"The Digital Identity Is the Foundation of Successful Digitalization"

Interview with Markus Naef, CEO of SwissSign Group Ltd.

Switzerland Ready for QR-bill

eBill and 1,000 Eiffel Towers

it clear it

Dear Readers

Switzerland is recognized as a progressive, tech-savvy country, also in terms of digital transformation. However, for 15 years our country has made no headway towards an essential digital service – a well-organized, state-certified electronic identification for all citizens. This digital blank spot was finally filled by the parliament last autumn with the E-ID Act. The referendum was called against the Act and we will probably vote on it at the end of September.

Why do we actually need an E-ID? So far, no one can clearly identify themselves on the Internet or clearly check the identity of another individual. The E-ID will lie a long overdue foundation for all Swiss citizens to move around the web easily and safely. A Swiss E-ID solution will allow us to fill a considerable gap in the digital communication between businesses or authorities. Therefore, a state-approved E-ID is crucial to Switzerland and its digital development.

The opponents of the E-ID Act criticize the fact that the E-ID would give out a sovereign "passport" and the state would not issue it fully independently. Both points of criticism miss the mark to me.

The E-ID is essentially a state-approved login facilitating clear identification of an individual on the Internet. It allows to properly determine that Ruedi Noser is actually the person he claims to be. This ensures that transactions with private or public providers who require clear and verified identification are processed easily yet securely. At the same time, it can be connected to using banking services, concluding an insurance or a mobile phone contract, dealing with authorities in a digital way or also just online shopping. However, the E-ID does not constitute a digitized passport. It is not a supranational official document and is not related to the sovereign granting of citizenship in any way. Therefore, there is also no obligation to obtain an E-ID.

Furthermore, the "public private partnership" makes sense as provided for by the Act; for logical reasons, an electronic identity is not developed at a passport office, but, just like logins today, wherever it is needed – at the bank counter, in an online shop or at the doctor's. The difference is that the effective identity would also be officially verified and confirmed when logging in. It can thus be developed everywhere and also respectively used everywhere. All I need to do is provide a proof of identity – only once and no longer physically.

Don't be deceived if you think issuing of electronic identity could be organized top-down. In the countries where it is the case, the electronic identity is used by not more than three percent of the population. Hence, it is reasonable for suitable private identity providers (IdP) to apply for an official recognition. Moreover, having undergone a verification with a positive result, private providers will be officially certified by an independent committee appointed specifically for verification and supervision purposes. As a consequence, the IdP will be subject to the continuous supervision of this commission. In addition to technical and security-relevant requirements, the IdP will also be required to always comply with the Swiss Data Protection Act and additionally defined data protection rules, which will also be subject to control.

The E-ID Act makes sense as is and deserves our support. This also applies to the digital transformation in payments with the QR-bill and eBill.

Ruedi Noser
Councillor of States from Zurich

Markus Naef
CEO of SwissSign
Group Ltd.

"The Digital Identity Is the Foundation of Successful Digitalization of Switzerland"

In the best of all digital worlds, there will be no need to go to the bank, to government agencies, to the mailbox, or to the ballot box at the local school. The general conditions for the electronic identity just need to be right. SwissSign Group CEO Markus Naef, who provides the infrastructure with SwissID, explains the potential uses of E-ID now and in the future.

Mr. Naef, no sooner had you welcomed the millionth SwissID user last October than you announced the discontinuation of the old SuisseID solution with USB stick or chip card. Are these two facts connected?
You have to make a distinction here, as these are two different products. SwissID, with an English spelling, is the digital future, whereas SuisseID, with a French spelling, is an "old" product that was launched in 2008 by SECO, the Swiss State Secretariat for Economic Affairs. It was the first genuine electronic ID on the Swiss market with a chip-card solution. However, we had to withdraw the product for regulatory reasons – hence the discontinuation. Even so, the SuisseID products in circulation remain valid and can still be used. SuisseID is being replaced by the new SwissID.

What regulatory reasons are you referring to? Do they relate to national or international rules?
It's international committees, and the chip cards are international, too. This USB stick has a type of SIM card on it. There are different versions of this card. The current version 4.3 is valid until June 2020, and unrestricted use of version 4.4 is possible until December 2021. The license for SuisseID, launched by SECO in 2008, expires after this. So what happened in the fall was a phase-out notification that we sent to our customers. We operate

in a trust-based business and have to offer secure solutions. At the same time, of course, we must keep our customers' needs in mind. Modern solutions are made up of different components. There can be a card or a secure connection, or a VPN (virtual private network) connection that has to be used. We must bear all these points in mind. These security considerations are crucial in our decisions to develop new products, take old products off the market or, as in the case of SuisseID, announce an "end of sale".

So the phase-out is planned for the fee-based "SuisseID", while the new, free SwissID is taking off. Where is the business case for your company here?
With SuisseID, the individual who uses this card pays around CHF 160 over three years. It's the other way round with the SwissID business model. SwissID is free for individuals. The online portals that offer SwissID as a login have to pay. By way of an example, let's look at an online service with the lowest level of identification where single-factor authentication is enough for a normal login, i.e. you have a username and password. This type of login costs a company between four and seven francs per year per user. These are costs for equipment, infrastructure, licenses, and customer support. The really expensive things are the customer

calls in the call center. Around 40 percent of all calls come from customers who have forgotten their username or password, or have other login problems. Studies show that the four to seven francs is a realistic level.

> ❝ **The costs can be reduced by a factor of seven to ten with our solution.**❞

The costs can be reduced by a factor of seven to ten with our solution. We have economies of scale, as we have the same users on different services. The idea is quite clear: If a user uses various different online portals with SwissID, they are used to logging in with it. They have a certain frequency of use, so they forget their password less often, and have far fewer problems with the login process. This in turn means fewer calls in the call center and correspondingly lower costs.

SwissID also provides users the opportunity to additionally integrate a second security factor (2FA) via the app. The second factor can be requested as an option by the online service. There are highly complex and time-consuming identification processes these days, particularly in the banking and insurance sector. For instance, if you want to view your insurance policy online, you ring the insurance company. They send you a letter with an access code that may also be combined with a text message, and only then are you matched up with your policy. That's four or five steps for the insurance company, incurring costs of CHF 15 to 25. It costs us three or four francs because we have developed a solution for matching a policy to a user. In the photo ID identification process, you identify yourself as the user with a photo of your ID card or passport, and also take a selfie. Authentication of the document and the matching of the ID picture with the selfie. We then confirm that person X really is person X. The insurance company or other online service providers can now correspondingly match the verified identity with the company's own database and establish that person X is already a customer, and can establish a corresponding link.

So you use insourcing here...
Exactly. It's business process outsourcing for the online services. And we carry out the processes for them with a huge cost reduction – because we have the ability to scale. The 1.2 million users whom we have already connected in the SwissID system need the login and the application regularly.

If the Swiss Federal Council and Parliament win the referendum campaign regarding the new Act on Electronic Identity, could I then theoretically take part in elections with my current SwissID?
I'd just like to make it clear that we at the SwissSign Group are not running a referendum campaign. The business associations and the parties are the ones doing this. Their question addresses e-voting. In purely theoretical terms, you could take part in elections with SwissID in the future. However, there's no legal basis for this yet. E-ID is a subset of SwissID. It merely confirms that a person exists, whether their surname and forename match other specific attributes. If e-voting is ever introduced, SwissID could theoretically serve as a gateway to e-voting. Person X could confirm with SwissID that they live in municipality Z, are Swiss, over 18 years old and therefore have the right to take part in these elections, be they at municipal, cantonal, or federal level. – However, let me reiterate that SwissID will not be an application for e-voting. Rather, it could only serve as a simple, secure gateway and as a means of identification.

And how are cantons such as Schaffhausen and Zug, which already have their own E-IDs, going about it?
These are merely regional E-IDs, whereas the SwissID is a national solution. E-voting is also the application on top. In Schaffhausen and Zug, those eligible to vote can have their identity confirmed at the town hall and then receive an application which allows them to use a few functions in e-voting.

If the E-ID Act were to be passed, would you adopt these processes as well?
Exactly. We're already doing that. The E-ID Act will simplify the currently prevailing legal bases and regulations. In the banking sector, you currently have two options for identifying yourself: physically at the counter or by video in an online session. Down the line, there might also be a bank or money transfer from an existing account. In addition, in line with current digital signature legislation, you could theoretically sign anywhere with any parties as soon as physical identification has been provided. By contrast, after video identification, you can sign only for the bank that identified you. If you change banks, you must go through this process again. An E-ID would simplify the whole thing. With a substantial-level E-ID, you could sign anywhere. That's an example from the world of banking. There are other, even more complex examples. The regulations in Switzerland are currently very diverse. The E-ID Act would lead to harmonization, as I would then know which of the three identity levels I need for which processes. By my estimation, 99.5 percent of people could manage their lives today entirely digitally with a substantial-level identity – partly because the system is also downwards compatible, of course. This means that substantial level is also valid for transactions at low level.

For high level, we currently assume that this will apply to just a few special cases that only a few select people need. According to the Federal Office of Justice, this will relate to sub-groups, e.g. for managing sensitive infrastructure such as nuclear power stations, dams, the army, or access to secret information.

Where is physical identification carried out if not at banks?

We're in discussions with certain federal offices about replacing physical identification with digital identification. However, current laws such as the Anti-Money Laundering Act and the FINMA Ordinance still require either physical identification or, in some cases in the banking sector, video identification. As soon as digital signatures come into play, there's only physical identification. In specific cantons that already use our solution, SwissID with a signature, we've trained employees of municipal bodies that undertake identification. For instance, a citizen can go to the town hall and identify themselves there, and the clerk confirms their identity. We've given the clerk appropriate training, and the whole end-to-end process has been mapped. This proves that person X comes from municipality Y and has been checked by clerk Z. Person X may sign electronically in a legally compliant manner on account of this process.

– However, this process is relatively complex and very time-consuming. Each municipal employee has to be trained individually. – This is unavoidable, as we ourselves have to be regularly certified and audited. We must be able to verify everything end-to-end. Legally, we have unlimited liability if anyone signs with the wrong name. That's why our processes are set out very strictly and in detail.

Who audits you?

Various bodies are responsible for this, as we have two business areas. There's the identification service business, the old SuisseID and the new SwissID, and we also operate in the highly regulated security certificate field. A certificate can also be a signature certificate. Here, we're subject to a detailed audit by TÜV SÜD from Germany every three to four months. TÜV SÜD looks at our processes, our IT infrastructure, how many people are trained, whether everything is stored properly, whether the firewalls are installed correctly, etc. In the field of SSL certificates, these are e-mail or website certificates, for instance. You may recall that a green bar used to light up to indicate a secure website when you typed in "https". We're also internationally certified and audited for these certificates on a regular basis as a trust service provider.

How much involvement by the state and the private sector is required when implementing an E-ID?
Under the new E-ID Act, the Federal Office of Police decides whether or not someone obtains an E-ID. So the responsibility lies with the state. However, what we are clearly seeing is that wherever the state lays claim to all parts of the process, E-ID penetration is in the low single-digit percentage range. By contrast, wherever the state has entered into a PPP (public-private partnership), penetration is over 80 percent. We have examples of both: high penetration in Scandinavia, low penetration in Germany and the UK. Even if the state were to handle E-ID by itself in Switzerland in the future, penetration would probably also be very low, as the state cannot build up the market that it needs for this by itself. From our perspective, the two-sided market is to be built up by private entities – the 1.2 million-plus users, as well as the growing number of online services that offer SwissID or E-ID login. That's the only way to achieve a high penetration rate for E-ID. In Switzerland at least, the state cannot compel anyone to create an E-ID, and it cannot compel online services to accept an E-ID as a login either. Nor will the state be able to build up a sales team to promote E-ID on the market. All the federal state can do is compel the cantons to perform tasks on behalf of the Swiss Confederation. This could be for the federal direct tax, for example. It would be up to the cantons whether to carry out everything else – or not. The latter is more likely, purely because of the costs. Bear in mind that just one audit of our systems costs around half a million francs, not to mention the requisite IT infrastructure and the processes that need mapping. Then there's the work involved in keeping up to date with the latest IT security requirements. We rent data centers, we have licenses, and we employ well-paid IT and security staff. Of course, the canton could also do this in principle, but it would make for a more bloated state. – So one relates to the market, namely utilization, which the state would have to build up, and the other relates to the high costs that the state would have to pass on to citizens to some extent, for instance through taxes. If the private sector takes on implementation of E-ID, it bears the financial risk.

So what do these million SwissID holders use their digital identity for at the moment?
We currently have around 85 "touch points". At the Swiss Post, there is a login for a host of different services: say you're going holiday and want to have your mail redirected or withheld. Another example is leasing. We've now fully digitalized the process here. By law, a leasing transaction requires a handwritten signature. This is now possible with a digital signature. In the canton of Jura, there's already an end-to-end process for submitting tax documents with no media disruption.

And in the canton of Grisons, fishing and hunting permits can be paid for entirely digitally, for instance. The SwissID is also already used as a login for SwissPass.

> **"Many customers, both in Switzerland and abroad, want Swissness. We're doing very well in the certificate business, especially in Germany."**

The Swiss Conference on Informatics (SIK), the informatics organizations of the Confederation, cantons, and municipalities and of the Principality of Liechtenstein recently concluded a collaboration agreement with you. What for?
In Switzerland, procurement by members of the SIK is governed centrally. If you can be included on this list as an official supplier, it results in an important economy of scale. We conduct the negotiations once, and the cantons handle the SIK agreement one-to-one. Otherwise, we'd have to negotiate a separate agreement with each canton and each municipality. Instead, the prices and terms are clarified, and that's how we're able to cover all municipalities and cantons, in principle. This clearly means improved efficiency for us.

Is this a USP?
Obviously. The negotiations took a long time. As you can imagine, lots of stakeholders were involved in these negotiations. It took around fourteen months before the agreement with SIK was signed. As well as pricing, it's also about rights and obligations, of course. So yes, it is a USP for us. This is ready becoming apparent. Our SwissID is currently being tested by lots of stakeholders from the cantons, MiGOF (Migration Governance Framework), and the Swiss Confederation. Some municipalities are also in contact with us.

Switzerland regularly does well in the digitalization rankings. Where do you see a need for action?
Switzerland certainly has a good starting position, particularly in teaching, in education, with the colleges and universities. We are obviously a top player here with the ETH Zurich, EPFL, USG, and other universities. That's probably a major factor in our strong ranking positions. But if you look solely at digitalization and where Switzerland is now, we're some way off a good position in lots of rankings that I've seen so far.

In e-government, we came 64th out of 128 in a recent study. The media disruption-free opportunities in place in various other countries don't really exist in Switzerland yet. We are 27th in the ranking of all industrialized nations.

Does this mean that 26 other nations are far more advanced than Switzerland?
That's right. The northern countries in Europe are the absolute front runners. In Norway, there's BankID and NemID; the Netherlands and Denmark are also much more advanced. Even Estonia and Austria. There are obviously various reasons for this. Things are working really well in the physical environment in Switzerland. If I go to the town hall in the morning, it takes me five minutes, and I have my certificate of origin, my excerpt from the debt collection register, etc. It's easy. In our country, there is less need for digital services than in France, for example, where everything is very centrally organized, or in Sweden, where people have to travel long distances. Here, by contrast, there's a community hall on practically every corner. And the processes work really well. That's probably what's stopping us from digitalizing more quickly.

> **" With the growth in flexibility and the new generation that is on the go 24/7, new needs for digital services are unfolding."**

So digitalization is being held back not so much by a lack of infrastructure as by the population's sense that there's no great need for it yet?
Yes. Why should I "digitalize" when I have a post office, bank or community hall on every corner? But some things are happening. After all, banks and town halls have opening hours. With the growth in flexibility and the new generation that is on the go 24/7, new needs for digital services are unfolding. And we need to move here, otherwise we will soon get left behind at international level.

Could foreign firms offer a Swiss E-ID too?
The conditions for the E-ID are clearly regulated in the Act. For instance, the data must be stored in Switzerland, a branch in Switzerland is compulsory, a license is required, etc. – There was this case in Denmark: A small firm won a call for tender for NemID – and was

sold to America. Now, everything is in the USA. For a Danish ID! With the E-ID Act, that sort of thing would have been impossible in Switzerland. If the E-ID Act doesn't come in soon, there's obviously always a danger of a foreign corporation discovering the Swiss market and offering an E-ID. There would then be little guarantee of data protection or data security.

Total Swissness!?
Yes, we're really noticing that with SwissID, but also in the certificate field. Many customers, both in Switzerland and abroad, want Swissness. We're doing very well in the certificate business, especially in Germany. Our customers include the federal states of Saxony and Hesse, as well as Aldi and Drägger. And they all really appreciate our Swissness. Swissness is also highly valued in the Arab world and Asia. But the name SwissID also speaks volumes. We store all data in Switzerland, and have the label "swiss made software + hosted in switzerland". Total Swissness is our vision and our seal of quality.

Interview:
Gabriel Juri and Karin Pache
SIX

SHAREHOLDER STRUCTURE OF THE SWISSSIGN GROUP LTD.
"On the one hand, we have the government-related firms: Swiss Post, Swisscom, and SBB. On the other hand, we have the shareholders from the banking sector: SIX, UBS, Credit Suisse, ZKB, Raiffeisen, Luzerner KB, BCGE, Entris. Then we have lots of insurance companies from A, such as Axa, to Z, such as Zurich Insurance, with Mobiliar, Helvetia, and Baloise in between. A who's who of health insurance funds are also represented. So the shareholder structure is highly diverse. Importantly, the majority of shares are held by the government-related firms: Swiss Post, SBB, Swisscom, and the cantonal banks. These companies hold over fifty percent of the share capital. We looked very closely at this when setting up the company: Who do Swiss people trust? Insurance firms and banks are held in very high regard, as are the government-related companies. And that was also the context in which we founded the company. The original idea was to join forces to digitalize Switzerland."

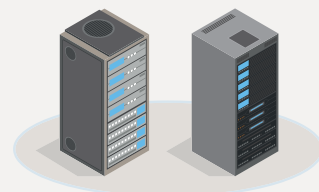# eBill In Numbers, Facts and Figures

Invoice Issuers
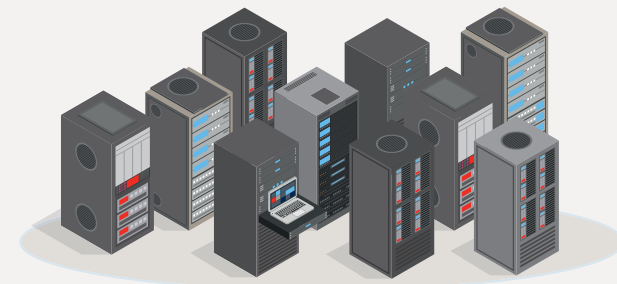
2018: 1257

2019: 3146

In one year, SIX recorded a 150 percent increase in the number of invoice issuers. This means that more and more natural or legal persons transmit transactions via a growing number of network partners.
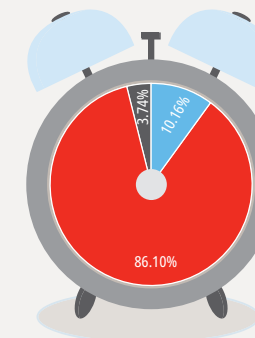
Invoice Recipients

2018: 835 760

2019: 1 272 238

Almost 1.3 million natural or legal persons receive, check and release their invoices for payment via the eBill infrastructure in a highly punctual manner.

Network Partners

2018: 2

2019: 10

Since the end of 2019, eight more network partners in addition to SIX Paynet and PostFinance may deliver business transactions of invoice issuers into the eBill infrastructure. They ensure greater reach and generate more transactions.

Payment Punctuality

3.74%

10.16%

86.10%

Approval more than 10 days prior to due date

Approval 9 days prior to/ after due date

Approval more than 10 days after due date

Over 95 percent of eBill invoice recipients release payment before or shortly after the due date. This excellent payment behavior is supported by the banks connected to the eBill infrastructure.
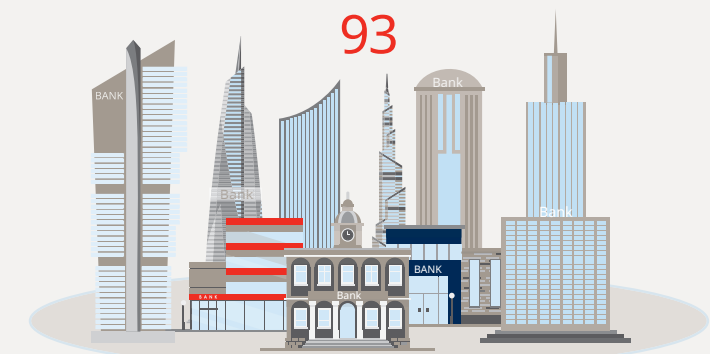
Security

2018–2019: 0 cases of fraud

0-00000

Thanks to the highest technical and organizational security standards of the eBill infrastructure, there are no cases of fraud or abuse.

Transactions

25 819 491

The eBill infrastructure currently processes around 26 million business transactions with a significant invoice volume.

Invoice Volume

1 323 750 011.33

Over CHF 1.3 billion are processed monthly via the eBill infrastructure. The volume of eBill invoices is constantly increasing thanks to a sharp rise in the number of invoice recipients.

Banks

93

95 percent of all Swiss financial institutions offering payment services are connected to the eBill infrastructure of SIX, thereby enabling their customers to issue, receive and release invoices electronically with absolute security.

Savings High Like 1000 Eiffel Towers

The digitization in payment transactions and invoicing is constantly accelerating. By 2028, over 200 million paper invoices will have been replaced by eBill in Switzerland on an annual basis, leading to saving so much paper as to build a tower 300 kilometers or 1000 Eiffel Towers high. Therefore, this will significantly contribute to improving sustainability and cost efficiency.

Nowadays the majority of invoices is still printed on paper and sent to invoice recipients per traditional mail. The Swiss financial center aims at sending all invoices by electronic means in the future and providing them in digital form to debtors' e-banking or m-banking directly through eBill. The payments can be released there with just a few clicks and without media disruptions.

93 Swiss banks make annual investments in eBill and also in their own systems and processes to make providing and paying digital invoices as easy as possible for customers. The investments are paying off.

Savings Potential

Paper invoices are expensive. In fact, they are much more expensive for invoice issuers than digital invoices, as shown by the research published by the University of Applied Sciences and Arts Northwestern Switzerland FHNW (cf. clearit 81). Considering not only direct, but also indirect costs in calculating the price, an SME can save an average of CHF 2.47 per invoice if it switches to eBill. If we multiply this amount by the 200 million invoices issued annually by all companies in Switzerland, it will give us a savings potential of CHF 494 million every single year. So if we sum up all expected savings in the next eight years, the eBill initiative of the financial center will bring the Swiss economy the savings of, believe it or not, CHF 2.47 billion.

What About Sustainability?

One sheet of paper is 0.01 cm high, so 500 sheets are around 5 cm high. An A4 invoice with integrated payment slip is usually folded and put into a C5 envelope. Therefore, a paper invoice in an envelope is around 0.03 cm high. 200 million paper invoices in envelopes stacked on top of each other reach 60 kilometers in height. If paper invoices are replaced by electronic invoices, the Swiss economy will have saved paper in the height of 300 kilometers by 2028. This is equivalent to the height of 1000 Eiffel Towers! Considering that only manufacturing of this paper tower results in emissions of ca. 10,000 tons of CO_2, not to mention the emissions from physical transport and disposal of paper, saving over one million paper invoices will also reduce the carbon footprint in a sustainable manner.

It is, of course, important to remember that growing amounts of data will also lead to increased power consumption of IT infrastructure. However, maximum energy efficiency with high digital sustainability will be achieved for eBill thanks to the fact that digital invoices will be processed in the central data center of SIX.

Overall sustainability

Saved paper tower in total   Additional eBill invoices in total
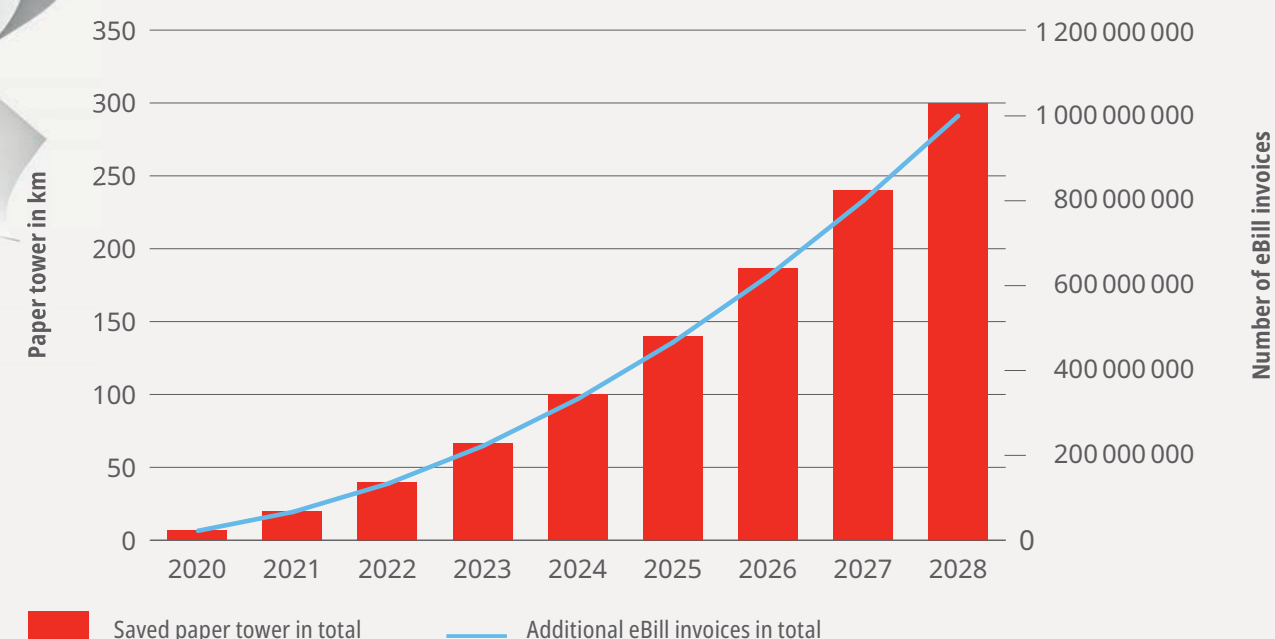
Only Benefits

To make it possible for invoice issuers to save around 500 million francs annually and at the same time not to generate the paper tower of sixty kilometers, all players must consistently pull in the same direction:

– In the years to come, SIX and eBill banks will be jointly investing a two-digit million amount in the eBill infrastructure.
– Business software developers will enable eBill in their software and keep the software updated at all times.
– Debtors will register for eBill in their e-banking and at their invoice issuers.
– Invoice issuers will be consistently switching to eBill.

eBill allows for saving costs, increasing sustainability and at the same time improving customer experience in payments. Is there any other product that can do this?

Peter Ruoss
UBS Switzerland AG

API: Milestone on the Royal Road to Successful eBill

In November 2019, the redesigned eBill solution was successfully launched on the market. The new technically modern solution has been very well received. For all manufacturers of invoicing software, the question now arises of how to connect to the new programming interface (API). Especially the newly available lookup function is a game changer.

Until now, in order to send e-invoices, invoice software manufacturers had to implement two interfaces Paynet and PostFinance. There are now ten so-called network partners, via which all invoice issuers must submit their invoices without exception. To prevent software partners from implementing ten different interfaces, network partners have developed an API recommendation for software partners (SWP). It is mainly based on the API of SIX, which is available to the network partners.

The SWP API is a recommendation, which means that both network and software partners are free to implement it. However, there are many advantages for both sides, which result in much less effort overall.

When developing the API, the network partners have been supported by SIX, Swico and the Association for Sustainable Value Creation NetworksGS1. Software partners were consulted to ensure that the API could be used in the most efficient manner. One result of this cooperation is the availability of various submission formats: yellowbill XML, EIXML ("Paynet XML") and a syntax of the new EU e-invoicing format EN16931, better known in Switzerland under the German name ZUGFeRD 2.1 (which is identical to the French factur-x 1.0.0.5). In addition, QR-bills can be submitted as PDF files, whereby it must be ensured that the "Alternative procedure" (eBill) and the so-called "Swico-String" have been correctly filled in. The recommendation also includes a standardized connection procedure for individual invoice issuers.

The SWP-API working group is about to complete its work in the foreseeable future. Subsequently, a four-week consultation procedure will follow. You can already find information on the current work status under: https:// ebill-swp.org.

Lookup Function
As of March 2020, all participating banks will ask their eBill users whether they would like to be found by all invoice issuers via their e-mail addresses already stored.

This option will massively increase the volume of eBill transactions, but it assumes that invoice issuers can use the lookup function in their invoicing process or master data to check whether or not an invoice can be delivered as an eBill based on the stored e-mail address.

The new SWP API offers exactly this possibility and it will be an essential feature for many invoice issuers to switch to a software version that supports this option. This feature will convince many more invoice issuers to start using eBill immediately. The time frame for this fits perfectly: In the upcoming months, many companies, associations and institutions will have to deal with their invoicing process due to the introduction of the QR-bill. It is therefore of great advantage for the software providers who are ready to offer the new SWP-API for eBill.

Nicolas Guillet
Abacus Research Ltd.

MEMBERS OF THE WORKING GROUP SWP-API

Possible Alternative to Finance IPNet?

Customers of SIX rely on a technical data connection when they use the services of the financial center infrastructure provider. Finance IPNet has been fulfilling this task for nearly 20 years, be it for interbank payment transactions (SIC and euroSIC), card transactions, financial information or the settlement of securities. An alternative to this communication service is currently being verified.

Finance IPNet facilitates offline access to SIX services and uses leased connections from carriers. The services are accessed through a network managed by the carrier (MPLS-VPN). Finance IPNet enables communication connections with guaranteed availability, via either one carrier or, if increased redundancy requirements apply, multiple carriers. Although Finance IPNet guarantees a high level of security, its functionality is limited. This means that the carrier networks are not connected to each other, and the only connections possible are those between customers and SIX. Standard Internet connections outdo Finance IPNet in terms of flexibility and functionality, but they also have serious disadvantages. Security deficiencies in today's Internet control endanger the transmission of data between carriers (routing sabotage). Denial-of-service attacks from anywhere in the world are also a constant concern in view of the global vulnerability of the Internet, posing significant risks to critical infrastructures. Previous attempts to upgrade the outdated protocol mechanisms have failed.

New Internet Protocol SCION as Alternative?
Against this background, the ETH Zurich has spent the past ten years developing the SCION protocol architecture, which has the potential to significantly increase routing security between providers and users without limiting the scope of function. The step-by-step introduction of SCION by providers for secure Internet areas and special-purpose networks seems realistic with reasonable outlay. In today's Internet, the sender transfers the data packages to the Internet provider – like sending a message in a bottle. The data packages then all too often travel through various intermediate stations and countries, taking a route over which the sender has no control. With SCION, the sender determines the path of its data to the receiver. The new architecture features key-based governance, authorization and control designed to improve routing security. Providers can create protected network groups that, in turn, can communicate with others. This enables community networks jointly defined by providers and users, in which only authorized participants can com-municate with each other and that are not dependent on a single carrier.
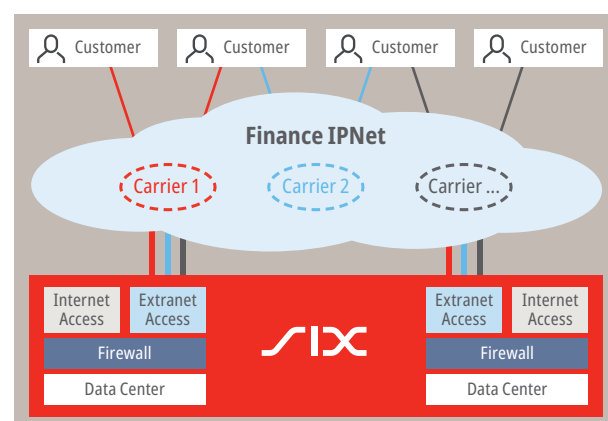
Joint Project Initiated Under SIX
Given the increasing prevalence of cyber risks, the Swiss National Bank sees SCION as a promising solution for enabling secure and flexible communication between financial institutions in Switzerland. Optimizing the communication infrastructure (Secure Swiss Finance Network) would further strengthen the financial center's resistance to cyber risks and could become an important locational advantage. Initial tests by providers and users are promising. Together with its renowned partners, SIX has initiated a project to develop a new communication service – Secure Swiss Finance Network SSFN – based on SCION and verify its suitability as an alternative to Finance IPNet.

Christopher Koch
SIX

Further details
SCION: www.scion-architecture.net
Finance IPNet: www.six-group.com/Finance-IPNnet

Swiss Market Ready for QR-bill

On 30 June 2020, the QR-bill will be launched in the Swiss financial center. Companies have been made aware of it and most of them have already taken necessary measures. With the help of some tips and tricks, the implementation will be a success.

The introduction of the QR-bill in Switzerland will carry the harmonization of payments with invoicing and payments in francs and euro forward. This will benefit invoice issuers and debtors in many different aspects. There will also be the opportunity to verify possible optimization of business processes and the use of suitable channels or interfaces.

Strong Upward Trend
According to the recent survey carried out in December 2019, around 50 percent of companies claimed they are ready to process the QR-bill from 30 June 2020. In fact, 70 percent already knew about the QR-bill. These numbers have clearly increased compared to the survey in spring 2019, when only 17 percent were addressing the QR-bill. In December, two thirds of respondents had an ERP system with automatic processing in place. The majority of these companies rely on their software providers to deliver the update to the QR-bill on time. Hence, the updated software version must be made available to the market as of this key date. After all, the 25 largest software companies cover over 80 percent of the market. Financial institutions and software providers must and will continue to exchange and discuss on this topic to set themselves up for successful introduction.

Accounts Payable Management: Receiving and Paying QR-bills
As of the introduction date (30 June 2020), debtors need to be prepared for receiving QR-bills from their suppliers. Therefore, the process needs to be clarified and set up to process the QR-bill by this date.

To support debtors in taking necessary actions, various information and support materials have been published on the website PaymentStandards.CH. There are not only checklists, but also introduction scenarios that precisely demonstrate use cases and action fields. The "readiness list" of individual software versions provides information on qualified software solutions.

TIPS FOR OPTIMIZATION
- *Save accounts payable master data in a structured way*
  Early verification of accounts payable master data. Addresses should be saved in a structured way whenever possible (separate fields e.g. for street, postal code, city and country).
- *Create existing suppliers who switch to the QR-bill as new invoice issuers*
  To avoid errors, it is recommended not to overwrite existing supplier data with ISR (orange payment slip/party number), for example also in standing orders, with the data of the QR-bill/QR-IBAN.

Use the "Billing information" (according to www.swico.ch) in the accounts payable
- The "Billing information" field of the QR-bill (QR element StrdBkgInf) allows for coded information for automated booking of the payment.

Receivables Management: Invoicing With the QR-bill and Booking Incoming Payments

The introduction date of QR-bills commences the parallel phase of the IS/ISR procedure and the QR-bill. The period of this phase has not been determined yet. PostFinance aims at replacing the current documents with the QR-bill after a transitional period reasonable for the customers. A respective date will be announced in due time.

For invoice issuers, the invoicing process goes hand in hand with the processing of incoming payments (accounts receivable reconciliation/cash management processes). Various software solutions are available on the market to support these business processes with the QR-bill with default or customized settings.

Designed to achieve a high level of automation, the QR-bill procedures are based on the IBAN or QR-IBAN. The IBAN/QR-IBAN is provided to the invoice issuers by their financial institution.

The QR-bill allows for physical invoicing, with each form printed on uniform white paper. The entire QR code payment part will be created directly upon issuing an invoice and printed with all necessary data.

Depending on the financial institution's offering, pre-printed/partly printed payment parts can be ordered with or without reference. It is important to note particularly in terms of using such payment parts that only the debtor's name and address and the amount can subsequently be added by hand. Subsequent manual supplements, for example to the details of payment or reference, may not be added.

Invoice issuers are not obliged to have their payment parts homologated by a financial institution. The payment part with the Swiss QR Code is tested only if it is explicitly desired or required by the invoice issuer or financial institution. However, such checks are highly recommended, as inadequate or incorrect payment parts may cause inconsistencies in processing and be rejected as a result.

The market trend justifies the optimism about the successful implementation of the QR-bill. Supported by the State Secretariat for Economic Affairs (SECO), the Swiss Trade Association sgv and the Swiss Bankers Association, the nationwide PR campaign launched before Christmas makes it gain even more momentum.

Dieter Bolliger
Credit Suisse (Switzerland) Ltd.

PR campaign banners.

Further details

TIPS FOR OPTIMIZATION
- *Save accounts receivable master data in a structured way*
  Early verification of accounts receivable master data. Addresses should be saved in a structured way whenever possible (separate fields e.g. for street, postal code, city and country).
- *Separate processes*
  To avoid errors in the parallel phase, it can be advantageous to run existing invoicing/accounts receivable processes in addition to the QR-bill so that outstanding payment slips can still be settled seamlessly.

Use the "Billing information" (according to www.swico.ch) in the accounts receivable
- The "Billing information" field of the QR-bill (QR element StrdBkgInf) allows for structuring information required from debtors.

New Ordering Procedure for Printing QR-bills

The QR-bill increases the automation of payment processing for banks, invoice issuers and receivers. A new standard now also ensures a continuous automated processing of print orders. Banks and the printing industry have agreed on a new ordering procedure.
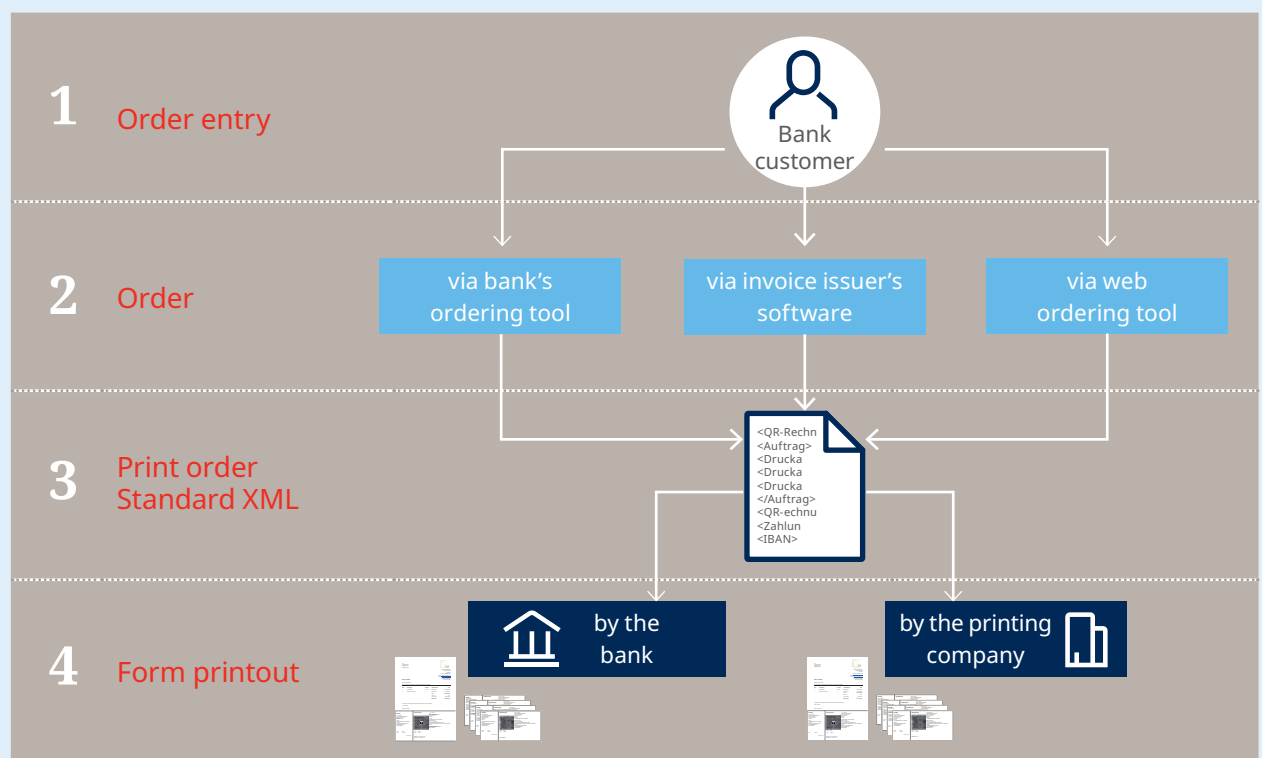
Today, when private individuals, companies and banks place an order with their printing company to print orange or red payment slips, dozens of different file formats are used. This way the printing company gets all necessary information it needs for the creation of the payment slips.

Efficiency Through Standardization
In the case of QR-bill, far more information (structured address, invoice information, notification also for reference procedures, creditor reference, alternative procedures, etc.) can be transferred for printing than with today's payment slips. Supported by SIX, banks and the printing industry have established a new Swiss standard in order to reduce complexity. Using a uniform XML format, all QR-bill information can now be transferred to printing companies in a standardized way. Therefore, all requestors submit the same file to any printing company that supports this standard. These, in turn, no longer have to offer a wide variety of formats, but can automatically send the orders of all customers to the printing line.

The four steps for placing an order to print a QR-bill

1	Order entry
	Bank customer
2	Order
	via bank's ordering tool / via invoice issuer's software / via web ordering tool
3	Print order Standard XML
	<QR-Rechn <Auftrag> <Drucka <Drucka <Drucka </Auftrag> <QR-echnu <Zahlun <IBAN>
4	Form printout
	by the bank / by the printing company

Sample of a QR-bill.

Content

The standard describes technical specifications and the data structure for placing orders for the printing of payment parts with the Swiss QR Code and receipt using standard XML.

The structure of an XML message always consists of three levels.
– The A level contains the order information, e.g. delivery address for sending QR-bills or customer number. The A level only appears once.
– The B level contains data from the invoice issuer, e.g. QR-IBAN and address of the beneficiary or QR reference. The B level can occur 999 times.
– In C level, the debtor's data is filled in, e.g. address, currency or amount.
  The C level can occur 99,999 times.

Optionally, the order can be submitted in PDF/A3 format to include a cover page with information about the print order or a company logo.

Thanks to the new standard, orders can be processed efficiently and in high quality, which contributes to data quality and thus enables payments to be processed correctly.

Erik Widmer
UBS Switzerland AG

The advantages of the new standard:
– Despite the increased complexity connected with the QR-bill, the bottom line is that placing an order becomes easier.
– Simplified ordering and processing for all parties.
– A standardized format saves investment costs.
– The print standard is suitable for both small and large orders.
– The process from ordering to printing and dispatch can be fully automated.
– Printing QR-bills is not part of the core business of banks and can easily be outsourced to printing companies thanks to the new standard.

How Did it Happen?

In spring 2019, the association of print and media industry viscom developed the new standard in several working sessions together with various printing companies, UBS, Credit Suisse, Zürcher Kantonalbank and SIX. Its draft was presented by viscom in a public consultation procedure last autumn. The multilingual final version has been available on the viscom website.

Sample of a payment part with receipt.

Additional info
• *viscom with the standard and list of printing companies which support it*
• *SIX with the standard and list of printing companies*

Life Doesn't Get Easier.
But Payments Do.

Thanks to the new QR-bill. It will modernize Swiss payments as of 30 June 2020. The QR-bill will replace current payment slips after a transition phase. You will be likely to come across it more and more often while clearing your mailbox. You may pay the QR-bill in three ways

Find out more at:
pay-simple.ch

with just one click
via e-banking

with a tap of a finger
via mobile banking

or by walking
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Schweizerische Eidgenossenschaft
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Swiss Confederation