

Securities processing and STP in Germany

**Has the financial world woken up to the
new trend?**

By Dyrk Scherff

About the author



Dyrk Scherff has been a financial editor of the Frankfurter Allgemeine Zeitung since 1998. He is in charge of reports on European stock market operators (including securities processing), online brokers and direct banks, credit cards and index providers. He also started writing for the Frankfurter Allgemeine Sonntagszeitung in July 2002.

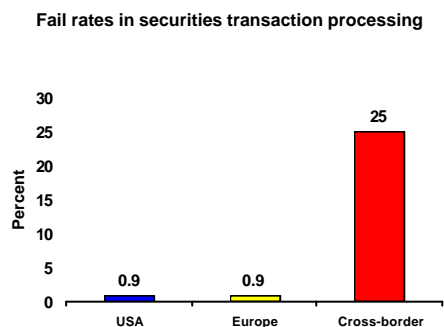
Dyrk Scherff studied business administration in Nuremberg and Dijon, France, lives in Frankfurt and is single.

CONTENTS

THERE'S A PROBLEM	4
Processing of cross-border transactions rife with errors	5
<i>Complicated transaction process</i>	5
<i>Inadequate automation</i>	6
<i>Incorrect reference data</i>	7
<i>Insufficient use of standards</i>	8
Problem identified – so what now?	8
Straight through processing – a new vision	10
THE SITUATION IN GERMANY	12
<i>Fewer sources of error for domestic transactions</i>	12
<i>Poor performances by funds and asset managers</i>	12
<i>Shortcomings in cross-border securities trading</i>	13
German asset managers have not yet fully recognised the inefficiencies	13
<i>No-one recognises the cost of errors in transaction processing</i>	14
<i>The speed of securities processing is over-estimated</i>	14
<i>Customers are keeping a closer eye on costs</i>	15
<i>STP is the most important measure in boosting efficiency</i>	16
Breakdown of German bank groups	16
Major private -sector banks	16
<i>No co-operation between transaction banks</i>	17
<i>A glimmer of hope: Deutsche Börse and big banks want a common processing system</i>	17
Small private-sector banks	17
Co-operatives sector	18
The savings bank group	18
SO WHAT IS THE WAY FORWARD FOR GERMANY?	20

THERE'S A PROBLEM

German banks are facing one of the worst crises since the war. They suffered losses running into billions in 2002. The slump on the equity markets, which has persisted for more than two years now, has left quite a mark on investment banking and securities trading, and the weak state of the economy is causing a drag on banks due to a dramatic leap in loan defaults. There is no sign of recovery on the horizon, so costs are being slashed, mainly by cutting jobs. Yet one of the biggest single costs and a frequent source of annoyance to customers is only being tackled in a half-hearted manner, i.e. the processing of securities transactions executed by banks, fund companies and asset managers. The most problematic area here is cross-border equity trading, which is steadily growing in importance: every day, up to a quarter of these transactions fail due to processing errors. According to feedback from German asset managers and fund companies¹ it costs up to EUR 500 per cross-border transaction to rectify these errors, compared with normal trading and processing costs which average EUR 3 to EUR 7 depending on the country. This is all money that eats further into investment managers' hard-won profits – money which is badly needed given the decline in performance of many of Germany's financial service providers. Securities transactions performed by German fund companies and asset managers are processed particularly inefficiently. In most cases they have failed to automate up to half of their processing steps but still send faxes to and fro. This, of course, is costly and prone to errors.



Source: Omgeo Benchmarks for OASYS GlobalSM

The cost is not the only problem though. Inadequate structures in securities processing have also led to a dramatic increase in risk over the past few years. Delays and errors mean it takes 3.5 days on average, and sometimes even 5 to 7 days, for a cross-border transaction to be completed and for both money and securities to change hands. It is estimated that the major German banks process an average of 5,000 to 10,000 of these every day, which means that dealers and investment managers are permanently sitting on transactions worth several billion euros, not knowing for days whether they are actually going to go through or might still fail. This is a very unsatisfactory situation when up to a quarter of securities transactions are going wrong. It is also a problem financially because they are unable to reinvest the capital for 3.5 days or longer or have to make expensive hedging arrangements on the futures market to cover this period.

However, Germany is not alone in facing these problems. Error rates in cross-border trading and the costs involved in rectifying them are high in other countries too. Every year, the international securities industry has to foot a bill of around USD 20 billion². Yet while foreign banks are gritting their teeth and improving their processes, many German banks are too reticent about opening themselves up to full-blown modernisation. Part of the blame falls on the shoulders of the German system of universal banks, one-stop shops for fund and asset management, custodian bank facilities, investment banking and lending business. This is because the system masks inefficiencies and hinders true competition. The same applies to the co-

¹ "Survey of European institutional sentiment towards operational efficiency issues in European trading systems," Fulcrum Research, July 2002

² Capco estimates, 2002

operative banks with their “central banks” DZ and WGZ Bank, as well as the public savings banks with their “parent companies,” the Landesbanken.

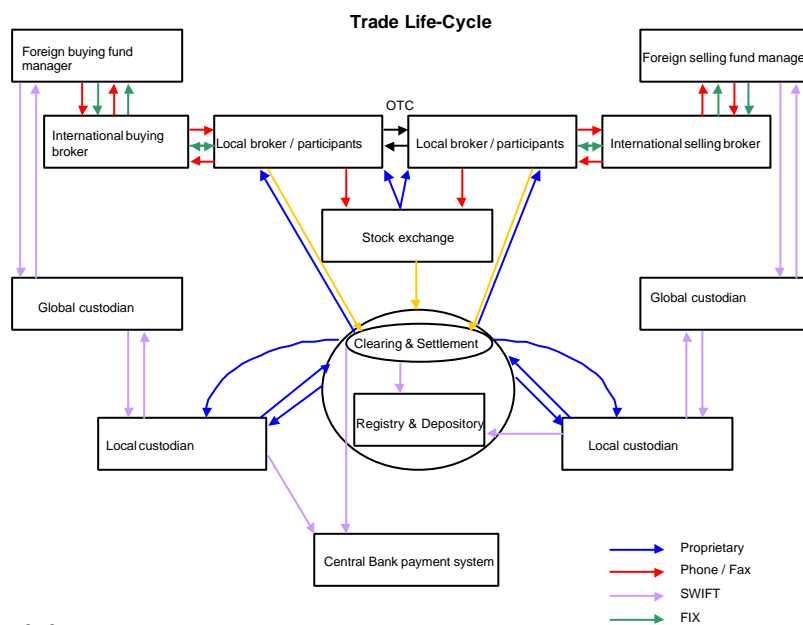
Processing of cross-border transactions rife with errors

One of the main reasons for inefficient management and processing of cross-border securities transactions is the countless steps from execution on the stock exchange or off exchange up until booking is made to the customer’s safe custody account (securities) and current account (cash). It could scarcely be more complicated. There are a great many parties involved, with numerous technical systems and interfaces. Different statutory provisions, for example in relation to reporting requirements, different currencies and supervisory authorities, language barriers and sometimes even different public holidays and time zones in the individual countries make the process even more complex and susceptible to errors, and hold up remedial action. Furthermore, there is still some way to go on the automation front and existing systems used and shared by banks, fund companies and asset managers are not totally harmonised. Transaction processing is also hampered by the use of different databases and a lack of standardisation in communications between market participants.

Complicated transaction process

The example of a share purchase on the London Stock Exchange by a German fund company or asset manager will be used to illustrate how complex the process is. Since it is generally only local brokers who are permitted to trade on stock exchanges – and the same applies in London – and off-exchange transactions are also best performed by local securities brokers, the German investment manager or his/her bank commissions a London-based broker to handle the order.

The broker buys the desired paper on or off exchange.



Source: CapCo
Copyright: 2001 TowerGroup

The transaction is processed by a bank in London known as the custodian bank, where the German custodian bank has a safe custody account. The local custodian performs the deal with the custodian representing the seller (a UK fund, for example). The securities are exchanged via Crest, the UK clearing house, which has just merged with the leading European clearing house Euroclear, owned by a group of major international financial service providers. Crest is also responsible for the subsequent custody of the securities.

The cash payment of the seller by the purchaser is also carried out via the two custodians, sometimes with the assistance of the central banks, i.e. the Bank of England and the Bundesbank in this instance. If the fund company does not have direct contact with a local custodian or broker in the country in question then yet another player has to become involved, namely a global custodian or broker, which operates internationally. This practice is widespread in Europe and is almost the norm for transactions on other exchanges.

All the institutions involved keep a close eye on the transaction process and consult extensively with one another. The broker sends a notice of execution to the fund company in question and a trade confirmation to the custodian, who will have received a list of the orders placed and processing instructions. The custodian then provides the broker with verification of the accuracy of the data (affirmation). The combination of confirmation and affirmation is termed “matching”. It can also be performed between a broker and investment company. At all stages of the matching process, it is important to check that real and reported data (for example in relation to the purchase price and number of units) correspond. Once affirmation has taken place, the actual processing of the transaction begins (settlement). However, the matching process itself is often seen as part of the settlement process too. Orders go wrong or are held up in this complex chain of events, if, for example, the data are not identical owing to data entry errors or misunderstandings, or if the trading partner is unable to pay or unable to deliver the securities immediately because – e.g. with short selling – he/she does not have them in his/her possession and cannot borrow them on time.

Similar processes apply when trading securities with parties in other countries. A small German bank with no foreign branches is in exactly the same position as the fund company mentioned earlier. It gets just as complicated when a foreign asset management company, fund company or bank wants to trade in Germany. They need a German bank to act as broker and custodian. The same happens as in the London example, but in reverse. In this case, Crest is replaced by Clearstream, the clearing house responsible for Germany, which has been 100%-owned by Deutsche Börse AG since summer 2002 and is a leader in Europe alongside Euroclear. If the equities referred to in the example are replaced by complex structured products, the potential for errors is greater still.

This is a familiar tale to a great many institutions that find it really is not easy to keep track of transactions with such a tortuous system. The professionals are inclined to agree. The process is simplified if the foreign broker and custodian are combined in a single bank or if the German fund company is part of a universal banking group. For example, DWS, the investment arm of Deutsche Bank, and Deutsche Bank Frankfurt place their orders via the group’s London operations. If this is done via internal systems it is likely to reduce the complexity and potential for errors, as internal interfaces are usually better integrated than external ones. However, because they have different in-house systems, some universal banks use external communication channels for certain countries and are therefore unable to exploit their advantages to the same degree. The number of external interfaces can also be reduced within the association of co-operative banks and the savings bank group since here too it is possible in practice for there to be “internal” communication between fund managers, brokers and custodians. Increased outsourcing of securities processing to transaction banks has also had a positive impact. It shifts the interfacing problem from the fund company to the transaction bank as it is no longer the fund that has a link with every broker and custodian but the transaction bank. Transaction banks often have better designed and more highly automated interfaces with brokers than fund companies do. Processing is their core business, so they are far more motivated to perform this work in an efficient and cost-effective manner than fund companies, who tend to regard processing as a necessary evil.

Inadequate automation

No matter how complex the process, surely it cannot pose a major problem in light of modern technical capabilities – or so you might think, and you would not be far wrong. The difficulties would be easier to overcome if the processes were fully automated and, more importantly, harmonised. But this is not the case. For example, brokers often still send faxes to fund companies and custodians confirming the execution of securities orders and affirmation from the custodian or the investment company is often transmitted in the same way. That is about the most inefficient, insecure and error-prone method that could

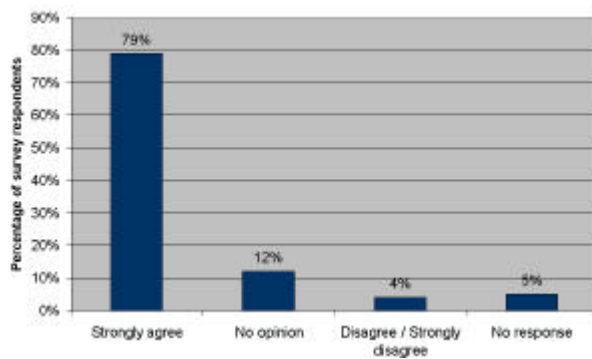
be used. After all, the print quality may be unsatisfactory and lead to errors and the data contained have to be entered into the systems several times over, causing unnecessary duplication of effort. Nevertheless, a survey of 77 international asset managers conducted by business and management consultancy Cap Gemini Ernst & Young in spring 2002³ found that information is still exchanged with the custodian in this way in around a third of equities transactions, half of currency transactions and as much as 70% of derivatives business. According to the survey, manual procedures are most commonly used for capital increases and stock splits, compliance issues and trade confirmation – 30% of the time in each case.

Incorrect reference data

But even where processes have largely been automated, the problems haven't disappeared altogether. Getting rid of manual processes might speed things up but when data is entered into the system wrongly all you get is faster but faulty transactions that then have to be manually corrected. And data is without doubt the main problem. A survey of international banks, brokers and investment managers conducted by US market researchers TowerGroup in September 2002⁴ found that 45% of all transactions which fail do so because of incomplete, non-standardised or incorrect reference data. This includes static data, i.e. data which does not often change, such as securities master data (for example the exact name of the security and its security identification number), as well as customer master data (local taxation, commission rates and the like) and delivery instructions (for example the number of the safe custody account via which the transaction is to be processed). Problems arise when brokers and fund companies or different departments within the banks use different sources, for example Reuters, Bloomberg or the WMGruppe for German institutions. The same applies if data have to be modified, for example due to a change in interest rates. A joint survey of international financial institutions conducted by TowerGroup, Reuters and Capco⁵ revealed that a third of the respondents rarely, if ever, make these adjustments automatically, even though an average of more than two million items of customer or financial instrument data are involved. This also entails higher personnel costs as, according to the survey, an average of 59 employees per bank are engaged solely in updating data for securities trading. These are all banking employees who could be put to far better use. It also increases error rates because there is more manual intervention. As well as static data there is variable information, which varies with every transaction, such as the quantity and price of the traded security. Problems may crop up here if, for example, a broker and investment manager agree a transaction on the phone but misunderstand each other.

Lack of reference data – a major problem

“Inconsistent, Inaccurate, and Incomplete Reference Data is the Major Cause of Internal STP Failure Within Respondent’s Organization”



Source: Reference Data: The Key to Quality STP and T+1, October 15, 2001; a joint Reuters / TowerGroup / Capco survey of various financial institutions

³ “Second survey of trends in IT within the asset management industry”, Cap Gemini Ernst & Young, in “Global Investor”, April 2002

⁴ “Is the Securities Industry Making Progress on Reference Data Management?”, TowerGroup, September 2002

⁵ “Reference data: the key to quality STP and T+ 1”, TowerGroup, October 2001

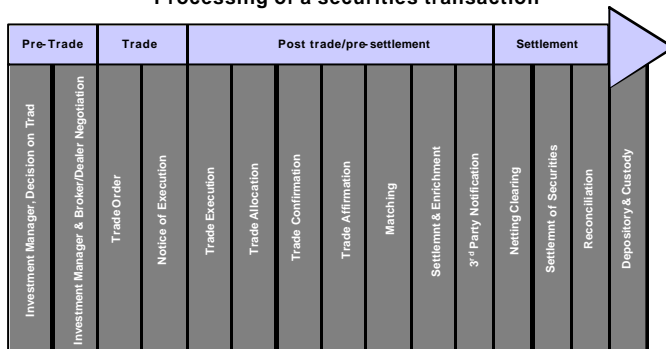
Yet even if data is entered correctly, errors still occur. The different systems employed by the banks, fund companies and asset managers are often unable to communicate with each other optimally because of a lack of communication standards or failure to apply them. There has, however, been progress on this front over the past few years. The SWIFT standard is the world leader for communication in securities processing (back office). The International Organization for Standardization (ISO) has given the code international standing in ISO 15022. This move was not entirely free of controversy. After all, SWIFT also operates an international communications network for the finance industry, so no wonder there were accusations that the standard would put SWIFT's rivals at a disadvantage when competing for users for these networks. The FIX messaging standard is gaining steadily in importance in communications between fund managers and brokers (front office). This standard too was incorporated in ISO 15022. Further standards are required to make the systems technically compatible. The internet language XML could also set the future standard for processing. However, the banks often convert the standards into their own in-house programming languages, which can give rise to errors. Another source of error is that many banks do not use these standards at all. Providers of securities databases and matching services also indirectly set standards. Investment managers, brokers and custodians communicate with each other via their systems by the asset managers or funds entering their transaction orders and later receiving acknowledgement that the transaction has been successfully concluded. They use standardised reference data for this purpose, reducing the number of errors (and hence the cost) and speeding up the process. One of Europe's leading service providers in this field is Omgeo, a joint venture between Thomson Financial and the US depository and clearing company DTCC. The company's systems are used by a large number of banks and investment managers. By contrast, Omgeo's former rival GSTPA – a joint bank initiative – was dissolved in 2002 due to financial difficulties and internal disputes.

The banks' difficulties are further exacerbated by the fact that the individual departments often use different technical systems, which have their own communication problems. For example, the TowerGroup, Reuters and Capco survey revealed that a bank uses 43 systems on average for customer and counterparty data and 37 systems for financial instrument data. Not only does a system as chaotic as this dramatically increase the potential for error, it is also expensive. Essentially, it is no longer viable. The differences may stem from restructuring activities or mergers and acquisitions, which have brought together a variety of systems of only limited compatibility. They are often only partially integrated into existing technology, increasing complexity levels. The same can happen when individual systems are updated without being harmonised sufficiently with the remaining infrastructure. The large banking groups such as the German universal banks, with their numerous departments and brisk M&A activity over recent years, are particularly susceptible to this. Deutsche Bank, which acquired Bankers Trust in the US, is just one example.

Problem identified – so what now?

There is nothing new about this analysis – the banks have been aware of it for some time. And yet they have consistently failed to tackle these problems with sufficient resolve for many years now. This is partly because they all prospered during the most recent stock market boom and saw no real need to cut costs by improving automation. Another factor is that although cross-border trading has gained in importance since globalisation began to take hold, it has only really gathered momentum in the past few years due mainly to the launch of the euro in 1999 and increased trading activities by private investors during the bull market of 1998-2000. In addition, very few banks calculate exactly what their processing costs are, which means it is not entirely clear just how inefficient they are. If they do see a need for change at some stage, the money is usually there. However, they often underestimate the fact that automation is one of the few technological investments that improves results even during a slump.

Processing of a securities transaction



It will become all the more important in the future to rectify errors in securities processing. There are various reasons for this. Firstly, **trading volumes** on the stock exchange are set to rise again in the medium to long term, creating pressure. In fact there will be a disproportionate increase in cross-border trading due to the emergence of an increasingly integrated European capital market. Credit Suisse First Boston is predicting an increase in these transactions, which currently stand at around 150,000 per day worldwide, to around 400,000 to 600,000 by 2005, rising further to between 600,000 and 900,000 by 2008. If the structures remain the same, the number of errors and staffing requirements will rise in line with these increases. However, the banks are unlikely to have either the time or money to deal with this. Even if volumes remain constant, banks must **cut their costs** to improve their earnings. There is huge cost-cutting potential in the management and processing of executed securities transactions, which has been woefully under exploited to date.

What is more, major customers are increasingly unwilling to pay for inefficiency in processing. Fund companies are feeling the pressure too. They have recently had to give a commitment to their customers to make their **opaque cost structures more transparent**. Thus, for example, increased attention is being paid in Germany to the key total expense ratio (TER), which shows costs in relation to assets under management. This trend is probably here to stay, forcing many funds to justify their actions. A survey conducted by Mercer of 29 British fund managers with assets totalling EUR 800 billion⁶ revealed that up to half of their transaction costs are not calculated or monitored at all. The worst fund managers incurred costs equivalent to 56 basis points per transaction, while the best only incurred the equivalent of 19 basis points. This means an average fund with a volume of EUR 1 billion sustains costs totalling EUR 5 million. **Pressure** may also increasingly be brought to bear by **other banks**. If some banks automate their processes but others do not, a large proportion of the savings potential will be lost because errors will still creep in. So they may well step up the pressure on their trading partners to improve their structures. Custodians are already imposing higher fees on investment companies which cannot guarantee STP. The **terrorist attacks** of 11 September 2001 could reinforce this trend. In the wake of the attacks, the US government took the lead in calling for banks to become better at identifying and freezing extremists' assets. This would be made easier if they were electronically traceable – one good reason why US banks in particular should automate as many processing steps as possible. They may well demand something similar from their European partners.

The financial sector has finally demanded that its participants redouble their efforts on the automation front. In the summer of 2002, the Securities Industry Association (SIA), the association of US financial institutions, put forward an **action programme** on the subject **for 2003 and 2004**. This involves important projects such as effective automation of institutional trade processing, the processing of corporate actions

⁶ "Transaction costs: a survey of major institutions in the UK", William M. Mercer, December 2002.

(such as recapitalisations and dividends) and securities lending and the replacement of physical securities in paper format with electronic versions. These are the areas the industry intends to work on. If the measures should prove successful in the US, European and, by extension, German institutions will come under increasing pressure to follow suit.

However, the one drawback of the programme is that it does not include binding implementation deadlines. It will therefore be less feasible to shorten the permitted processing times by the end of 2004 than under the original plan. This would only have been possible if there had been a higher degree of automation with better communication between the technical systems. The idea was to reduce the time it takes in the US for securities and cash to finally change hands and for the transaction to be booked as complete, from three days (T+3) to one day after the transaction has occurred. This would also have significantly reduced the risk borne by the banks' trading departments because it would only be unclear for 24 hours whether the positions would actually be closed on time or the trading partner would default. In view of the close ties between the world's financial markets, there would also have been increasing pressure on the European institutions to shorten their processing times accordingly. However, in the face of opposition from the banks, the project was first postponed until 2005 and then taken off the list of priorities. In its stead, the SIA has developed a non-binding automation programme, stressing that efficient automation of processing will be given paramount attention in the years ahead.

Straight through processing – a new vision

...is the seamless integration of systems and processes to automate the trade process from end to end – trade execution, confirmation and settlement – without the need for manual intervention.

Definition provided by the US Securities Industry Association (SIA)

All of this means that over the forthcoming years, banks are likely to focus increasingly on extending and improving automation of processes. For most the new watchword will be straight through processing (STP). This is defined as “the seamless integration of systems and processes to automate the trade process from end to end – trade execution, confirmation and settlement – without the need for manual intervention.” It should speed up processes and lower the potential for errors, leaving staff free to carry out more productive activities, and not least, should also reduce costs. After all, processing an electronic transaction only costs a quarter of the sum of processing it manually. The advocates of more widespread use of STP have a champion in no less a figure than Alan Greenspan, Chairman of the US Federal Reserve. In his opinion, “achievement of straight through processing will significantly reduce costs of settlement, including the growing costs of resolving errors in the documentation and processing of trades.” He has also commented that it would create scalable capacity that can meet future increases in trading volumes, and finally that STP “will remove many, if not all, of the obstacles to realisation of what should be the ultimate goal – settlement on T+0.”

In order to achieve this, the technical systems used within individual financial services providers (internal STP) and between market participants (external STP) must be able to communicate with one another to optimum effect and the data must be absolutely clear. This requires the use of and adherence to standards. The international security identification number (ISIN) and existing technical standards would be a good start in this respect. In order to reduce the complexity of the technology it would be advisable to keep the number of systems to a minimum. They should work in real time so as to keep down the time required for processing.

Many established practices, for example in the area of funds, would have to be modified to this end. If, for example, orders are executed in sections, most fund managers wait until all part-orders have been completed and then calculate an average price. Doing it this way means that confirmation/affirmation of the transaction and hence the remaining processing stages are already delayed. Most systems only forward trading confirmations and orders to be processed in batches, which means a great deal of information and orders being left unprocessed in the system for hours at a time. Finally, securities dealers too often put processing on hold for too long because they are expecting further orders from fund managers.

However, not even the staunchest advocates of STP are aiming for 100% application. Omgeo, for example, thinks this would be unrealistic. It believes 80% of transactions should be processed using STP, a further 15% are non-standard, unusual transactions which should be handled under special procedures and the remaining 5% should be processed manually. The management of exceptional cases needs to be organised efficiently as it accounts for around three quarters of all operating costs in processing.

More and more banks are coming to recognise the importance of turning STP into reality. The survey conducted by Cap Gemini revealed that the fund companies and asset managers questioned have put internal and external STP at the top of their priority list for IT spending. The experts are forecasting that the industry will probably spend between USD 10 and 20 billion on STP in the next four years. Only then will extensive automation become reality. In addition, expansion of the euro zone to include London, Europe's biggest financial centre, harmonisation of permitted processing times and alignment of the various legal practices employed within the European Union, together with the creation of a European supervisory authority would help to simplify securities processing, speeding it up and making it less prone to errors.

THE SITUATION IN GERMANY

As in all countries, there is a wide gulf in Germany between the processing of domestic and of cross-border transactions. Where both parties are located in Germany, the transactions run very smoothly, with extremely low error rates. According to estimates by Credit Suisse First Boston, mistakes are made in only around 1% of cases, as opposed to 20-25% for cross-border transactions (or 5-10% in very well-developed foreign markets). Other calculations put the figure much higher and sometimes lower – the degree of fluctuation is substantial. The results depend on which countries are included in the calculation (e.g. whether emerging markets feature), whether they are weighted or not, whether the entire transaction chain or only part of it is included, how many parties are involved in the order process and at what point an error is deemed to have occurred. But whatever the ins and outs, the overall conclusion is that error rates for cross-border securities processing are much higher, and unacceptably so, than for domestic transactions. Germany has a much higher rate of automation for domestic transactions, with very high STP levels in a large number of instances. For domestic payment transactions, the figure is in excess of 95% and the processing of equity trades is also highly automated. STP rates are lower for bonds, and more so for derivatives such as warrants, as these products are extremely complex and therefore difficult to automate.

Fewer sources of error for domestic transactions

Another reason for this discrepancy is that there are fewer sources of error than for cross-border transactions. Securities codes (WKNs) provide a common standard for the identification of securities being traded. The currency, language, legal framework and supervisory authorities are the same for both sides. Furthermore, Deutsche Börse and its Clearstream clearing and settlement subsidiary provide a central marketplace around which all the technical systems are based. Following the complete takeover of Clearstream, which was previously only half-owned by Deutsche Börse, we now expect the stock exchange to keep pushing ahead with STP and cut error rates in Germany further. By contrast, the systems have to contend with a wide range of stock exchanges, clearing houses, brokers and custodians when it comes to cross-border transactions. The German system of universal banks and the associations between co-operative and public sector institutions also help reduce the frequency of errors as compared with the separate structures found in Anglo Saxon countries. As we have already explained, this means that many technical interfaces can be kept in house, which makes it easier to harmonise them with one another. Germany's major fund managers overwhelmingly pass on their securities orders to their parent companies, which also act as custodian banks in Germany, and consequently there are fewer external interfaces. Nevertheless, full use is not made of the opportunities available.

Poor performances by funds and asset managers

As in other countries, asset and fund managers in Germany remain the exception to the good overall level of domestic STP penetration. This applies to private-sector, co-operative and savings bank funds alike. Fax machines are still used in large numbers and Capco states that the STP rate is frequently below 50%. This is because it was not necessary to make cost structures clear to customers in the past, so no exact figures were put on the expensive processing of securities trades. The universal banking system and systems of associations between savings banks and public sector institutions also play a part here, as inefficiencies in processing have been concealed by cross-subsidies, masking the scale of the problem.

Neither has there been any time pressure on investment companies before now. Retail funds, which are not traded on an exchange but where customers sell their units directly back to the fund company, only need to fix a price once a day, or even less frequently for real-estate funds and special funds for large clients. This gives the companies sufficient time to process transactions manually. But changes are afoot – customers want more accurate breakdowns of costs and more frequent updates of safe custody account data. Growing business volumes are making manual procedures increasingly cumbersome. The old processing methods are even more problematic for exchange-traded funds (ETFs), which have grown in popularity over recent years and are traded constantly.

Shortcomings in cross-border securities trading

Unlike domestic trading, there are still some major shortcomings with regard to cross-border transactions, which German banks are only slowly tackling. Automation levels are significantly lower than for domestic

trades. Germany's error rates are fairly average, according to a survey in the specialist "GSCS Benchmarks" publication, which looked at eight large international custodians, including Deutsche Bank. On a more positive note, errors have almost halved over the past five years. All the same, the UK and Switzerland in particular, but also Italy and France achieved better results than Germany⁷. This weaker performance could be due in part to the fact that cross-border transactions account for a lower proportion of total business than in the smaller Switzerland, making inefficiencies in German cross-border processes far less obvious.

"Inefficiencies" here refer to the inadequate integration and harmonisation of different systems, and not always to a complete lack of automation. STP consultants claim that Germany, like no other country, has developed its own way of automating solutions to individual problems, cutting the manual input substantially. On the other hand, however, new problems frequently arise because the systems are not optimally linked to one another, and the structures that have grown up over time have in some instances created dependencies between individual components that can be hard to circumvent. Furthermore, almost all the big banks have developed their own systems, which have not always had all difficulties ironed out, entailed high development costs and still involve high maintenance costs, so that the money that could have been spent on moving closer to "real" STP is not now available. The average cost of developing a proprietary system in Germany is around EUR 500 million, and the process ties up staff for a number of years. IT costs currently account for a third of all operating costs at German banks⁸, making it the largest single item on that bill. Some banks have sought to cut costs by outsourcing the processing of securities, currency and forward transactions and payment operations to subsidiaries or third parties. But there are still far too few co-operations, the transaction banking landscape is highly fragmented and so insufficient use is made of the potential for cutting costs via economies of scale. To illustrate, European Transaction Bank (ETB – a subsidiary of Deutsche Bank), which is the largest provider, had an estimated market share in 2001 of just 13.5% in terms of the number of transactions processed, while BWS Bank (part of the "genossenschaftliche Bankengruppe" co-operative group of banks) had a share of 12%. These were followed by Financial Market Service Bank (FMSB), HypoVereinsbank's settlement bank, with 9.4%, Dresdner Bank with 8.2% and Commerzbank and HSBC Trinkaus & Burkhardt with 5.9% each. The two biggest transaction processors for the savings banks – WPS Bank and TxB Bank – each accounted for around 2%. It is expected that in the long term there will be just three operators remaining in Germany. Cost cutting is the main objective. Lower error rates could also be a consequence, as the merger of transaction banks would also lead to reference data convergence.

German asset managers have not yet fully recognised the inefficiencies

The UK market researchers Fulcrum Research conducted an interesting survey of the 52 largest European funds and asset managers, of which 15 were German⁹. In summer 2002, it questioned a high-ranking representative of the front office (generally the head of the trading department) and of the back office (generally the IT director or head of operations) at each company about domestic and cross-border securities trading. It asked them to give their opinions on the reasons for and the cost of errors in processing transactions and on the motivation behind reducing them and the measures taken. The study confirmed the many different causes of the failure of transactions set out above and the importance of STP. It is one of the few to look at the German market in greater depth, and it is therefore worth looking at the responses in some detail.

The responses showed that the front offices in Germany – as well as in the UK, France and Italy, the other countries studied – were far too ignorant about what went on in their back offices, which is another reason why the processes do not run efficiently enough. Their incorrect assumptions applied above all to the cost of and reasons behind failed trades and to the percentage of transactions that were acknowledged as correctly processed on the same day by the broker and custodian or investment company (same-day

⁷ "Survey of Custodian Banks", *GSCS Benchmarks*, autumn 2002

⁸ "Kostenmanagement als strategische Herausforderung" (*Cost management as a strategic challenge*), *Credit Suisse First Boston*, September 2002.

⁹ "Survey of European institutional sentiment towards operational efficiency issues in European trading systems," *Fulcrum Research*, July 2002

affirmation or SDA rate). By contrast, they had a much better idea about the efficiencies of the systems and transaction costs.

No-one recognises the cost of errors in transaction processing

Germany came out of the survey very well in terms of awareness about the average costs of processing a failed transaction. Only eight of the 30 representatives of the German front and back offices surveyed were unable to respond because they did not know what they were. They were, however, in the majority in most of the other countries. This is a staggering finding. It means that most fund and asset managers have no idea of the size of one of the biggest costs in the transaction process. But it was also clear in Germany that while many respondents had a stab at the figures, only a very few could calculate the costs exactly. German front-office respondents stated an average cost of USD 138 for a failed domestic order and USD 178 for a cross-border one. Responses from the back office, where the representatives ought to have a firmer grasp of the real situation, as they are largely responsible for dealing with such orders, were significantly higher at USD 302 and USD 533 respectively. These figures were above the averages for the four countries studied. However, the front and back offices were in agreement that errors in cross-border transactions were much more costly to remedy than those in domestic transactions. This reflects the more complicated processes involved (see below) and the greater number of potential sources of error in cross-border transactions.

✂✂ **Front-office experts put the cost of processing a failed cross-border order at USD 178, while back-office staff estimate it at USD 533.**

✂✂ **Manual intervention is the main cause of errors in securities transaction processing.**

✂✂ **German front-office and back-office experts believe that 87% of all transactions are confirmed the same day, while in fact the figure is only 53%.**

✂✂ **Over 85% of back-office staff support optimisation of technological processes in securities transaction processing.**

✂✂ **Operational efficiency and the cost of transaction processing are at the top of the agenda for eight out of ten IT directors in German financial institutions.**

Source: Fulcrum Research

In looking for technical or systemic causes of failures in transaction processing, the main reasons cited by German front-office respondents were technical problems and the incorrect inputting of international securities codes (ISINs). A few also mentioned erroneous instructions, an incorrectly set limit, misunderstandings in communication by telephone or other human error. Germany is alone in seeing it this way. Problems with ISINs and technical faults had no great significance in the UK, France or Italy. The German back office also takes a different view of things. They primarily blamed misunderstandings in communications between fund managers and brokers, incorrect instructions and non-identical data records, attaching only secondary importance to ISINs and technical problems. For example, one head of a back office said: "One reason for a failure in processing is that the trade is carried out on the wrong stock exchange. Another is to do with timing: the exchange in question must be open or the transaction will fail. This sometimes arises where trades cross different time zones."

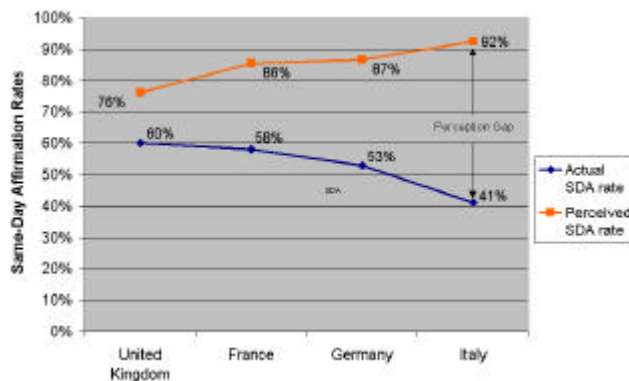
The speed of securities processing is over-estimated

The front offices in Germany and elsewhere were much more optimistic than the back offices about SDA rates. They therefore believed the transaction process to be much more efficient than it really is – a fatal error. On average, German respondents estimated the SDA rate at 87% – as high as in France, higher than in the UK but lower than in Italy. Unlike their German counterparts, half of UK respondents (90% of whom were front-office respondents) were unable to put a figure on the SDA rate at all. However, all of those surveyed, including back-office staff, in all four countries thought that the SDA rate was higher than it actually is. Omgeo's research puts Germany's SDA rate at just 53%, in stark contrast to the 87% stated in German responses. They are obviously far from clear about the inefficiencies in the processes. A high SDA rate is extremely important, as it speeds up the remainder of the process right up to the final booking to a

safe custody account when a custodian or investment company and broker confirm that a transaction has been correctly executed the same day. This reduces the costs and risk for investment managers, as they know by the evening of that day that in all probability they will receive the newly purchased securities or the capital for the paper sold and that – depending on the nature of the agreement – they will be compensated for the costs incurred should the transaction still fail. This allows them to plan accordingly. Companies that can offer high SDA rates therefore have a competitive edge over their rivals.

The Fulcrum study also looked at what the strongest drivers were behind improving efficiency in the transaction process and lowering costs. German front and back offices were agreed that the quest for a competitive advantage, the reduction in permissible processing times (currently T+2 in Germany) and pressure from custodians were the main reasons. Fund managers also cited pressure from customers and the associated demands for greater transparency, and a heightened need to deliver better results – points that were not important to back-office respondents. For them, technological improvements and the emergence of STP were the biggest motives for improving their own efficiency. German and UK institutions had very similar views on this point.

How many transactions are confirmed the same day? Perceptions and reality in Europe



Quelle: Omgeo OASYS Global Benchmark data, Fulcrum Research survey of European investment managers, September 2002

Customers are

keeping a closer eye on costs

Asset managers and fund companies in all four countries agree with their transaction processors that efficiency and the cost of the transaction process are becoming increasingly important. This view was supported by 80% of German respondents. Some of the answers provide an interesting insight into their thinking. For example, one head of processing said quite bluntly: “For a long time, we didn’t always have transparency, and many investment companies hoovered up a lot of money from investors as a result. With growing cost transparency and intensifying pressure of competition, improvements in efficiency are becoming increasingly important, as they impact on results.” Another answered: “Small shareholders are increasingly keen to get involved, and transaction costs are important to them. That applies to fund management as well.” Another back-office representative referred to the state of the stock markets, in which environment investors are paying ever-closer attention to costs. One leading fund manager thought the costs of failed orders were too high because little attention was paid to improvements in efficiency and transaction costs in the past, which is now being remedied. But there were also voices warning against getting hung up on these issues, mainly from the front office of course: “It is not the be-all and end-all if a transaction is executed a couple of basis points higher or lower – other things are more important. It is still a significant issue though.” Or: “A few cents saved are nothing compared with the importance of making

the right investment decision.” And finally, another opinion from the front office: “These issues are going to become increasingly unimportant.”

STP is the most important measure in boosting efficiency

As far as key measures to improve efficiency and reduce costs are concerned, the majority of respondents across all countries concurred that STP was the most important step in automating the transaction process. This reinforces the arguments in the first section of this document. German respondents expressed the following views: “Automation is required throughout the entire process, so we can go from the investment decision to the back office and the stock exchange with no manual input at all, or only a bare minimum,” explained one back-office respondent. His counterpart from another institution declared: “First we need to be clear about the visible and hidden costs. Then there must be regular controls to ensure that these do not climb back up again.”

In German front offices, on the other hand, there was evidently a lack of awareness, as STP was noticeably undervalued. Only a third of respondents felt automation was the way forward – the lowest level in Europe. Instead, they cited other measures to increase efficiency, such as greater transparency or better training for back-office staff.

Transaction processing in German Banks

	Major private-sector Banks	Small private-Sector Banks	Co-operative Sector	Savings Bank Sector
Transaction Banks	Deutsche Börse European Transaction Bank (ETB) Dresdner Bank Financial Market Service Bank (FMSB) In-House Processing	In-House Processing 3rd Party Processing (z.B. HSBC Trinkhaus & Burkhardt)	BWS Bank	WPS Bank TxB Bank Plusbank Norddeutsche Landesbank Landesbank Baden-Württemberg (LBBW) Landesbank Rheinland-Pfalz Dekabank Abwicklung im eigenen Haus

In Planning Phase

Major private-sector banks

The big banks are far and away the leaders in securities trading. Together with smaller but well-reputed private-sector banks such as Metzler, M. M. Warburg and Sal. Oppenheim, they managed EUR 2.648 trillion in 2001, giving them a market share of 62%. Savings banks and Landesbanken held EUR 561 billion (13%) and co-operative banks EUR 840 billion (6%). Investment companies (funds), the German federal debt administration and other institutions managed EUR 840 billion, which equates to a market share of 19%¹⁰. Of the funds (excluding funds of funds and open-ended real estate funds), the DWS Group was market leader with EUR 83 billion in November 2002 and a 25% market share, ahead of the savings banks’ Deka co-operation (19%), Union, owned by a group of co-operative banks, (17%), Allianz Dresdner Asset Management Group (13%) and Cominvest (Commerzbank) with 8%. Funds operated by small private-sector banks, like those operated by the biggest foreign players Fidelity and Franklin Templeton, accounted for only a small part of the German market. By contrast, funds run by major private-sector banks, plus Activest, which is owned by HypoVereinsbank, (5%) managed around half of Germany’s total fund volume, clearly signalling the dominance of the universal banks.

¹⁰ German Bundesbank, Association of German Banks

No co-operation between transaction banks

The big banks all process their securities transactions and those of their subsidiaries, including fund and asset managers, themselves or via subsidiaries. Talks of co-operation between banks have so far come to nothing. Market leader ETB saw itself at heart as transaction bank for many banks, but it has made little progress towards this goal until now, partly because it is a subsidiary of Deutsche Bank and not independent. Until recently, the only customer it had gained since the start of 1999, apart from its parent and other group companies such as DWS and DB's asset management arm, was Sal. Oppenheim. In the second half of 2002, the 15 "Spardabanken" (special form of co-operative bank) signed up, inflicting a heavy blow on the business strategy of rival BWS Bank. Since November 2002, it has also been processing the fund trades of Maxblue, Deutsche Bank's online broker, completely electronically and has vastly increased the STP rate in this little -automated area. The transaction bank has links to all the world's major custodians, and these are largely automated.

The HypoVereinsbank subsidiary FMSB was founded in 2000 and has found it even harder than ETB to acquire outside business. Besides its parent company and certain private-sector banks within the group, the only customers it has acquired are online banks such as DAB Bank (a subsidiary of Münchner bank), Allgemeine Deutsche Direktbank (DiBa) and Santander. HypoVereinsbank itself has highly complex systems as a result of its merger. Bayerische Hypothekbank and Bayerische Vereinsbank, which had previously bought Bayerische Stadtbank, both brought their own infrastructures with them, which then had to be integrated at a cost running into tens of millions.

A similar danger could be facing Allianz and Dresdner Bank following their merger. Like Commerzbank, it conducts processing itself in house. It has encountered huge difficulties in securities processing as it – quite rightly – bought in the Austrian standard software "Geos" rather than modernising its old system, developed in house. Geos has been successfully installed in many banks in neighbouring Austria, but it needed to be adapted for the German market and integrated into the bank's existing systems. Dresdner Bank is said to have invested EUR 200 million in this already, and the system has still not been launched. The amalgamation of investment banking and corporate customer activities since the end of 2001 has also taken huge efforts, as the two areas were working with different master data. Failure to harmonise would have led to new sources of error.

A glimmer of hope: Deutsche Börse and big banks want a common processing system

The delay in introducing Geos is also due to the fact that Dresdner is now negotiating with Deutsche Bank and Deutsche Börse over setting up a joint securities settlement company, which Commerzbank might also sign up to later. This would reduce the complexity of the systems and bring down costs long-term, as the investment in the necessary technological developments and ongoing maintenance would be split between the parties. The scheme could also achieve lower error rates in processing, as further advances would be made in STP. The involvement of Deutsche Börse could mean that the processes are co-ordinated even more effectively with the stock exchange's systems and those of its clearing and settlement subsidiary Clearstream. The idea has a greater chance of actually coming into being than if it were simply between the banks, as a neutral party – Deutsche Börse – would be participating. Nevertheless, the negotiations are still beset with thorny issues. It is unclear what platform would form the basis of the new bank's operations – Dresdner Bank's Geos system or ETB's Euro Engine. Both banks have invested hundreds of millions of euros in their platforms. The "loser" would therefore face high depreciation costs as well as having to invest in another system. These costs would have to be borne by all the parties, which is no easy matter given the banks' earnings positions and the fact that savings would not materialise until later on. There is also a danger of a monopolistic structure developing if the big transaction banks join forces with the German stock exchange.

Small private-sector banks

Most small private-sector banks with a strong tradition behind them – such as Delbrück, Berenberg and Lampe, to name but a few – have the problem that they tend to process only relatively small volumes of securities. Large-scale investment in technology designed to raise STP rates very rarely makes sense for them. It should come as no surprise therefore that they process more of their trades manually than big banks do, thus incurring higher costs. According to some estimates, the financial burden can be up to 20 times greater at small banks. Some stories can even raise a snigger. One expert in the sector told a tale that almost

beginning: apparently at a bank with around 50 customers one woman was in charge of settling securities trades by filling them in on a typewriter and sending them off by post. When she went on holiday they just piled up on her desk. This is of course an extreme and non-representative example, but there is a valid point behind it. On the other hand, error rates at small banks are extremely competitive, as the volumes are lower and fewer staff are involved.

These days, however, small banks are also starting to outsource their processing. One provider with a good name in this area is Düsseldorf-based HSBC Trinkaus & Burkhardt. According to the bank's own figures, its customers include more than 25 brokers and securities settlement companies, plus the savings banks' joint online broker. It has also been operating the Geos system with no real difficulty since November 2002 and has spent around EUR 30 million on it. It claims that the brokerage firms have now switched to the new technology, with the savings banks' joint broker to follow suit in spring 2003. Other private-sector banks are likely to follow, as their own systems are 20 or more years old but it is often prohibitively expensive for them to modernise by themselves.

Co-operatives sector

This sector, which is largely made up of the Volksbanken and Raiffeisenbanken, the Spardabanken and Deutsche Verkehrsbank, along with the co-operative central banks DZ and WGZ Bank, enjoys the highest degree of co-operation in securities processing in Germany. With the exception of the Spardabanken, practically all these institutions perform their transactions via BWS Bank, including the co-operative fund group Union (which does so indirectly via the custodian banks in most cases). BWS was founded in May 1998. DZ Bank holds 83.23% and WGZ Bank 16.77% of the shares. BWS serves over 1,600 institutions, either directly or indirectly via its two parent companies. According to sector observers, BWS, unlike any other transaction bank, is client-capable – which means it can handle the processing activities of all kinds of banks.

Indeed it is essential for BWS to have this capability, given the large number of co-operative institutions it serves. Experts believe BWS Bank has the expertise and technology required to operate numerous different interfaces seamlessly. It has the edge over ETB in this respect. It will therefore come as no surprise that it tried to position itself alongside Deutsche Börse at the heart of a transaction bank covering all sectors – although it is believed this was partly because of financial difficulties. However, this idea did not get off the ground. Instead, BWS announced in January 2003 that it intends to merge with WPS, the transaction bank for the savings banks of North Rhine Westphalia and Brandenburg (see next section).

The savings bank group

Securities processing in the savings bank group is more fragmented in structure than in any other financial group. This is because of its decentralised structure; it consists of several hundred independent institutions with local government financial backing. A few large institutions such as Hamburger Sparkasse process their own securities transactions. However, the majority have outsourced these activities to one of the five transaction banks which deal exclusively with the public sector. Almost all are subsidiaries of the Landesbanken. Unlike the market leaders ETB and BWS, their market share is diminishing, each accounting for less than 2% of all transactions processed in Germany. WPS and TxB are the largest transaction banks in the savings bank group. WPS started out in 1998 as a subsidiary of Westdeutsche Landesbank and the Landesbanken of Schleswig-Holstein and Rheinland-Pfalz, while Hamburgische Landesbank joined at a later date. In 2002, the holdings were sold to the Westfälisch-Lippische and Rheinische Sparkassen- und Giroverband savings banks associations. WPS carries out the processing for around 150 savings banks, mainly from North Rhine Westphalia and Brandenburg. WestLB, the online broker postal service bank easytrade and three small independent banking houses. TxB is a joint venture between Bayerische Landesbank and Hessisch-Thüringische Landesbank (Helaba), launched on 1 July 2002. It is responsible for around 140 institutions across these three German Länder and processes around one third of all savings bank transactions, with Bayerische Landesbank contributing almost twice as much business as Helaba. The aim of the merger is to cut transaction costs by 30-40%. This move coincided with the founding of Plusbank, the transaction banking arm of Hamburgische Landesbank, which serves around 80 institutions (mainly savings banks from Lower Saxony, Schleswig-Holstein, Saxony and Mecklenburg Vorpommern), as well as being the online broker for Dresdner Bank, Advance Bank, BHW Bank and the private bank Merck Fink & Co. Norddeutsche Landesbank is responsible for the processing activities of

around 100 institutions located in seven Bundesländer. Then there is Landesbank Baden-Württemberg (LBBW), which handles the processing for the 57 savings banks in southwest Germany and as of 1 October 2003 will take on work from a small private bank and from Landesbank Rheinland-Pfalz, along with the region's 31 savings banks, which formerly outsourced their processing to the Landesbank. The Deka funds have their transactions processed by their custodian bank, Dekabank.

The fragmented structure of securities processing means costs are unnecessarily high. Ideally, therefore, the aim should be to create one big transaction bank. In fact this is what the savings banks have in mind for the long term, at least according to the strategy paper produced by the German Savings Banks Association. Putting ideas down on paper is all very well but there have been no actual negotiations as yet. On the contrary, the foundation of TxB and Plusbank in 2002 led to further fragmentation. In 2000, the S-Finanzgruppe savings bank group (known by the familiar red "S" logo) attempted to set up a joint transaction bank, with the aim of cutting costs by 60% or hundreds of millions of euros. The intention was for WPS to be at the heart of this venture. Unfortunately the project failed for reasons of cost. The Hamburger Landesbank subsequently pulled out of WPS in 2001 and later set up Plusbank.

The time was now ripe for an even more ambitious project to take the place of the failed idea of setting up a transaction bank for all the savings bank, in the shape of a joint transaction bank for savings banks and banks in the co-operative sector. The first step towards this goal was taken in January 2003. BWS Bank and WPS announced in a statement of intent that they plan to merge in the course of 2003. This would create by far the biggest German transaction bank ahead of ETB and lead to a significant reduction in securities processing costs. According to the proposals, the integration should be finalised by the end of 2004. DZ and WGZ Bank would hold 50% of the shares in the new bank and WPS's two shareholders would hold the remaining 50%. The idea is for the new bank to be open to other institutions, mainly those savings banks which do not currently outsource their processing to WPS. If the invitation should be rebuffed, the failed plan from 2000 to set up a joint transaction bank for all the savings banks might yet be resurrected.

Aside from this substantial merger there are also signs within the savings bank segment of other more limited consolidation moves. Norddeutsche Landesbank has announced that it does not wish to continue operating its own system, but instead plans to link up with WPS or Plusbank by summer 2003. The migration of Rhineland-Pfalz Landesbank and the region's savings banks to LBBW is also a step in the right direction. And according to Plusbank's forecasts, a further 150 to 200 banks are looking for a new back-office service provider. 30% of the transaction banking market volume has not yet been allocated.

SO WHAT IS THE WAY FORWARD FOR GERMANY?

This analysis of securities transaction processing in Germany has shown that while the processing of domestic orders is very efficiently organised it is high time for modernisation in the case of cross-border transactions. Billions of euros are wasted on this each year due to inadequate processes. But the financial institutions are dragging their feet. They baulk at the costs, reflecting their current financial positions, and are not investing at the requisite level. This is partly because the boards, which have to approve major investment decisions, often lack the necessary expertise where securities processing issues are concerned. Plus the banks have had other priorities in this area to date. In spring 2003, the first phase of Deutsche Börse's CCP (central counterparty project) became operational in Germany – initially applying to around 1,000 German securities traded on Xetra. This is a radical project for the German market, which will require the banks to make substantial changes and will tie up their resources. The central counterparty is currently the trading partner of each market participant in the forward market; in future this will also apply to the equity and fixed-income markets. This will guarantee anonymity, reduce the risk of the non-delivery of money or securities and allow for the sales and purchases of market participants to be offset against each other (netting), so that only the balance needs to be processed, which can dramatically cut costs. To enable the counterparty to take on risks, the users have to provide security, which is recalculated each day.

Only now that the first phase of the central counterparty project has been implemented is there a chance that the banks will turn their attention to upstream activities, i.e. those processes which take place after a transaction has occurred and before it is passed on to Clearstream for clearing. It is the fund companies and asset managers and their communications with the brokers that have the most room for improvement. The automation of processes within the individual companies, as well as between the institutions, must be taken forward towards STP. In other words, the development of new in-house systems should be a thing of the past. They are more expensive to develop and operate than third-party solutions, tie up too many resources and increase unwelcome fixed costs. Outsourcing elements of these processes to specialised service providers is clearly the way forward. When market participants communicate with one another it is vital, particularly in cross-border securities trading, for them to use the same reference data and for confirmations/affirmations of deals to be exchanged between fund companies and their brokers more rapidly, thus reducing the uncertainty as to whether a transaction has been successful and curbing the number of errors. The introduction of ISIN codes in Germany in spring 2003, after many years of debate and delay, is a small step in the right direction. More widespread acceptance of communication standards and external matching solutions could also help the situation.

To sum up, a great deal is now expected of German banks, fund companies and asset managers. They must stop biding their time and tinkering at the edges as they have so far been doing. It is time for the processing of cross-border securities transactions, which is currently so inefficient, to be completely overhauled. This will reduce both costs and risks and enable the German institutions to remain competitive in an increasingly integrated European financial market.



Published by Omgeo

Mainzer Landstrasse 16
60325 Frankfurt am Main
Germany

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