



Future of Wealth Management

Harvesting the Power of Data and Technology

A SIX White Paper



Lucerne University of
Applied Sciences and Arts

**HOCHSCHULE
LUZERN**

Business
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The competence center Investments at the Lucerne University of Applied Sciences and Arts is active in education, training and research. It is mainly concerned with the areas of wealth and asset management with a special focus on digital and crypto assets as well as sustainability.

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Foreword

Covering about one quarter of the total global wealth and thus generating economic growth and creating jobs, Switzerland is one of the world's leading locations for cross-border wealth management. However, this status cannot be taken for granted and it is crucial to constantly reflect on the realities in which the industry operates and be ready to adapt to new and changing environments.

Being aware of the great importance of wealth management to the Swiss financial industry, its economy and globally, SIX aims to understand how current trends and developments are shaping the future of wealth management, especially with regards to the increasing power of data and technology. It is essential for the Swiss wealth management industry to continuously monitor the drivers of change and build up the necessary competencies.

To be able to get a holistic view and expand our thinking, we partnered with the Lucerne University of Applied Sciences and Arts and conducted a study in a joint endeavor. The goal of this whitepaper was to examine the current state of Swiss wealth management, discuss global trends and developments and derive our perspectives on the value drivers that are expected to shape the future of the industry.

We believe this white paper, with its special focus on the power of data and technology, will provide an important contribution to the overall picture of the possible future of Swiss wealth management. We aim to raise awareness of the set of adaptations needed in the industry to maintain its competitiveness over the long term.

With that we wish you an exciting and insightful read, and hope you will enjoy the findings as much as we did.

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Executive Summary: The White Paper in Brief

Future of Wealth Management

Harvesting the Power of Data and Technology

Wealth management is considered one of the most important business areas in the Swiss financial industry with trillions of Swiss francs in private assets managed by resident banks. However, as with other areas of finance, the wealth management industry is facing a number of challenges, especially with regard to technology and handling data.

Combined with clear trends such as digital transformation, changing client needs, dynamic regulatory frameworks and the rise of new competitors, this creates uncertainties around the future shape of the Swiss wealth management business and potentially significant changes to its operating model and the value chain. Hence the key question is how the Swiss wealth management industry should position itself and adapt to this increasingly data- and technology-driven world to sustain its competitiveness in the future.

The white paper “Future of Wealth Management: Harvesting the Power of Data and Technology”, which emerged from a joint project of SIX and the Lucerne University of Applied Sciences and Arts (HSLU), is intended to provide input into answering this question and can thus serve the industry in helping to explore the undergoing changes

and enrich its understanding relating to potential implications for the future of wealth management.

The study is divided into three parts. The first part provides an overview of the current state of Swiss wealth management by describing the size of the industry, the current business model and value chain, as well as discussing the current challenges and pain points. The second part highlights current global trends and value drivers relevant to wealth management going forward, whereby special attention is devoted to data- and technology-driven drivers such as open financial ecosystems, data requirements & data analytics and sustainability. The third part aims to synthesize the insights gained in the first two parts and derive practical implications. The findings obtained for each of the three parts are summarized below.



Part 1: The Swiss Wealth Management Industry Today

At the end of 2019, Swiss banks managed a total of CHF 3.7 trillion in private assets, with 62 percent, or CHF 2.3 trillion in absolute terms, originating from foreign clients. This makes Switzerland the globally leading center for cross-border wealth. Despite this preeminent role, there are various challenges and pain points in the industry. For the wealth management value chain, there is a discrepancy between the strategic relevance of asset and client relationship management and the existing competencies in these areas, which could potentially impede the future success of the industry. In addition, challenges in the area of technology and data are particularly apparent. These include the lack of IT skills, the existence of data graveyards and insufficient data quantity and/or quality. Furthermore, declining profitability, labor costs, regulatory requirements and limited customer access, especially with regard to the mass segment, also pose some additional difficulties for the industry.

Part 2: Key Developments in Swiss Wealth Management

There are a variety of social, technological, economic and political macro trends that are expected to influence the operating model and the value chain of wealth management. In our view, these trends can be consolidated into three main value drivers that will decisively

shape wealth management. Open financial ecosystems represent the first value driver, as they facilitate interaction and exchange between a variety of players in the wealth management industry, thus enabling new business models. In doing so, they can serve as a catalyst for the second value driver, namely the increased generation of value through data and its analysis. In particular, the sophisticated use of data can lead to efficiently tailor wealth management solutions to specific customer needs. Data and analytics will also be increasingly in demand in the area of sustainability, the third value driver, as this becomes another pillar in the investment process alongside customer risk aversion, return expectations, and liquidity constraints.

Part 3: Implications for Swiss Wealth Management

Based on the current status of Swiss wealth management as well as observable developments, four main implications for the industry can be derived, which consistently revolve around technology and data. These are:

1. Increasing Importance of Data & Analytics

While the use of data and corresponding analytics is widely used in processing, it is not currently widespread in some other areas like client relationship management.



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It will become a key resource for competitive future wealth management, as it allows for new business models and new ways to generate added value. In particular, the consideration of external non-financial information opens up the potential for truly holistic wealth management services that incorporate the customer's entire life situation. However, this requires the availability of high-quality data and a robust infrastructure, which is not yet in place for most wealth management providers. Moreover, data security is also a critical factor for harvesting the power of data. This particularly includes protecting data when calculations involving different parties are to be performed. Privacy-enhancing technologies can help to remedy this issue, but again require corresponding IT skills.

2. Open Financial Ecosystems for Operations

The exchange of data and services not only within the wealth management industry but also with other external providers will increasingly break up the traditionally holistic wealth management value chain into different segments with specialized offerings. Such a demand-driven "as-a-service" operating model can serve not only to obtain missing resources and competencies externally, but also to reduce high personnel costs, one of the biggest challenges in the industry. Open ecosystems built as a platform represent an efficient solution and are already being used successfully in other industries. For wealth management, open financial ecosystems could help source methodological and conceptual services, for example, regarding AI or big data techniques for data-driven client segmentation, recommender systems or potential analysis, as

these are often not available internally. However, for the future success of ecosystem-oriented Swiss wealth management, the use of the best competencies in the field of IT interfaces is crucial.

3. Sustainability as the New Normal

The importance of sustainability in wealth management will continue to grow steadily driven by changing client needs and regulatory requirements. ESG criteria must be part of the investment process to provide holistic wealth management services. However, the availability of high-quality ESG data as the basis for making sound and good investment decisions remains a major challenge for the industry. Reasons for this include the fact that most ESG data is self-reported by companies, the lack of comparability between different ESG data providers, and difficulties in linking ESG data to sustainable development goals in a meaningful way. One driver for promoting more consistent and accurate ESG data is the evolving regulatory requirements for companies, alongside innovative technology-based approaches by FinTech companies.

4. Regulation as a Driver of Innovation

Although regulatory pressures on wealth management will remain high, particularly in the area of data and its use, alongside sustainability, the relevant regulations provide an opportunity for further business model innovation in the industry. Therefore, data specialists and third-party vendors will play a critical role as the industry evolves.

Summary

Swiss wealth management is under pressure to change, prompting the industry to adapt its business model and value chain. In particular, the industry must proactively embrace developments toward data-driven value creation via open financial ecosystems and internalize the increasing importance of sustainability. If this succeeds, Switzerland can continue to operate as one of the leading locations for wealth management.



1 The Swiss Wealth Management Industry Today

Switzerland has gained a reputation for its strong position in wealth management. However, this status cannot be taken for granted; it requires constant reflection on the realities in which the industry operates and an adaptation of business models to the drivers of change. This study is intended to contribute here by providing the industry with a corresponding assessment so that it can prepare for the future.

A general evaluation of today's Swiss wealth management is the aim of this first chapter, including a discussion of key figures, the current operating model and value chain, as well as pain points perceived by the industry.¹

1.1 Size and Composition

The Swiss financial center, with its over 240 banks and many other participants such as family offices and independent asset managers, offers a wide range of financial services and is of great importance for the Swiss economy. A significant part of this is wealth management², with CHF 3.7 trillion of private assets managed at Swiss banks as of 2019. This represents about 46 percent of total assets (CHF 7.9 trillion) managed at banks in Switzerland for private, corporate and institutional clients (SBA, 2020).

As shown in Figure 1, the total volume of CHF 3.7 trillion in Swiss wealth management is composed of CHF 1.4 trillion assets owned by domestic private clients and CHF 2.3 trillion private assets originating from customers abroad, spread across the globe. This makes Switzerland the world's leading location for cross-border wealth management, with a share of around one quarter of the total volume (SBA, 2020). In the past years, total assets managed by Swiss banks have increased and are expected to grow, albeit at a slower pace than international competition³.

In addition to growth in assets, an increase can also be observed with regard to the revenues generated by the industry. As shown in Figure 2, in 2019 revenues of Swiss wealth management amounted to CHF 28.8 billion and estimates indicate an increase to CHF 30.9 billion by 2024. However, rising revenues cannot keep pace with the growth in assets under management, resulting in a declining return on assets (RoA)⁴. While the RoA stood at 87 basis points in 2014, this margin declined to 77 basis points in 2019, and is expected to drop further in the coming years⁵.

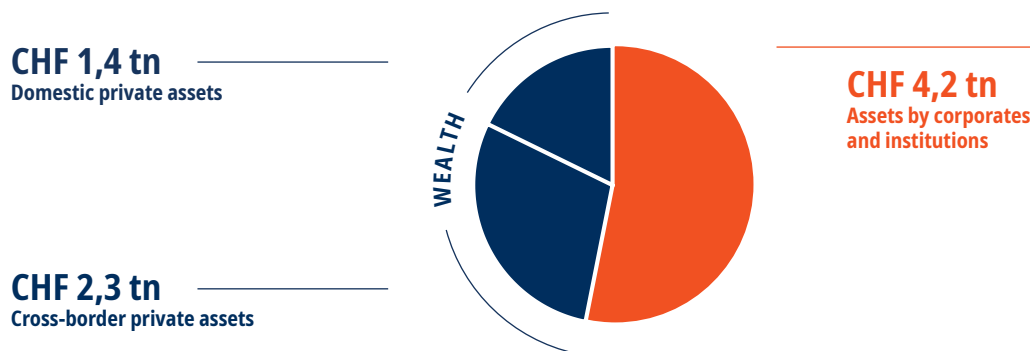


Figure 1: Segmentation of assets under management at banks in Switzerland. Source: SBA (2020) based on BCG (2020)

- 1 Please note that a glossary is included at the end of the study to define certain terms that may not be familiar to the reader and are not further explained in the text.
- 2 For a definition of the term "wealth management" as used in this study, see Appendix A.
- 3 Switzerland is followed by Hong Kong and Singapore, with USD 2.1 trillion and USD 1.2 trillion assets under management respectively. Due to the high growth rate driven by strong inflows from Mainland China, which has recorded strong growth in its wealth pool in the past years, it is expected that Hong Kong will overtake Switzerland in terms of cross-border wealth volume by 2023 (BCG, 2021).
- 4 Return on Assets (RoA) is a measure highlighting how much gross revenue Swiss wealth management achieves per one Swiss franc of assets under management.
- 5 This decrease over the past five years has been more pronounced in cross-border wealth management than in the domestic business (SBA, 2020).

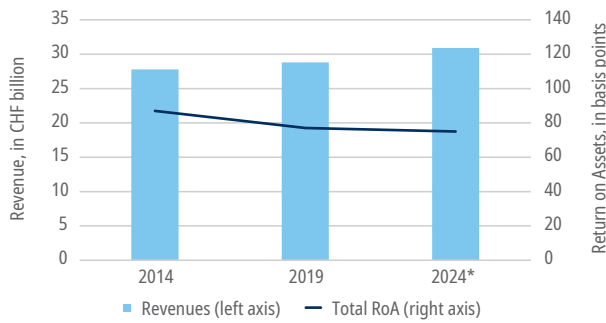


Figure 2: Revenues and RoA in Swiss wealth management. Source: SBA (2020) based on BCG (2020)

1.2 Current Operating Model and Value Chain

To further understand the general development of the Swiss wealth management industry, it helps to review the current state of its operating model and the underlying value chain as well as the distribution of wealth in Switzerland and globally.

As shown in Figure 3, the wealth management operating model can be broken down into four main blocks. The first three describe the core processes, while the fourth provides an overview of service models in wealth management and the corresponding value chain.

Operating model. The core processes described in the blocks *Clients and Products*, *Operations* and *Support Infrastructure* are similar across all service models in wealth management. The first block relates to customer acquisition, the sale and distribution of the offering, customer care and retention as well as product development and management. The latter two blocks can be attributed to asset administration and usually deal with back and middle office processes, as well as the provision of IT and data management solutions (HSLU & Asset Management Association Switzerland, 2020). For wealth management service models, a distinction is typically made between advisory and discretionary mandates, as well as execution-only business (PAM Insight, no date).⁶

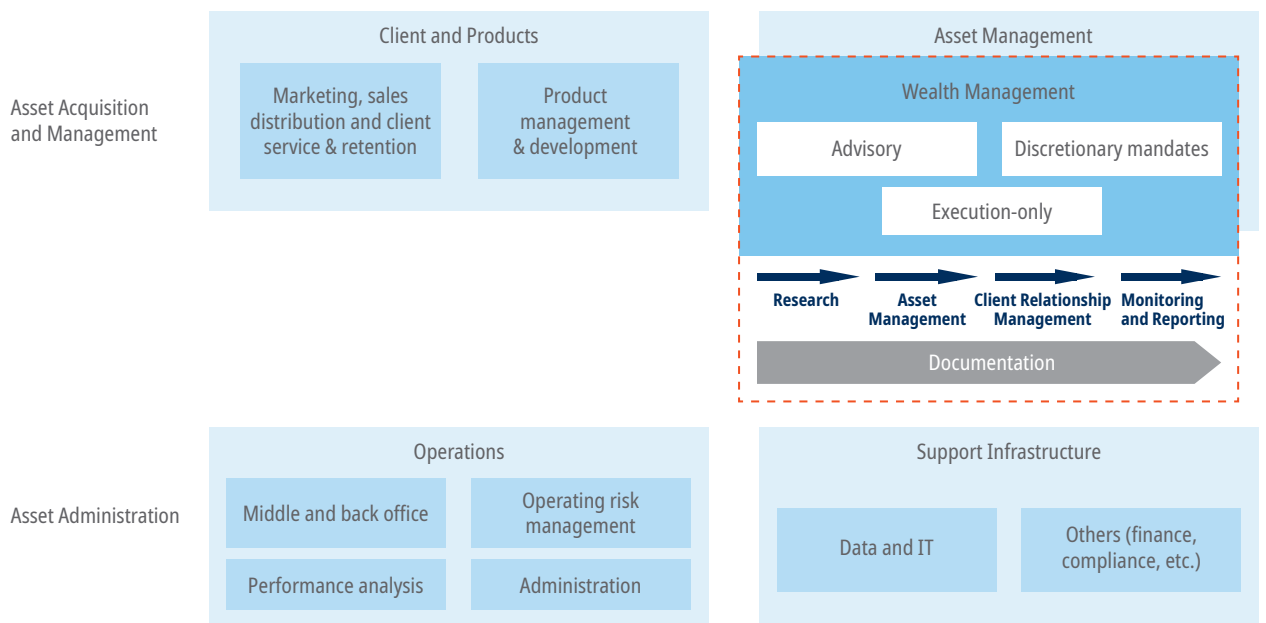


Figure 3: Wealth management operating model and value chain based on HSLU & Asset Management Association Switzerland (2020) and Oliver Wyman (2015)

⁶ Advisory mandates cover all services related to holistic investment advice, with the client ultimately deciding on the execution of the proposal. In the case of discretionary mandates, the mandated financial institution manages the client’s assets directly on behalf of the client at its own discretion, in compliance with a predefined investment objective. In the execution-only model, the financial institution merely executes the customer’s investment decisions without providing customer-specific investment advisory.

Value chain. The wealth management value chain comprises various core processes that contribute to value creation. As shown in Figure 3, these include research, asset management (AM), client relationship management (CRM), monitoring & reporting, and documentation, which in turn can be broken down into specific activities described in more detail in Appendix B. Note that these core processes are mainly built around wealth advisory and discretionary mandates, while these do not have the same relevance for the execution-only service model. The channels through which the services and products are included in the wealth management value chain can differ. A distinction is typically made between purely personal (e.g. personal advisory) and digital channels (e.g. digital execution-only investment platform), as well as a hybrid form of both.

Distribution of wealth. From a distribution perspective, wealth management services are not offered in the same form to all customer segments. Rather, the degree of personalization and the range of offerings depend on the customer’s wealth. A distinction is generally made between the mass or retail market, affluent individuals, high-net-worth individuals (HNWI) and ultra-high-net-worth individuals (UHNWI). Depending on the level of personal wealth, the monetary demarcation between the different segments can vary across different financial institutions globally.

Figure 4 shows the distribution of wealth in Swiss society and at the global level according to the Global Wealth Report 2021 from Credit Suisse, where wealth is defined as total financial and real assets minus debts. In Switzerland, 46 percent of adults have a total wealth of lower than USD 100,000, compared to 88 percent globally; and 40 percent between USD 100,000 and USD 1 million, compared to 11 percent globally. In contrast, adults in Switzerland with between USD 1 to 5 million total wealth account for 13 percent of the total population, compared to only 1 percent globally (Credit Suisse Research Institute, 2021).

Distribution of Wealth

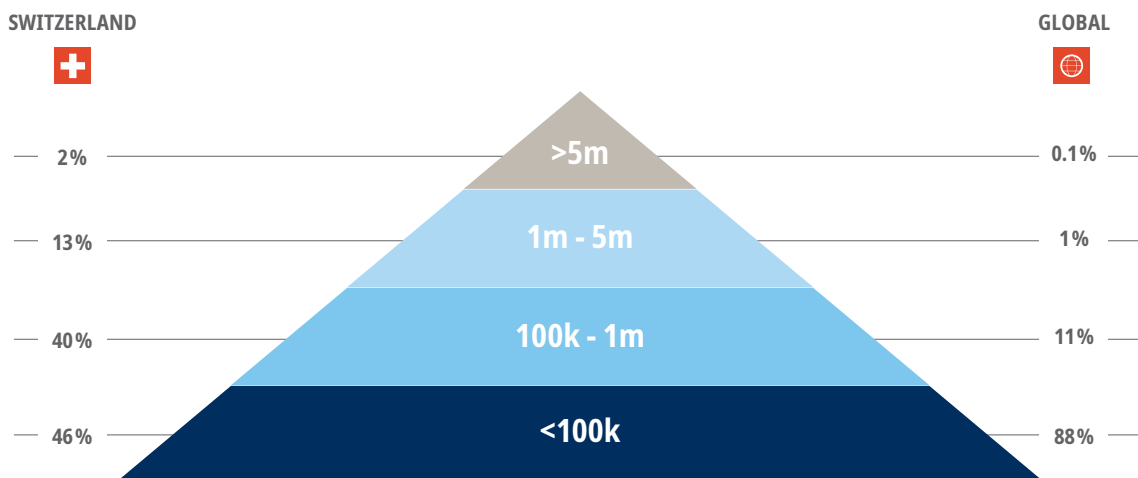


Figure 4: Distribution of wealth for Switzerland and globally, USD, 2020. Source: Credit Suisse Research Institute (2021)

1.3 Industry Pain Points

Although Switzerland is a globally recognized hub for wealth management and even a world leader in the corresponding cross-border business, the industry also faces certain pain points and challenges.

To identify these, nine structured interviews with banking professionals were conducted, with the sample including representatives from cantonal banks, Raiffeisen banks, foreign-controlled banks, banks specialized in exchange, securities and asset management business, and other banks. A more detailed description of the methodological approach followed in this study is given in Appendix C. During these interviews, respondents were invited to assess five core processes of the wealth management and investment advisory service models, i.e. research, asset management, client relationship management, monitoring & reporting, and documentation, with regard to their strategic relevance and the available competencies.

As shown in Figure 5, **the client relationship management represents the highest strategic relevance** with regard to wealth management, and the advisory business in particular, followed by asset management. This can be explained, at least in part, by the fact that banks have to adopt a modern, customer-focused service approach as a result of constantly changing customer needs and increasing competition in the industry. Research is assessed as the third most important process from a strategic perspective, **while documentation and monitoring & reporting reveal the lowest**, but still sizable, strategic relevance. The comparatively lower strategic relevance of the latter two processes can be explained by the perception of them as hygiene factors of a bank, which must be implemented, also partly driven by legal requirements, and, in banks' view, shows comparably little potential for differentiation.

Assessing Five Core Processes

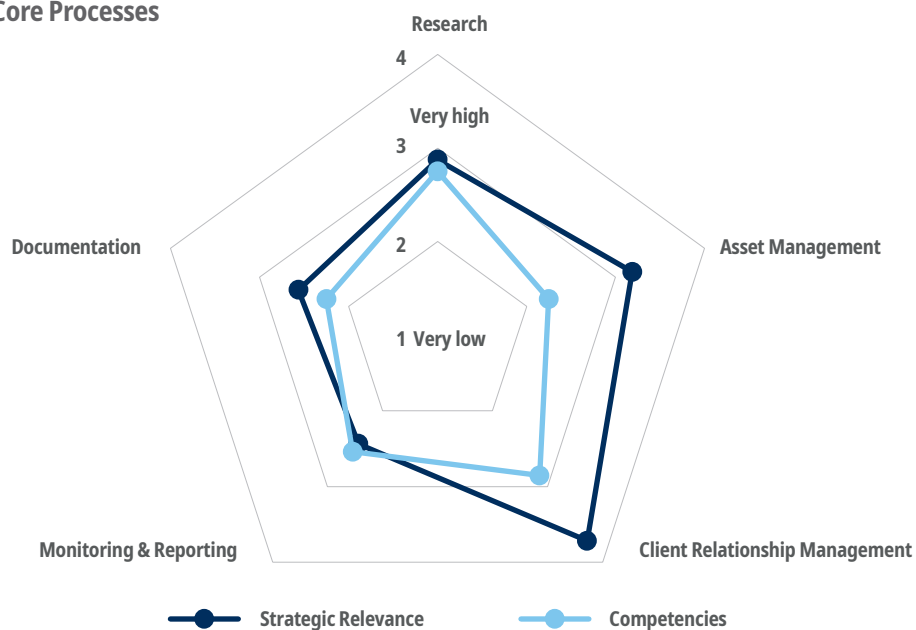


Figure 5: Analysis of wealth management core processes from the perspective of the individual banks at which the interviewed experts are employed (1=very low, 4=very high)

With regard to the competencies available at the surveyed banks, **the greatest expertise is available in the area of client relationship management** which generally is in line with its high strategic relevance. The second largest competencies are found in the area of research. This might be explained by the fact that some banks position themselves in certain niche markets and the corresponding expertise, as a consequence, needs to be generated in-house. While monitoring & reporting is the process with the third largest existing competencies, **the expertise regarding documentation and asset management is lower but still in the medium range**. The lower level of competencies in asset management could be attributable to the circumstance that many banks do not offer their own products and do not independently define their product strategy, and therefore do not need to have corresponding in-depth expertise internally.

The experts surveyed were also asked to name further (exemplary) pain points and challenges they perceive in their own institution. Table 1 provides an overview of the most frequently mentioned, whereby these relate mainly to the service models of advisory and discretionary mandates, where the differences are comparatively small, and lower than to the execution-only model.

 **Pain points / challenges**

	Description
Lack of IT expertise 	In addition to the insufficient presence of certain competencies in the core processes of wealth management, there is also a knowledge gap concerning the back office of Swiss wealth management providers, particularly in the area of IT. This is underscored by the relatively low share of IT-related costs in total personnel expenses and the comparably large share of IT-related costs in general and administrative costs at Swiss banks, indicating a high degree of outsourced IT services (HSLU, 2021). The lack of internal tech DNA due to the often highly hierarchical sales-oriented corporate culture leads to limited innovation and vision in terms of digitization and operational inefficiencies (e.g. with regard to the interaction of different processes, tools and systems in use).
Data graveyards 	The Swiss wealth management industry continuously produces a large amount of data and information, be it, for example, through research activities or client interactions, which is however mostly used in isolation and therefore not considered and analyzed in a larger context. The data collected becomes a data graveyard and its great potential for value creation lies fallow. The main causes are inefficient legacy data systems and processes (e.g. unstructured and incompatible data sources) and a lack of analysis skills.
Insufficient high-quality data 	To provide personalized wealth management, detailed and up-to-date information about clients but also on the considered asset universe is needed. However, the data available to wealth managers today usually does not go beyond the internally collected information in customer interactions as well as externally sourced market & reference data. Further enriching this data with external customer but also investment-specific data from public sources or specialized providers (e.g. in the area of ESG) could enable significant added value in the form of more accurate wealth management services tailored to a client's needs. However, wealth managers often lack confidence in the security of data exchange with external partners or the technological interfaces for secure integration.
Declining profitability 	The Swiss wealth management is experiencing a decline in profitability, as indicated by the falling return-on-assets (see Figure 2). The reasons for this are manifold and are strongly related to current developments in the industry, which are discussed in detail in Chapter 2.
Cost of labor 	The main factor driving costs in wealth management is personnel expenses. The holistic value proposition of wealth management requires broad and deep financial knowledge, which is currently provided by a variety of specialists. However, continuous capacity utilization of specific expertise is often not ensured and drives up costs. Reconciling these costs with the revenues generated is considered difficult.
Regulation 	For the internationally oriented Swiss wealth management industry, continuous compliance with national (e.g. FinSA) as well as global regulations (e.g. in tax matters) is essential to minimize legal and reputational risks. However, the continuously changing regulatory requirement (see paragraph on political trends in Section 2.1) is a major challenge and a significant cost factor for Swiss wealth management. Activities related to reporting, as well as maintaining multiple investor protection and suitability checks, are perceived as particularly expensive and extensive. The strong focus on regulatory issues also means that management capacities are tied up and not available for other future-oriented issues such as digitization.
Limited client access 	Many wealth management services currently focus on high-net-worth clients, such as those in private banking which often require a minimum amount of investable assets in the single-digit millions or higher (Crawley, 2019). This means that until now, only a limited number of private clients have been able to access corresponding services, and these have not yet been accessible to a large number of individuals (see Figure 4). One main reason for this lies in the difficulty of making clients with assets lower than seven figures profitable. Many personalized wealth management services are currently not highly scalable due to a lack of automated processes, for example, and therefore cannot be offered cost-effectively. Moreover, business models in wealth management are still predominantly product-oriented, i.e. they focus on sales instead of addressing the needs of different customer groups, including those from the mass market.

Table 1: Pain points and challenges voiced in the expert interviews

2 Key Developments in Wealth Management

This chapter takes a future-oriented view of wealth management. The first section describes trends relevant to the wealth management industry from multiple perspectives, while the sections that follow provide an in-depth look at three key value drivers for the industry going forward.

2.1 Macro Trends Impacting Wealth Management

Changing client expectations, new technologies and regulatory requirements, as well as the emergence of new market players such as FinTech and BigTech companies have brought profound changes to the financial industry. The wealth management space has also felt an impact of this phenomenon and as with traditional banking has experienced an urge to innovate as a response.

To see the complete picture of how the industry is changing and what strategic directions the wealth management firms should take as a response, it is important to look at global trends and developments in a holistic sense. Figure 6 and the analysis that follows give an overview of developments we believe are particularly relevant for the Swiss wealth management industry today. To examine those in a structured way we employ a framework provided by the STEP approach.

STEP is an acronym that stands for the following underlying dimensions: Social, Technological, Economic and Political. We use this framework as a guidance, noting that the trends mentioned are not intended to be exclusively categorized into one dimension or another, but rather lie on a continuous spectrum.

Social Trends

The social aspects of change relevant to wealth management include in particular the changes in the behavior and needs of customers. A growing group of bank customers is emerging who are tech-savvy, hungry for innovation and are keen to use digital channels via mobile devices (Accenture, 2020). This contrasts with the current largest customer groups in wealth management, i.e. adults from the baby boomer and older generations. In general, bank customers expect high-quality advice and customer proximity, while their loyalty to existing banking relationships is declining (Ernst & Young, 2021). Therefore, **consistent customer centricity** is becoming of crucial relevance for long-term success for all types of financial services, including wealth management.

From the customer's point of view, tailor-made and transparent wealth management solutions and a high level of comfort when using the offering are of particular importance. At the same time, some providers aim at providing mass customization, i.e. a flexibly scalable

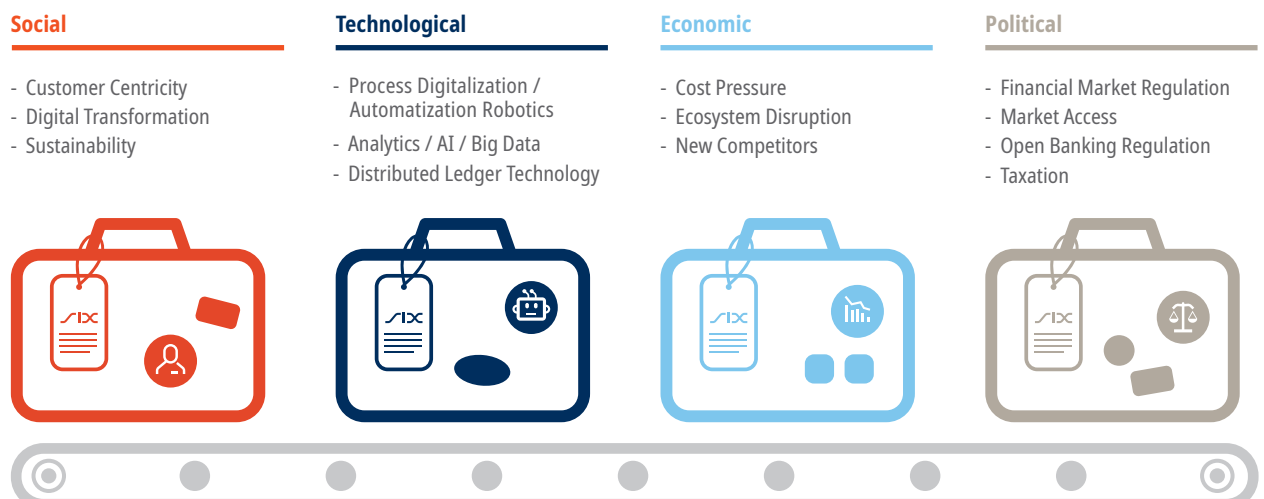
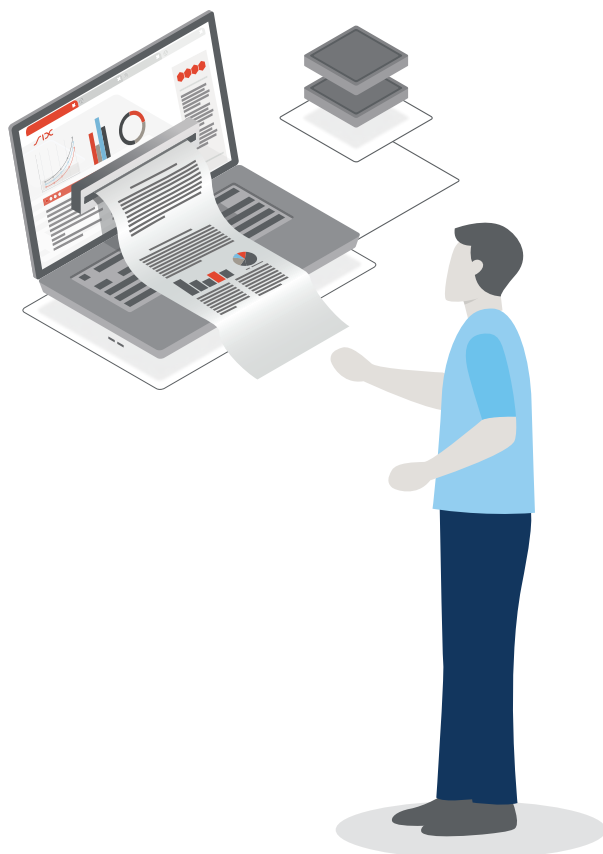


Figure 6: STEP classification of macro trends



service without sacrificing a high degree of personalization. Recent developments in this regard include the rise of passive investing in combination with robo-advisors and the growing need of the increasingly financially sophisticated and cost-aware mass market for customized financial services.

Customer centricity is also linked to a further trend, namely the general **digital transformation** of society. Young, tech-savvy people from Generation Z, i.e. the 1997 to 2012 birth cohorts, often use digital channels to do their banking. According to a study by the Lucerne University of Applied Sciences and Arts, 71 percent of people from Generation Z use mobile banking and 30 percent use chat functions to interact with their bank (Hafner, et al., 2020). With the digital native customer segment in mind, wealth management products and services will need to be increasingly digitized to capitalize on this emerging market potential. Given the social and demographic changes, the solutions offered need to be scaled up to meet demands of new and existing customers as they progress through their lifecycle and asset accumulation phases.

A third trend from the social dimension is the **increasing awareness of sustainability** issues, which affects the financial sector in general, but wealth management in particular. It is no longer sufficient to consider only a client's risk aversion, return expectations and liquidity constraints. Increasingly, sustainability preferences must

also be included in the process. In the United States, especially younger clients (<35 years old) perceive sustainability as an important factor when investing. Savers are motivated primarily by the prospect of avoiding harm from sustainability issues and they do not significantly differentiate between environmental and social impact (CISL, 2019). To grasp the individual motivation of each client to invest sustainably, ESG factors need to be part of the advisory process. However, according to the EY Banking Barometer 2021 report, only 51 percent of all Swiss banks currently include ESG factors in their investment advisory, one of the core services in wealth management (Ernst & Young, 2021). On the other hand, according to a study conducted in France and Germany, two thirds of retail investors would like to invest sustainably (Dupre, et al., 2020). With more regulations at the international and national level, combined with more reliable data, wealth management is also increasingly expected to provide more information about the sustainability risk and impact of an investment.

Technological Trends

The impact of technology on the design of financial services has undoubtedly accelerated in recent years. This is also true in the area of investment management, of which wealth management is a big component. As shown in Figure 7, according to the IFZ FinTech Study 2021, 46 Swiss FinTech companies were operating in the investment management⁷ space at the end of 2015; by the end of 2020, this number had more than tripled to 158. The right-hand chart reveals that of these 158 companies, roughly 40 percent apply comparably mature technological concepts from the field of **process digitization, automatization and robotics**, including, for example, the use of Application Programming Interfaces (APIs) that enable standardized interaction of processes and systems inside and outside the company. The chart also reveals that there is a significant share of Swiss FinTech companies founding their business model on more innovative technological concepts from the fields of **analytics, big data and artificial intelligence and distributed ledger technology**. In particular, recent innovations in the latter technology have led to the emergence of a new asset class of cryptographic assets that is

⁷ The figures shown relate to investment management more broadly. However, the analysis is still applicable to wealth management, as it represents a major component of investment management, and technological trends have a similar impact in both areas.

increasingly in demand by different types of investors (Mikhaylov, 2020) e.g. due to its potential for portfolio diversification. Please see further on this in Box 1.

Overall, the fact that the Swiss FinTech ecosystem, which is considered to be the innovative spearhead of banking, is becoming more mature and its business models are increasingly focused on corporate customers such as banks and asset managers indicates that these innovative technologies are increasingly finding their way into the Swiss financial services industry and changing it accordingly in the medium to long term. The materialization of FinTech-driven digitization with increasingly mature technological approaches has already been reflected to some extent in Swiss banks' ability to increase volumes under management while keeping costs constant, and thus improving efficiency over time (HSLU, 2019). However, more innovative, but in some cases not yet fully mature technologies continue to lack widespread application.

Economic Trends

From an economic perspective, the financial industry is experiencing increasing **cost pressure**, driven by falling margins and the growing demand for transparency.

In recent years, Swiss banks have managed to achieve some cost reductions primarily by lowering labor costs, which has been accompanied by a reduction in the number of employees. However, an increase in general and administrative expenses, of which a significant portion is IT-related and which can partially be explained by an increased degree of outsourcing at Swiss banks (HSLU, 2021), has offset the labor cost savings, resulting in constant total annual costs (Swiss National Bank, no date). Hence, cost pressure has not (yet?) led to a measurable impact in the total spending of Swiss banks. Furthermore, the majority of IT spending by Swiss banks predominantly targets operating business rather than innovative activities (HSLU, 2021). As a result, IT resources for digitization projects to reduce costs are generally rather scarce at Swiss banks.

One of the reasons for increasing cost pressure is the emergence of **new competitors** at two different levels. The first is hub level, which describes the increased international competition between the Swiss wealth management industry with other locations such as Hong Kong and Singapore. The second is the corporate level, which describes the increased involvement of technology-driven market participants such as FinTech or, more specifically, WealthTech companies. Competition is also

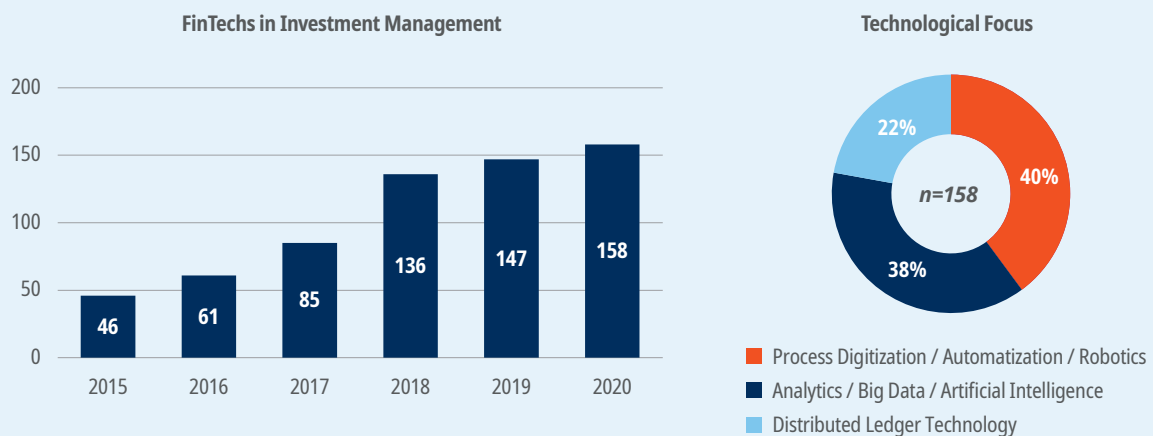


Figure 7: Swiss FinTech companies in the field of investment management and their technological focus, as per the end of 2020. Source: HSLU (2021)

BOX 1: DISTRIBUTED LEDGER TECHNOLOGY

One particular technology that stands out is the distributed ledger technology (DLT), sometimes also referred to as blockchain. The developments in this space over the past years have given rise to a significant transformation in many industries, including the traditional financial markets. This transformation is also often referred to as Decentralized Finance (DeFi). DeFi leads to a democratization of banking services through its open and permissionless access. DeFi may affect wealth management from two different perspectives. According to the interviews conducted, the two most relevant opportunities to build bridges between the traditional and the decentralized financial markets are the following:



TOKENIZATION OF NON-BANKABLE ASSETS

Non-bankable assets are illiquid assets that cannot be converted into cash in traditional banking but are an important component in wealth management. For example, they can offer potential for portfolio diversification. However, so far these advantages have been reserved mostly for wealthy clients, as such assets typically do not allow for fractional ownership and are not easily accessible. Tokenization is a process by which such non-bankable assets can be transformed into bankable assets by issuing tokens as representatives on a distributed ledger technology infrastructure. Hence, tokenized assets are transferable digital representations of values or rights and are designed using DLT in such a way that they cannot be copied or reproduced freely. This results in a better accessibility for all types of investors but also in an immutable record of ownership due to the transparency characteristic of DLT. In addition to works of art, other luxury goods and real estate, but also traditional securities such as stocks, represent potential subjects for tokenization.



SECONDARY MARKET FOR CRYPTOGRAPHIC ASSETS

The new asset class of cryptographic assets, including, for example, cryptocurrencies and tokenized assets, is typically part of a public decentralized network and can be traded by virtually anyone, which is why it is being closely scrutinized by regulators around the world. To realize its full potential, also in respect to capital markets, shorter settlement times and global access to liquidity with few restrictions and high operational resilience, a regulated secondary market for cryptographic assets are needed. This would give wealth management easy and regulated access to the innovative new asset class which then could be integrated into the asset management process. Many of the currently operating exchanges for cryptographic assets operate in a (partially) unregulated environment and are therefore not a viable option for established financial institutions. A regulated secondary market would remedy this situation and promote leveraging the potential of DLT-based assets for wealth management.

→ Both services, i.e. tokenization of assets as well as the access to a corresponding trading infrastructure, are important for wealth management to continue meeting the changing needs of its increasingly digital-savvy clientele, in particular to efficiently and securely offer the emerging asset class of cryptographic assets. However, the provision of the two services is best not offered by the financial institutions themselves, as the required technological expertise to implement and operate a corresponding infrastructure is not available to most of them, but by specialized external providers. Such a provider should be a regulated entity with expertise in banking, especially trading, and DLT, to integrate cryptographic assets into the existing financial market infrastructure and should enjoy the trust of industry in general.

being driven by new financial solutions such as purely digital brokerage solutions or the ability to invest directly into mutual funds without going through an intermediary. The development of lower-cost solutions or free-of-costs solutions is often enabled by technology and is difficult for many traditional financial institutions to implement because they are tied to bulky legacy systems that prevent or at least hinder such innovation.

Another reason is that new financial products and services can no longer be viewed in isolation. FinTech is being increasingly linked to **ecosystem disruption**, which describes the growing interconnectedness of industries and the emergence of partner networks that enable complete product and service solutions, often provided via plat-form-as-a-service or software-as-a-service sourcing models. Such ecosystems have already established themselves in other industries, such as the travel industry with Airbnb. This development may also lead to significant changes in existing business models in wealth management by breaking down the previously holistic value chain into its components. This may result in market participants taking on different specific roles, e.g. acting exclusively at the customer interface or operating as service and product producers. In the context of the general financial industry, there is a move towards open financial ecosystems that implies the exchange of data and services between financial services providers and third-party providers via available and published interfaces. Here the trend is away from individual collaborations toward platform solutions for a large number of market participants, changing the way value is created and captured. This development has increasingly come into focus as it enables new business models and has been observed in Switzerland, where there are already a number of platform providers. For further information, please refer below to *Open Financial Ecosystem* deep dive in the next section.

Political Trends

From a political dimension perspective, the **financial market regulation as an ongoing challenge** has been regarded as the biggest priority by US and European banks over the last few years (PwC, 2020) and is something that requires continuous changes and adaptation. Besides capital and risk management requirements and reporting obligations, investor protection is a major topic. With the establishment of the Financial Services

Act (FinSA) in Switzerland as a counterpart to MiFID II and PRIIPs regulation in the European Union, a variety of requirements have come into force to protect clients. These rules have a significant impact on the organization of financial service providers, their processes, the transparency, information and documentation in client-facing actions and even the knowledge of their wealth managers. Managing regulations and requirements proactively and efficiently in a holistic approach is expected to require further investments in IT, processes and relevant data, as well as ongoing monitoring of existing and new regulatory initiatives. As the recently published number of 613 sanctions and measures with a total value of EUR 8.4 million imposed by EU/EEA national competent authorities under MiFID II in 2020 (European Securities and Markets Authority, 2021) indicates that not being compliant is not an option.

Analogous to being compliant, non-discriminatory **market access** is a prerequisite for the strong internationally oriented wealth management services in Switzerland. One example of a relevant development in this context is the recently concluded negotiations between Switzerland and the European Union on an institutional framework agreement (InstA). One of its objectives is to guarantee Swiss companies access to the European single market and provide protection against discrimination in favor of EU competitors. In the view of the Swiss Bankers Association, this termination may lead to an economic standstill and the resulting uncertainty to a continuous erosion of market access (SBA, 2019). On the other hand, progress was made in the Brexit-driven reorganization of relations between Switzerland and the United Kingdom. In particular, the two countries issued a joint declaration of intent with the goal of liberalization and expansion of mutual market access in the area of financial services (SBA, 2020). However, the fact that the private assets managed by Swiss banks originating from the Far East, Latin America, the Middle East and Eastern Europe have shown stronger growth in recent years than those from Western Europe shows that market access to other regions is also of increasing importance (SBA, 2020).

Another trend, **open banking regulations**, which was partly touched on in the previous section, and describes the opening of financial institutions to third-party providers via APIs, has also certain political and regulatory implications. While in the European Union this opening

is anchored in the Payment Services Directive 2 (PSD2), in Switzerland there is no such regulation. To create good conditions for a market-driven implementation in Switzerland, the Swiss Bankers Association (SBA) published a set of guidelines for implementation in 2020 (SBA, 2020). Over time, a number of industry collaborations have emerged in Switzerland that define standards to promote open financial ecosystems in general, some with specific reference to wealth management (e.g. OpenWealth Association). This is intended to facilitate the exchange of, for example, data and financial services between market participants, which would allow easier access for technology or analytics providers in the area of wealth management. For more information, please refer further below to *Open Financial Ecosystem* deep dive in the next section.

The area of **taxation** represents another area of constant change, as past developments have shown. The introduction of a transparent global tax reporting mechanism via Automatic Exchange of Information and tax cost disclosure requirements under investor protection guidelines have had a profound impact on the taxation of financial products used in Swiss and international wealth management. For manufacturers and distributors, the Common Reporting Standard (CRS) and product disclosure requirement impose a blueprint for disclosing direct and indirect tax costs associated with products. The identification of potentially tax-harmful products has therefore become an obligation for financial advisors that needs to be considered in investment advisory. Whilst there is a cost associated in aligning product suitability with tax suitability requirements, the discrepancies between international market regulation (MiFID II) and national fiscal regulation allows wealth management firms to offer value-add services governed by a customer-centric approach. Tax suitability therefore offers new opportunities for wealth management firms to talk about the taxation of financial products offered unrelated to the topic of tax evasion.

Summary

The Swiss wealth management industry is exposed to a variety of social, technological, economic and political trends that affect the existing business and operating model in different ways. To maintain its leading position in the long term, the industry must continuously address the relevant developments and possibly change, innovate and perhaps even rethink itself. In our view, the trends described can be summarized into three key value drivers for the industry going forward. These are **1) Open Financial Ecosystems, 2) Data & Analytics, and 3) Sustainability**, which are discussed in more detail in the following sections.

2.2 *Deep Dive*

Open Financial Ecosystems



In general, open ecosystems can be understood as non-hierarchical systems between interacting organizations and are enabled by modularity and complementarity properties (Hakanen, 2021), with data as the key resource.

Ecosystems to Drive Innovation in the Financial Industry. While in other industries data-driven ecosystems are already established, for example, Airbnb in the travel or Uber in the transportation industry, for the most part banks today typically have access only to data generated through their own client relationships and to market data obtained from domain-specific market data aggregators. This data does not cover all client-, asset- or market-specific information relevant to holistic wealth management and therefore does not allow for fully customized products and services.

Ecosystems, typically offered, managed and operated by technology-driven companies, can alleviate these problems by facilitating interactions and exchanges of value (e.g. in the form of data) among a large number of participants. A general architecture for open financial ecosystems is given in Figure 8, distinguishing between five horizontal layers which are connected by Application Programming Interfaces (APIs) highlighted in red.

The top layer describes the end customer of financial products and services. The second layer is the front end, i.e. the part of an application that customers interact with. In addition to traditional financial institutions, this can also be provided by other (non-financial) parties such as Fin- and BigTech companies or retailers. In principle, neobanks can also be regarded as providers on this layer. They can therefore be seen as the front end to typically rather young customers who are, on average, more digitally savvy compared to previous generations but tend to have lower financial wealth (Kurz, et al., 2019) and thus represent a significant potential customer base for low-cost digital financial offerings. In addition to neobanks, there are other solutions with (currently) more specific relevance to wealth management, such as fully digital applications in the area of pension provision, like VIAC, Frankly or Freya in Switzerland in the area of third pillar retirement savings.

Front-end application providers like neobanks, e.g. neon in Switzerland or Revolut internationally, are often connected to external providers at the execution and custody layer where assets are booked, as they do not provide these services themselves. In practice, this is typically handled by a bank (“Open Banking”), but generally can also be carried out by another party (“Open Finance”) or, in the case of Decentralized Finance (“DeFi”), by distributed ledger technology.

The systematic handling of data is the fourth layer of an open financial ecosystem. It includes the storage, analysis and processing of data for the provision of financial products and services, whether by the front-end provider or the execution and custody service provider. The basis of each participant of an open financial ecosystem is the IT infrastructure. The four vertical layers on the right-hand side of the architecture in Figure 8 are relevant for the APIs that enable the necessary technical interconnectivity of participants and the different layers of an open financial ecosystem.

Open financial ecosystems are not yet widely established in the Swiss financial landscape. According to the IFZ FinTech Study 2021, one of the reasons is that Swiss banks do not yet consider the development of such ecosystems to be particularly important for their business, which is also underlined by the lack of pressure from customers to open up bank interfaces. However, the survey of Swiss CIOs conducted in the study shows that open financial ecosystems are expected to gain in significance in the foreseeable future, with greater potential being identified in the corporate customer segment than in the private customer segment. In terms of role in a financial ecosystem, most banks see themselves as aggregators, i.e. procurers of products and services from third parties, especially FinTech companies, other banks, and insurance companies, to distribute through their own channels.

Regulatory- and industry-driven initiatives. According to the survey participants, there are, however, some hurdles for a broad API-based exchange between financial institutions and third-party providers. These hurdles perceived by the banks include the relatively high cost and effort of implementation, as well as the (still) lacking standardization and security of APIs. To pro-

mote the success of open financial ecosystems and their adoption, it is important to reduce these existing barriers (HSLU, 2021).⁸ Platform solutions like bLink from SIX in Switzerland are one way to do this, as they usually set clear and uniform rules for the connection between participants and the operator takes responsibility for the security of the system. In general, the promotion of open financial ecosystems can be driven partly by the industry itself and partly by the regulator, which is why open banking, as a form of open financial ecosystems, is classified as a policy macro trend in this study (see Section 2.1), although it also has direct links to the other dimensions in the STEP framework.

In Switzerland, the OpenWealth Association initiative in particular has been dedicated to promoting open financial ecosystems in wealth management. The Association’s goal is to define a global open API standard to build a global wealth management community of certified WealthTech companies and financial institutions, as illustrated in Figure 9. The initiative envisions using the same API standard for customer management (cus-

tomers data and addresses), custody services (positions and transactions) and securities trading based on known semantic and established industry standards (ISO20022, FIX). In addition, the initiative focuses on standardized consent and security handling for reusable and secure strong customer authentication, knowledge sharing for best practice implementation and API capabilities, and a regulatory and compliance framework with the OpenWealth connectivity (OpenWealth Association, no date).

Openness to fragment the wealth management value chain. Open financial ecosystems allow for seamless API-based interaction between wealth managers and other (non-) financial service providers and therefore hold the potential to increase granularization of the wealth management value chain. The openness of the network enables the entry of new, highly specialized market players whose products and services may improve, complement or even disrupt individual existing wealth management processes and activities, thus achieving greater cost efficiency or cus-

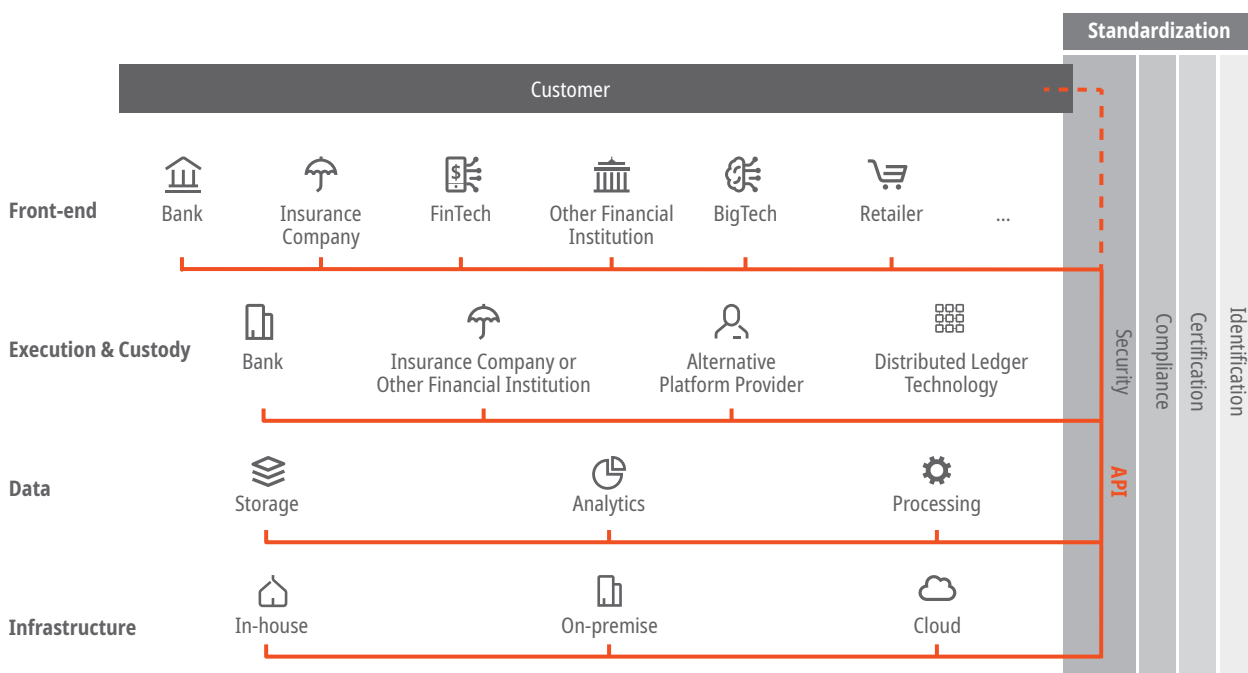


Figure 8: Architecture of open financial ecosystems. Source: HSLU (2021))

8 An overview of Swiss platforms for open financial ecosystems can be found in Chapter 6 of the IFZ FinTech Study 2021 which is available at <https://blog.hslu.ch/retailbanking/files/2021/03/IFZ-FinTech-Study-2021-1.pdf>

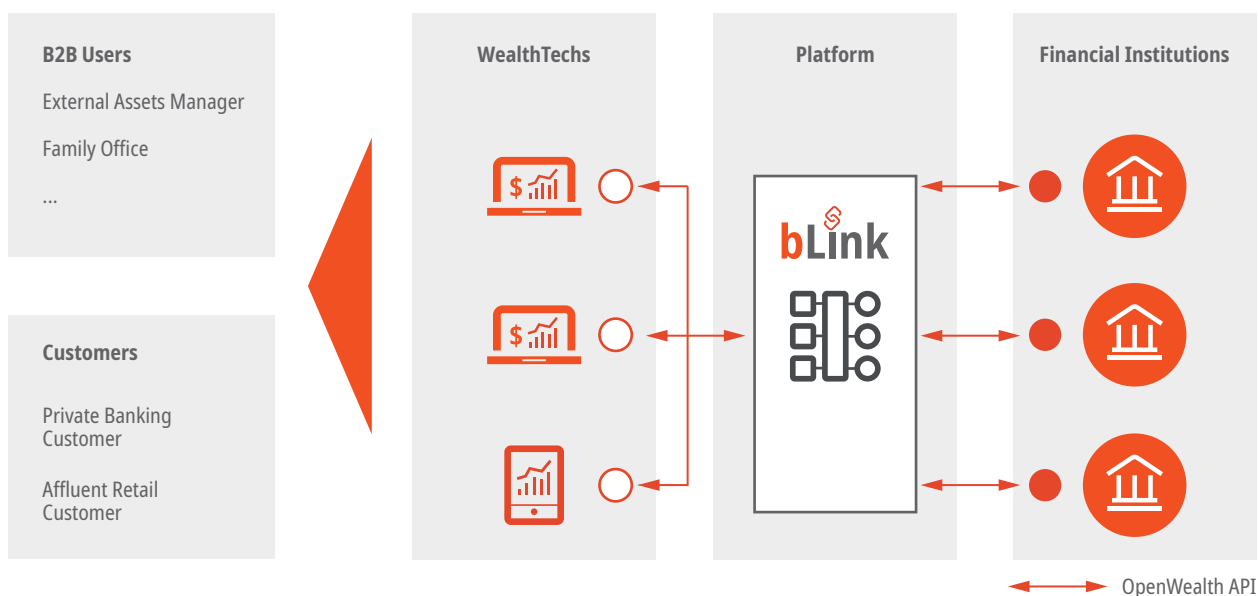


Figure 9: Example of the OpenWealth ecosystem operationalized via a platform like bLink from SIX. Currently Zürcher Kantonalbank and St.Galler Kantonalbank are exposing the OpenWealth APIs on the platform from SIX. The OpenWealth ecosystem adopted from OpenWealth Association (<https://openwealth.ch/>)

tomers focus. Established wealth managers cannot ignore this development or they will be squeezed out by new market entrants or risk an exodus of existing customers for reasons such as unsatisfied customer needs or in-efficiency. However, the new opportunities created by open financial ecosystems can also be embraced as an opportunity by traditional wealth managers. On the one hand, new distribution channels can be created to offer own products and services to third parties. On the other hand, an open network can also be used to obtain individual resources from specialists in line with demand. These resources may also include data and analytics services, which are described as a second value driver in wealth management in the next section.



2.3 *Deep Dive* Data & Analytics



Technological progress and the general digitization of society are leading to an ever-increasing amount of data being generated. Data-, analytics- and technology-driven business models are therefore on the rise in many industries. This development is also increasingly finding its way into wealth management and is seen as one of the key value drivers for the industry.

Markets to collect data. Data is a symbiotic good. This means that it typically is anti-rival, i.e. the value of data increases the more it is shared and used. One way to unlock the potential of data is **data markets**, like Microsoft's Azure Data Marketplace, where data can be made available and retrieved on a selective basis. Such markets can serve as the basis of an open financial ecosystem by providing an access-controlled standardized platform for various types of data. This data can be supplied by a number of parties, not only from the financial industry, but also from private customers, with the incentive being compensated once it is purchased by another party.

In general, data markets are suitable for the exchange of a wide variety of information but also competencies. An example of the latter is research generated by financial institutions that can be offered to interested parties. This is particularly relevant for wealth management, which not only relies on macro and fundamental research itself, but also for providing customers with tailored financial information. While large institutions do most of their research in-house, smaller banks often focus on niche markets and obtain general research as a white label solution from third parties for investment types and classes they are not specialized in. An open data market that enables the exchange of research between different providers could further improve wealth management services. For the researching banks, such a market could provide a new revenue channel by offering individual research results to other market participants for remuneration. The receiving financial institution on the other hand would benefit from an expanded supply of pay-on-demand information, without having to conduct its own research.

The increasing understanding in wealth management of the value of data, its bundling and exchange thus offers potential for a corresponding platform. The

requirements for the provider of such a data marketplace include a high degree of trustworthiness as well as a high level of competence in data security, since sensitive information could potentially be exchanged, and ideally existing interfaces to potential data suppliers and recipients.

Analytics to understand data. However, access to relevant data alone does not guarantee added value for wealth management. For this, it also needs to be analyzed accordingly, as represented in the second element of the data layer in Figure 8. Early adopters of **analytics** and related methodological concepts predominantly concentrated on functions related to risk and compliance, while more recently other activities in the field of marketing and services have come into focus (Accenture, 2021).

AI-driven analytics in wealth management can hereby help to increase personalization of products and services offered by better understanding and anticipating the needs of clients. In principle, a systematic computational analysis of data has the potential to enrich wealth management, and particularly investment advisory, across the entire value chain. Besides data-driven research approaches leveraging the capabilities of sophisticated analytical methods, asset management is also affected. For example, a financial institution could generate optimized data-driven product or investment strategies by applying modern concepts of quantitative finance. There is also potential in client relationship management, where a clear discrepancy between strategic relevance and available competencies can be observed for Swiss banks, for example, by enabling AI-driven customer profiling and thus more personalized wealth planning. In addition, value can be added by applying AI and related methodological concepts in the area of monitoring & reporting, for example, by financial institutions improving the potential analyses of their customers (e.g. by taking into account a supplemented database that provides a more detailed view of a customer's financial and possibly also non-financial situation).

Many financial institutions, however, lack conceptual knowledge in the area of analytics, artificial intelligence and big data techniques, and thus great potential for data-driven services lies fallow. Frictionless access, not only to external data, but also to relevant specialists is therefore of great importance to optimize wealth man-

agement in a data-driven way. The developments in the direction of open financial ecosystems are aimed precisely at simplifying the interaction between different market participants using standardized protocols and therefore bring together data producers or providers and analysts, such as FinTech companies, to generate added value through the anti-rivalry property of data. In Figure 8, this is represented by the API layer, also managing the access to (in-house) data also for external analytics providers.

Data quality to maximize added value. For analytics and other data-driven applications to offer maximum added value, high **data quality** is needed. This applies to wealth management, but also to other areas of finance.⁹ There are several factors contributing to data quality such as integrity, timeliness, completeness, validity, accuracy and consistency of data. However, ensuring high data quality is proving difficult for many financial institutions for a variety of reasons. For example, the data currently often managed in isolated systems makes it difficult to maintain a uniform, consistent and complete database, while continuous changes in the data (with reference to the customer, for example, a change of residential address) make it difficult to maintain and guarantee timeliness. In addition, the increase in digital services also makes the sheer volume of data to be stored, processed and managed an increased challenge.

To successfully manage the evolution towards more digitized and data-driven wealth management services (e.g. in the field of roboadvisory or recommendation systems), which promise more efficient yet personalized services to remain competitive in the market, high data quality is essential, which in turn requires increased data management competencies and a corresponding performing infrastructure. Building these capabilities and resources internally is likely to prove difficult for many financial institutions, which is why collaboration with third-party providers, for example, via data markets or other financial ecosystems, appears appropriate.

Technologies to handle data. The steadily increasing awareness of financial institutions to structurally gather data as well as the growing willingness to use it

intensively and sophisticatedly to generate added value leads to an increasing need for computational capacities. Today there are already certain limitations of classical, or binary, computing, which could be alleviated for certain use cases by the emerging technology of **quantum computing**. Although the development of quantum computers is still at an early stage, meaning that practical operation may still be years away, the potential of quantum computers in finance has been discussed in various publications. One area that is increasingly being described as a promising use case, and where the first illustrative solutions have already been implemented, is portfolio optimization (see, e.g. Cohen, et al. (2020)), one of the core processes in wealth management. A faster and/or more sophisticated calculation of optimal portfolios considering the largest possible asset universe using quantum computing is therefore of high relevance for the wealth management industry in general. Furthermore, simulations (e.g. in the area of long-term wealth planning), also taking into account the liability side of customers, become more comprehensive through quantum computing, i.e. considering a large number of possible scenarios.

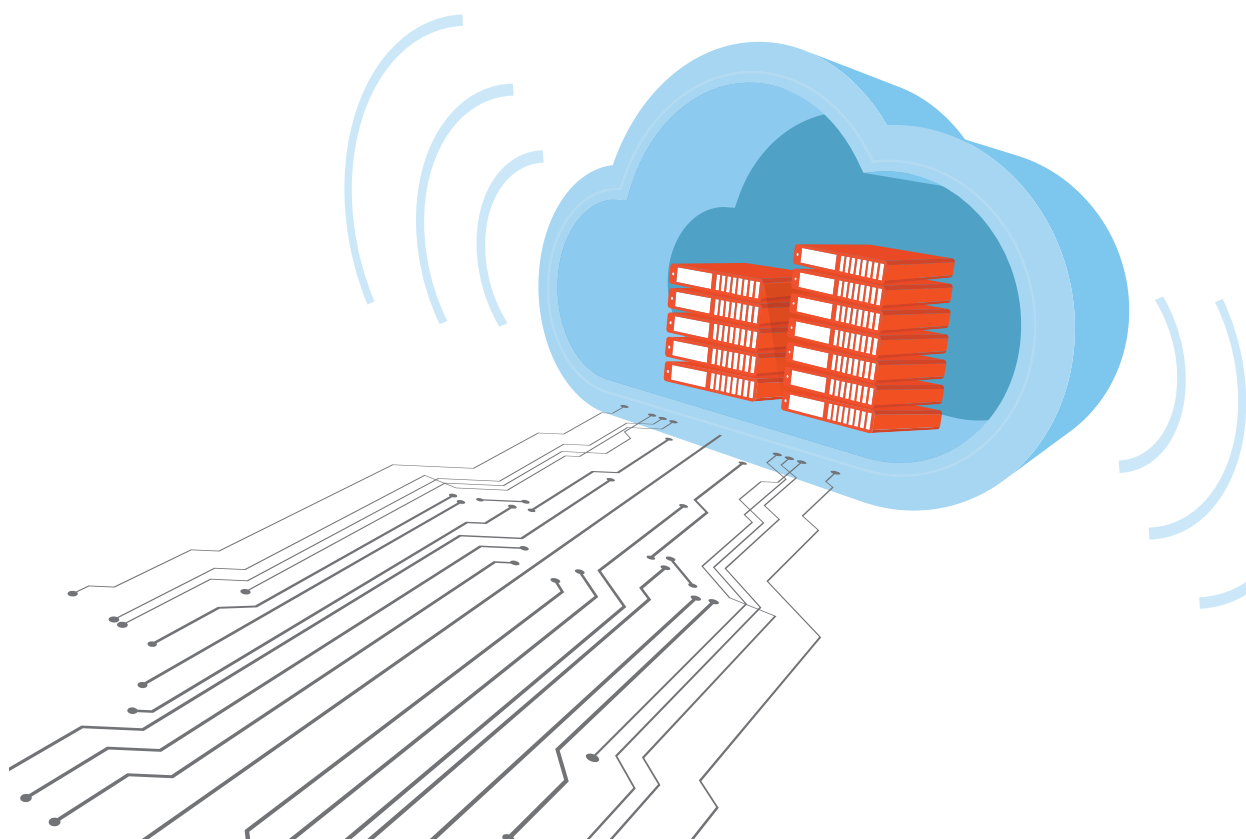
The underlying hardware, with first experimental prototypes already available for public use, can hardly be operated efficiently by financial institutions themselves due to the very complex implementation and the restrictive conditions on the environment quantum computers operate. Also, the concrete implementation of use cases based on quantum algorithms is not feasible for a majority of financial institutions due to their high complexity. However, while the hardware is likely to be provided by specialized experienced operators such as IBM and Google, with the access being delivered via cloud-based platforms (see bottom layer of Figure 8), there is currently still a vacuum of quantum algorithm providers building the bridge between technology and the financial domain.

Technologies to ensure data privacy and security. The requirements to protect sensitive data pose a challenge to widespread adoption of data markets and has significantly hindered data collaborations between financial institutions and third parties to date. **Privacy-enhancing**

⁹ See, for example, the survey report “Corporate Actions Processing—Data Quality and Automation Are Key” by SIX for the importance of data quality in the field of corporate actions.

technologies comprise a class of newly emerging technologies that introduce concepts and techniques that enable data exchange with third parties for calculation or analysis purposes without disclosing the exact data.¹⁰ In particular, the data remains permanently encrypted for third parties, also when calculations are conducted, which guarantees confidentiality and security for the data provider. This is generally of relevance when services that leverage sensitive internal data are provided by external third parties.

For wealth management, privacy-enhancing technologies could be of particular relevance in the client relationship management and in monitoring & reporting, which typically include highly sensitive data. A concrete example are recommendation systems for internal customers operated by an external provider, possibly enriched with data from other (non-)financial institutions without disclosing unencrypted data.



10 For a more detailed introduction to the topic of privacy-enhancing technologies and exemplary use cases in the field of finance, see Ankenbrand, et al. (2021).



2.4 Deep Dive Sustainability



When talking about *sustainability*, there is no single definition that can be referred to. The term ESG however, which stands for Environmental, Social and Governance and was first introduced in 2004 by the United Nations, offers a framework for the discussion and operationalization of sustainability. Today, in the world of finance the three dimensions, E, S and G, are often utilized when assessing the sustainability of companies and their activities.

Over the last few years, the topic of sustainability has gained much attention among academics, regulators and investment practitioners. This has been largely driven by three key reasons. First, investors are becoming more aware of the direct connection between their financial portfolio and sustainability issues. Second, publicly available ESG data is increasing significantly and ESG ratings are becoming more accessible. And third, the gradual and ongoing shift from voluntary to mandatory regulatory disclosure of ESG matters is putting tremendous pressure on firms. In the following section, we will deep dive into each of those reasons.

Raised investor awareness of sustainability. In financial jargon, the “magic triangle of investing” describes the three dimensions return, risk and liquidity. For a long time, it was sufficient for wealth managers to explain to their clients the necessity to prioritize among risk, return and liquidity because of their strong interdependency. With sustainability, now there is a fourth dimension which needs to be considered when making investment decisions. Investors are becoming increasingly aware that with their investments they actively support the sustainability behavior of a company and thus assume responsibility. Conversely, investors are also directly affected by the sustainability risks the company in which they are invested is exposed to. Investors want to be able to better comprehend, influence and manage the consequences of their investments. As such, when managing private investor portfolios, clients’ sustainability preferences have become an essential component of wealth management and are expected to be taken into account

to the same extent as asset allocation, risk, return and liquidity considerations.

The statistics also confirm the increasing demand for sustainable investment products. According to the Swiss Sustainable Investments Market Study, total sustainable investments in Switzerland have risen sharply. As shown in Figure 10, while in 2017 total sustainable investments added up to CHF 390 billion, three years later in 2020, the investment volume had already reached CHF 1,520 billion. From 2019 to 2020, investments rose by 31 percent. Institutional investors still play the dominant role and account for 72 percent, while private investors made up 28 percent of the total volume in 2020. Although the share of private investors is seemingly small, they are catching up rapidly. In 2017, only 14 percent of the total sustainable investment could be assigned to private investors. Since then, their absolute volume has increased by a factor of 7.8 (from CHF 54 billion to CHF 422 billion) (SSF, 2018; SSF, 2021).

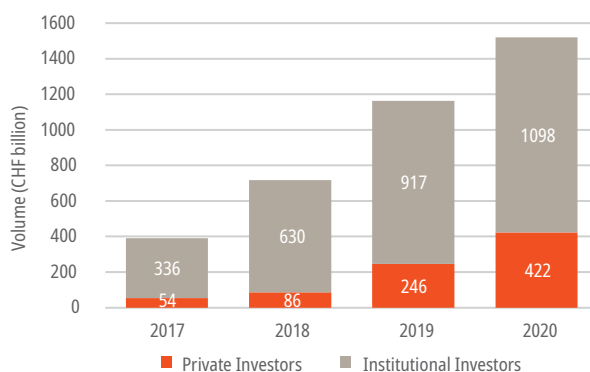


Figure 10: Total Swiss sustainable investments by investor type. Sources: SSF (2018); SSF (2021)

The financial product providers have also responded to the rising demand in the private sector. According to the IFZ Sustainable Investments Study 2021, and as illustrated in Figure 11, the number of sustainable funds open to the general public in Switzerland increased by 512 funds¹¹ from 2020 to 2021 (777 to 1'289) and the volume increased by CHF 459 billion within the last year (HSLU, 2021).

¹¹ The volumes in Figure 10 and Figure 11 are only partly comparable due to the different methodologies applied. The SSF market study is based on a survey among Swiss investors and classifies assets as sustainable if at least one ESG strategy is applied. The IFZ Sustainable Investments Study from the Institute of Financial Services Zug (IFZ) HSLU focuses exclusively on the Swiss fund market and classifies funds as sustainable only if a clear commitment by the fund manager to ESG criteria is visible. Therefore, the IFZ study applies a more restrictive methodology to be considered as sustainable.

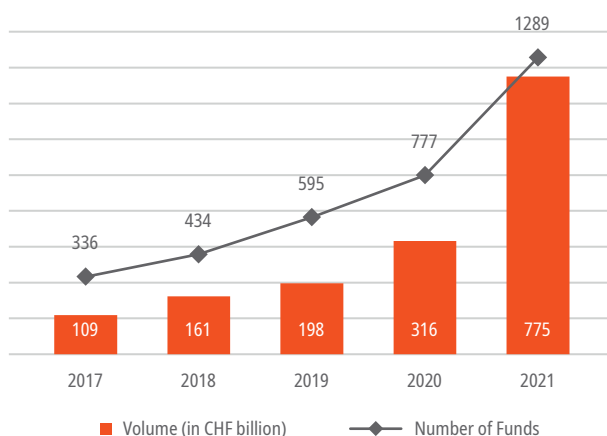


Figure 11: Volume and number of sustainable funds open to the general public in Switzerland. Sources: HSLU (2018); HSLU (2019); HSLU (2020); HSLU (2021)

However, despite increased investor interest in sustainability, there is a need for education on the subject of sustainable finance, both on the wealth manager and on the customer sides. It is important to become more familiar with sustainable investment strategies, improve understanding around ESG factors, and be generally aware of common misconceptions that currently exist in this space. For instance, investing sustainably or “green” has been associated with a sacrifice in profit, although many empirical studies prove the opposite (Das et al., 2018; Whelan et al., 2021). Another common misconception is that a sustainable investment approach that aims to reduce ESG risks in a portfolio will automatically lead to a positive social or environmental impact. These are two different strategies which pursue different goals. One strategy comprises the systematic and explicit inclusion of material ESG factors in the investment decision making process to reduce the risk of a potential monetary investment loss caused by ESG issues. The other strategy entails integrating investments that deliver measurable environmental and social impact while providing the conventional financial returns.

The rise of ESG data and ESG ratings. When the terms Socially Responsible Investing (SRI) and Corporate Social Responsibility (CSR) were predominant, sustainability data was retrieved mainly from voluntary disclosure of firms and publicly available information

about their social engagement. Since then, the need for data has increased and so has the ESG data base. Firstly, companies themselves have become more vocal about their sustainability practices. For example, in 2020 about 90 percent of the companies of the S&P 500 Index published sustainability reports for the accounting year 2019 and 70 percent of the firms reported alignment to well-known sustainability reporting standards (GRI, SASB or TCFD). Some publish sustainability data regarding specific SDG, respond to CDP, and / or use external assurance. Each of these frameworks offers unique reasons that should be considered by management. While each of these frameworks are different in their own way, they complement each other to a certain degree. Hence, it is common for organizations to align their sustainability reporting with more than one sustainability framework (G&A, 2020).

Another prominent trend is that over the last decade many third-party providers have started focusing on collecting and providing ESG data and ESG ratings. On the market there are rating agencies of all sizes. In Switzerland, for example, Inrate as a small independent sustainability rating agency provides ESG ratings in a wide range of areas such as countries, real estate or impact on a global level. Sustainalytics on the other hand, another provider of ESG research, is partly owned by one of the leading global investment research firms, Morningstar. Other big global rating agencies followed quickly and S&P, Moody’s as well as MSCI have all brought ESG knowledge in-house through acquisitions of ESG rating entities. S&P bought the provider of carbon and environmental data Trucost and RobecoSAM’s ESG rating business. Moody’s on the other hand acquired, among others, Vigeo Eiris (V.E), Four Twenty Seven, and SynTao Green Finance while MSCI bought, among others, RiskMetrics Group in 2010. As a result, even major rating agencies are now deeply involved in the provision of the ESG data. In parallel, there are other data providers which focus on different areas of the three dimensions E, S and G and use alternative methodologies to gather the corresponding data. For instance, some of them specifically focus on ESG sentiment data¹² and others on controversies.¹³

12 One example is ORENDA which was acquired by SIX in 2021.

13 Incidents that may pose a business risk or threat the reputation of a company due to the potential impact on stakeholders or the environment.

However, despite the increased volume of ESG data, its availability and ratings, the quality of data still remains the main challenge for ESG integration into client portfolios (BNP Paribas, 2019). According to the United Nations Environment Programme, in July 2020 only 42 percent of the environmental-related SDGs could be measured and thus, for 58 percent of the SDG indicators there was not enough data available (UN, 2021). Another concern is that it is hard to make comparisons with available data. The rating agencies calculate ESG scores differently, which might result in different ratings for the same company. This divergence of ESG ratings is mainly due to different scopes, measurements and weights of each evaluated sustainability category (Berg, et al., 2020). However, the good news is that it is expected that the quality of this data will increase further with the use of common sustainability reporting frameworks (i.e. GRI, TCFD or SASB). The expanded data set alongside higher quality and harmonization should allow for more accurate comparisons and ratings.

Sustainability guidelines and regulations. Another important reason for **wide-spread** adoption of ESG is increased pressure from the regulators which have been paying increasing attention to the developments in the space. In recent years, sustainability-related regulations have been developing in multiple jurisdictions and are expected to continue to evolve. A visualization of developments relevant for wealth management is given in Figure 12.

The use of technology to gather ESG data is also being promoted at government level, for example, to support compliance with sustainability-related regulatory requirements. In 2020, the Swiss government published a report in which it set the goal to become a global leader in digital and sustainable financial services (The Federal Council, 2020). The report does not state any details about the measures for achieving this ambitious goal. However, the Green Fintech Network, which was founded in November 2020 in collaboration with the State Secretariat for International Financial Matters (SIF), formulated a concrete action plan which consists of 16 different ways of combining sustainable finance and digital technology and divides them into the following five categories: 1) foster access to data, 2) cultivate new startups, 3) promote access to clients, 4) ease access to capital, 5) boost ecosystem and innovation. The action plan

addresses a wide range of stakeholders and represents ideas to become leaders in green digital finance without binding character. Some actions can be implemented without further analysis, while others require more resources and effort (The Green Fintech Network, 2021).

Today, in Switzerland there is no ESG reporting regulation in place. However, in August 2021, the Federal Council instructed the Federal Department of Finance to prepare a consultation draft for a future mandatory climate reporting by large Swiss companies by summer 2022. In future, public companies, banks, insurance companies with 500 or more employees, more than CHF 40 million in turnover or more than CHF 20 million in total assets will be affected by this regulation (SIF, 2021). Also, the Swiss Financial Market Supervisory Authority, FINMA, wants financial institutions to disclose the major climate-related financial risks and their effect on financial planning, business strategy and the business model. Financial institutions must describe the key elements of their governance structure in relation to climate-related financial risks and their process for identifying, assessing and managing climate-related financial risks and quantify their information (FINMA, 2021). In addition, in 2020 the Swiss Bankers Association recognized the need for ESG integration and introduced a guideline for the integration of ESG considerations into the advisory process for private clients (SBA, 2020).

Sustainable finance has also significantly gained in importance at international level. In 2018, the European Commission published an action plan for financing sustainable growth (European Commission, 2018). The action plan contains a comprehensive strategy for linking finance with sustainability and emphasizes three objectives: 1) reorient capital flows towards a more sustainable economy, 2) mainstream sustainability into risk management and 3) foster transparency and long-termism. The action plan comprises tools and ten key actions on how to achieve the defined objectives. One key action focuses on rules on how to incorporate sustainability into financial advice. Already in the final report of the High-Level Expert Group they recommend to “require investment advisers to ask about, and then respond to, retail investors’ preferences about the sustainable impact of their investments, as a routine component of financial advice” (EU HLEG, 2018).

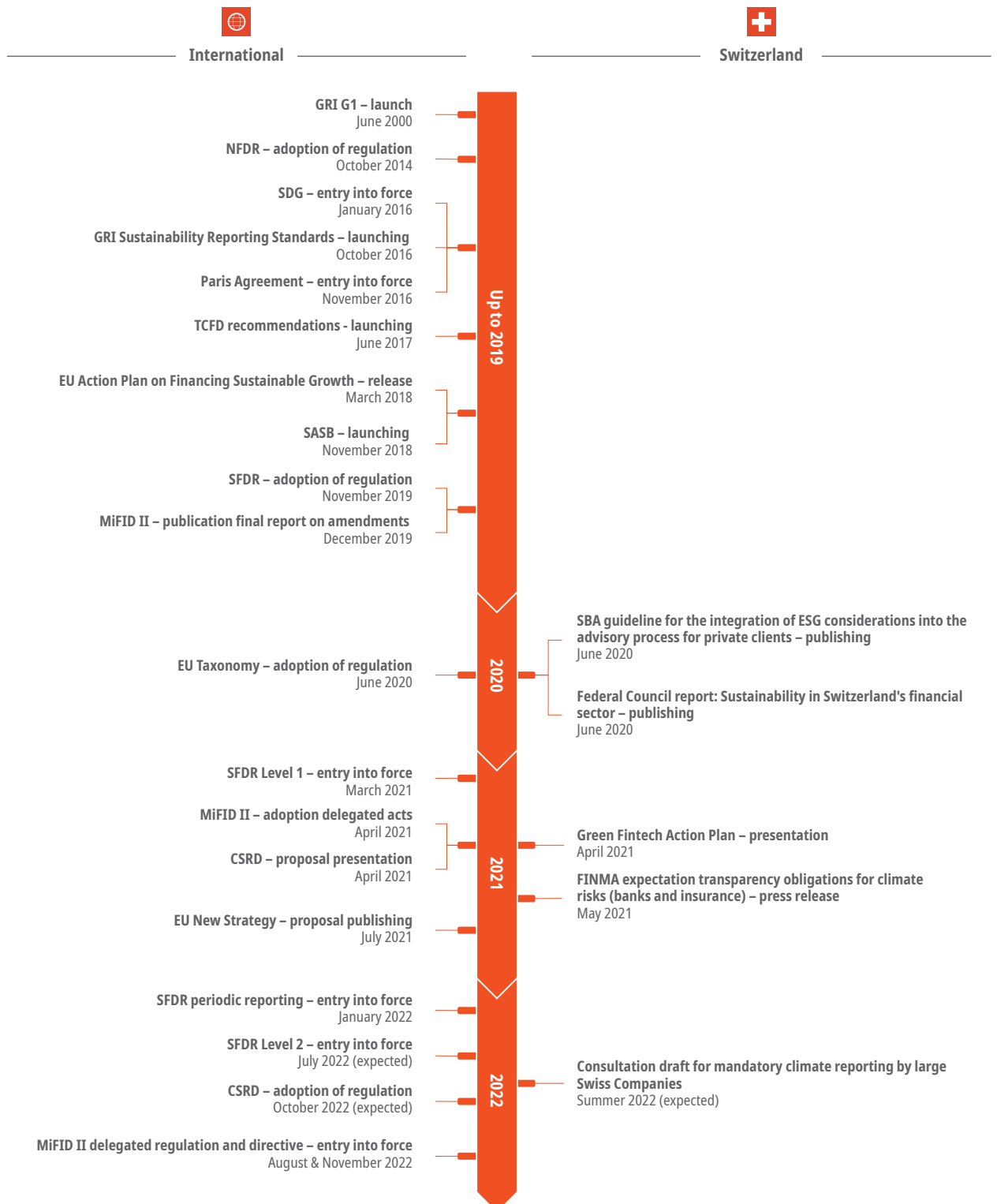


Figure 12: Major ESG regulations relevant for wealth management

The action plan also contributes to a common understanding of the term “sustainable finance”. The EU taxonomy Regulation (published in July 2020) is a classification system, which sets conditions that economic activities have to meet to qualify as environmentally sustainable. The activities must make a “substantial contribution” to at least one of the six environmental objectives without harming any of them significantly:

1. Climate change mitigation
2. Climate change adaptation
3. Sustainable use and protection of water and marine resources
4. Transition to a circular economy
5. Pollution prevention and control
6. Protection and restoration of biodiversity and ecosystems

With definitions for which economic activities can be considered environmentally sustainable, the EU taxonomy contributes to a common understanding, protects against greenwashing and supports companies to become more climate-friendly (European Commission, 2020).

Furthermore, in March 2021 the first provisions of the European Sustainable Finance Disclosure Regulation (European Parliament; European Council, 2019) – known as SFDR – came into force. The SFDR establishes far-reaching sustainability-related disclosure obligations for financial participants, both at entity and product level. The SFDR contains transparency requirements related to ESG that must be disclosed to potential investors. The SFDR is connected to the amendments of the MiFID II suitability rules, with which the EU aims to ensure that investors’ ESG preferences are taken into account, particularly when providing wealth management services and investment advice. Existing MiFID II regulations require wealth managers to gather information about clients’ financial objectives, risk profiles, investment and financial knowledge and experience. These factors help in recommending suitable financial instruments for individual clients, taking into account their overall circumstances and preferences. Starting in



August 2022, the new rules require MiFID firms additionally to include ESG preferences into the suitability assessments.

In addition, in April 2021, the European Commission presented the Corporate Sustainability Reporting Directive (CSRD), which is intended to amend the requirements for corporate sustainability reporting. The CSRD is complementary to SFDR in that it aims to ensure that financial market participants and financial advisors have the necessary information to meet the requirements of SFDR. CSRD expands the mandatory reporting requirements for non-financial companies to the extent that additional information on ESG aspects have to be included to show a company’s impact on sustainability aspects and the impact of sustainability issues on a company’s development, performance and strategy. Among other elements this includes its resilience to sustainability risks, a description of its strategy and business model, the corporate policy and objectives related to sustainability issues (European Commission, 2021).

Summary

Wealth management faces several trends and developments that combine to create three key value drivers for the industry going forward. These value drivers include the increasing interconnectedness of the industry via open financial ecosystems, the transition towards data-driven services and the growing importance of sustainability, and will increasingly push wealth management to adapt its existing business and operating model to stay competitive. The resulting implications for Swiss wealth management are the subject of the following chapter.



3 Implications and Key Messages

This chapter synthesizes the findings from the previous chapters on the current state as well as the trends and developments in wealth management and derives specific implications for the industry, which are formulated and discussed on the basis of eight key messages.

Data & Analytics as the New Key Resources

Message 1:

We are only in the beginning of using data in wealth management. The Swiss wealth management industry is not harvesting the full power of data yet. Data and analytics generally allow for new business models and for new ways to generate added value in wealth management. The importance of data, more specifically its use for data-driven value generation, is steadily increasing. However, today the data pool of wealth managers usually does not go beyond the internally collected information in customer interactions as well as externally sourced market data. Enriching this data with external financial and non-financial customer-specific data would enable significant added value in the form of holistic wealth management service. This increased customer orientation is not only beneficial from the customer's point of view, but also offers various advantages to wealth managers themselves, e.g. through better risk assessment.

Message 2:

The future wealth management service would require availability of high-quality data and a robust infrastructure. Through technology the importance of data in wealth management is steadily increasing. However the complexity around it, especially when it comes to high-quality data, is also growing. In this transition phase as infrastructure and capabilities are not yet ready, solving the complexity and costs issues around data sourcing and handling will be a priority. Moreover, data security is also a critical factor for the successful operation of a financial institution and includes data in all its forms and states, i.e. at rest, in transit and in use. While the protection of stored data and data in transit already works reliably and securely using encryption technologies, and hereby enables potential outsourcing of the corresponding infrastructure, the protection of data in use is more demanding, especially when calculations are to be performed including different par-

ties. A provider of trusted and audited data aggregation and analytics services that employs privacy-enhancing technologies could thus accelerate a wide range of opportunities that are currently ruled out due to security concerns.

Open Financial Ecosystems as the New Way to Operate

Message 3:

Open financial ecosystems are an approach to efficient exchange of data and services that is becoming increasingly important in wealth management, as it enables new business models and segmentation of the traditional value chain. Initial platforms for an efficient interaction between financial institutions and third-party providers already exist and their adoption is being promoted through various initiatives. This allows, for example, "out-of-the-box" solutions for complex services like pre-investment suitability analysis. To exploit this potential within the wealth management industry, open data ecosystems are needed in which participants can selectively offer or obtain information in the form of raw data, or also specific analytical findings. Such an ecosystem that is also open to third-party analytics service providers from whom wealth managers can source methodological and conceptual services, for example, regarding AI or big data techniques, should these not be available internally, opens up much potential for new value generation. It could therefore enable exchange and collaboration between a wide range of market participants to optimize wealth management processes on a data-driven basis.

Message 4:

Leveraging best competencies in IT interfaces is crucial to the future success of an ecosystem-driven Swiss wealth management. A modern infrastructure approach is needed to efficiently access financial ecosystems and thus new customer segments, but also to dynamically adapt the existing business models to benefit from the newly created potential. As the corresponding wealth management value chain is opened up, the opportunity for established service providers emerges to close the gap between the current in-house competencies available and market demands. One way to benefit from this development is "as-a-service" solu-

tions which are produced by an external provider but used/offered by the financial institution itself. Such solutions are most efficiently offered through platforms that can be made accessible to a variety of subscribing parties, while also enabling exchanging data, analytics, products and services among participants. This concept aims to facilitate interactions and value exchange between a large number of participants and is typically offered, governed and operated by technology-driven companies. “As-a-service” platforms for wealth management can not only help to lower one of the most frequently mentioned challenges by the financial institutions surveyed, namely the high personnel costs by providing specialized but scalable solutions, but also to improve their wealth management services by leveraging the solution providers specific expertise and/or by allowing for value exchange, e.g. in the form of data collaboration between financial institutions with the consent of the client.

Sustainability as the New Normal

Message 5:

Sustainable investing is here to stay and will continue to grow due to changing investor demands and regulatory pressures. Nowadays, to provide a holistic wealth management service, ESG criteria have to be part of the process. The volume of sustainable financial products available on the market has grown significantly and wealth managers can no longer simply assume that ESG criteria are not relevant to its clients. While some years ago some wealth managers stood out when actively taking into account client sustainability preferences, today this is becoming common practice.

Message 6:

ESG data is still a big challenge, particularly when it comes to breadth, depth and comparability. High quality ESG data serves as the foundation for making sound and good investment decisions. At the first glance, it may seem that it has become easier for wealth managers to evaluate a company’s sustainability with the increasing availability of ESG data and ESG ratings. However, multiple challenges exist. As evident from the interviews conducted in this study, the ESG data challenge starts with the vague definition of sustainability, which does not specify hard thresholds and thus allows

for different interpretations. Today, most of the ESG data about certain companies is self-declared and cannot be verified. Another challenge is the comparability of data from different providers, due to inconsistent methodologies to collect and derive data and their sources. Thirdly, connecting the data to the sustainable development goals in a meaningful way also turns out to be difficult. Similar to financial data, there is a lack of forward-looking data, which limits the possibility to build robust scenario analysis.

Message 7:

The amount of ESG data will continue to grow and the regulation will be the key driver. The ESG data is growing in volume and in the future there will not only be more company-reported data, but also alternatively sourced ESG data. One key driver that promotes the generation of more accurate and reliable ESG data is regulation. Not only does regulation increase the pressure on firms to report their ESG-related data, but it also helps reduce greenwashing. There are sustainability-related regulations developing in multiple jurisdictions, and hence regulation and guidelines that make ESG data comparable should be of great importance for any wealth manager. These regulations at national and international level are driving sustainability as a new normal. In the end, only what can be measured well can also be managed well.

Regulation as a Driver for Innovation

Message 8:

Regulatory pressure on wealth management remains high. There will not only be more regulation, but more data-driven regulation. The data will be in the epicenter. Moreover, the implementation requirement will involve all relevant parties from senior management, business, IT and legal and compliance. These regulations and the increased availability of data coupled with the increased investor interest are a huge opportunity for wealth managers, but not easy to handle. Therefore, data specialists and third-party vendors will play a crucial role as the industry evolves.

4 Conclusion

The present study aims to identify the current state and observable relevant developments in Swiss wealth management and to derive corresponding implications for the operating model and the value chain going forward. The findings obtained are summarized in this chapter.

Swiss wealth management plays a leading role globally but is currently facing a number of challenges. With regard to the traditional value chain, this is reflected in the discrepancy between the strategic relevance of asset and client relationship management and the corresponding competencies available in the industry. Other problems include the lack of IT and data management skills, high labor costs and increasing regulatory requirements.

In addition to these challenges, there are certain macro trends that are requiring Swiss wealth management to change going forward, which can in turn be summarized in three strongly technology- and data-oriented value drivers that are expected to shape the future of the industry. These main value drivers are the increasing importance of data and corresponding analytics for value creation, the change of the operating model towards open financial ecosystems that segment the traditional holistic value chain, and the increasing importance of sustainability.

From the current challenges and the observable trends and developments, implications for Swiss wealth management can be derived. These can be summarized as follows:

- **Data & analytics as the new key resources:** The Swiss wealth management industry must regard data and its analysis as well as the exchange with third-party providers as a key driver for value creation. This will ensure that clients can be offered services that are as tailored as possible, but also efficient in their provision.
- **Open financial ecosystems as the new way to operate:** The traditional holistic value chain in wealth management will be segmented in the future, with specialized providers covering individual areas of activity. The corresponding services will be offered or procured via platform-based open financial ecosystems.

→ **Sustainability as the new normal:** Sustainability will play a crucial role in the investment process in the future, alongside customer risk aversion, return expectations and liquidity constraints. The basis for decision-making will increasingly be data-driven, taking into account high-quality ESG data, the availability of which will be supported by evolving regulation.

→ **Regulation as a driver for innovation:** Regulatory pressure on wealth management will remain high, especially in the area of data and its use alongside sustainability. To turn regulatory requirements into an opportunity in the form of more innovative business models, data specialists and third-party providers will play a crucial role in the further development of the industry.

To compete in such a dynamic environment, it is essential for the Swiss wealth management industry to continuously monitor the drivers of change and build up the necessary competencies. Only in this way can the industry make appropriate adjustments to its business model at an early stage to be able to perceive change as an opportunity. If this succeeds, Switzerland can continue to operate as one of the leading locations for wealth management.

Appendix

Appendix A: Definition of Wealth Management

Asset management¹⁴, investment management and wealth management are terms from the financial industry that may appear similar but differ in the scope of their services. In the present study, wealth management is defined as follows:

“Wealth management refers to the provision of holistic financial solutions including financial planning, asset management and a range of aggregated financial services.”

The definition of wealth management integrates investment management by offering a financial solution that not only includes portfolio management but also takes into account the entire financial situation of a client. Wealth management therefore includes more extensive financial services such as liabilities, tax, inheritance and insurance services to enable comprehensive wealth planning for the client. A distinction is typically made between three different service models, which are briefly described in the following table:

In particular, a distinction is made between advisory and discretionary mandates, as well as execution-only business (PAM Insight, no date). Advisory mandates cover all services related to investment advice, with the client ultimately deciding on the execution of the proposal. In the case of discretionary mandates, the mandated financial institution manages the client’s assets directly on behalf of the client at its own discretion, in compliance with a predefined investment objective. In the execution-only model, the financial institution merely executes the customer’s investment decisions without providing customer-specific investment advisory (PAM Insight, no date).

Service Model	Responsibility
Advisory mandate	<p>Client</p> <ul style="list-style-type: none"> - Sets investment policy - Makes investment decision <p>Financial institution</p> <ul style="list-style-type: none"> - Provides investment advice - Provides client-relevant information - Executes client’s investment decision
Discretionary mandate	<p>Client</p> <ul style="list-style-type: none"> - Sets investment policy <p>Financial institution</p> <ul style="list-style-type: none"> - Makes investment decision on behalf of the client - Executes investment decision
Execution-only	<p>Client</p> <ul style="list-style-type: none"> - Sets investment policy - Makes investment decision <p>Financial institution</p> <ul style="list-style-type: none"> - Executes client’s investment decision

¹⁴ For an analysis relating to institutional clients in Swiss asset management, see HSLU & Asset Management Association Switzerland (2020).

Appendix B: Core Activities in Wealth Management

The core processes in the value chain of wealth management can be broken down further into specific activities. A description of these can be found in the following table:

For reasons of clarity and to reduce complexity, the empirical part of this study generally focuses on the core processes of wealth management rather than individual activities.

Process	Activity	Description
Research	Macro research	Economic and financial market research to provide information for investment decisions and clients
	Fundamental research	Company research to provide information for investment decisions and clients
Asset management	Product suitability	Definition of asset universe to be considered
	Product strategy	Definition of model portfolios provided
	Strategic asset allocation	Strategic allocation of funds to different asset classes
	Tactical asset selection and timing	Tactical allocation of funds to different assets
Client relationship management	Wealth planning	Assessment of the client's financial situation and definition of wealth objectives
	Client profiling and appropriateness & suitability checks	Classification of the client in a specific segment based on wealth plan and assessment of his/her risk capacity and appetite
	Investment proposal	Development and offering of a personalized investment proposal which fits the client's wealth plan
	Market & liability simulations	Simulation of market developments and liability cash flows of the client under different scenarios
Monitoring & reporting	Compatibility checks and risk analysis	Continuous review of the compatibility of the investment portfolio and its performance with the long-term wealth plan
	Potential analysis	Identification of additional suitable products and services for the client
	Customer reporting	Provision of relevant information and documents for the client
Documentation		Maintenance of a complete record of all customer-related activities

Appendix C: Methodological Approach

As the present study aims to describe an outlook on the future Swiss wealth management industry, a structured methodological approach is required. The starting point is a detailed review of the wealth management value chain and corresponding core processes as presented in Section 1.2. In a next step, the identified processes are evaluated in terms of their strategic relevance and the level of competencies available at the Swiss banks to uncover possible discrepancies that could hinder a future-oriented alignment of the industry. This evaluation is carried out using structured expert interviews, a well-established approach in qualitative research. Overall, nine interviews were conducted, with the sample including representatives from cantonal banks, Raiffeisen banks, foreign-controlled banks, banks specialized in exchange, securities and asset management business, and other banks. The interviewed experts were asked to classify each wealth management process on a scale from 1 (very low) to 4 (very high) from the perspectives of the bank where they are employed. Furthermore, the experts were asked to identify the greatest pain points for their institution in the advisory value chain and to suggest potential use cases for innovation opportunities they see in wealth management. The panel of selected Swiss banks and their interviewed representatives, whom the authors would like to thank for their valuable input, is composed as follows:

1. Philipp Baretta (SEBA Bank)
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7. Gabriela Payer (VP Bank)
8. François Rûf (Vontobel)
9. Stephan Zwahlen (Maerki Baumann & Co. AG)

Glossary¹⁵

Analytics: The extensive use of data, statistical and quantitative analysis, explanatory and predictive models, and fact-based management to drive decisions and add value (Davenport & Harris, 2007).

Application Programming Interface (API): A set of rules that allows programmers to develop software for a particular operating system without having to be completely familiar with that operating system.

Artificial Intelligence (AI): A branch of computer science dealing with the simulation of intelligent behavior in computers.

Big Data: An accumulation of data that is too large and complex for processing by traditional database management tools.

CDP: Formerly the Carbon Disclosure Project, aims to help investors, cities, and corporate managements disclose the environmental impact of their organization through an annual questionnaire where they are scored, ranked, and recognized (CDP).

Cryptographic Assets: DLT-based transferable digital representations that are designed in a way that prohibits their copying or duplication (PwC, 2019).

Decentralized Finance (DeFi): The fusion of the traditional financial industry with distributed ledger technology to create trustworthy and transparent systems based on protocols that do not require intermediaries (HSLU, 2021).

Distributed Ledger Technology (DLT): A digital database containing information (such as records of financial transactions) that can be simultaneously used and shared within a large decentralized, publicly accessible network.

ESG: Abbreviation standing for Environmental, Social and Governance, first introduced in 2004 by the United Nations in their report “Who cares wins” (UN Global Compact, 2004).

Greenwashing: Expressions of environmentalist concerns especially as a cover for products, policies or activities.

Global Reporting Initiative (GRI): A global standard for corporate sustainability reporting with the mission to enable organizations to be transparent and take responsibility for their impacts (GRI, no date).

Machine Learning (ML): The process by which a computer is able to improve its own performance (as in analyzing image files) by continuously incorporating new data into an existing statistical model.

Markets in Financial Instruments Directive II (MiFID II): EU legislative framework to strengthen investor protection and improve the functioning of financial markets making them more efficient, resilient and transparent (European Securities and Markets Authority, 2018).

Neobank: A type of bank that operates online only and tends to have a limited range of products on offer to keep fees that they charge their customers as low as possible (Macmillan Dictionary, 2020).

Open Banking: Exchange of data and services between banks and third-party providers via available and published interfaces whereby the exchange can take place in both directions.

¹⁵ Unless otherwise noted, the definitions of terms listed in the glossary are from the Merriam-Webster online dictionary, available at <https://www.merriam-webster.com/>.

Open Finance: Extension of the principles of Open Banking to functions of other providers of financial services, such as insurers or asset managers, and their data or offers.

Packaged Retail and Insurance-based Investment Products (PRIIPs): European regulation aiming to standardize precontractual information regarding packaged financial products offered to non-professional investors as defined by MiFID II (CACEIS, no date).

Payments Service Directive 2 (PSD2): Legal foundation for an integrated single market for electronic payments in the EU, with the aim of making international payments (within the EU) as simple, efficient and secure as payments within a country, and opening up payment markets to new entrants, leading to more competition, greater choice and better prices for consumers (EUR-Lex, 2019).

Privacy-enhancing Technologies: Technologies to support the protection of data in all forms and states, i.e. at rest, in transit, and in use.

Quantum Computing: Computing that takes advantage of the quantum properties of qubits to perform certain types of calculation extremely quickly compared to conventional computers.

Roboadvisory: Automated investment process without personal interaction and at usually low cost (HSLU, 2019).

Sustainability Accounting Standards Board (SASB): SASB aims to bring more organized reporting by publicly-traded companies for ESG performance disclosure while focusing on what is financially material information (SASB, no date).

STEP: Acronym standing for Social, Technological, Economic and Political that refers to an analytical framework for external environmental factors affecting business objectives and strategies (Frue, 2020).

Sustainable Development Goals (SDG): The United Nations 2030 Agenda for Sustainable Development includes 17 Sustainable Development Goals (SDGs) that address poverty, health and education, inequality, economic growth and climate change (UN, 2015).

Sustainable Finance Disclosure Regulation (SFDR): A set of EU rules on various disclosure-related requirements for financial market participants and financial advisors that aim to provide more transparency on sustainability in financial markets in a standardized way, for example, preventing greenwashing and ensuring comparability (PwC, 2020).

Task Force on Climate-related Financial Disclosures (TCFD): A task force organized by the G20 nations published the voluntary TCFD Recommendations as a new reporting framework to improve and increase reporting of climate-related financial information (FSB TCFD, no date).

Financial Services Act (FinSA): Swiss Federal Act to protect the clients of financial service providers and to establish comparable conditions for the provision of financial services by financial service providers (FINMA, no date).

Tokenization: Process where some form of assets are converted into a token that can be moved, stored, or recorded on a distributed ledger (eToroX, no date).

Note to the Reader

The views expressed in this paper are those of the authors and SIX contributors, and do not necessarily reflect those of SIX or others. For more information about this report, please contact us at: research@six-group.com

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