

09 | 2019  
Edition 80



## With the QR-bill In the Champions League

Interview with Markus Käfer,  
Head of Accounts payable  
of SFS services Ltd

eBill: More Competition  
and Innovation

Open Banking  
In Switzerland

# it for e L C

The Swiss professional journal for payments

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#### IMPRESSUM

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SIX INTERBANK CLEARING LTD  
Hardturmstrasse 201  
CH-8005 Zurich  
T +41 58 399 4747

##### ORDERS/FEEDBACK

clearit@six-group.com

##### EDITION

Edition 80 – September 2019  
Published regularly, also online at [www.clearit.ch](http://www.clearit.ch)  
Circulation German (1,300 copies), French (400 copies) and English (available in electronic format only on [www.clearit.ch](http://www.clearit.ch))

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Felber, Kristofori Group, Advertising agency

##### PRINTER

sprüngli druck ag

Additional information about the Swiss payment traffic systems can be found on the Internet at [www.six-interbank-clearing.com](http://www.six-interbank-clearing.com)

##### FRONT PAGE

The QR-bill opens up new dimensions in payment traffic





## Dear Readers,

Less than twelve months remain until the introduction of the QR-bill on 30 June 2020. The financial center has developed many means of communication and made them available to banks through PaymentStandards.CH. This way banks will be able to competently support their clients in changing over to the QR-bill.

23,000 copies of the last special clearit edition on QR-bill have been put in circulation. The flyer "Preparing on Time" enjoys great popularity too: more than 50 banks have ordered over 24,000 copies in German, French, Italian and English. Everyone is getting prepared – from Apples in Morges and Mümliswil on the ridge of Passwang through St. Niklaus at Weisshorn, ending up with Vicques in the Jurassic Val Terbi. According to a bank survey, however, it will not be until autumn that broad communication really gets off the ground.

The vast majority of banks is actively searching for contacts to their business clients. However, much work needs to be done yet in order for the QR-bill to be implemented. This is because the general information status on the QR-bill introduction can still be improved, to say the least. It has been stated by the majority of the banks surveyed as well as by the companies themselves. A representative study of gfs.bern (see page 8) puts it in a nutshell: companies are happy about the QR-bill but they want to know more – especially from their financial institution in the first place.

The fact that a company is looking forward to the QR-bill is a very good starting point. This makes it easier to talk to customers. And additional aids of the financial center are again of help here: for example the generic conversation guideline, which is suitable for the structured consultation of large invoice issuers and receivers with own supplier and/or debtor software. Or the standard presentation, which makes the payment transaction environment around the QR-bill understandable.

Moreover, all these means of communication are also suitable for preparing own employees. Also here there is a backlog demand. As of now, half of the banks assume that their consulting teams are not ready yet to explain to their business clients why they need to change over to QR-bills in the case of payments and accounting processes. The best way to prepare them is to use the most persuasive arguments. For example those mentioned by the head of accounts payable of a major supplier in the automotive and electronics industry in an interview on page 4.

A handwritten signature in dark ink that reads "Michael Montoya". The signature is fluid and cursive, with a large, stylized 'M' and 'M' at the end.

**Michael Montoya**  
Head Operations & Services,  
SIX Banking Services





Precision components from SFS  
meet the highest requirements



# With the QR-bill In the Champions League

Markus Käfer is a practitioner and specialist in accounting. As Head of accounts payable at SFS services Ltd, he deals with 190,000 incoming invoices every year. He explains in an interview how SFS Group as a big provider in the automobile and electronics industry has been preparing for the implementation of the QR-bill as of 30 June 2020 and what he expects of it.

**Mr. Käfer, how is the automatization of the incoming orange and red payment slips in your company?**

Thanks to the implementation of a technically very good OCR solution, over 90 percent of suppliers and 85 percent of document header data are already being automatically found or filled out in the booking screen.

**“We hope to achieve an almost 100 percent document header and supplier recognition.”**

**In your opinion, which of the existing challenges in the supplier process will be easier to handle thanks to the QR-bill?**

With the implementation of the QR-bill, we hope to achieve an almost 100 percent document header and supplier recognition. The order numbers must also be recognized completely.

**To what extent will the general application of the QR-bill help you reduce costs?**

“Time is money.” We are convinced that the QR-bill helps us upgrade the requirements for the supplier’s accountants. If manual interventions in the process chain are omitted, lead times and resource commitment will decrease little by little. The quality of the recorded data will also develop positively. In general, the cooperation between purchasers and suppliers can be intensified and, for example, through highly efficient processes the loss of cash discounts can be reduced to CHF 0 in the best case scenario.

**What do you think of the field “Billing information” that has been defined by Swico?**

The standard of billing information determined will hopefully lead us into the “Champions League” of recording documents. All relevant data is precisely mapped in the QR code. This will be the basis to automate the process end-to-end. Manual intervention in order to correct information will take place exceptionally.



Markus Käfer, Head of accounts payable at SFS Services Ltd

**What is your strategy to obtain the QR-bills with billing information from your providers in the quickest manner possible?**

We're going to actively reach out to providers with high invoice volume in order for them to send us the QR-bills in the future.

**In ten months, the QR-bills you receive will be due. How do you organize your project in order to be ready for the supplier process on time?**

Since March 2019, a project team has already been taking care of this topic. Having built up the necessary knowledge, we took all the measure needed for implementation. In doing so, we'll implement all the three variants of the QR-bill so that we can use the new technology when it is available.

**Which measures will you take in order to avoid rejects and erroneous credits?**

Erroneous credits or rejects of payments are inefficient and should be avoided. In the case of SFS debtor and supplier departments are affected. Together with software providers and financial institutions we'll ensure that various payment methods are processed in an error-free manner. This has a high priority.

**“It's important that the parallel phase of ISR/IS and QR-bill lasts as short as possible.”**

**There will be a parallel phase in which ISR/IS and QR-bill will be used at the same time. Which consequences do you foresee for software or process adjustments?**

When it comes to documents recording and payments, we'll ensure that IBAN, ISR and then also QR-bills payments are performed error-free. We must adjust the customizing in ERP system to all possibilities. It's of course important that the parallel phase of ISR/IS and QR-bill lasts as short as possible. The market will show how quickly the standardization, i.e. changeover to the QR-bill, can be conducted.

**Which internal and external units are involved in the project?**

Internally, IT as well as Supplier and Debtor Departments are involved. In addition, the changeover requires externally the cooperation of ERP providers and providers of e-banking solutions as well as financial institutions. Last but not least, it requires adjustments to OCR recognition.

**Where is your company in the preparations for the introduction of the QR-bill and what have been the challenges so far?**

Due many stakeholders, this project hides a high level of complexity. As preliminary study, we've conducted a very helpful workshop with UBS. We hosted a kick-off meeting. A main study was prepared for all affected areas. The next measure that need to be taken now is a step-by-step implementation.

**What would you recommend to other companies?**

Anyone who wants to play in the "Champions League" should definitely actively shape this step towards digiti-



**ABOUT SFS GROUP AG**

SFS is a worldwide leading supplier of mechanical fastening systems and precision components. SFS Group AG comprises the three segments Engineered Components, Fastening Systems and Distribution & Logistics, which represent the respective business models. In the Engineered Components segment, SFS acts as a development and manufacturing partner for customer-specific precision-moulded parts, fastening solutions and assemblies. Engineered Components appears on the market with the four divisions of Automotive, Electronics, Industrial and Medical. The Fastening Systems segment, made up of two divisions, Construction and Riveting, develops, produces and sells application-optimised mechanical fastening systems. In the Distribution & Logistics segment, SFS is a leading partner for fasteners, tools, fittings and innovative logistics solutions in Switzerland. With its more than 80 distribution and production facilities, the SFS Group is represented worldwide in 26 countries. In the 2018 business year, with around 10,000 employees (FTE), it generated sales of CHF 1,738.6 m.

“

*Wherever manual recording still takes place, it's time to think about automation.*

Markus Käfer

”

zation. I think the benefits are so great that it's easy to convince management and other stakeholders. Moreover, the QR-bill cannot be ignored once a transitional period has lapsed. That's why it's important to act, not just react!

**For which companies is payment with the QR-bill especially suitable?**

Wherever manual recording still takes place, it's time to

think about automation. This can be the key to secure jobs in high-wage countries such as Switzerland.

“

**Having built up the necessary knowledge, we took all the measure needed for implementation.”**

**INFORMATION SHEET ON THE SUPPLIER DEPARTMENT OF SFS SERVICES LTD**

The company receives ca. 190,000 invoices per year:

- 100,000 invoices from Switzerland, physical or as PDV, whereas:
  - 25% red payment slips (IS)
  - 75% orange payment slips (ISR)
- 50,000 invoices from abroad
- 40,000 intercompany invoices (fully automated)
- 6% EDI (Electronic Data Interchange) of the whole volume, without intercompany invoices
- Invoices are digitized (in-house) (e.g. for early archiving)

**From your point of view, what would you improve on the QR-bill?**

It's too soon to say. Once the QR-bill is established, the improvements will follow from the inputs in practice. As already mentioned, a short parallel phase of ISR/IS to QR-bill will definitely be helpful.

Interview:

**Ivana Beslic**

UBS Switzerland AG

# Companies Are Happy About the QR-bill, But Want to Know More

The switch to the QR-bill draws high attention among companies and organizations of all Swiss industries and is associated with benefits. This has been shown in a representative survey conducted by gfs.bern in May 2019. However, only a minority has already started a changeover project or feels sufficiently informed about the adjustments. However, the conditions are ideal for banks and business software providers to close this information gap until the QR-bill's launch mid-2020.

Today, Swiss payment transactions are already being processed automatically to a great extent. Therefore, the QR-bill is unexplored territory for very few users and it is not surprising that 85 percent out of 1716 companies and organizations with over 20 employees surveyed have already heard about the QR-bill. However, only few respondents feel that they have sufficient information about the specific switchover steps. They wish their financial institution and business software providers served more details in the first place.

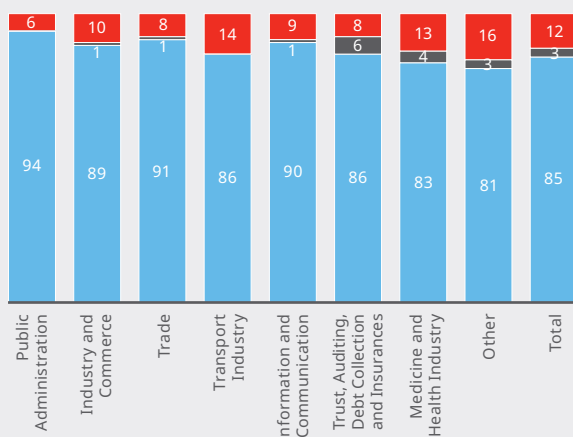
“Over half of the respondents associate the changeover with benefits.”

## Perception of the QR-bill

“Can you remember having heard of the QR-bill before?”

in % of users

■ No, I haven't heard about it  
■ Don't know/no response  
■ Yes, I've heard something about it

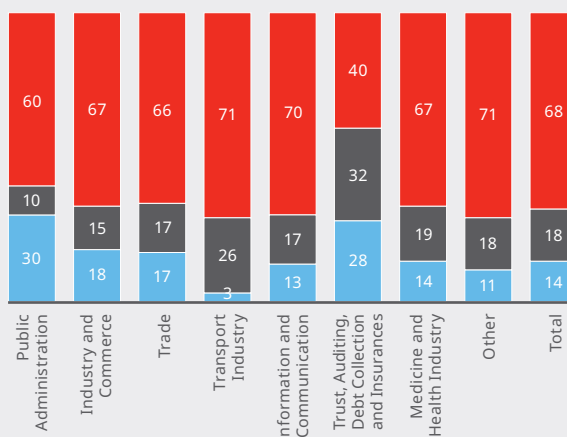


## Project Launched for the Invoice Receiving and Invoice Payment Process

“Have your organization already launched a project for software switchover of your invoice receiving and invoice payment processes to the QR-bill?”

in % of users who cannot process the QR-bill as invoice receivers yet

■ No  
■ Don't know/no response  
■ Yes

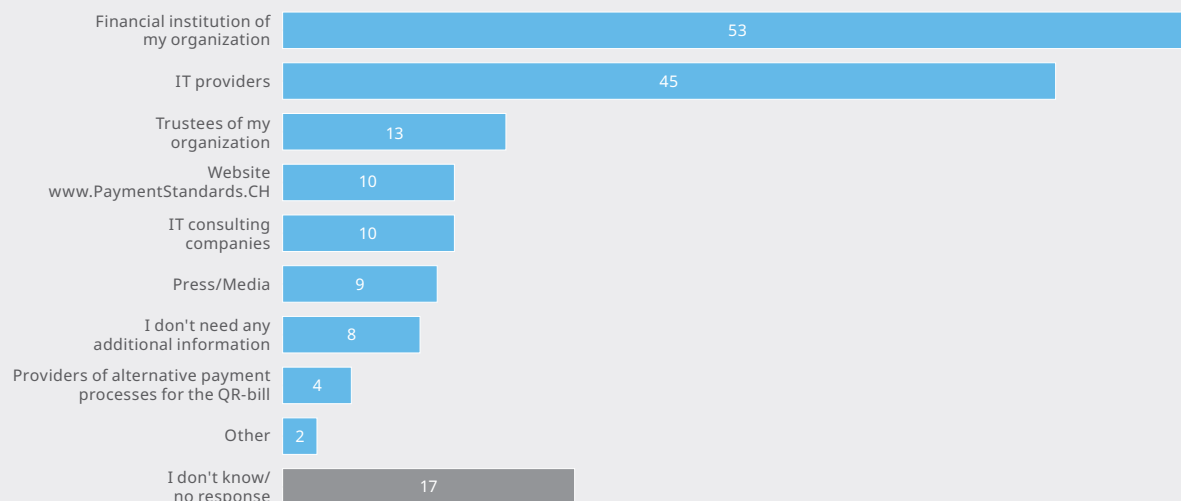




### Desired Player for Additional Information

"Who would you like to receive additional information from on the standardization of Swiss payment transactions or the QR-bills?"

in % of users



### Strong Perception of Advantages

By May 2019, around three quarters of companies had not started any changeover project. 60 percent of respondents having already started such a project would have changed their invoicing process by June 2020. In the case of invoice receipt, the number is less than two thirds of the respondents. However, there is nothing to be worried about given the high level of

interest in this matter, the high level of familiarity with automated payment transactions and the benevolence towards the switchover. Over half of the respondents associate the changeover with benefits. With the QR-bill they expect error minimization and support of digitization processes.

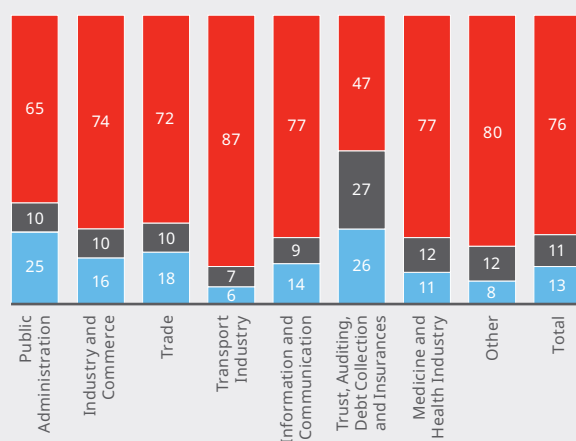
Ideally, increased communication will take up these basic prerequisites and show how to make progress from this positive status quo with the QR-bill in a profitable manner.

### Project Launched for the Invoicing Process

"Has your organization already started a project for software switchover of your invoicing processes to the QR-bill?"

in % of users who cannot process the QR-bill as invoice issuers yet

■ No  
■ Don't know/no response  
■ Yes



### Central Information Activities

The goal for the remaining period until the switchover date, i.e. June 2020, is to convert the great knowledge and confidence in the advantages of the QR-bill into a comprehensive project completion. Communication activities performed by house banks and ERP partners are a perfect driver to support the project prioritization in companies. Clients who took advantage of respective advisory services are satisfied with them. This shows that the communication channel continues to be a functioning key for important changeover projects.

### Urs Bieri

Co-head of the public opinion and market research institute gfs.bern



# Standardized Interfaces for Open Banking In Switzerland

Open banking – the exchange of customer data initiated by customers between financial institutions and third-party providers – is viewed as the silent revolution in the European financial industry. However, not only there; for Swiss financial institutions it is an opportunity to compete with the major technology companies.

Wherever new services arise and meet with customer interest, bank or insurance data is increasingly required, regardless of which bank holds the account or whether there is a policy. And regardless of whether it involves, for example, an automatic reconciliation of bank accounts with accounting programs or a payment made via a mobile payment solution. All these situations require interfaces, so-called APIs (application programming interfaces) capable of securely, reliably and rapidly transmitting the data.

While API's will play a crucial role in the future in the communication of different digital systems, it is to be avoided to the greatest possible extent that each bank builds its own APIs to handle the same issues.

Unbridled API growth would increase complexity and costs and thus severely hamper competitiveness and innovation. It is impossible for smaller companies to integrate the APIs from every bank or insurance company.

## GLOSSARY

**API** stands for Application Programming Interface. APIs enable TPPs to use bank customers' account data and bank functions in connection with this account.

**PSD2** is the second EU payment services directive (PSD), which has been in force since January 2018. Among other things, it stipulates market opening for TPPs in payments. By mid-September 2019, banks in the EU must have implemented the corresponding measures.

**TPP** stands for Third Party Provider. TPPs generally refer to non-banks for which access to bank customers' accounts is permitted subject to conditions (such as through APIs).

Open banking – the customer-initiated, standardized and secure exchange of customer data between financial institutions and recognized third-party providers (TPPs), is currently on the advance worldwide. The Financial Times has even labeled open banking as the “silent digital revolution”. And yet, different standards and solutions are cropping up everywhere: While in the EU, the Payment Services Directive (PSD2) specifies which data financial institutions must share, but not how the exchange is to occur. A proliferation of interfaces is arising in Asia. Banks in the USA are developing individual solutions along with partners. Britain has also enacted its own banking law in addition to the PSD2 that is also applicable there.

### The Clock Is Ticking

How far will the cooperation between the old and new financial worlds go? While there was initially trepidation between financial institutions and fintechs, most banks have since set aside their initial skepticism.

“The connection of services from third-parties meets the customer demand for integrated solutions,” confirmed Herbert Scheidt, Chairman of the Swiss Bankers Association, recently in an interview. “The Swiss Bankers Association sees great potential in open banking for the Swiss financial center,” but rejects “a state-imposed, one-sided opening for third-party access rights, as stipulated in the EU PSD2”.

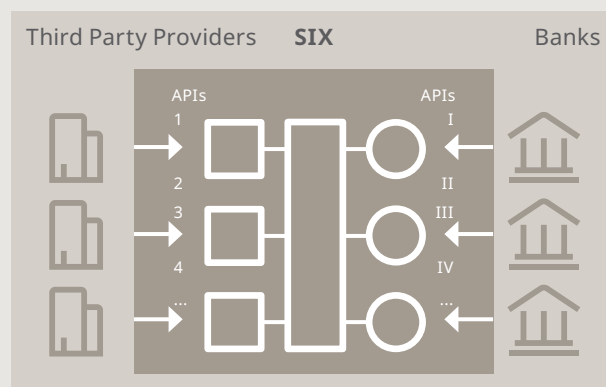
The clock is ticking for the Swiss financial center: if it does not take action and find innovative solutions, then its financial institutions risk being driven out of the market by the large American technology companies.

### THE SIX PLATFORM

SIX provides open banking on a broad basis in Switzerland. “With its Platform, SIX will become the data exchange hub in banking,” according to Marco Menotti, Head Banking Services at SIX. “We are thus laying the foundation for innovative products from our Platform users and strengthening the Swiss financial center.” The pilot operation with Credit Suisse, UBS and the two TPPs, Abacus and Klara.ch, began in July 2019. SIX is initially testing two services. With the account information service, TPPs gain access to bank account data so as to be able to reconcile it with company accounting software. With the payment service, TPPs can automatically place payment instructions for their business customers at the respective bank, where customers need only approve them for payment. “We are gearing ourselves towards market and customer requirements,” stated Marco Menotti, “and will continually expand the use cases.” It is anticipated that regular operation of the Platform will launch at the beginning of 2020.

### The Platform

SIX has developed a central data exchange Platform to provide the Swiss financial center with efficient entry into open banking – without regulatory pressure and according to the needs of customers, banks, TPPs and other potential partners. The SIX Platform will be the benchmark for efficient open banking in the Swiss financial center and guarantee a high level of security for all participants.



The Platform will connect the various partners through standardized APIs. This means that new, innovative and user-friendly services can be developed and more easily delivered to customers. It is intended to be a sort of Petri dish in which new ideas and business models can be cultivated. While there are also other approaches in Switzerland, SIX is currently the only solution to be offered by a central infrastructure service provider. It functions without interim solutions such as screen scraping. This refers to the automatic capturing of data direct from a computer screen, which some companies are forced to do because there are no other interfaces available to them. Screen scraping has a poor reputation, is considered to be error-prone and is a popular target for hackers.

A further advantage of the SIX Platform: if international standards are established, then the Platform can be adapted to meet them. SIX will thereby ease the way for small, highly specialized Swiss startups to sell their services internationally.

The ‘Handelszeitung’ called the SIX solution, which upon launching will initially be available for business customers as early as April, a milestone for open banking in Switzerland. The pilot operation began in July with the first two services, account information service and payment initiation service for companies (see box).

### Simon Brunner

Ammann, Brunner & Krobath AG



# Next Challenge for Instant Payments

## – Turning a Promise Into Successful Products

The infrastructure for euro instant payments is in place, already connecting a critical mass of financial institutions across SEPA. But more collective work is needed to turn this new payment tool into compelling customer products. A pan-European infrastructure solution for request to pay could provide an important push to unlock the true potential of instant payments.

Real-time payments entered the Single Euro Payments Area (SEPA) in November 2017. This is when a euro instant payment scheme (SCT Inst) was launched by the European Payments Council (EPC) and the first infrastructure platforms – including EBA CLEARING's pan-European RT1 system – started processing these new transactions, which are exchanged 24/7/365 and reach the payee in just a few seconds.

### **The Infrastructure Is Deployed – and Working**

Over the past 20 months, a large number of financial institutions across SEPA have been working on readying their systems for real time. For RT1, this effort translated into an adoption rate of 60% among financial institutions offering payments in SEPA by mid-2019. In detail, RT1 extends reach to over 2,350 payment service providers via 54 participants from 19 different European countries. In fact, a critical mass of payment players has already connected to the system in Austria, the Baltics, Finland, Germany, Italy and Spain.

A few pioneering institutions or communities have also launched the first real-time products. Others have migrated existing offerings, such as local P2P payment apps, to the new payment rails. These early movers are currently generating over 1.5 million transactions in RT1 on a weekly basis. This continues to grow with each new group of on-boarded banks.

### **Speedy End-to-End Processing and Immediate Finality**

The new infrastructure put in place for the handling of real-time payments has proven to be fit for purpose and fast – irrespective of whether these transactions only travel through RT1 or over multiple hubs, including local clearing systems. RT1 also provides interested participants with a direct feed into the other pan-European instant payments platform, the TIPS system operated by the Eurosystem, i.e. the national central banks of the eurozone.

The unique selling proposition of instant payments is the immediate finality of each payment, which enables the payee to use the money within seconds following its sending. To this effect, all RT1 transactions are instantly settled, resulting in immediate adjustment of the participants' positions. These positions, which cannot be negative, are held in central bank funds in a technical account in TARGET2. With these features, real-time payment certainty is always achieved, and there is no settlement or counterparty risk.

### Preparing for Mass Roll-Out

Work continues on fine-tuning infrastructure platforms, as well as bank-internal systems, in line with the evolving needs during the ongoing ramp-up phase. RT1 has gone through four iterations since its start to ensure it remains fully in synch with user expectations as the popularity of the new payment method is picking up. As an example, a feature implemented in November 2018 allows RT1 participants to exchange, on a closed user group basis, transactions with an amount exceeding the maximal threshold of EUR 15,000 set by SCT Inst.

Much of the industry's attention has now shifted to product-related considerations. A key focus is being put on crafting compelling and highly convenient customer products, which ideally should be made available across SEPA. Topical industry groups, such as the European Retail Payments Board's Working Group on instant payments at the point of interaction and the EPC's Request-To-Pay Multi-Stakeholder Group, were launched earlier this year to help pave the way towards improved and new customer propositions.

Efforts are also ongoing at different levels to further strengthen real-time fraud combatting capabilities of all parties involved. The SMART2 initiative facilitated by the Euro Banking Association issued best practice recommendations in June and additional collaborative action is expected in this area to ensure that fraud levels will remain low as instant payment adoption progresses.

### Why Request to Pay Is a Key Piece of the Puzzle

Whilst some countries have introduced local functionality to accommodate payments initiated by payees, a pan-European request to pay functionality has been on the wish list of many bank customers for quite a while.

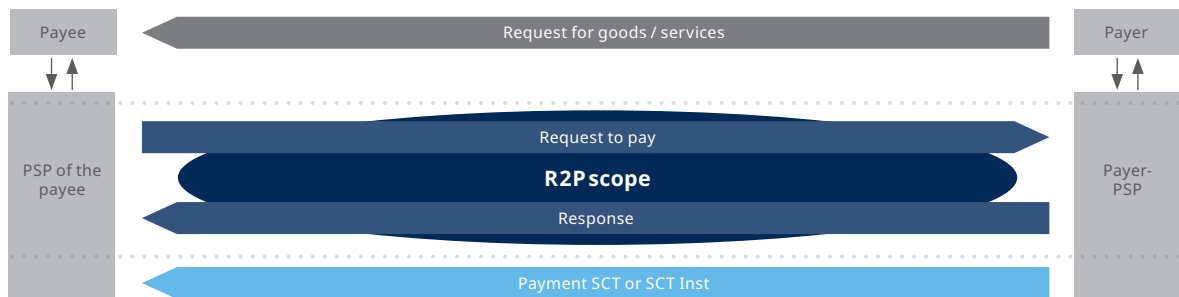
Fundamentally, a request to pay enables a payee to make a request for initiation of a payment by a payer. The essential steps in the process are usually the following:

- A request is made by the payee.
- The payer is provided with information on the amount, description of the purpose of the transaction and payee information.
- The payer decides to approve or decline the request, resulting in authorization (or refusal) of the payment transaction.
- Upon approval of the payment request, the payer's bank is instructed to execute a payment to the payee.



## Pan-European R2P Infrastructure Solution

Supporting different use cases and solutions



Request to pay adds context to a payment: it ensures that the payer receives verified payee data before initiating a payment and provides confirmation to the payee that a payment order has been issued. This additional context helps to improve controls around payment execution and enables smoother end-to-end processing and reconciliation. Request to pay also increases convenience levels for payers, since the keying in of data is kept to a minimum.

These tangible benefits in terms of certainty, transparency and convenience have led many experts to see request to pay as an enabler to realise the full potential of instant payments and as a 'missing link' for a number of rich end-user products and services. With real-time messaging capabilities and application programming interfaces (APIs) now established and scheme development work ongoing at an accelerated speed, market players have all the elements at hand to make instant payments a resounding success, providing viable alternatives for all types of payments, including e-commerce, e-billing, P2P and even POS.

### How a Pan-European Infrastructure Solution Could Help

In November 2018, an EBA CLEARING task force composed of 30 service participants from 14 countries began to look into the request to pay topic to determine what would be needed to make it fly at a pan-European level. There was a strong perception that any pan-European approach should ensure the seamless use of request to pay functionality across the continent while, at the same time, supporting the different local or national customer services already evolving in this space.

The task force concluded that this could be achieved by putting in place a highly performant thin-layer infrastructure solution providing a standardized real-time message flow to enable the harmonized and managed exchange of request to pay messages

on a pan-European level. This infrastructure solution could also support the interlinking of different local and national solutions to facilitate pan-European connectivity for request to pay.

### Next Steps

Based on a blueprint delivered by the task force in April 2019, EBA CLEARING at this stage has secured the support of 25 financial institutions across SEPA to fund and develop the proposed solution. The specification phase of the development project has recently been kicked off.

As detailed in the blueprint, the solution will solely focus on providing a harmonized and managed platform for the processing of request to pay messages, irrespective of the underlying use case and independent of the channel used for the resulting payment. Throughout the development process, EBA CLEARING will closely follow the work of the EPC, to which it also actively contributes, in order to ensure that its solution will stay aligned with scheme developments.

EBA CLEARING plans to complete the implementation of its pan-European request to pay infrastructure solution in the second half of 2020.

### Hays Littlejohn

CEO, EBA CLEARING



# eBill: Network Partner Model Promotes Competition and Innovation

On 7 November 2019, SIX will introduce the network partner model for eBill into the market. The Swiss financial center is expecting to significantly extend the coverage of digital invoicing. In the future, 600,000 companies in Switzerland should be able to count on innovative offerings of numerous network partners.

The strategic goal of the Swiss financial center is to efficiently process 80% of invoices issued to private individuals with the use of eBill by 2028. To increase the current invoice volume by twenty times within nine years, SIX will open its infrastructure to all interested providers. Whether a financial institution, a business software developer or a fintech – as network partners, all service providers will be able to align their invoicing processes via eBill with the digital needs of their customers.

## Enormous Innovation Potential

By introducing the network partner model, SIX will build the foundations for a new wave of service innovations related to invoicing. Network partners will be able to provide their customers with comprehensive services and deliver invoices to invoice recipients or payers according to their receipt preferences (e.g. traditional mail, eBill).

## Simplified Invoicing Processes

In view of the introduction of the QR-bill in summer

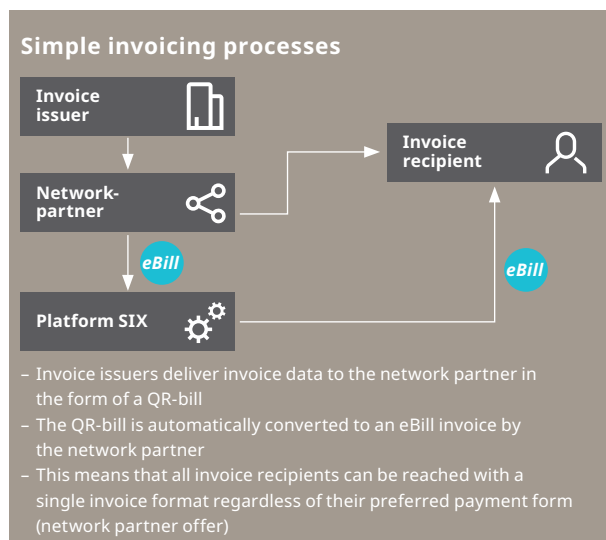
2020, the interoperability between eBill and QR-bill will particularly contribute to simplifying invoicing processes. Network partners will be able to provide their customers with the possibility to post QR-bills with extended data set, which may be turned into eBill invoices and transferred to the eBill infrastructure. The invoice recipient will then have a convenient option to pay the invoice in e-banking system.

## Strong Interest of the Market

Since the network partner model was announced two years ago, SIX has been fostering the exchange with almost 40 prospective interested parties. The existing solution has been developed by a working group with interested market participants to ensure the representation of diverse needs and technical conditions.

## Test Environment and Contracts Are Ready

To set themselves up for success, network partners can now connect to the test infrastructure of SIX and fully test their solutions under realistic conditions. Various future eBill providers make use of this opportunity, considering the infrastructure will go live in November 2019.



Since the beginning of July 2019, the contracts for network partners have been available online to be downloaded and signed. Contractual partners will be listed on the eBill website so that interested invoice senders have up-to-date overview of the providers at any time.

**Daniel Berger**

SIX Banking Services



## More detailed information

For network partners:

[www.ebill.ch/en/home/network-partners.htm](http://www.ebill.ch/en/home/network-partners.htm)

On the interoperability eBill/QR-bill:

[www.ebill.ch/specs-qr](http://www.ebill.ch/specs-qr)

Contact: [partner-management.bbs@six-group.com](mailto:partner-management.bbs@six-group.com)

# *Is ISO 20022 Already Outdated?*

Various voices claim that the ISO 20022 standard is already outdated. Rather than large, complicated XML messages, needed are faster, more modern data formats such as JSON. And ISO 20022 cannot be used for Instant Payments anyway, they say. This, however, is clearly untrue.

The fact is that in discussions like these, apples are often compared to pears. That is why it is important to clearly differentiate between data models, on the one hand, and data formats on the other.

ISO 20022 today is the undisputed data model for retail, large value and Instant Payments, and will continue to be the dominant model for payment transactions and account information, both nationally and internationally, in the coming decades. It has become the de facto standard for payments today in our latitudes through first movers, including EPC (SEPA), Swiss Payment Standards (SPS) and recently even SEPA Instant Payments with the STEP2, SIC and RT1/TIPS

### Data Format

JSON and XML are both neutral data formats in human-readable text form for data exchanges between applications. Both are dynamic formats in which only the fields relevant to the current transaction are depicted and all others omitted. Both formats are relatively lean and therefore suitable for time-critical applications such as Instant Payments and the Internet of Things (IoT).

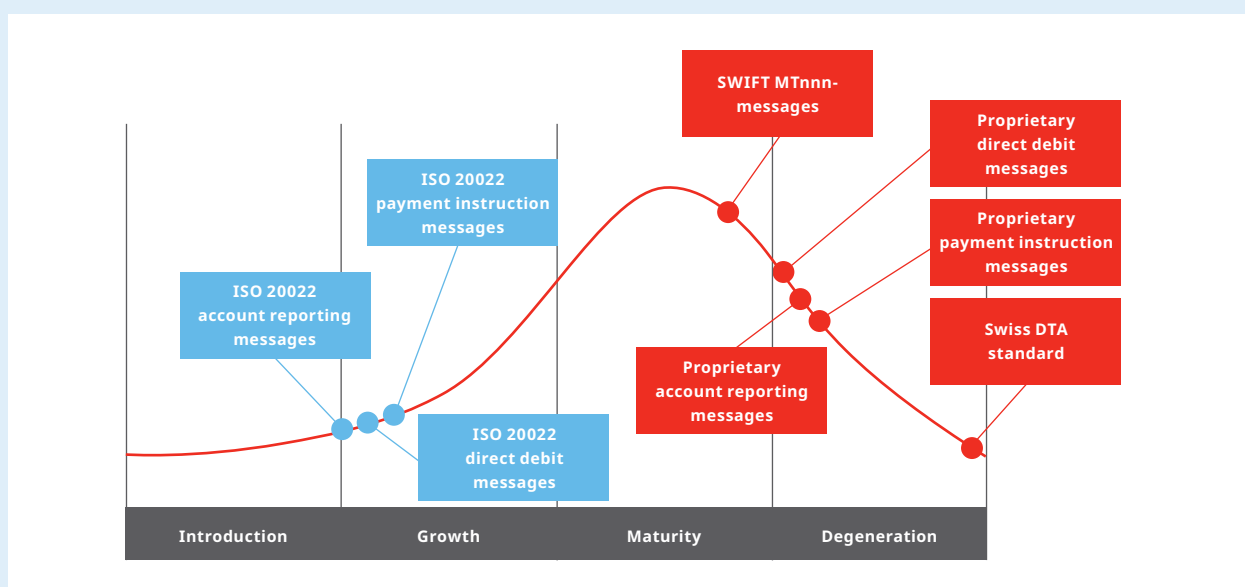


Figure 1: Lifecycle of messages in payments

clearing systems, as well as other regional clearing houses. In global terms, ISO 20022 is on the brink of a breakthrough with systems including Fedwire, CHIPS, CHAPS, MEPS, TARGET2, EURO1, SWIFT MX and many more that are planning to migrate to ISO 20022 in the coming years. Although ISO 20022 is only at the beginning of its lifecycle (Figure 1), it is already foreseeable that this standard will edge out all other data models in payments.

One of the problems with discussions about whether ISO 20022 is outdated or sustainable is that apples are compared to pears. It is essential to differentiate data formats from data models.

- JSON (see example in Figure 2) is more suitable for simpler API applications with a focus on public Web services.
- XML (see example in Figure 3) also supports complex requirements, is widely established and an integral component of ISO 20022 initiatives including SPS, SEPA, SEPA Instant Payments, SWIFT MX and more.
- JSON and XML can also be combined if, for example, an entire XML message is transported within a JSON field as a so-called "XML Load".



		Data Model	
		ISO 20022	proprietary
Data Format	XML	pain.001, pain.002, pain.008 camt.052, camt.053, camt.054, etc.	
	JSON		
	JSON with "XML Load"		
	proprietary		DTA, V11, TA875, SWIFT MT, etc.

- New world – messages in standardized data format with a standardized data model
- Old world (end-of-life) – messages in a proprietary data format with a proprietary data model

Table 1: Payments – data formats and data models used in Switzerland

Data Model

ISO 20022 contains a logical data model, including cross-organization workflows, which is the undisputed global model in payment traffic when it comes to depicting information, dependencies and interactions uniformly and bindingly end to end for all market participants (including clearing houses, banks, software providers and bank customers). Even automated business processes, such as cash management, accounts payable, payment factory, collection factory and reconciliation of open items, are based on the diverse possibilities of the ISO 20022 data model, also in terms of the interoperability of payments, cards, securities, trade services and forex business fields.

XML or JSON?

To initiate a transaction based on the ISO 20022 data model it is immaterial whether XML or JSON is used as the data format, as long as all participants stick to the data model agreed upon. There are hardly any payments data models in use in Switzerland that are not based on ISO 20022. Concurrently, many proprietary data formats have been replaced with XML and JSON (Table 1), such as for the EBICS transport channel, where XML is primarily used, and for APIs, which uses JSON. Since the limited possibilities of a pure JSON API do not always meet the complex requirements of business payment traffic, JSON

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SYSTEM	COUNTRY	DESCRIPTION
CHAPS	GB	British payment system for same-day money transfers in Sterling
CHIPS	USA	Private clearing house for large volume transactions
EUR01	EU	EBA CLEARING's payment system for large value amounts
Fedwire	USA	RTGS system for the USA
MEPS	SG	Interbank payment system in Singapore
RT1	EU	Instant Payments system operated by EBA CLEARING
SIC	CH	Central Swiss RTGS system
STEP2	EU	Euro mass payment traffic operated by EBA CLEARING
SWIFT MX	Global	SWIFT messages via the SWIFT network in ISO 20022 standard
TARGET2	EU	RTGS system for the eurozone
TIPS	EU	TARGET Instant Payment Settlement

```

{
  "messageId" : "A-Level ID",
  "initiatingPartyId" : "Einreicher",
  "requestedExecutionDate" : "2019-07-21",
  "debtorAccount" : {
    "type" : "IBAN",
    "identification" : "CH2801234000123456789"
  },
  "debtor" : {
    "name" : "Auftraggeber"
  },
  "bookingInstruction" : "SINGLEBOOKING _ NOA",
  "transactions" : [
    {
      "instructionId" : "INSTR-001",
      "endToEndId" : "E2E-ID",
      "instructedAmount" : {
        "currency" : "CHF",
        "amount" : "1.00"
      },
      "ibanDetails" : {
        "creditorAccount" : {
          "type" : "IBAN",
          "identification" : "CH6404835023456781000"
        },
        "creditor" : {
          "name" : "Empfänger",
          "postalAddress" : {
            "unstructured": {
              "addressLines": [
                "Musterweg 20",
                "8000 Zürich"
              ],
              "country": "CH"
            }
          }
        }
      },
      "remittanceInformation" : "Transfer"
    }
  ]
}

```

Figure 2: SPS payment instruction in ISO 2022 standard with JSON data format

APIs often support the option of an “XML Load”, in which a complex XML message, such as a pain.001 or a camt.053, can be transmitted in a field with a JSON API call.

Since the ISO 2022 data model will continue to shape payment traffic for decades to come – at the customer-bank interface, in interbank payments, for account reporting as well as in the emerging Instant Payments and IoT systems – payments specialists

```

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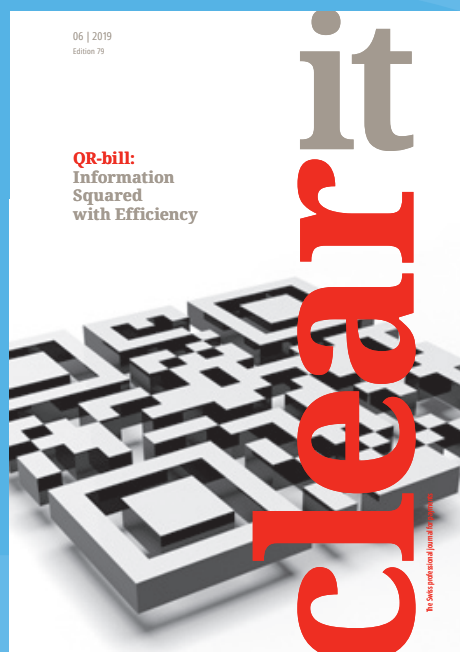
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Figure 3: The same SPS payment instruction in ISO 2022 standard with XML data format

must acquire solid ISO 2022 knowledge which, at the same time, is a worthwhile, long-term investment in their own future!

**Peter Ruoss**  
UBS Switzerland AG

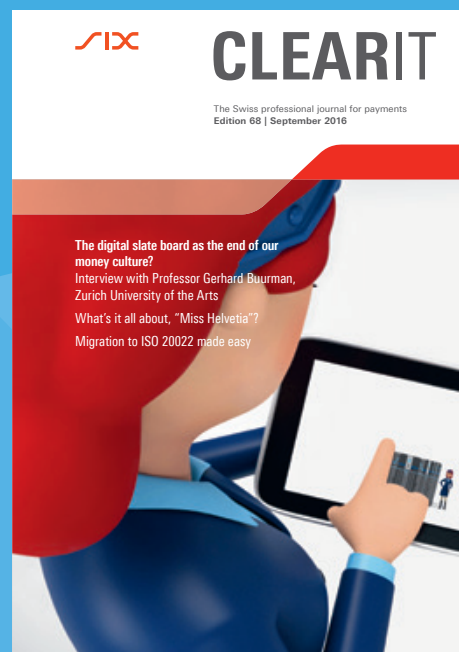
## DEEP DIVES:



More about the QR-bill  
in the June 2019 edition



More about Open Banking  
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