Swiss Instant Payments in the Starting Blocks — Future Talk with Marianne Wildi — A Visit to University Hospital of Zürich — New Network for Secure Data Exchange

A VISIT WITH

This is how the University Hospital of Zürich introduced the QR-bill



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FUTURE TALK

Hypothekarbank Lenzburg CEO Marianne Wildi senses pressure to move toward ever faster payment settlement processes.



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How much is means-ofpayment use in Switzerland really changing? A survey by the Swiss National Bank provides answers.

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Swiss Instant Payments in the Starting Blocks

TEXT MICHAEL MONTOYA MANAGING DIRECTOR, SIX INTERBANK CLEARING LTD

anks in Europe settled the first instant payments via the pan-European RT1 system around four years ago. It was an exciting development that the Swiss financial industry did not yet perceive and construe as a

widespread customer need at that time. Then, in late 2018, the European Central Bank put its TARGET Instant Payment Settlement (TIPS) service into operation. Time to observe and reflect was over in Switzerland. The conviction that instant payments can become the new norm is increasingly gaining prevalence as time goes on.

In March 2020, the Board of Directors of SIX Interbank Clearing Ltd gave the go-ahead for the next – fifth – generation of the SIC system. SIC5 will support the new instant payments use case that Swiss banks will be able to offer their clients starting in August 2024. Instant payments can then be executed 24 hours a day, 7 days a week, and 365 days a year, with a transaction path from the payer's to the payee's account taking only a few seconds.

SIC5 is to payment transactions in Switzerland what 5G is to mobile communications: speed. The fifth generation of wireless technology transmits signals much faster than the 4G transmission rate. This vastly accelerates surfing speed and, with a reaction time of just a few milliseconds, enables virtually instantaneous communication in real time. In the future, banks will be able to execute clients' payment transactions end-to-end in less than ten seconds. The SIC system itself processes payments within a maximum of two-tenths of a second, i.e., in real time.

Demand Will Increase

"Digitalization and improvements in communications technology are boosting demand today for instant payments available around the clock," says Swiss National Bank (SNB) Governing Board member Andréa M. Maechler. The boom in mobile payment applications is particularly bound to spur on demand, according to the SNB. As the originator of the SIC sys"Digitalization and improvements in communications technology are boosting demand today for instant payments available around the clock."

tem, which is operated on behalf of the SNB, it's important to the SNB that Switzerland's core payments infrastructure remains fit for the future and facilitates innovations in customer payment transactions.

Public-Private Partnership

The SNB, financial institutions, and software partners have been engaged in a strategic dialogue and cooperation for years. The responses to the consultation on the SIC5 concept draft in summer 2020 revealed that the participants welcome the undertaking. This spring, the Board of Directors of SIX Interbank Clearing Ltd approved a detailed SIC5 concept plan after further consultation with the SIC community. Numerous online information events lured officials of SIC participant institutions - including big universal banks as well as cantonal, regional, standalone, and foreign banks – to their screens. SIX Interbank Clearing Ltd and the SNB want to get as wide a circle of affected SIC participants as possible involved in the innovation process. The key focus lies on how to implement in a practical way. Where do banks see the biggest challenges? What specialist and technical support do they need to successfully introduce instant payments?

A Must for Everyone

All active participants in the Swiss customer payment transactions system via SIC are expected to be capable of processing incoming customer payments instantaneously by the end of 2026. The new service will become an integral part of the SIC system. As of August 2024, a little over six months after SIC5 goes into operation, institutions that received more than 500,000 incoming customer payments through the SIC system in 2020 will need to be capable of receiving instant payments. Sending instant customer payments is voluntary.

The SIC5 Platform

The settlement of instant payments poses very demanding requirements with regard to availability, processing times, and operating uptime. The SIC system must process instant payments within a maximum of two-tenths of a second, 24 hours a day. The current SIC4 generation is not designed to do that. SIX Interbank Clearing Ltd is therefore rolling out the new SIC5 platform in three operational stages.

The new SIC5 platform will initially provide only the new IP service. The RTGS service of the current SIC system will stay on the present SIC4 platform for the time being. This means that both platforms





Payment transmission in the SIC system lasts less than 0.2 seconds.

Glossary

SIC

The Swiss Interbank Clearing (SIC) payment system has been settling payments denominated in Swiss francs since 1987. SIX Interbank Clearing Ltd operates Switzerland's central payment system on behalf of the Swiss National Bank.

IP service

The instant payment (IP) service is the part of the SIC system that will settle Swiss franc-denominated payments from senders' to recipients' accounts around the clock (7x24x365) starting in August 2024.

RTGS service

The real-time gross settlement (RTGS) service is the part of the SIC system that has been processing Swiss franc-denominated payments between financial institutions in real time since 1987.

RT1

The pan-European RT1 instant payment system has been settling euro-denominated payments around the clock (7x24x365) since 2017. It is operated by EBA Clearing, which is owned by a consortium of 46 European banks.

TIPS

TARGET Instant Payment Settlement (TIPS) is a platform that has been processing Euro-denominated payments around the clock (7x24x365) since 2018. It was launched by the national central banks of every EU Member State together with the European Central Bank.

SEPA Instant Credit Transfer

SEPA Instant Credit Transfer (STC Inst) is the process that forms the basis for Europe-wide instant payments via the RT1 and TIPS systems. will be run in parallel during this operational stage.

In the second operational stage, starting in 2026, SIX Interbank Clearing Ltd will migrate the technically unchanged RTGS service from the SIC4 to the SIC5 platform. This will have no effect on system participants, who should ultimately be able to utilize the benefits of the new platform for the entire SIC system with both services.

The functions of the new SIC5 platform – particularly the functions of the RTGS service – are fundamentally based on those of SIC4. The IP service for its part – like the pan-European RT1 system – is designed along the lines of the SEPA Instant Credit Transfer process procedures. This should make life easier for those financial institutions that also wish to offer instant payments denominated in Euro in the future.

New Offerings in Sight?

As is the case with 5G, SIC5 alone likewise isn't enough to provide the perfect infrastructure. The real added value doesn't materialize until innovation reaches users. For that to happen, offerings for retail clients and enterprises are needed from banks and business software suppliers. Banks prospectively have an opportunity to provide instant payments to customers across their own mobile and e-banking channels. Moreover, instant payments can lay the foundation for entirely new solutions, such as automated payments in connection with the Internet of Things. What innovations will actually come into being is as yet unknown and will become clear in the years ahead.









Marianne Wildi, CEO of Hypothekarbank Lenzburg, on Instant Payments. You are the chief executive officer of a Swiss bank and a fintech pioneer. What motivates you as a banker? I'm fascinated by the possibilities of combining banking and technology. As a result of my background, I have a deep understanding of innovation, which manifests itself particularly in interaction with fintech companies.

What do you think about the introduction of instant payments in Switzerland? We are definitely sensing pressure from customers to move in the direction of ever faster payment settlement processes, particularly in connection with mobile apps. We're noticing that, for example, from the customers of our fintech partner Neon. They already expect all effected transactions to always be executed, debited, and simultaneously displayed on the account app instantly. Instant payments are thus a very important function in the platform business. For this group of customers, we already supply a solution that is quasi instant. I say "quasi instant" because it doesn't follow the Swiss Interbank Clearing (SIC) payment system's real-time processing standard but can be deemed instant by our own standards. We are looking forward to this becoming possible also across different banks.

Where do you see the biggest challenges? Today's systems are complex and have developed over a long time. It certainly would be easier to introduce a greenfield system from scratch. What's important, in my view, is having the support of all bank groups and ensuring inexpensive transaction costs, particularly also compared to debit and credit card offerings.

What is the next big trend in the digitalization of payment transactions? Besides the implementation of instant payments, the next big trend is transactions in a blockchain, for example through the introduction of central bank digital currencies (CBDCs). The Swiss National Bank and SIX are at the forefront here and thus have a unique opportunity to reshape the Swiss value chain. Incumbent systems have grown long in the tooth, even more so in light of the advancements in blockchain or distributed ledger technology (DLT). This applies to the SECOM securities settlement system just as much as it does to the SIC system. Using DLT to link the two systems would thrust those of us in the finance business into new areas and would enable numerous innovations.

How much is the use of payment instruments really changing in Switzerland? The National Bank survey provides answers.



Volume share of payment instruments

Methodology Payment diary Basis 2020: 21,853 transactions; 2017: 22,517 transactions; exclusive consideration of non-recurring payments

Read the entire

survey:



Ownership of payment apps



Methodology Computer-Assisted Telephone Interview <u>Question</u> Which of the following non-cash payment instruments do you own? <u>Basis</u> All respondents (2020: 2,126 people; 2017: 1,968 people)



Usage of contactless function of card payments



Methodology Computer-Assisted Telephone Interview Question When you pay with your card, how often do you use the contactless payment function? <u>Basis</u> Respondents with a debit or credit card (2020: 2,062 people; 2017: 1,843 people)



Volume share of cash

Methodology Payment diary Basis 21,853 transactions or number of transactions per generation group <u>Sample</u> Greatest & Silent Generations: 169; Baby Boomers: 575; Generation X: 622; Generation Y: 529; Generation Z: 232

How University Hospital Zürich Rolled Out QR-Bills

TEXT DR. WERNER VOGT, WERNER VOGT COMMUNICATIONS AG

ood planning is half the battle is one way to summarize the switchover by University Hospital Zürich (UHZ) to QR-

bills. The transition project was carried out for the most part through the deployment of inhouse resources and capabilities. Health insurance companies – the main recipients of invoices from UHZ – were particularly interested in the project.

When did UHZ switch over to QR-bills, and how many of them have you sent out thus far?

The transition at UHZ followed a precise schedule with a progressively increasing invoicing volume so that we would have been able to take corrective action at any moment if problems arose. The first dispatch of a QR-bill occurred on 23 November 2020, and was sent to a small health insurer. The complete switchover took place at the end of March 2021. By mid-July we had already sent out half a million QR-bills to health insurance companies.

How did you undertake the project? How did you get your processes and systems ready for QR-bills?

The project team staffed with personnel from our finance and IT departments began its work at the start of 2020. The switchover kicked off with technical adjustments to our SAP system with regard to incoming accounts payable invoices and the automatic payment run. In June of last year, the system was expanded to accommodate outgoing invoices to health insurers. At the same time, we of course needed to ensure that their payments to UHZ are booked correctly. In the course of making the system adjustments, we upgraded our server landscape and recognition software for incoming payments to the latest standards. We also had to set up new bank accounts with new QR-IBANs.

What went smoothly, and what didn't?

We had already been working with the same external consultants and software programmers for years. This longstanding cooperation and our trust in their work proved very valuable. We were able to resolve the many open issues on the part of SAP and banks at the outset of the project on schedule through active dialogue with the parties involved. Besides that, our technical preparations were impeccable. The validation platforms of various banks were helpful here. When we flipped the switch, everything in our systems functioned properly right away.

How did customers react?

We were quickly able to resolve the comparatively few telephone queries we received.

What advice do you have for other invoice issuers as they transition to QR-bills?

The essential thing in project management is good cooperation and communication across all levels of the hierarchy and with external specialists.

How are you driving innovation in the digitalization of your payment transaction operations? What part does eBill play in it?

The eBill unquestionably plays a key role in the digitalization of payment transactions; 80% of invoices are sent electronically. We already use various electronic transfer procedures for incoming invoices. We send outgoing bills electronically mainly to health insurance companies and public agencies. So, we're already very well prepared for eBill.

<section-header>

Interview partners: Nicole Jung, Project and Application Manager for SAP Hospital Applications, and Patrik Wittenwiller, Billing and Performance Management Specialist, University Hospital Zürich Authenticator Apps Are Taking over the World of User Authentication. But How Do They Work?

Required knowledge

 Basic understanding of cybersecurity

With increased security and customer protection now a top priority for most companies, two-factor authentication (2FA) is gaining traction for Internet applications. The goal is to uniquely identify users for access and prevent unauthorized persons from gaining access.

Depending on security requirements, companies use various 2FA login methods that provide more or less simple and/ or secure access to web applications. In the case of high security requirements, dedicated security methods are usually used. For example, this is the case when bank customers access their own payment accounts online and trigger electronic payments. If it is "only" a matter of accessing an online account (such as a social media account) or if additional security measures such as content encryption are used, mobile apps known as authenticators are increasingly being used as a second security factor. They are available in every major app store and enable 2FA in a user-friendly way. However, such commonly available authenticator apps are not suitable for online banking. They do not provide adequate software protection for the security-sensitive app data stored locally on the smartphone.

Basics of 2FA

2FA identifies a person based on the combination of at least two different factors independent of each other. Factors that can be considered for this include:

- 1. Knowledge: something only the person knows (PIN, password, etc.).
- 2. Possession: something only the person possesses (a bank card, security token, cell phone, etc.)
- Biometric characteristics: something that is inherent to the person (biometric identification such as fingerprint, iris, facial recognition, etc.)

Usually, the company specifies the "possession" factor as one of the two 2FA factors to ensure dynamic authentication. If one of the two specified factors is missing or incorrect at login, access is denied.



Figure 1: Authenticator apps are being used more and more frequently as a security factor.

2FA with Authenticator Apps

Authenticator apps are usually used as a second factor along with the login data:

- 1. Knowledge: username and a dynamic password set by the user
- Possession: the six-digit authentication code displayed in the authenticator app

To set up 2FA, a person uses the authenticator mobile app to scan a QR code that is dynamically generated specifically for them and displayed on the Internet app's website. The QR code contains a long string of characters (also called a "secret") and belongs to the "possession" factor category. This means that only the person in question and the website application have this code. This personal code contains the central key that only the respective person should ever possess. The generation, transmission and handling of this code are therefore extremely security sensitive. If the code is revealed to third parties at any point, the access it secures is exposed.

The person may scan the code on more than one smartphone if a backup solution is desired. They are also encouraged to save the account recovery codes provided by the websites and keep them in a secure location (such as in a password manager).

Once set up, each time the person logs in, they must open the authenticator app and enter the six-digit authentication code displayed by the authenticator app for that website, in addition to the login credentials.

How Does the Authenticator App Generate the Code?

Authenticator apps generate time-based one-time passwords (TOTP) that consist of six digits and are updated every 30 seconds. One-time means that the authentication code works to log in only once. If attackers get access to such a one-time authentication code, it will not work after 30 seconds at the latest in any case.

The authentication code is generated using a standard algorithm in accordance with the Open Authentication Initiative (OATH). In this process, a long string of characters transmitted to the authenticator app by the QR scan is computed together with the precise current time.

Authenticator apps do not have access to users' website accounts and do not communicate with the website application after the initial transfer of the "secret." They simply and silently generate the authentication codes based on the standardized algorithm, the secret, and the current time. You don't even need an Internet or phone connection to do this. The web app uses the same process, but completely independently of the authenticator app, to check whether the authentication code you entered is currently valid.

Since the popular authenticator apps are usually all built on the same standard algorithm in accordance with RFC 6238 (OATH-TOTP), you can, for example, use Microsoft's authenticator to log in to your Google account or vice versa.

Golden Future

More and more web application operators are using the OATH-TOTP standard for 2FA and are encouraging their customers

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to use two-factor authentication. The time when every person will use an authenticator app on their smartphone for web logins on a daily basis therefore does not seem far off. Even if similar procedures are used in online banking, the authenticator apps that are currently generally available will not displace the dedicated security procedures already established.

PETER RUOSS LEAD BUSINESS ARCHITECT PAYMENT SOLUTIONS, UBS SWITZERLAND AG

SSFN – New Network for Secure Data Exchange

Required knowledge

- Network technology basics
- Knowledge of the Swiss payment infrastructure

Secure access to infrastructure services is a prerequisite for a smoothly functioning Swiss financial center. For example, data exchange between participants in the SIC payment system must meet the highest security and availability requirements. Cyber threats cannot be ignored. SIX and the Swiss National Bank (SNB) are therefore upgrading. They are introducing the Secure Swiss Finance Network (SSFN) as a new and additional gateway to the infrastructure for the financial center.

Previous Gateways

Financial center participants, such as banks, use different paths for data connection - depending on the requirements of the individual components of the infrastructure. Exchange access is implemented almost exclusively on private lines with short latency. The SIC and euroSIC payment systems as well as the SECOM securities settlement system use a connection via the Swiss communication service Finance IPNet. Almost all other services allow both Finance IPNet and the Internet as gateways. Alternatively, participants can exchange data via a SWIFT connection or a service bureau, which in turn must be connected to the infrastructure.



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Figure 2: Schematic representation of Finance IPNet: radial connections to SIX

The New Gateway Option

As of November 2021, SSFN will be open to financial center participants.



Figure 3: Schematic view of SSFN: including connections between the participants

This is based on a new technology developed at ETH Zurich called SCION (Scalability, Control, and Isolation On Next-Generation Networks).

Based on their experience with SCION technology, the SNB and SIX initiated the work to build SSFN. In the context of SCI-ON, SSFN represents a separate Isolation Domain (ISD) with its own Trust Root Configuration (TRC).

Advantages of SSFN

The SSFN communication network allows a precisely defined group of users (the ISD participants) to exchange data with

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each other in a manner independent of the telecommunications provider, separate from the rest of the data traffic.

But SCION technology can do more. The sender is given control over the path that the data takes from the sender to the recipient. At the same time, a recipient can specify which sender is permitted to deliver data to it and along which path. This gives the sender and recipient significantly more control compared with all existing network protocols and can ensure that data only flows through the network nodes that they classify as trustworthy.

The cooperation and networking of several telecommunications providers increases robustness against failures and attacks. This is because the status of every possible connection is known at all times. If the connection in use fails, the next best connection is automatically activated based on the rules, and the data exchange takes place over this connection. Switchover times of less than one second were measured in the pilot operation. It is equally important that the data connection is transparent for the service. Thus, a path change does not cause an interruption of the active application connection. It is precisely this aspect that makes SSFN superior to Finance IPNet. Here, the interruption of the application connection during a connection change usually takes several minutes. An interruptionfree connection is of great advantage, especially in view of the introduction of instant payments.

Governance

As the product owner of SSFN, SIX defines the rules and regulations in coordination with the SNB and Switch, which in particular define the admission criteria.

Initially, only SIX service customers will be granted access to SSFN.

Increasing Cybersecurity

As SSFN is logically separated from other networks, attacks from outside – such as a (D)DoS attack – are impossible.

Should an attack occur within SSFN, protective measures are quickly available, since the source, i.e., the sender, is known. Any SSFN user can prevent such an attack at the network level.

Should one of the telecommunication

providers fail, every SSFN user can easily switch to the network of another telecommunication provider thanks to the pathoriented routing mechanisms.

SSFN Does Not Require Any Adaptation of the Application – Availability Is a Given

No adaptation at application level is necessary to use SSFN. This was also shown in the pilot project. Adjustments are only necessary at the network level, e.g., addressing or firewall rules.

All SIX services that connect via Finance IPNet or via the internet will also be accessible via SSFN in the future.

Necessary SSFN Connection

Infrastructure participants need an SSFN connection to use SSFN. This comprises a SCION connection through an approved telecommunications provider, a SCION gateway, and an SSFN access certificate.

For reasons of redundancy, SIX recommends connecting via two different telecommunications providers.

As soon as a participant has a functional SCION connection (carrier including SCION gateway), it can apply to SIX for the SSFN access certificate and submit the CSR (Certificate Signing Request) for signing.

As soon as the SSFN certificate is saved on the SCION gateway, it connects to the SSFN communication network via the SCION connection. Data exchange with other SSFN users is then possible, i.e., with SIX as well as with other parties.

All SIX service customers and service bureaus that currently use Finance IP-Net should consider an SSFN connection at an early stage.

Even those who currently obtain their services exclusively via the Internet can benefit from an SSFN connection. The advantages, synergy potentials and risk considerations speak in favor of it.

In the course of connecting to SSFN, it is worth analyzing the existing communications infrastructure. It is possible that SSFN is suitable for replacing data connections to other financial center participants that were previously established elsewhere.

Outlook

From November 2021, SSFN will be authorized in parallel with the existing gateways. It will replace Finance IPNet in the medium term, due to its superior flexibility and functionality.

SCION			
SCION			
¹ together with SCION connection			

Figure 4: Service providers supporting the procurement of a connection and an access certificate for SSFN.

CHRISTOPHER KOCH SENIOR STRATEGY MANAGER, SIX BBS LTD

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SIC Transactions – More Convenient Than Ever Before

Required knowledge

- Knowledge of the Swiss payment infrastructure
- Basic knowledge of interbank clearing and settlement

The importance of electronic payments and the speed at which they are developing have increased steadily in recent years. In an environment of high competition and shrinking margins for participants in the SIC payment system, paying electronically has become commonplace. Financial institutions benefit from the fact that SIX Interbank Clearing operates the SIC system as cost-effectively as possible. On average, a transaction today costs half as much as it did five years ago. And that is no coincidence.

Technical Evolution and New Pricing Model

SIX Interbank Clearing began implementing the SIC4 platform in 2012. In addition to introducing the ISO 20022 message

Figure 5: Average price per transaction in Swiss centimes



Figure 6: Volume development in million of transactions

standard, the fourth generation aimed to process up to 10 million transactions per day (double a peak day at the time). The makeover of the platform represented a significant investment for the financial center. This can be easily seen in the development of the average price and the short-term increase from 2011 (see figure 5) to finance this project. The successful launch of the SIC4 platform took place in April 2016. In parallel to this, SIX prepared a new pricing model with the aim of bringing additional volume onto the SIC system from 2017 and thus being able to sustainably reduce the average price.

Migration of PostFinance

In the course of introducing the new pricing model, PostFinance decided in 2017 to process its entire interbank payment traffic via the SIC platform in the future. With the completion of this multi-year project in April 2021, it was possible to increase the volume in SIC (see figure 6).



Combined with the natural growth in transactions, the system has thus recorded a significant increase in volume over the past few years. At the same time, the average transaction price continuously declined. In 2021, customer payments will be less than half the price of five years ago (see figure 5).

Expansion of the SIC Platform

On 26 February 2021, the SIC system processed around 9.9 million transactions in one day – more than ever before. By comparison, the peak day at the end of 2016 was still around 5.7 million transactions. The 10 million mark, which seemed a long way off a few years ago, is likely to happen this year. In 2019, anticipating that the demands on the SIC system will increase much faster, SIX has therefore already geared the architecture of the system to handle up to 20 million transactions per day.

Instant Payments

With the creation of the SIC5 platform, the Board of Directors of SIX Interbank Clearing Ltd has already decided to invest in the next generation of payment infrastructure. The instant payment capabilities of the SIC system will enable participants to launch new payment products in the Swiss financial center. The goal for SIX Interbank Clearing remains unchanged: to continue lowering the average price over the coming years.

TIMO PFAHL MEMBER OF THE MANAGEMENT COMMITTEE, SIX INTERBANK CLEARING

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The day when traditional payment slips will be definitively replaced by the QR-bill and eBill is drawing nearer. Swiss companies recognize a corresponding need to take action here, the latest survey shows.

Further details
③ six-group.com/gfs-bern

ATM Density

A recent study commissioned by SIX demonstrates that the automated teller machine network in Switzerland could be downsized to around 2,100 ATMs – from almost 6,000 at present – without jeopardizing the basic provision of payment transaction services to the Swiss population. An adequate distribution of ATMs would even increase efficiency in many areas while securing the supply of cash in locations that have inadequate access to ATMs today in a sustainable way.



Open Finance

The sharing of customer data between finance institutions and third-party financial service providers is gaining momentum. Leading players in the Swiss asset management industry, through their joint collaboration in the OpenWealth Association, have agreed on an application programming interface (API) standard. The use case potential for this OpenAPI standard made in Switzerland goes far beyond the country's borders. The first two banks to go live with it have chosen bLink from SIX as their open banking platform.



Giving "Goldvreneli" coins as birthday and Christmas gifts or as contest prizes is a decades-old tradition in Switzerland. Before they became popular as a collector's item, the gold coins were a legal tender medium of exchange. They lost this function in 1936 after the Great Depression caused the Swiss currency to drastically depreciate. Nearly 59 million of the 20-franc coins were minted between 1897 and 1949.



A Digital Wallet for Europe?

The smartphone as a method of payment has been successfully introduced in European countries. Fourteen leading mobile payment providers combining approx. 60 million users agreed to foster collaboration and international payment through the European Mobile Payment Systems Association (EMPSA), which was founded and is headquartered in Zurich, Switzerland. EMPSA Members include the leading providers in Belgium (Bancontact Payconiq), Bosnia Herzegovina (BAM-CARD), Germany and Austria (Bluecode), Denmark and Finland (MobilePay), The Netherlands (Currence iDEAL), Portugal (SIBS/MB WAY), Slovenia (Bankart), Sweden (Swish), Switzerland (TWINT), Norway (VIPPS), Italy (BANCOMAT & Plick), Poland (BLIK), and Bulgaria (BORICA).

"We are convinced that this collaboration between European providers has a lot of potential and will offer new opportunities to our customers and merchants. Achieving interoperability that transcends borders will be the next level for the very successful local mobile payment systems," EMPSA-Chairman Anton Stadelmann, Deputy CEO of TWINT in Switzerland, explains.

EMPSA will enable the use of the domestic mobile payments systems internationally through interoperability between existing "national champions". EMPSA members have already a high market and user acceptance in their countries, which allows infrastructure investments to be reduced and benefit to be gained from localized use cases in an international capacity. "By establishing common standards with the strength of dynamic national market players, we believe in combining the best of two worlds: having one single payments approach, coupled with innovation meeting future market challenges," explains Anton Stadelmann. To underscore the importance of interoperability, EMPSA has set up a working group to establish joint system interoperability. Another EMPSA working group deals with the legal and commercial framework on

how to proceed in case of cross-system transactions affected by different legislation and business environments. Pilot tests are already underway involving the systems of several countries including Switzerland with TWINT. But EMPSA has not yet revealed the timing of introducing cross-country solutions. However, TWINT expects that it will be possible to pay with TWINT in some neighboring countries of Switzerland as early as spring 2022.

TEXT

DR. VICTOR SCHMID, CHAIRMAN & PARTNER HIRZEL.NEEF.SCHMID.KONSULENTEN

Toward Central Bank Digital Currencies

Central banks around the world are thinking out loud about launching their own digital currencies. A new study released by the central bank of central banks – the Bank for International Settlements (BIS) headquartered in Basel – reveals just how intensively they are exploring this issue. BIS Working Paper no. 941 states that around 50 central banks have already developed central bank digital currency (CBDC) concepts or even prototypes. What has been driving them to do this?

The crux of the matter is that private digital currencies like Bitcoin or Facebookbacked Diem could nullify the rules of the money economy as we know them today if they gain broad public acceptance. Such scenario would have consequences, for instance with regard to the three traditional functions of money that go hand in hand with conventional currencies: acting as a store of value, a medium of exchange, and a unit of account. Digital currencies, in contrast, could specialize in specific single functions and could compete with conventional currencies exclusively in the role of a pure medium of



Basel, headquarters of BIS, offers culture, pharmaceuticals and architecture as well.



exchange or solely as a store of value.

However, the concept of competition between currencies can endanger the equilibrium of the international monetary system. The authors of the BIS working paper predict that private issuers of digital currencies will try to differentiate their products to carve out a good position in competition with other currencies. They could, for instance, link the money function to usership of social media networks and their services. A currency would thus no longer be tied to a specific country, but would instead be linked to a digital network, presumably an international one. The danger of this lies in the possibility that a very attractive social media-based currency could largely supplant the currencies of small countries or of nations with "weak" currencies. That would imperil the stability of the monetary and banking systems in those countries and, if it occurs often enough, would also put the international monetary system at risk.

Another danger, of course, is that a privately issued currency can suddenly lose its value as soon as people stop believing in its worth. This would spell the bankruptcy of a currency, so to speak. The demise of a currency becomes more probable when there is no central bank or government in the background to guarantee its value. The BIS sums it up this way: "In a digital economy, cash may effectively disappear, and payments may center around social and economic platforms rather than banks' credit provision, weakening the traditional transmission channels of monetary policy. Governments may need to offer central bank digital currency in order to retain monetary independence."

TEXT GABRIEL JURI Benjamin Franklin (1706–1790)

If you would know the value of money, go and try to borrow some.

