

Digital Revolution in Banking — Future Talk with Sunnie Groeneveld — A Visit with On — Conversion to Structured Addresses for Payments

A VISIT WITH

Tell Me How You Pay and I'll Tell You Where You Come From

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FUTURE TALK

Entrepreneur Sunnie Groeneveld wishes to have a single app for her payments.

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Digital Business Models Are Revolutionizing Banking

TEXT DIETER GOERDTEN

here has been a lot of talk in recent years about a digital revolution in banking. A revolution sounds exciting. We listen with eager pleasure to stories from other industries about winners who parlayed a combination of bold ideas, perseverance, and cleverness into fame, fortune, and power. Rockefeller, Bill Gates, Steve lobs, leff Bezos, and most recently Elon Musk. Their ascendence is inextricably tied to the rise of brands - Apple, Amazon, Tesla – that nobody

had heard of twenty years earlier. But there are also stories, of course, about losers – the term "Kodak moment" has even made it into everyday language. Such stories often tell of transitions that were started too late or were never begun at all. So, what sort of revolution is underway in the banking industry, and who will be the winners and losers?

The situation facing Swiss retail banks is clear at first glance. Bank branches were long the main access point for customers. They paid a price that enabled banks to coexist in a relatively carefree manner within the safe confines of Switzerland's borders. Today, though, customers want to conduct their financial transactions digitally, and they have smartphones.

This allows them to register with and start using the offerings of financial service providers outside Switzerland in less than five minutes. And, if that weren't enough, Apple, Samsung, Revolut, and the like already operate in Switzerland, and many others will follow in their steps.

Why should this impress us? These companies possess platforms that can create cross-border economies of scale that simply don't exist in tiny Switzerland. In other words, they have huge cost advantages. But more importantly, they have grown up digitally. This is why they, in the image of Henry Ford, are able to skip the step of first harnessing faster horses to the carriage. They are going straight to building proper automobiles. Customers, especially young ones, love this: Their offerings are on their smartphones and operate intuitively. The access points for customers are thus migrating to third-party suppliers. Banks, meanwhile, are becoming account providers, suppliers of highly regulated infrastructure for safekeeping money. That still sounds like a safe with things safeguarded "within." But are you sure about that?

Sockets for Banking

Here another development is taking hold: "API-fication." APIs are interfaces between programs. If they are designed to be frequently reutilized, they employ an



"Banking as a service" is on the rise. It is important for Swiss banks to adapt their infrastructures and processes and, above all, to design suitable strategies and make the necessary investments. Because sooner rather than later, non-banks will offer customers seamlessly integrated, digital financial products in Switzerland too.

"open standard." Sockets are an example of such standards: Their technical specifications are openly accessible to the public and their dimensions are always the same. APIs – "digital sockets" – open up new ways of connecting. Google Maps is integrated into almost every website these days – via an API. Banks, too, can secure services from third-party suppliers this way. There are suppliers, for instance, of digital customer identification and document authentication solutions. Banks therefore no longer have to develop these processes themselves; they can now use them as a service via an API.

But beware: It also goes the other way around! Let's take a large retailer as an example. It wants to offer its customers accounts as well in the future to enable shopping payments, installment loans, and participation in reward programs. So, does this retailer found a bank and obtain a FINMA license? No. It instead seeks out an account provider that supplies customer accounts as a service – via APIs. Some neobanks in Europe provide such services today exclusively for non-banks – retailers, car dealerships, insurance companies, and health insurers. Banking as a service (BaaS) is becoming a business model. This

means that even this bastion has been razed: The account leaves the imaginary safe, becomes part of the third party's service chain, and is supplied to the end customer under the third party's brand name. The account provider becomes invisible; the bank's brand vanishes from the end customer's field of view.

Is this a distant vision of the future? No, it's already happening. People in Germany today can buy Samsung smartphones with a pre-installed banking app. Samsung is collaborating with Solarisbank, which supplies Samsung with bank accounts as a service. It takes less than five minutes to open one, and then you can start paying with Samsung Pay. In addition to accounts, interested companies can now access an entire universe of services with which to expand their offerings: credit score queries, installment loans, loyalty programs, receipt filing - everything can be obtained as a service and integrated into the company's own digital offerings for end customers, without separate application forms, digitally, and seamlessly.

And where do Swiss banks stand in this environment? Many trailblazing developments have been initiated in recent years. The widespread introduction of ISO 20022

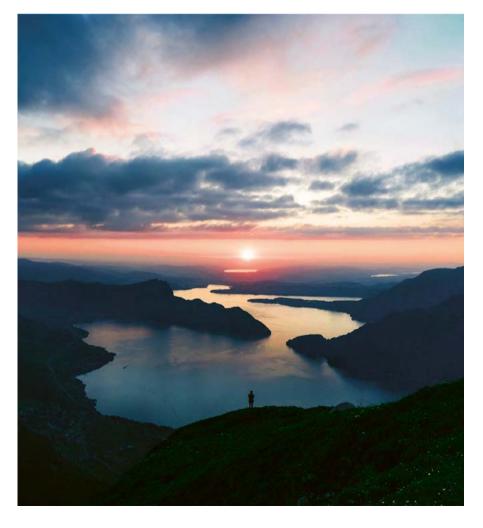
fired the starting shot for consolidations and an acceleration in digitalization. The impressive record of achievements for 2020 alone included the consolidation of the Swiss platforms for clearing and settlement and for eBill invoices, the successful launch of the QR-bill, and the migration of 6,000 ATMs to a uniform operating system software. In addition, bLink, the API platform from SIX, went into operation with its first use cases, and TWINT last autumn reported that it had over three million users. Finally, instant payments will be introduced in the years ahead. An accelerated structural transformation is clearly discernible. but is this already the digital revolution? And can we already detect the winners and the losers?

Swish à la Suisse?

It is arguably too soon to pass definitive judgments, but it appears possible in the meantime to predict which squares on the chessboard have to be occupied. One is brand leadership in key use cases, which TWINT, for instance, has attained in person-

to-person payments. The situation regarding invoicing processes looks different: different QR codes, two direct debit procedures, invoices sent via e-mail, and digital eBill invoices are all in use in Switzerland today, and new direct debit-based concepts are under development. Users are confronted with a multitude of access points and procedures, each of which covers a specific niche. The technical challenges involved in integrating those processes - such as integrating eBill into TWINT - are straightforward and manageable. However, the problem of winning over the majority of people in Switzerland with a simple, uniform digital process from under one roof has heretofore seemed unsolvable. The countries of Scandinavia have led the way in demonstrating what's possible here: The Swish mobile payment app is used by more than 70% of the Nordic population.

A second square will be the speed and consistency with which banks carry out API-fication. The first concern is to integrate as-a-service offerings from



An accelerated structural transformation in banking is clearly discernible, but is this already the digital revolution?



third-party suppliers. That can save resources for self-built services and can yield more contemporary solutions. However, such offerings have to be adapted to fit with banks' processes and IT setups. But above all, it's about devising strategies for the BaaS world and finding the funding for the necessary investments. Because it's bound to be only a matter of time until non-banks in Switzerland also start offering their end customers seamlessly integrated digital financial products.

In the midst of this structural transformation, banks are receiving support from SIX, which is enabling cost savings for them through centralization. For instance, a centralized platform will lower the high cost of introducing instant payments by 2024 and will make it affordable even for smaller-scale institutions. Complete-package offerings for areas as diverse as operating ATMs and comprehensive telephone services for usage of debit cards are other innovations by SIX. But SIX is also strengthening banks' relationships with their end customers, for example through the debiX app for the use of the new debit cards that banks can issue under their own brands. In addition, the eBill process used by Swiss banks aims to become the undisputed brand leader in digital invoicing. Finally, a powerful API platform with a sophisticated single contract has since become available with bLink, which presents big advantages for the future interconnection of banks and the exchange of data with third parties.

The digital revolution has only just begun. Bets are still being taken on who the winners will be.



Startup
founder Sunnie
Groeneveld
talks about
digital transformation.

As a young entrepreneur and speaker, you've been passionately advocating for digitalization in Switzerland for years. What is your aim specifically? New digital technologies are increasingly affecting the lives of everyone today. Each of us has a choice: Will we proactively participate in shaping this transformation, or will we respond to it reactively? As an entrepreneur, I'm advocating that we also take an entrepreneurial approach to digitally transforming Switzerland's economy, society, and politics. We need to exploit the opportunities presented by digital advancement to stay ranked among the world's most innovative economies in the future

In what stage of the digital transformation is Switzerland's financial industry? I think everyone is very well aware of the importance of this issue. Moreover, the regulatory conditions in Switzerland for innovations in the blockchain and crypto space are very good in international comparison. Looking at the financial industry as a whole, though, it's clear that we're still just at the start of the digital transformation. There are, of course, a few promising digital products and services like eBill, TWINT, and digital account opening at a number of banks, but none of these financial innovations have evolved beyond the Swiss

market. Successful fintechs like PayPal, N26, Revolut, Square, Stripe, and Klarna were founded outside Switzerland, but today have many Swiss customers due to their compelling digital offerings, user experiences, and value-for-money propositions.

If there were such a thing as a digital customer experience in SME payment transactions, what would it look like? For payment transactions at my consultancy firm Inspire 925, I wish there were a single app, one with which we would only have to photograph an invoice once to then transmit it automatically to the e-banking portal for payment while at the same time forwarding it to our accounting software. If it only took me three seconds to pay and file an invoice, that would be a better customer experience than the one today. Because as things currently stand, someone on our team still enters some of the invoices manually in the e-banking system and then scans them and e-mails the scanned copies to the accounting department.

What is your formula for more digital innovation at the interface between customer and bank? More digital-first thinking. Banks developed a large part of their product and service portfolios a long time ago under the assumption that they would greet customers live once or multiple times at bank branches and would be able to explain products to them in person. Many of those products are still around today, and banks have tried to "translate" them one-to-one into digital products, often more for the worse than for the better.

How are your personal payment needs covered? Where are you satisfied, and where do you see room for improvement? I manage my finances with two mobile apps, one from a Swiss bank and the other from a foreign neobank. That works great. I wish there were even more standardization for paying invoices. Despite eBill, it still happens occasionally that I have to enter invoices in my e-banking portal manually. Also, more could be done to integrate services. I, for example, would find an app with an API interface that allows me to combine my accounts at different banks on a centralized dash-board quite useful.

"I wish there were even more standardization for paying invoices."



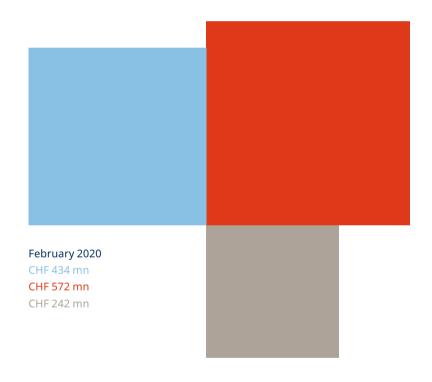


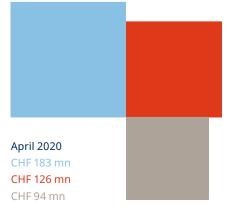
The coronavirus affects the world – and Switzerland with it. But what impact will the lockdown really have on consumer and payment behavior? A direct comparison between the old normal and the pandemic.

Non-food retail sales

- Urban areas
- City centers
- Beyond

Merchants retail excluding food, beverages and tobacco card holders domestic and foreign payment means debit cards, credit cards and mobile payments point of sale brick-and-mortar

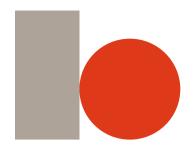




Source: SIX and Monitoring Consumption Switzerland (monitoringconsumption.com



8.9 mn CHF 381.38



April 2020 4.4 mn CHF 481.08

Cash withdrawals at ATMs

- Number of transactions
- Average amount per transaction

Card holders domestic payment means debit cards payment method cash withdrawal



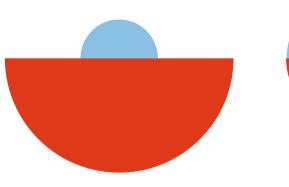
February 2020 CHF 10 mn CHF 352 mn CHF 1,056 mn

February 2021 CHF 34 mn CHF 550 mn CHF 1,178 mn

Payment means in food retail

- Credit cards
- Mobile payments
- Debit cards

Merchants food, beverages, and tobacco card holders domestic and international payment means debit cards, credicards, mobile payments point of sale brick-and-mortar and online



February 2020 CHF 143 mn CHF 1,249 mn



April 2020 CHF 379 mn CHF 403 mn

Non-food retail sales channel

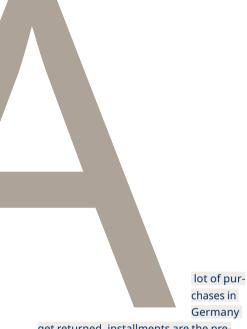
- Online sales
- Brick-and-mortar sales

Merchants retail excluding food, beverages and tobacco card holders domestic and foreign payment means debit cards, credit cards and mobile payments, stationary and online

Tell Me How You Pay and I'll Tell You Where You

Come From

TEXT SIMON BRUNNER



get returned, installments are the preferred mode of payment in Brazil, paying by check dominates in America, and China is an e-commerce cosmos of its own. Over coffee and apple slices, Christoph Kühne, the Head of Group Finance at On, gives insights into cultural payment habits around the world and explains his goal of minimizing the human factor in payment transactions.

When you get called "cult" by the New York Times, when Forbes dubs you the "the world's fastest-growing running shoe brand," and when Welt asks in resignation, "Have the Swiss now also invented sneakers?" then you're arguably not entirely unsuccessful. But embracing the role of underdog is embedded in the DNA of On, a sporting goods manufacturer based on the west side of Zurich famous for its Cloud sneakers with air holes in their outsoles.

We pay a visit to On's headquarters, an anonymous office building without a large corporate logo adorning it and without expensive sports cars parked outside to flaunt the young company's worldwide success (most of On's employees prefer to ride bicycles anyway). Christoph Kühne's appearance is equally as unassuming. The 41-year-old Head of Group Finance is wearing a hoody, jeans, and a pair of On shoes like practically everyone else here. Only one person is sporting Nikes. One immediately wonders who that might be (answer: a job applicant).

"It Pushed Us to Our Limits"

Kühne invites us into the lounge area, where there are bowls of apple slices and nuts on the tables (and a bar with alcoholic beverages tucked in a corner). The entire office is a long stretch of open-plan space done up in minimalist decor that mirrors the design of On footwear. The average employee age at On is 33. "I'm one of the grandfathers here," laughs Kühne. Over 800 employees currently work for On. There were only 150 when Kühne joined the company in late 2017.

The last twelve months were an extraordinary time for On's Head of Group



Finance, in part because Roger Federer acquired a stake in On, helping the company to a further growth spurt, and in part because the COVID-19 pandemic completely shook up On's sales channels. "As soon as one of the countries in which we operate went into a lockdown, the conventional retail market there imploded and e-commerce exploded," Kühne recounts.

This caused a variety of challenges. Online sales surged to a record-high level, but pushed On's digital infrastructure to the limits of its capacity. Bulk orders by sporting goods retailers decreased and the number of single-item orders increased, causing shipping to become more fragmented. There was a constant looming risk that an infection would force a warehouse to close, causing a breakdown in the supply chain. "It pushed us to our limits," Kühne says, "but at the end of the day, we met or exceeded all of the sales targets we had set prior to the outbreak of the pandemic."



The booming online sales volume was accompanied by yet another challenge: "The number of fraud attempts increased sharply," Kühne says. So, On had to step up fraud detection, the trick to which is keeping the payment process as simple as possible. "3-D Secure authentication for credit card payments is widely accepted in Switzerland," Kühne explains, "but in the USA, customers run away if they have to enter an additional authentication code."

The University of St. Gallen-trained economist and Swiss certified public accountant is also astonished by the archaic systems in purportedly high-tech America: "Checks are still in widespread use there even though they're a nightmare from an efficiency standpoint, just like paper receipts are." An online retailer has to deal with such realities, Kühne sighs, because "we can't train consumers." On's top priority, he says, is to deliver shoes to shoppers as simply, quickly, and conveniently as possible. "Once customers have laced them on their feet, there's a good chance that they'll order another pair."

Installments in Brazil, Return Culture in Germany

The USA isn't the only peculiar case. "Brazilians pay for running shoes in installments," Kühne says. In France, he adds, local payment cards called Cartes Bancaires are the dominant mode of paying. An astonishingly large number of cus-

Christoph Kühne is Head of Group Finance at On and a sneakerhead. However, his collection is limited to 15 pairs.



tomers in Switzerland want to pay for their purchases on account. "They probably think that paying this way makes it easier for them to exchange merchandise, though it's of course just as easy if they pay with a credit card," Kühne says.

Germans return a lot of purchases. Kühne conjectures that this cultural habit was instilled over decades by traditional mail-order catalogs. The Swiss, in contrast, "don't order until they're almost a hundred percent certain about the item."

China, on the other hand, functions entirely differently, as Kühne explains: "Shopping there isn't done on companies' websites, but rather on platforms that display those companies' offerings and handle the payment arrangements." Asked if this mode of digital shopping will also catch on one day in Switzerland, Kühne and On's head of direct-to-consumer sales, who sits down briefly to join the conversation, lean toward skepticism. "Certainly not in the next four to five years," they say.

Do the many cultural differences cause headaches at On's headquarters? No. On's system landscape replicates almost every mode of payment in existence the world over. Kühne's goal is to remove as much human intervention as possible from payment processes: "The advantage of being a young company is that we

don't have any legacy systems — we can re-set up our systems from scratch every couple of years."

Allotment of 15 Pairs of Shoes

Kühne has been working for On for over three years now and therefore ranks among the company's veterans. He previously worked for eight years in the SIX Group's finance department. "I was already wearing On shoes there," says the sneakerhead, whose wife allows him a maximum allotment of 15 pairs, which he enthusiastically manages. "New shoes are constantly coming in, and I pass old pairs on to friends and relatives." At SIX Kühne was more of a laid-back kind of guy, whereas at On he's one of the few with previous corporate experience. "The company's enormous global growth necessitates structures and processes. In the course of creating them, it's incredibly fun not to think in terms of hierarchies, organigrams, and controls, but to instead rely on trust and autonomous personal responsibility." (\$\strace{8}\)



COVID is fueling an explosion of e-commerce sales.

The sneaker selection at On's headquarters in Zurich

Swiss Financial Center Converting Payment Processing to Structured Addresses in 2025

Required knowledge

- Being familiar with the ISO 20022 standard
- Prior knowledge about address database storage

Even though payment processing is one of the areas in the financial industry where everyone is talking about innovation and disruption, changes are not really popular among market participants. This is certainly due to the fact that payment processing is a massive business and requires powerful, high-performance systems. In addition, it is particularly deeply integrated throughout the entire processing chain, from the debtor, the banks and market infrastructures involved, to the recipient of the money and any additional service providers involved in settlement and invoicing. Even changing a single element in such an environment can quickly have an impact on many areas and on a large number of systems, and therefore be expensive. Accordingly, such a change must either pay off or be forced, mostly by regulators.

However, with the switch to ISO 20022, the introduction of the QR-bill and a uniform eBill platform, market participants in Switzerland have shown that adaptation can be implemented profitably. These changes were anything but easy. Nevertheless, the decisive factor is how the overall system is developed and how efficiently new requirements can be implemented.

In such change processes, there are

also always aspects that give rise to major discussions. One such issue is the structured address according to the ISO 20022 standard. On the one hand, the address in this context the addresses of the sender and recipient of a payment – is one of the elements that affect the systems throughout the entire chain. On the other hand, there is a certain urgency, since with the switch in international payment processing as of next year, the addresses of the newly possible elements "Ultimate debtor" and "Ultimate creditor" will only be permitted by SWIFT in a structured form. In a later phase, the addresses of the debtors and creditors will also only be accepted in a structured form.

Switzerland's Response

The international conditions have prompted the Swiss financial center to also fully switch to the structured address as of November 2025. It should be noted that according to an evaluation in the SIC system in summer 2020, around 50% of transactions already contain structured addresses and many banks have adapted their online banking systems and internal applications accordingly. In domestic payment processing, the financial center can decide independently on the entire processing chain and therefore also soften the standard somewhat in particularly sensitive cases and define certain tolerance ranges. For example, the strict separation of street names and house numbers can be dispensed with over a certain period of time. However, such tolerances may not necessarily be granted for cross-border payments. In such cases, it is up to the regulators of the respective countries whether and which deviations from the structure are tolerated. It doesn't help that certain fields are only optional. Because optional only means that the element is not mandatory for the actual processing. However, a regulator may still require that all address data of a party involved in the payment be included in the message.

There are still four years to clarify these issues and to adapt the systems and master data accordingly. This should be entirely possible given the general trends mentioned at the beginning. And if certain tolerances are also established across borders, even only partially, it can also be implemented with reasonable effort.

Component	Action required				

Figure 1: Affected components for structuring a payment

Reasonable Structuring

The guestion of how an address should be written is very old itself. When sending a letter, it is clear that appropriate conventions must be followed for the address. This is the only way to ensure that a letter arrives in Lebanon in the US state of Pennsylvania, for example, and not in the country of Lebanon by the Mediterranean Sea. However, there are clear differences throughout the world, whether in the arrangement of certain elements such as the house number, or the description of a place used to determine delivery. However, an address is not only a decisive factor for physical shipping. It often also indicates the legal domicile and helps distinguish people with the same name. Especially in payment processing, the correct identification of the parties involved in a financial transaction is extremely important and, for regulatory reasons, often critical. This is much easier with a structure that is independent of the physical representation. The example of the house number, which is placed either before or after the street name depending on the country or region, shows that recording it as an independent element solves such problems. In whatever order address elements are printed, written down or displayed, each system can clearly identify these elements and compare or validate them if necessary

thanks to the structure defined in a standard. This will facilitate the operation of efficient, fast and, above all, reliable systems that deliver correct results in all situations where this is necessary or required.



Figure 2: To Lebanon in the USA or by the Mediterranean Sea?

But why should this be a problem? The main obstacle is the way an address is structured, or rather the way it is divided into individual elements. Especially business customers in our latitudes have trouble separating street names and the house numbers into separate elements. Even elements that are a natural part of the address structure in other regions of the world can pose great challenges for master data. It is not enough that the address "looks" correct. The individual parts must also be placed in the correct element.

When designing the pain.001.001.01 message in 2005, ISO 20022 architects already separated the street name and house number. However, this granular structure is by no means an "invention" of ISO 20022. For example, the United States Department of Commerce's United States Thoroughfare, Landmark, and Postal Address Data Standard describes the house number as a separate element.

In payment transactions, however, there has always been the option to transmit the address data (apart from the name) in an unstructured form, even with ISO 20022. Almost all markets have used or at least allowed this option. This makes it possible to use even minimally structured master data or to accommodate regionally uncommon or unknown elements under similar used elements.

But now, for regulatory reasons (detection of money laundering and terrorist financing), government authorities are increasingly demanding the consistent

separation of these elements and obliging banks to enable unique identification. The banks in turn are showing great interest in this development because their customers have an increasingly strong need for immediate, end-to-end automated processing and settlement of payments. Manual controls or transactions that cannot be automatically allocated do not fit into the world of instant payments and seamless transactions.

APIs – Key Technology of the Future with a Long History

Networking is playing an increasingly important role for all types of companies. In order for companies to profitably exploit the benefits of networking and to succeed in the digital transformation that this requires, the use of API technologies is unavoidable.

APIs (application programming interfaces) are a core element of software development that enable software developers to access systems and software components and develop their own applications based on the data and functionality provided. APIs are used for the controlled exchange and subsequent processing of data and content between different programs, modules within a program, and a website.

Where users communicate with computer systems via a graphical user interface (GUI), computers do so via APIs (Figure 3).

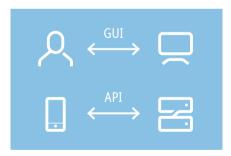


Figure 3: Communication via GUI (between users and computers) versus API (between computers)

These two patterns are found simultaneously in modern software systems, typically involving a GUI and at least one level of APIs (Figure 4). Here, the APIs allow not only modularization of functionality and communication across software module boundaries, but also communication across company boundaries. This means that computers 1 to 3 can be operated by different companies.

EXPERTS ONLY EXPERTS ONLY



Why Do We Need APIs?

APIs are primarily about integration – connecting data, modules, applications, and devices so they can better communicate and work together. APIs enable software products or services to communicate with other software products or services, regardless of programming language, infrastructure, location, and corporate boundaries. APIs also enable the integration of new software components into an existing architecture. Through modularization, encapsulation and their reusability, APIs can be used to optimize software development and thereby save time and money.

APIs open up new possibilities not only in software development but also in business development and corporate strategy. The focus here is on data-based collaboration with partner companies. Through API-based integration, companies can, for example, complement their own product range with suitable partner products or efficiently open up new distribution channels through API-based embedding of their own products in those of their partners. This creates new forms of collaboration between companies, known as digital ecosystems.

Availability of APIs

An API enables the use of its data not only internally within the company but also externally by customers and other external users if needed. A public API can have high business value because it simplifies the connection to partners, creates new opportunities, and thereby enables monetization of data. An example of external customer/partner APIs in Switzerland is bLink from SIX, which already enables banks and bank customers to exchange electronic payment instructions as well as account balances via their software.

Types of APIs

Different types of APIs are used depending on the area of application:

Internal APIs are used in professional software development to modularize and

Figure 4: A user's communication sequence via three computers by means of GUI and APIs

structure software. These APIs are created to delimit software components and modules from each other on the one hand and to connect them in a controlled manner on the other. In doing so, the total complexity of a software package is reduced and the software becomes more maintainable.

Analogous to making functions available to users via a GUI, such as via a smartphone app, these and other functions can also be executed by computers and devices via an external API (see Figure 3). Such external APIs are offered, for example, by Amazon, Instagram, weather services, and many others. This allows content to be processed further and "API mashups" to be developed. A typical example is sending tweets via desktop applications, where the external API provided by Twitter is used.

To run applications and apps on platforms such as Windows, Facebook, or on smartphones, they offer platform APIs for integration. This allows third-party applications, apps, or plug-ins to be installed and operated on the platforms. For example, a platform API can provide functions to seamlessly integrate the user interface of the developed application into the user interface of the platform. Platform APIs are characterized by their governance, standardization, and use in a platform model. There are forms of internal platform APIs such as Windows, which mainly simplify software development, and external platform APIs, which enable data-based enterprise collaboration.

Standardized external platform APIs are also emerging in banking, for example with the bLink platform in Switzerland. Thanks to standardization, bLink enables accounting software providers to access banking data from different financial institutions in a centralized and uniform manner. Platform APIs, such as those provided by bLink, therefore lead to a simplification of data access, increase mar-

ket efficiency, and uncover new innovation potential, which ultimately benefits bank customers.

Monetization

The goal of API monetization is to generate revenue from your own data and services via external APIs. In an increasingly digitalized world, external APIs are the key to the next level of business development for companies. In this context, APIs represent a powerful and extremely efficient new sales channel. Third parties can directly access company data and resources in a controlled manner or integrate it with their own external or internal websites and applications. However, for a successful monetization strategy, it is imperative to have a sound business model that ensures that the APIs provided deliver the function and performance desired by the customers.

The Story Continues...

Mainframe and mini-computers with APIs for COBOL, VT100, etc. and companies like IBM and Digital Equipment
Client-server and distributed computing with APIs for CORBA, SQL, etc. and compa- nies like SAP and Oracle
Cloud, social, and mobile with REST/JSON APIs from compa- nies like Facebook and LinkedIn

Figure 5: History of APIs



Figure 6: Working on a mainframe in the

The story of APIs is not over, as the digitalization and networking of companies is far from complete. For efficient use of API

RTS ONLY EXPERTS ON

technologies, topics such as management, security and governance, i.e., the process around development, monitoring, and publication of programming interfaces as well as data protection, are playing an increasingly important role. These must be actively integrated into the company's own culture.

Text: Peter Ruoss and Matthias Biehl, UBS Switzerland AG

ZUGFeRD – The **Ambitious International** Standard for Electronic **Invoices**

Required knowledge

- Prior knowledge about electronic invoicing standards
- Basic knowledge of electronic invoicing

ZUGFeRD is already a widely accepted international format standard for sending electronic invoices. ZUGFeRD documents are hybrid documents that contain both a visual human-readable representation of the invoice and machine-readable structured invoice data for automated processing. ZUGFeRD meets the legal requirements of the European Union for electronic invoices (EU standard EN 16931) but is not limited to use in the EU.

ZUGFeRD can be used across all industries in B2B (business-to-business), B2G (business-to-government) and B2C (business-to-consumer) business transactions. In the B2C area, for example, there are already eBill network partners in Switzerland where eBill invoices can be submitted in ZUGFeRD format.

The ZUGFeRD standard was developed by the Forum for Electronic Invoicing Germany (FeRD) in collaboration with associations, ministries and companies. Working groups in various countries have now published their own user guides. The name ZUGFeRD was derived from "Zentraler User Guide des Forums elektronische Rechnung Deutschland (Central User Guide of the Forum for Electronic Invoicing Germany)."

Structure of ZUGFeRD Invoices

ZUGFeRD describes the structure and content of an electronic invoice file. How and through which channel ZUGFeRD

invoices are sent is not specified in the standard and is agreed upon between the invoice issuer and the invoice recipient.

A ZUGFeRD invoice file is a hybrid electronic invoice (Figure 7) in which structured invoice data (XML format) is directly embedded in the PDF document (PDF/A-3 format), similar to the eBill PDF/A-3 format. The human-readable PDF invoice must be identical in content to the invoice data in XML format, which is used for automatic processing. This means that identical copies of the data must be present.

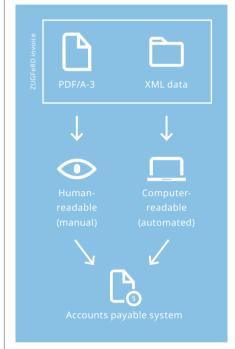


Figure 7: Structure of the ZUGFeRD hybrid electronic invoice

In order to meet the different requirements of the various application areas, ZUGFeRD uses the concept of application profiles.

Flexibility Thanks to Application Profiles

The requirements for invoice documents vary greatly depending on the business context – from a simple invoice document to a fully digitalized and automated business process. Thanks to the concept of profiles, ZUGFeRD offers the flexibility to create both simple and more complex invoices. As a result, the same ZUGFeRD format can be used to replicate a wide range of country- and industry-specific requirements within the application profiles (Figure 8).

The ZUGFeRD format comprises five core profiles plus the XRechnung reference

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profile. The ZUGFeRD application specification defines the following profiles:

Profile	
EN 16931 (COMFORT)	
EXTENDED	
MINIMUM	

Figure 8: ZUGFeRD application profiles

Factur-X Is Identical to ZUGFeRD

In terms of content and structure, the current version of ZUGFeRD has been identical to the current version of the French invoicing standard Factur-X since March 2020. The two standardization bodies, FNFE-MPE (France) and FeRD (Germany), published a joint version of Factur-X 1.0 and ZUGFeRD 2.1, which are fully compatible and strictly identical from a technical perspective. Thanks to this collaboration, a powerful pan-European invoicing standard has emerged, with common XML schemas, identical profiles, and unified code lists.

Which Format Will Prevail in the Long Term?

In order for the exchange of electronic invoices to function smoothly, a uniform open invoicing standard is needed, one which adapts to the requirements of the still evolving electronic invoice market. Here, the FeRD working group has made trend-setting decisions that have shaped ZUGFeRD into one of the most promising formats of the future. On the one hand,

this invoice format implements the European standard (EN 16931) for electronic invoicing required by EU Directive 2014/55/EU. On the other hand, it has been merged with the French Factur-X and also supports the requirements of XRechnung. This means that ZUGFeRD can be used in both national and European contexts and, thanks to the application profiles, can be used for both simple and more complex e-invoices in the B2B, B2G, and B2C sectors. The proprietary formats are at least out of the running in the battle for dominance.

Text: Peter Ruoss, UBS Switzerland AG

Gordian Knot of Electronic Invoicing Unraveled

Digital invoicing has been growing rapidly for years. Various formats have therefore established themselves at the same time. Here is an overview:

Format	Description	Open standard?	Distribution	PDF/A-3?	XMLdata	European standard EN 16931	With invoice items?	Ideally suited for?
								B2B
								B2C, B2B, B2G, eBill
								B2G
								B2B
								B2B, eBill
								B2G
								B2B, eBill
								B2C, B2B, B2G, eBill

Figure 9: The most important e-invoice formats



The SRTP Scheme Nearing its Creation

The SEPA Request-to-Pay (SRTP) scheme covers the set of operating rules and technical elements (including messages) that allow a payee to request the initiation of a payment from a payer in a wide range of physical and online use cases. The RTP is a messaging functionality – it is not a payment means or a payment instrument. The scheme can be considered as a complement to the payment flow because it supports the end-to-end process and lies between an underlying commercial transaction and the payment itself.

Initially, in November 2019, the EPC Request-to-Pay Multi-Stakeholder Group (RTP MSG) published the "RTP Specifications for a standardisation framework" document to support further work on the RTP scheme. The RTP MSG was created and coordinated by the European Payments Council (EPC) in response to an invitation

from the Euro Retail Payments Board (ERPB).

Next, the EPC decided to establish an adhoc task force (RTP TF) to develop a SEPA RTP scheme rulebook, which was published on the EPC website in November 2020. Moreover, the RTP MSG mandate was extended to fulfill a consultative role towards the RTP TF ("phase 2"), thereby maintaining broad stakeholder involvement in the scheme development process.

On November 30, 2020, the EPC published the first version of its SEPA Request-To-Pay (SRTP) scheme rulebook covering core functionalities. The effective date of this rulebook is set to 15 June 2021. At that date, the SRTP scheme participants (entities that have formally adhered to the EPC scheme) will be able to launch their solutions based on the SRTP scheme functionalities and exchange the related messages.

The First Rulebook

The SRTP scheme rulebook, which is based on the above-mentioned RTP specifications document, consists of a set of rules, practices, and standards that makes it possible for any eligible SEPA RTP service provider to participate and operate in the SRTP scheme. It should be noted that the SRTP scheme will be available to all eligible entities – i.e., payment service providers (PSPs) and non-PSPs – from all SEPA countries according to the level playing field principle.

The Implementation Guidelines that set out the rules for implementing the relevant ISO 20022 XML message standards based on the SRTP rulebook were published on 1 February 2021.

The SRTP scheme covers a wide range of use cases and business models, applicable in many sectors. The participants will be free to choose what services they want to offer and which use cases they will support, as long as they comply with the rules set out in the SRTP rulebook and with the related Implementation Guidelines.

Clarification on the Rulebook and Homologation Body

A clarification paper on the SRTP scheme rulebook was published in the beginning of February 2021. This document aims to provide guidance and, where feasible, recommendations to the SRTP participants

on matters that are not as such described in the rulebook in order to avoid a fragmented approach in the way the rulebook is implemented.

In the same month, the EPC also launched a request for proposals for the selection of a body for the homologation of applicants to the SRTP scheme, as described in the Trust and Security Framework Annex of the rulebook. The purpose is to find and select at least one reliable independent entity to which the EPC can outsource the homologation of applicants to the SRTP scheme.

The goal of this "homologation process" is mainly to make sure that new applicants will not jeopardize the scheme's security and stability. This process will be an integral part of the SRTP adherence procedure.

The effective date of the SRTP rulebook, set to 15 June 2021, takes into account the time needed for the selection of the homologation body and to get it up and running.

What's Next on the Agenda

- The SRTP scheme adherence process was opened in the first week of May 2021 to allow applicants to prepare their adherence application ahead of the effective date of the scheme.
- Stakeholders were invited to submit change requests for a second version of the SRTP rulebook by 26 February 2021.

The RTP Task Force will provide its recommendations on the way forward with regard to those change requests as well as the changes that were suggested in the comments received following the 2020 public consultation on the draft SRTP rulebook. Several elaborate functionalities including those already identified by the RTP MSG in their November 2020 report may also be part of the change requests.

- In the last week of May 2021, a threemonth public consultation on all those change requests was launched.
- Publication of version 2.0 of the SRTP rulebook is foreseen for the end of November 2021 (entering into effect 6 months or 1 year later).

On the Road to More Efficient Cross-Border Payment Transactions

Cross-border payment transactions are often slow, expensive, and opaque. These

inefficiencies have long existed, but digitalization possibilities and advancements in domestic payment transactions make them all the more glaring today. To address these inefficiencies, the G20, the group of the world's largest industrialized and emerging economies, has declared it a priority to improve cross-border payment transactions.

Faster, cheaper, more transparent, and more inclusive cross-border payment services would have widespread benefits for the public and national economies. A roadmap for improving cross-border payment transactions has been drawn up under the aegis of the G20. It started this year and consists of 19 individual building blocks arranged into five focus areas. The first four focus areas seek to improve the existing payment ecosystem and its infrastructure by, for example, coordinating regulatory frameworks and facilitating straight-through processing. The fifth focus area is more exploratory and covers newly emerging possibilities such as central bank digital currencies and multilateral payment platforms.

Several international organizations, central banks, and other national authorities are involved in the work laid out in the roadmap. The G20 is also putting special emphasis on involving the private sector, whose expertise will make a crucial contribution to implementing the objectives of the roadmap. Such a complex undertaking as improving cross-border payment transactions obviously requires committed engagement from everyone involved.

The five focus areas of the roadmap:

- Committing to a joint public- and private-sector vision to improve cross-border payments
- 2. Coordinating regulatory, supervisory, and oversight frameworks
- 3. Improving existing payment transaction infrastructures
- 4. Facilitating straight-through processing by improving market practices
- 5. Exploring a potential role for new payment infrastructures



The EPC is based in Brussels.

SWIFT's Roadmap to Payment Data Revolution

Cross-border payments today are still constrained by poor-quality data, which can require manual intervention before processing. SWIFT has recently announced a new strategy with an enhanced approach for ISO 20022 adoption. This approach enables the SWIFT community to more quickly reap the benefits of rich data. The vision aims for instant and frictionless transactions where rich ISO 20022 data is the foundation. The roadmap comprises three phases:

— Now to November 2022: MT messaging remains the standard for cross-border payments. Financial institutions continue to invest in training staff for ISO 20022 market practice and enable their channels, payment processing, and screening systems to support the ISO 20022 dataset.

— From November 2022 to November 2025: SWIFT transaction management services are introduced, supporting the new ISO 20022 dataset for payments and reporting, and

enabling compatibility with financial institutions that choose to stay on MT messaging.

— November 2025 onwards: The message categories MT1xx, MT2xx and MT9xx are decommissioned, and all interactions with the SWIFT platform use the new dataset.

Financial institutions are advised to prepare for ISO 20022 through a strategic and systematic evolution of their channels and transaction processing systems.

Secondly, a comprehensive, well-planned program will be required that raises awareness and knowledge across the organization, delivers technical implementation and testing, and achieves go-live from November 2022 onwards.

Thirdly, they should engage with their own clients, raising awareness of new features and services that will be provided and their respective timelines. An agreed roadmap should be established to move to ISO 20022-based client services over time.

"The Swiss banking community can only fully benefit from ISO 20022 by leveraging the standard for cross-border payments in addition to domestic payments. Doing so will reduce friction for payment transactions as a whole," said Roger Inderbitzin, Head of SWIFT Switzerland & Liechtenstein. "Banks that adopt ISO 20022 early will achieve a competitive advantage across service innovation, operational efficiency, and financial crime risk mitigation."



The SWIFT headquarters is 20 km from Brussels.

A new study shows continued interest from global players in blockchain technology.

Further details

researchandmarkets.com

The SIC System Is the World Champion

There is a lot to discover and a wealth of interesting facts to learn in the Swiss National Bank's latest annual report on the Swiss Interbank Clearing (SIC) system. Alongside information on the SIC system laid out in alignment with the international principles governing systemically important financial market infrastructures, you'll also find a plethora of statistics. You'll find out, for example, that the number of transactions per inhabitant settled by the SIC system make it the world leader among real-time gross settlement (RTGS) systems.

Further details

msnb.ch



A Swiss Bankers Association working group has set itself the goal of collaborating with key partner organizations to draw up and review technical and legal principles for open banking and open finance.

Further details

swissbanking.org



Dollars Like Sand on the Seashore

The Central Bank of the Bahamas was the world's first to issue a central bank digital currency (CBDC). Its CBDC called the sand dollar, which is pegged 1:1 to the Bahamian dollar, was launched on 20 October 2020. Since then, three financial institutions in the island nation have obtained authorization to integrate the digital currency into their smartphone apps. The first transactions are slated to be executed and settled in the second quarter of this year.

Further details

m sanddollar.bs



It is easier to write about money than to acquire it; and those who gain it make great sport of those who only know how to write about it.