The digital slate board as the end of our money culture?
Interview with Professor Gerhard Buurman, Zurich University of the Arts

What's it all about, "Miss Helvetia"?

Migration to ISO 20022 made easy

connection themselves, must adapt part of their soft-
ware to the new ISO 20022 standard as stipulated in the
Swiss recommendations. An important support during
the migration are the test platforms, which simulate the
behavior of the customer-bank interface in detail and
are made available by SIX and the larger Swiss banks as
essential migration tools.

PD Dr. Sébastien Kraenzlin

Dear reader,

Everyone is talking about innovation, which is steadily growing in importance in an increasingly technological world and gaining media attention. As you all know, the rapid progress of information technology is also fostering an array of new products and services in payment traffic. While e-banking, for example, has become virtually indispensable in Switzerland, now the focus is on the use of mobile phones as payment devices and the processing of account-to-account payments between end-customers within seconds. Furthermore, new providers in the future, such as fintechs, and new technologies, such as blockchain, may change the payments landscape in the future. Such disruptive financial solutions and technologies have the potential to develop into attractive alternatives to traditional payment methods and grow even stronger as a result of competition between the various products and services and their providers.

The National Bank Act assigns the Swiss National Bank (SNB) with facilitating and ensuring the functioning of the cashless payment system in Switzerland. The SNB primarily meets this obligation by acting as the system manager of the Swiss interbank payment system SIC, through which both large value and retail payments are processed. Within this dynamic field, the SNB thus has a vital interest in efficient, secure payment processing and carefully follows the innovative developments in payment traffic. Efficient and secure payment systems are essential for the functioning of the real economy and the trust of market participants in the financial mar-

ket infrastructure. To also be able to meet these expectations in the future, the SIC system was completely refurbished and meets the latest technical standards today as SIC^4.

The SIC^4 project is intended to do more than merely react to technical change. The primary goal was far more about setting a milestone for the entire financial center: with SIC^4 the ISO 20022 message standard can be supported, thereby creating the conditions for further innovations in payment traffic, enhanced efficiency at banks and for their customers and also for meeting future regulatory requirements. One thing is clear: SIC remains an important pillar of payment traffic.

In conclusion, I would like to say good-bye to Daniel Wettstein, who, over the past few decades as my predecessor, has impacted developments in payment traffic, both nationally and internationally, with his dedication and the necessary farsightedness. We thank him for his tireless and valuable commitment and wish him nothing but the best for the future.

S. Kraenzli

PD Dr. Sébastien Kraenzlin
Head of Banking Operations, Swiss National Bank,
Member of the Board of Directors of SIX Interbank
Clearing

The digital slate board as the end of our money culture?

The penetration of digital media is leading to a culture of constant changes in business and society. Also, and especially, when it comes to mobile payment solutions. Professor Gerhard Buurman, co-founder of the Swiss Design Institute for Finance and Banking, teaches at the Zurich University of the Arts and focusses on future forms of bank-customer interaction. In this interview he explains why it is crucial whether banks view money as something technical or rather as something social, what the key to an entirely new financial or monetary culture is and what the digital payments world urgently does and does not need.

CLEARIT: Mr. Buurman, you manage the university's interactive design projects, which could be taken to mean that you research the usability of devices. What do you think of studies which, for instance, are focused on the interactive experiences of cats with the 'catch the mouse' app?

Gerhard Buurman: That is the question about 'meaning'. I think that markets have no meaning per se. Pets are simply a giant market and there are endless numbers of people who are greatly interested in their cats. Markets recognize and react to this. It might seem odd to us that a cat can sit in front of an iPad and catch the mouse. It is nevertheless entirely conceivable that such studies can supply scientific findings which, in turn, can be useful. This is very difficult to judge from the outside.

So there is apparently a market need for scientists to work on such topics.
The market does not really have any needs. The market merely represents the totality of the relationships. If you are a scientist today, the interesting questions are not simply served to you on a silver platter. You want to also somehow be original, possibly astound and get attention. There are researchers who are working in the field of plant communication, which would have been considered voodoo science 30 years ago. It really is true today that the networks of life and technology are merging together. For example, today there are astonishing findings on how our forests organize themselves and how trees communicate with one another.

"Form follows function" – Does this design guideline still apply when talking about paying through a mobile phone? Or is it rather the other way around: the new

Before the advent of the digital world, form truly was
indicative of function. Take the Austrian Postal Sav-
ings Bank in Vienna for example. They managed to
lend cultivated expression to the strictly defined pro-
cesses that define a post office branch: paying in
money, receiving advice, bank vault transactions, etc.
Here, the form of the premises and its furnishings
were indicative of its function.

Another example is a door handle, the function of which
can easily be guessed from its form. I can grasp the
form by what I physically have in the hand. With digital
devices, the form – since today it is indistinguishable
among many smartphones – is a slate board, in princi-
ple. Similar to a traditional slate board, the interaction
here primarily occurs by tapping, ruling lines or wiping.
The problem is that a wide range of very different pro-
cesses can be triggered in this way. With a smartphone,
the accidental touching of a symbol on the display can
trigger a contract signing that I really did not want and
now will cost me money (has already happened to me).
This cannot occur with a door handle – unless, perhaps,
if you are Indiana Jones.

Functionalism, a design theory from the 1950s, states
that the industrial form is to be rational, honest and
esthetic. But that won't get us very far in many cases.
Comprehensibility, unobtrusiveness, honesty, durabil-
ity, reduction to what is essential or the love of detail
– all these aspects change, because we are dealing
with cognitive design in which we must develop com-
prehension and behavioral models. This makes the
context of digital design far more complex than our
door handle. In my opinion, it is nevertheless also
important in the digital field to set conventions and to
stick to them, just as there are conventions about what
a door handle is in our constructed environment. So
that people do not need to relearn the interaction each
time, so that they (properly) understand transactions
through conventional design and experience them as
secure, for example. Our systems must very clearly
differentiate themselves from online games here.

"The staging of a pure payment process is counterproductive and generates false attention."

With numerous mobile payment solutions, strong
attempts are being made to meet individual customer
needs. How many methods for simple payment pro-
cessing can society handle? Or to put it differently:
What end-customer is ready to actively use more than
one payment solution?

Let's think a bit ahead: I have to transfer 100 francs to
my son. Then I say: "Smartphone, please transfer CHF
100 to my son." The device analyses my voice, thus
unambiguously knows that it's me, the security guaran-
tees are stored in the smartphone and at my provider,
and the credit transfer functions. A second later my son
receives an SMS with the news that his father just
transferred 100 francs to him. Or, in a quiet moment,
my mobile phone says to me: "You transferred 100
francs to your son for his birthday last year; do you want
to do it again?" And a simple, spoken "yes" would suf-
fice to trigger an extremely complicated technical pro-
cedure.

That means that the diversity of differently designed
payment tools does not provide any advantage at all.
What I feel is important is to properly integrate the
payments in contexts that actually are relevant – in the
business model. The staging of a pure payment pro-
cess is counterproductive and generates false atten-
tion.

That means nothing more than that the providers of
mobile payment solutions should not give them any
differentiating features because they involve pro-
cesses that everyone has to support?

Yes, that is correct on the level pertaining to the con-
text of the user. There, this process becomes a com-
modity and it does not matter who makes it available.
On the vendor side, I see the problem that every com-
pany that is occupied with offering these processes in
a secure and resilient manner naturally needs to also
receive appreciation for it and to be visible. From the
customer's perspective, there is little room here for
any major self-presentation. The service must simply
function and be secure.

I came up with several ideas for a new digital financial
market infrastructure a few years ago in an article.
Among them there was also the question of why there
couldn't be a type of "Swiss banking" button that
would appear on all mobile phones around the world.
Then I would know that if I pressed this button my
payment would be made reliably, securely and quickly.

It doesn't really matter who the provider is, so to say.
What matters most is that the customer can rely on
the security, and when he sees "Swiss Banking" on
the button when triggering a payment, then he is man-
ifesting his faith in the Swiss banks.

Yes, I believe this is a huge chance for the Swiss finan-
cial center. The origin or identity of the security makes
a difference. If SIX, as a joint venture of the Swiss
financial center, conveys this sense of security in the
area of payments, then not only do the forms and tools
convey an important meaning, but so do the brand
and its designation of origin. This could be a type of

symbol for the customer for a technical transaction quality which the digital world so urgently needs.

To stick with our example regarding the transferring of CHF 100 francs to your son – to what degree are computer programs intelligent enough to recognize that his birthday repeats annually and to remind you of it in due time.

Technically, a great deal is possible. But, of course, there are limits and constraints to be seriously considered, customer data to aggregate and new services to forge. However, I am sure that there will be third-party providers that will drive their business model forward particularly with such services in the future. And they already exist.

"The banking industry must harmonize technology and culture."

Speaking of third-party providers, the payments industry is in flux. New non-banking providers are entering the market with new business models and services. People are talking about a silent revolution. How do you view these new developments?

On the one hand, I see an ongoing technical development, and on the other, a cultural one. The banking industry must harmonize technology and culture. It will be massively changed by the technology and is thus subject to cultural developments resulting from the technical revolution. What also has to be considered here is that society and many customers no longer accept certain practices, behaviors and stylistics. Earlier, the banking business was comparatively simple. Business models today are just as granular as are circumstances in the digital economy.

This is easy to see in the music industry. Technology companies have digitalized products (music), clearly organized them on a platform and built in a payment button for purchasing them. The industrial revolution was over (from the perspective of the old major labels). Technology companies such as Apple have morphed into content providers, because technology alone is not a product.

Banks today are confronted with the challenge that their business processes are being completely mechanized. That technology, however, does not belong to them and is also not being further developed by banks. From a cultural standpoint, this technology is foreign to the banks. Of course, large banks are involved with technical questions and further developments; however, taking the example of blockchain technology, one can see that banks have adopted ideas that arose in another place and with another motive. I view it as not at all improbable that increasing numbers of banks

will depart entirely from these development tasks, because ultimately they will not want to, or be able, to be technology companies. The definition of new business models depends more on the companies' response to whether they comprehend the issue of money as something technical or something social. I am solidly convinced that security and trust when it comes to other people's money is the core business of companies that we call banks today. In view of the increasing complexity of markets and media, banks must act as interfaces and moderate these circumstances with customers. This means that other revenue models automatically come into play: ideational, social, intellectual among others. Financial literacy is therefore not just an education program, but the key to a whole new financial or monetary culture. Banking is primarily a people business, and that has nothing to do with romanticism. The banks of tomorrow must develop and define their cultural competence, how people and societies function, and which role they want to play in this regard. If one comprehends banking as a technical problem, then one has failed to understand what technology is.

"I cannot imagine that people are lacking in imagination and do not stand up to the totalitarian mechanism of the digital world."

Many industry experts are prophesying the end of cash money and that future generations will not even know what that was. Sweden has already eliminated most of their cash dispensers, while the Danish National Bank will no longer print banknotes as of 2017. What do you say about this as a futurologist?

Coins and banknotes are a materialization of values and services. I cannot really imagine that people will want to do without them entirely – especially not in Switzerland, which, in my opinion, has the most beautiful banknotes in the world (Swiss designers also do a good job here). Coins and banknotes represent services, and they form and materialize our comprehension of value and countervalue. Cash money is also a teaching tool in this sense. My daughter mows the lawn and receives 10 francs. If I now send her 10 francs on her smartphone, then she perceives it differently than the banknote that she holds in her hand and experiences as a countervalue for her service. A completely digital payment landscape is a threat for many people because it would create total transparency. Naturally, digitalized processes are practical and reduce transaction costs. However, there are other areas of life, other players and other interests (and by

these I mean solely legal interests) that are better served with cash money. I cannot imagine that people are lacking in imagination and do not stand up to the totalitarian mechanism of the digital world. The history of money is colorful and, in my opinion, will remain so. When people finally realize that they are hooked into a single, networked, technical system, from where there is no escape, they will simply think up something else. Otherwise, digitalization would be the end of our money culture.

"I would wish that peoples' interest in a secure and stable financial infrastructure would lead to greater community spirit."

Payment traffic, like hardly any other financial instrument, stretches across all processes within a bank. Consequently, this revolution must also leave traces within the bank operations. What will a successful bank look like in the future?

We still have the idea that a bank is a type of temple and its employees the guardians and keepers of the money. Banks have invested a great deal to establish this image and to keep it alive. This metaphor matches our material concept of money, which has a physical location. The materiality of money and markets, however, has completely changed. Money is growing more virtual, disaggregated and more agile. It functions and moves like communications between players, around the globe. This means that not only are business models changing, but also the identity of the financial service providers. A lot has fallen apart in this field in the past 20 years, and new forms have arisen.

One central question involves the security and the customer's back-end. I can very easily imagine that the Swiss financial culture could provide certain infrastructures and services that are organized like a public service, especially where the security and identity of citizens are involved. The Swiss financial center would be a predestined player through which a new dimension of the digital society could be opened. A legal and technically secured and guaranteed client back-end would then form a point of origin for new services. Such a system would then be attractive not only for customers in Switzerland, it could potentially also become an export product. The banks must recognize that they are not alone in being uncertain, but their customers are equally so. They need to therefore reflect upon their own situation and find answers, like a phoenix rising from the ashes. I am quite sure that these issues are being considered. I would wish that peoples' interest in a secure and stable financial infra-

Gerhard Buurman

structure would lead to greater community spirit. The merging of mobile payment applications which the Swiss banks have recently agreed upon with SIX and PostFinance is a step in the right direction in my opinion. This is a community building path that well addresses the future of Swiss finance.

Interview:
Gabriel Juri, SIX Interbank Clearing and
André Gsponer, ConUm

"Miss Helvetia" explains the business of SIX Interbank Clearing

A scene from the intro clip "A brief history of money"

Four short films from SIX Interbank Clearing provide simple explanations for highly complex technologies. A two-minute clip, which shows the development of money in fast motion, offers an introduction of the world of payment traffic. And then it's about the core technology and especially the payment system, without which nothing functions. With it everything runs smoothly, also in the Swiss Value Chain, which is presented in the last clip – moderated from A to Z by Miss Helvetia.

Intro
"Miss Helvetia", a clever businesswoman with a Playmobile look who leaps out from a two franc coin, briefly explains the history of money of the past 3,000 years. At the start of the history of payment traffic was livestock. The word 'capital', (Latin for 'head') originally stood for the number of livestock that a transaction cost. This was followed by coins made of precious metal, which were generally accepted and used as a means of payment. This was not entirely without risks, there were also pickpockets back then, as the film shows. The discovery of the promissory note in the Middle Ages represented further progress. This form of capital had its pitfalls as well; so many of such notes (the more so as they were uncovered) were issued that state bankruptcies resulted in France, Portugal and Spain. All these forms of payment were analogue. The digital revolution in payments occurred in Switzerland in 1987 – and the film is justified in celebrating this. SIX Interbank Clearing (or one of its predecessors) invented the first fully electronic clearing system, which made payment traffic massively faster, more secure and more efficient.
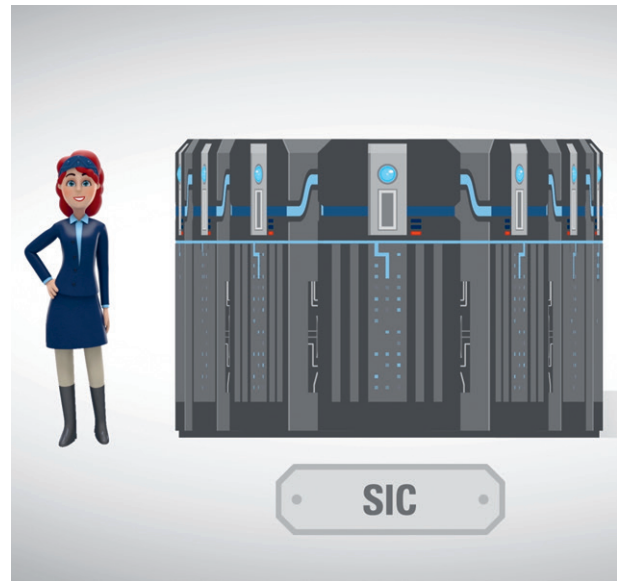
RTGS
In this video "Miss Helvetia" explains the core technology in Swiss payment traffic: RTGS or Real Time Gross Settlement. To put it more simply, this technology stands for the automated and irrevocable payment of an amount observing all security measures such as checking whether there are sufficient funds in the instructing party's account. The operating company, SIX Interbank Clearing, has two systems available to conduct this activity: SIC (for transactions in francs) and euroSIC (for payments in euro). These systems, which operate in an encrypted manner, are constantly monitored by the Swiss National Bank (SNB) to maximize security. More than 400 transactions per second are possible.

SIC
Swiss Interbank Clearing (SIC) stands for real-time payment traffic in Swiss francs, as explained by "Miss Helvetia". For the Swiss financial center, the SIC system is similar to what the vascular system is in the human body: nothing works without it. Whether it is a bank transaction, salary payment, debit or credit card booking, in short, everything is Swiss payment traffic runs through SIC. The performance is impressive: SIC processes hundreds of millions of transactions annually with a total value of 40,000 billion francs. Before each transaction is executed, SIC checks

Excerpts from the "RTGS" clip, from the "SIC" and "Swiss Value Chain" clips

whether the instructing party has the necessary liquidity. The SNB is an additional guarantor of payment traffic security.

SVC

The Swiss Value Chain (SVC) is celebrated by "Miss Helvetia" as one of the most innovate technology in recent decades. The SVC refers to the fully automated linking of exchange trading, clearing (checking the underlying buyer and seller positions), settlement (processing) and payment. Within the blink of an eye, in Switzerland up to 10,000 exchange transactions can be processed fully automatically in this way in Swiss francs or euro. Payment traffic runs through the SIC system and euroSIC. The (virtual) deliver of securities from the seller to the buyer takes place through the SECOM system. Both the stock exchange system and the downstream components of the Swiss Value Chain are impressive with their greatest possible availability and reliability.

The films were produced in English, French and German and are available at six-interbank-clearing.com/Guided-Tour. Creatively designed and skillfully implemented, they cleverly reduce highly complex issues to simple explanations. Their short lengths make them very suitable for showing at presentations.

Dr. Werner Vogt
Werner Vogt Communications

Migration to ISO 20022 made easy with specialized test platforms

Software partners that offer payment functionalities, and bank customers that program their payment traffic connection themselves, must adapt part of their software to the new ISO 20022 standard as stipulated in the Swiss recommendations. An important support during the migration are the test platforms, which simulate the behavior of the customer-bank interface in detail and are made available by SIX and the larger Swiss banks as essential migration tools.

Such test platforms offer an enormous reduction of work during the end-to-end testing of the customer-bank interface by simulating the bank-to-customer feedback. Software developers and bank customers can make technical and business checks for all offered ISO 20022-based XML files (including pain and camt), and with just a few clicks, they can generate the appropriate feedback. This occurs quickly and reliably with minimal effort while adhering to the often complex ISO 20022 rules. The test platforms deliver qualified feedback in various display formats (online, PDF reports, comments inserted in XML) and thereby support efficient agile software development.

As an important functionality, the possible feedbacks for positive and negative cases from the bank to the customer can be simulated on the basis of payment and direct debit instructions.

Functionalities offered per test platform
The functionality of the test platforms respectively offered generally differs from bank to bank and can include the following banking functionalities:
- Validation of the ISO 20022-based XML formats offered for instructions (pain.001 and pain.008) by uploading the file
- Schema and business rule validation according to the standard offered
- Consideration of different national and international standards (including CGI, EP, DK, SIX)
- Generation of bank-to-customer messages through simulation of the payment process (pain.002, camt.052, camt.053, camt054) by downloading the file
- Account statement simulation for account debits, including individual and collective bookings
- Account statement simulation for account credits, including receipts of inpayment slips and direct debits
- Early simulation of the new payment slip IS with data code and ISR with data code, which will be offered in Switzerland starting mid-2018
- Support of test automation
- EBICS support

Other functionalities that are generally offered:
- Simple, self-explanatory operation
- Availability 7 days a week, 24 hours a day
- Automatic schema and format recognition
- No limitation regarding file size
- Sample messages
- Detailed ISO 20022 field definition

**Advantages for software developers and bank customers**
The reliable and rapid checking of ISO 20022-based XML files and the 'self-service' simulation of bank-to-customer messages 7 days a week, 24 hours a day, add up to an enormous reduction of work while developing and during end-to-end testing of the customer-bank interface.

Application example
1. Uploading of an ISO 20022 payment instruction (pain.001 message) and displaying of errors (if any exist) within the uploaded file.
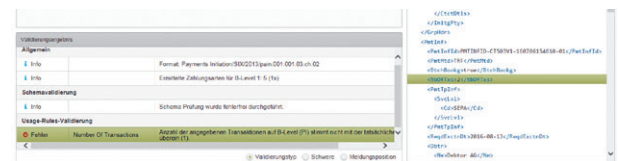
2. Payment status report (pain.002) and account statement (camt.053, camt.054) simulation for downloading and importing in one's own software for end-to-end simulation.
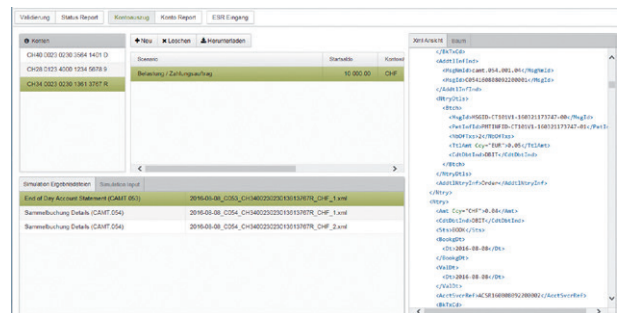
Peter Ruoss
UBS Switzerland

Swiss test platforms

SIX and the larger Swiss financial institution are providing test platforms. The following features are currently being offered or in planning (live date):

Functionality	UBS	Other test platforms				
		CS	PF	Raiffeisen	SIX	ZKB
Validation according to the Swiss recommendations						
Payment instruction pain.001	yes	yes	yes	yes	yes	yes
Direct debit instruction pain.008 ch	yes	no	yes	no	yes	Q4 2017
Direct debit instruction pain.008 SDD	yes	yes	yes	no	yes	no
Simulation of incoming payment according to the Swiss recommendations						
IS	yes	no	yes	no	no	Q1 2017
ISR	yes	yes	yes	yes	no	Q1 2017
IS with data code	Q4 2016	no	Q2 2017	Q3 2017	no	Q1 2017
ISR with data code	Q4 2016	no	Q2 2017	Q3 2017	no	Q1 2017
Bank payment	yes	yes	yes	no	no	Q1 2017
Incoming direct debit LSV	yes	Q4 2016	yes	no	no	Q4 2017
Incoming direct debit SDD	yes	no	yes	no	no	no
Simulation of payment status according to the Swiss recommendations						
pain.002 based on pain message upload	yes	yes	yes	yes	yes	yes
pain.002 individually and dynamically configured on the platform by the user, with warnings, mistakes and reason codes	yes	no	no	no	no	no
Simulation of account statement according to the Swiss recommendations						
camt.053 with internal collective booking resolution	yes	yes	yes	yes	yes	Q1 2017
camt.053 with external collective booking resolution in camt.054	yes	yes	yes	yes	yes	Q1 2017
Simulation of account report according to the Swiss recommendations						
camt.052 with internal collective booking resolution	yes	yes	yes	yes	no	Q1 2017
camt.052 with external collective booking resolution in camt.054	yes	no	no	no	no	Q1 2017
Simulation of credit and debit advices according to the Swiss recommendations						
camt.054 credit advice	yes	yes	yes	yes	no	Q1 2017
camt.054 direct debit advice	yes	yes	yes	yes	no	Q1 2017
Other recommendations						
Deutsche Kreditwirtschaft	yes	no	no	Q3 2017	no	no
CGI	Q4 2016	yes	no	Q3 2017	no	no
EPC	Q4 2016	yes	no	Q3 2017	no	no
Other functionalities						
EBICS: Upload und Download	Q4 2016	yes	no	yes	no	yes
Detailed integrated ISO 20022 field definition in portal	yes	no	no	no	yes	no
Comprehensive example library	yes	yes	yes	yes	yes	yes
Cancellations/Corrections	yes	Q4 2016	yes	no	no	Q1 2017
Interest rates simulation	Q4 2016	no	yes	no	no	Q1 2017
Fees simulation	yes	yes	yes	yes	no	Q1 2017
Account statements based on multiple pain message uploads	yes	no	yes	no	no	no
Multilingualism	DE, EN, FR (Q1 2017), IT (Q1 2017)	DE, EN, FR, IT (Q4 2016)	DE, FR, EN	DE, FR, IT, EN	DE, EN	DE, EN

Detailed payment statuses with ISO 20022

In the future, financial institutions will have detailed payment statuses available to them during payment processing. This is a result of the harmonization of payment traffic and the migration to the international ISO 20022 standard.

These statuses can be used for a substantial improvement of the payment process by ERP systems (such as SAP) and software solutions with a payment function.

The processing chain

The debtor's software creates credit transfer messages, transmits these to his financial institution and subsequently receives various messages sent by financial institutions (e.g. status, debit advice or account statement). Based on this message flow, the current status – entered, submitted, checked, executed, reconciled, rejected and returned – can be precisely traced, from the entry to the reconciliation in the accounting system, if the software used supports this.

For example, the status "rejected" would be reported with the "Payment Status Report" message in near real time during the day if a payment instruction cannot be accepted due to technical or functional errors. This gives the debtor the option of immediately correcting the error and thus still submitting the payment on the same day. The following example illustrates the options available.

## OK case – payment executed and credited

The debtor's software generates a pain.001 message and receives a pain.002 back with the status "accepted" from his financial institution after technical and functional validation is completed. As soon as the payment instruction is transmitted by the debtor bank to that of the creditor's, the debtor's software receives a debit advice (optional status that will not be offered by all banks) and after day-end the account statement for the final status "reconciled".

[1] Will not be offered by all financial institutions
[2] Processing generally in near real time
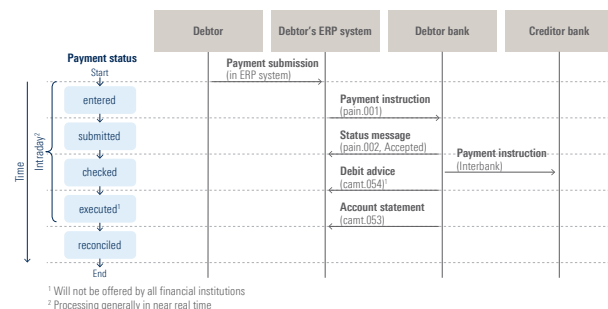
Payment rejected (NOK case 1)

In this case, the submitted pain.001 message cannot be processed by the debtor bank. As a result, it informs its customer about the rejection of the pain.001 message with a pain.002. It also provides the reason for the rejection at the same time. Examples of possible causes of errors:
- Duplicate submission of the pain.001 by the debtor.
- The debtor's account number entered in the message is not permitted for the debit.
- The ISR reference number provided in the message is erroneous (check sum is incorrect).

[1] Processing generally in near real time
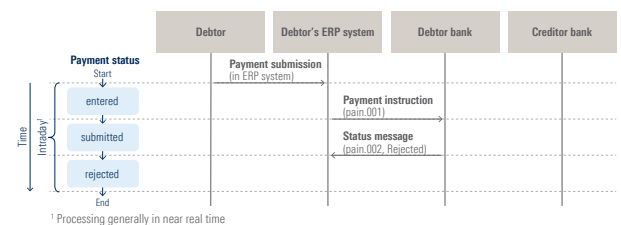
Payment returned (NOK case 2)

Once the financial institution has sent back a pain.002 message with the status "accepted" to its debtor following technical and functional validation, the payment will be returned by the creditor bank. One potential reason for this could be that the creditor's account is netted.

[1] Will not be offered by all financial institutions
[2] Processing generally in near real-time
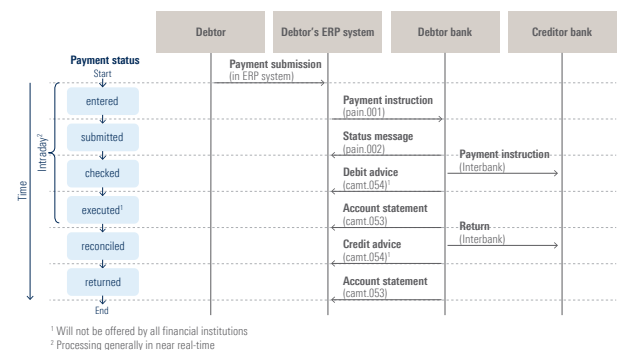
More detailed information on this topic can be found in the Swiss ISO 20022 recommendations at www.iso-payments.ch.

Peter Ruoss
UBS Switzerland

Intraday Liquidity Reporting – Being liquid at all times

Since the financial and banking crisis of 2007, market players have again become very much aware of the liquidity risk for banks since the financial and banking crisis of 2007. International and national regulators have defined steps for measuring and planning of liquidity. This requires the introduction of real-time liquidity management on an intraday basis.

"Cash is king" became the maxim at the beginning of the financial and banking crisis. Through As a result of the diminishing trust between banks, liquidity needed to cover daily transactions increasingly turned into a bottleneck and risk factor, especially among the larger correspondent banks.

A path back to trust

To secure the processing of their daily transaction volume, correspondent banks customarily grant so-called intraday credit lines. The account holding bank ensures must ensure at all times that its bank customers are sufficiently liquid in order to be able to grant intraday credit lines until the end of the trading day. If this is were no longer guaranteed, the international payment process would be in jeopardy. This is because cash collateral deposits do not represent a viable alternative in view of the current interest rate situation.

Active management of liquidity-effective transactions

That is why the Basel Committee on Banking Supervision (BCBS) encourages active management of intraday liquidity positions and risks, both under normal and in stress situations. Accordingly, on a daily basis, banks should be able to provide information about the maximum of the intraday liquidity obtainedclaims, about the available intraday liquidity at the start of the day, the number of payments, turnover, about crucial urgent payments, payments executed and intraday credit lines granted to (correspondence bank) customers. These rules, known as Basel III, formed FINMA's basis for the Swiss implementation of the first Liquidity Ordinance in January 2013. It additionally stipulates using both quantitative benchmarks and qualitative measures for liquidity management. Through a separate reporting about intraday liquidity management, banks should demonstrate the ability to meet their payment and processing obligations in a timely manner, both under normal and in stress conditions (See CLEARIT, December 2014 to see how the reporting is structured).

Cash management via SWIFT

In addition, an international working group of leading banks has elaborated suggestions for the practical implementation for the financial industry and agreed to ensure the provision of data bases and the timely supply of this data for the required reporting. This means that the account holding banks are encouraged to supply all the necessary transaction data to their customers so that they can generate the necessary reports according to their regulators' requirements. Customer surveys have shown that, if possible, all account movements should have been shown to the account holder by means of credit and debit notices-advices. Credit Suisse, for example, promises its customers that they will receive a notification within five minutes after a booking takes place, at the maximum.

The working group particularly recommends incorporating all liquidity-effective measures, including: purchase/sale of securities and foreign exchange transactions, internal bank's internal transfers, cash deposits, file-related bulk transactions and transactions resulting from capital measures.

To provide the greatest possible amount of information for each transaction, in addition to the information about the booking, the value date and exact time-stamp of the transaction should also be supplied. Cash reporting takes place using the latest SWIFT message types MT900 to MT950 (Cash Mgmt and Customer Status) or using the ISO 20022 camt message type.

From a regulatory perspective, in the future, in addition to the ex-post view, an ex-ante reporting is conceivable (liquidity forecasting) as well as possible linkages to risk functions. It remains to be seen whether external providers become established to meet these ever more complex reports or if the financial institutions will continue to manage their data preparation on their own.

Herwig Ganz
Credit Suisse

Renewal of the Swiss franc SIC system: A retrospective of the SIC[4] project

"One thing is for certain: With the SIC system the Swiss banks now have a clearing system which meets or exceeds the increasing customer and bank demands of volume, speed and quality, a system that compares favorably to foreign organizations."

With these words in 1988, Willi Hurni, former Deputy Chairman of the Board of Directors of what today is SIX Interbank Clearing (SIC Ltd) and the former Chairman of the Project and IT Process Steering Committee (PAP), looked back on 15 years of operation of the SIC system in CLEARIT in 2002. His assessment is still valid today.

The SIC system

SIC, the real-time gross settlement (RTGS) system for Swiss francs steered by the Swiss National Bank (SNB) and operated by SIC Ltd, is a central element of the Swiss financial market infrastructure and is therefore considered to be systemically important. The SNB depends on the SIC system to meet its legal obligations, particularly when it comes to supplying the money market with liquidity while facilitating and securing cashless payments systems. It is for this reason that it has a vital interest in ensuring that the SIC system is under constant development to meet both the current and future technical and functional requirements – those of the system participants and thereby ultimately also those of the real economy and naturally also its own.

Reasons for the renewal

The SIC system has proven itself since it was placed in operation in 1987. Particularly, during the last financial crisis, in which SIC remained functionally stable like the other elements within the Swiss Value Chain (stock exchange with the entire post-trade chain, including payment processing). The system participants' confidence in the security-oriented principles of the SIC processing mechanisms, e.g. the finality of payments, contributed to avoiding an increase in uncertainty in the financial system. This stability and reliability are not a coincidence, but a conscious objective. The Swiss financial center has had an extremely solid infrastructure for years, which is protected and ensured by its users and operator with considerable, continuous effort.

Despite various adaptations and upgrades since the first SIC system was placed in operation in 1987, it became increasingly more difficult to integrate functional modifications and new technologies in the existing system architecture. Maintenance of the IT architecture (mainframe) grew steadily more expensive and the scalability of individual components had reached their limits. In addition, everyone was aware that interfaces that grew over the years could be more cost-effectively integrated into infrastructure solutions in the future. There was also the issue of replacing an outdated programming language and switching a monolithic hardware and software architecture with one that is modular. Against this backdrop, the Board of Directors of SIC Ltd issued the assignment in September 2009 to elaborate a concept for a new, future-oriented architecture.

To also ensure the provision of high standards regarding security, reliability and efficiency for future requirements, the SIC system was completely overhauled. This means that SIC[4] now meets the latest technical standards without changing the basic concept and functionalities. In the area of messaging, the proprietary SIC standard was converted to the ISO 20022 (XML) standard, which will apply globally and industry-wide in the future. This represents a central milestone in the course of the harmonization and migration of Swiss payment traffic and creates the requirements for further innovations in payments, efficiency improvements for banks and their customers, and also serves to meet future regulatory requirements.

The interests of the SNB

The renewal project at the end of the lifecycle of the existing system was thus a technically-driven project, which was reflected in the project name: "New SIC Architecture" (NSA). In an age characterized by rapid technological progress and change, high innovation and consequently continuous change and cost pressure, the big challenge is to make decisions early and correctly. For the SNB, the renewal of the more than 30-year old system architecture also presented an opportunity to review its own requirements and to redefine them where necessary. The interests of the SBN can be summarized as follows as a result of the discussions held within the framework of interbank committees and in bilateral exchange between SIX and the SNB:

For the SBN as central bank, contracting authority and SIC system manager, it is central that a new platform also guarantees the high baseline requirements regarding continuity, stability and security. The requirements derived from this – specifically the security-oriented principles of the settlement mechanism, the finality of payments and the compatibility of a standard settlement infrastructure of large value and retail payments – had to remain in place.

The SNB also needed to be able to introduce the new platform without fundamental changes to the agreed-upon and established functionalities. This procedure that was oriented upon continuity, however, did not

free the involved parties from the obligation to review improvement possibilities and to partly implement them in future releases. The first SIC[4] standard release with functional changes will take place in November 2016. As of this date, the SIC participants who have already migrated to ISO 20022 will have new functionalities available to them which will facilitate even more efficient liquidity management (liquidity reservation for specially marked payments, modification of settlement sequence).

The National Bank is convinced that with SIC[4] a platform has been created that takes the named interests into account, which features a sustainable architecture, that meets the needs of participants and, at the same time, meets the high expectations for operational availability.

Summary

After closely accompanying the project for seven years, the SNB makes a positive assessment of the NSA project. With SIC[4], a secure, solid, scalable and future-oriented technical platform has again been created to meet the coming challenges. Gratitude for the good work in the NSA project goes to all who participated, and especially to SIC Ltd as a whole. It is not self-evident that a project of this size and complexity can be completed on time and on budget. It also shows, once again, that such a major project can be completed successfully based on the intensive collaboration between SIC Ltd, as operator, the system participants, and the SNB as system manager. The reliable operation of the SIC system over many years justifies the trust of Swiss financial market participants in the infrastructure for cashless payment traffic in the future.

Stefan Michel
Swiss National Bank
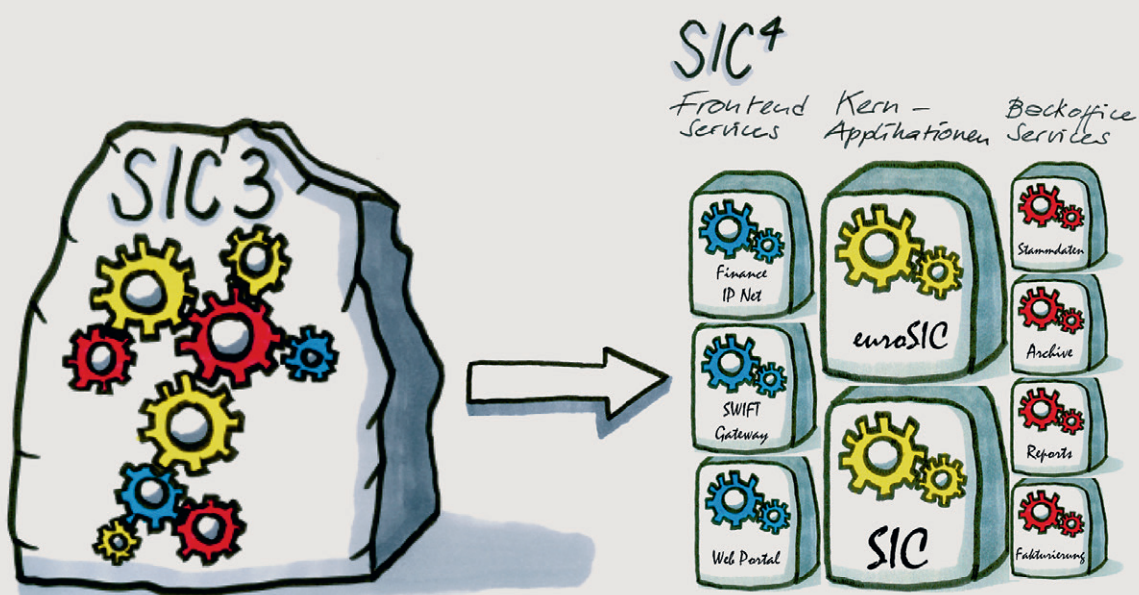
Source: Jean-Pierre Groner, NSA Project Manager, SIX Interbank Clearing Ltd

Additional information about the Swiss payment traffic systems can be found on the Internet at www.six-interbank-clearing.com