, which will then be used to cover the costs of the data retrieval and segregation.

[113] Article 2 let. b^{bis} FMIA.
[114] For an overview see FINMA guidelines for applications concerning licensing as a DLT trading facility (FINMA, 2021b) (version of 2 August 2021), which are available in German, French as well as English.
[115] Article 58i et seq. FMIO.
[116] Article 58l FMIO.

Excursus: CMTA Standards

The Capital Markets and Technology Association (CMTA) is an independent association formed by leading participants of Switzerland's financial, technological and legal sectors with the aim of creating common standards governing the issuance, distribution and trading of securities in tokenised form using the distributed ledger technology. Notably the CMTA has issued the "Standard for the tokenization of shares of Swiss corporations using the distributed ledger technology" (CMTA Tokenization Standard).[117] The CMTA Tokenization Standard sets out a standard for the tokenisation of shares of Swiss corporations, covering both the technical and legal aspects of the tokenisation process. Shares tokenised in accordance with the CMTA Tokenization Standard qualify as Uncertificated Register Securities within the meaning of the Swiss Code of Obligations. Further, shares that have been tokenised under the CMTA Tokenization standards will receive a CMTA certification which will increase public confidence in the technical and legal set-up underlying the tokenised shares.

The CMTA' activities are, however, not limited to the tokenisation of equity rights. In December 2022, the CMTA, together with a number of market participants, including various banks and notably BX Swiss, conducted a proof of concept for the DLT based issuance, trading and settlement of tokenised investment products. The proof of concept namely included three separate steps (i) the issuance of tokenised investment products recorded on an Ethereum test blockchain, (ii) the trading of such tokenised investment product on a regulated Swiss exchange and (iii) the settlement of such trades through a smart contract developed by the CMTA. The operational benefits of a DLT based fully integrated issuance, trading and settlement of tokenised investment products are considerable, best evidenced by the fact that the proof of concept was conducted within hours, whereas the issuance, trade execution and settlement of "traditional" financial products typically takes a number of days to finalise.

[117] For further details see CMTA (online).

6. Crypto Assets Market in Switzerland

By Thomas Ankenbrand, Denis Bieri, Timon Kronenberger & Levin Reichmuth

Despite, or perhaps because of, high volatility, temporary rising return correlation with other asset classes, hypes, and crashes, the Swiss ecosystem for crypto assets remains active. This chapter provides an update on market volumes in the corresponding investment ecosystem, building on the "Crypto Assets Study 2022" published by the Lucerne University of Applied Sciences and Arts in September 2022.[1]

6.1. Structure of the Ecosystem for Crypto Assets

While different terms such as "cryptocurrencies", "tokenised assets", "digital assets", and "crypto tokens" are often used in practice to refer to DLT-based assets, sometimes as synonyms, an overarching definition of the subject is lacking. In this chapter, analogous to Ankenbrand et al. (2022), the term "crypto assets" is used, which is defined as follows:

> Crypto assets are digital representations, like claims, values, or rights, issued on a distributed ledger, such as a blockchain protocol, in the form of tokens.

The advantage of this comparatively broad definition is that it encompasses various manifestations of DLT-based tokens. These include, for example, cryptocurrencies, i.e., crypto assets designed as alternative means of payment, and tokenised representations of other goods or assets, such as tokenised shares or stablecoins.

Similar to the investment value chain for traditional financial assets, there are various processes for crypto assets that are pertinent to corresponding investments. These processes tend to vary depending on the type of investment vehicle, specifically direct investments in crypto assets or indirect investments in products based on crypto assets. An overview of these main processes, their degree of DLT exposure, and the different types of providers is illustrated in Figure 6.1. In general, a distinction is made between the issuance of crypto assets or indirect financial products on them, investment services, trading infrastructures, and post-trade infrastructures (e.g., custody), whereby the degree of decentralisation and DLT exposure of the service can differ.[2]

6.2. Market Volumes

In this section, the market activities in the trading of crypto assets and corresponding indirect investment products are discussed in particular, as these can be used as a proxy for the general activity in the Swiss investment sector and, in contrast to other processes of the value chain, corresponding Switzerland-related figures are available or can be estimated. In addition, developments with regard to tokenisation are discussed.

6.2.1 Indirect Investments

Trading indirect financial instruments on crypto assets represents an interesting opportunity for some types of investors, as it offers certain advantages over direct investments. For example, the corresponding trading takes place on regulated exchanges, and blockchain-based custody is not necessary, as corresponding financial products can simply be integrated into traditional securities accounts. However, this entails that there is a counterparty risk and that corresponding custody fees may also be incurred.

Since their initial launch, the number and variety of indirect financial products traded on the two Swiss exchanges, BX Swiss and SIX, have increased steadily

[1] See the full report at Ankenbrand, Bieri, Kronenberger, and Reichmuth (2022).

[2] See Ankenbrand et al. (2022) for a more detailed discussion of the framework.

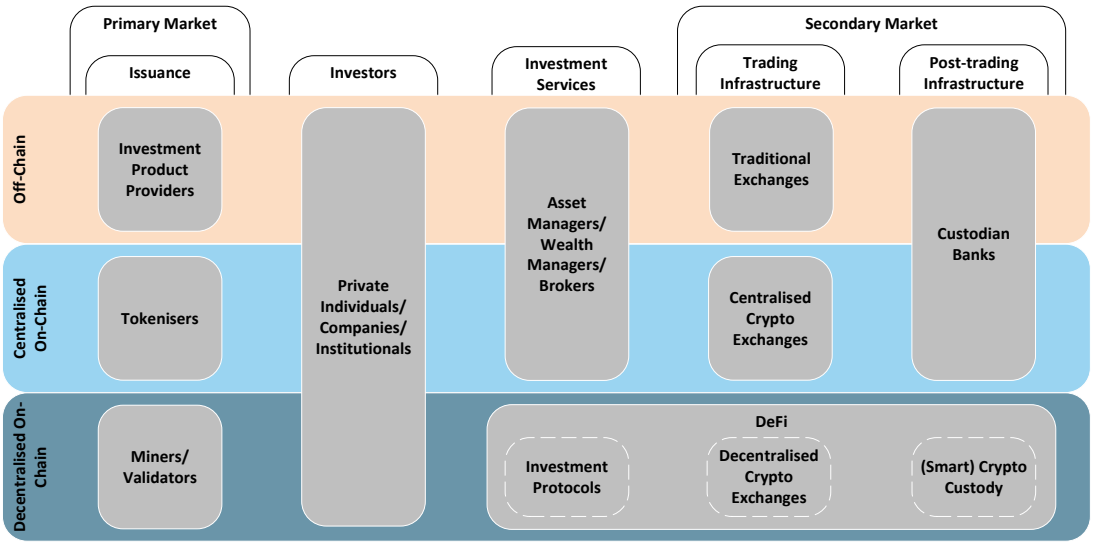

Figure 6.1: Structure of the ecosystem for crypto assets investments

in recent months. Figure 6.2 shows the number of crypto-related financial products traded at these two exchanges by product type (left-hand graph) and by the underlying crypto asset (right-hand graph) since August 2020.

The figure reveals that the total number of indirect products traded at Swiss exchanges has increased from March 2021 to May 2022 and then stagnated at a total of around 330 products. The increase can mainly be attributed to the launch of new exchange-traded products (ETPs) and tracker certificates, as highlighted in the left-hand graph. In contrast, mini futures, (barrier) reverse convertibles, and capital protection certificates are of comparatively minor relevance. At the end of December 2022, 170 ETPs, 112 tracker certificates,

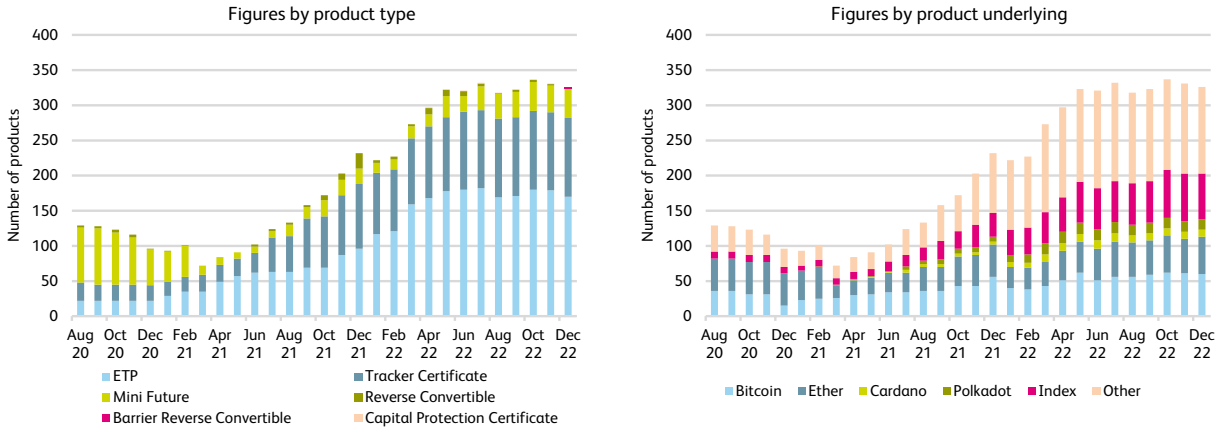

Figure 6.2: Number of crypto-related financial products traded in Switzerland per month by product type (left-hand graph) and the underlying asset (right-hand graph) (sources: BX Swiss, SIX)

41 mini futures, two reverse barrier convertibles, and one reverse convertible were listed on the two Swiss exchanges.

The right-hand graph of Figure 6.2 reveals the underlying assets of the indirect investment products. From this, it can be seen that the diversity of crypto assets on offer has increased over the last few months. While products on Bitcoin, Ether, Cardano, and Polkadot, the four crypto assets with the largest number, have remained relatively stable in 2022, the number of index products and products on other crypto assets (e.g., Ripple, Litecoin, and Algorand), in particular, has increased.

The trading volume for indirect products on crypto assets on the SIX exchange, i.e., the largest Swiss stock exchange, is shown in Figure 6.3.[3] The left-hand graph reveals that the total monthly trading volumes have decreased significantly in 2022, which might be related to the overall negative performance of the crypto market. As of December 2022, the total market turnover was CHF 52 million, of which CHF 33 million was accounted for by ETPs and CHF 19 million by structured products. Compared with the highest figure of over CHF 1.2 billion in February 2021, this represents a decline of 96 percent. Comparing the total annual trading volume of CHF 2.1 billion in 2022 with the CHF 8.6 billion from 2021 results in a decrease of 76 percent.

The right-hand graph of Figure 6.3 illustrates the relative distribution of total trading volume on ETPs and structured products. It shows that while ETPs gained share relatively steadily in 2020 and 2021, there was a tendency for this trend to reverse in 2022. However, at the end of 2022, ETPs still accounted for around 63 percent of the total trading volume of crypto-related products on the SIX exchange, while structured products accounted for only 37 percent.

The trend for the number of transactions is very similar to that for the trading volume. For December 2022, SIX recorded a total of 4,160 transactions for crypto-related products, the majority for ETPs. In comparison to the all-time high of 48,586 transactions in May 2021, this constitutes a decline of 91 percent. There was also a decline in the average transaction size. While the average transaction volume in 2021 was CHF 24,654, it was only CHF 14,289 in 2022.

In recent years, derivatives trading (e.g., via perpetual futures contracts or call and put options) on centralised crypto exchanges has emerged as another way to build crypto exposure via indirect investments. This type of trading differs from spot trading, for example, by the possibility of leverage and short selling and is there-

[3] Note that no corresponding figures are available for BX Swiss.

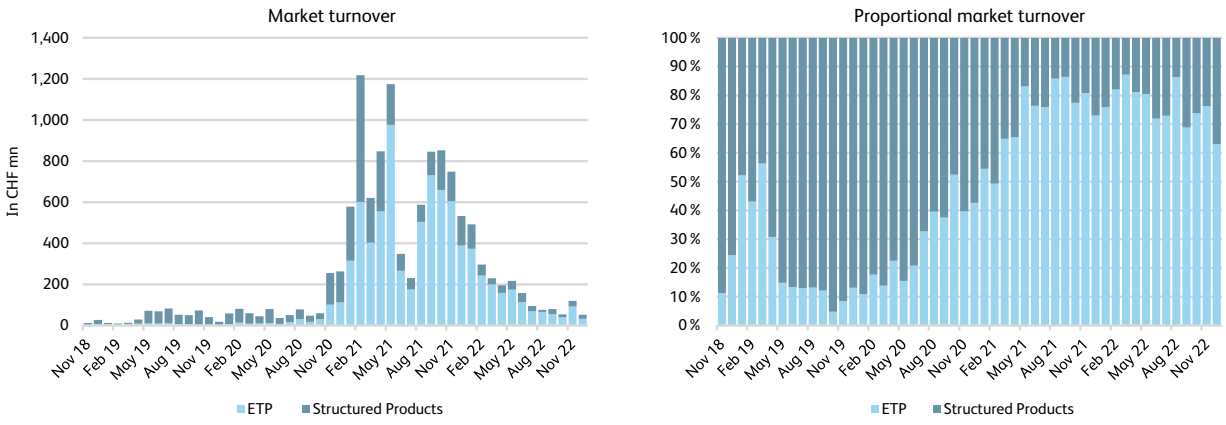

Figure 6.3: Market turnover on the SIX Swiss Exchange by month (source: SIX)

fore also suitable for risk management, i.e., hedging of crypto assets exposure. The estimated monthly trading volume for crypto derivatives trading originating from Switzerland is presented in Figure 6.4.[4]

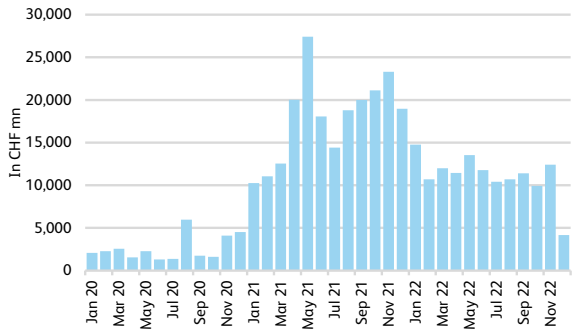

Figure 6.4: Monthly derivatives trading volume on centralised crypto exchanges from Switzerland (sources: CoinGecko (2022), Semrush (online))

Like trading of indirect crypto products on SIX, derivatives trading on crypto exchanges declined in 2022 compared to 2021. However, the estimated Swiss trading volume of CHF 133 billion over the entire year 2022 shows the great relevance of derivatives trading on crypto exchanges. Compared to trading on SIX, this volume is around 64 times larger.

Hence, while the range of indirect investment products on Swiss exchanges has increased and diversified in recent months, the market volumes for indirect trading declined in 2022. One reason for the latter could be the recent negative price development on the market for crypto assets.

6.2.2 Direct Investments

In contrast to indirect investments, crypto assets can also be traded directly on centralised and decentralised crypto exchanges. In the following, the corresponding trading volume originating from Switzerland is discussed. The data was collected using the API provided by CoinGecko (2022) and covers the period from January 2020 to December 2022. The daily spot trading volumes of all centralised and decentralised exchanges available via the API were retrieved, and the trading volumes denominated in Bitcoin were multiplied with the corresponding day's BTC/CHF market rate and aggregated by the period. The largest exchanges per segment were selected for further analysis by considering the 20 largest exchanges for each month of the period. For centralised exchanges, only those with a CoinGecko trust score greater than five out of ten were considered. The trust score focuses on liquidity, scale of operations, and API coverage CoinGecko (online). To estimate the volume originating from Switzerland, the corresponding monthly web traffic share of each exchange was collected using the platform of the search engine marketing company Semrush (online) and multiplied by the total trading volume of the exchange. As some exchanges are frequently accessed via the mobile application, the Swiss market shares have to be considered with care. Additionally, the estimations of the Swiss market shares might be rather modest, given that Switzerland is a wealthy country and that Swiss investors might hold an overproportional amount of crypto assets compared to their web traffic.

The monthly spot trading volume on crypto exchanges originating from Switzerland is illustrated in Figure 6.5.

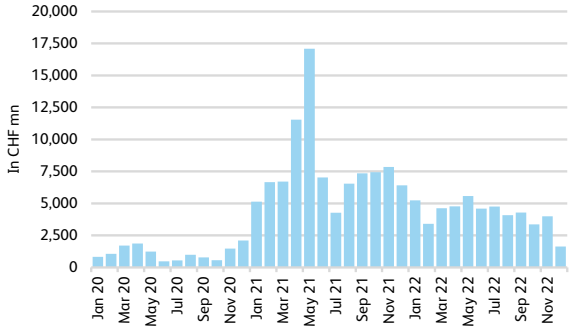

Figure 6.5: Monthly spot trading volume on centralised crypto exchanges from Switzerland (sources: CoinGecko (2022), Semrush (online))

It reveals that trading activity has declined over the past months. In December, centralised exchanges cleared CHF 1.6 billion in spot trading, a figure that is

[4] The estimation procedure is the same as for direct investments and is described in more detail in Section 6.2.2.

about ten times smaller than the record month of May 2021, when they cleared about CHF 17.1 billion.

Compared to indirect trading on SIX, it can be seen that spot volumes on the centralised crypto exchanges have also declined, albeit to a lesser extent, and that trading volumes for the latter fluctuate comparatively less. A comparison of the yearly figures reveals that while trading of products related to crypto assets on SIX amounts to CHF 2.1 billion for the year 2022, the estimation for the centralised crypto exchanges amounts to CHF 50.3 billion, which underlines the important role of direct investments. However, compared to derivatives trading on crypto exchanges, spot trading volumes are lower.

Decentralised exchanges are alternative venues for the direct trading of crypto assets. Unlike centralised crypto exchanges, decentralised crypto exchanges allow users to trade directly with each other without the need for an intermediary. These exchanges are operated by a decentralised network of nodes, and users have control over their own assets. This typically provides more privacy and security but can result in higher transaction fees and longer trade execution times compared to centralised exchanges (Barbon & Ranaldo, 2021). The monthly trading volumes on decentralised exchanges originating from Switzerland are illustrated in Figure 6.6.

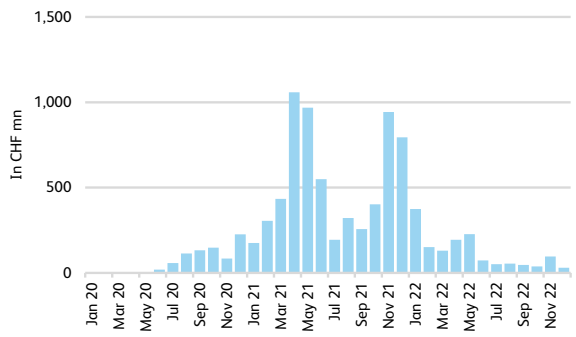

Figure 6.6: Monthly spot trading volume on decentralised crypto exchanges from Switzerland (sources: CoinGecko (2022), Semrush (online))

Again, a clear decline in trading activity is evident in 2022 compared to 2021. In 2022, decentralised exchanges recorded a total trading volume of CHF 1.5 billion, which is significantly lower than spot and derivatives trading on centralised crypto exchanges and also around 29 percent below that of SIX for indirect investments in crypto assets.

6.2.3 Tokenisation

Developments in blockchain technology, such as the establishment of token standards (e.g., the ERC-20 standard on the Ethereum network), have spread the concept of tokenisation. In general, the term can be summarised relatively broadly as follows (Ankenbrand et al., 2021):

> Tokenisation is the process of issuing tokens on a blockchain that represent an asset, such as a good or a right.

Tokenisation can, therefore, be used for a variety of use cases and allows for the creation of many different types of crypto assets.[5] The asset to be tokenised may exist off-chain. Examples include fiat money or commodities used to issue blockchain-based stablecoins whose value is linked to underlying assets or artworks whose (fractional) ownership rights are represented using tokens. This type of tokenisation is often undertaken by centralised providers who are also responsible for the custody and maintenance of the off-chain asset. However, tokenisation can also take place for assets such as rights or obligations. One example is tokenised securities, which have the same rights as shares issued in the form of traditional (digital) certificates or as uncertificated securities and, therefore, also include voting rights and dividend payments (CMTA, online). The creation of tokenised securities sometimes requires a custodian to hold the underlying "traditional" securities represented by tokens on the blockchain as collateral. In Switzerland, a legal basis was created with the DLT Law, which enables the digital issuance

[5] See Ankenbrand, Bieri, Cortivo, Hoehener, and Hardjono (2020) for an in-depth discussion of (crypto) assets and their characteristics.

of shares, participation certificates, bonds and other rights in the form of so-called registered uncertificated securities (in German: "Registerwertrechte") directly on a blockchain.[6]

The representation of assets in the form of tokens on a blockchain requires the use of crypto wallets to hold them in custody. Depending on the case, this safekeeping can take place completely decentralised in individual wallets or also be taken over by centralised providers. The degree of transparency of token activity (e.g., issuance, change of ownership) can, hereby, vary depending on the underlying blockchain. More specifically, tokenisation can be done on a public blockchain, with all corresponding activities being public (typically in pseudonymous form using public keys) or on a private or consortium network with only accredited participants being able to write or read token-related information.

The potential of tokenisation has already been explored in various publications. A study by the Boston Consulting Group (BCG) and ADDX highlights that in a conservative scenario, the total volume of tokenisation of illiquid assets (e.g., real estate, artworks, private equity) is expected to increase from USD 0.31 trillion to USD 16.1 trillion between 2022 and 2030 (see Figure 6.7). According to this estimate, ten percent of the total global GDP will be tokenised in 2030 (BCG & ADDX, 2022). In an earlier report from 2015, the World Economic Forum (WEF) already predicted tokenisation of ten percent of global GDP by 2027 (World Economic Forum, 2015a).

In Switzerland, tokenisation has already taken place in various areas, as the following exemplary projects show. Already in 2020, the real estate investment company BrickMark informed about the purchase of a property in Zurich for CHF 130 million, whereby part of the purchase price for the property was paid in BrickMark tokens representing the rights and entitlements of the token holders (BrickMark, 2020). In December 2021, SEBA Bank AG announced the issuance of a gold-backed token in conjunction with the two companies

[6] See Chapter 5 for more information.

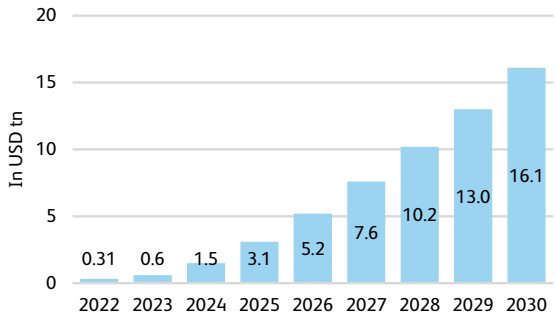

Figure 6.7: Tokenisation of illiquid assets by year (source: BCG & ADDX (2022))

Argor-Heraeus and aXedras in order to provide digital and cost-effective access to the precious metal (SEBA Bank AG, 2021). In November 2022, Sygnum Bank AG announced that it had tokenised the Andy Warhol artwork "Four Marilyns (Reversal)" in cooperation with art investment company Artemundi (Sygnum Bank AG, 2022b). Further examples include the tokenisation of bonds issued by UBS and the City of Lugano for CHF 375 million and CHF 100 million, respectively, on the SIX Digital Exchange (SDX) blockchain platform (UBS, 2022; City of Lugano, 2023). There are also Swiss examples in the field of non-fungible tokens (NFTs), like the issuance of crypto stamps by Swiss Post in 2021 and 2022 (Swiss Post, online).

In general, various providers in Switzerland have focused on the tokenisation of assets, sometimes alongside other products and services. These tokenisation service providers include 4bridges, Aktionariat, Atomyze, aXedras, the Berner Kantonalbank, Bitcoin Capital, Crowdlitoken, Crypto Finance, daura, FQX, GenTwo Digital, InCore Bank, Mt Pelerin, Swissquote, and Sygnum Bank (Ankenbrand et al., 2022). Of these providers, many have specialised in tokenising equity, thus creating a new way of raising capital driven by the introduction of the DLT Law in Switzerland (see Section 5.3.2). For example, the two platforms Aktionariat and daura together have already issued tokenised shares for almost 100 Swiss companies as of the beginning of 2023 (Aktionariat, online; daura, online). In addition to is-

Stablecoin	Transfers	Holders	Token Supply	Network(s)	Issuer
JCHF	60,588	1,214	1,133,738	Avalanche, BNB Chain, Ethereum, Gnosis, Polygon	Jarvis Network
Defi Franc	35,506	1,757	7,797,014	Ethereum	Grizzly.fi
XCHF	14,610	457	7,100,00	Ethereum	Bitcoin Suisse

Table 6.1: Selection of CHF-stablecoins as of mid-January 2023 (sources: Blockscout, BscScan, Etherscan, PolygonScan, SnowTrace)

suance, trading venues for secondary trading of tokenised assets, such as SDX by SIX or SMEIX by the Berner Kantonalbank, have also positioned themselves in the market.

Swiss franc stablecoins are another area of tokenisation activity in Switzerland and represent blockchain-based tokens whose value is pegged to the Swiss franc. A selection of three such stablecoins is shown in Table 6.1. Jarvis Network's stablecoin JCHF has the most total token transfers (60,588) as of mid-January 2023 and is available on several networks. Grizzly.fi's Defi Franc, launched in the year 2022 on Ethereum, is the stablecoin with the largest number of holders (1,757) and the second largest number of transfers (35,506) and token supply (7,797,014). Another Ethereum-based stablecoin is XCHF by Bitcoin Suisse, totalling 14,610 transfers, 457 holders, and a circulating supply of 7.1 million tokens, equivalent to CHF 7.1 million.

In summary, tokenisation can be used to represent a wide variety of types of assets on a blockchain. There are already various examples of tokenisation in Switzerland, with more projects expected in the future, judging by the estimated global potential.

6.3. Crypto Assets as an Investment

The emergence of different types of crypto assets has increasingly attracted the attention of investors. As concluded in various publications, crypto assets can themselves be considered an asset class and can make a useful contribution as a portfolio addition to investment management (see, e.g., Ankenbrand and Bieri (2018) or Krueckeberg and Scholz (2019)). The basis for this is the (historically) low return correlation of crypto assets with other asset classes. An analysis of the rolling 30-day correlation between Bitcoin (in CHF) and the Swiss Performance Index® (SPI) is shown in Figure 6.8.

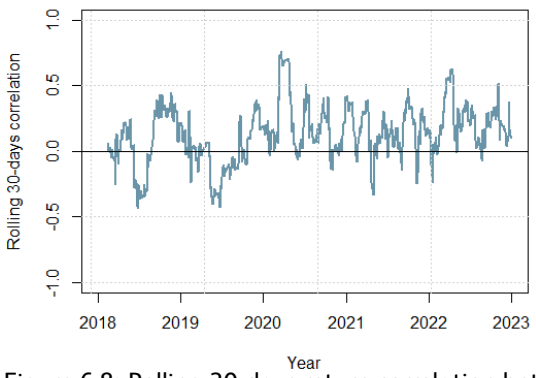

Figure 6.8: Rolling 30-days return correlation between Bitcoin and the SPI (source: Bloomberg)

It shows that as of 2018, the rolling correlation is only slightly positive on average, indicating a relatively uncorrelated relationship between the two markets. Hence, crypto assets seem to reveal an interesting potential for portfolio diversification. It should also be noted that the correlation coefficient exceeds a value of 0.5 in certain phases, e.g., at the outbreak of the Covid-19 crisis, and thus the diversification effect temporarily decreases. With a mean correlation coefficient of 0.13 over the entire observation period, however, there is evidence for the potential of crypto assets in portfolio management.

Portfolios	Bonds	Stocks	Real Estate	Bitcoin
Portfolio excluding BTC	40 %	35 %	25 %	0 %
Portfolio including BTC	39 %	34 %	24 %	3 %

Table 6.2: Asset allocations considered

The potential of crypto assets, as proxied by Bitcoin, for portfolio diversification for a Swiss investor is discussed in the following for the observation period from January 2018 to the end of 2022. The starting point of the analysis in 2018 is due to the availability of Bitcoin also for a broader group of investors.

Considering the asset classes stocks (as proxied by the Swiss Performance Index®), bonds (as proxied by the Swiss Bond Index® TR), real estate (as proxied by the SXI CH Real Estate® Shares TR), and Bitcoin (denominated in CHF), two different portfolio allocations as defined in Table 6.2 are compared regarding their performance. The first portfolio is based on the overall investment strategy of Swiss pension funds according to the Occupational Pension Supervisory Commission (OPSC) and serves as a benchmark (OPSC, 2021). Using this strategy, 40 percent is invested in bonds, 35 percent in equities, and 25 percent in real estate.[7] The second portfolio additionally includes Bitcoin. More specifically, exposure to traditional asset classes is reduced by one percentage point each and newly invested in Bitcoin, resulting in a three percent investment into the latter.[8]

The performance of both portfolio allocations is illustrated in Figure 6.9, showing the cumulative returns and the maximum drawdown over time and consider-

[7] In this analysis, alternative investments are not included in the asset universe.

[8] This is a more conservative allocation compared to the market portfolio according to Modern Portfolio Theory, which retrospectively results in an optimal Bitcoin share of roughly 14 percent over the same observation period.

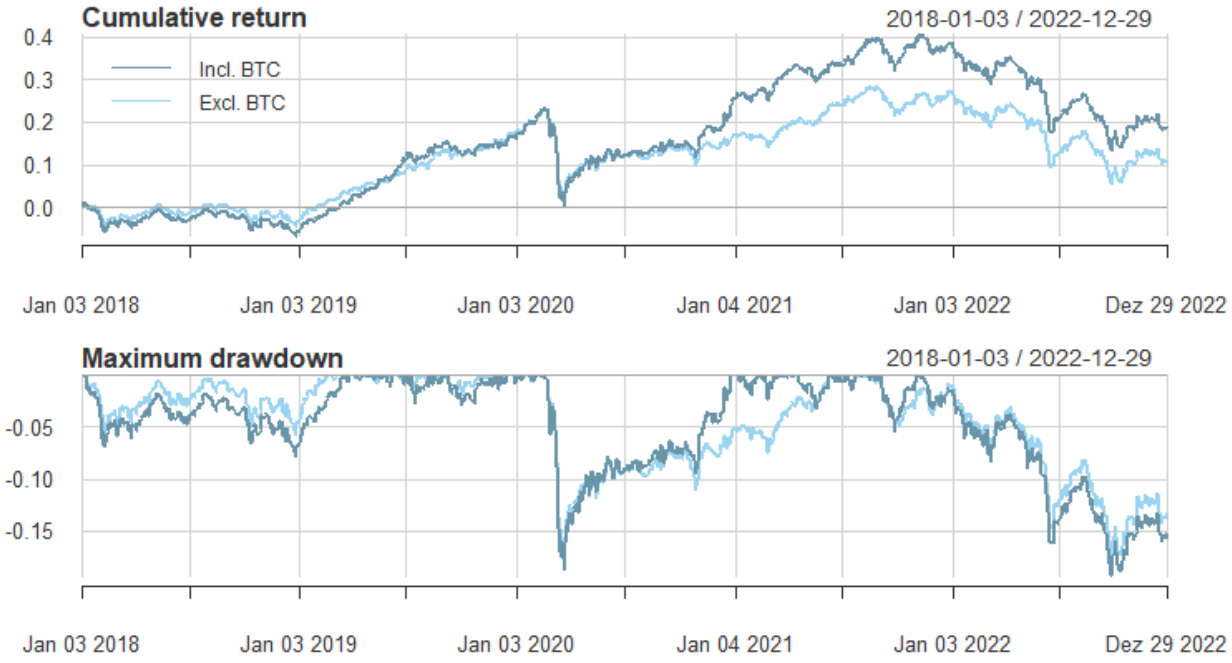

Figure 6.9: Portfolio performances in- and excluding Bitcoin

ing a yearly rebalancing. The figure indicates that while the portfolio without a Bitcoin investment achieves a cumulative return of roughly 12.4 percent, the one with a three percent Bitcoin investment is higher at 19.4 percent. Conversely, the maximum drawdown shows that the risks of the Bitcoin portfolio are also higher. The maximum drawdown for the traditional portfolio without crypto assets in the asset universe of minus 18 percent was reached in March 2020 during the outbreak of Covid-19. The one for the portfolio, including Bitcoin, amounts to minus 19 percent and starts in November 2021 without a full recovery by the end of 2022.

An alternative performance measure, namely the Sharpe ratio, also suggests the utility of Bitcoin in a portfolio context. While the portfolio with a three percent investment in Bitcoin achieves an annualised Sharpe ratio of 0.40 over the observation period, that of the traditional portfolio is 0.27.

In summary, Bitcoin could have been a value-added investment from an investor perspective. However, it should be clearly noted at this point that in addition to performance, the risks of the Bitcoin portfolio were also higher over the observation period and that past performance is not necessarily an indicator of future performance.

6.4. Conclusion & Outlook

The emergence of crypto assets has led to a diverse investment offering in Switzerland, which investors could have benefited from in the past. Although trading volumes for both indirect and direct investments have declined in recent months, the potential for crypto assets, for example, through tokenisation activities, is assumed to be far from exhausted. The turmoil observed in the crypto ecosystem in recent months, such as the collapse of FTX, could also prove to be an opportunity for Swiss banks to increase their crypto assets-related business volume, as investors could switch to regulated and trusted providers.

To benefit from this, however, it will be increasingly important for Swiss banks to adopt an integrated infrastructure for crypto assets that can cover the relevant processes of the crypto asset life cycle in a scalable way, depending on the bank's business model, and also meet changing customer needs and requirements. Various IT providers to financial institutions have recognised this, which is why there is an evolution from bilateral project-based partnerships for integrating crypto assets into banking services to standardised and modularised products. This enables financial service providers to integrate services in the areas of, for example, payments, trading, clearing and settlement, or custody of crypto assets into their core banking system comparatively quickly, securely, and efficiently. This, in turn, could lead to greater adoption of crypto assets by banking customers, as well as an increasingly strong merging of the traditional financial world with the crypto economy.

7. Funding and Valuation of FinTech Companies

By Thomas Ankenbrand, Denis Bieri, Moreno Frigg & Timon Kronenberger Institute of Financial Services Zug IFZ

This chapter provides an overview of the financing activities of FinTech companies (Section 7.1) and an analysis of the performance of those companies that are listed on a stock exchange (Section 7.2).

7.1. Funding of FinTech Companies

Funding is critical for FinTech companies as it provides them with the necessary resources and support to grow and succeed in their respective markets. Venture capital (VC) is particularly important for younger companies, enabling them to develop products and services, enter the market, and scale up.

As illustrated in Figure 7.1, global VC investment volumes in 2022 have declined for the first time since 2015.

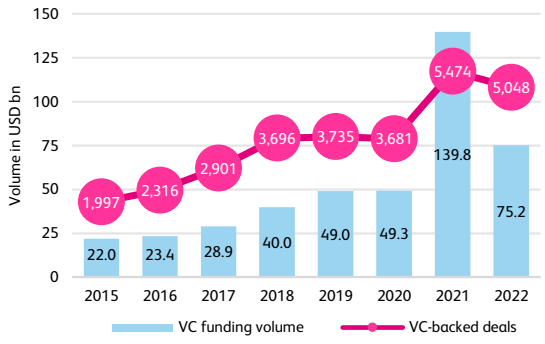

Figure 7.1: Global venture capital investments in FinTech (sources: CB Insights (2022b, 2023))

More precisely, in 2022, the total venture capital raised by FinTech companies globally amounted to USD 75.2 billion, representing a year-over-year decrease of 46 percent. The number of financing rounds has also decreased, although not as much as the volume. While a total of 5,048 rounds were counted in 2022, 5,474 were counted a year earlier, a decrease of eight percent. This comparatively smaller decline suggests that investors were not generally shying away from providing capital in 2022, but that smaller early-stage companies were financed rather than larger late-stage companies, as indicated by the lower average transaction volume of USD 14.9 million per deal compared to USD 25.5 million per deal in 2021. In general, however, VC activity was still higher than in 2020.

From a regional perspective, the highest activity is recorded in North America. More precisely, the analysis of the volumes of the last quarter of 2022 also shows that North America, with 39 percent of the total, takes the leading role, followed by Europe (26 %), Asia (25 %), Latin America and the Caribbean (6 %), Australia (3 %), and Africa (2 %) (CB Insights, 2023).

The numbers specific to Switzerland are presented in Figure 7.2. While the left-hand graph illustrates the development of the total number of VC rounds by year, the right-hand graph shows annual VC volumes raised by Swiss FinTech companies. In the figure, a distinction is also made between Seed, Series A, and Series B[1] financing. In general, Seed financing is the initial funding that is used to validate the business idea and feasibility, Series A financing is used to develop the product, expand the team, and launch the business, and Series B financing is used to scale the business and expand into new markets.

The left-hand graph of Figure 7.2 reveals that the number of VC rounds remained relatively stable in 2022

[1] Note that in this analysis, all later stage funding rounds, e.g., Series C or Series D, are summarised under Series B funding.

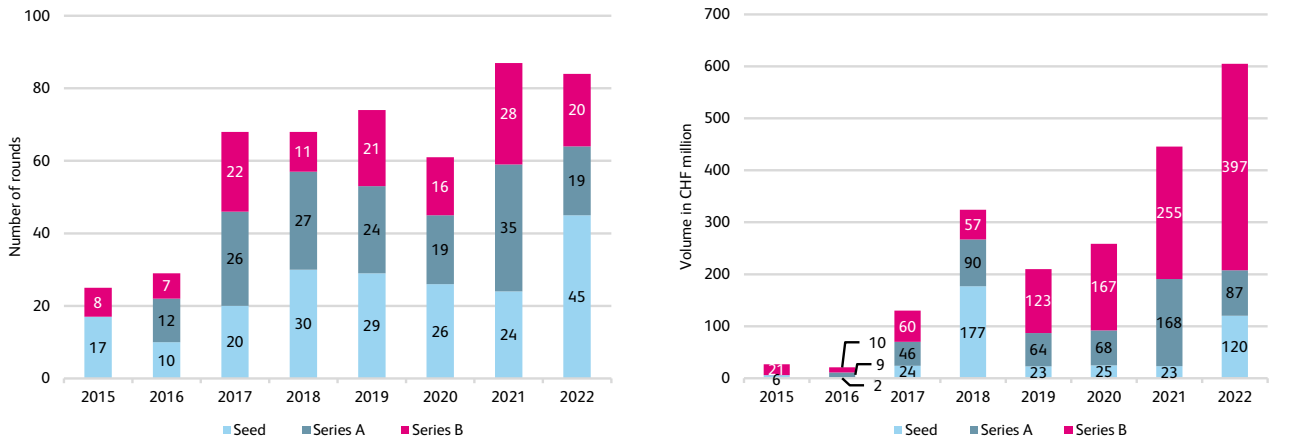

Figure 7.2: VC activity in the Swiss FinTech sector (source: own data)

compared to the year 2021. Of the total 84 rounds, 45 can be attributed to Seed, 19 to Series A, and 20 to Series B investments. Compared to the year 2021, a shift from Series A to Seed rounds can be observed. Hence, financing of companies at a very early stage of the corporate life cycle has become more popular again in 2022, after three years of declining numbers of Seed financing rounds.

Although no growth in financing rounds was recorded in 2022, the volume of financing increased significantly, as shown in the right-hand graph of Figure 7.2. At CHF[2] 605 million[3], 2022 represents a record year, showing growth of 36 percent year-on-year. Of the total volume, CHF 120 million is accounted for by Seed rounds, CHF 87 million by Series A rounds, and CHF 397 million by Series B rounds. Therefore, the majority of investments were made in companies at a very early stage of the corporate life cycle and comparatively mature FinTech companies. The year 2022 was also marked by one mega-financing round, i.e., a VC investment with a volume of over CHF 100 million. This mega round was conducted by SEBA Bank AG and raised a total of CHF 110 million in Series B financing (SEBA Bank AG, 2022). Other sizeable funding rounds were completed by Sygnum Bank AG, Yokoy Group AG, and Portofino Technologies AG raising USD 90 million, CHF 80 million, and USD 50 million, respectively (Sygnum Bank AG, 2022a; Yokoy Group AG, 2022; fintechnews.ch, 2022). The average financing volume in 2022 was CHF 3.6 million for Seed rounds, CHF 5.5 million for Series A rounds, and CHF 26.5 million for Series B rounds.[4]

The VC rounds and volume invested in Swiss FinTech companies by product area and technology category are illustrated in Figure 7.3. The left-hand graph reveals that the product areas *Banking Infrastructure* and *Investment Management* account for the largest shares of the total, with CHF 234 million and CHF 228 million, respectively. Companies in the *Payment* (CHF 116 million) and *Deposit & Lending* (CHF 26 million) product areas raised comparably less. This general order holds not only true for the volumes raised but also for the total number of financing rounds conducted.

With regard to the technology categories, the right-hand graph of Figure 7.3 highlights the dominant role of companies in the field of *Distributed Ledger Technology* in VC funding volumes (CHF 317 million), raised in 28 financing rounds. The largest amount of financ-

[2]Note that all investment volumes have been converted to Swiss francs using yearly average exchange rates.
[3]Note that in some cases rounding differences may occur.

[4]Note that in calculating these values, only financing rounds where the volume raised is publicly known were considered.

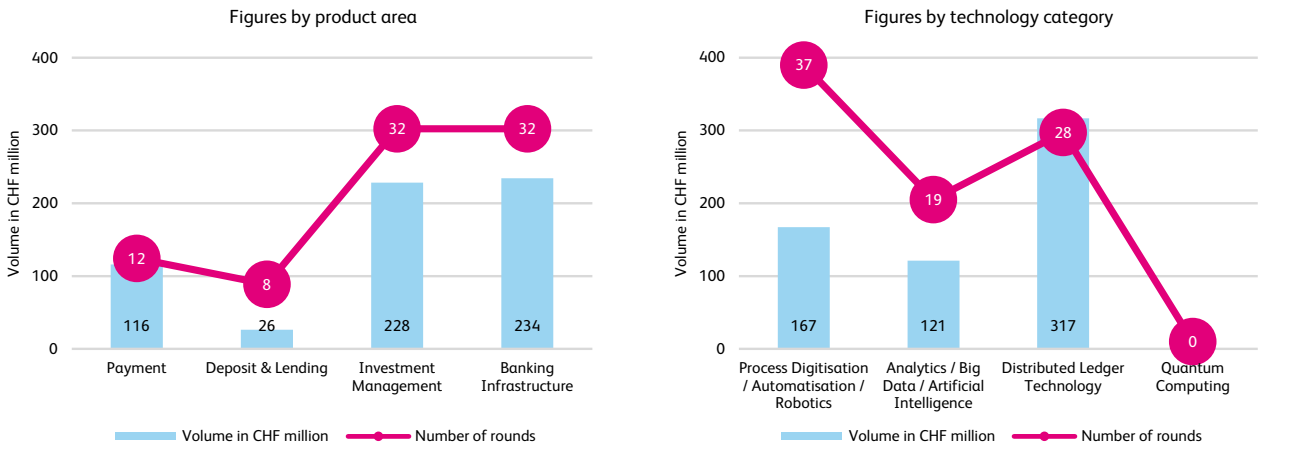

Figure 7.3: VC investments in Swiss FinTech companies in 2022 by product area (left-hand graph) and technology category (right-hand graph) (source: own data)

ing rounds (37), however, is accounted for by companies from the *Process Digitisation / Automatisation / Robotics* category, totalling CHF 167 million. Companies applying technologies from the field of *Analytics / Big Data / Artificial Intelligence* counted 19 financing rounds with a total volume of CHF 121 million. Since there are no Swiss FinTech companies using quantum computing, no VC rounds were observed in 2022. However, it should be noted that quantum computing companies raised VC in Switzerland in 2022, but their solutions do not have a specific focus on the financial industry. One example of this is the two financing rounds of Terra Quantum, which raised a total of CHF 68.9 million (startupticker.ch, 2023).

Comparing the volumes of the individual product areas and technology categories with those of the previous year, it can be seen that the volumes of companies from the *Investment Management* area (+119 %) and *Analytics / Big Data / Artificial Intelligence* category (+138 %) have increased the most. By contrast, the largest decrease was recorded in the product area *Deposit & Lending* (-73 %) and in the technology category *Process Digitisation / Automatisation / Robotics* (-9 %).

A breakdown of the VC volume invested in Swiss FinTech companies by canton is illustrated in Figure 7.4.

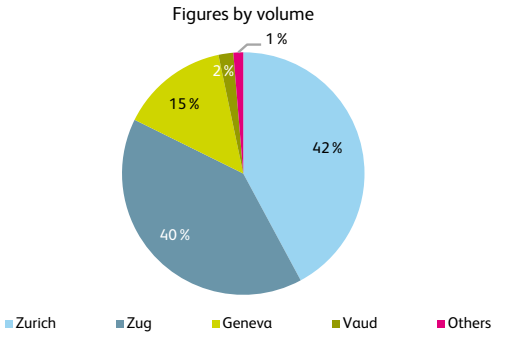

Figure 7.4: VC volume in Swiss FinTech companies in 2022 by canton (source: own data)

It reveals that Zurich accounts for the largest share (42 % of the total), followed by Zug (40 %), Geneva (15 %), and the canton of Vaud (2 %). The remaining cantons only account for one percent of the total VC volume in 2022. The geographical distribution of the financing volume thus roughly corresponds to the distribution of the number of FinTech companies across the cantons shown in Figure 2.5.

From a sustainability perspective, only seven percent of the rounds, or six in absolute terms, and three percent of the volume, or CHF 17 million in absolute terms, were

invested in sustainable FinTech companies as identified in Section 2.2.

In addition to VC, various companies, especially from the blockchain area, have financed themselves via token sales in recent years. An overview of the corresponding activities in all sectors and on a global level by year is provided by Figure 7.5.

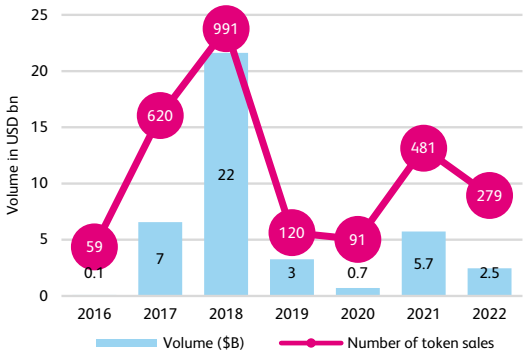

Figure 7.5: Token sales global across all sectors (sources: CoinSchedule (2019), ICO Drops (2023))

It shows that in 2022, a total of 279 token sales were counted, raising a total of USD 2.5 billion. In terms of volume, this represents a decrease of 57 percent compared to the year 2021, and in terms of the number of rounds, a decrease of 42 percent. Of the total volume in 2022, USD 269 million, or eleven percent in relative terms, were accounted for by projects related to FinTech (i.e., in the categories "Wallet", "Currency", "DEX", "DeFi", "Finance", and "Exchange"). Overall, the highest activity was achieved in 2018 with 991 token sales and a volume of USD 22 billion.

In the Swiss FinTech sector, one token sale took place in 2022. Grizzly.fi, a provider of a yield farming platform, raised USD 26 million to build its ecosystem and product offering (startupticker.ch, 2022b).

While VC and token sales are often used to fund early-stage companies, a sale can be a way for the next growth step. On a global scale, the number of acquisitions of FinTech companies shows a similar trend to VC activity. Acquisitions can be driven by various reasons, such as sourcing new technology or intellectual property, gaining access to new markets or customer bases, or taking over complementary products or services. As illustrated in Figure 7.6, the number of FinTech acquisitions has declined in 2022 for the first time since the year 2010. Specifically, there is a decrease from a total of 346 takeovers in 2021 to 285 in 2022, or a reduction of 18 percent in relative terms. From a continental perspective Figure 7.6 reveals that in 2022, and consistent with the VC activity, most FinTech companies were acquired in North America (40 %), followed by Europe (32 %) and Asia (19 %).

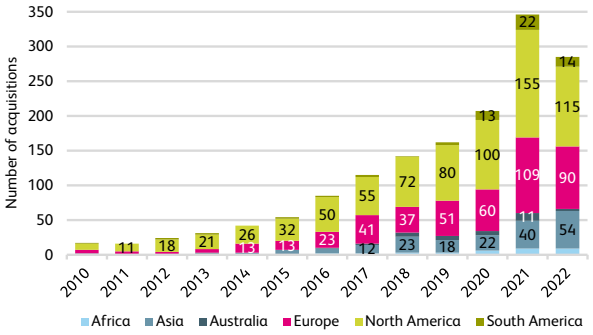

Figure 7.6: Number of FinTech acquisitions by continent by year (source: Crunchbase (2022))

Switzerland also saw several acquisitions of FinTech companies in 2022. These include the takeovers of New Access by FNZ (FNZ, 2022), Accointing by Glassnode (Glassnode, 2022), Assetmax by Infront (Infront, 2022), dloop by Tokengate (Tokengate, 2022), SecurionPay by Shift4 (Shift4, 2022), Unblu by Swiss Post (Swiss Post, 2022), and Yes by Verimi (Verimi, 2022).

Another way to raise capital is to issue and sell shares to the public in what is called an initial public offering (IPO). In the global FinTech sector, IPOs were particularly popular in 2021, with a total of 54 offerings, as shown in Figure 7.7. However, similar to VC, token sale, and acquisition activity, there has also been a decline in IPOs in 2022. A total of twelve such offerings were counted in said year, most of which were in North Amer-

ica, which corresponds to an annual decline of 78 percent.

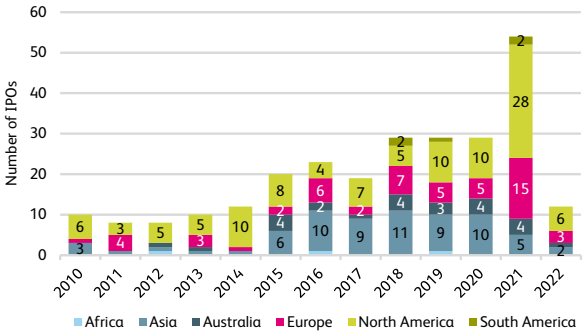

Figure 7.7: Number of FinTech IPOs by continent by year (source: Crunchbase (2022))

In 2022, there were 1,333 IPOs worldwide across all sectors (Ernst & Young, 2022). FinTech companies, therefore, only account for about one percent of this total. With regard to Switzerland, there was one IPO in the Swiss FinTech sector in 2022. Smart Valor, an operator of a publicly accessible digital asset exchange, custody and asset management, went public on the Nasdaq First North Growth Market in Stockholm (startupticker.ch, 2022a).

In summary, FinTech funding activity at a global level declined in 2022, be it VC, token sales, acquisitions, or IPOs. However, the trend for the Swiss FinTech sector is more positive, as shown by the significant increase in VC volume in Swiss FinTech companies for 2022.

7.2. Valuation of FinTech Companies

This subchapter outlines the formation of the IFZ FinTech Index family, allowing the sector's performance to be compared with its related industries, as well as a broad market. The index family further enables the comparison of the industry's different business models.

7.2.1 Data & Index Construction

The index family was derived through the following steps. First, to identify as many listed FinTech companies as possible, the Crunchbase database was used, resulting in a sample of 370 companies. Second, publicly available data was gathered to classify the FinTech companies, applying the same classification system as described in Chapter 1. Specifically, the companies were classified into the FinTech grid and segmented by customers and market served. This process ensures that the sample only contains actual FinTech companies, and various sub-indices can be created (see Section 7.2.3). As a result of this classification step, the sample size was further reduced as 25 companies were identified as private equity, private debt, or SPAC vehicles. In addition, 21 companies focusing on insurance were excluded, eleven companies did not have an accessible homepage[5], and four companies were no longer active. As a result, the sample size decreased to 309 companies. Third, access was granted to the market data provider Bloomberg to capture the companies' tickers, monthly prices in US dollars, and monthly market capitalisations in USD. The latter was needed to exclude so-called micro caps, i.e., FinTech companies with a market capitalisation of less than USD 150 million, and thus extreme return and volatility patterns. After the exclusion of FinTech companies for which no market data were available as well as micro caps, the final sample as per 31 December 2022 amounted to 102 companies.

After the aforementioned data collection, an equally weighted and monthly rebalanced global FinTech index, referred to as the "IFZ FinTech Index", was established.[6] In order to have as many companies represented in the IFZ FinTech Index as possible and thus achieve a degree of diversification within the index, the formation of the index began in January 2015. This also allows for the creation of various sub-indices (e.g., sub-index "Banking Infrastructure") with a minimum of five constituents, in turn, to achieve diversification of the sub-indices created. The starting year of 2015 is in line with the analysis presented in Section 7.1. Thus,

[5] Note that the absence of an active website for a company makes it impossible to verify the validity of its business model and confirm whether it is operating as a FinTech company.

[6] A critical examination of the approach used can be found in Chapter 7 of last year's edition of the IFZ FinTech Study.

the year 2015 marks a structural shift during which numerous IPOs of FinTech companies took place.

The profile of the IFZ FinTech Index with its key indicators can be found in Table 7.1.

IFZ FinTech Index	
Currency	USD
Number of constituents	102
Market capitalisation in million	13,893.19
Product area exposure	
Payment	24.5 %
Deposit & Lending	16.7 %
Investment Management	16.7 %
Banking Infrastructure	42.1 %
Technology category exposure	
Process Digitisation / Automatisation / Robotics	76.5 %
Analytics / Big Data / Artificial Intelligence	18.6 %
Distributed Ledger Technology	4.9 %
Customer segment exposure	
B2B	39.2 %
B2B & B2C	41.2 %
B2C	19.6 %
Market served exposure	
National	40.2 %
International	59.8 %
Regional exposure	
United States	55.9 %
China	8.8 %
India	7.8 %
Others	27.5 %

Table 7.1: Portrait of the IFZ FinTech Index as of 31 December 2022

7.2.2 Performance of the IFZ FinTech Index

In this section, the performance of the IFZ FinTech Index is analysed and compared to the three benchmarks MSCI World Equal Weighted Price Index, MSCI World Banks Price Index (value-weighted), and MSCI World Information Technology Price Index (value-weighted). This selection enables the comparison of the sector's performance with a broad stock index and with the two industries with which the FinTech sector is most closely associated.

Figure 7.8 illustrates the development of the four indices mentioned. All four indices have achieved a positive cumulative return over the sample period, but they are subject to different magnitudes of fluctuation. The best performance is achieved by the MSCI World IT Price Index, followed by the MSCI World Price Index, the IFZ FinTech Index, and the MSCI World Banks Price Index.

For the IFZ FinTech Index, in particular, there is comparatively high volatility. Although its performance has been superior compared to the one of the broad equity index and the bank index for much of the observation period, it has been negatively impacted by the comparatively sharper decline since mid-2021. This higher fluctuation could be due to the fact that the IFZ FinTech Index contains comparatively fewer established companies than the other three indices and is therefore associated with a higher overall risk. In addition to the IFZ FinTech Index, the index capturing the development of the IT industry has also recorded comparatively large losses for the year 2022. The banking sector, in contrast, seems to have been more robust in 2022 compared to the general market development.

The aforementioned different patterns are further reflected in the key metrics in Table 7.2. During the sample period, the MSCI World IT Index achieved the highest annual mean return of 13.7 percent, followed by the MSCI World Index with 5.4 and the IFZ FinTech Index with 3.5 percent, respectively. The MSCI World Banks Index reveals the lowest return of 1.8 percent. Compared to the results of last year's study, all average annual returns have decreased significantly. It is also worth mentioning that the MSCI World Index has overtaken the IFZ FinTech Index when only the average annual return is considered.

The analysis conducted cannot confirm the well-known rule that a higher return comes with higher risk. Table 7.2 shows that the index with the worst performance has the second-highest annual volatility, and the best index (measured by the mean return achieved) has the second-lowest over the total sample period. With 22.9 percent, the IFZ FinTech Index displays the

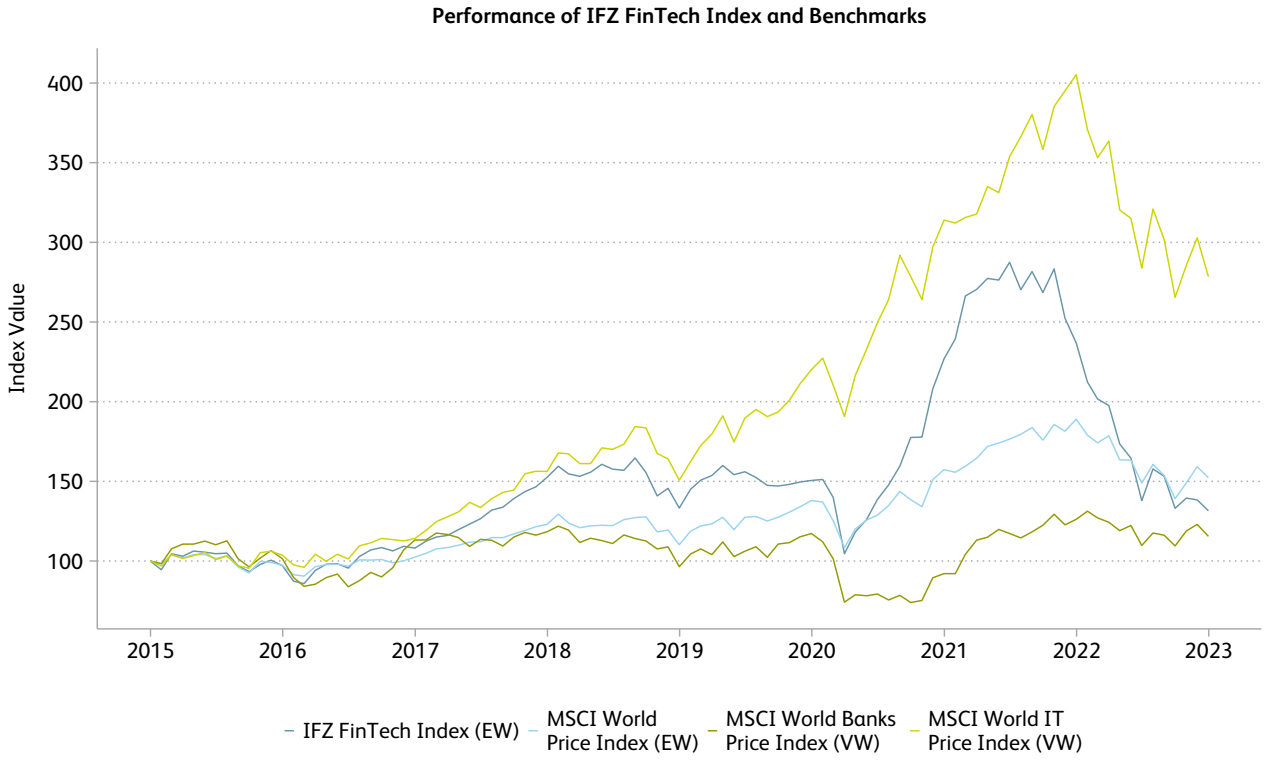

Figure 7.8: Comparison of IFZ FinTech Index with selected benchmarks

Index	Mean return	Volatility	Sharpe ratio
IFZ FinTech	3.5 %	22.9 %	0.11
MSCI World	5.4 %	15.6 %	0.29
MSCI World Banks	1.8 %	21.4 %	0.04
MSCI World IT	13.7 %	19.7 %	0.64

Table 7.2: Performance metrics of the IFZ FinTech Index and benchmarks

greatest level of return volatility. A comparison of the indices based on the Sharpe[7] ratio, i.e., a risk-adjusted performance metric, shows that the performance of the MSCI World IT Index with a Sharpe ratio of 0.64 is superior compared to the others. The MSCI World Index follows with 0.29, and the IFZ FinTech Index with 0.11. The banks sector index performs worst with a Sharpe ratio of 0.04.

In order to assess the exposure (factor loading) of the IFZ FinTech Index with regard to the selected benchmarks, a regression analysis is conducted. Using ordinary least squares, the excess return of the index was regressed on the excess returns of the two industry benchmarks, i.e., MSCI World Banks Price Index (VW) and MSCI World IT Price Index (VW).[8] To account for heteroskedasticity and autocorrelation in the regression residuals, HAC-robust standard errors suggested by Newey and West (1987)[9] are used. Table 7.3 depicts the main results of this analysis, with the standard errors of the estimates given in brackets.

[7] As all metrics are denominated in USD, the one-month US Treasury Bill rate was used as a proxy for the risk-free rate in order to compute the excess returns upon which the Sharpe ratios are determined.

[8] Note that the index for the general market, i.e., the MSCI World Equal Weighted Price Index, is not included to due multicollinearity. This is underlined by a variance inflation factor of 10.4 for the corresponding return series. One reason for the multicollinearity may be the index composition as the MSCI World Equal Weighted Price Index consists of 21 percent companies from the IT industry and 15 percent from the banking industry (MSCI, 2023b), i.e., companies that are also included in the two industry indices considered.

[9] The number of lags was set to four, based on the formula $4(T/100)^a$ where a is defined as $2/9$ (Newey & West, 1994).

There is no empirical evidence of the outperformance of the IFZ FinTech Index relative to its benchmarks, as the constant (α) is not statistically different from zero at the ten percent level. The return achieved by the index, hence, seems to be in proportion to its associated risks.

	Dependent variable:
	IFZ FinTech Index (EW)
Constant (α)	-0.004
	(0.006)
MSCI World Banks	0.391***
	(0.085)
MSCI World IT	0.649***
	(0.081)
Observations	96
Adjusted R^2	0.668
F Statistic	96.450***
Note:	*p<0.1; **p<0.05; ***p<0.01

Table 7.3: Time-series regression IFZ FinTech Index (EW) returns

Table 7.3 moreover demonstrates that the performance of the listed FinTech companies seems to move with its two related industries. With a coefficient of 0.649, the index's exposure to the MSCI World IT Index is higher than to the MSCI World Banks Index with 0.391. Consequently, the sensitivity of the IFZ FinTech Index's returns to movements in the IT index is higher than to movements in the banks index. Both relationships are statistically significant at the one percent level.

The significant linear relationship of the IFZ FinTech Index with the MSCI World Bank Index may be explained by the fact that FinTech companies often act as suppliers of innovative solutions for banks. Therefore, their cash flows, and consequently also market performance, could be correlated. One explanation for the significant exposure to the performance of the IT industry could be that FinTech companies, at least those in Switzerland, have increasingly switched to IT business models over the last few years, which may have led to increasing integration with the corresponding industry.

The model as a whole is statistically significant at the one percent level (as indicated by the F Statistic) and explains 66.8 percent of the variance of the index's returns.

7.2.3 Performance of Sub-indices

In addition to the overall performance of the FinTech sector, another aspect to examine is whether the performance of certain FinTech business models differs from others. For this, the IFZ FinTech Index is divided into several sub-indices based on data collected about each company, including their product area, technology category, customer segments, and markets served. Each company is included in four sub-indices.[10] As mentioned in Section 7.2.1, a minimum of five companies is required for each sub-index to ensure a certain degree of diversification. Due to this constraint, the *Payment* sub-index is formed starting from July 2015. The sub-index *Distributed Ledger Technology* is only available from December 2020, which is why it is not included in the following analysis of the technological sub-indices, as no conclusive results can be achieved. All other sub-indices data are available since January 2015.

Figure 7.9 shows the performance for the four sub-indices associated with the product areas *Payment*, *Deposit & Lending*, *Investment Management*, and *Banking Infrastructure*. The *Payment* and *Investment Management* sub-indices achieved the highest returns, with annual mean returns of 13.3 percent and 10.8 percent, respectively. *Banking Infrastructure* achieves a return of 0.17 percent while *Deposit & Lending* has a negative return of -0.08 percent. All annual mean returns have substantially declined since last year's study. Volatility is highest in *Investment Management* at 49.9 percent, followed by *Payment* with 32.6 percent and *Deposit &*

[10] For example, *Banking Infrastructure*, *Analytics / Big Data / Artificial Intelligence*, *B2C*, and *International*.

Lending with 26.7 percent. *Banking Infrastructure* has the lowest volatility at 24.2 percent.

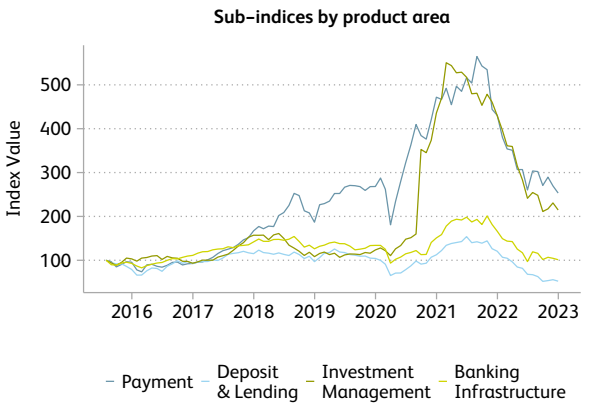

Figure 7.9: Comparison of the product area sub-indices

The conclusions remain the same when evaluating the risk-adjusted performance (see Table 7.4). The *Payment* sub-index generates the highest Sharpe ratio due to its much lower volatility compared to the *Investment Management* sub-index. *Deposit & Lending* and *Banking Infrastructure* show negative Sharpe ratios of -0.35 and -0.03, respectively.

Index	Mean return	Volatility	Sharpe ratio
Payment	13.3 %	32.6 %	0.38
Deposit & Lending	-0.08 %	26.7 %	-0.35
Investment Management	10.8 %	49.9 %	0.2
Banking Infrastructure	0.17 %	24.2 %	-0.03

Table 7.4: Performance metrics of the sub-indices by product area

The following paragraphs examine the sub-indices related to the technology categories. Figure 7.10 depicts the performance of each sub-index. Over the sample period, it is apparent that the *Process Digitisation / Automatisation / Robotics* sub-index outperforms with an average annual return of 4.7 percent. This is partially due to the returns achieved after the onset of the Covid-19 crisis. At the start of the crisis, this sub-index was nearly on par with the *Analytics / Big Data / Artificial Intelligence* sub-index, both standing at values of 107 and 105, respectively. The two sub-indices show a rapid recovery after the dip in March 2020, and despite experiencing a sharp decline thereafter, the *Analytics / Big Data / Artificial Intelligence* sub-index still recorded an annual mean return of 3.3 percent over the sample period.

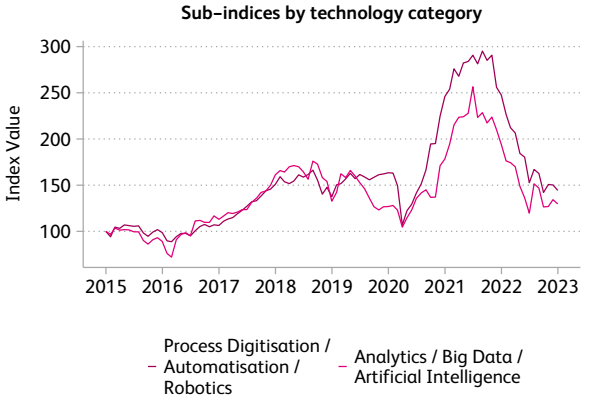

Figure 7.10: Comparison of the technology category sub-indices

With reference to the Sharpe ratios (see Table 7.5), the ranking is the same as for the mean returns. Hence, the highest Sharpe ratio of 0.17 is achieved by the *Process Digitisation / Automatisation / Robotics* sub-index, while the lower ratio of 0.09 is offered by the *Analytics / Big Data / Artificial Intelligence* sub-index.

Index[11]	Mean return	Volatility	Sharpe ratio
Digitisation	4.7 %	22.8 %	0.17
AI / Big Data	3.3 %	27.3 %	0.09

Table 7.5: Performance metrics of the sub-indices by technology category

The illustration of the sub-index performance by customer segments served is shown in Figure 7.11. The *B2B* sub-index reveals the best performance with an annualised average return of 10.1 percent. It is followed

[11] The abbreviations are as follows: Digitisation = Process Digitisation / Automatisation / Robotics; AI / Big Data = Analytics / Big Data / Artificial Intelligence.

by the sub-index of firms serving both business and private customers (*B2B & B2C* sub-index) with a negative mean return of -0.8 percent, and lastly, the sub-index comprising firms serving only private customers (*B2C* sub-index) with -2.0 percent. However, the return difference between the latter two is only marginal over the total sample period.

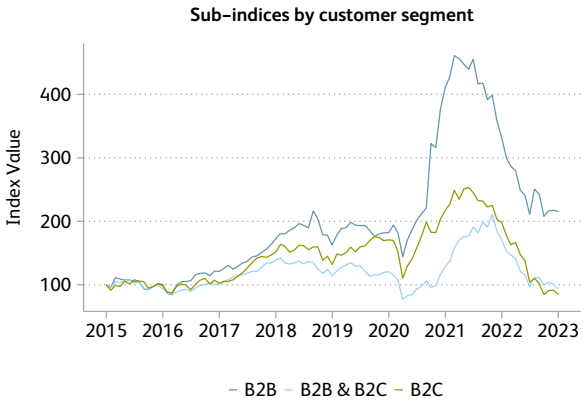

Figure 7.11: Comparison of the customer segment sub-indices

Table 7.6 summarises the performance metrics of the aforementioned sub-indices. Again, the sub-index with the highest mean return (*B2B* sub-index) provides the highest Sharpe ratio with 0.31 and the one with the lowest mean return (*B2C* sub-index) the lowest one at -0.11. At -0.07, the combination of *B2B* & *B2C* has only a slightly better Sharpe ratio than *B2C*.

Index	Mean return	Volatility	Sharpe ratio
B2B	10.1 %	29.5 %	0.31
B2B & B2C	-0.8 %	23.9 %	-0.07
B2C	-2.0 %	26.6 %	-0.11

Table 7.6: Performance metrics of the sub-indices by customer segment

A last distinction is made between the sub-indices differentiated by markets served. The corresponding time series are illustrated in Figure 7.12.

While from the beginning of the sample period up to the outbreak of the Covid-19 crisis, the sub-index containing companies focusing on serving the home market (*National* sub-index) outperformed, the opposite is true after this period. At the start of the crisis, the sub-indices were at a similar level of 116 (*National* sub-index) and 120 (*International* sub-index). Although both sub-indices recovered well, the return of the *International* sub-index increased more strongly than the *National* one. Again, both indices experienced a significant decrease at the start of 2022. By the end of the year 2022, the *National* sub-index was even below its starting value of 100.

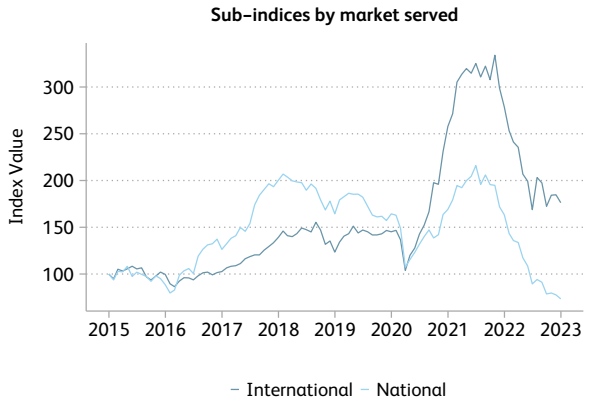

Figure 7.12: Comparison of the market served sub-indices

Index	Mean return	Volatility	Sharpe ratio
International	7.3 %	24.4 %	0.26
National	-3.8 %	25.1 %	-0.19

Table 7.7: Performance metrics of the sub-indices by market served

As a result, the annualised mean return of the *International* sub-index amounts to 7.3 percent, while the *National* sub-index yields a negative mean return of -3.8 percent. Table 7.7 summarises the performance metrics of both sub-indices. While the volatility is nearly equal (*International*: 24.4 % and *National*: 25.1 %), the Sharpe ratios of 0.26 for the *International* sub-index and -0.19 for the *National* sub-index diverge sub-

stantially due to the previously mentioned mean return differences.

7.2.4 Conclusion & Outlook

The IFZ FinTech Index, designed to evaluate the performance of the global FinTech industry from an investment viewpoint, witnessed strong expansion during the period of January 2015 to December 2021. However, it suffered a substantial decline in 2022, resulting in a worse return compared to the previous year's analysis. In comparison, the MSCI World Equal Weighted Price Index, a comprehensive global equity index, outperformed the IFZ FinTech Index and the global banking index but lagged behind the information technology index. Although the IFZ FinTech Index showed a positive performance over the observation period, certain FinTech categories demonstrated better results than others. The *Payment* and *Investment Management* sub-indices led the sub-indices by product area, while the *B2B* sub-index outperformed the other two sub-indices (*B2B* & *B2C* and *B2C*) in terms of customer segments. The examination of the technology categories revealed that the mean return for *Process Digitisation / Automatisation / Robotics* was superior to that of *Analytics / Big Data / Artificial Intelligence*. Furthermore, the *International* sub-index had a more favourable mean return compared to the national sub-index, with almost similar volatility, in terms of the market served. The stability of the IFZ FinTech Index and its various sub-indices over time, especially after the sharp drop in 2022, is yet to be determined.

Due to the slowly evolving observation horizon, more extensive analyses of the performance of the FinTech sector and respective sub-indices might also be possible in the future. One possibility, for example, is to differentiate with regard to the profitability of companies. A first introductory analysis revealed that FinTech companies which reported a net operating profit for the 2021 financial year seemed to have performed slightly better in 2022 than the ones that reported a net operating loss for 2021. In order to be able to verify such findings with regard to their statistical significance and robustness, an extended observation period is required as well as the consideration of further aspects. These include, among other issues, the harmonisation of the respective definitions of the financial year and the inclusion of the release dates of the corresponding reports.

8. Banks and FinTech

By Thomas Ankenbrand, Denis Bieri, Timon Kronenberger & Levin Reichmuth, Institute of Financial Services Zug IFZ

This chapter examines the impact of new technologies on established banks. In Section 8.1, the findings of this year's CIO Barometer, an annual survey of IT managers at Swiss banks, are presented. A specific deep dive into the state of data science at Swiss banks is given in Section 8.2. In Section 8.3, the focus shifts from a micro to a macro perspective and the potential impact of FinTech on Swiss banks is analysed on an aggregate level.

8.1. CIO Barometer

The CIO Barometer's seventh edition was conducted as of the end of 2022. The purpose of this survey is to collect information on current trends and developments in the Swiss banking market. CIOs of Swiss banks were questioned regarding the difficulties they experience and to what degree these are being handled at an operational level and at a strategic level. The questions were formulated in a way which allows mapping the present and enabling a prediction for future developments. The design of the survey remained consistent in order to ensure comparability with earlier editions. The methodology is described in the subsequent Section 8.1.1 followed by the findings of this year's CIO Barometer in Section 8.1.2.

8.1.1 Methodology

The CIO Barometer, which was developed as an anonymous survey among IT representatives of Swiss banks, aims to gather the most recent developments and organise them into dimensions pertinent to bank IT. The IT balanced scorecard concept developed by Van Grembergen and Saull (2001), which is based on the original balanced scorecard approach developed by Kaplan and Norton (1996), serves as a framework for the survey and its analysis. *User orientation*, *Operational excellence*, *Business contribution*, and *Future orientation* are the primary dimensions taken into account, and they are all assessed from the standpoint of the banks' IT departments. Each dimension is then broken down into three indicators that are deemed to be important for evaluating that particular dimension. On a four-point scale, the participants were asked to rate all three indicators for each dimension, representing their priorities in the range of very low (1), low (2), high (3), and very high (4). Priorities have been evaluated for their importance now and for their expected importance in five years' time. Additionally, general inquiries were made in order to categorise the banks by segments and inquiries regarding the distribution of financial resources.[1]

8.1.2 Results of the CIO Barometer

In this subsection, the results of the CIO Barometer based on the methodology described in Section 8.1.1 are discussed.

8.1.2.1 Sample Description

A total of 61 Swiss banks took part in this year's edition of the CIO Barometer. Figure 8.1 shows a description of the sample by banking groups as defined by the Swiss National Bank (SNB), balance sheet volumes, and assets under management.

The left-hand diagram illustrates that the majority of participating banks fall into the category of regional banks, savings banks, and Raiffeisen (41 %). The second and third-largest groups are cantonal banks (21 %) and other banks (13 %). Private banks account for eight percent of the sample and foreign-controlled banks and big banks for seven percent each. The least represented bank groups are the branches of foreign banks and stock exchange banks, each accounting for two percent of participants.

[1] All previous editions of the survey relied on the same approach. Slight changes to questions have been implemented over time.

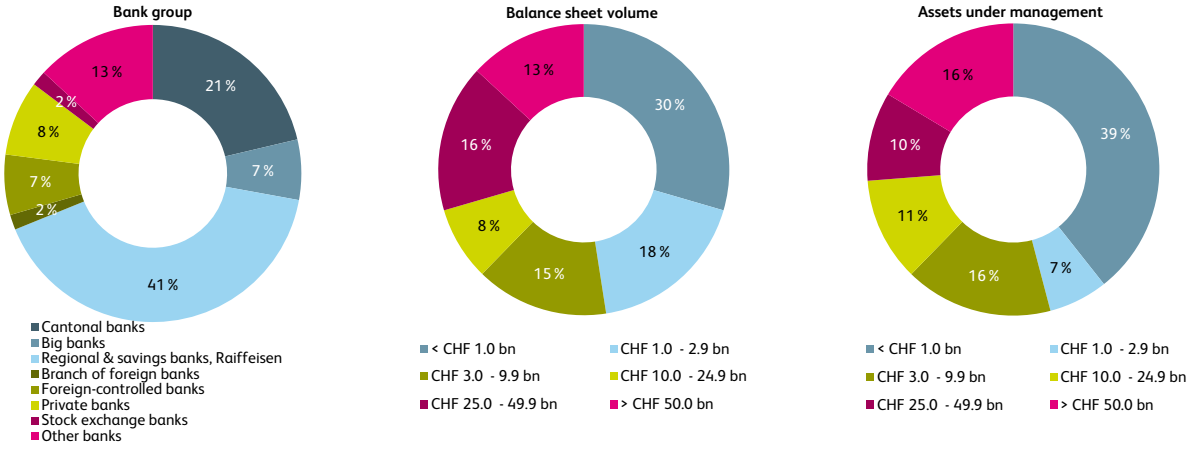

Figure 8.1: Survey participants according to bank group (left-hand diagram), balance sheet volume (middle diagram), and assets under management (right-hand diagram) (n=61)

The middle diagram of Figure 8.1 furthermore illustrates that the participating banks are of different sizes. It presents that there is a large proportion of comparatively smaller banks with balance sheet volumes of less than CHF 10 billion (63 %). Medium-sized banks with balance sheet volumes between CHF 10 billion and CHF 50 billion and large banks with balance sheet volumes of over CHF 50 billion account for 24 and 13 percent, respectively.

A similar pattern applies with regard to assets under management. Comparatively, smaller banks with assets under management of less than CHF 10 billion represent the largest share (62 %). Medium-sized banks with assets under management between CHF 10 billion and CHF 50 billion, and large banks with assets under management of more than CHF 50 billion account for 21 and 16 percent of the sample, respectively.

A comparison with the total population of Swiss banks at the end of 2021 according to the Swiss National Bank (2023) shows that the category of regional banks, savings banks, and Raiffeisen, as well as cantonal banks, in particular, are over-represented in the present sample. In contrast, foreign-controlled banks and stock exchange banks are under-represented. The sample on which the results of the CIO Barometer are based is, hence, not identical to the Swiss banking sector. Nevertheless, the findings can help to provide a general overview of how Swiss banks are setting their priorities and strategies in regard to IT.

8.1.2.2 IT Balanced Scorecard

The role of IT in various bank areas and processes is assessed using the IT balanced scorecard. The results are presented in Figure 8.2 and distinguish between the four main dimensions, i.e., *User orientation*, *Operational excellence*, *Business contribution*, and *Future orientation*. For each of these four dimensions, the evaluation of the underlying three indicators is shown.

The figure reveals that the dimension *Business contribution* yields the highest average score (3.24) of the underlying indicators. In particular, the use of IT for the adaption of new regulatory requirements is seen as highly relevant (3.43). However, the priority of IT for the digitisation/optimisation of business processes (3.18) and the implementation/improvement of products and services (3.11) is also perceived to be comparably high.

Operational excellence is the dimension with the second- largest average score (3.06). This is due, in particular, to IT security (3.79), which has the highest priority among all indicators. The reduction of IT operating

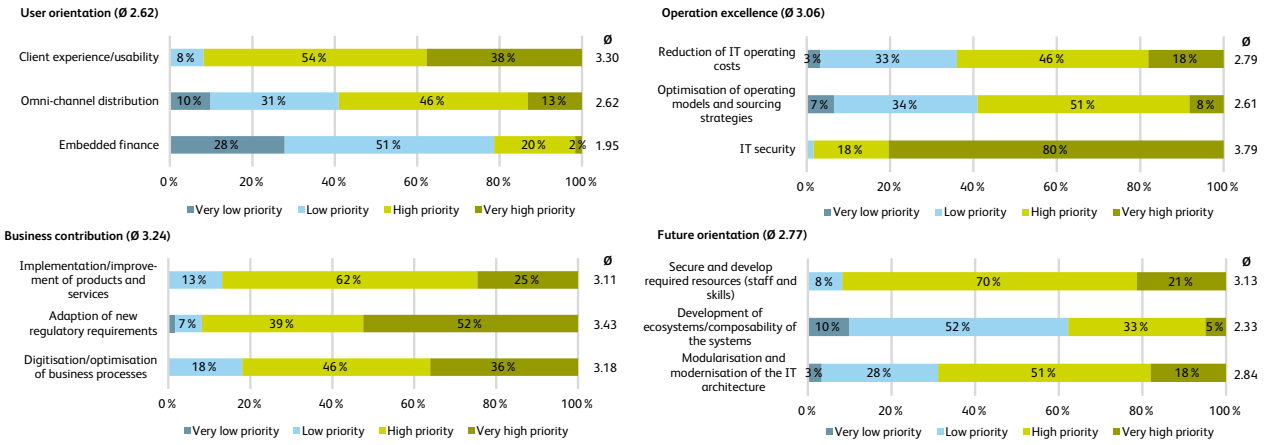

Figure 8.2: Results for the IT balanced scorecard 2022 (n=61)

costs (2.79) and the optimisation of operating models and sourcing strategies (2.61) are of lower priority.

The *Future orientation* dimension has the third-highest average value at 2.77. The highest priority in this respect is assigned to securing and developing required resources (3.13), followed by the modularisation and modernisation of the IT architecture (2.84) and the development of financial ecosystems (2.33).

The dimension with the lowest average priority is the dimension *User orientation* with a value of 2.62, this despite the fact that client experience/usability is assigned a comparatively high IT priority (3.30). However, this is overcompensated by low priorities for omni-channel distribution (2.62) and embedded finance (1.95), resulting in low overall importance of the dimension.

Compared to the results of the previous edition of the CIO Barometer, the largest decrease in priority (in percentages) is recorded for the optimisation of operating models and sourcing strategies (-13 %), followed by the modularisation and modernisation of the IT architec-

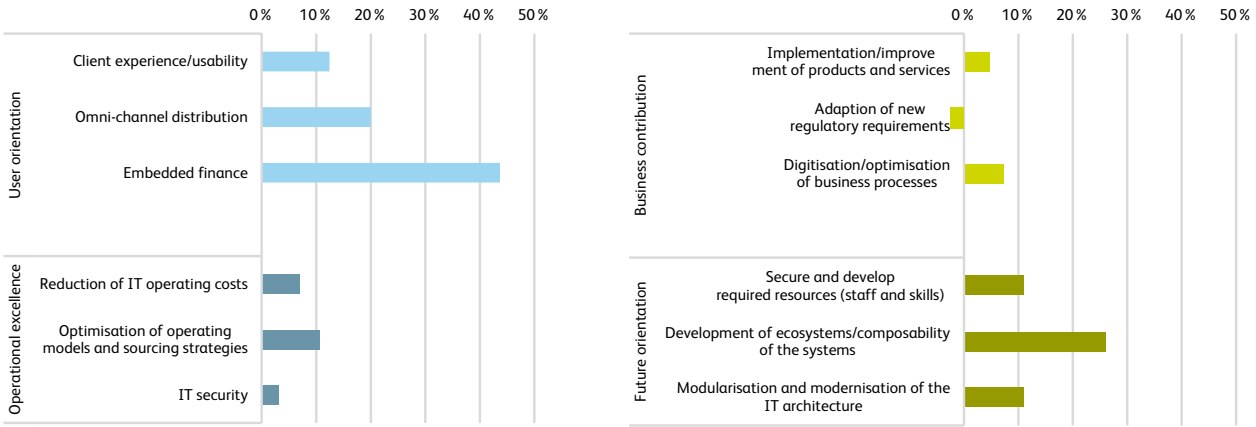

Figure 8.3: Changes in indicator priority between 2022 and 2027 (n=61)

ture, and the development of ecosystems (-7 % each). In contrast, the IT priorities with regard to the adaption of new regulatory requirements (+5 %) and securing and developing required resources (+2 %) reveal the largest increase.

In general, the IT balanced scorecard thus highlights that the priority of bank IT today is rather to support and secure the existing operational business and less to make future or customer-oriented adjustments. However, IT priorities today need not be the same as those of the future. This is evident in Figure 8.3, which shows the change in priorities between today and the expected priority in 2027. The figure shows that especially the indicators in the two dimensions *User orientation* and *Future orientation* are expected to increase in priority until 2027. The largest increase can be seen for embedded finance, followed by the development of financial ecosystems and omni-channel distribution. A reduction in priority is only recorded for the use of IT for adapting to new legal requirements.

8.1.2.3 Cost Management

In order for Swiss banks to be able to focus more strongly on the future- and customer-oriented use of IT, the corresponding resources are needed. These resources appear to have been expanded in the last year, as Figure 8.4 shows. Specifically, the figure illustrates the temporal development of the average percentage of IT-related and non-IT-related costs at Swiss banks. It reveals that IT-related personnel costs, in particular, appear to have increased in relative terms in 2022. While this share was between 15 and 16 percent in earlier years, IT-related personnel costs accounted for a quarter of total personnel costs in 2022.

The share of IT-related costs in general and administrative expenses also increased last year, for example, driven by increased outsourcing of corresponding processes. This share has fluctuated around 40 percent in recent years and is highest so far in 2022 at 46 percent. The fact that IT is responsible for an increasing share of both personnel and general and administrative costs indicates that Swiss banks are investing more in this area, both in-house and via outsourcing.

Figure 8.5 attempts to show how these IT resources are used. More specifically, the figure distinguishes between the proportion of IT costs spent on ongoing business (“run-the-bank”) and those spent on transforming the bank (“change-the-bank”) and shows the proportion of participating banks that fall within the predefined groups.

It highlights that 48 percent of participating banks invested more than half of the IT expenses in bank operations, i.e., running the bank, with the remainder going

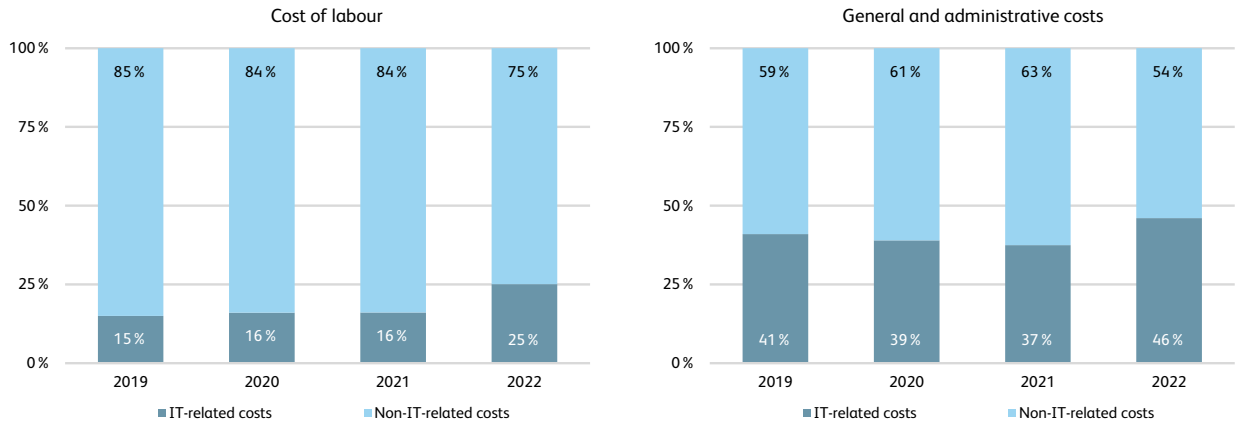

Figure 8.4: Average percentage of IT-related and non-IT-related costs by year (n_{2022}=61)

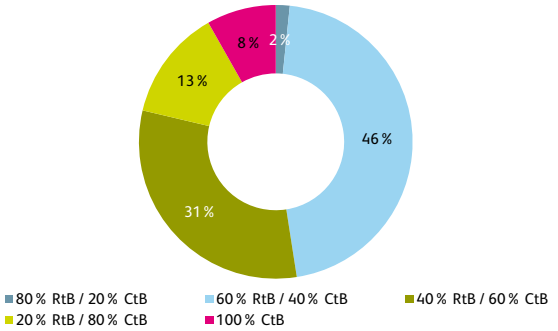

Figure 8.5: Percentage of IT costs associated to run-the-bank and change-the-bank (n=61)

toward bank transformation. More precisely, 46 percent of all participating banks have a 60 percent "run-the-bank" and a 40 percent "change-the-bank" allocation, making this the largest group. Of the 52 percent of banks that invest more in bank transformation than in bank operations, the largest group (31 %) represents those that have a 40 percent "run-the-bank" and 60 percent "change-the-bank" allocation of IT costs. In addition, the high proportion of banks investing over 80 percent or even all of their IT costs in bank transformation compared to previous years is worth noting. Together with the increasing share of IT in personnel and general and administrative costs, this, in turn, indicates that the Swiss banking sector is increasingly gearing itself towards the digitisation of business or, at least, seems to prepare for it.

A comparison with the results of the last edition of the CIO Barometer shows that there is a clear shift in the share from "run-the-bank" to "change-the-bank" expenses. More precisely, in 2021, 84 percent of the participating banks had invested more than half of their IT expenses in the ongoing business, while only 16 percent (compared to 52 % in 2022) invested the majority in the transformation of the bank. This indicates that Swiss banks are also increasingly strategically aligning themselves with digitisation.

8.2. Data Science

One of the areas in which IT is relevant is the management and analysis of data. This area, often summarised as "data science", is assumed to have large potential for the financial industry by generating value based on the vast amount of data banks possess but whose potential is still largely untapped. The increasing relevance of data science in the financial industry is also underlined by the increasing number of Swiss FinTech companies applying technologies related to analytics, big data, and artificial intelligence, as shown in Section 2.1. The present section aims to provide an overview of the state of data science at Swiss banks.

A key resource for using data successfully is an appropriately trained workforce. Figure 8.6 presents the proportion of banks that participated in the CIO Barometer by different groups of full-time equivalents (FTEs) in data science.

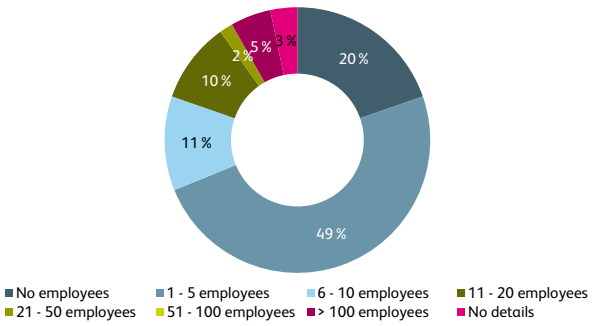

Figure 8.6: FTEs in data science at Swiss banks (n=61)

The figure reveals that while 20 percent of the participating banks do not employ any data science experts, roughly half of them (49 %) employ between one and five data science FTEs, pointing toward rather low capacities. Eleven percent of banks employ between six and ten FTEs, and ten percent between eleven and 20 FTEs. Comparably larger data science teams of more than 20 FTEs are employed by another seven percent of banks. Furthermore, the number of FTEs in data science seems to correlate with the size of the bank.

Other expenses, i.e., costs not related to the personnel expenses, for data science are another important resource needed for successful value creation using data. A corresponding assessment for Swiss banks is presented in Figure 8.7.

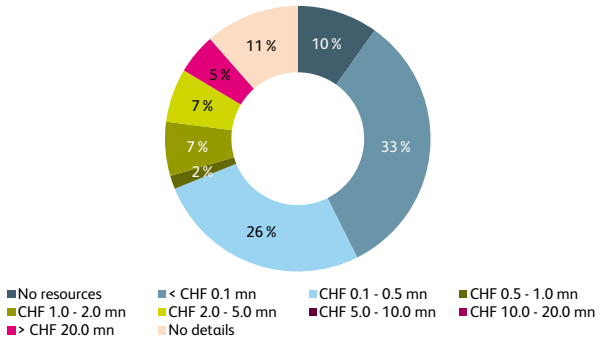

Figure 8.7: Data science-related other costs (n=61)

As highlighted in the figure, ten percent of participating banks do not allocate any other expenses to data science. The largest group of banks (33 %) spends between CHF 1 and CHF 100,000 on data science-related other costs, and the second-largest group (26 %) between CHF 100,000 and CHF 500,000. 21 percent of participating banks spend more than CHF 500,000 in other costs for data science, with five percentage points of which spending more than CHF 20 million.

Data science-related resources, whether personnel or others, seem to be limited in availability at most Swiss banks, indicating untapped potential. However, the limited capabilities do not exclude specific cases of data science application. Therefore, Figure 8.8 shows in which areas of the banking value chain data analysis is used by the participating banks to generate added value.

It shows that fraud detection is the most widespread use case for data science, with 61 percent of banks actively involved in this area. Data science is used second most frequently in risk management (46 %), followed by data-driven optimisation of marketing and sales (37 %). Data science in investment advice and asset management is the fourth most utilised application

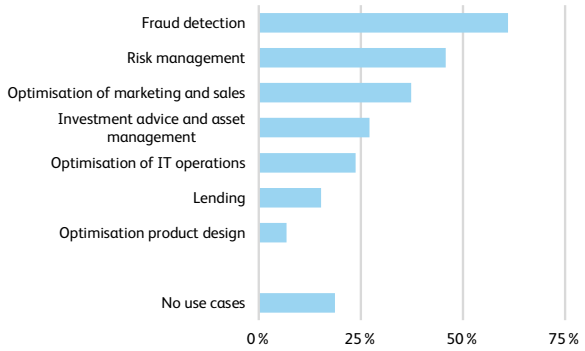

Figure 8.8: Use cases of data science (n=61, multiple answers possible)

(27 %), while applications in the areas of IT operations optimisations, lending, and optimisation of product designs are pursued by less than a quarter of the participating banks. 19 percent of participants do not apply any use cases related to data science.

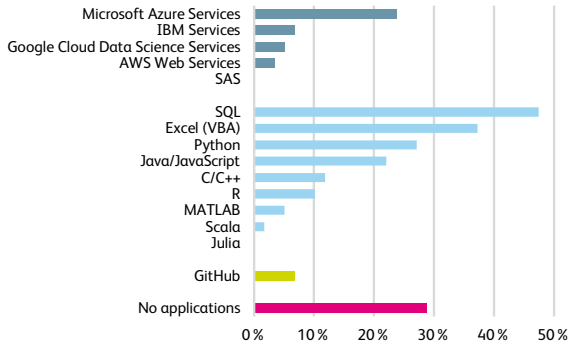

Figure 8.9: Tools in data science (n=61)

The comparatively wide penetration of fraud detection use cases is not only observable for Swiss banks but can also be found internationally, as a report by The Economist (2022) shows. According to the report, 90 percent of banks worldwide use AI, which can be considered a subfield of data science, at least to some extent, for fraud detection. But AI-driven use cases in the area of optimising IT operations and digital marketing are also being implemented by more than half of the banks surveyed (The Economist, 2022). These rel-

atively higher figures compared to Switzerland suggest that Swiss banks may be lagging behind in the area of data analysis and use, although they could also be due to the different underlying samples of banks surveyed.

A breakdown of the tools, programming languages, and services used for data analysis at Swiss banks can be found in Figure 8.9. In terms of providers for data science services (e.g., data warehousing, modelling, and visualisation services), Swiss banks prefer Microsoft (24 %), followed by IBM (7 %) and Google (5 %) (dark-blue bars). With regard to tools or programming languages, most banks use SQL (47 %), a programming language for storing and processing information in a relational database, and Excel (VBA) (37 %) (light-blue bars). Other less relevant programming languages are Python (27 %), Java/JavaScript (22 %), C/C++ (12 %), and R (10 %). Note that only seven percent of participants use GitHub as their software development and version control tool (light-green bar) and 19 percent do not use any of the listed applications (magenta bar).

8.3. Benefits of FinTech for Banks

Swiss FinTech companies are known as digital innovators and important service providers to Swiss banks. As collaboration with FinTech companies can improve the business processes of traditional Swiss banks, the accumulated productivity of the latter is described in the following paragraphs. Figure 8.10 illustrates costs and income figures of Swiss banks in relation to their aggregated business volumes, namely balance sheet and assets under management, indexed at 100 percent as of the year 2010.

The left-hand graph shows that total expenditure is relatively constant over time. Labour costs, and general and administrative costs, however, show diverging behaviour. Swiss banks were able to reduce relative labour costs to 77 percent by the end of 2021, with the majority of this reduction achieved in the period before 2018. Despite the stabilised labour costs in most recent years, the number of staff at Swiss banks grew slightly in 2020 and 2021, ending the decline in staff, which had been apparent between 2011 and 2019 (Swiss National Bank, 2022a). In contrast, general and administrative costs reached 151 percent as of 2021, increasing for the first time (+1 % year-over-year) since peaking at 155 percent in 2018. In comparison, the aggregated balance sheet and assets under management reached 132 percent and 178 percent, respectively. The balance sheet has grown steadily over the observation period, while the assets under management fluctuated more strongly, likely driven by volatile

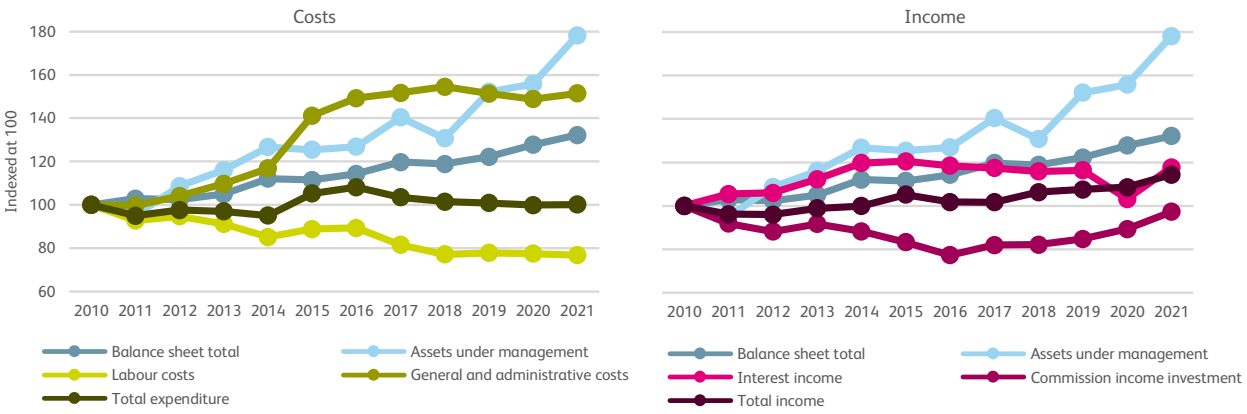

Figure 8.10: Size, costs, and income indicators for Swiss banks indexed at 100 in 2010 (source: Swiss National Bank (2022b))

asset prices. Given the increasing business volume figures and the constant total expenditure, banks seem to have succeeded in improving their efficiency.

The right-hand graph of Figure 8.10 shows the development over time of interest and commission income from the securities and investment business, as well as the two income streams aggregated into a total income that reached a peak of 114 percent at the end of 2021. The increase in total income is supported by the recovering interest income and successive growing commission income investment. The drop in interest income in 2020 can be explained by value adjustments in the lending business concerning default risks (Swiss National Bank, 2022b). The growth in commission income from securities and investment business in 2021 is driven by strongly rising asset prices.

In conclusion, Swiss banks especially benefited from rising asset prices in 2021 without having to increase costs in parallel. In general, it can be said that banks continue to become more efficient, and costs remain stable despite growing volumes.

9. Open Finance

By Thomas Ankenbrand & Denis Bieri, Institute of Financial Services Zug IFZ

Open Finance is one of the trends in the Swiss financial industry that is seen as having the potential to change the operating model of established institutions by opening them up to exchange with third-party providers. Through this opening, banks can benefit, for example, from externalising certain process steps in their value chain due to a lack of in-house resources, competencies, or strategic importance, but also through the integration of third-party products and services into their own value chain or vice versa. Open Finance is, therefore, also attractive for FinTech companies, which in Switzerland often act as suppliers of innovative solutions to established financial service providers, as it promises a standardised and regulated exchange of, for example, financial data or services. The potential of Open Finance has also been recognised by the Federal Council. In December 2022, the Federal Council mandated the Federal Department of Finance (FDF) to submit measures by June 2024 if the financial sector did not sufficiently commit to opening up its interfaces (The Federal Council, 2022).

However, the concrete form of exchange or cooperation between traditional financial service providers and third-party providers can take different forms, which are often subsumed under the relatively broad term "Open Finance".

This chapter aims to distinguish the different forms of Open Finance (Section 9.1) and also to give an overview of the relevant actors (Section 9.2) and the currently highest-volume business areas (Section 9.3). Finally, Web 3.0 is introduced, as it is seen by various sources as having significant potential as a future open financial ecosystem and thus also seems relevant in the context of Open Finance (Section 9.4).

9.1. Types of Open Finance

Since the term "Open Finance" is used relatively broadly, this section provides a delineation of the various forms of cooperation that are associated with the development towards opening up interfaces in the financial industry. The following forms differ in particular in the degree of opening of interfaces and their standardisation:

- **Outsourcing**: According to the Swiss Bankers Association (SwissBanking), outsourcing is defined as follows: "Outsourcing [...] occurs when a company mandates a service provider to perform all or part of a function that is significant to the company's business activities independently and on an ongoing basis" (SwissBanking, 2020, p. 9). In the financial sector, outsourcing is typically done by established institutions to externalise part of their business processes to a third party. As such, outsourcing is typically a one-to-few relationship from the third-party perspective, with specialised providers that source services to a variety of financial institutions without the need for general standardisation and with limited openness.

- **Partnerships**: A partnership is an agreement in which one party procures a product or service from another. Unlike outsourcing, a partnership is usually a one-to-one relationship without the need for high standardisation and with only limited openness. Moreover, in partnerships, traditional financial institutions usually integrate third-party products and services into their value chain instead of outsourcing business processes.

- **Platforms**: Platforms are solutions designed to enable interaction between a plurality of different market participants. In the financial industry, platforms particularly operate as enablers for an exchange between financial institutions but also

with third-party providers such as FinTech companies. They are, therefore, to be understood as many-to-many networks, with the need for interaction standards as well as openness to a variety of participants such as banks and FinTech companies.

- **Ecosystems**: An ecosystem is a network of partners that interact in various ways to create added value for customers, influence each other, and participate in the economic success of the ecosystem with their products and services or individual parts thereof (Buschor, Blattmann, Estermann, & Ettlin, 2022). Hence, ecosystems can be understood as systems between interacting organisations and are enabled by the properties of modularity and complementarity (Hakanen, 2021), with data being the most important resource. Financial ecosystems thus represent a network of a multitude of participants without the need for an intermediary power.

- **Embedded finance**: Embedded finance describes the integration of financial solutions into traditionally non-financial environments with the goal of streamlining financial services for consumers (SAP Fioneer, online). Although such solutions can take different forms, in each individual case, they typically represent a few-to-one relationship in which a few financial institutions integrate their solutions, for example, in the area of payment transactions, into a specific non-financial solution, for example, an e-commerce marketplace or a transportation application. In order to efficiently integrate financial solutions into different environments, a certain degree of standardisation of the relevant interfaces is required.

A publication by the University of Applied Sciences and Arts Northwestern Switzerland (FHNW), Swiss FinTech Innovations, and Swiss Banking, released in December 2022, also comes to a similar classification of collaboration models from a legal perspective. Three of the four models described are also introduced in a similar form in this study. Specifically, this concerns the models of outsourcing, partnerships, and platforms. FHNW, Swiss FinTech Innovations & Swiss Banking (2022) also introduce a fourth form of collaboration in which separate contractual relationships exist between the bank and its customers and between the customers and the third-party provider, but not between the bank and the third-party provider, and contact between the bank and the third-party provider occurs solely at the request of the customers. In the present chapter, such a model is not specifically introduced since the triggering role of the end customer is, in principle, also possible in other collaboration models. In contrast, with ecosystems and embedded finance, two other models of interaction between financial service providers and third-party providers are considered. At this point, it should be noted that the five forms of collaboration described are not mutually exclusive; rather, mixed forms can also exist.

There are various forms by which financial institutions can exchange financial data, products, or services with each other or with third parties. However, not all of them are equally compatible with the basic idea of Open Finance, i.e., a broad degree of industry interaction through the exchange of financial data, products, or services between financial institutions themselves and/or with third-party providers. Traditional outsourcing, partnerships, and embedded finance solutions between financial institutions and third-party providers typically lack fundamental openness, which is why they are considered individual business relationships rather than open financial architectures. In the following, only platforms will be discussed, as this form of Open Finance has steadily emerged in Switzerland in recent years.

9.2. Swiss Actors in Open Finance

In Switzerland, there are already multiple providers of platforms for financial services or corresponding supporting initiatives. These include (in alphabetical order):

- **avaloq.one** by avaloq

- **blink** by SIX
- **Common API** by Swiss FinTech Innovations
- **eBill** by SIX
- **Finnova Open Platform** by Finnova
- **Finstar Open Platform** by Hypothekarbank Lenzburg
- **ix.OpenFinancePlatform** by Inventx
- **key4** by UBS
- **MoneyPark**
- **OpenBankingProject.ch** coordinated by BEI
- **OpenPK Project** by Acrea
- **OpenWealth** orchestrated by Synpulse
- **Swisscom Open Business Hub** by Swisscom
- **Valuu** by PostFinance
- **Terravis** by SIX
- **TWINT**

Note that not all of these providers actually function as operational platforms that connect different service providers but nevertheless play an important role in promoting Open Finance in Switzerland, for example, by defining standards for the required interfaces. Such supportive initiatives can be very important for the adoption of Open Finance platforms, as they often represent working groups with various relevant stakeholders such as banks, advisers, software providers, FinTech companies, and policymakers. Furthermore, note that certain platforms also differ in the breadth of the offer. While some are built as a multifunctional solution, others are purpose-specific. Also, the stage of development of the solutions can differ.

9.3. Volumes in Open Finance

Although there are several platform providers for Open Finance in Switzerland, the facts regarding their focus on activity and volumes are unclear. In order to get an impression of the size and traffic processed by Open Finance platforms in Switzerland, each of the actors listed in Section 9.2 was contacted and asked to provide information with regard to the following metrics:

1. Number of participants (e.g., banks, third-party providers) at the end of 2022
2. Number of transactions, transaction volume in CHF, and/or API calls processed in 2022

More than half of the platforms responded to the request and provided data, although not always completely and, in some cases, with additional information. However, the data obtained allow an initial assessment of the product areas of the FinTech grid (see verticals in Figure 1.2) in which volumes are taking place. Note that for reasons of confidentiality, no concrete figures can be given, as this could allow conclusions to be drawn about individual platforms. Therefore, the results will be discussed qualitatively in the following paragraphs, and only where data is public will concrete figures be given.

The figures obtained on participants and the volume of Open Finance platforms show that the greatest activity takes place in the product areas of *Payment* and *Banking Infrastructure*. Further operations can be found in the area of *Investment Management*, but the corresponding numbers and volumes are comparably smaller. In the *Deposit & Lending* area, however, there is the least business activity within the scope of Open Finance. This could be due, among other things, to the fact that the corresponding processes are comparatively little digitised and can, therefore, only be mapped with greater difficulty within platforms.

A comparison with the basic financial infrastructures in Switzerland, which in principle also serve as platforms for financial services, shows that the transaction volumes of the Open Finance platforms contacted are rather low. Systemically important financial infrastructure solutions in Switzerland include the SIX Swiss Interbank Clearing (SIC) system, which acts as the payment processor between banks, SIX x-clear, as the central counterparty (CCP) of the SIX Swiss Exchange, and SIX SIS, which is the Central Securities Depository (CSD) of the Swiss financial market (Swiss National Bank, online). All these systems are central to the functioning of the Swiss financial industry and are correspondingly volume-intensive, as the following metrics for the year 2021 (2020 for x-clear) underline:

- **SIC**: 319 participants (mainly Swiss banks), 893.4 million transactions, CHF 41.8 trillion turnover (Swiss National Bank, 2022c).

- **x-clear**: 78 clearing members, 682.6 million contracts and transactions submitted, CHF 7.0 trillion of total value submitted (Bank for International Settlements, online).

- **SIS**: 53.2 million transactions, CHF 4.1 trillion average deposit volume per month (SIX SIS, 2022), over 169 thousand securities ISIN in the clearing system (SIX SIS, online).

Within the framework of the FinTech grid, these solutions can be assigned to the areas of *Payment* (i.e., SIC) and *Investment Management* (i.e., SIS and x-clear).

New Open Finance platforms, therefore, need to fit into and/or extend the functionality of existing infrastructure and software solutions to be successful. The existence of the latter also shows that Switzerland is in a better position in the context of Open Finance than is often perceived.

9.4. Web 3.0

One development that is increasingly coming to prominence in the context of open ecosystems is the evolution from Web 2.0 to Web 3.0. Accordingly, Open Finance can also be seen as a possible development in the context of Web 3.0. The overall development of the internet is shown in a simplified form in Figure 9.1.

Web 1.0 represents the starting point and describes the early phase of the internet when static HTML pages were the norm, and there was little interaction or user-generated content ("Information Economy"). Web 2.0 can be understood as the evolution of Web 1.0 into an interactive and dynamic internet, with the emergence of social media, blogs, wikis, and the ability for users to upload and share content ("Platform Economy"). Web 3.0 represents the next evolutionary step of the internet, where data is better connected and smarter, enabling more sophisticated services and applications. The goal of Web 3.0 is to create a smarter and more interconnected internet that can better understand and meet the needs of users, making the internet more useful, efficient, and personalised for everyone, including strengthening users' ownership of data ("Ownership Economy"). The latter could be achieved, for example, through the use of decentralised technologies such as blockchain, whereby internet activity is represented by a user's crypto wallet, assets and business logic by tokens and smart contracts, respectively, and websites are hosted as decentralised applications (DApps).

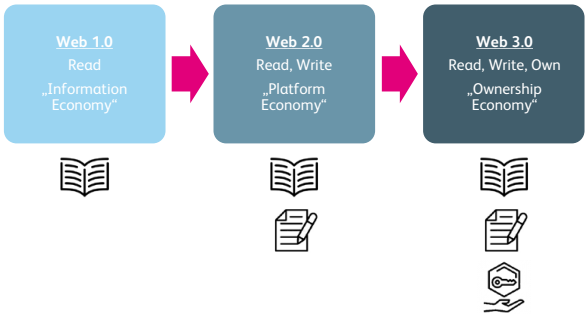

Figure 9.1: Development of the internet (source: based on Chamria (2022))

In simple terms, Web 3.0 can be understood as an ecosystem of ecosystems that serves as the foundation for various areas of life. As a basic infrastructure, it can also lead to new business models in banking. Potential use cases include (Sakharchuk, 2022; Banerjee, Byrne, De Bode, & Higginson, 2022):

- **Financial transactions**: Reduced settlement time and costs of payments.

- **Tokenisation**: Shareable tokenised assets that represent claims to real assets such as goods, real estate, or intellectual property.[1]

- **Digital identity management**: Storage and management of customer data, providing improved privacy and security.

[1] See Chapter 6 for more details.

- **Personalised financial services**: Tailor-made products based on holistic customer data.
- **Virtual banking**: Digital interaction enriched with augmented reality (AR) and virtual reality (VR) elements.

But for Web 3.0 to arrive in banking, various challenges must be overcome, as a survey by Bain & Company of senior bank executives and CEOs of Web 3.0 companies reveals. The biggest obstacle seems to be the immaturity of the regulatory and legislative environment, followed by the large changes required to existing systems and processes (Bain & Company, 2022).

From a technological point of view, the prerequisites for Web 3.0 seem to be in place in many respects. DLT, for example, is constantly evolving, as are the interface technologies from AR and VR. There is, however, still a need for improvement with regard to generally accepted digital identities and interface standards so that Web 3.0 can grow into the mainstream. That the development is fundamentally pointing in the right direction is shown by the investment volumes. In the two years 2021 and 2022, Web 3.0 companies raised a total of over USD 50 billion in over 4,000 deals globally (Crunchbase, 2023).

10. Conclusion and Outlook

The IFZ FinTech Study 2023 presents the current state and advancements in the Swiss FinTech sector. The key discoveries are condensed into the following statements and theses:

The Swiss FinTech industry is finding its way back to growth. After a year of contraction in 2021, the Swiss FinTech sector grew again in 2022. At the end of the year, the sector counted a total of 437 companies, which corresponds to an increase of 14 percent year-over-year. The largest growth was recorded in the product areas of *Investment Management* and *Banking Infrastructure*, the two areas to which most FinTech companies are also assigned in absolute figures. In terms of applied technologies, the biggest growth is recorded for companies in the *Distributed Ledger Technology* category. An analysis of business models furthermore shows that an increasing relevance of sustainable FinTech solutions is emerging. By the end of 2022, 7.3 percent of all Swiss FinTech companies focused strategically on sustainable products and services.

Singapore can extend its top position as a leading FinTech hub. Since the first FinTech hub ranking was conducted in 2017, Singapore has been leading in terms of the conditions offered to FinTech companies. This lead was further extended in 2022. The two Swiss cities of Zurich and Geneva, together with Stockholm, form the first group of pursuers with still good framework conditions but follow at some distance. An extended analysis of the connection between the framework conditions offered by a location and the size of its local FinTech sector also shows that there is a significant positive relationship, even when corrected for country-specific effects. In addition, the analysis shows that venture capital and joint venture activities correlate most strongly with the size of a country's FinTech sector.

Investments in Swiss FinTech companies largely escaped the global downtrend. While financing activities in the FinTech sector declined globally in 2022, with decreasing venture capital, token sales, acquisition, and IPO volumes, Switzerland shows a comparably more positive or stable development. In 2022, a total of 84 venture capital financing rounds of Swiss FinTech companies were counted, with a total volume of CHF 605 million. The year-on-year comparison shows that while the number of financing rounds only slightly decreased in 2022, the volumes have increased by 36 percent. However, an evaluation of different challenges by the FinTech companies shows that access to finance has become more difficult on average over the past year also in Switzerland.

Swiss banks are stepping up their digitisation game. A survey of IT executives at Swiss banks shows that they have expanded their IT-related resources over the past year. These resources are also invested more in transforming the banking business and less in maintaining day-to-day operations. These developments generally point to increasing innovation capacities in the traditional Swiss financial industry. With regard to data science at Swiss banks, the survey reveals that the corresponding team sizes and tools, providers, and programming languages used are diverse. The most common data science use case currently is fraud detection.

Open Finance is existent in Switzerland but is more an evolution than a revolution. In Switzerland, various platform solutions have developed in the context of Open Finance, and various support initiatives exist. However, as the general financial infrastructure in Switzerland is already well developed and handles comparatively big volumes, it seems to be important for Open Finance platforms to fit into and/or extend the functionality of the existing infrastructure or software to be successful.

11. Factsheets of Swiss FinTech Companies

In this chapter, the factsheets of 163 companies that participated in the survey for the analysis in Chapter 2 are shown. The information presented was self-reported by the companies. The factsheets are based on the Business Model Canvas by Osterwalder and Pigneur (2010) and contain general information, such as the year of foundation and the canton of the company headquarters, as well as detailed information on a company's business model. At this point, we would like to thank all companies that took part in the survey.

Companies

Companies

Companies

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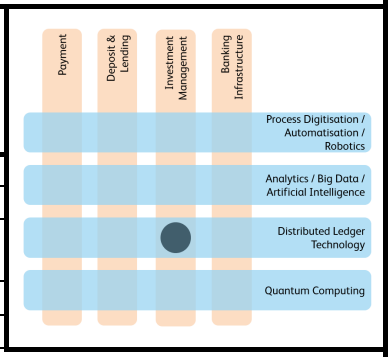
21Shares AG
https://21shares.com/

21.co is the world's leader in providing access to crypto through simple and easy to use products. 21.co is the parent company of 21Shares, the world's largest issuer of cryptocurrency exchange traded products (ETPs) – which is powered by Onyx, a proprietary technology platform used to issue and operate cryptocurrency ETPs for 21Shares and third parties.

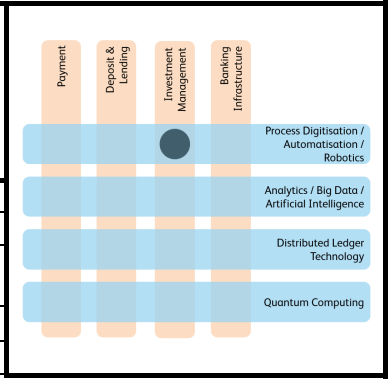


Year of foundation	2018
Domicile (canton)	ZG
Employees … of which in CH	115 50
Valuation	USD 2,000,000,000
Total funding	
Board members	Ophelia Snyder, Hany Rashwan, Cathie Wood
Management team	Ophelia Snyder, Hany Rashwan
Key partners	MarketVector, Vinter, Bitwise, S&P Dow Jones Indices, Flow Traders, Jane Street, LSX, Virtu Financial, GHCO, Nyenburgh Holding B.V., DRW, Bluefin Europe LLP, Copper, Coinbase, Bitcoin Suisse, JPMorgan Chase & Co.

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

3rd-eyes analytics AG
https://3rd-eyes.com/

We develop software that empowers financial institutions to provide goal-based, individual, realistic and sustainable wealth and life event planning. Our solutions provide a holistic assessment and simulation of the client's wealth, optimise their asset allocation across various capital scenarios, and rrecommenda set of financial products for exan ecution. As we include climate scenarios, and consequently enable our clients to conduct climate stress tests as required by the TCFD.



Year of foundation	2015
Domicile (canton)	ZH
Employees … of which in CH	35 14
Valuation	
Total funding	CHF 5,100,000
Board members	Stephan Mohrhardt, Thomas Pütter, Marc Mettler, Rodrigo Amandi, Stephanie Feigt
Management team	Stephanie Feigt, Rodrigo Amandi, Marc Mettler
Key partners	Morningstar, Investment Navigator, Wize byTeamWork, Logismata, Avaloq

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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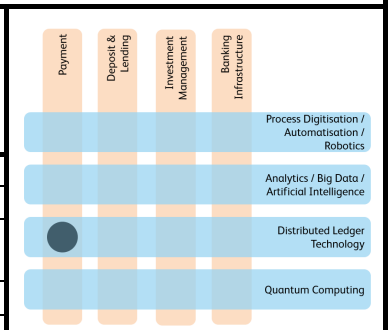
4cash.exchange - 4bridges GmbH
https://4bridges.ch/

FinTech, Paper- & Cryptocurrency Exchange based in Switzerland. 4bridges follows the cryptocurrency principals & share the values of the cryptocurrency community. Great team of open minded, highly motivated entrepreneurs. With the launch of 4cash.exchange important infrastructure has been created, licensed and registered for the community. Access to financial freedom and self custody has become reality.

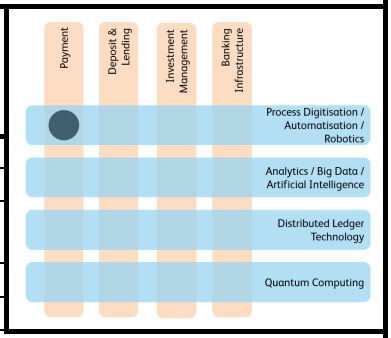


Year of foundation	2019
Domicile (canton)	ZH
Employees … of which in CH	5 2
Valuation	CHF 16,000,000
Total funding	CHF 855,000
Board members	Robin Caduff, Emad Hassanipanah, Simon Tiberius Fundel
Management team	Robin Caduff, Emad Hassanipanah, Simon Tiberius Fundel
Key partners	Switzerland Innovation Park Ost. OST, HSG, Crypto Society St. Gallen.

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

abrantix AG
https://www.abrantix.com/

We are experts in software and technology solutions for the payment industry.
We automated the payment terminal testing and introduced a product allowing retailers to reconcile their cashless payments from the POS to the bank account completely automated.



Year of foundation	2001
Domicile (canton)	ZH
Employees … of which in CH	96 53
Valuation	CHF 10,000,000
Total funding	
Board members	Daniel Eckstein, Christian Vetsch, Roland Walder, Niklaus Santschi
Management team	Roger Niederer, Daniel Eckstein, Matthias Malär, Martin Gloor, Christian Vetsch, Adrian Zimmermann, Luzi Tiefenauer
Key partners	Many different payment companies eg, Worldline, PAYONE, Worldpay Many different companies acting in business field of testing products eg. UL, B2, IntelliQA

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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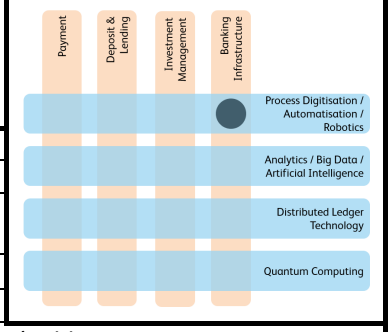
Accounto AG
https://accounto.ch/

Accounto represents a paradigm shift in bookkeeping for sme and trust companies by removing the actual booking and administrative work from both parties. Thanks to the bookkeeping automatisation, trust companies are able to scale their business model and deliver the latest financial figures to the SME sme clients.

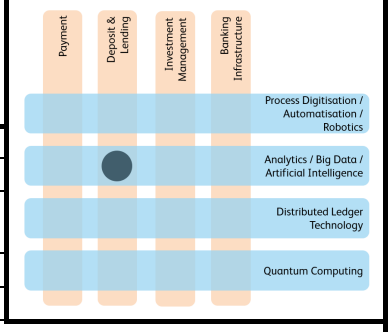


Year of foundation	2018
Domicile (canton)	ZH
Employees … of which in CH	50 30
Valuation	
Total funding	CHF 2,000,000
Board members	Dominique Andreas Kasper, Michael Manz, Alain Veuve, Alessandro Micera
Management team	Jan-Hendrik Heuing, Kilian Perrin, Andreas Ros-Lang, Pascal Thommen
Key partners	AXA, Treuhand Suisse, Swiss Finance Startups, Expert Suisse, swissICT

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Acredius AG
https://www.acredius.ch/

Acredius is a Swiss independent crowdlending platform. Private and institutional investors can diversify their portfolios starting from a CHF 200 investment. SMEs and startups get access to fair loans using their traditional and non-traditional data.



Year of foundation	2017
Domicile (canton)	ZH
Employees … of which in CH	25 5
Valuation	
Total funding	
Board members	Nada Chebli-Raafat, Ghassen Ben Hadj Salah, Thomas Hentz
Management team	Ghassen Ben Hadj Salah, Tareck Raafat, Nada Chebli, Fernando Felix
Key partners	TMF Group, Kellerhals Carrard, Lemon Way, newchip

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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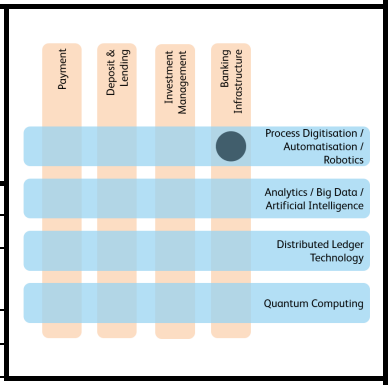
Additiv AG
https://additiv.com/

Orchestrated Finance to address complex, real-life customer needs in all key areas of finance: additiv provides everything that's needed to design, orchestrate, embed, launch, run and scale highly-contextualised and seamless financial experiences. Based on its DFS orchestration platform, the offering combines third-party and own services to enable new operating, servicing and sourcing models – differentiating end-to-end value propositions, out-of-the-box, at a cost advantage.

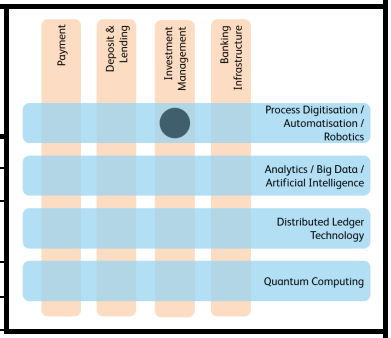


Year of foundation	1998
Domicile (canton)	ZH
Employees … of which in CH	250 70
Valuation	
Total funding	
Board members	Roger Steiner, Benjamin Paul Robinson, Rolf Theo Schönauer, Thomas Scherr
Management team	Michael Stemmle, Christine Schmid, Dieter Lützelschwab, Silvan Schriber, Chris Tanner, Adrian Weiss, Yann Kudelski, Guy Levy, Vlad Magereanu, Thomas Schornstein, Pieter Zylstra
Key partners	Technology and expert partners: Microsoft, unblu, Idnow, fidentity, edgelab, Morningstar and others. Sales and implementation partners: accenture, Fehr Advice, IKON, synpulse, Xtoniq Soft and more than 20 others.

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Adviscent AG
https://adviscent.com/

Interactive Advisor Framework – integrates people, processes and content from the investment- and sales process into the advisory process.



Year of foundation	2010
Domicile (canton)	ZH
Employees … of which in CH	50 6
Valuation	
Total funding	
Board members	Stephan Jöhri, Thomas Bosshard
Management team	Stephan Jöhri, Thomas Bosshard
Key partners	Ecosystems: Avaloq, additiv, Temenos Data: Bloomberg Implementation: DXC.technology

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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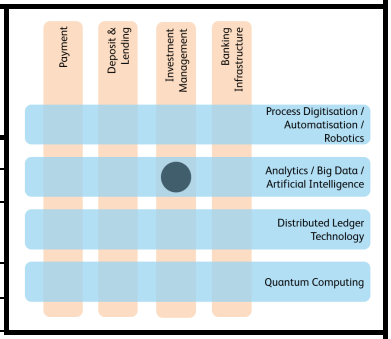
Aisot Technologies AG
https://www.aisot.ch/

More data, less time to react: growing complexity makes markets more volatile and harder to interpret. Aisot collects, processes and makes sense out of data. aisot's real-time AI insights put you ahead of volatile markets.

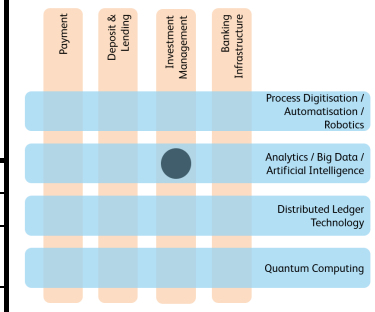


Year of foundation	2021
Domicile (canton)	ZH
Employees … of which in CH	7 4
Valuation	
Total funding	CHF 1,030,000
Board members	Stefan Klauser, Nino Antulov-Fantulin, Tian Guo
Management team	Stefan Klauser, Nino Antulov-Fantulin, Roger Peyer
Key partners	Lake Crypto, UX Wealt Partners, SIX bLink, Microsoft

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

aixigo (Schweiz) AG
https://www.aixigo.com/

aixigo provides the world's fastest API-based wealth management platform for creating individual, innovative and profitable wealth management services. aixigo drives innovation by creating future-proof wealth management software that exceeds today's standard on speed and usability, with a constant focus on serving a real client need. With 20+ years of deep expertise in the field, aixigo is a global leader in API-based investment advisory, portfolio management, analysis, monitoring and risk management tools.



Year of foundation	2019
Domicile (canton)	ZH
Employees … of which in CH	150 2
Valuation	
Total funding	
Board members	Roland Schlager, Erich Borsch, Urs Ehrismann
Management team	Arnaud Picut, Christian Friedrich
Key partners	GFT, zühlke, Synpulse, ti&m

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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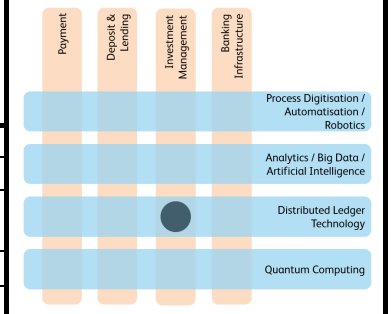
Aktionariat AG
https://aktionariat.com/

Aktionariat AG offers a set of tools for Swiss companies to create a market for their shares on their own website. Open technology. No intermediaries. Powered by the Ethereum blockchain.

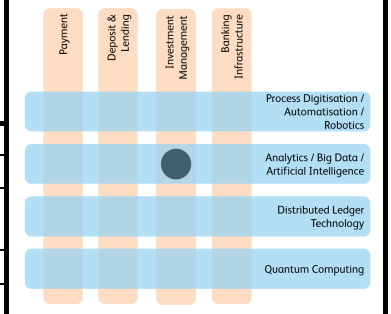


Year of foundation	2020
Domicile (canton)	ZH
Employees … of which in CH	14 12
Valuation	CHF 17,686,911
Total funding	CHF 2,388,250
Board members	Murat Ögat, Luzius David Meisser
Management team	Murat Ögat, Nicola Plain
Key partners	LEXR

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

ALLINDEX AG
https://www.allindex.com/

We democratize the creation of customized indices and model portfolios via a white-label software-as-a-service web platform and mobile app (B2B and B2B2C).



Year of foundation	2018
Domicile (canton)	ZH
Employees … of which in CH	12 4
Valuation	
Total funding	
Board members	Christian Alois Kronseder, Robert Leopold Bareder, Reinhard Stary, Peter Knez
Management team	Christian Alois Kronseder, Robert Leopold Bareder
Key partners	S&P, Morningstar (indices on the platform), GenTwo, Symphony, Asia Financial

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital			Data
			Operat. business & serving clients	Trading	Advertising

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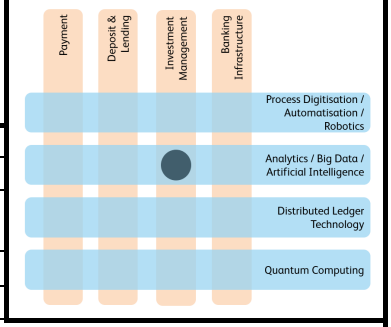
Alphasys AG
https://www.alphasys.ch/

Alphasys AG is a dynamic software enterprise. With Netfolio, we have developed a software solution for in-depth and professional wealth management.

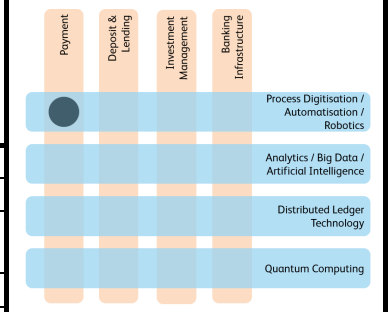


Year of foundation	2003
Domicile (canton)	ZH
Employees … of which in CH	12 12
Valuation	
Total funding	
Board members	Andreas Bachmann, Fabrizio De Ambroggi
Management team	Andreas Bachmann, Fabrizio De Ambroggi, Lukas Bachmann
Key partners	SIX, OpenWealth Association, ZHAW, theScreener, Investment Navigator, Cleversoft

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

AMNIS Treasury Services AG
https://www.amnistreasury.com/

Amnis is on the mission to reshape international banking for companies. As a licensed European Payment Institution, we bring global transaction banking to SMEs across Switzerland and Europe and serve more than 2'000 companies from 30+ countries. Within a subscription model, amnis offers free individual IBAN accounts in 20+ currencies, payout possibilities in every currency, highly competitive currency exchanges and instant Peer-to-Peer payments.



Year of foundation	2014
Domicile (canton)	ZH
Employees … of which in CH	35 15
Valuation	
Total funding	CHF 11,600,000
Board members	Doris Beck, Peter Gerlach, Stefan Bürzle, Philippe Christen, Robert Bloch, Michael Wüst
Management team	Michael Wüst, Robert Bloch, Philippe Christen, András Ratz
Key partners	Bank WIR, bexio, Microsoft, Mastercard

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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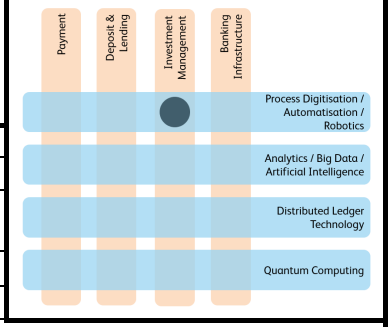
AM-One AG
https://www.am-one.ch/

Complete outsourcing platform with Swiss cloud hosting and operational services for independent asset managers and family offices.

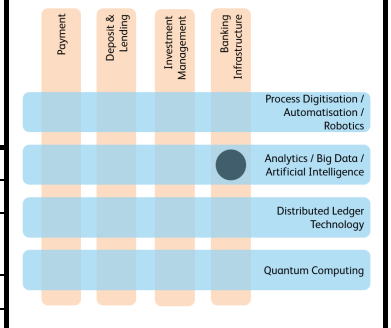


Year of foundation	2017
Domicile (canton)	ZG
Employees … of which in CH	300 > 100 (Group)
Valuation	
Total funding	
Board members	Urs-Peter Oehen
Management team	Philipp Bisang, Dominic Greenwood, George Prapopoulos
Key partners	

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Ariadne Business Analytics AG
https://www.ariadne.swiss

Ariadne provides next generation core finance systems. Ariadne fills an important gap in the supply landscape for system support for existing banks and new financial service providers. The systems for core banking services (SolitX), decentralized financial platforms and for risk and finance analytics (AnalytX) are all based on a Smart Financial Contract concept based on the ACTUS standard. To learn more, visit https://www.ariadne.swiss/.



Year of foundation	2015
Domicile (canton)	ZG
Employees … of which in CH	17 4
Valuation	
Total funding	CHF 1,300,000
Board members	Willi Franz Brammertz, Daniel Imfeld-Binzegger
Management team	Willi Franz Brammertz, Shirish Kalangi, Daniel Imfeld-Binzegger, Ralf Kubli, Wolfgang Breymann, Jefferson Braswell
Key partners	Casper Labs, Nucleus Finance, Actus, Mobile First Finance, Nosco Analysis, Oded, ZHAW

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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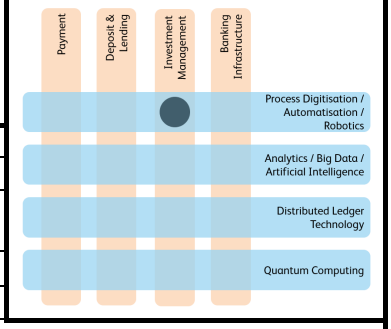
Assetmax AG
https://www.assetmax.ch/

Manage portfolios across several custodians with readily available data and in compliance with customer objectives and regulation.

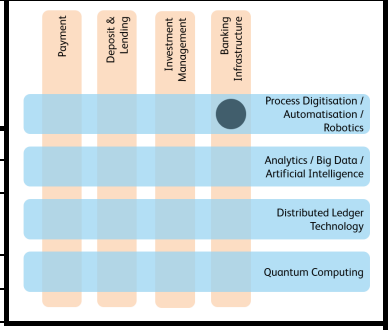


Year of foundation	2014
Domicile (canton)	ZH
Employees … of which in CH	42 42
Valuation	
Total funding	
Board members	
Management team	Massimo Ferrari, Stefanie Gaiser, Zlatko Vucetic
Key partners	Altoo, Edgelab, Evooq, Indigita, Investment Navigator, Performace Watcher, Prometeia, World-Check, GW-Group, Synpulse, BDO, Noveras, Numas, GWP, Swisscomply, Tinext, Bloomberg

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

atfinity AG
https://atfinity.io/

atfinity automates and orchestrates client and compliance processes with our no-code platform. This allows to customize very flexibility and being able to adapt and extend processes in no-time.



Year of foundation	2018
Domicile (canton)	ZH
Employees … of which in CH	14 9
Valuation	
Total funding	CHF 1,600,000
Board members	Alexander Balzer, Thorben Croisé, Ingo Drexler
Management team	Alexander Balzer, Thorben Croisé, Raphael Wullschleger, Tijana Živić
Key partners	Avaloq, ComplyAdvantage, Finastra, IDNow, Microsoft, Refinitiv

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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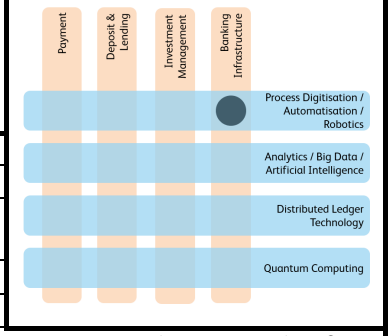
Avaloq Group AG
https://www.avaloq.com/

Avaloq is a global leader in digital banking solutions, core banking software and wealth management technology. It provides powerful cloud solutions for banks and wealth managers through business process as a service (BPaaS) and software as a service (SaaS). Avaloq is a subsidiary of NEC Corporation, a global leader in the integration of IT and network technologies.

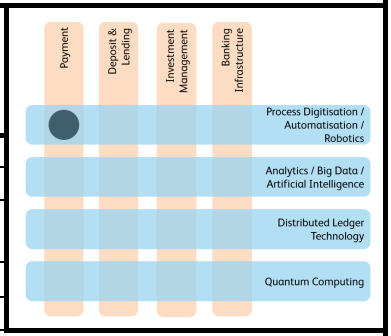


Year of foundation	1985
Domicile (canton)	ZH
Employees … of which in CH	> 2,400 > 1,300
Valuation	
Total funding	
Board members	Tomoki Kubo, Tomonori Hira, Daichi Iwata, Asako Aoyama, Francisco Fernandez, Peter Schöpfer
Management team	Thomas Beck, Martin Greweldinger, Martin Büchi, Barry Frame, Hubert Gmünder, Tobias Marbler, Thomas Widmer, Jesper H. Sorensen, Torsten Pull, Torsten Boettjer, Roberto Vigano, Thomas Fischer
Key partners	NEC Corporation

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Avance Pay AG
https://www.avance-pay.com/

As expert in the banking and payment area, Avance Pay specializes in the development of innovative solutions for NFC-based and contactless payments.



Year of foundation	2011
Domicile (canton)	BE
Employees … of which in CH	6 5
Valuation	
Total funding	
Board members	Peter Nicoleit, Herbert Gartner
Management team	Peter Nicoleit, Peter Danz, Heinz Bircher-Nagy, Herbert Gartner
Key partners	

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
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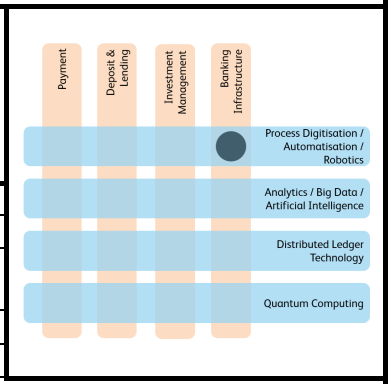
aXedras AG
https://www.axedras.com/

aXedras is connecting and digitalizing the precious metal industry. aXedras is a DLT infrastructure and application provider for product and data integrity in the bullion market (and for other high-value industries). aXedras has been developing a distributed Corda application which operates on a permissioned and private blockchain and which efficiently combines integrity, traceability and confidentiality of business transactions on a technical level.

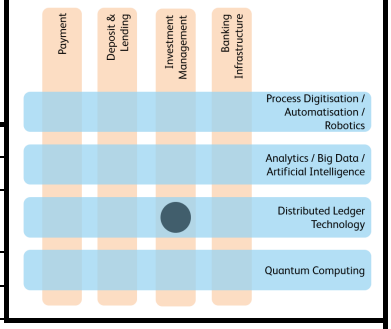


Year of foundation	2019
Domicile (canton)	ZG
Employees … of which in CH	25 15
Valuation	
Total funding	
Board members	Frank Richard Süss, Oliver Kehl, Urs Röösli, Florian Herzog, David Tait
Management team	Urs Röösli, Iwan Lottenbach, Bernd Stöger
Key partners	ASFCMP, SBG, Microsoft, R3, Scalefocus, SFTA, USI, LBMA, SMBA, WGC

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Base58 Capital AG
https://base58.ch/

We are a technology-driven investment firm specialized in crypto assets.



Year of foundation	2017
Domicile (canton)	ZG
Employees … of which in CH	3 2
Valuation	
Total funding	
Board members	Christian Frey, Ivo Sauter, Fabio Federici
Management team	Fabio Federici, Tommaso Bonanata, James Edwards
Key partners	Coinbase Prime

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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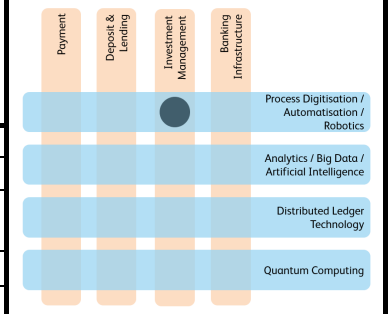
Beedoo SA
https://www.beedoo.ch/

A platform proposing real investment solutions with investment advice.

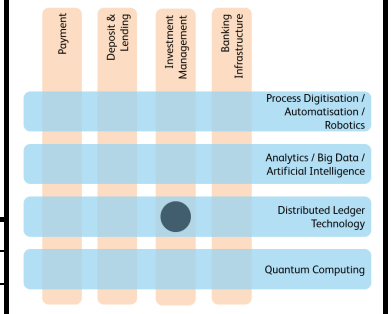


Year of foundation	2014
Domicile (canton)	VD
Employees … of which in CH	
Valuation	
Total funding	
Board members	Maria Del Carmen Croisier
Management team	David Croisier
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Bitcoin Suisse AG
https://www.bitcoinsuisse.com/

Founded in 2013, Bitcoin Suisse Ltd is the Swiss crypto-finance and technology pioneer and market leader. As an enabler for the crypto and blockchain ecosystem in Switzerland, Bitcoin Suisse has been a driving force in the development of the 'Crypto Valley' and the 'Crypto Nation Switzerland'. The crypto-financial services provider offers brokerage, custody, lending, staking, payment solutions and other crypto-related services for private and institutional clients. As a member of the self-regulatory organization Financial Services Standards Association (VQF), Bitcoin Suisse is a financial intermediary subject to Swiss AML/CFT regulations. Bitcoin Suisse consists of several companies under the parent company BTCS Holding Ltd. The company is headquartered in Zug and has built a team of over 250 highly qualified experts in Switzerland and Europe.



Year of foundation	2013
Domicile (canton)	ZG
Employees … of which in CH	250+ The majority
Valuation	CHF 302,500,000
Total funding	CHF 45,000,000
Board members	Roger Studer, Urs Alois Bigger, Giles Barry Keating, Luzius David Meisser, Gabriela Hauser-Spühler
Management team	Dirk Klee, Andrej Majcen, Barbara Hofkamp, Lothar Cerjak, Mauro Casselini, Peter Camenzind, Philipp Vonmoos, Sven Ramspott
Key partners	Worldline, CoinRoutes

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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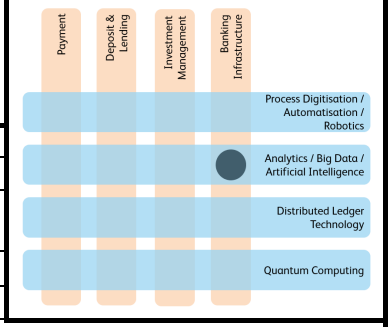
BitsaboutMe AG
https://bitsabout.me/

BitsaboutMe empowers you to reclaim control over your personal data, in order to better protect your privacy and to get a fair deal when sharing your personal data profile with trustworthy companies and institutions.

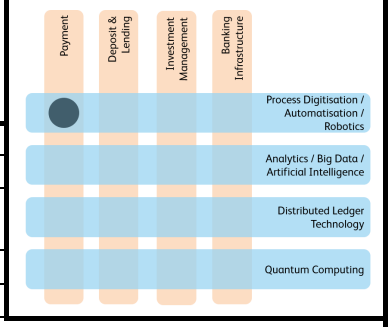


Year of foundation	2017
Domicile (canton)	BE
Employees … of which in CH	2 2
Valuation	
Total funding	CHF 2,000,000
Board members	Thomas Walter Billeter, Christian Kunz, Christophe Legendre
Management team	Christian Kunz, Christophe Legendre
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

BLP Digital AG
https://www.blp-digital.com/

Automated ERP processes such as supplier invoices, order confirmations, delivery notes and customer orders through Artificial Intelligence.



Year of foundation	2019
Domicile (canton)	ZH
Employees … of which in CH	14 14
Valuation	
Total funding	Bootstrapped
Board members	Tim Beck, Sven Beck
Management team	Tim Beck, Sven Beck, Sabrina Schenardi, Thore Harmuth
Key partners	ERP's, ERP partners, consulting firms

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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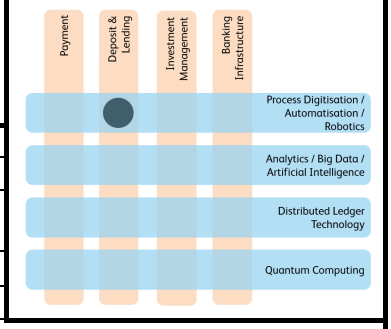
bob Finance - Valora Schweiz AG

https://bob.ch/

bob Finance is a Zurich-based FinTech company that provides digital consumer finance products to Swiss consumers. Core products include buy now pay later offerings (bob invoice, bob zero) as well as consumer loans up to CHF 80'000 (bob credit).



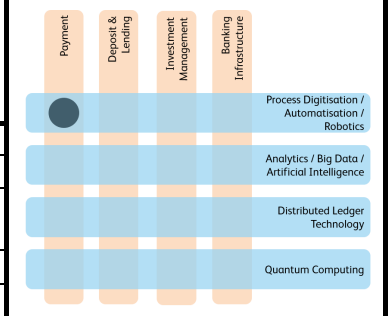
Year of foundation	1996
Domicile (canton)	BL
Employees … of which in CH	~35 ~35
Valuation	
Total funding	
Board members	
Management team	Hilmar Scheel, Wolfgang Gröschel, Tim Ackermann, Martin Fischer
Key partners	Glarner Kantonalbank, PostFinance, Apple, Breitling, Richemont etc.

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital			Data
			Operat. business & serving clients	Trading	Advertising

b-Sharpe SA

https://www.b-sharpe.com/

b-Sharpe is a Fintech that provides fair exchange rates for small and middle sized companies as well as private individuals.



Year of foundation	2006
Domicile (canton)	GE
Employees … of which in CH	27 23
Valuation	
Total funding	CHF 100,000
Board members	Philippe Echenard, Didier Eicher, Jean-Marc Sabet, Xavier de Villoutreys
Management team	Jean-Marc Sabet, Xavier de Villoutreys, Julien Dubost, Nicolas Lombard
Key partners	Cooperative Migros Geneve

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital			Data
			Operat. business & serving clients	Trading	Advertising

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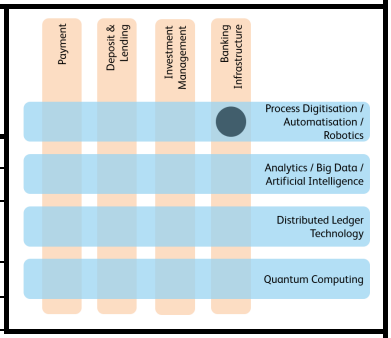
BX Swiss AG
https://www.bxswiss.com/

BX Swiss AG is a Swiss stock exchange focused on the needs of active investors and SMEs.

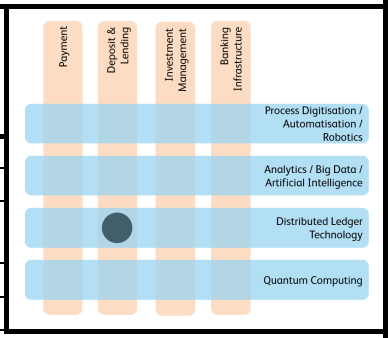


Year of foundation	2017
Domicile (canton)	ZH
Employees … of which in CH	20 20
Valuation	
Total funding	
Board members	Matthias Voelkel, Peter Heller, Dragan Radanovic, Claudio Studer
Management team	Lucas Bruggeman, David Kunz, Matthias Müller
Key partners	Börse Stuttgart

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Caeleste AG
https://clst.com/

Institutional peer-to-peer lending for the digital asset era.



Year of foundation	2021
Domicile (canton)	ZH
Employees … of which in CH	20+
Valuation	
Total funding	
Board members	
Management team	Michael Guzik, Hassan Al-Lawati, Hugh Macmillen
Key partners	Spartan Group, Avon Ventures by Fidelity Investments, Kraken Ventures, Coinbase Ventures, GSR, Menai Financial Group, Luno Expeditions, TX Group and other

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital			Data
			Operat. business & serving clients	Trading	Advertising

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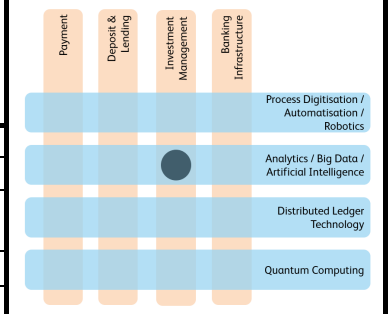
Canopy Europe AG
https://canopy.cloud/

"Canopy", is a private & anonymous wealth account aggregation, portfolio analytics and client reporting platform for High Net-Worth Individuals and their Wealth Managers.

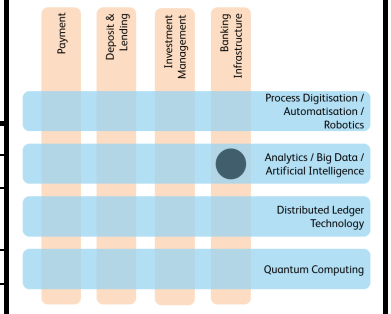


Year of foundation	2018
Domicile (canton)	ZG
Employees … of which in CH	68 2
Valuation	Approx. USD 35,000,000
Total funding	USD 21,000,000
Board members	Sharma Tanmai, Sinan Adnan Biren
Management team	Sharma Tanmai, Wu Eryn, Sinan Adnan Biren, Pereira Shamara, Surana Prashant
Key partners	Bloomberg, FactSet, Morningstar, Sustainalytics, Tableau, AWS, MS Azure, Safe Swiss Cloud, MS PowerBI, Sage Intacct

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Capnovum (Switzerland) GmbH
https://capnovum.com/

Capnovum helps financial institutions respond to regulatory change across global jurisdictions - by delivering timely intelligence, impact assessments and successfully automating the end-to-end process.



Year of foundation	2016
Domicile (canton)	ZH
Employees … of which in CH	11-20 1-10
Valuation	
Total funding	
Board members	
Management team	Inga Jovanovic, Niclas Nilsson, Derek Forder
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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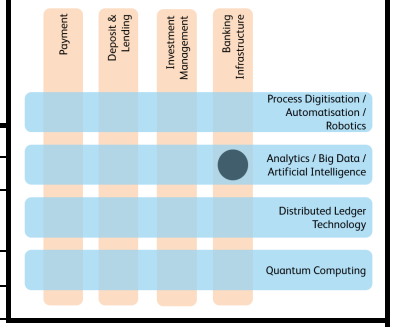
Check Your Customer GmbH
https://www.cyc-online.net/

We simplify KYC and AML compliance checks for SMEs.

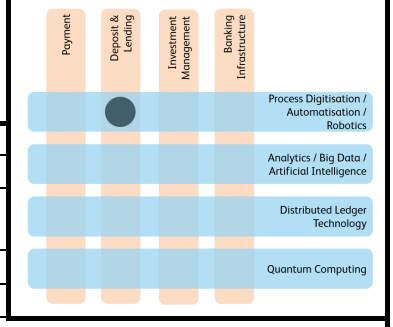


Year of foundation	2020
Domicile (canton)	ZH
Employees … of which in CH	1 1
Valuation	
Total funding	CHF 20,000
Board members	Michael Andrä, Stefan Kröger, Stefan Miletzki
Management team	Michael Andrä, Stefan Kröger, Stefan Miletzki
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Conda.ch GmbH
https://www.conda.ch/

The crowdinvesting platform for investments in start-ups und KMU.



Year of foundation	2021
Domicile (canton)	ZG
Employees … of which in CH	
Valuation	
Total funding	
Board members	
Management team	Linus Gabrielsson, Christian Klumpe
Key partners	braingelist, Lemonway, keymarketing

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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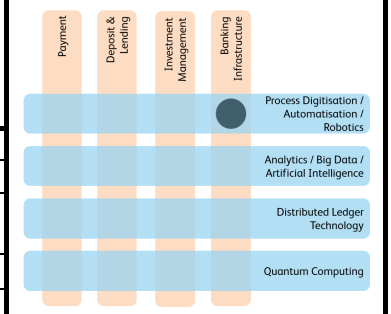
Confinale AG
https://confinale.ch/

Confinale combines banking expertise with software competence, making us the perfect partner for digitisation projects at banks. We focus our IT consulting on five specialist areas in the banking sector: Wealth advisory, tax, compliance, regulatory reporting, credit business and - across all topics - integration solutions.

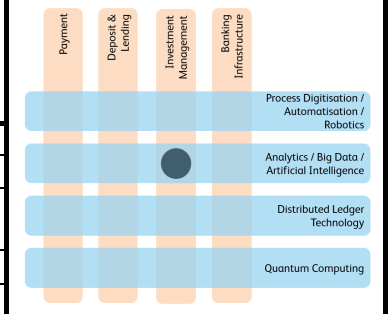


Year of foundation	2012
Domicile (canton)	ZG
Employees … of which in CH	105 90
Valuation	
Total funding	
Board members	Roland Staub, Jonas Misteli, Rakesh Kewalkrishna Sarin, Sudip Kumar Lahiri, Shiv Kumar Walia
Management team	Roland Staub, Jonas Misteli, Florian Schrag, Andreas Egli, Fabian Erni, Birol Izel, Pascal Inauen
Key partners	Avaloq, SIX, Adenza (formerly AxiomSL), PwC, Flowable, Appway, Actico, Investment Navigator, Wolters Kluwer Financial Services

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Conser Invest SA
https://www.conser.ch/

We are passionate people determined to enable a real integration of sustainability into finance. Our commitment is to advise our clients in a neutral and independent manner. We act as third-party verifier and aim to build trust between investors and asset managers.



Year of foundation	2007
Domicile (canton)	GE
Employees … of which in CH	5 5
Valuation	CHF 4,000,000
Total funding	CHF 200,000
Board members	Matteo Bosco, Olivier Collombin, Bernard Vischer, Angela de Wolff de Moorsel
Management team	Angela de Wolff, Jean François Léon Laville, Matteo Bosco
Key partners	Canopia Sàrl and Fundo SA

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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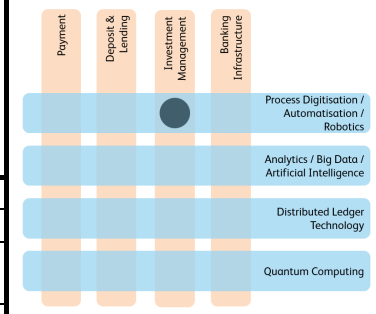
Copula GmbH
https://copula.ch/

Securitisation Deal Flow Solution • Analytics • Book-Building • Open Ecosystem • ESG Ready •
Copula operates the Securitisation Terminal. The Securitisation Terminal is a powerful and user-friendly solution for the private debt market, globally. It has a built-in book-building function that allows you to syndicate investors and increase the size of your transactions, boosting your profitability. Plus, it streamlines securitisation processes, standardises data, and simplifies controlling. As an ESG-ready interface, it can also integrate sustainability data.

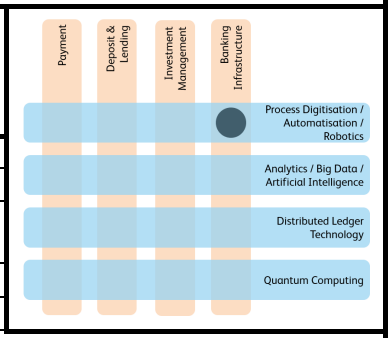


Year of foundation	2022
Domicile (canton)	ZH
Employees … of which in CH	4 3
Valuation	
Total funding	CHF 20,000
Board members	Adrian Benz, Felix Fehlauer, Finlay Fehlauer, Frédéric Taesch
Management team	Adrian Benz, Felix Fehlauer, Finlay Fehlauer, Frédéric Taesch
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Cow Level AG
https://cowlevel.ch/

Cow Level is a FinTech company for gaming. The main project is FiPME, an exchange for the virtual worlds.



Year of foundation	2021
Domicile (canton)	ZG
Employees … of which in CH	1 I external: 7 + IT 1 I external: 2 + 1 IT
Valuation	
Total funding	
Board members	Stefan Manfred Kämper, Boris Jochen Georg Obodda
Management team	Stefan Kämper, Boris Obodda
Key partners	SME-X, daura, F10, 2-pi, SwissGaming, aws, RegSearch

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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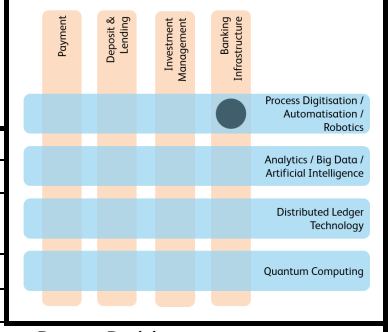
Crealogix Holding AG
https://crealogix.com/

CREALOGIX Group (SWX:CLXN) is a Swiss Fintech 100 company and is among the global market leaders in digital banking. Using the products from CREALOGIX, financial institutions can better respond to evolving customer needs in the area of digital transformation.

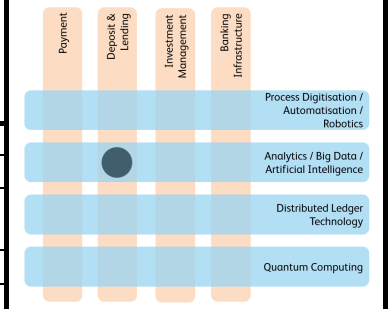


Year of foundation	1996
Domicile (canton)	ZH
Employees … of which in CH	550 200
Valuation	CHF 90,000,000
Total funding	
Board members	Rudolf Noser, Ralph Marco Mogicato, Jörg Zulauf, Richard Dratva, Bruno Richle
Management team	Oliver Weber, Richard Dratva, Daniel Bader
Key partners	Adesso, CGi, Cognizant, DXC, HPE, IBM, Oracle, redhat, Inventx, Meniga, unblu, Entersekt, Promon, Swisscom, Syngenio, Synpulse, Zeb, Qontis, OneSpan, and more

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Credit Exchange AG
https://www.creditexchange.ch/

Development of an open exchange for the mortgages business to fundamentally innovate and digitalise the mortgage market in Switzerland.



Year of foundation	2018
Domicile (canton)	ZH
Employees … of which in CH	25 10
Valuation	
Total funding	
Board members	Serkan Mirza, Andrea Canonica, Tiago Cruz
Management team	Serkan Mirza, Andrea Canonica, Tiago Cruz
Key partners	Bank Avera, Swisscom, Mobiliar, Vaudoise, Additiv, Q-centris

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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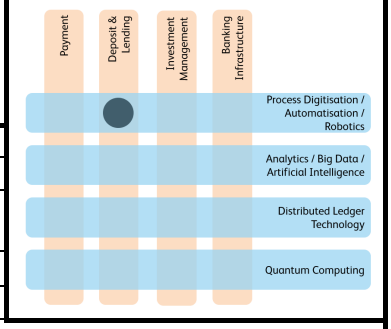
Crowd4Cash - Crowd Solutions AG
https://crowd4cash.ch/

We are an innovative company in the financial service sector, specialized in supporting SME and corporates regarding instalment solutions in their offline and online business (loan as service). We are partnering with over 100 shops in Switzerland.

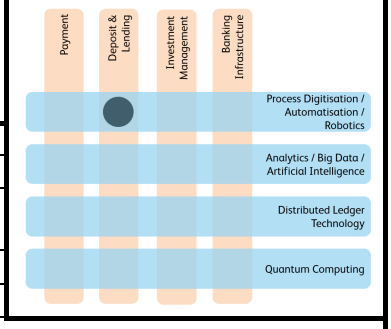


Year of foundation	2016
Domicile (canton)	ZG
Employees … of which in CH	7 5
Valuation	
Total funding	CHF 1,200,000
Board members	Roger Bossard, Peter Paul Oesch
Management team	Andreas Oehninger, Roger Bossard
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

CROWDLI AG
https://crowdli.ch/

Property crowdfunding platform.



Year of foundation	2016
Domicile (canton)	TG
Employees … of which in CH	3
Valuation	
Total funding	CHF 600,000
Board members	Michael Escher, Ernst Sutter-Gantenbein, Roger Bigger
Management team	Felix Helling
Key partners	Moneypark, INP Finanz, Azemos, AA Finance

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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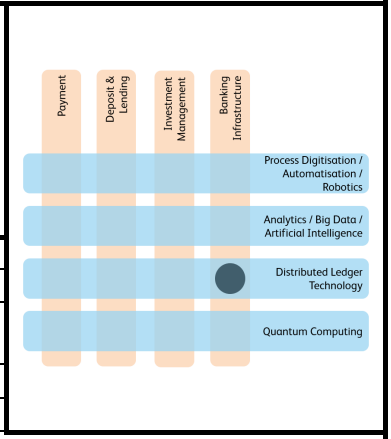
Crypto Finance AG
https://www.cryptofinance.ch/

The Crypto Finance Group - comprising two FINMA-regulated financial institutions and part of Deutsche Börse Group - offers professional digital asset solutions. This includes one of the first FINMA-approved securities firms with 24/7 brokerage services, custody, infrastructure, and tokenisation solutions for financial institutions, as well as the first FINMA-approved manager of collective assets for crypto assets, with an active, rules-based and index-based alternative investment fund offering, including the first Swiss crypto fund. The Crypto Finance Group is headquartered in Switzerland and has a regional presence in Singapore and Germany.

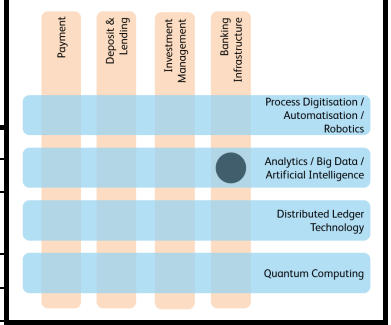


Year of foundation	2017
Domicile (canton)	ZH
Employees … of which in CH	123 (Dec 12, 2022) 115
Valuation	
Total funding	
Board members	Eric Leupold, Jan Brzezek, Uwe Schweickert, Hans-Peter Wyss, Raymond J. Baer, Philipp Cottier, Fabian Schär
Management team	Jan Brzezek, Lewin Boehnke, Stijn Vander Straeten, Sarina Christner, Patrick Heusser, Nathaniel Zollinger, Christian Müller, Niloo Verma Bruppacher
Key partners	

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Cybera Global AG
https://cybera.io/

At CYBERA we're on a mission to disrupt financial cybercrime. We close gaps that allow cyber criminals to thrive by sharing actionable information in real-time with financial institutions, fintech, and crypto exchanges, and coordinating a global legal response to support customers who have become victims of financial cybercrime.



Year of foundation	2020
Domicile (canton)	ZH
Employees … of which in CH	15 6
Valuation	
Total funding	
Board members	Daniel Heller, Nicola Staub, Claudio Staub
Management team	Nicola Staub, Claudio Staub, Sudip Biswas, Rob Tharle
Key partners	Merkle Science, Police Geneve, Kantonspolizei Graubünden, Manhattan District Attorney's Office, Innosuisse, CyberPeace Institute, Global Cyber Alliance, Cryptocurrency Compliance Cooperative, temenos, NetGuardians, Schwyer Kantonalbank, BEKB

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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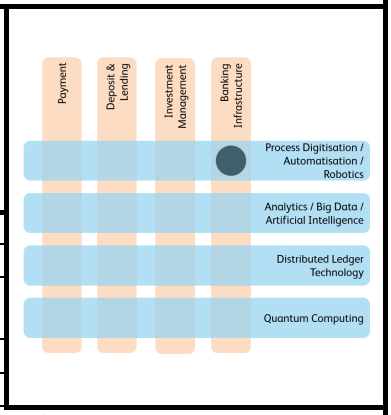
Cynos AG
https://www.cynos.ch/

Cynos is a full-service compliance provider offering IT solutions and comprehensive compliance services to support financial institutions in their regulatory compliance. The Cynos Toolbox is the first digital compliance solution for financial institutions to efficiently deal with the newly introduced requirements imposed by FinIA/FinSA and the AML obligations. The Compliance Service Centre support financial institutions in the design of compliance frameworks and policies, in implementing new regulations and acts as compliance function required under FinIA.

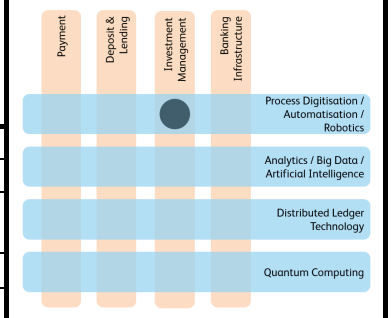


Year of foundation	2019
Domicile (canton)	ZH
Employees … of which in CH	7 6
Valuation	
Total funding	CHF 750,000
Board members	Stefan Zumtaugwald, Daniel Gonzenbach, Pascal Forster, Claude Ehrensperger
Management team	Claude Ehrensperger, Stefan Zumtaugwald, Florian Patscheider, Mohammad Alavi, Loric Szalai
Key partners	Inventify AG

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

datalevel AG
https://www.datalevel.ch/

datalevel's Data Refinery Box refines your financial data and forms the solid basis for the implementation of innovative banking models.



Year of foundation	2017
Domicile (canton)	ZH
Employees … of which in CH	7 7
Valuation	
Total funding	CHF 100,000
Board members	Wolfgang Millat, Manfred Köhl, Peter Christian Strittmatter
Management team	Wolfgang Millat, Peter Christian Strittmatter
Key partners	OneDigit

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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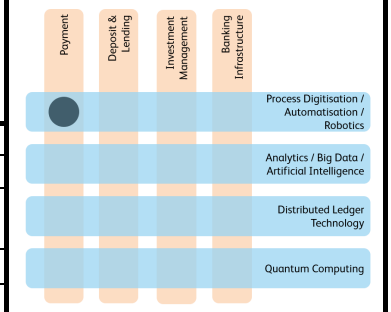
Datatrans AG
https://www.datatrans.ch/

We are the online payment experts for demanding customers with individual requirements.

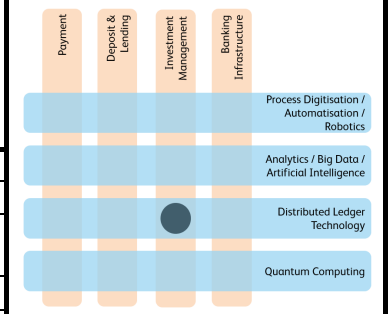


Year of foundation	1989
Domicile (canton)	ZH
Employees … of which in CH	64 64
Valuation	
Total funding	
Board members	Thomas Willenborg, Daniel Ellersiek, Oliver Heister
Management team	Thomas Willenborg, Daniel Ellersiek, Oliver Heister
Key partners	Mastercard, Visa, Twint, PostFinance, INT/Byjuno, PayPal, Amex, EPS, MFGroup, REK/Reka, Paysafecard, UATP/AirPlus, Manor MyOne, SwissBilling, Diners, SOFORT/Klarna, Google Pay, Apple Pay, Worldline, Nexi/Nets (ex Concardis), Card Complete, PayOne etc.

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

daura ag
https://www.daura.ch/

daura brings SMEs to the capital market: Companies digitize their shares simply at the touch of a button. Investors worldwide can obtain their shares via daura and manage them free of charge. This creates efficiency and entirely new opportunities in raising capital, incentivizing employees and retaining customers. Information is easily exchanged between companies and shareholders, and general meetings are conducted digitally.



Year of foundation	2018
Domicile (canton)	ZH
Employees … of which in CH	10 10
Valuation	
Total funding	
Board members	Andreas Rudolf, Armin Brun, Guido Hueppin, Johannes Höhener, Tomas Kindler
Management team	Claudio Tognella, Markus Geissler, Roland Cortivo, Peter Schnürer
Key partners	The market leader daura is a joint venture of BDO, Berner Kantonalbank, SIX, Swisscom, Sygnum Bank, Luka Müller (MME) and Christian Wenger (Wenger&Vieli).

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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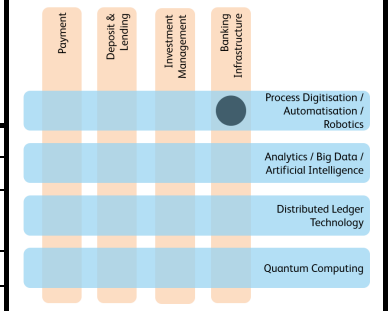
Delega Treasury AG
https://www.delega-banks.com/

Cloud Based/ SAAS B2B company for digitalization of bank signatories for mid & large-sized corporation.

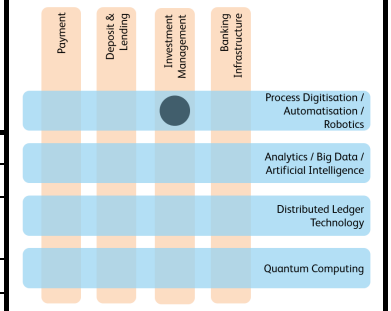


Year of foundation	2019
Domicile (canton)	ZG
Employees … of which in CH	7 2
Valuation	CHF 4,500,000
Total funding	CHF 350,000
Board members	Riccardo Balsamo
Management team	Riccardo Balsamo, Patrick Ramseyer, Petr Gybas, Elenia Gamba, Cristina Giambarresi
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

DESCARTES FINANCE AG
https://descartes-finance.com/

Descartes has been offering digital pension and investment solutions since 2016. Asset managers, banks and other financial service providers can integrate these as "as-a-service" solutions directly into their existing platforms and thus expand their offerings in a targeted manner. As an owner-managed company, Descartes is completely independent.



Year of foundation	2015
Domicile (canton)	ZH
Employees … of which in CH	7 7
Valuation	
Total funding	
Board members	Anna Stünzi, Mirjam Schaffner, Rino Borini, Eric Gisiger
Management team	Adriano Lucatelli, Dagmara Nägeli, Philipp Pag, Christian del Bianco
Key partners	Swisscanto Invest, iShares, Crypto Finance, OLZ, UBS, Lienhardt & Partner Privatbank

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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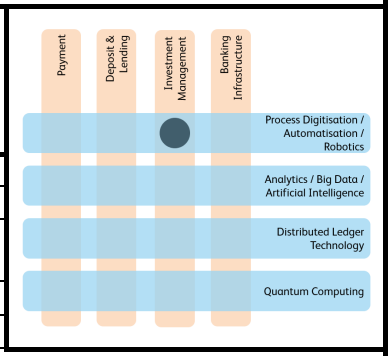
Divizend Suisse GmbH
https://divizend.com

Divizend is the leading international wealth-tax FinTech platform to reclaim foreign withholding taxes on dividends. Our software helps investors to reclaim their taxes by automating and digitising the process of withholding tax reclaims and thereby offers this service for the first time ever in a convenient, end-user friendly and price-competitive way.

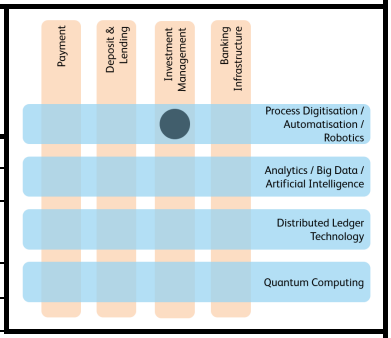


Year of foundation	2022
Domicile (canton)	TG
Employees … of which in CH	15 2
Valuation	
Total funding	CHF 1,500,000
Board members	Thomas Rappold, Roman Przibylla
Management team	Thomas Rappold, Julian Nalenz
Key partners	SIX, OpenWealth Association, b.Link, Synpulse, BLKB, SGKB, KPMG Luxembourg, finanzen.ch, boerse.de, ABBL, CAT Financial Products, Vontobel, payoff.ch, Derivative Partners, Microsoft/Azure Switzerland

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

DUFOUR CAPITAL AG
https://www.dufour-capital.ch/

Dufour Capital offers dynamic, rule-based investment products (multi-asset, equities) and tailor-made solutions for financial institutions and private investors.



Year of foundation	2011
Domicile (canton)	ZH
Employees … of which in CH	4 4
Valuation	
Total funding	CHF 500,000
Board members	Richard Colin Müller, Marc Harry Weber, Ryan Eric Held, Sascha Patrick Freimüller
Management team	Ryan Eric Held, Sascha Patrick Freimüller
Key partners	VZ VermögensZentrum

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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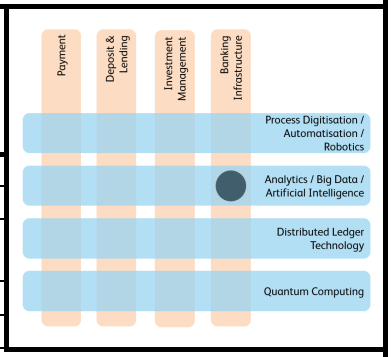
Dydon AG
http://dydon.net/

At Dydon, we understand that AI-based solution implementation tops the list of needs for businesses to transition into the era of prime efficiency and results. Based on Dydon's flexible AI platform a unique offering for sustainable finance has been realised supporting the core topics: EU Taxonomy Assessment, ESG Rating and Corporate Carbon Emission Measuring & Monitoring.

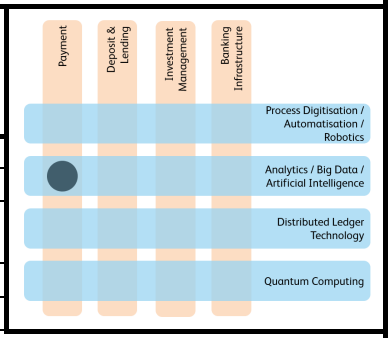


Year of foundation	2016
Domicile (canton)	ZH
Employees … of which in CH	12 4
Valuation	
Total funding	
Board members	Hans-Peter Güllich, Katharina Dalka, Pierre Suhrcke
Management team	Hans-Peter Güllich, Katharina Dalka, Pierre Suhrcke
Key partners	Verband öffentlicher Banken Deutschland, Capco

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

eCollect AG
https://ecollect.org/

We apply high-end technology to cover the full receivables management process for you: from the initial invoice to the final payment.



Year of foundation	2014
Domicile (canton)	ZG
Employees … of which in CH	65 5
Valuation	
Total funding	Fully bootstrapped
Board members	Marc Schillinger
Management team	Marc Schillinger
Key partners	Operative Hubs = eCollect Bulgaria EOOD, eCollect Germany GmbH

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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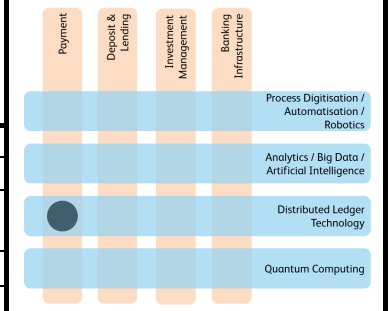
Ecoo AG
https://www.ecoo.ch/

ecoo is a digital revolution. It is a conditional payment system that can be tailored for your specific needs; whether you want to engage your local community, want to design a state-of-the art loyalty program or are organising an event. ecoo connects people and companies by creating digital and earmarked coins or points for their ecosystem.

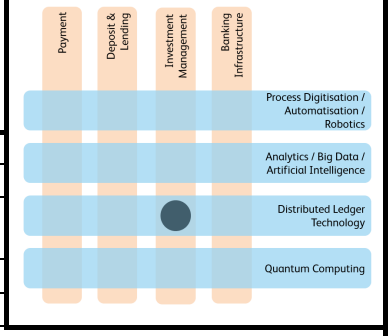


Year of foundation	2021
Domicile (canton)	ZG
Employees … of which in CH	
Valuation	
Total funding	CHF 1,000,000
Board members	Marc van Nuffel, Alessandro Decarli, Claudia Sauter, Daniel Jörg, Raffaele Carmine
Management team	Marc van Nuffel, Raffaele Carmine
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Elysium Lab Sagl
https://elysiumlab.io/

Our application will be a Digital Crypto Wallet that will allow every user profile, even inexperienced ones, to finally dispose of their cryptocurrencies and crypto assets without intermediaries and use them in the real world. With a quick and intuitive login, the user will be able to store, manage and restore login credentials and private keys, in a decentralized manner, ensuring privacy, security, and simplicity.



Year of foundation	2021
Domicile (canton)	TI
Employees … of which in CH	10 3
Valuation	
Total funding	
Board members	Aron Clementi, Gianmarco Guazzo, Stefano De Nart
Management team	Aron Clementi, Gianmarco Guazzo, Stefano De Nart
Key partners	Innosuisse, Ticino Blockchain Technologies, SUPSI, Blockchain Nation Switzerland, Swiss made software, USI Startup Center ,DeepSquare

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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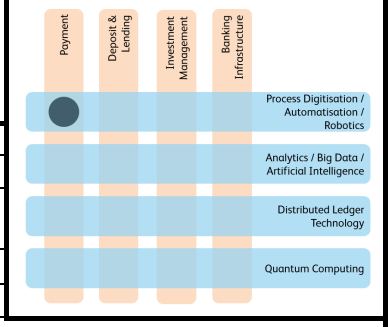
EM Exchange Market GmbH
https://exchangemarket.ch/

ExchangeMarket.ch enables people to exchange currencies online at a fair exchange rate independent on the amount the change.

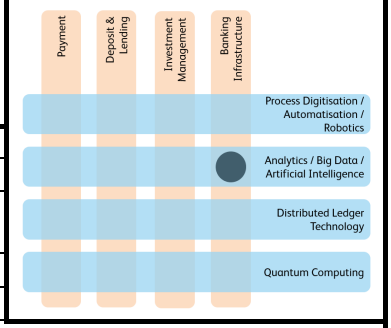


Year of foundation	2012
Domicile (canton)	ZH
Employees … of which in CH	6 3
Valuation	
Total funding	
Board members	
Management team	Michael Wychowaniec
Key partners	Swiss Finace Startups, Zürcher Kantonalbank, PolyReg, AML Revisions AG

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital			Data
			Operat. business & serving clients	Trading	Advertising

Enterprise Bot GmbH
https://enterprisebot.ai/

Enterprise Bot is an Artificial intelligence company that provides white-labeled cognitive solutions in several languages to improve customer service and create operational efficiency for large corporate clients.



Year of foundation	2017
Domicile (canton)	ZH
Employees … of which in CH	45
Valuation	CHF 20,000,000
Total funding	CHF 2,200,000
Board members	Pranay Jain, Ravina Mutha, Ralph Mogicato, Anand Pareek
Management team	Pranay Jain, Ravina Mutha, Sandeep Jayasankar
Key partners	PwC, SIX Group, Generali, SWICA, SBB, AfterPay (Arvato), Assura, Sympany

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital			Data
			Operat. business & serving clients	Trading	Advertising

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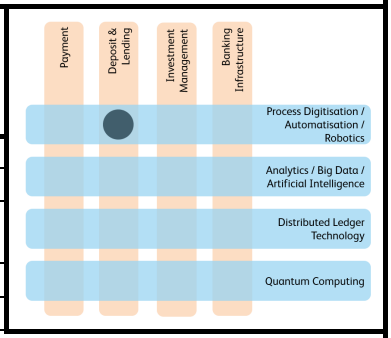
eny Finance AG
https://eny.ch/

We are a Fintech company that serves individuals in all their various needs. Our focus is providing customers financial services and expertise in the most straightforward way possible.

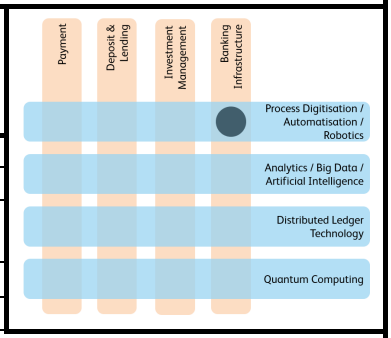


Year of foundation	2011
Domicile (canton)	ZH
Employees … of which in CH	18 18
Valuation	
Total funding	
Board members	Jürg Stäuble, Marcel Rappaport, Michel Roland Destraz
Management team	Benjamin Adler, Verica Gorgieva
Key partners	Banks

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

ERI Bancaire SA
https://www.olympicbankingsystem.com/

ERI is an international company, specialising in the design, development, implementation, and support of an integrated, real-time banking software package: the OLYMPIC Banking System.



Year of foundation	1989
Domicile (canton)	GE
Employees … of which in CH	384 152
Valuation	
Total funding	
Board members	Monika Assaraf, Yehuda Assaraf
Management team	Jean-Philippe Bersier Benoît Jacquat, Franck Lamoureux, Abraham Assaraf, Amine Khiat, Mthieu Buffo
Key partners	Technology partners (IBM, Oracle, Red Hat, Microsoft, BIAN) and solution parters (+60 solution software suppliers).

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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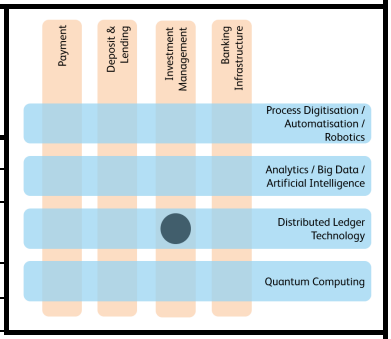
ETERNYZE

Eternyze AG
https://www.eternyze.ch/

To facilitate the tokenization of commodities, enabling them to be traded in a simple and secure way, by increasing liquidity, granting access to new digital products and services. We also envision ability to tokenize other physical assets in the future.



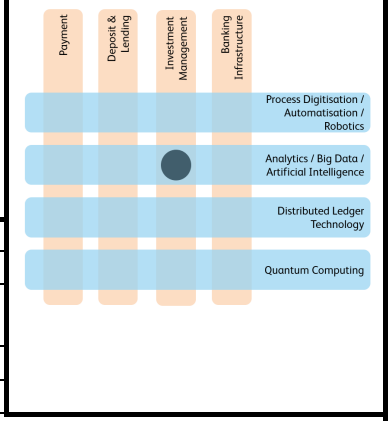
Year of foundation	2018
Domicile (canton)	ZG
Employees … of which in CH	49 25
Valuation	
Total funding	
Board members	Alexander Stoyanov, Alexander Freedland, Stephan Arnet
Management team	Marco Grossi, Philipp Dettwiler, Valerio Matriciani, Michael Stockinger
Key partners	Linux Foundation, Traxys, Umicore, Glencore, Brinks, IBM, Stone X

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital			Data
			Operat. business & serving clients	Trading	Advertising

etops

Etops AG
https://www.etops.ch/

Etops combines state-of-the-art technology and proven back- and mid-office services into a unique cloud-based platform that covers the entire value chain of asset managers, family offices and institutional investors. A solid data basis through efficient integration of market and custodian bank data forms the basis for portfolio management solutions with a fully integrated CRM part, which ensure all requirements for modern asset management and regulatory compliance at the same time. Evaluations are carried out directly on-screen or in the form of flexible, high-performance reporting solutions in both traditional and digitalised form. With more than 130 employees, Etops supports companies in the financial sector in achieving their digitalisation goals. Etops' more than 140 customers manage assets of over EUR 150 billion.



Year of foundation	2010
Domicile (canton)	ZG
Employees … of which in CH	135 36
Valuation	
Total funding	
Board members	Pius Stucki
Management team	Pius Stucki, Jürgen Kuza, Christian Jedlicka, Malte Rosenthal
Key partners	Etops group companies (infinys, axeed, Etops Germany [former Coryx]), BDO, WMZ, Swissquote, etc.

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital			Data
			Operat. business & serving clients	Trading	Advertising

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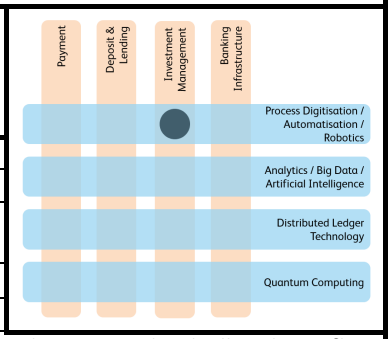
Everon AG
https://everon.swiss/

Everon offers a complete range of digital private banking services in a hybrid model to affluent and HNWI clients. The all-in-one app with personal support enables clients to get access to tailor-made, exclusive investment opportunities.

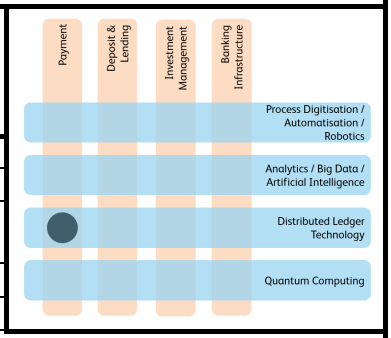


Year of foundation	2019
Domicile (canton)	ZH
Employees … of which in CH	10 10
Valuation	
Total funding	
Board members	Michael Georg Eugen Rümmelein, Florian Rümmelein, Jonas Bächinger, Michael Albrecht Bufler, Krzysztof Bialkowski
Management team	Florian Rümmelein, Jonas Bächinger
Key partners	Hypothekarbank Lenzburg, Liberty Vorsorge

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Fiat24 - SR Saphirstein AG
https://www.fiat24.com/

Fiat24 is the first coring banking system that is fully built on blockchain. We use NFT to represent clients' ID and use smart contracts to manage the booking logics. By moving the core banking system from server to blockchain, we are able to massively reduce the operation costs of banks.



Year of foundation	2018
Domicile (canton)	ZH
Employees … of which in CH	9 9
Valuation	CHF 30,000,000
Total funding	CHF 8,000,000
Board members	Yang LAN, Killian Schärli, Reto Luthiger
Management team	Haoning Zhang, Nico Büchel
Key partners	MLL (legal), Grant Thornton (Auditor)

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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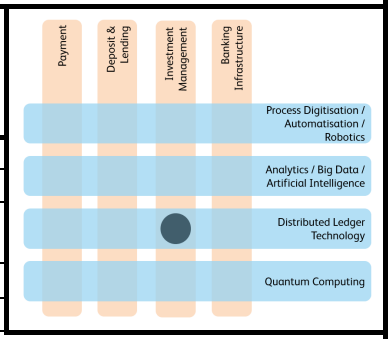
FICAS AG
https://ficas.com/

FiCAS is a specialized crypto-asset investment firm committed to delivering better than market performance through actively managed crypto investment products.

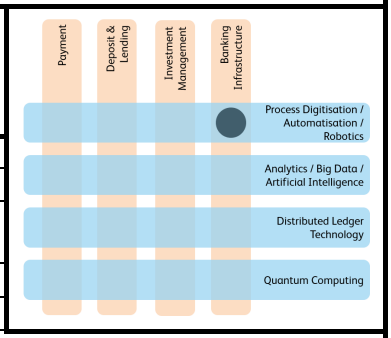


Year of foundation	2019
Domicile (canton)	ZG
Employees … of which in CH	6 6
Valuation	
Total funding	
Board members	Sanjeev Karkhanis, Daniel Leo Diemers, Mattia Luigi Rattaggi, Ali Mizani Oskui
Management team	Olga Vögeli, Marcel Niederegger, Darko Novakovic
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Fidectus AG
https://fidectus.com/

Fidectus revolutionizes post trading in OTC energy and commodity markets. We connect market participants and enable them to better manage their working capital.



Year of foundation	2019
Domicile (canton)	ZH
Employees … of which in CH	13 7
Valuation	CHF 14,000,000
Total funding	> CHF 6,000,000
Board members	Jens Bartenschlager, Chris Sass, Richard Grossi
Management team	Jens Bartenschlager, Chris Sass, Michael Panson, Matthias Raeck
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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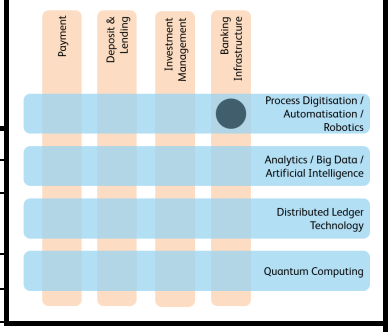
fidentity AG
https://fidentity.ch/

fidentity provides digital identification with seamless user experience.

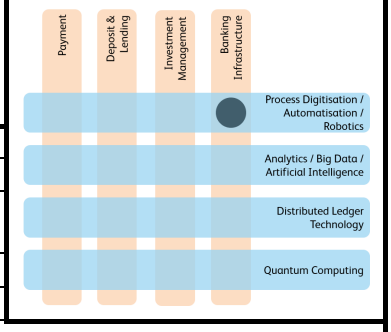


Year of foundation	2016
Domicile (canton)	BE
Employees … of which in CH	8 8
Valuation	
Total funding	
Board members	Thorsten Hau, Edgar Martin Spring
Management team	Thorsten Hau, Edgar Martin Spring
Key partners	Lambda-IT, Designsensor

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

FinConTec AG
https://fincontec.ch/

FinConTec develops digital financial advisory technology to strengthen client protection, competitiveness and the long-term relationship between clients and advisors.



Year of foundation	2020
Domicile (canton)	AR
Employees … of which in CH	14 4
Valuation	CHF 363,000,000
Total funding	CHF 18,000,000
Board members	Wilhelm Georges Graf, Luigi G. Smider
Management team	Wilhelm Georges Graf, Oxana Bärtsch
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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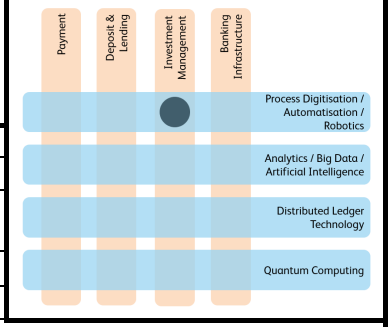
Findependent AG
https://findependent.ch/

With our simple and transparent investment-app, findepenent makes investing as natural and easy as saving on a bank account.

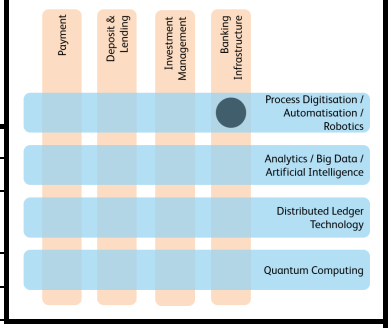


Year of foundation	2019
Domicile (canton)	AG
Employees … of which in CH	6 6
Valuation	CHF 6,000,000
Total funding	CHF 1,950,000
Board members	Matthias Bryner, Lukas Speiser, Miklos Stanek
Management team	Matthias Bryner, Nadine Hitz, Beat Müller, Kay Foerschle, Tobias Hochstrasser, Anita Beka
Key partners	Hypothekarbank Lenzburg

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital			Data
			Operat. business & serving clients	Trading	Advertising

Finform AG
https://www.finform.ch/

Finform standardises, industrialises and digitalises compliance formalities. We offer a complete digital customer onboarding and KYC formalities approving, for standard and complex cases.



Year of foundation	2016
Domicile (canton)	BE
Employees … of which in CH	30 30
Valuation	
Total funding	> CHF 20,000,000
Board members	Claudia Bläuenstein, Markus Fuhrer, Peter Dominik Delfosse, Daniel Schütz
Management team	Alessandro Rausa, Stephan Käser, Michèle Rigert
Key partners	Axon FinTech, AxonActive

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital			Data
			Operat. business & serving clients	Trading	Advertising

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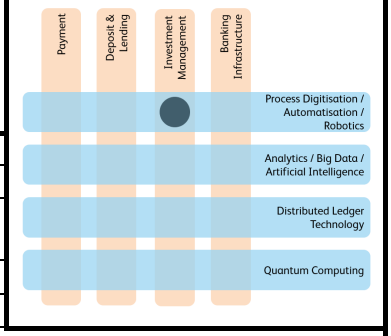
Finfox (by ECOFIN Software and Technology AG)

https://www.finfox.ch/

ECOFIN Software and Technology AG is a Zurich-based wealthtech company. Our core product is Finfox, the software solution for hybrid investment advice. Thanks to intelligent business logic, a consistent data set and full omnichannel capability, Finfox makes wealth management a high-quality, regulatory compliant and seamless experience across all digital and physical touchpoints – for banks, advisers and clients.



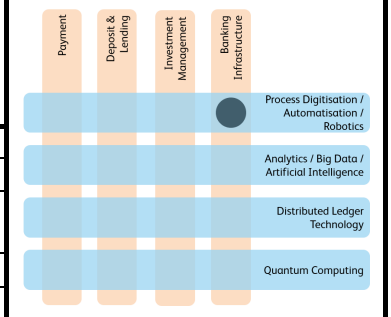
Year of foundation	2007
Domicile (canton)	ZH
Employees … of which in CH	+/- 50 +/- 50
Valuation	
Total funding	Equity capital
Board members	Alexandra Janssen, Maarten Christopher Janssen, Roger Stettler
Management team	Andreas Borg, Ursina Lüthi, David Kocher
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

finnova AG Bankware

https://www.finnova.com/

Finnova is a leading provider of end-to-end banking software in the Swiss financial centre. Some market segments in the field of data driven finance are served with services and bank-related functionalities, also abroad.



Year of foundation	1974
Domicile (canton)	AG
Employees … of which in CH	450 450
Valuation	
Total funding	CHF 500,000
Board members	Heinrich Leuthard, Pascal Niquille, Hendrik Lang, Robert Gebel, Hans Zehetmaier, Stephan Frohnhoff
Management team	Hendrik Lang, Raphael Widmer, Daniel Bernasconi, Markus Metzger, Olaf Romer, Samuel Scheidegger
Key partners	Finnova maintains an actively managed ecosystem with more than 80 services, product and technology partners.

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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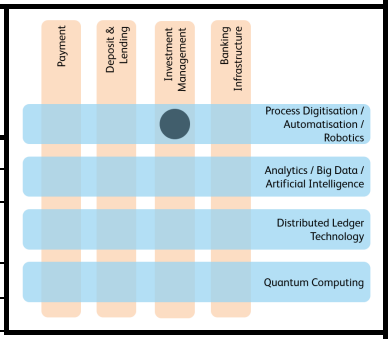
finpension AG
https://finpension.ch/

finpension is a provider of retirement savings solutions.

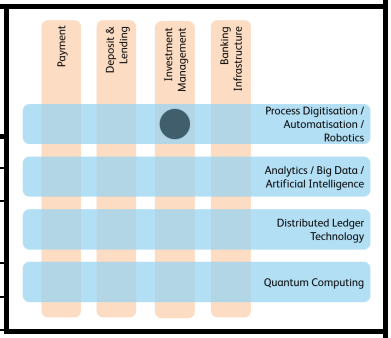


Year of foundation	2017
Domicile (canton)	LU
Employees … of which in CH	20 19
Valuation	
Total funding	CHF 500,000
Board members	Gaëtan Alexandre Maraite, Beat Bühlmann, Ivo Blättler
Management team	Beat Bühlmann, Ivo Blättler
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

FNZ Switzerland SA
https://www.fnz.com/

FNZ is the global platform opening up wealth. We partner with the entire industry to make wealth management accessible to more people. We combine technology, infrastructure and investment operations in a single state-of-the-art platform.



Year of foundation	2003
Domicile (canton)	GE
Employees … of which in CH	6,000 200+
Valuation	
Total funding	
Board members	Lord Alexander Leitch, Adrian Durham, John Bernstein, Connie Chan, Alain Cianchini, Andrew Given, Tom Hodges, Rebecca Manuel, Benoit Raillard, Gregor Stewart, Frank Strauss, Rob Heyvaert, Charlie Trotter
Management team	Adrian Durham, Alastair Conway, Charlene Cooper, Carl Robertson, Din Mustaffa, Fabian Camenzind, Hanspeter Wolf, Jane MacLeod, Jennifer McArthur, Juan Gómez-Reino, Kris Love, Scott Webster, Tim Neville, Tom Chard, Vian Sharif, Philippe Bongrand
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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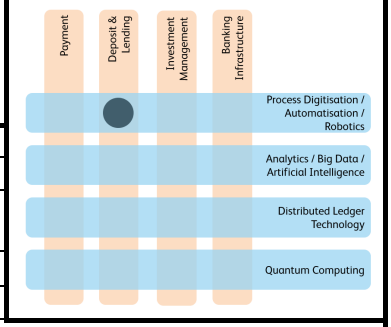
Foxstone SA
https://www.foxstone.ch/

Foxstone democratizes real estate investment by offering intitutional quality opportunities to Swiss citizens and residents by increasing transparency and lowering the minimum investment amount to 10,000.

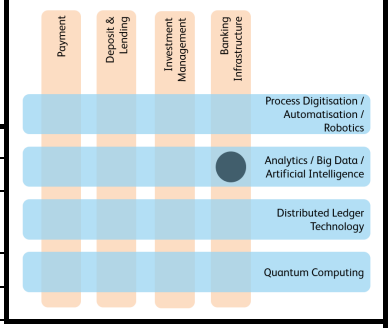


Year of foundation	2016
Domicile (canton)	GE
Employees … of which in CH	21 21
Valuation	
Total funding	
Board members	Dan Amar, Yossi Amar, David El-Eini, Isabelle Schirmer
Management team	Dan Amar, Yossi Amar, David El-Eini, Isabelle Schirmer
Key partners	Vaudoise, Investis, Ochsner & Associés, PwC, Borel & Barbey, CBRE, Naef, Régie du Rhône, Privera

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Futurae Technologies AG
https://www.futurae.com/

Build trust, not inconvenience with Futurae's future-proof customer authentication. Futurae develops and manages an authentication platform extremely easy to deploy and use. Futurae empowers any web-based and app-based customer interaction to be authentic.



Year of foundation	2016
Domicile (canton)	ZH
Employees … of which in CH	40 25
Valuation	
Total funding	CHF 7,000,000
Board members	Michael Stanley Shipton, François Robinet, Thomas Hilgendorff-Trampusch, Claudio Marforio, Nikolaos Karapanos, Sandra Tobler
Management team	Claudio Marforio, Nikolaos Karapanos, Sandro Tobler, Linda Brunner
Key partners	

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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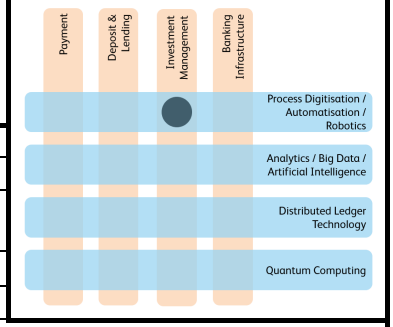
Halo Investing Europe Holding AG
https://haloinvesting.com/

HALO offers customizable SaaS-modules that digitize the issuance as well as the distribution process of structured products.

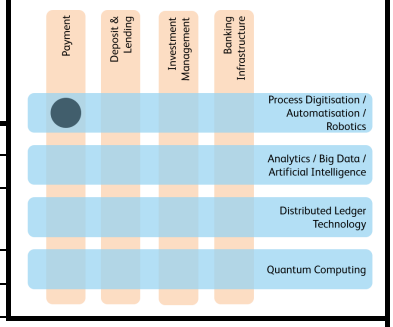


Year of foundation	2021
Domicile (canton)	SZ
Employees … of which in CH	13 10
Valuation	
Total funding	CHF 100,000,000
Board members	Stavros Pavlidis, Maurice Charles Picard
Management team	Maurice Charles Picard
Key partners	Pershing / Bank of Montreal (BMO)

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Heidi Pay AG
https://www.heidipay.com/

HeidiPay is a technology company enabling merchants, marketplaces and lenders to offer next generation buy now pay later and retail financing solutions to their customers.



Year of foundation	2020
Domicile (canton)	GE
Employees … of which in CH	23 10
Valuation	
Total funding	CHF 18,000,000
Board members	Matteo Bozzo, Laurent Rappaport, Martin Roth
Management team	Matteo Bozzo, 22 employees
Key partners	Stripe, CRIF

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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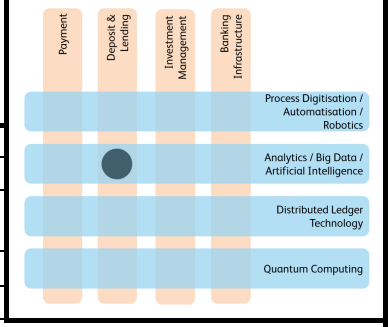
Hypodossier AG
https://www.hypodossier.ch/

HypoDossier is a document processing software, designed to meet the requirements of Swiss mortgage lenders by categorizing and extracting mortgage documents, as well as documents from other banking areas.

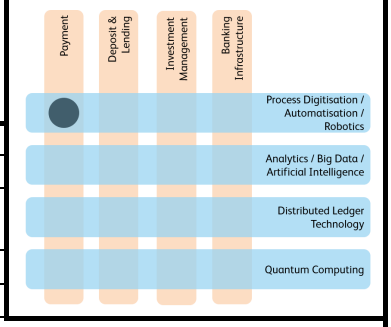


Year of foundation	2020
Domicile (canton)	ZH
Employees … of which in CH	8 6
Valuation	
Total funding	
Board members	Andreas Dominik Wapf, Silvan Alexander Kaufmann, Manuel Antonius Thiemann
Management team	Andreas Dominik Wapf, Silvan Alexander Kaufmann, Manuel Antonius Thiemann
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

ibani SA
https://www.ibani.com/

ibani is an online currency exchange service helping people and businesses get the best exchange rates of the market the easy way.



Year of foundation	2018
Domicile (canton)	GE
Employees … of which in CH	7 6
Valuation	CHF 4,500,000
Total funding	
Board members	Sébastien Olivier Moret, Michael Ernst Felix Stumm, Arnaud Salomon
Management team	Arnaud Salomon
Key partners	HUB612, Lexem, Banque du Léman, Raiffeisen

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
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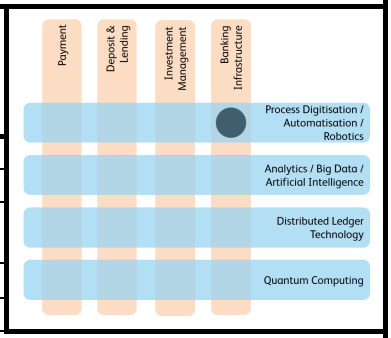
iFinity AG
https://ifinity.ch/

IFINITY AG – Service company for independent asset managers.

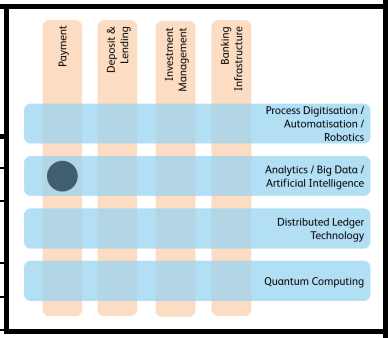


Year of foundation	2015
Domicile (canton)	SZ
Employees … of which in CH	
Valuation	
Total funding	
Board members	
Management team	Eliane Gmünder, Frank Müller-Erkelenz
Key partners	LCR Services AG, Temenos, Canon (Schweiz) AG, Kinesys AG

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

iLoy Solutions SA
https://www.iloy-group.com/

iLoy creates next-generation platform technology for loyalty, crm and payment systems using advanced rule-based methodologies and AI/predictive analytics.



Year of foundation	2019
Domicile (canton)	AG
Employees … of which in CH	30 10
Valuation	> CHF 10,000,000
Total funding	
Board members	Simon Grenacher, Alexander Raoul Schmid, Anton Weber, Thomas Wagner
Management team	Tony Weber, Thomas Wagner, Simon Grenacher
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
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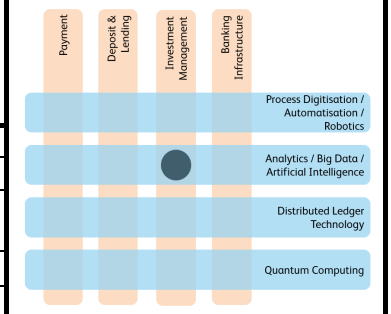
IMC Zug AG
https://www.imc.com/eu/

IMC Zug develops and licenses trading software to the IMC group.

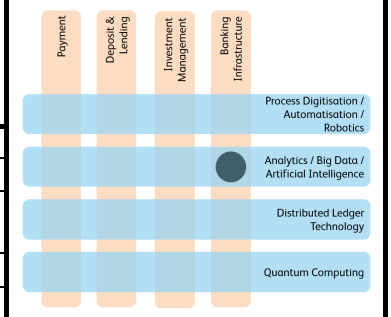


Year of foundation	2018
Domicile (canton)	ZG
Employees … of which in CH	20 16
Valuation	
Total funding	
Board members	Leonard Rüst, Otto ten Bosch, Michiel Jensma
Management team	Leonard Rüst, Otto ten Bosch, Harmeet Gandhi
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

INPHER Sàrl
https://www.inpher.io/

Inpher has pioneered cryptographic Secret Computing® that enables advanced analytics and machine learning models while keeping data private, secure, and distributed.



Year of foundation	2015
Domicile (canton)	VD
Employees … of which in CH	27 20
Valuation	
Total funding	CHF 14,000,000
Board members	
Management team	Jordan Brandt, Dimitar Jetchev
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
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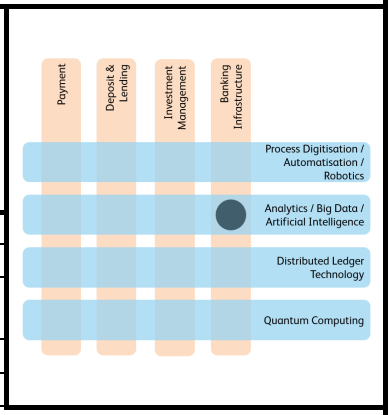
Integration Alpha GmbH
https://integrationalpha.com/

On our data Service-Oriented-Architecture (SOA) orchestrationless platform Ferris DX Integration Alpha establish an ecosystem of digital transformation use cases up to 3 times faster than done traditionally. We built AI-based use-cases such as 'scalable advice', 'next best product recommendation', AML/KYC, Cash-protection and all sorts of regulatory optimizations and AI-based ESG data extractions. In addition, based on Ferris DX Integration Alpha initiated a multitude of spin-off companies such as ferris labs, People Analytix, Logitize and Extheria.

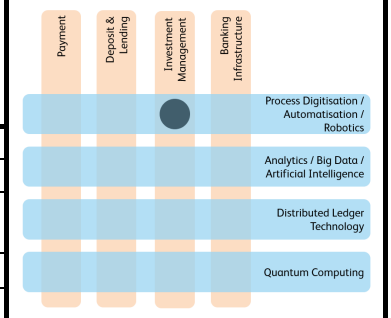


Year of foundation	2014
Domicile (canton)	ZG
Employees … of which in CH	50 40
Valuation	
Total funding	Self-funded
Board members	Frank Kaminsky, Marco Selva, Thomas Debus
Management team	Frank Kaminsky, Marco Selva, Thomas Debus
Key partners	Google Cloud, Azure, Exoscale, UpCloud, DXC Cloud, AxiomSL

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Invemo Capital AG
https://www.invemo.ch/

Invemo Capital AG is an asset manager, broker and liquidity provider.



Year of foundation	2017
Domicile (canton)	ZG
Employees … of which in CH	6 4
Valuation	CHF 5,000,000
Total funding	CHF 2,000,000
Board members	Edvard Vork, Trond Henninen, Maxim Zimin
Management team	Edvard Vork, Maxim Zimin
Key partners	Fireblocks, Copper, Deribit, Uniswap, BDO, VQF, Crystal, GenTwo, ISP

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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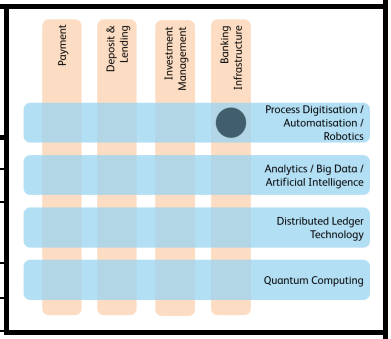
Inventx AG
https://inventx.ch/

Inventx is the Swiss IT partner for leading financial institutions and insurance companies. The basis for our business activities are our values: innovation, interaction and Swissness.

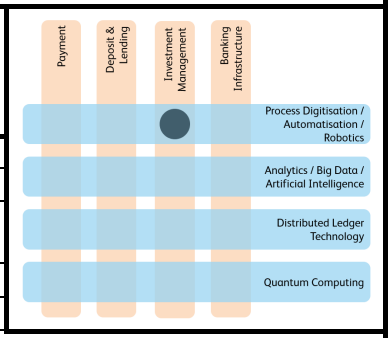


Year of foundation	2010
Domicile (canton)	GR
Employees … of which in CH	380 380
Valuation	
Total funding	
Board members	Gregor Alexander Stücheli, Hans Nagel, Ivo Furrer-Buholzer, Urs Saxer, Niklaus Huber
Management team	Pascal Specht-Keller, Patrick Hagen, Christoph Züger, Fabio Cortesi, Pascal Wild, Daniel Wenger
Key partners	Arcplace, Avaloq, Citrix, Crealogix, IBM, ivanti, Finnova, Oracle

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Investart AG
https://www.investart.ch/

DIY and Robo-advisory Investment Platform. For beginners and professionals alike.



Year of foundation	2016
Domicile (canton)	ZH
Employees … of which in CH	
Valuation	
Total funding	
Board members	Toolen Richard Thomas
Management team	Toolen Richard Thomas
Key partners	

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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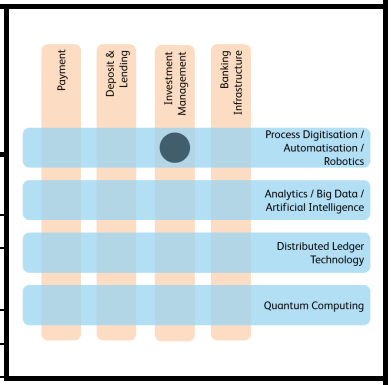
Investment Navigator AG
https://www.investmentnavigator.com/

We are the product distribution experts for financial institutions. Our modular eco-system-like infrastructure of tech-driven solutions allows financial institutions to make the most out of their product capabilities. Core themes include Suitability Enablement, Cross-Border Servicing, Offering Management, and Asset Management Distribution Support.

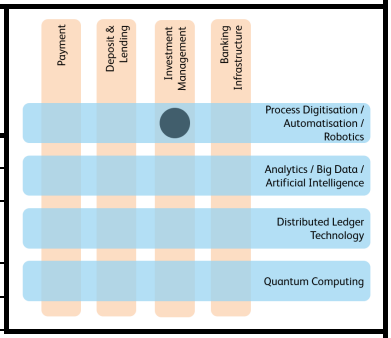


Year of foundation	2014
Domicile (canton)	ZH
Employees … of which in CH	20 19
Valuation	
Total funding	
Board members	Jochen Gutbrod, Philipp Portmann, Julian Köhler, Alberto Rama, Maurus Fries
Management team	Alberto Rama, Maurus Fries, Julian Köhler
Key partners	FE Fundinfo, SIX, KPMG, EY, Clearstream Fund Centre

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Inyova AG
https://inyova.ch/

Inyova stands for “invest in your values”. We’re on a mission to turn millions of people into impact investors. Through our digital investment platform, our customers invest in companies helping to solve the big global issues of our time. Personalised with financial return and traceable impact.



Year of foundation	2017
Domicile (canton)	ZH
Employees … of which in CH	43 22
Valuation	
Total funding	
Board members	Tillmann Lang, Erik Gloerfeld, Helmut Fink, Alois Flatz
Management team	Tillmann Lang, Erik Gloerfeld, Angela Altvater, Christian von Angerer
Key partners	Baader Bank, Saxo Bank, Liberty

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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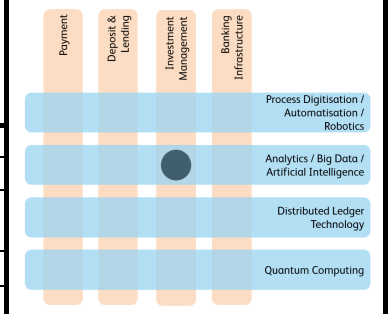
iquant GmbH
https://www.iquant.ch/

We develop rule-based investment strategies that outperform the market in the long term. We apply exclusively scientific models whose success has been documented in numerous studies.

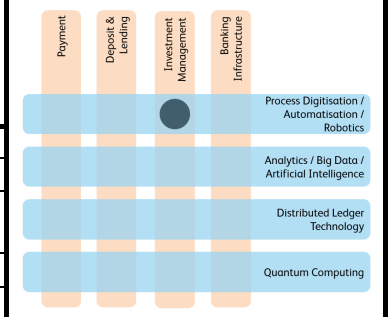


Year of foundation	2016
Domicile (canton)	ZG
Employees … of which in CH	6 6
Valuation	
Total funding	CHF 50,000
Board members	Manfred Schriefl, Andreas Büchler, Oliver Paesler
Management team	Leonardo Staffiero, Manfred Schriefl
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Kasparund AG
https://www.kasparund.ch/

We create access to professional financial services and offer you a new level of financial wellness. Starting with investing.



Year of foundation	2020
Domicile (canton)	SG
Employees … of which in CH	9 9
Valuation	
Total funding	CHF 2,100,000
Board members	Thierry Kneissler, Jan-Philip Schade, Lukas Plachel, Lauro Böni, Sebastian Büchler
Management team	Jan-Philip Schade, Lukas Plachel, Lauro Böni, Sebastian Büchler
Key partners	Hypothekarbank Lenzburg, Basellandschaftliche Kantonalbank

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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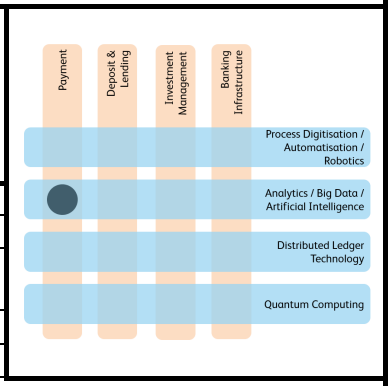
keycount

keycount GmbH
https://www.key-count.com/

Keycount is a financial app that connects all bank accounts as well as cryptocurrency wallets and exchanges in one place with one single login, making them interoperable across platforms and payment methods. We offer our users the possibility to analyze and categorize all of their transactions provide additional insights and make our user's keycount-profiles connectable to other platforms and payment options. We strive for the most wholesome overview and payment experience possible.

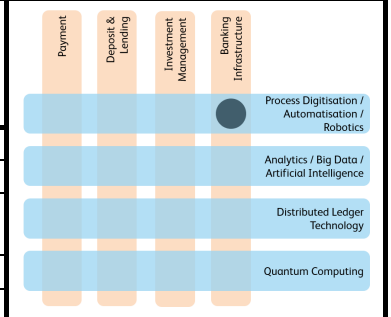


Year of foundation	2021
Domicile (canton)	ZH
Employees … of which in CH	7 6
Valuation	CHF 5,250,000
Total funding	CHF 110,000
Board members	
Management team	Arman Zeren Thomas Öztürk, Almedin Zenkic, Tobias Holenstein, Luca Mayer, Domenik Duhanaj
Key partners	Tink (Visa), Vezgo (Crypto Aggregation), ComplyCube

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

KLARA Business AG
https://www.klara.ch/

KLARA takes care of your administrative tasks for you - at work and at home. It automatically communicates with authorities, tax offices, insurance companies and banks - so you don't have to worry about the paperwork and much more, like your online presence in the web.



Year of foundation	1993
Domicile (canton)	LU
Employees … of which in CH	125 60
Valuation	
Total funding	
Board members	Christian Georg Plüss, Hans Gurtner, Nicole Paulina Burth Tschudi, Peter Dominik Delfosse, Patric Deflorin, Stephan Bruno Muff
Management team	Renato Stalder, Jens Margraf, Daniel Gauch, Daniel Schütz, Manuela Unger, Marina De Simone
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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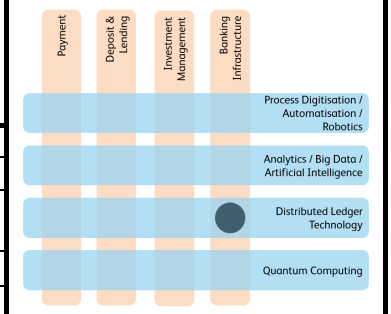
Kore Technologies AG
https://www.kore-technologies.ch/

Leader in high-performance digital asset systems.

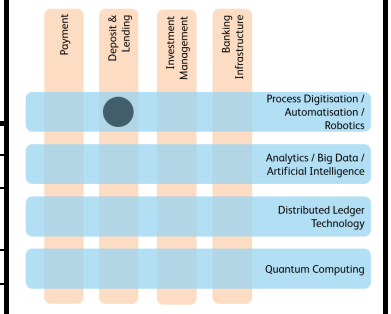


Year of foundation	2019
Domicile (canton)	ZG
Employees … of which in CH	12 10
Valuation	
Total funding	CHF 1,400,000
Board members	Michael Guzik, Thomas Taroni, Carla Bünger, Robert Rogenmoser, Roger Süess
Management team	Carla Bünger, Thomas Taroni, Gregor Rohrer, Roque Caballero
Key partners	IBM, Securosys, Phoenix Systems

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

LeaseTeq AG
https://leaseteq.ch/en/

We make leasing simple. LeaseTeq is a technology-first car leasing company with a relentless customer focus.



Year of foundation	2021
Domicile (canton)	SZ
Employees … of which in CH	20 11
Valuation	CHF 50,000,000 pre money
Total funding	CHF 3,500,000
Board members	Jan Reinhart, Benjamin Eisert, Patrick Krauskopf, Joscha Rosenbauer, Anna Rosenbauer
Management team	Joscha Rosenbauer, Human Shahin Nia, Anna Rosenbauer, Richard Dalton, Michel Gebrael, Christophe Lemoine
Key partners	Zurich Insurance, Tesla

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
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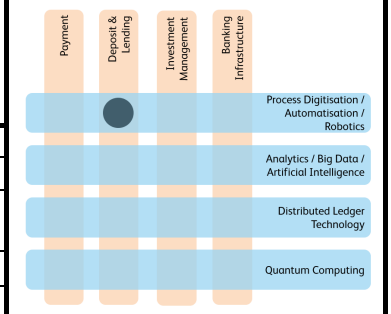
lend.ch - Switzerlend AG
https://lend.ch/

Lend.ch is the Swiss marketplace lending platform for corporate, consumer and mortgage-backed loans.

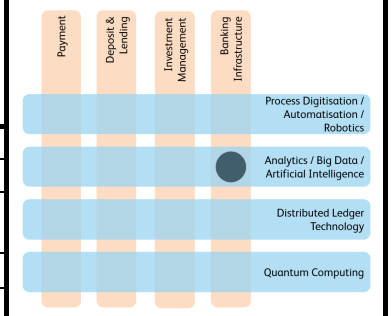


Year of foundation	2015
Domicile (canton)	ZH
Employees … of which in CH	20
Valuation	
Total funding	CHF 13,300,000
Board members	Samuel Hügli, Pascal Widmer, Stefan Andri Jaecklin, Tonia Zimmermann, Florian Kübler-Lichtenstein, Michel Lalive d'Epinay
Management team	Florian Kübler-Lichtenstein, Michel Lalive d'Epinay, Stefan Andri Jaecklin, Roman Mebert, Nils Samuelsson
Key partners	PostFinance, TX Group, Intrum, CRIF

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Lendiron Group AG
https://lendiron.com/

Financing software company with fully automated end-to-end solutions for banks and financial institutions, BNPL solutions for retail and service providers and debt collection platform. We generate financial value (savings & profits) via market leading SaaS model and universal multitenant, multibank and multiproduct solution.



Year of foundation	2021
Domicile (canton)	ZG
Employees … of which in CH	32 4
Valuation	CHF 16,000,000
Total funding	CHF 3,500,000
Board members	Kai Karttunen, Chairman, Severin Weiss, Mikael Kylätie, Cyril Staeger
Management team	Mikael Kylätie
Key partners	74 integrations and partners including credit providers (BNPL), credit buro's, debt collection and factoring companies.

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
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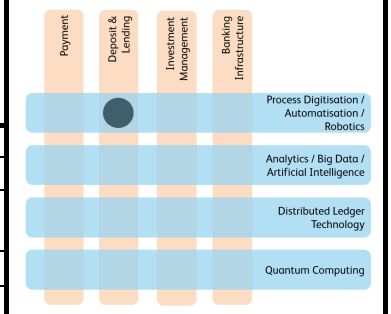
Lendity AG
https://lendity.com/

Lendity is a Swiss-based firm specializing in niche private debt opportunities.

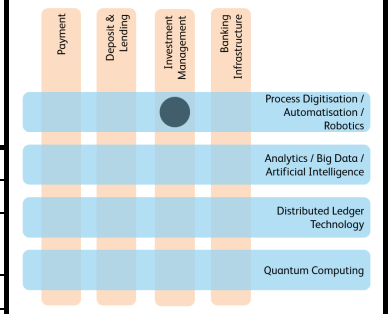


Year of foundation	2018
Domicile (canton)	ZH
Employees … of which in CH	
Valuation	
Total funding	
Board members	Rafael Karamanian
Management team	Rafael Karamanian
Key partners	SIX, PwC, Julius Bär, F10

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Leonteq AG
https://www.leonteq.com/

Leonteq is a Swiss fintech company with a leading marketplace for structured investment solutions. Based on proprietary modern technology, the company offers derivative investment products and services. Leonteq acts as both a direct issuer of its own products and as a partner to other financial institutions. Leonteq further enables life insurance companies and banks to produce capital-efficient, unit-linked pension products with guarantees.



Year of foundation	2007
Domicile (canton)	ZH
Employees … of which in CH	558 332
Valuation	
Total funding	CHF 436,000,000
Board members	Philippe Le Baquer, Sylvie Davidson, Philippe Weber, Dominik Schärer, Susana Morgado Gomez Smith, Richard Laxer, Christopher Michael Chambers, Thomas Roland Meier
Management team	Lukas Ruflin, Marco Amato, Manish Patnaik, Reto Quadroni, Alessandro Ricci, Markus Schmid, Ingrid Silveri
Key partners	Aargauische Kantonalbank, Banque Internationale à Luxembourg, Basler Kantonalbank, Cornèr Bank, EFG International, PostFinance, Raiffeisen Switzerland, Standard Chartered Bank, Swisquote, VP Bank Helvetia, Swiss Mobiliar

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
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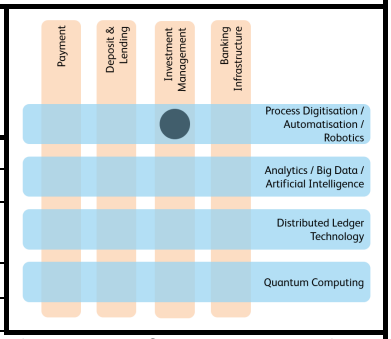
LibertyGreen 3a Vorsorgestiftung
https://libertygreen.ch/

LibertyGreen 3a - your private retirement savings plan, for your retirement and the environment.

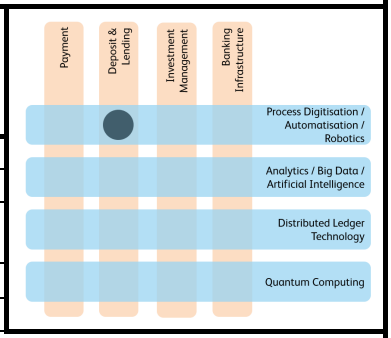


Year of foundation	2011
Domicile (canton)	SZ
Employees … of which in CH	90+ 90+
Valuation	CHF 50,000
Total funding	
Board members	LVAG: Josef Andres (P), Barbara Bienek, Oliver Bienek, Michael Meier, Stefano Beros, Stephan Wilms Liberty Green: Beat Stalder (P), Martina Bühler, Mathias Herger,
Management team	LVAG & LibertyGreen: Oliver Bienek, Barbara Bienek, Patrick Steiner, Adrian Scherer, Hansueli Halter
Key partners	Liberty Green: Swiss Sustainable Finance, Athletes Network, Green Pick

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Loanboox - Swiss FinTech AG
https://loanboox.com/

Loanboox is the independent debt capital market platform, connecting big ticket borrowers and investors. We offer an easy process, personal support and various tools to borrowers while providing investors with a large dealflow, automation tools and market data to enable an efficient deployment of their capital.



Year of foundation	2015
Domicile (canton)	ZH
Employees … of which in CH	30 22
Valuation	
Total funding	CHF 30,000,000
Board members	Felix Rudolf Ehrat, Dario M. S. Zogg, Stefan Mühlemann, Oliver Lang
Management team	Philippe Cayrol, Dario M. S. Zogg, Dominique Hügli, Martina Bühler, Urs Meier
Key partners	

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
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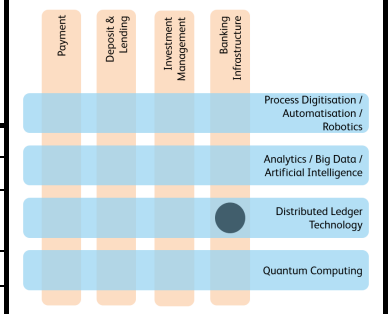
Lykke Corp
https://www.lykke.com/

Lykke is a Fintech company bridging the gap between traditional finance and Blockchain. We operate a crypto exchange and offer tools and services for blockchain based applications.

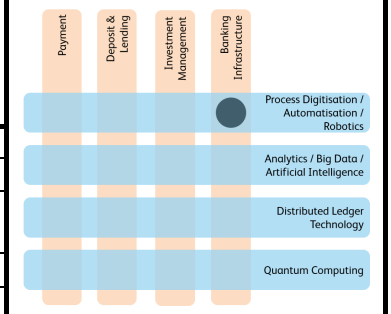


Year of foundation	2013
Domicile (canton)	ZG
Employees … of which in CH	20 2
Valuation	
Total funding	CHF 29,000,000
Board members	Richard Björn Olsen
Management team	Richard Björn Olsen
Key partners	AWS, Azure

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

mesoneer AG
https://www.mesoneer.io/

We connect virtual, digital and analog worlds. For our customers, we digitize and simplify processes and develop unique software solutions. In-depth knowledge of the financial industry and core banking systems enables our customers to benefit from secure, performing and innovative end-to-end solutions.



Year of foundation	2014
Domicile (canton)	ZH
Employees … of which in CH	100 50
Valuation	
Total funding	
Board members	Matthias Keller, Patrick Brazzale, Ralf Jenzer, Reto Lanfranconi
Management team	Patrick Brazzale, Jana Fischer, Nelli Arnold, Orell Appenzeller, Dirk Budke, Ralf Jenzer
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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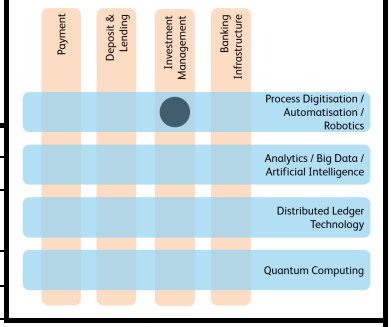
MetaSwiss Group AG
http://www.meta.swiss/

Swiss Financial Metaverse operating in new way of capital markets.

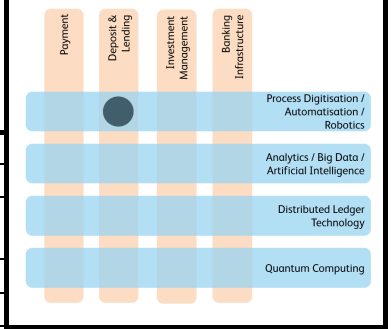


Year of foundation	2018
Domicile (canton)	ZH
Employees … of which in CH	25 7
Valuation	CHF 50,000,000
Total funding	CHF 400,000
Board members	Arsenije Grgur
Management team	Arsenije Grgur, Carlo Frölichsthal
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

MoneyPark AG
https://moneypark.ch/

MoneyPark is a financial advisory company focusing on mortgage, retirement planning and real estate advice. Overall, it offers services from Search to Sell and specifically, the most holistic, tax-optimized mortage advisory in Switzerland, taking a multi-dimensional approach to property financing, with its values transparency, information, comfort and choice.



Year of foundation	2011
Domicile (canton)	SZ
Employees … of which in CH	300+ 300+
Valuation	
Total funding	
Board members	André Keller, Ralph Alex Jeitziner, Stefan Heitmann, Martin Jara
Management team	Martin Robert Tschopp, Stephanie Doris Kuntz, Thomas-Sebastian Adam, Jasser Kassab, Viola Kirsch, Lukas Jonathan Vogt, Shahram Shad, Stephan Mischler, Benjamin Tacquet
Key partners	More than 150 financing and insurance partners (banks, insurances and pension funds) in Switzerland. Partnerships among others with Helvetia and Credit Suisse.

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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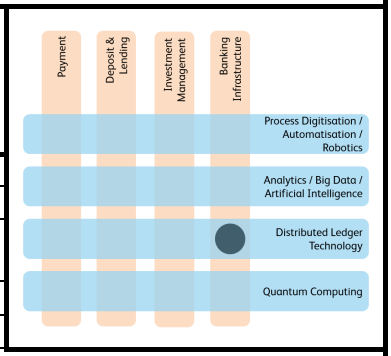
Mt Pelerin Group SA
https://www.mtpelerin.com/

Mt Pelerin is a regulated Swiss fintech company working since 2018 to bring the ultimate experience in financial services blurring the frontier between the crypto world and traditional finance. It offers today unique crypto-fiat services to retail and business users, develops the non-custodial mobile app Bridge Wallet, and provides leading asset tokenization services around its platform Bridge Protocol.

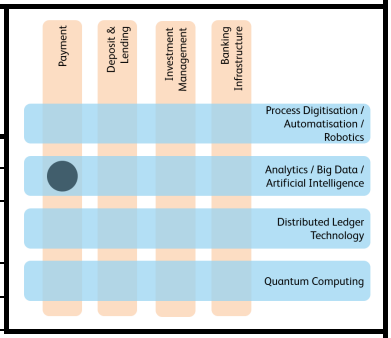


Year of foundation	2018
Domicile (canton)	NE
Employees … of which in CH	12 6
Valuation	CHF 90,000,000
Total funding	CHF 2,150,000
Board members	Arnaud Salomon, Sébastien Moret, Pierre Maliczak
Management team	Arnaud Salomon, Sébastien Krafft, Sébastien Moret, Yann Gerardi
Key partners	Incore

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Mympact AG
https://mympact.io

Track the carbon footprint of your spending, discover sustainable alternatives and reduce your impact.



Year of foundation	2021
Domicile (canton)	ZH
Employees … of which in CH	5 3
Valuation	
Total funding	CHF 450,000
Board members	Christian Sutter, Vinzenz von Teufenstein
Management team	Christian Sutter, Vinzenz von Teufenstein
Key partners	F10, New Energy Nexus, Startup@HSG, Leaders for climate action

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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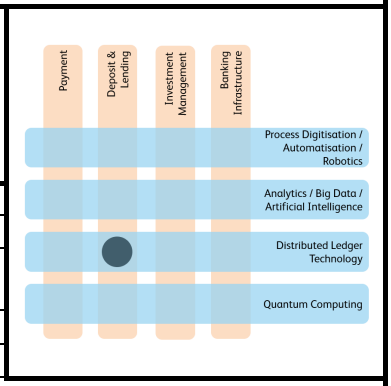
MYSO Finance Association
https://www.myso.finance/

MYSO v1 is a DeFi protocol that allows users to borrow without liquidation risk. For borrowers, this makes it easier to understand and manage crypto loans, while for lenders this provides new and sustainable yield enhancement opportunities. The way this is achieved is through "zero-liquidation loans", a novel risk transfer mechanism in which borrowers are relieved from liquidation risk while lenders get exposure to a physically settled covered call strategy.

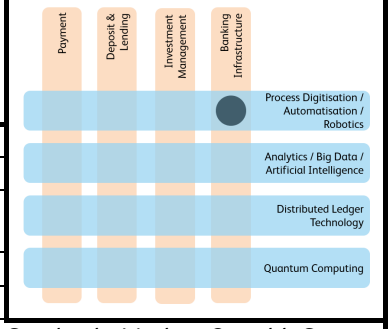


Year of foundation	2022
Domicile (canton)	ZG
Employees … of which in CH	
Valuation	
Total funding	CHF 2,400,000
Board members	Aetienne Sardon, Dominic Vincenz
Management team	
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

neon Switzerland AG
https://www.neon-free.ch/

neon is an independent smartphone account.



Year of foundation	2017
Domicile (canton)	ZH
Employees … of which in CH	30 30
Valuation	
Total funding	CHF 36,152,600
Board members	Krzysztof Bialkowski, Julius Kirscheneder, Miklos Stanek, Jörg Sandrock, Markus Oswald, Simon Youssef
Management team	Jörg Sandrock, Julius Kirscheneder, Patric Ammann, Simon Youssef
Key partners	Hypothekarbank Lenzburg, Wise, Smile, Mastercard, Inyova, Findependent, Selma, frankly (ZKB), Helvetic Warranty, ERV, Allianz, Moneypark, QoQo, Brack, EdenProject, …

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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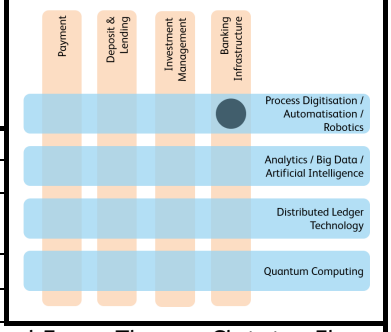
Netcetera Group AG
https://www.netcetera.com/

Netcetera is a global software company with cutting-edge IT products and individual digital solutions in the areas of secure digital payment, financial technologies and insurance.

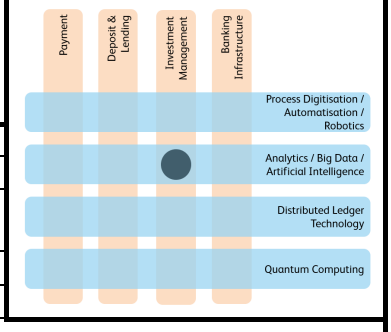


Year of foundation	2003
Domicile (canton)	ZH
Employees … of which in CH	860 300
Valuation	
Total funding	
Board members	Ralf Wintergerst, Philipp Schulte, Ronald Brunner, Ulrich Michael Franz, Thomas Christian Flatt, Johann Rudolf Vonder Mühll, Andrej Vckovski
Management team	Andrej Vckovski, Dominique Ramelet, Micaëla Raschle Grand, Peter Frick, Gabriele Brechbühl, Ronnie Brunner, Kiril Milev, Michael Brantschen, Vlado Galevski, Aleksandar Nikov, Corsin Decurtins, Peter Kohler, Martin Jäger, Roger Wettstein, Martin Meier, Urs
Key partners	Giesecke+Devrient, Blindflug Studios, Blockverse, Braingroup, Cognism, Done, proCentric, Rhumbnet, Unitek Engineering, Securities Grid

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Norsia SA
https://norsia.ch

Norsia develops tools to help financial advisors integrate their clients' personal values into the investment process. The platform is a unique solution to provide a tailored approach to sustainable finance: from clients profiling to personalized portfolio sustainability reports.



Year of foundation	2021
Domicile (canton)	GE
Employees … of which in CH	
Valuation	
Total funding	
Board members	Patrick Schirmann
Management team	
Key partners	F10, Innosuisse, Pulse, Genilem, Venturelab, HEG, EPITA

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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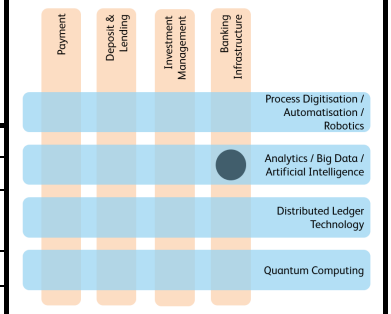
numas sa
https://www.numas.ch/

We are a young FinTech company in the heart of Zurich that combines expertise and pioneering spirit around the topic of "data".

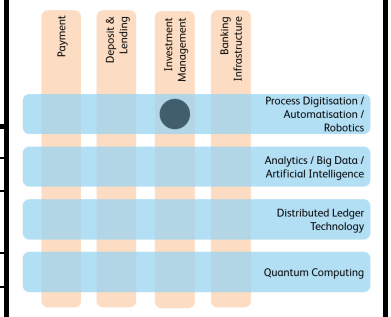


Year of foundation	2016
Domicile (canton)	ZH
Employees … of which in CH	8 8
Valuation	
Total funding	CHF 250,000
Board members	René Charrière, Jakob Kamm, Patrick Schellenberg, Peter Robert Staub
Management team	Patrick Schellenberger
Key partners	Allocare AG

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

One PM AG
https://www.one-pm.com/

ONE PM enables open banking beyond cash and offers cloud-based, API driven financial data management services by excelling existing bankinterfacing capabilities and overcoming missing standards with self-learning mechanisms. We norm, aggregate, process and transfer financial data.



Year of foundation	2015
Domicile (canton)	ZH
Employees … of which in CH	16 15
Valuation	
Total funding	
Board members	Darko Butina, Fabio Giuri, Giulio Giuseppe Rosamilia
Management team	Fabio Giuri, Marcel Meili, Michel Lussenburg, Ali Madani, Myrto Zehnder
Key partners	SWIFT, ebics, Sitrox, ergon, Opensystems, Openbanking Project, Swiss Finance Startups, Microsoft for Start-ups, First Advisory Group

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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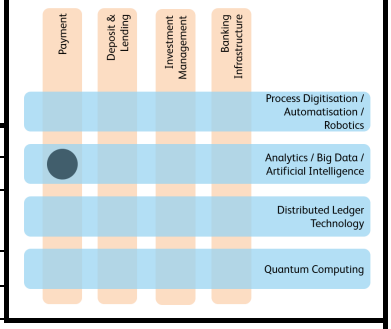
OneVisage SA
https://www.onevisage.com/

OneVisage develops Strong Customer Authentication (SCA) technologies and white-labeled 2FA solutions on all platforms, all hardware for large integrators to eliminate digital identity theft.

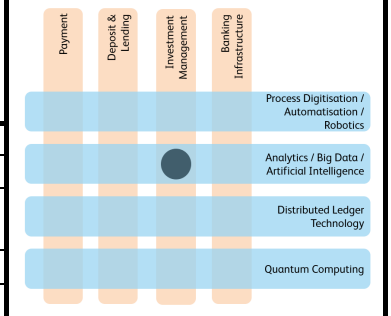


Year of foundation	2016
Domicile (canton)	VD
Employees … of which in CH	5 4
Valuation	CHF 15,000,000
Total funding	CHF 1,000,000
Board members	Maxim Lyadvinskiy, Christophe Remillet, Alexandre Benhamou
Management team	Christophe Remillet, Ronni Guggenheim
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

OpenMetrics Solutions AG
https://www.openmetrics.ch/

OpenMetric's technologies provide systematic protection against losses from financial market crises or the negative market movements that these causes. Portfolio managers in banks, insurance companies, pension funds and fund companies can systematically and efficiently hedge their investment strategies with dynamic risk overlays.



Year of foundation	2016
Domicile (canton)	ZH
Employees … of which in CH	3 3
Valuation	CHF 30,000,000
Total funding	
Board members	Félix Fernandez Martinez, Tobias Setz, Stefan Buck
Management team	Félix Fernandez Martinez, Tobias Setz, Stefan Buck
Key partners	Publica, Pension Fund of Credit Suisse, ZKB, Swisscanto

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
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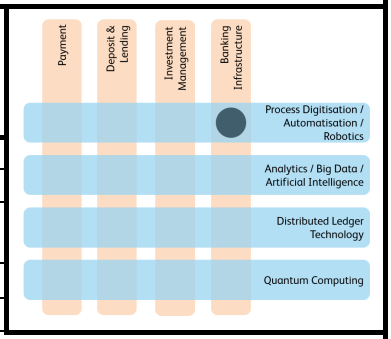
Parashift AG
https://parashift.io/

Parashift offers a versatile AI-based document extraction cloud platform.

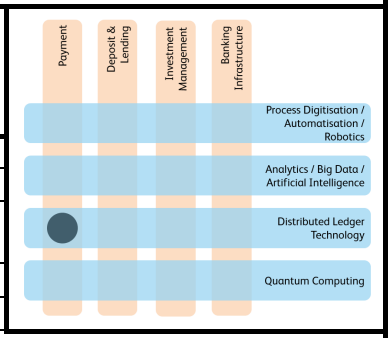


Year of foundation	1990
Domicile (canton)	BL
Employees … of which in CH	40 34
Valuation	
Total funding	CHF 8,500,000
Board members	Kurt Strecker, Daniel Burkhardt, Olivier Jaquet, Alain Veuve
Management team	Andre Bieler, Jos Braaksma, Andreas Isenring, Manuela Rohr, Thilo Rossa, Alain Veuve
Key partners	Inacta, IMTF, BSI, Abraxas, SELISE, Arcplace, Google

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Payment 21.com - Moving Media GmbH
https://payment21.com/

Payment21.com is an innovation-intermediary, moving forward with the concept of encouraging digital currency as a global medium of exchange.



Year of foundation	2002
Domicile (canton)	SG
Employees … of which in CH	
Valuation	
Total funding	
Board members	
Management team	Bernhard Kaufmann
Key partners	ACI Worldwide

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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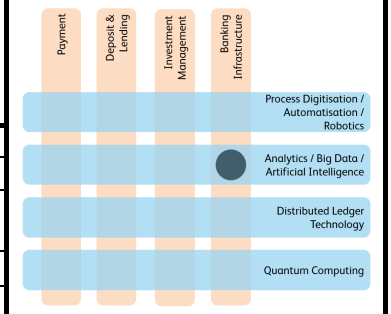
Pelt8 GmbH
https://pelt8.com/

Our cloud-solution helps companies collect and report their sustainability data verifiably to ensure ESG assurance.

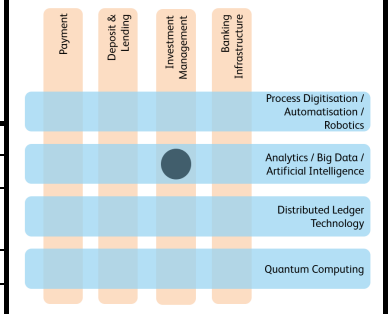


Year of foundation	2021
Domicile (canton)	ZH
Employees … of which in CH	4 3
Valuation	
Total funding	CHF 230,000
Board members	
Management team	Gwen Jettain, Julian Christoph Osborne
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Performance Watcher - INVESTMENT BY OBJECTIVES (IBO) SA
https://www.performance-watcher.ch/

Performance Watcher is a community initiated by the company IBO. It allows all participating investors to evaluate and monitor the performance of their portfolios by comparing them with other portfolios with the same risk budget.



Year of foundation	2009
Domicile (canton)	VD
Employees … of which in CH	4 4
Valuation	CHF 2,000,000
Total funding	CHF 990,000
Board members	Klaus Dieter Stark, Nicholas Hochstädter
Management team	Eric Nicholas Hochstädter, Eric Bissonnier
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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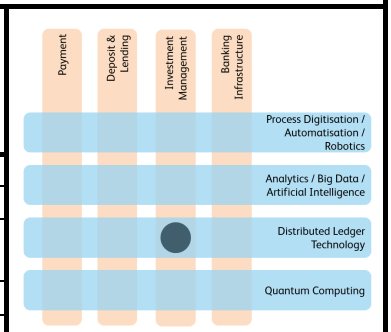
PI Digital AG
https://pidigital.swiss/

PI Digital AG strives to offer a high-end bespoke service advising its clients on an optimal use of crypto derivates to balance risk and performance. We scan the market to find the best price from various OTC market makers and exchanges. In simple terms: PI Digital AG offers a service that exists in all traditional asset classes but not yet in the crypto asset class.

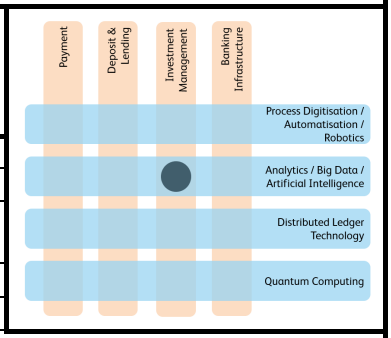


Year of foundation	2022
Domicile (canton)	ZG
Employees … of which in CH	5 5
Valuation	CHF 10,000,000
Total funding	
Board members	Patrick Oliver Haberstock, Antonio Pellizzato, Maxim Zimin, Paul-Alexander Norking, Thomas Walcher
Management team	Patrick Oliver Haberstock, Antonio Pellizzato, Maxim Zimin, Paul-Alexander Norking, Thomas Walcher
Key partners	Fireblocks, GSR, Blockfills, Galaxy Digital

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Private Alpha Switzerland AG
https://www.privatealpha.de/

Private Alpha enhances investment research and investment strategies with artificial intelligence technology.



Year of foundation	2017
Domicile (canton)	LU
Employees … of which in CH	9 5
Valuation	
Total funding	
Board members	Beat Spühler, Christoph Züllig, Andreas Perreiter, Christoph Josef Gum
Management team	Christoph Josef Gum, Christoph Züllig
Key partners	Microsoft Azure Startup Partner, Donner & Reuschel , NFS Netfonds, Hansainvest

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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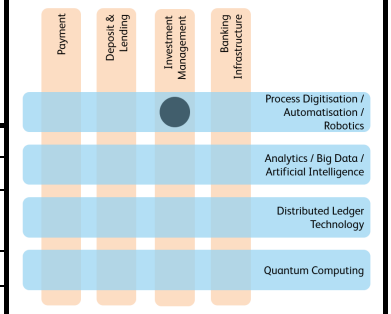
PSS AG
https://www.pssplattform.ch

PSS enables investors to invest with the strategy of leading Swiss investment experts. Including individual investment objectives, digital onboarding and investment cockpit, and institutional level costs.

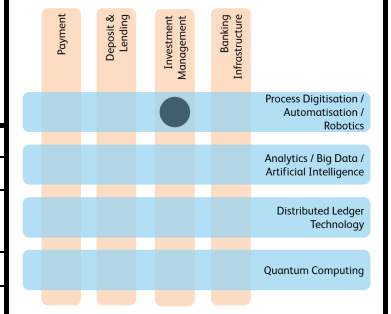


Year of foundation	2018
Domicile (canton)	SG
Employees … of which in CH	5 5
Valuation	
Total funding	
Board members	Ralf Seiz, Julius Agnesens, Simon Taro Müller
Management team	Alexander Pierre-Marie Lehmann, Alain Beyeler
Key partners	UBS, Credit Suisse, Hypothekarbank Lenzburg, Asga Pensionskasse, PAT-BVG Personalvorsorgestiftung, SPIDA Personalvorsorgestiftung

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

qashqade AG
https://qashqade.com/

qashqade is a FinTech Start-up focused on providing private equity solutions for GPs, LPs and fund administrators. Our solution enables our clients to streamline its processes and reduce the risk the face by automating their calculations and allowing them to customize their reports.



Year of foundation	2018
Domicile (canton)	ZH
Employees … of which in CH	46 25
Valuation	
Total funding	CHF 2,000,000
Board members	Karl Takayuki Oliver Freigang, Gregor Kreuzer, Stefan Müller
Management team	Karl Takayuki Oliver Freigang, Gregor Kreuzer, Kathleen O'Leary, Paul Foley, Roman Zogg, Marco Marty, Tomas Hundegger, Jeannine Wirth
Key partners	Lionpoint, Inveniam, Synpulse, Accelex, String73

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
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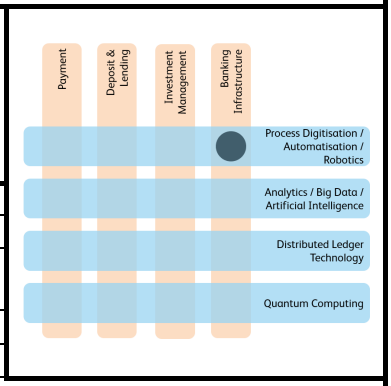
Ratyng - Onloan GmbH
https://www.ratyng.ch/

We provide the financial industry and other industries the opportunity to benefit from highly efficient & accessible SME risk assessment through our innovative rating model. Our risk assessment automates & digitizes the manual risk evaluation in banks, significantly reducing costs & time required. At the same time, this increase in efficiency allows us to bring proper credit risk evaluation to other companies through our newly launched CoRa-Certificate.

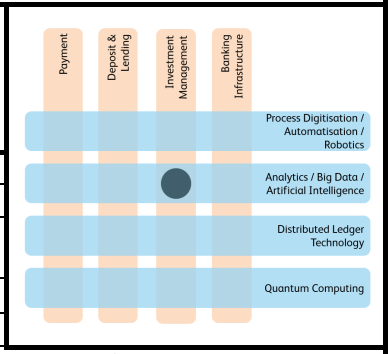


Year of foundation	2020
Domicile (canton)	ZH
Employees … of which in CH	2 2
Valuation	
Total funding	
Board members	
Management team	Matthias Schaller, Volker Haushalter
Key partners	Migros Bank, Intrum

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

RepRisk AG
https://www.reprisk.com/

RepRisk sells daily-updated, human-curated ESG risk data and metrics based on machine learning. This enables clients to identify and assess ESG issues and risk incidents, controversial activities, and business conduct risks for due diligence, third-party vetting and screening, compliance, and risk management in banking, underwriting, and investment management.



Year of foundation	1998
Domicile (canton)	ZH
Employees … of which in CH	336 107
Valuation	
Total funding	
Board members	Kurt Anderson Lambert, Daniela Bosshardt-Hengartner, Philipp Gregor Aeby
Management team	Alexandra Mihailescu Cichon, Benjamin Haltinner, Britta Margraf, Dan Santos, Elizabeth Teige, Gina Walser, Giulia Misino, Hope Vega, Jenny Mathilde Nordby, Karoly Guba, Kathrin Weston Walsh, Luba Protopopova, Mariana Pote, Misty San Juan, Natascha Gruden,
Key partners	BlackRock eFront, CDP, CHRB, FTSE Rusell, ICE Data Services, Apex, J.P. Morgan, Sustainability Accounting Standards Board (SASB), S&P DJI, S&P Sustainable 1, wbcsd, WWF, K2 Integrity, Google Cloud, and Fitch Ratings

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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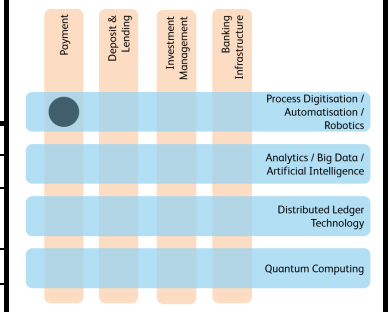
Rivero AG
https://rivero.tech/

Rivero offers SaaS products to banks, card issuers, acquirers and processors to gain efficiency and improve customer experience by end-to-end digitalization of (card) payment processes.

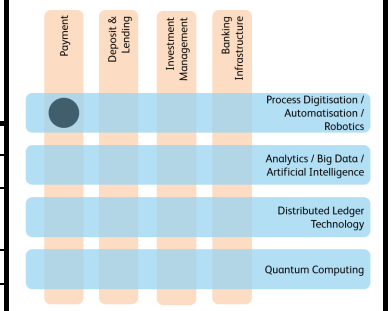


Year of foundation	2018
Domicile (canton)	SH
Employees … of which in CH	15 13
Valuation	
Total funding	
Board members	Thomas Müller, Daniel Bürchler, Flurin Müller, Fatemeh Alsadat Nikayin
Management team	Fatemeh Alsadat Nikayin, Thomas Müller, Thomas Weber
Key partners	Visa, Mastercard, several card issuers and acquirers

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Run my Accounts AG
https://www.runmyaccounts.ch/

Accounting made simple. Run my Accounts has invented the automated accounting process for SME. We offer an end-to-end solution with personal services and support, enabling SMEs and startups to focus on their business.



Year of foundation	2008
Domicile (canton)	ZH
Employees … of which in CH	65 58
Valuation	
Total funding	CHF 800,000
Board members	Thomas Brändle, Emrich Traugott
Management team	Andréina Plath, Philip Ruf, Georg Burgener, Teodora Ristov, Raphael Meier, Yves Helbling
Key partners	Infoniqa

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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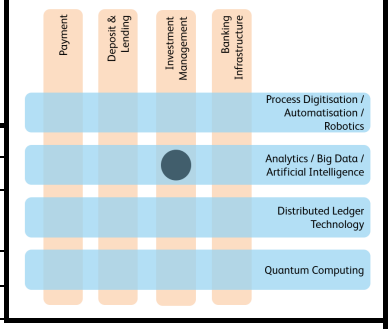
Schlossberg&Co Technologies AG
https://schlossberg.co/

Schlossberg&Co is a quantitative investment management company trading in global financial markets, dedicated to producing exceptional returns for its investors by combining the most sophisticated scientific methods of quantitative finance, machine learning and behavioral finance.

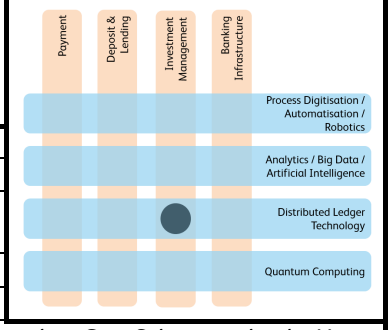


Year of foundation	2013
Domicile (canton)	ZG
Employees … of which in CH	6 6
Valuation	
Total funding	
Board members	David Dino Bühlmann, Andy Jean-Bernard Heilmann
Management team	David Dino Bühlmann, Boris Kuznetsov
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital			Data
			Operat. business & serving clients	Trading	Advertising

SEBA Bank AG
https://www.seba.swiss/

SEBA is a Finma licenced and supervised Swiss bank providing the most comprehensive, secure, and easy-to-use bridge between digital and traditional assets. Store, trade, and manage your crypto currencies, digital and traditional assets all in one place.



Year of foundation	2018
Domicile (canton)	ZG
Employees … of which in CH	120 98
Valuation	
Total funding	CHF 341,500,000
Board members	Päivi Rekonen, Joseph Chee, Sébastien Mérillat, Evangelia Kostakis, Guy Schwarzenbach, Hans Kuhn, Sanjeev Karkhanis, Olivier Roussy Newton, Cheney, CHENG Ki Sum, Colin McQuade
Management team	Franz Bergmüller, Mathias Schütz, Urs Bernegger, Ritesh Dutta, Alistair Heggie, Alena Nicolai Gwerder, Markus Blattman, Urs Lehmann, Xavier Alabart
Key partners	Julius Bär, Finstar, smartTrade Technologies, Geissbühler Weber & Partner (GWP), Taurus Group SA. Fireblocks, ED&F MAN, Chainalysis, Flowable, Defi Technologies, Tokensoft, ebankit, InfoGuard

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital			Data
			Operat. business & serving clients	Trading	Advertising

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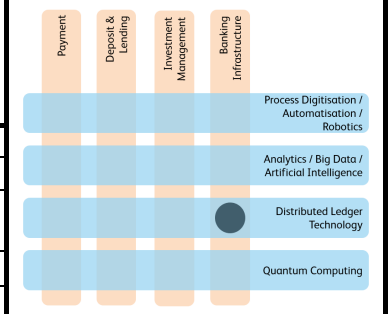
Securosys SA
https://www.securosys.com/

We develop, produce, and distribute hardware, software and services that protect and verify data and their transmission.

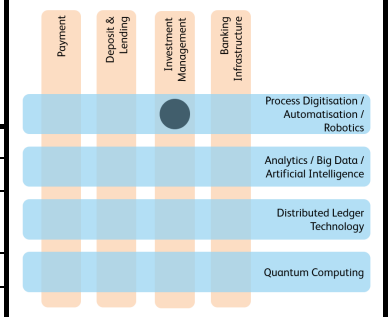


Year of foundation	2014
Domicile (canton)	ZH
Employees … of which in CH	26 20
Valuation	CHF 25,000,000
Total funding	CHF 3,000,000
Board members	Hans Jörg Bärtschi, Boris Andrea Schlapbach Käppeli, Andreas Viktor Curiger, Robert Rogenmoser
Management team	Robert Rogenmoser, Andreas Viktor Curiger, Marcel Dasen, Reto Stäuble, Axel Hauer
Key partners	Electronic Manufacturing Services Enics AG and GPV Switzerland SA

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Selma Finance AG
https://www.selmafinance.ch/

Selma is a digital financial advisor that helps you to do the right things with your money, like a private banker in your pocket.



Year of foundation	2016
Domicile (canton)	ZH
Employees … of which in CH	30 10
Valuation	
Total funding	
Board members	Kevin Alexander Linser, Stefan Andri Jaecklin, Patrik Oliver Schär
Management team	Patrik Schär, Dominik Seiler
Key partners	Saxo Bank (Schweiz) AG, VZ VermögensZentrum

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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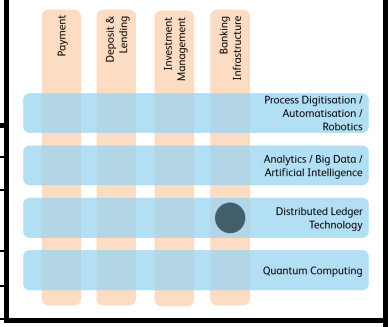
Shift Crypto AG
https://shiftcrypto.ch/

Swiss made hardware wallet BitBox02.

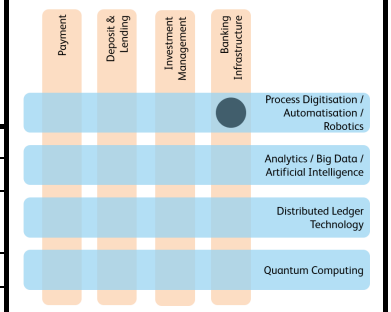


Year of foundation	2020
Domicile (canton)	ZH
Employees … of which in CH	13 7
Valuation	
Total funding	CHF 4,500,000
Board members	Douglas Bakkum
Management team	Douglas Bakkum
Key partners	Relai, Pocket, Coin Tracking, HITS, Bitcoin Association Switzerland

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

SIX Group AG
https://www.six-group.com/

SIX operates the infrastructure for the Swiss and Spanish financial centre. The company provides services relating to securities transactions, the processing of financial information, payment transactions and runs a digital infrastructure.



Year of foundation	2002
Domicile (canton)	ZH
Employees … of which in CH	3,500 3,500
Valuation	
Total funding	
Board members	Thomas Wellauer, Herbert Scheidt, Andreas Kollegger, André Marc Helfenstein, David Jimenez-Blanco Carrillo de Albornoz, Romana García Belen, Jürg Gutzwiller, Jürg Bühlmann, Lorenz Erzherzog von Habsburg-Lothringen, Soeren Mose
Management team	Jos Dijsselhof, Daniel Schmucki, Jochen Dürr, Thomas Zeeb, Marion Leslie, Christoph Landis, Javier Hernani Burzaco, Dieter Goerdten
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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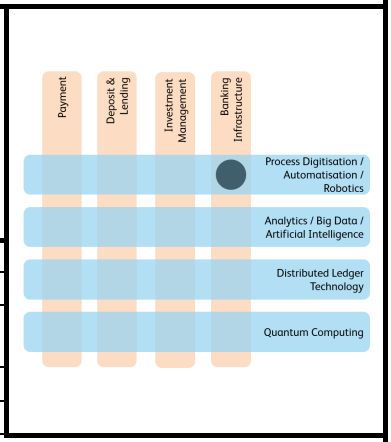
Spitch AG
https://www.spitch.ai/

Spitch helps enterprises to identify, understand and serve their customers better by using conversational AI. We are a leading Swiss and global one-stop vendor for conversational AI solutions with an established customer base in the financial sector and beyond. We were the first company to offer enterprise-class solutions understanding Swiss German dialects and developed our own core engines that stand behind our key products: virtual assistants, voice biometrics, as well as over a dozen seamlessly connected other components of the Spitch omnichannel conversational platform.

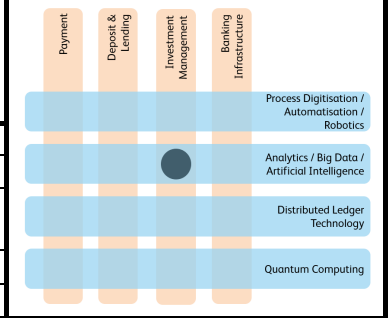


Year of foundation	2014
Domicile (canton)	ZH
Employees … of which in CH	58 26
Valuation	
Total funding	EUR 5,200,000
Board members	Kirill Tatarinov, Alexey Popov, Neil MacDonald, Vadim Shchepinov, Joe Novak, Igor Nozhov, Thomas Christmann
Management team	Alexey Popov, Francisco Campillo, Javier Dieguez, Saglara Dzhavkaeva, Fehmi El Benna, Stephan Fehlmann, David Font Marin, Shoin Hatano, Carmen Keller, Giovanni Mannarino, Bernd Martin, Josef Novak, Igor Nozhov, Lincoln Payne, Jörg Rebell, Juerg Schleier,
Key partners	Swisscom, TCS, QuandaGo, Genesys, Bucher + Suter, AdNovum, Comapp, Creative Virtual, FINIX, BSI, NTT DATA, SAP, FINNOVA, DOTVOCAL, swisspro, CRIF, inventx, Deloitte, Transcom, AVAYA, Comdata, Accenture, Mexedia and others

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Squirro AG
https://squirro.com/

Squirro is a cognitive insights engine that enables companies to turn meaningless data into actionable insights.



Year of foundation	2009
Domicile (canton)	ZH
Employees … of which in CH	56 32
Valuation	
Total funding	CHF 30,000,000
Board members	Albert Lanham Napier, Carmen Schlatter Broger, Nityen Ranjan Lal, Andrew James Honess, Patrice Marcel Neff, Ariel Frank Lüdi, Dorian Selz
Management team	Dorian Selz, Toni Birrer, Patrice Marcel Neff, Bernd Schopp, Saurabh Jain, Irina Bechmann
Key partners	Semantic Web Company, Synpulse, Refinitiv, Dow Jones, Accenture, DXC, Wipro, CMCI, Salesforce, ServiceNow

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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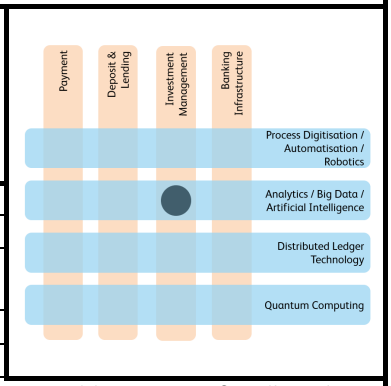
Stableton Financial AG
https://www.stableton.com/

Stableton is an award-winning fintech platform and an investment firm specializing in late-stage venture capital and growth equity. Institutional and qualified investors benefit from the sourcing of outstanding growth companies and the creation of unique top-tier investment opportunities with improved liquidity. Our unique position and differentiated approach within the ecosystem, combined with technology and process edge, enable us to act on the most attractive deals, generating returns for investors.

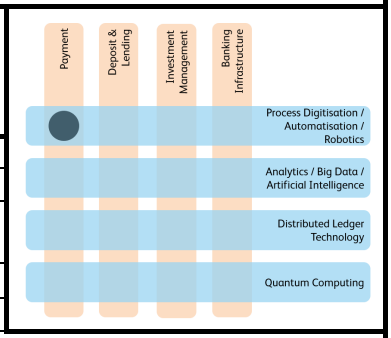


Year of foundation	2018
Domicile (canton)	ZG
Employees … of which in CH	40 32
Valuation	
Total funding	
Board members	Andreas Christian Bezner, Henning Konstantin Heiermann, Bertram Köhler, Krzysztof Bialkowski
Management team	Andreas Christian Bezner, Henning Konstantin Heiermann, Igor Shelemetiev, Freddie Cunningham, Christian Schmid, Roman Loosli
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

SWISSBILLING SA
https://www.swissbilling.ch/

SwissBilling focuses on delivering an easy to use online payment method that offers payment via invoice for Swiss online customers.



Year of foundation	2011
Domicile (canton)	VD
Employees … of which in CH	43 43
Valuation	CHF 50,000,000
Total funding	CHF 100,000
Board members	Holger Laubenthal, Pascal Perritaz, Emanuel Christian Hofacker
Management team	Jean-Christophe Calmes, Patrick Weibel, Pascal Follonier, Timothy O'Hear, Moreno Bottesi
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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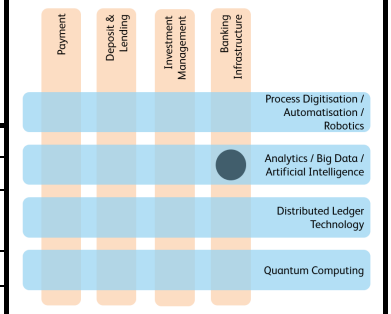
SwissMetrics GmbH
https://www.swissmetrics.com/

The all-in-one platform for counterparty onboarding, compliance, credit risk monitoring and ESG scoring.

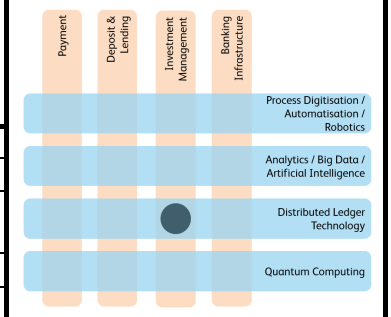


Year of foundation	2014
Domicile (canton)	ZH
Employees … of which in CH	3 3
Valuation	
Total funding	CHF 250,000
Board members	
Management team	Piotr Zmidzinski
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

SwissOne Capital AG
https://www.swissone.capital/

SwissOne Capital is a niche asset manager with a focus on institutional grade crypto and blockchain investment funds.



Year of foundation	2018
Domicile (canton)	ZG
Employees … of which in CH	10 10
Valuation	
Total funding	
Board members	Cornelis Jan Quirijns, Hugo van Veen, Steffen Heinrich Leo Bassler
Management team	Michael Pawlowski, Steffen Heinrich Leo Bassler, Hugo Van Veen, Kenneth Hearn
Key partners	AKJ Jenson, APEX Fund Management, MRB Partners AG, iMaps

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
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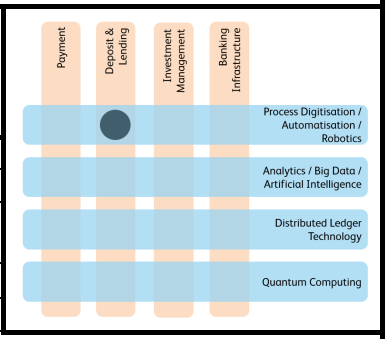
swisspeers AG
https://www.swisspeers.ch/

swisspeers is an independent online platform that enables SMEs to raise funds financed directly by investors.

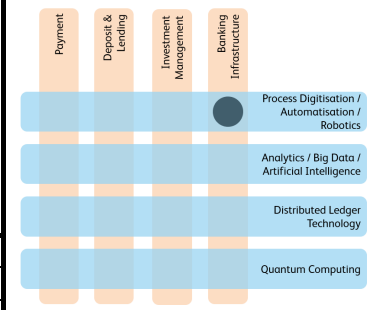


Year of foundation	2015
Domicile (canton)	ZH
Employees … of which in CH	17 15
Valuation	
Total funding	
Board members	Jürg Hunziker, Urs Hofer, Christoph Ammann, Karin Rhomberg Hug, Peter Sami, Beat Röthlisberger
Management team	Alwin Meyer, Andreas Hug, Stefan Nägeli
Key partners	Basellandschaftliche Kantonalbank

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Swissquote Group Holding SA
https://www.swissquote.com/

Swissquote is Switzerland's market leader in online banking. Over three million financial products can be traded on its innovative platforms. Swissquote's core competencies include global stock market trading, trading and custody of crypto assets, Forex trading and the Robo-Advisor solution. In addition, Swissquote is active in the payment card, mortgage and leasing markets. As at the end of June 2022, Swissquote held over 50 billion Swiss francs in assets for more than 520,000 private and institutional clients. In addition to its headquarters in Gland, Switzerland, Swissquote has offices in Zurich, Luxembourg, London, Dubai, Hong Kong, Singapore, Bucharest and Malta. Swissquote holds banking licenses both in Switzerland (FINMA) and Luxembourg (CSSF). Its parent company, Swissquote Group Holding SA, is listed on the SIX Swiss Exchange (symbol: SQN). The Swissquote Group and PostFinance each own 50 % of the fintech app Yuh AG.



Year of foundation	1999
Domicile (canton)	VD
Employees … of which in CH	1,040 (30.06.2022) 886
Valuation	
Total funding	
Board members	Michael Heinrich Ploog, Markus Dennler, Monica Dell'Anna, Beat Oberlin, Jean-Christophe Pernollet, Demetra Kalogerou
Management team	Marc Bürki, Yvan Cardenas, Gilles Chantrier, Alexandru Craciun, Jan De Schepper, Lino Finini, Morgan Lavanchy
Key partners	PostFinance, Luzerner KB, Tesla

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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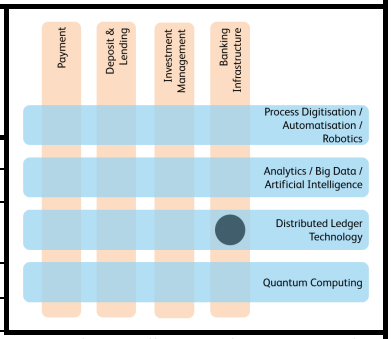
Sygnum Bank AG
https://www.sygnum.com/

Founded on Swiss and Singapore heritage, Sygnum empowers its clients to invest in the digital asset economy with complete trust.

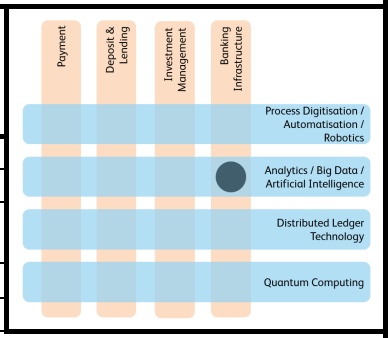


Year of foundation	2017
Domicile (canton)	ZH
Employees … of which in CH	220 190
Valuation	CHF 800,000,000
Total funding	CHF 160,000,000
Board members	Peter Wuffli, Gabriela Maria Payer, Kim Leng Chua, Thomas Buess, Luka Müller-Studer, Fernando Luis Vázquez Cao, Al-Noor Ramji
Management team	Mathias Imbach, Fabian Dori, Martin Burgherr, Thomas Eichenberger, Guido Hüppin, Philippe Imbach, Firtz Jost, Martin Jost, Gino Wirthensohn, Carolina Thomaz
Key partners	Swisscom, Custodigit, daura

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

SyntiFi GmbH
https://www.syntifi.com/

SyntiFi offers privacy enhanced risk intelligence tools to fight money laundering and prevent financial crime.



Year of foundation	2021
Domicile (canton)	ZG
Employees … of which in CH	7 4
Valuation	
Total funding	
Board members	Remo Stieger, André Luiz Carneiro Bertolace
Management team	André Luiz Carneiro Bertolace, Remo Stieger
Key partners	

Customer segments		**Channels**	**Key activities**	**Revenue streams**	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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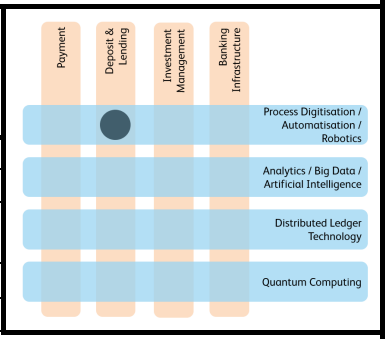
Systemcredit AG
https://www.systemcredit.com/

Systemcredit provides healthy financing for small and medium businesses. Our digital credit platform provides small and medium businesses looking for financing with a choice of credit offers from many lenders in an easy and efficient way.

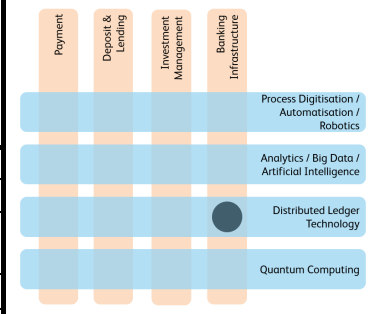


Year of foundation	2018
Domicile (canton)	ZH
Employees … of which in CH	4 4
Valuation	
Total funding	
Board members	Thomas Billeter, Daniel Bont, Daniel V. Christen, Andreas R. Herzog, Anouk Marazzi
Management team	Daniel V. Christen
Key partners	Systemcredit co-operates with 40 lenders such as banks, crowdlenders and speciality financeers to provide the best credit offers to small and medium businesses.

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Taurus SA
https://www.taurushq.com/

Taurus is a Swiss company that provides enterprise-grade digital asset infrastructure to issue, custody, and trade any digital assets: crypto-currencies incl. staking, tokenised assets, and digital currencies. It is the Swiss leader and an European leader in digital asset infrastructure and entrusted the full spectrum of financial institutions: systemic banks, universal banks, online banks, crypto-banks, private banks, and broker-dealers. Taurus also runs a regulated marketplace for tokenised assets (www.t-dx.com).



Year of foundation	2018
Domicile (canton)	GE
Employees … of which in CH	50
Valuation	
Total funding	
Board members	Jean-Blaise Conne, Geoffroy Henri F. De Ridder, Rani Jabban, Lars Christian Robert Gellerstad, Oren-Olivier Puder
Management team	Lamine Brahimi, Sébastien Dessimoz, Oren-Oliver Puder, Jean-Philippe Aumasson, Nicolas Bonvin, Victor Busson
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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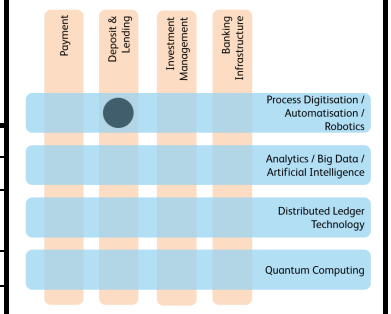
Teylor AG
https://www.teylor.com/

Teylor has built software that digitizes and automates the entire SME lending cycle. It uses this technology to broker its own loan under the Teylor brand and sells the technology to banks in a SaaS model.

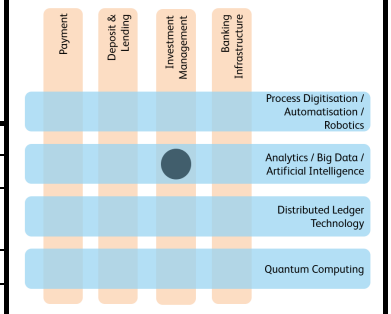


Year of foundation	2018
Domicile (canton)	ZH
Employees … of which in CH	38 12
Valuation	
Total funding	CHF 15,750,000
Board members	Patrick Andreas Stäuble, Christophe Aumaitre, Oyvind Oanes, Patrick Pierre Severin Zbinden
Management team	Patrick Stäuble, Joshua Mauk, Andre Cordesmeyer, Huy Nguyen
Key partners	BDU, BVMV, Offensive Mittelstand, Raisin Bank, RSM Luxembourg, AKF Bank

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

theScreener Investor Services AG
http://www.thescreener.com/

We assist leading financial institutions to optimise advice and performance.



Year of foundation	2004
Domicile (canton)	ZG
Employees … of which in CH	30 30
Valuation	
Total funding	
Board members	Andreas Milan Lusser
Management team	Farwagi Alain, Andreas Milan Lusser, Valérie Gianini, Francois Cleyet
Key partners	WebFG, Alpasys, Infront, SIX, Refinitiv, Factset, gd inside, Avaloq, Yukka Lab, FIS, Interactive Brokers, Morningstar, Guide Capital, Inrate

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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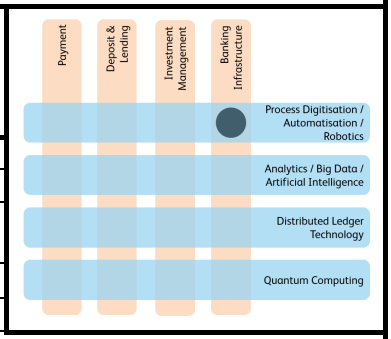
ti&m AG
https://www.ti8m.com/

ti&m is a Swiss leader in digitisation, security, as well as innovation projects and products.

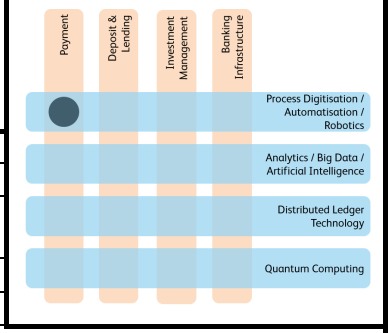


Year of foundation	2005
Domicile (canton)	ZH
Employees … of which in CH	595 550
Valuation	
Total funding	CHF 100,000
Board members	Luisa Domenica Sartori, Urs Buner, Markus Nigg, Thomas Wüst, Johannes Hoehener
Management team	Thomas Wüst, Markus Nigg, Karsten Burger, Philip Dieringer, Holger Rommel, Fabian Braunwalder, Marius Matter
Key partners	Microsoft, Jive, IBM, Contovista, edorasware, Finnova, Liferay, Magnolia, MeaWallet, Oracle, Qumram, Quo Vadis, Red Hat, Shopware, Swisscom, USP, aws, Google, Azure

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Tilbago AG
https://tilbago.ch/

The software of Tilbago AG enables companies to process debt collection proceedings and loss certificates online. The intelligence of the software leads creditors straight forward to collect the money. In addition CredRep allows end consumers to collect tamper proof digital credit reports. CredRep is an easy to implement end-to-end service for portal operators and providers of software solutions.



Year of foundation	2016
Domicile (canton)	LU
Employees … of which in CH	
Valuation	
Total funding	
Board members	Oliver Wolf, Mathias Strazza, Harley Ernst Alexander Krohmer, David Fuss
Management team	Oliver Wolf, David Fuss, Harley Krohmer
Key partners	PostFinance

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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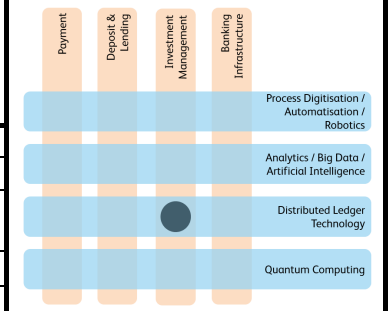
Tokengate.io - DSENT AG
https://www.tokengate.io/

Tokengate is a cutting edge token creation and management platform, serving both issuers and buyers with a better way to buy, sell and issue Token.

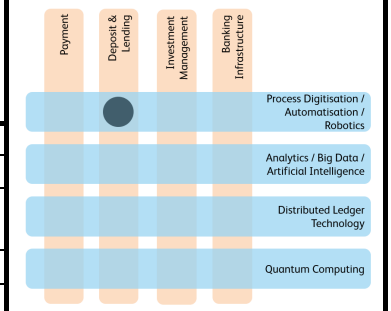


Year of foundation	2018
Domicile (canton)	ZG
Employees … of which in CH	8 6
Valuation	CHF 10,000,000 +
Total funding	
Board members	Nathan Kaiser, Marco Bumbacher, Ralf Hans Glabischnig
Management team	Daniel Peter Rutishauser
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Tradeplus24 AG
https://tp24group.com

An innovative financing solutions designed for SME's helping them to optimise their working capital through taking up liquidity against domestic and international receivables.



Year of foundation	2016
Domicile (canton)	ZH
Employees … of which in CH	55 15
Valuation	
Total funding	
Board members	Andreas Iten, Andreas Laule, Benjamin James, Wendy Edwards, Jürg Steiger
Management team	Benjamin James, Cameron Fletcher, Matthias Kribbel
Key partners	Credit Suisse, BDO, SIX, Berliner Volksbank Ventures, Allianz

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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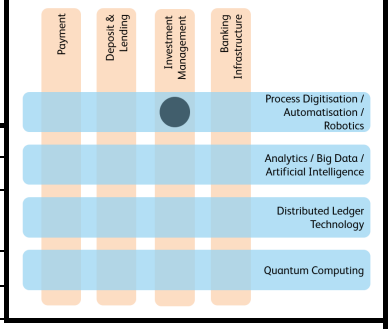
BEAUTYCONTEST.CH
GET YOUR ASSET IN SWITZERLAND

Trechter.ch GmbH
https://beautycontest.ch/

Making the RFI/RFP process more efficient and effective. Anonymous pre-market screening for investors. Business directory of Swiss asset managers.



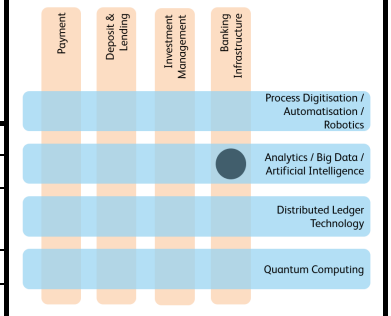
Year of foundation	2018
Domicile (canton)	LU
Employees … of which in CH	1
Valuation	
Total funding	
Board members	Andreas Urs Troxler
Management team	Andreas Urs Troxler
Key partners	Xappido AG (Software Partner: Cooperation)

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

TRESIO

Tresio AG
https://www.tresio.ch/

Digital CFO tool that faciliates the cash flow management and financial planning of small- and mid-sized companies. Tresio's multibanking-capabilities enables users to connect more thant 2'700 banks from 31 countries (including Switzerland), larger organizations benefit from ai-enabled treasury-automation.



Year of foundation	2020
Domicile (canton)	ZH
Employees … of which in CH	10 3
Valuation	
Total funding	
Board members	Tobias Angehrn, Roman Levchenko, Angelo Quabba
Management team	Tobias Angehrn, Roman Levchenko
Key partners	Bexio, Run my Accounts, Stripe, Smallinvoice, Amnis Treasury Services AG, Windata.

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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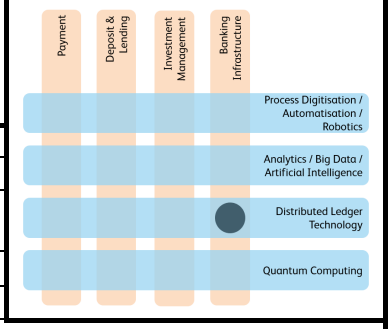
Värdex Suisse AG
https://www.vaerdex.ch/

We offer secure access to the world of crypto and the increasing demand for digital assets. Our ATMs are the easiest way to buy and sell cryptocurrencies.

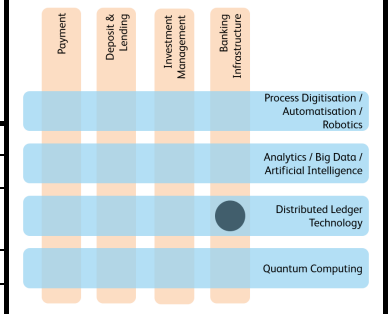


Year of foundation	2017
Domicile (canton)	ZG
Employees … of which in CH	10 10
Valuation	
Total funding	
Board members	Marius Angelo Urban, Andrej Francisco Majcen
Management team	Simon Manuel Grylka
Key partners	Swiss Blockchain Federation, Crypto Valley, epay, Bitcoin Suisse, Grant Thornton, Bank Frick, mll, Bitcoin Association Switzerland

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Veritic AG
https://www.veritic.com/

Veritic provides institutional-grade NFT and smart contract management infrastructure – fast to integrate for platforms and easy to access for end-users.



Year of foundation	2021
Domicile (canton)	ZG
Employees … of which in CH	3
Valuation	
Total funding	
Board members	Stephan Holzer, Giacomo Schwarz
Management team	Stephan Holzer, Giacomo Schwarz, Nicolaj Förderer
Key partners	Lucerne Festival, National Art Museum of Ukraine, Casper Network, Deutsch Ukrainische Gesellschaft, Jewish Museum in Prague

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
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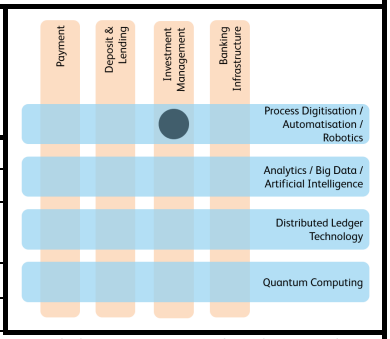
Verve Ventures - Verve Capital Partners AG

https://www.verve.vc/

Verve Ventures offers qualified private and institutional investors access to start-up investment opportunities across Europe.



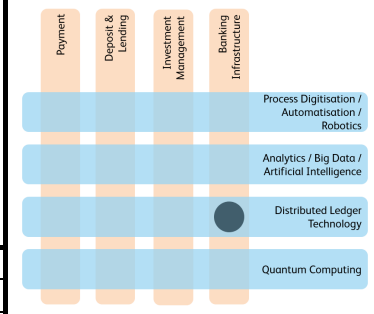
Year of foundation	2007
Domicile (canton)	ZG
Employees … of which in CH	59 45
Valuation	
Total funding	
Board members	Heinz Christian Kunz, Michel Kaufmann, Peter Werner Quadri, Ralph Martin Zurkinden, Lukas Weber
Management team	Steffen Wagner, Sergej Kalaschnikow, Lukas Weber, Mike Hobmeier
Key partners	Zürcher Kantonalbank, nest, Die Post

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Wyden (AlgoTrader AG)

https://www.wyden.io/

Wyden (previously AlgoTrader) is a fast-growing scale-up and the ance leader in institutional digital asset trading technology. It is the prime solution partner for banks and other sell-side firms for digital asset and crypto execution management, in addition toitst leading position as the first fully integrated algorithmic trading software solution for quantitative hedge and crypto funds on thebuy-sidee.
By covering the entire trade lifecycle and supporting seamless custody, core banking and portfolio management system integration as well as full trade lifecycle automation, the Wyden platform streamlines digital assets trading. Engineered by a team of trading system veterans and crypto asset experts, Wyden offers best-in-class integrated infrastructure solutions that meet the highest institutional needs. Wyden also offers consulting services to assist with the timely implementation of both Wyden solutions. Our typical clients are banks, hedge funds, asset managers, crypto funds, prop trading groups and brokers.



Year of foundation	2014
Domicile (canton)	ZH
Employees … of which in CH	45 15
Valuation	
Total funding	CHF 14,600,000
Board members	Martin Adalbert Wiedmann, Theo Woik, Roger Daniel Altorfer, Andreas Flury, Martin Alexander Trepp
Management team	Andreas Flury, Bartosz Wójcik, Felix Saible, Stefan Koller, Marc Heissenbüttel, Jason Blum, Christian Bock
Key partners	Fireblocks, Metaco, Copper, Avaloq, Finnova, Temenos

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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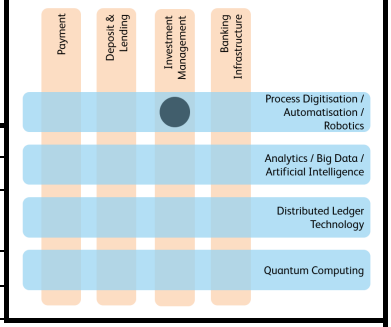
yeekatee AG
https://www.yeekatee.com/

yeekatee is an independent social network connecting people and investing - from starters to experts. We offer peers sharing and discussing their actual investments backed by linking their favorite bank or broker accounts.

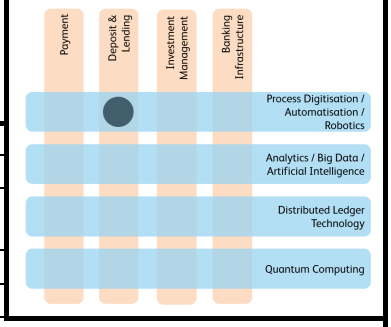


Year of foundation	2021
Domicile (canton)	ZH
Employees … of which in CH	8 8
Valuation	CHF 3,800,000
Total funding	CHF 1,800,000
Board members	André Pierre Müller, Ronald Strässler
Management team	Stephan Kei Nufer, Didier Christoph Marcel Matthey
Key partners	

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Yeldo SA
https://www.yeldo.com/

Yeldo grants direct digital access to institutional grade real estate investments.



Year of foundation	2017
Domicile (canton)	TI
Employees … of which in CH	10 10
Valuation	
Total funding	
Board members	Alberto Montorfani, Antonio Borgonovo
Management team	Antonio Borgonovo, Matteo Pitton, Marco Margnini
Key partners	Fidinam SA (Switzerland) / CONCEDUS GmbH (Germany)

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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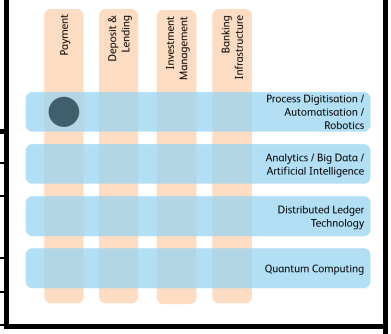
Yourasset AG
https://www.yourasset.com/

Founded in 2020, Yourasset is a Swiss company positioned at the unique intersection of tech, finance, and horology. The company was founded based on the principle that today, many hard luxury goods - especially fine watches - behave like assets rather than simple consumer goods, and therefore a digital ecosystem needed to be created to service them accordingly.

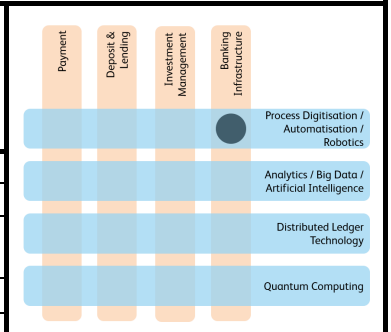


Year of foundation	2020
Domicile (canton)	ZH
Employees … of which in CH	6 4
Valuation	
Total funding	
Board members	Stephan Kolz, Moshe Schlisser
Management team	Stephan Kolz, Gabriel Tanguay, Meera Anand
Key partners	Microsoft for Startups, Cembra Money Bank AG, various brand, merchants from the luxury goods industry (visit our partner section on yourasset.com)

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

Yuh SA
https://www.yuh.com/

Yuh, the free 3-in-1 financial app to pay, save & invest.
Meeting modern financial needs at the tap of an app, Yuh combines 3 functionalities: money management (pay), savings solutions (save) and investment innovation (invest) with an effortless and intuitive UX. It is the most complete & innovative finance app offering on the Swiss market in 4 languages.



Year of foundation	2021
Domicile (canton)	VD
Employees … of which in CH	45 45
Valuation	
Total funding	
Board members	Marc Bürki, Hans-Rudolf Köng
Management team	Diego Bigger, José Carlos Nunes Rosa, Markus Schwab, Sonia Milici
Key partners	Joint venture between PostFinance & Swissquote

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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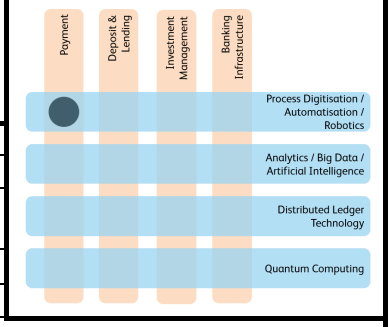
zahls.ch - siebenberge gmbh
https://www.zahls.ch/

With zahls.ch, receiving payments is easy. Integrate various payment options such as credit cards, PostFinance or TWINT into your online shop with zahls.ch.



Year of foundation	2020
Domicile (canton)	SG
Employees … of which in CH	2 2
Valuation	
Total funding	
Board members	
Management team	Adrian Brügger, Ivan Louis
Key partners	Payrexx AG

Customer segments		Channels	Key activities	Revenue streams	
B2B	National	Personal	Programming & engineering	Interest	Licence fee
			Marketing & finding clients	Commission	SaaS
B2C	International (incl. CH)	Digital	Operat. business & serving clients	Trading	Data
					Advertising

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Appendix

Source and affiliation to one of the four PEST dimensions for each indicator of the FinTech hub ranking:

Publisher	Factor	Source	Dimension
2THINKNOW	Innovation Cities	Innovation Cities Index	Technological
App Annie Intelligence, International Monetary Fund	Mobile App Creation	World Economic Outlook Database October	Technological
AT Kearney	Global Cities Report	Global Cities Report	Social
Clarivante Analytics	Scientific and Technical Publications	World Economic Outlook Database October	Technological
GitHub	GitHub Commits	GitHub; United Nations, World Population Prospects	Technological
Global Entrepreneurship Research Association	Entrepreneurship Policies and Culture	Global Entrepreneurship Monitor	Economic
Henley & Partners	Passport Acceptance	Henley & Partners Passport Index	Political/legal
IHS Markit	Political and Operational Stability	Country Risk Scores	Political/legal
	Software Spendings	Information and Communication Technology Database	Technological
IMD	Digital Competitiveness	IMD World Digital Competitivess Ranking	Technological
	Smart City	Smart City Index	Technological
	Talent Competitiveness	IMD World Talent Ranking	Social
InterNations	Expat Ranking	Expat Insider Survey	Social
Insead, The Adecco Group, Google	Global Talent Competitiveness	Global Talent Competitiveness Index	Social
Institute for Economics and Peace	Global Peace	Vision of Humanity Global Peace Index	Political/legal
International Labour Organization	Female Employment Advanced Degree	ILOSTAT Annual Indicators	Social
	Knowledge-Intense Employment	ILOSTAT Database of Labour Statistics	Social

Publisher	Factor	Source	Dimension
International Monetary Fund	Foreign Direct Investments	International Financial Statistics and Balance of Payments databases	Economic
	Domestic Credit to Private Sector	International Financial Statistics and Balance of Payments databases	Economic
International Telecommunication Union	Mobile Cellular Subscriptions	International Telcommunication Union, World Telecommunication/ICT Development Report and database	Technological
	ICT Access	World Telecommunication/ICT Indicators Database	Technological
	ICT Use	World Telecommunication/ICT Indicators Database	Technological
	Cybersecurity	Global Cybersecurity Index	Technological
Mercer	Cost of Living	Mercer's Cost of Living Ranking	Social
Mesopartner & Analyticar	Infrastructure Quality	Global Quality Infrastructure Index Report	Political/Social
NUMBEO	Prices by City of Average Monthly Net Salary	Average Monthly Net Salary Index (After Tax) (Salaries And Financing) by City	Economic
	Purchasing Power	Local Purchasing Power Index by City	Economic
	Quality of Life	Quality of Life Index by City	Social
OECD	PISA Ranking	PISA Results	Social
Portulans Institute	Network Readiness	Network Readiness Index	Economic
QS Quacquarelli Symonds Ltd	University Ranking	QS World Universtiy Ranking, Top Universities	Social
Reporters without Borders	Press Freedom	World Press Freedom Index	Political/legal
Tax Justics Network Limited	Financial Secrecy	Financial Secrecy Index	Economic
The Heritage Foundation	Investment Restriction	Index of Economic Freedom	Political/legal
	Financial Restriction	Index of Economic Freedom	Political/legal

Publisher	Factor	Source	Dimension
The World Bank	Value of Stocks Traded	World Federation of Exchanges Database	Economic
	Domestic Market Scale	World Economic Outlook Database	Economic
	Cost of Redundancy Dismissal	Doing Business Report	Political/legal
	Ease of Getting Credit	Doing Business Report	Economic
	Ease of Protecting Minority Investors	Doing Business Report	Economic
	Ease of Resolving Insolvency	Doing Business Report	Economic
	Starting a Business	Doing Business Report	Economic
	Applied Tariff Rates	World Development Indicators Database	Economic
	Gov. Effectiveness	Worldwide Governance Indicators	Political/legal
	Regulatory Quality	Worldwide Governance Indicators	Political/legal
	Human Capital	Human Capital Index and Components	Social
The World Bank and Turku School of Economics	Logistics Performance	Logistics Performance Index	Social
Thomson Reuters	Joint Venture Deals	Thomson One Banker Private Equity, SDC Platinum Database	Economic
	Venture Capital Deals	Thomson One Banker Private Equity, SDC Platinum Database	Economic
Trading Economics	Corporate Tax Rates	List of Countries by Corporate Tax Rate	Political/legal
Transparency International	Corruption Perception	Corruption Perceptions Index	Political/legal
UNESCO Institute for Statistics	Expenditure on Education	UIS Online Database	Social
	R&D Expenditure	UIS Online Database Eurostat, Eurostat Database	Technological
	Government Funding per Secondary Student	UIS Online Database	Social
UN Habitat	Cities Economic Competitiveness	Global Economic Competitiveness Report	Economic

Publisher	Factor	Source	Dimension
UNESCO Institute for Statistics	Graduates in Science and Engineering	UIS Online Database	Social
	Tertiary Inbound Mobility	UIS Online Database	Social
	Pupil-Teacher Ratio	UIS Online Database	Social
	Research Talents in Businesses	UIS Online Database Eurostat, Eurostat Database	Technological
	Researchers	UIS Online Database Eurostat, Eurostat Database	Technological
	School Life Expectancy	UIS Online Database	Social
	Tertiary Enrolment	UIS Online Database	Social
United Nations Public Administration Network	E-Participation	e-Government Survey	Technological
	Gov. Online Services	e-Government Survey	Technological
Wiley	Digital Skills	Digital Skills Gap Index	Social
World Economic Forum	Cluster Development	Executive Opinon Survey	Social
	University-Industry Collaboration	Executive Opinon Survey	Technological
World Federation of Exchanges	Market Capitalisation	World Bank's World Development Indicators Database	Economic
World Intellectual Property Organization	Patents by Origin	World Economic Outlook Database	Technological
World Trade Organization	ICT Services Imports	Trade in Commercial Services Database	Technological
	IP Payments	Trade in Commercial Services Database	Technological
World Trade Organization and United Nations	High-Tech Imports	Comtrade Database	Technological
Z/Yen Group, China Development Institute	Global Financial Centres	Global Financial Centers Index	Economic

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