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Financial IT

Interview with
Valerie Bannert-Thurner
of NASDAQ OMX

Hosting and trading infrastructure: the need for speed... and what else?

page 8

Taming HFT risks for safe and efficient trading

Vladimir Kurlyandchik,
ARQA Technologies

page 14

Greater efficiency in the issuance of securities

René Lemme,
icubic

page 26

Waiting for an Asteroid. The Future of Retail Stockbroking

Geoffrey Hoodless,
The Share Republic.com

page 30

Founders' Letter

Standards in financial markets have always been high on the agenda as a way of introducing greater efficiency and improved costs for the investor. As international cross border investing and trading has grown over the last twenty years, the need for standards has become even more important. The standards story has however, been fraught with delays and an over complication of requirements. Notably in payments, the standards story is vastly different from that of the securities markets. Why should this be the case?

The answer is very simple! During the sixties and seventies when banks developed mainframe computers and there was a need for computer to computer communication they developed SWIFT — a secure, closed, private network between participating banks. They also created the first finance industry message standards. Those message standards have hardly changed since, with all banks on the SWIFT network easily adapting to a single, already created, electronic message.

How different would the securities industry look today if it had developed its own messages from scratch, over its own private network? A private network in securities would obviously have included not just banks, but the investing community as well. Thus we would have had two private networks both owned by SWIFT, but doing different things and made up of different users. A fanciful notion, but one that under investigation, highlights why after so many years, the financial services industry still struggles to come up with standards that are readily implemented, within an acceptable timeframe. Unfortunately, the creation of networks and messages specifically developed for industry and user needs, was cast aside, as what the industry actually did was to try and adapt the SWIFT network for an industry and market that it was not created for.

Nowadays, the creation of SWIFT would be highly unlikely, as the web and the universal use of the Internet, almost makes closed private networks in markets, archaic, if not totally redundant.

Today, we wrestle with standards as we have done for decades. But there is still an almost universal view that standards hold the final solution to the ails of the markets and the desires of its users and investors. However, might we for once look at the future from a different perspective? Let's imagine that SWIFT did not exist, what would be the likely answer that financial services firms would look for? Would it not be via technology? Would it not include the technical capability of transforming messages over the internet and then integrating them into appropriate systems and communications mediums? Does this scenario include the need for message standards or not?

Markets, like technology, are always developing and adapting, but it appears in the case of standards we simply keep charging forward without looking around to see if there is an alternative and better way. Are we moving into the era of technology and away from standards? It's hard to say but it's a debate worth having.

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Contents

Introduction

Opinion

Industry Report

Interview

In The News

Editor's Letter

Andrew Hutchings
Editor-In-Chief

Welcome to the second edition of Financial IT.

At any point in time, the opportunities for the IT companies which serve the global financial services industry come from two general directions.

In our inaugural edition, we highlighted the opportunities that arise from developments which had taken place in the past. In particular, we considered the implication of technological advances that have taken place in the last two years or so (such as cloud computing) for institutions which are still dealing with the limitations of legacy systems. Our conclusion was that the institutions which make the substantial investment to take advantage of the solutions that have become available will gain huge strategic benefits. Those institutions should be able to dramatically reduce business risk, lower operating costs and enhance their ability to grow — whether organically or by acquisition.

Naturally, we consider that this conclusion remains valid. In this edition of Financial IT, we look at opportunities for technology companies that arise from future trends within the global financial services industry. Yet again, many of the people to who we spoke in order to collate material for the publication highlighted the importance of regulatory change in the financial services industry. In Europe, the MiFID II regime will, from 2014-15, greatly increase the obligations and responsibilities of all market participants, including the companies that actually run exchanges and provide trading infrastructure. Parties who are involved with high frequency trading (HFT), for example, will have to be more assiduous in ensuring that they have sufficient liquidity for their activities.

In Europe, as in the rest of the world, new regulations also imply higher costs. Increased collateral will need to be provided to support trading positions in derivatives, for instance. The migration of financial products to regulated exchanges will not occur without significant expense. All this is happening when the pressure on prices and margins for most financial services companies is downwards, and unrelentingly so.

In short, many financial institutions will need to think much more carefully about what are the core activities that they wish to undertake themselves and what are the activities that are better outsourced to external solution providers. As we explained in the inaugural edition of Financial IT, these questions are much more urgent now than they were in, say, 2010 because of the advances in technology that have taken place since that time.

Of course, the financial institution's challenge is the financial IT company's opportunity. Most of the companies whose products and services are discussed in this edition of Financial IT have business models that are built around the premise that financial institutions will outsource many key functions. Many smaller financial IT companies are thriving because they are delivering software as a service (SaaS). Other companies are offering comprehensive solutions to institutions who which to provide trading infrastructure for markets, but who would prefer not to overcome all the hurdles themselves.

As providers of solutions on an outsourced basis, financial IT companies always highlight a number of strategic benefits that they can deliver to their clients. Outsourced solutions almost invariably have advantages in terms of cost-effectiveness. However, lower cost is not everything. The solutions also provide opportunities from flexibility, scalability, ability to keep up with ever increasing regulatory requirements and lower risk.

The implication is clear: for a financial IT product or solution to succeed, it must provide multiple benefits within the context in which it is operating. In relation to HFT, for instance, low latency — which is sometimes boosted through collocation of hardware — is a feature that virtually all promoters of trading engines emphasise. However, other aspects — such as risk control, flexibility and consistency — are just as important.

For the financial IT companies that can develop and market multi-faceted products and solutions to financial institutions, the future looks bright. Moreover, the future is one in which the distinctions between financial IT companies and the institutions that they serve will be considerably more blurred than they are now. In responses to the challenges that they face, many financial institutions may evolve so that they are essentially pools of capital with brands and client relationships: operations, including the provision of infrastructure may typically be outsourced to financial IT companies with the suitable skills and resources. Conversely, the financial IT companies would, in this new world, undertake most of the activities that are essential to the day-to-day operation of financial institutions. The airline industry, where operating systems, infrastructure (i.e. aircraft) and personnel can be procured from external providers by the owners of brands, provides a model.

In the long-run, financial IT companies may find themselves under the same regulatory scrutiny that is faced by the financial institutions that they serve — but that is another story.

Hosting and trading infrastructure: the need for speed... and what else?

Financial IT magazine spoke with Valerie Bannert-Thurner to identify what are the issues that really matter in relation to hosting trading infrastructure.

Valerie, any organisation, or group of organisations, that wishes to establish a formal market for securities, derivatives or, indeed, commodities has broadly two options. On one hand, they may seek to build, and maintain total control over, the trading infrastructure that they need. On the other, they may choose to outsource the construction and possibly also the operation of the trading infrastructure to an external party. About the only activity that cannot be outsourced is marketing — the attraction of market participants who will provide liquidity to the new market. Do you see a clear trend in either direction, and why?

At NASDAQ OMX, we think that there is, and will continue to be, a clear trend towards the second of the two options that you mention. It will become more common for brokers, financial institutions and other organisations that wish to establish new markets to outsource the tasks of constructing — or acquiring — trading infrastructure and operating it. The key drivers of this include increasing cost pressure, the advent of novel technologies and regulatory changes such as MiFID II, which is likely to be in effect in 2015 or thereafter. As consultants PwC have pointed out, MiFID II is likely to require more from exchange operators, infrastructure providers and market participants.[1] Among other things, MiFID II imposes through the re-categorisation of matching facilities greater organisational requirements on the development and operation of trading systems. MiFID II also seeks to maximise transparency. In short, organisations that wish to provide trading infrastructure and to run exchanges need to be certain that they can match the industry best practice which will be required by the new regulations.

In other words, management of trading infrastructure and hosting of markets will increasingly be undertaken by companies who are specifically in that business?

Absolutely. However, that would probably be the trend even if MiFID II did not exist. The companies that are specifically in the business of hosting markets and providing trading infrastructure have the advantages of scale. The benefits can be passed on to the organisations that want to outsource to them. One benefit is the substantial commitment to investment in technology. A company that is already hosting one or more markets can set up an additional market far more quickly than one which is seeking to build a market from scratch. Substantially for this reason, the initial costs from using an outsourced solution are significantly lower. An organisation that wants to outsource the provision and operation of trading infrastructure to an external company should be able to negotiate a tiered fee structure.

In any case, in a rapidly changing world, it makes sense to work with existing proven systems and protocols unless the alternatives are compelling.

No marketplace operates as an island, separated from other market places. Protocols such as FIX, ITCH and OUCH are long established and widely used across many exchanges. In a world where trading of securities and derivatives across exchanges is growing, it makes sense to work with the proven systems. This is an additional reason why outsourcing is on the rise. I would also note that companies which are actually in the business of hosting markets and managing infrastructure should be able to provide more flexible solutions than those companies which are not. Given the volatility of markets, the developments of new derivatives and instruments and, of course, the rapidly changing regulatory environment, flexibility and adaptability are essential.

Conventional wisdom is that low latency — or high speed — in trading systems is essential. How important is it really?

We would describe low latency as a necessary and very important, but not sufficient, element of trading systems. Obviously, we are proud of the speed offered by our systems. We also note that we operate our hosted trading infrastructures in Slough, UK, which is close to the location of many broker algorithmic trading systems, and thus access to our markets, is very fast. It is important to note though, that speed has multiple aspects — for example consistency in speed is extremely essential for the operation of HFT programs. There is little advantage from having the lowest latency 99% of the time if speed is much slower for the remaining 1%. Trading systems also need to incorporate world class surveillance systems and be able to handle multiple asset classes. There is a need for speed: however, there is need for much more.

Therefore, physical collocation of hardware does not provide a clear advantage for a market operator?

On its own, not necessarily. Physical collocation of hardware only provides a significant advantage if the overall trading system has all the other essential features to support an attractive market. As we have discussed, these include speed of the matching engine itself,

[1] PwC, *Are you taking control of the MiFID II agenda?*, August 2012

The NASDAQ OMX Group, Inc., owns and operate 26 markets including three clearinghouses and five central securities depositories supporting equities, options, fixed income, derivatives, commodities, futures and structured products — in the U.S. and Europe. Able to process more than 1 million messages per second at sub-55 microsecond average speeds with 99.99% uptime, its technology drives more than 70 marketplaces in 50 developed and emerging countries into the future, powering 1 in 10 of the world's securities transactions.

ease of access, the ability to comply with ever increasing regulatory requirements and to cope with new instruments and asset classes. In addition, there are a number of supportive business processes such as market operations, trade reporting, surveillance, etc. that require dedicated teams with specific skills and processes. A provider like NASDAQ OMX that has several dedicated teams operating in the markets can provide these business services to brokers, MTFs, or exchanges which allows these firms to focus on the market model and associated business case rather than the resource intensive operational processes behind the market. A market is a complex entity that needs management in a holistic way. Faster systems, on their own, will not make it possible to build an exchange from scratch.

If you had to take a five-year view, what trends would you highlight in relation to hosting and trading infrastructure?

First, I would emphasise that the downwards pressure on prices and margins will remain brutal. A lot of organisations that are providing trading infrastructure will need to think laterally and adapt rapidly if they want to remain profitable. The same is true for the financial institutions and brokers that actually use that infrastructure. Second, the constantly evolving technology means that innovative solutions can usually be developed rapidly: this matters at a time that new asset classes and derivatives are being introduced. A third change is regulation. MiFID II is, obviously, a directive that applies to the European Union however, similar regimes and initiatives are evident in other parts of the world. That matters, because another trend is increased global connectivity. It is becoming more common for investors and brokers to trade simultaneously through different exchanges — which are often geographically quite distant from each other. The consequence of this is that there is greater demand for global linkages from a trading and post-trade perspective. Finally, there may be a new view of what constitutes an exchange. For the reasons that we have discussed, we anticipate that more and more organisations will look to external parties to provide trading infrastructure and to operate that infrastructure. Taking the trend to the logical conclusion, a lot of markets may be promoted and branded by organisations that have never been traditional operators of exchanges. There will be a blurring of lines of distinction. And there will be surprises.

Thank you very much.

Valerie Bannert-Thurner,
Vice President and Head of Sales for the NASDAQ OMX Market Technology business in Europe

by Pamela Pecs Cytron,
CEO, Pendo Systems, Inc.

Is it Déjà Vu or just real-life Groundhog Day

Anyone who's seen my presentations knows for certain that I draw people to the headlines. The good news for me is that daily I can find articles that evidence that as much as things change, they remain the same. I refer to the world we are living in as being in the movie "Groundhog Day" (1993) staring Bill Murray. For those that have been around as long as me, may find it fascinating that in 1999 every analyst shared their perspectives on the "data warehouse spend". So forgive me when I roll my eyes when people start talking about their "enterprise data management projects". We just have a fancier name: "big data". What makes the matter even scarier is that we are solving much of this with the same players we were considering in 1998, who launched their products in the mid 80's. What was happening in the mid 80's? Well, Lady Gaga was born, the first MAC computer was launched and Windows 1.0 was released. Can we compare our progressive innovation in the capital markets back-office on the same scale?

Consider this: the last 30 years have seen amazing advances in technology that have transformed the world — particularly the world of finance and investment. Moore's Law and the Internet — the main forces underlying the Globalisation Megatrend — have democratised Information, Technology, and Finance bringing knowledge and power that was once the exclusive domain of a few "Masters of the Universe" to the masses. The power of these advances is hard to understand since humans are linear thinkers by nature and these advances are exponential. To get a better idea of what has happened in 30 short years, think through this: If the same forces were operating on the price of a $100,000 USD car bought 30 years ago — that same make a model brand new today would have a sticker price of about $1.50 — cheaper to abandon at the curb than pay for parking.

But in the world of financial technology, ALL of this power has been applied to develop more and more complex instruments — derivatives, swaps, CDO’s CDS’s — faster and faster trading platforms — “flash trading” and co-location — and risk analytics and trading models so complex, a successful Wall Street executive is more likely to have a PhD in math than in finance. But, the ability to track and account for this explosion of trading vehicles and volumes is right were it was 30 years ago. As a result, we have seen a string of financial crises that have become more frequent and more damaging — all brought on by lack of transparency and inaccuracy of legacy accounting systems. The host of issues and financial debacles has had one common problem; somewhere in there was inaccurate accounting or a true look at the positions exposure. Even Mr. Dimon was quoted in the Wall Street journal May 18, 2012: “now I want to see my positions”.

Chicago Tribune

Breaking News, Since 1847

Oops! Corporate accounting errors pile up

January 29, 2002 | By Marilyn Geewax, Cox News Service

Some accounting experts say the problem is that today's complex economy can't be measured properly with rules rooted in a bygone era.

"We've got a 1930s-vintage system" struggling to keep pace with today's speedy economy and account for new types of transactions, such as those involving financial derivatives, said Michael Young, editor of the book "Accounting Irregularities and Financial Fraud."

BusinessWire

A Berkshire Hathaway Company

White Paper Exposes Danger of Failing Accounting Systems to the Buy-Side

New paper authored by Woodbine Associates argues that legacy accounting systems introduce risk, escalate operating costs and delay new product launches.

Forbes

Financial LEI's -- Required To Reduce Operational Risk

..."Without the ability to view the underlying positions and cash flows, valued in standard ways and aggregated by counterparty through common identifiers, neither risk triggers nor risk exposures can be observed nor can systemic threats be detected"...

But the industry is spending billions of dollars pulling data from legacy accounting infrastructure to store it in a static warehouse. Has anyone given any thought to what the implications of LEI place on the legacy infrastructure? Can we just expand a table to 30 plus characters? Let alone a field that drives every part of the eco system from trading, risk, and compliance. A field that references every piece of indicative data from issuer, industry sector code in our global financial systems eco system?

Wall Street Technology

infrastructure

Legacy Outsourcing Requires A Delicate Touch

Ripe For Picking

Fund accounting is one application that many of the firms that have already taken stock of their legacy platforms are targeting for outsourcing or replacement.

the Atlantic

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What’s Inside America’s Banks?

By Frank Partnoy and Jesse Eisinger

THE WALL STREET JOURNAL. | MANAGEMENT

MANAGEMENT | Updated May 18, 2012, 10:11 a.m. ET

Inside J.P. Morgan's Blunder

CEO Dimon Blessed the Concept Behind Disastrous Trades; 'Blood in the Water'

On April 30, associates who were gathered in a conference room handed Mr. Dimon summaries and analyses of the losses. But there were no details about the trades themselves. "I want to see the positions!" he barked, throwing down the papers, according to attendees. "Now! I want to see everything!"

Is it not time we consider some of these functions as a commodity? As an industry, we streamlined payments, we streamlined settlement and clearing. But yet, the way we determine the market value on a portfolio remains siloed in the industry and further siloed in the organisations.

So if we remember Bill Murray in “Groundhog Day”, isn’t it time that we start rewriting these headlines, rewriting our RFPs and RFIs? Stop the consultants from over analysing what is quite simple. Driving transparency on our financial data will only come from the source systems, which provide the lowest common denominator of the position data. It is not just about “big data” it is about the “valuable data”. Since January 2013, there have been over 20 articles focused on legacy accounting systems being an issue. That said, I can show you the same amount of articles from 2010. Yet, how many projects are in place to address this mission critical systems replacement? Few in comparison to everyone focusing on working around the data. Is it too hard? The clear answer is no. Think about modern medicine, where open heart surgery was just that, but today with Robotics surgery, it takes days to recover. Is it fear of conversion the ultimate risk factor, or maybe is merely complacently? Why if I can have a $65M budget for “big data” — would I want to trade that for a $2M projects to solve the issue at the source?

We shouldn’t fear or allow the status quo to remain the same, we should fear what will happen if we do not being to focus on the root of the cause verses the symptoms. And a call to action, please remove from any RFP, RFI “how long does your nightly process take?” Consider this: Cycle Computing has created a 50,000 core virtual supercomputer to assist in the development of novel drug compounds for cancer research. The cluster, codenamed Naga, sits in the Amazon infrastructure and is the biggest utility supercomputer yet. Using this mega-cluster, computational chemistry outfit Schrödinger was able to analyse 21 million drug compounds in just 3 hours for less than $4,900 (yes compared with $20M to $30M in years past).

It is time to embrace the new solutions available to the market verses compounding the problem — building around the legacy. If we shut our eyes and fast-forward to 2020, what will our infrastructure look like? What will the headlines read? We can start to evolve our infrastructure or we can begin to envision the competition of the future capital markets firms.

CA Risk Back to Front

One of the major cost and risk areas of concern for the Securities Industry continues to be corporate actions, although the costs and risks are rarely quantified. The risks in corporate actions are most similar to those found in the front office. These risks are quantifiable and the solutions are available so it's a little surprising that the securities industry struggles to introduce final solutions to the well-known and age old problems in corporate actions.

A white paper published by B.I.S.S. Research in 2010, commissioned by Vermeg — a leading provider of corporate actions systems globally — listed the areas of business and processing that can be detrimentally affected when a corporate action goes wrong. One of the key points identified in the whitepaper, but one that is often missed during debates about the many points of failure in a corporate action, concerned the risks undertaken in the front-office.

Corporate actions are one of the few transactions that have duel back-office processing and front-office risk implications. When something goes wrong in corporate actions, both areas have 'replacement' as the headline risk and both have reputational risks. If it goes badly wrong, the size of the risk can be measured in significant numbers in terms of replacement cost, with reputational risk potentially terminal.

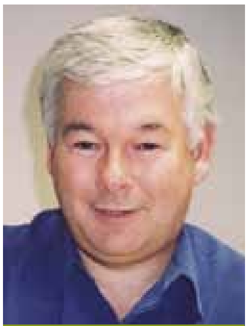
As is normal in the securities markets, the problems can be created at the very beginning of the process and data is the first risk and cost hurdle with corporate events. The front office receives data from various data sources, updating trading positions, and investors and their accounts and portfolios. It would be great if the same data from the same source updated the various back-office systems and in turn started the client information and settlement process, but unfortunately, this tends not to be the case.

More often than not, both front and back-office systems are operating in data silos, creating potential breaches of information data. The problem being that information in the front-office can differ from information in the back-office. The data on the corporate action can be incomplete and in some cases not timely, so front and back-office systems can be out of sync. Financial services firms can cover this potential discrepancy by enabling the corporate actions department to update the front-office systems via electronic and/or manual interventions where necessary. For manual intervention, plenty depends on the relationship between the corporate actions expert in the back- office and the front-office dealer.

Whether trading or investing, the dealer will need to make decisions on behalf of the trading book or investing clients. Electing on an offer can be fraught with potential failures.

- Failure to accept the correct offer to the benefit of the client can immediately expose the firm to replacement risk. This is to protect the firm's and the trader's reputational risk.
- Failure by the back-office to operate efficiently and settle the corporate action can also become a replacement cost issue. Worse if the failure is systemic throughout the firm's trading and client accounts.

Contrary to views held by some in-house system developers or technologically deprived firms, there are some excellent full corporate actions processing systems available in the market, with proven functionality and capability to efficiently manage the settlement process and ensure both front and back-offices are in unison. Most of these systems have been through a comprehensive on-going



Gary Wright

CEO of B.I.S.S. Research, founder of the B.I.S.S. Independent Accreditation for all systems and services provided to financial services companies internationally. Guest Lecturer at Reading University and ICMA. Comentator in the media on Industry Issues.

Over 30 years in the City as Head of Operations with a number of leading Brokers and Banks. Founding member of ISITC Europe and IUG. Member of the SII, founding member of the Operations Management Examination committee.

[1] Detailed information on the systems benchmarked is available to financial services firms who are going through a system selection process from B.I.S.S. Research

annual benchmarking process, for over ten years and have been duly awarded the B.I.S.S. Accreditation.

Unfortunately, there are still some corporate actions experts who nevertheless have reservations concerning the capability of off-the-shelf systems. Some of this scepticism, no doubt, comes from overzealous marketing by vendors, especially with the liberal use of the term straight-through-processing (STP).

Of course there will always be some things that require manual intervention, but the top of the range full off-the-shelf corporate actions systems can provide significant value in increasing efficiency and reducing risk and cost in processing corporate actions.

Corporate actions can be complicated in their design, but the basic settlement and front-office requirements are easy. At the base level it's a data updating process, with accurate communication, around process management and measurement.

Financial services firms can cover this potential discrepancy by enabling the corporate actions department to update the front-office systems via electronic and/or manual interventions where necessary.

The global securities markets have historically spent a huge amount of time and effort, at great cost, on creating message standards. In ISO 15022 the industry has a message standard that has brought great benefits to the industry. SWIFT has been a force for industry good in this respect, but it's only a small part of the problem. ISO 20022 has greater flexibility by utilising XML and enabling non SWIFT users to send electronic messages over their preferred network; even using the Internet, if that is their choice.

The good news is that the story is changing, from the introduction of standards, to the ownership of technology tools to read electronic messages and transform when necessary, with integration into all the various systems that need upgrading.

Use of the right technology can establish an integrated relationship between front and back-office that will finally start tackling both front and back-office risks in corporate actions, in a logical and sensible process, after all they are dealing with the same risks.

Taming HFT risks

for safe and efficient trading

by Vladimir Kurlyandchik,
Director of Business Development,
ARQA Technologies

The attitude towards High Frequency Trading (HFT) has changed for the worse. Its nature is often regarded as inherently irresponsible and potentially disruptive.

I believe that its demonisation and the fear of possible dangers of HFT to the markets has been blown way out of proportion. The reason, in my view, lies in the perception of risk management.

There is too much emphasis on the word “risk”. The word sends danger signals paralysing the brain while the “management” part of the phrase is almost neglected. But, let us be rational about dangers provoked by HFT. These arise from the huge numbers of transactions and their high frequency. Thus, risk-management logically means restricting the number of orders and their frequency.

Straightforward methods of reducing risks are usually referred to as “fat finger” checks. The term is inelegant and unpleasant: this somehow matches the attitude to HFT.

But why don’t we recall some positive things associated with HFT? It usually brings in liquidity and improves market efficiency as algorithmic traders use minimal spreads. They also invest a lot into technological development pushing forward the progress.

How do HFT operators make money? There are two well-known strategies widely used which are market-making and statistical arbitrage. Arbitrage usually means taking reverse positions in highly correlated instruments of similar nature. Such positions don’t bring along high market risks. Yet in real life, especially if arbitrage positions are placed at different trading venues (or even in different segments of the same venue) traders have to provide collateral for each separate position. This raises the requirement for additional funds and forces devising more complex algorithms.

But it is precisely the management of risks that can reverse the situation. There are techniques and technology to control market risks pre-trade and online. That means using minimal collateral through netting opposite positions in correlated instruments: this allows maximising positions’ volumes at low risk.

The same applies to derivatives trading. Despite the fact that HFT positions do not involve high market risk, rough margining demands excessively high collateral, which is incompatible with the overall position.

The explanation may be the common attitude to real risk calculation as a costly mathematical task. It is easy to assume that it leads to much more latency. The easy

Module	Description	Internal Latency	% of exchange latency on collocation
FIX2MICEX	FIX-cover for Moscow Exchange stock market (ASTS platform)	45 mcs	7.5%
FIX2CETS	FIX-cover for Moscow Exchange currency market (ASTS platform)	45 mcs	7.5%
FIX2Plaza2	FIX-cover for Moscow Exchange derrivatives market (SPECTRA platform)	60 mcs	7.5 %
FIX2LSE	FIX-cover for LSE stock market (over native API)	15 mcs	10% (faster than native protocol with fat-fingers at LSE)
MICEXPreTrade	Solution which is integrated inside native API of Moscow Exchange (ASTS platform)	3 mcs	0.5 %
FIXPreTrade	FIX-proxy for any FIX environment	30 mcs	-

shortcut is a compromise for rough but fast pre-trade margining.

It is not a fair shortcut. Investing in infrastructure may be easy. You can go on a shopping spree, use new servers with the latest processors and the best collocation available from the exchange. Implementing fat finger checks is easier than understanding the nature of HFT trading. But you can't do the best for your client without addressing your client's trading pattern.

When you search for a better way to implement your client's strategy you may be surprised but the technology is already here. What is the principal calculation cost of real market risk check of complex positions? It is the pre-trade analysis of different scenarios of client orders' execution.

Is it possible to set up your infrastructure to reduce this factor to a minimum? Yes, absolutely. The trick is to split a risk processing module in two: one is a risk parameters' calculation module working post-trade and another is a so-called fast pre-trade module.

The first one calculates position parameters and scenarios and either permits trading or blocks it. The second one receives a signal for permission and performs fat finger checks. The checks make sure there is a sufficient financial reserve for trading.

In this scheme, the time-intensive part (calculation of risk parameters and scenarios) is excluded from the transaction chain.

It goes without saying that such a risk parameters calculation module needs to receive all orders and trades in a drop copy mode as well as the market data. It is also obvious that the quality of calculation greatly depends on the speed of receiving this information. Thus, from the technological point of view, this module should be placed as close to the source of data as possible (most likely, at the exchange itself). But, due to the fact that post-trade calculation is done outside the transaction chain and does not affect execution speed you can employ any appropriate technique of risk calculation.

In our trading solutions, for instance, we employ techniques for operations which rely on the following:

- margin trading;
- portfolio margining (SPAN-like approach);
- netting of local shares and ADRs\GDRs;
- netting of equity and derivatives' positions;
- unified cash account for all markets.

All these techniques support multi-currency operations, take into account working orders, broker and exchange commissions.

To ensure proper pre-trade control in the fast pre-trade module we select appropriate settings. Knowing the latency for a given infrastructure we choose flood control and order volume settings. This prevents sending orders of higher total volume than a specified amount in the period of time between sending a transaction to exchange and receiving a signal about the updated position from the post-trade module.

Of course, the said amount raises the amount of collateral. However, the client still enjoys significantly lower finance requirements due to netting algorithms and portfolio margining.

It is also possible to switch on P&L checks and checks for instruments acceptable for the trader.

The business consequences of this approach may be summarised as follows:

- the client starts performing more transactions (the exchange and the broker get more commissions);
- the client spends less money on financing his/her operations and reduces both his/her costs and complexity of algorithms. The resulting efficiency of your client's trading improves.

As it is necessary to take into account different infrastructure peculiarities for proper installation of the fast pre-trade module we have developed several approaches. In the table above are the available options, their technical descriptions and internal latency.

All solutions listed in the table above are employed by ARQA clients in their day-to-day operations, and all figures are based on average results.

As I have already mentioned all these solutions are used to service HFT clients. In my view, the essential condition of success lies precisely in the fact that these technologies and basic techniques balance the interests of HFTs, exchanges and brokers. The principal component of this balance is understanding each party's business requirements and applying risk-management as an instrument of risk control for a well-understood trading pattern adapted to existing infrastructure and not to the fear of the unknown and the terrible.

by Andrew Owens,
SVP, enterprise payments, SunGard's AvantGard

Centralised payments, enterprise-wide value

During this 'countdown' year to the SEPA migration end date, certain things have become apparent. Firstly, the inertia that has dominated the industry for some years about SEPA now needs to end. Secondly, there is significant help available today to facilitate migration to SEPA, particularly the technical elements such as supplementing account details with IBAN and BIC, reformatting file formats to XML and converting direct debit mandates. Leveraging this type of assistance can make an enormous difference in reducing project risk and also enables resources to be directed towards process enhancement rather than technical tasks that ensure compliance, but may not deliver wider value.

One of the most significant areas where companies have and continue to take advantage of SEPA is to centralise payments into a payment factory or shared service centre (SSC), or to optimise an existing centralised payments function. SEPA migration is a project involving a variety of stakeholders across purchase-to-pay processes. It is therefore an ideal opportunity to seek closer alignment across these business functions, such as accounts payable and treasury.

Payment factories are typically most efficient when processes, formats and technology platforms are as consistent as possible, in order to take advantage of economies of scale. This has not always been easy to achieve in the past, not least due to the variety of payment instruments across Europe, and the diversity of file formats that has existed. Consequently, while many companies have implemented payment factories and financial shared service centres (SSCs), the efficiency of these functions is often compromised, or the technical complexity can be considerable. SEPA sweeps away much of the inconsistency between payment types and formats, enabling more standardised processes and a simpler technology infrastructure as fewer file formats and less complex data mapping is required. And we are starting to see that some of the principles of SEPA from a standardisation perspective are becoming relevant for payments beyond the Eurozone. The most recent initiative in this area is the development of the ISO 20022 based Common Global Implementation Initiative (CGI) which seeks to make use of ISO 20022 XML messages for payments, cash management messages and direct debits across many different payment types. As such, this is a format harmonisation exercise that seeks to replace the different domestic formats in the world with an XML based format framework. Backed and driven by some of the largest cash management banks, usage of CGI within the context of payment factories can again drive economies of scale because even though there will remain a variety of payment types, the underlying technical format variations can at least be replaced by a common XML framework, facilitating faster international rollouts.

A second important reason why SEPA is a catalyst for payment centralisation is the legal framework which underpins it, the Payment Services Directive (PSD). Depending on the legal and tax structure of the enterprise, it is easier for companies to set up payment factories on a 'payments-on-behalf-of' (POBO) model. This is particularly the case where an organisation is also moving to a more centralised procurement model as part of a wider purchase-to-pay transformation. Under a POBO model, the supplier liability remains on a business unit's balance sheet, but the amount is paid from a central account on behalf of the business unit. The intercompany flows can then be dealt with through an in-house bank.

Using a POBO model means that not only can formats and payment instruments be standardised and rationalised, but account structures can also be simplified as only one Euro payments account is required for supplier payments. This ensures that treasury has maximum access to and control over liquidity, with less reliance on complex liquidity management structures.

SEPA is not only a catalyst for payment factories in the Eurozone. It also offers the potential to extend the benefits across regions or even globally. The broader the scope of the payment factory the greater the benefits. For example, not only can payment processes be rationalised, and account structures simplified, but FX exposures can also be managed more effectively. Key to the expansion of a payment factory is the use of XML-based ISO 20022 formats, which are now becoming a global standard in the Corporate to Bank space as mentioned earlier. Supported with the right in-house technology and bank connectivity, the opportunities for centralising payments are far greater than ever before.

by Sébastien Jaouen
Head of Trading Community Services, Orange Business Services — Trading Solutions

Should a trading firm (whether buy-side or sell-side) manage its own trading infrastructure and connections to its Community?

The larger your IT team, the more powerful your trading infrastructure used to be. Encompassing trading systems specialists, networking, data bases, telephony, IT support ... a whole set of skills is required to fully operate on financial markets, from front to back office.

With the level of regulation rising, together with the global trends on trading multi-assets, the level of complexity simply skyrockets and puts more pressure on IT teams to deliver a platinum service. This also comes at a time when the business is challenged on its model and P&L, with commissions/margins strongly under pressure. IT budgets are under huge constraints.

With new financial instruments and OTC becoming more mainstream and the regulators imposing more transparency and full audit trails, the CIO is juggling between higher expectations and reduced budgets. This goes without mentioning the fact that he also needs to cut costs on existing infrastructure.

Storing all the data in each country where you operate, with the security rules that are specific, complying with new regulations such as recording the voice conversations on mobile phones surely puts a lot of pressure on the CIO to not only size the current needs but also plan for the future to scale it up or down in a flexible way.

With multiple platforms located in different places in the world, it is difficult to have your own infrastructure in place with regards to connectivity. Implementing its own spaghetti network around the globe is surely not the most beneficial strategy for a financial firm. This can prove very costly and hard to manage in the long term as new marketplaces arise, others move from one location to another, different local carriers are available in the different destinations ... There is a lot of complexity in running a seamless network globally, not mentioning the differences in terms of level of services that you can get from the different providers. Time to market is also a key benefit in leveraging on an existing Community as the underlying infrastructure is already in place and the service can be delivered in a matter of business days, quickly transforming business opportunities into real revenues and margins.

Going for a fully owned solution also implies that you bear all the costs, in the good years as well as in the bad years, with technology strategies planned on 3 to 5 years. This can reveal extremely costly and expose your trading organisation to external costs not aligned to the business strategy that may decide to change focus quickly based on how the markets evolve.

Your trading infrastructure has to be planned and supervised as a whole, from your market data sources to your trading infrastructure, encompassing the servers and applications as well as the connectivity provider in charge of the price dissemination and the trading.

Relying on a dedicated financial extranet provider ensures that your firm will benefit from all the improvements to network technologies, from the equipment to the fastest routes.

The way to move forward for the CIO is to accept that he can reap all the benefits from a mutualised Platform mixing both private and dedicated solutions together with off the shelf and ASP solutions. Selecting the right Data-centres, managing the servers and connectivity should be outsourced to the right partner.

It also saves you all the headaches in managing multiple carriers in different time zones, different Service Level Agreements, different Guaranteed Time for Repair when an issue occurs on the primary access...

Talking about continuity of business, the Cloud Trading or Platform as a Service is key when you want to implement a full 24/7 global operation. With recent catastrophes and potential issues to access to your primary site, relying on a fully managed solution provides you with a Disaster Recovery plan while limiting the CAPEX and OPEX costs to operate it.

In a nutshell, in a completely fragmented market, benefitting from an innovative Cloud Trading provider running its own seamless network globally is the step towards success. It simply enables you to focus on the core business of the financial firm i.e. trading and leverage on a trusted partner to leverage its expertise and ability to integrate with all your current and future providers.

The transformation path between a fully internal IT to a Cloud Trading solution should be approached on a step-by-step, controlling the different stages and eliminating all operational risks.

by Louis Lovas,
Director of Solutions OneMarketData, LLC

What Drives Profitable Trading Models

We have seen significant growth in automated and algorithmic trading across the industry. The swelling ranks of algo-trading firms are ever watchful of the competition as they strive to keep pace with rapidly advancing technology and adapting to the new normal of uncertainty in the equity markets. Together they act like a dragging anchor on what matters most — what drives alpha.

Firms can manage through sluggish times, but struggle in the chaos of undertainty, a new normal of falling volumes and volatility. U.S. equity volatility declined 18.5% and CBOE's VIX is down over the 12 months to January. GETCO's 82% decline in reported profits confirms the thinning margin across the industry. The recent exuberance of Q1 2013, creating a negative divergence, underscores the market fragility that is related to central bank policy. This is a scenario that has paradoxically caused an increased use of algorithms. Firms rely on quants to steer a new course, to squeeze alpha out of a diminishing pot, which consequently increases the demand on technology.

What do quants do? Apply an empirically-tested and rules-based approach to exploit market inefficiencies caused by geo-political events, central bank policy and market structure. Nonetheless, it's a documented fact that quant models have a short shelf life due to continually changing market conditions. Consequently, the quest for new and revised models is never-ending, demanding deeper historical data over longer time periods.

Deep history is defined by accurately capturing market data that comes in many shapes, sizes and encodings. Discovering new alpha and optimising existing strategies demands a confidence in the resulting analytics. Quant models depend on the accuracy of underlying prices.

For quantitative traders, deep history can be an ally for back-testing, simulation, valuation, benchmarking and numerous other critical decisions. It is the key to understanding global markets and achieving confidence in statistical arbitrage, market neutral, econometric or virtually any strategy model, well before production deployment.

Investment firms of all strips understand the importance for testing only too well. Algorithms are essential to the sustainability of the business and testing them is focused on two main areas — robustness and profitability.

Testing begins with unit testing, through integration testing and acceptance testing. Robustness indicates the stability of an algorithm. It is determined by replaying historical data through algorithms and trading to a fill simulator, a scaled-down replica of an exchange's matching engine. The historical data can represent normal market activity, highly volatile conditions, or even crash periods. A simulated matching engine can mimic the behaviour of lit and dark pools, as model design expands and diversifies.

Back-testing is a measure of profitability, as strategies are optimised. There could be targets for profit factors, maximum drawdown or an equity curve, to improve the quality of execution decisions. Historical data sets provide "what if" market conditions, as strategy parameters are varied. Back-testing for profitability is a task involving prediction, that elusive Holy Grail which seeks to validate the efficiency of an algorithm and understand market movement. It requires a modeling of market impact, which seeks to predict what other market participants will do when your orders hit the book. This requires a level of inference of human behaviour through the program: you assess what might happen to the liquidity in the book as your activity acts as an influence.

Another significant challenge behind the goal of model confidence is data management. Achieving a high degree of accuracy and quality in this historical data dump requires dealing with the vagaries of multiple data sources. You must manage a sea of reference data, in order to map ticker symbols across a global universe. Hazards include tick-level granularity, cancellations, corrections and price adjustments for corporate actions.

Lower risk appetite, and thinning margins, have pushed firms to expand their hunt for alpha. Deep market history is the fuel for the engine of the trade life cycle beginning with research and discovery of new analytical models and trade performance measured through back-testing. Profitable algorithms are part genius, inspiration and perspiration and their complexity is accelerating. They are born out of the mathematical ingenuity of quants and become the lifeblood of trading firms. The quest to devise and revise them is never ending. Back-testing across accurate deep history can make sense of today's new normal of uncertainty enabling timely, accurate business decisions. It's a matter of survival in the fiercely competitive trading landscape.

by Donal O'Sullivan
VP Product Management, Corvil

The New Monitoring for Financial Enterprises

IT departments face many challenges — high data rates, faster applications, increased use of virtualisation, and demands for greater flexibility and responsiveness from their business units and customers. In this environment of constant change, "flying blind" is not an option and the inherent limitations of many legacy monitoring systems are becoming apparent. Coupled with this, there is the demand from regulators, and others, for greater transparency and increased scrutiny of the activities of financial enterprises. Furthermore, budgets are tight and there is a need to find solutions that can be applied across multiple business units. From these diverse drivers the requirements for a new generation of monitoring systems are emerging.

To meet these demanding and diverse requirements monitoring systems need to capture a complete and accurate set of data that fully represents the state of the business. They must transform this data from hundreds of different formats into forms suitable for analysis and consumption by network teams, application operations, risk and other business groups that require data. And finally, they must present this data in real-time to both human and electronic consumers.

The detailed data that is needed to effectively monitor IT systems is already present on the network. In fact, data collected from network links provides the most up-to-date, comprehensive and accurate record of interactions with clients and third parties, and of the instantaneous risk position of the business. A system that passively monitors this network data, independently of the IT systems that are being monitored unlocks several key benefits:

1. **Scale:** This separation allows monitoring to scale independently so that multiple systems and components can be added and automatically monitored with minimal integration effort.
2. **Non-Intrusive:** With a non-intrusive approach to monitoring, there is no impact on performance, and therefore the highest levels of data granularity and accuracy can be achieved without affecting latency or capacity.
3. **Independent and Accurate:** Separation also leads to a more robust monitoring solution that is not compromised by faults or errors that may occur in production systems.

Although offering these benefits, network data is raw and does not expose application data fields or messages and it cannot easily be searched, filtered or processed. This is where the second key requirement of the monitoring system arises — data transformation. The system must analyse and transform this raw data into meaningful business information and analytics suitable for use in high-level business functions.

Finally, this transformed data must be made available,and presented in various formats, to different groups such as network operations, application operations, development, customer support and management teams. The specific requirements and presentations of the data will change from group to group and can include reports, dashboards, alerts, APIs, GUI analysis and troubleshooting tools so flexibility is a key requirement. Risk and business analysis functions can also get the best and most accurate picture of system behavior by leveraging this data.

Monitoring of today's financial enterprise can be a daunting challenge for firms that have multiple systems, managed by multiple teams, making it hard to gain a view that encompasses all of the firm's activities. Now more than ever IT Teams are under pressure to achieve an alignment of IT and business growth, often with shrinking budgets. From this environment a new generation of monitoring systems are emerging that foster greater collaboration and alignment between IT and the business enabling them to leverage the new applications, technologies and data that will facilitate this growth.

Donal has over 15 years' experience developing and creating products in the high-performance network and application delivery space. Donal's team collaborates with clients, sales and development teams, and industry analysts to ensure that the Corvil product is aligned with the requirements of the modern enterprise, while maintaining its strong reputation for technical innovation.

by Barry Kislingbury
Global Product Manager, Mysis

Global Trends in Payments

These days payment processing is a wide and dynamic topic, a far cry from the stagnant and unloved industry of several years ago and one that has propped up the revenues of many banks. Yet how many banks have updated their payments infrastructures to cope with the increasing speed of change that is happening around world?

There is a saying that everything a bank does results in a payment. It is the nature of banks, to lend, to invest, to send and receive funds. All these activities involve the movement of money and ultimately generate payments. There's nothing new about that. But what is new is the speed and diversity of change in society and business and what this means for banks.

From a consumer perspective, virtually everything we do requires us to make a payment and we want to do it in the easiest and cheapest way, increasingly via electronic channels. In fact the younger generation who have grown up in the online world and who are increasingly mobile expect real time services, waiting 3 days is no longer an option.

This is the same for businesses, but unlike individuals, who have a few payment options available to them; businesses have multiple channels and banking relationships. But all businesses really want to know is where their money is and how much they need to keep the wheels turning. Not easy with multiple electronic channels.

Then there are the government's plans to make or keep their domains efficient, safe and fairer and most importantly part of the growing global economy. The results of this unprecedented level of change are many, here are a few examples are given in the table below.

To allow the industry to support these changes many of the clearing networks that banks have to connect with are updating their technology, there are trends emerging that banks need to consider if they are to remain competitive in the payments market. This also supports all of the banks' other business activities, allowing them to understand their clients' businesses on a holistic scale and uncover cross-sell opportunities.

In the emerging markets we are seeing countries that have previously not had electronic payment networks installing ACH's and using ISO 20022 and XML standards, such as QATCH in Qatar. Qatar had been purely paper based, to provide a modern infrastructure and to allow the monitoring of criminal activity the government installed the new ACH supporting both Credit Transfer and Direct Debits.

We are also seeing major established markets such as Europe implement these technologies. SEPA in Europe was the first clearing network to use ISO 20022 and XML. SEPA was initiated by the EU in 2000, the goals of SEPA were to make Europe a better place and the Euro a critical part of the global economy. This is also true for many other countries and regions, there are several groups planning similar schemes to SEPA, such as the Asian Standards Working Group (ASWG) and Southern African Development Community (SADC).

In the UK payment volumes are moving away from the legacy ACH network to the near real time UK Faster Payments, with all internet and mobile payments going this route. Again UKFP was a government initiative that the banks had to comply with.

In Singapore they are also upgrading to an ISO 20022 based real time ACH called G3, and again it is a government scheme to make sure the Singaporean economy can attract and keep international business.

This trend towards real-time payments means that many ACHs are upgrading to real time as well as ISO 20022 and XML to stay competitive in the global market. However some have looked even further ahead and are considering their RTGS systems as well.

In the high-value payments market many countries are now updating their RTGS systems to encourage more direct participation to spread systemic risk of failure of a large clearer. At the same time, generally countries are moving away from proprietary standards adopting instead SWIFT in such counties at Hong Kong, Japan and China.

But some countries such as Canada are looking even further ahead, they are proposing to support both their domestic high and low value systems on one environment based on ISO 20022 and all in real time to prepare the country for continued growth in global on-line business.

So the value of a payment becomes less relevant in the Canadian system which can support any value and volume. The value of the payment is being replaced by priority and ISO 20022 and XML can cope with these variables more easily than traditional standards. This may well be the beginning of the end for SWIFT FIN and the beginning of truly standardised payment processing.

To support these global trends your processing needs to evolve to managed by exception and support real-time ISO 20022 and XML messaging.

Payment Initiation	New ways of initiating payments via mobile or on-line services, often by new payment service providers. This is a potential challenge for banks, as these new providers can disinter-mediate the users from the banks, reducing revenue and cross selling opportunities. If you don't know what your clients are doing how can you remain relevant to their needs?
Real-time Payments	Real time payments, as the younger generations who are technology savvy start to use these services they simply don't understand why a payment can take 3 days to clear, everything else is real time so how come banks are not? Corporates also prefer real time as this makes managing their cash easier.
Data-rich Payments	Regulators are demanding more and more information such as data on remitters so they can track criminal activity. There have been a number of heavy fines in this area recent years, existing standards struggle to cope with these new requirements.

by Phil Niles
Director, Client Executive, Butterfield Fulcrum

FATCA — The Next Technology Challenge

In recent memory, there has been no shortage of technology challenges put forward in the fund administration industry. Modern examples include increased requirements for front and middle office services, more integrated and transparent investor reporting services, heightened online reporting capabilities, and Form PF compliance solutions, just to name a few. It should thus come as no surprise to the astute reader that the Foreign Account Tax Compliance Act (FATCA) is creating a new technological problem for investment managers, and by extension fund administrators, to solve.

It is especially noteworthy that this examination comes on the back of Form PF compliance filings, which for many annual filers is only just now being completed for the first time. Already strained internal human and technology resources, fresh off annual audits and Form PF filings, will now be asked to devote time and energy to ensuring their funds are compliant with FATCA. In addition, not only must these funds be FATCA compliant at the time of filing, but an ongoing process must be scoped and defined in order to ensure compliance into the future.

There is a great deal of information that must be catalogued, maintained, and reported to authorities with respect to the investor base in their funds. Perhaps a greater threat than the actual workload required for compliance is the risk that comes with non-compliance; this can include withholding tax as well as additional penalties if warranted. Clearly, the stakes are high with respect to FATCA and, given these challenges, investment managers are looking to put a manageable and cost-efficient process in place as soon as possible, leveraging high-grade technology where possible to streamline the process.

While a number of different organisations will likely announce FATCA compliance offerings over the coming months, a fund administrator is easily in the best position to help investment managers with preparing for FATCA and ensuring ongoing compliance. Most notably, the fund administrator is already the books of record for the funds that an investment manager oversees, meaning that a great deal of the investor data is already held within the proprietary and third-party technology that the fund administrator utilises to service their client base.

However, it takes more than simply having the base data to deliver a sufficiently robust solution for FATCA compliance; there are several key features that any technology solution should have. First, a fund administrator's internal technology and software systems must have the ability to store the additional data that must be collected for FATCA. The information that must be gathered and maintained goes well beyond the typical AML/KYC and due diligence information that is collected as part of the capital activity process. Many investor registry systems do not have these capabilities at present, as they were designed well before the creation of FATCA.

A second consideration revolves around what the end-to-end capabilities of a technology solution might be, beyond simply storing data. Does the FATCA compliance solution merely kick off some basic reporting, leaving the investment manager to handle the balance? Or does it truly offer a complete, front-to-back offering that allows the investment manager to outsource the entire process? If it is somewhere in between, what is included? There is much that must be done to ensure FATCA compliance, including registration with the IRS, a full gap analysis on existing data, collection of additional missing data from investors, capturing the data in a technology system, updating subscription documents for the new requirements, and more. It is imperative that any solution leverages technology as much as possible throughout this process to make certain that the process is not only accurate, but also replicable on an ongoing basis.

An additional requirement for an effective FATCA technology solution involves whether or not the solution is enacted across a consistent technology platform. As mentioned, many of the investor registry systems in use today do not have FATCA-specific capabilities at the present time. This means that, for some fund administrators, a FATCA solution will require spreadsheets and mixed technology platforms. For obvious reasons, any work that is either completed or maintained in a spreadsheet will be prone to human error through data input mistakes as well as feature manual workarounds to complete the process. Such a solution is incredibly risky and, given the risks and penalties that are already in place with respect to non-compliance, this situation needs to be avoided at all costs.

FATCA compliance represents a new and important technology challenge for fund administrators and the investment managers that they service. However, it is also an outstanding opportunity for institutional-grade fund administrators to showcase the flexibility and adaptability of their technology platforms, both third-party and proprietary. Have no illusions, compliance reporting such as FATCA is here to stay and it is just the latest in a series of technology challenges that have been put to the fund administration industry; if an investment manager finds an insufficient solution with their present fund administrator, then it begs the question of how their present fund administration solution will cope with the challenges yet to come.

by Hirander Misra,
Chairman of Forum Trading Solutions Ltd

Will new OTC derivatives regulations have unintended consequences on market data, trading technology and venue connectivity?

With the advent of MiFID in November 2007, we saw the creation of new trading venues being established and as a result fragmentation in the cash equities markets. This was then followed by a period of consolidation as the sector became increasingly competitive. This trend is likely to repeat itself over the next few years in the OTC derivatives space.

As a result new regulations such as Dodd-Frank in the US and MiFID II/EMIR in Europe, we will see the migration of many OTC derivatives products e.g. interest Rates Swaps to an exchange type environment with Central Counterparty (CCP) clearing. This will lead to opportunities for new trading venues to be established in this space leading on from those such as Eris Exchange established in the US earlier. This coupled with existing exchange players looking to diversify beyond their traditional product base or geographical local, such as NASDAQ due to go live in the first half of 2013, NLX in Europe and CME looking to establish a European based exchange during 2013, initially trading FX products. New venues in this space are likely to be categorised as Swap Execution Facilities (SEFs) in the US and Multilateral Trading Facilities (MTFs) or Organised Trading Facilities (OTFs) in Europe, depending on how the regulations will be finalised.

This will lead to the "electronification" of markets that have been largely opaque with a greater degree of trading on central limit order-books, with associated pre and post-trade data transparency. Data vendors like Reuters and Bloomberg already source data from multiple OTC data contributors, which consist of mainly the main banks and inter-dealer brokers, who are trading bilaterally today. They in turn create consolidated composite pages incorporating the quote and trade data. The fact that these products will now be traded order-driven will result in dissemination of data from such new venues, leading to an increase in data volumes, driving the need for low latency data feeds. Vendors such as Activ Financial, Fixnetix and Quanthouse will go more multi-asset and source multiple feeds in a fragmented market and offer them out, either in single venue normalised format, or as part of a consolidated feeds product.

Coupled with this venue fragmentation, we are also likely to see banks automate their Fixed Income trading to a greater extent and establishing their own liquidity pools as they have done in equities and FX, albeit these have been dark pools rather than lit books. Given the multitude of different liquidity pools, smart order routing and algorithmic trading will also become more prevalent in this space.

All this, whilst presenting opportunities, does not come for free and requires considerable investment in technology at a time when we are all doing more with less. Banks have cut headcount to the bone and are now also looking to consolidate systems given they no longer have the headcount to run them, in addition to reducing complexity and cost. This coupled with the significant approvals required to run a regulated trading venue will therefore encourage a trend for outsourcing exchange technology and operations to managed services vendors like Forum Trading Solutions who can do this more cost effectively through economies of scale.

On the connectivity front, infrastructure vendors such as TMX Atrium that interconnect to multiple data centres where such trading venues will be located, as well as OMS vendors who leverage that physically connectivity to logically connect to these trading venues, will have opportunities to provide managed services to trading firms wanting to access these markets in a less resource intensive way. Data centre providers such as Equinix also have an important role to play given the existing financial ecosystems that have been built up, which new trading venues can leverage to gain critical mass quicker.

When products become more accessible, with lower frictional costs of trading and are essentially quantifiable, it affords opportunities for electronic liquidity providers to enter the market and this will certainly be the case in some of these OTC market segments. The likes of DRW and Getco are already invested in Eris Exchange as are banks like Morgan Stanley who are hedging against the move from OTC trading to exchange trading.

Regulation is not the only factor driving a change in the way OTC markets must operate.

The additional cost of new margins and collateral on OTC products, combined with the multiple strains on balance sheets, have driven many market players to search for new ways to hedge and trade existing products. The successful trading venues in this space will be those which: aim to bring products onto the exchange, using innovative new methods for the development of index-based futures contracts; and which address several issues surrounding the current batch of OTC futures contracts. These contracts need to be simple to understand, easy to manage and easy to trade. They also need to reflect the underlying physical market. Of course the indices for such contracts are dependent on the quality of the underlying market data sources, both real time and historical. Historical data is needed to calculate the indices for purposes of algorithmic back-testing and technical analysis.

Such contracts will also enable institutions to access these market segments at a drastically reduced cost to balance sheet, margining and internal back office resources by using CCPs to reduce risk. Notwithstanding a multitude of trading venues and CCPs in the short term may increase risk through fragmentation before natural selection holds true and the best ones survive and prosper.

One thing is clear, in this era of dramatic change, simplicity and low cost must now be the watchwords of financial markets enabled by innovative products underpinned by good scalable multi-asset technology services and data.

B.I.S.S. Research 2013 Corporate Actions Industry Report

B.I.S.S. Research is an independent research company providing training, advisory services, business benchmarking, Accreditation and analysis of technology and services of suppliers in the Global financial services industry. B.I.S.S. Research analysts are all from a business to IT background with a long track record of procurement in the financial services market place, which enables them to produce unique and valuable assessments of technology and services and their value to the supplier and the market place.

Corporate actions are a major sticking point in the securities industry, which continue to frustrate the drive to reduce risks and costs. The complicated industry structure within international markets and the variant rules and laws are major barriers to introducing global solutions. There is a convoluted committee structure across the world trying to find and introduce solutions that are taking an eternity to arrive. The good news is there is available technology and systems for Financial Institutions to invest in, to provide solutions to their problems and in this annual report we lift the lid on some of these and provide a document that attempts to open the minds of corporate actions experts to what is possible.

This is the definitive corporate actions industry report for senior professionals globally, which has established a worldwide following of corporate actions experts. Written in plain and easy to understand operational language it is intended to be challenging and questioning of trends in corporate actions. This annual report on the status and issues around corporate actions, in the international securities markets has been produced from research undertaken over the past 10 years. The opinions in this report have been derived from a detailed analysis of the market from an analyst who has been in the industry for over 30 years.

The report is designed to be both thought provoking and informative. With this in mind it also provides a platform for debate and opinion by corporate actions professionals. Readers will gain knowledge and information but most importantly given food for thought.

This report includes an update on various developments in the corporate actions industry ranging from the DTCC/SWIFT XBRL corporate data project, to initiatives to standardise processing and basic corporate action descriptions across international markets. With LEI looming, a look into the impacts of its introduction is included.

It will also provide an overall view on the corporate actions market giving an informed opinion on the new technologies that are entering the market along with a considered view of the possible developments coming in the next year.

This year's report will feature an analysis of Vermeg, one of the software firms leading the way in providing corporate actions processing solutions, whose system MegaCor was benchmarked during the unique B.I.S.S. Accreditation process and duly gained the B.I.S.S. Accreditation, with an exceptional performance. The analysis will include a graph of how the system performed and the analyst's view on the company's prospects.

A popular feature of the report is the opportunity given to various experts to write thought provoking articles on different aspects that make up the corporate actions industry. These articles are created with strict instructions for no covert marketing and selling as they are writing for corporate actions professionals and they carry thought leadership values. This year's report will include special articles from Stephen Everard, CEO of GOAL concerning Class Actions and one from Chris Pickles from BT on ISO standards and open networks. Other features include an interview with SmartStream's Alan Jones to get his perspective on Corporate Actions and prospects for the coming year.

The report also includes a handy guide for readers seeking information on suppliers of systems and services related to corporate actions including; data vendors, data cleansers, software vendors, SaaS solutions and outsourcing providers.

B.I.S.S. Research is the foremost analyst firm specialising in corporate actions. For over ten years B.I.S.S. has benchmarked corporate actions systems functionality against industry requirements and tested the vendors servicing capacity. Those software systems that measured up against the benchmark tests were offered the B.I.S.S. Corporate Actions Accreditation, the results of which are published and provide an independent easy to ready assessment, to assist buyers in selecting the best system for their business. For further information on systems and services Accreditation and to obtain this year's Corporation Actions Industry report please visit: www.bissresearch.com.

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Greater efficiency in the issuance of securities

Financial IT magazine spoke with René Lemme, Marketing Manager at icubic about the company's icubic subscription solution (ISS) product.

René, could you please tell us a little about your company?

We were established in Magdeburg, where we are still based, in 1999. Originally, our main business was the development of software solutions for managers of financial markets. Our services included installation and ongoing maintenance. Today we work with ten of Germany's 20 largest financial services companies. We also work with bank and investment firms elsewhere in Europe and across Asia. Revenues grew by about 50% through 2011 and have risen further to record levels through 2012. We employ 140 people.

What are your main products?

Our products facilitate trading, distribution and settlement of securities. iQrepos, iQbonds and iQderivatives handle trading of repos, bonds and derivatives respectively. iMarket features an STP platform which provides a seamless connection between clients, sales and trading. iSettle automates settlement processes. We offer 'software as a service' (SaaS), which means that our customers can link their systems with our solutions through the web. In essence, we provide the IT infrastructure and the ongoing maintenance.

If you were to showcase just product in Financial IT, what would it be?

We are excited by our new icubic subscription solution (ISS) platform. This is an online portal, through which companies that are issuing securities can streamline offerings to defined groups of investors — such as employees or clients. It has been approved by the leading German exchanges. However it can be used to assist issuers who want to work with selling agents, direct banks and so on.

What are the key benefits to customers of this product?

The key benefits are efficiency and flexibility. We operate with Deutsche Börse AG so that it can interface with the systems of all parties that are involved with the issuance of securities or derivatives — be they paying agents, custodian banks or trading participants on exchanges. ISS can handle all the data that is required, including tax information and accrued interest. Thanks to the modular structure of ISS, its output can be tailored to the very specific needs of the security issuer. This includes everything from the preparation of documents such as subscription certificates and payment instructions to the design of the correspondence which passes between the issuer and the investor. Finally, I would add that ISS can handle any security, be it listed or unlisted, and targeted group of investors, be they internal (e.g. employees) or external to the issuer.

How long does the implementation of this product typically take?

A new issuer can be connected to ISS, and start using it almost immediately. Because ISS is a fully automated solution, it means that the issuer's IT and administrative staff are not needed to handle the acceptance, processing and settlement of buy orders from investors.

How would you describe the competitive position of this product?

The key point that we would emphasise is that ISS enables us to draw on the expertise we have from working with exchanges, banks and insurance companies, to offer a useful solution to a huge variety of companies beyond the financial services sector. If a company is looking to issue securities or derivatives — especially on a regular basis — we can help them.

Finally, what do you see as the most important industry-wide trends affecting the market for this product?

ISS responds to two major trends. The first is the growth in regulatory requirements. All parties to the issue of securities and derivatives are under produce increasing amounts of information that can be tied to specific investors. The information must be correct. It must be gathered quickly. ISS automates processes, with the results that speed is increased and errors are reduced. The second trend is the downwards pressure on revenues and margins that many companies face. ISS implies a significant reduction in resources that must be committed to IT and administrative processes.

Thank you very much.

Company self-description

icubic is an IT service provider. It develops specialised software solutions for all electronic market trading sectors and offers installation as well as maintenance services to accompany its products.

Company contact details

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Improving middle office processes

Financial IT spoke with Bernard Tardy, Sales and Marketing Director of SLIB, about company's Middle Office for Brokers solution.

Bernard, could you please tell us a little about your company?

Our solutions have been helping financial institutions to improve processing of securities for 25 years. By 'processing', we include securities order and trade, clearing, settlement, custody, online voting prior to General Meetings and risk control. We have 50 clients. About half of these are broker-dealers in France and the UK. Six are globally prominent clearing members. We also work with two of the largest US banks. Our total turnover in 2012 was about €20mln. We are a private company with capital of around €4mln. BNP Paribas and Natixis are our strategic shareholders.

Where and how do you operate?

We are based in France, but our people operate across the Europe Middle East and Africa (EMEA) region. Our software and IT infrastructure are hosted in two highly secure computer centers, which are designed for high availability and business continuity.

We provide 'software as a service' (SaaS). This means that each of our customers, wherever their premises might be located, can easily access the services that they need from our systems. This model is lean and cost-effective, for both us and our customers. There is reduced need for our customers to invest in their own IT infrastructure. They do not have to worry about periodic upgrades. The customers' economies of scale are greater than they otherwise would be. We have the benefit of not having to maintain a permanent physical presence in each of the various countries/regions in which our customers operate.

If you were to showcase just one product in Financial IT, what would it be?

We would prefer to highlight our entire portfolio of solutions, which is designed in a modular fashion. It encompasses five software suites, each of which contains 19 software components. The suites and components can be selected to match, and to evolve with, each customers' requirements as those requirements change over time. The five suites are:

- *SLIB Order & Trade* streamlines all processing steps along the trade lifecycle: order and allocation management, confirmation and trade reporting to the back office;
- *SLIB Clearing & Settlement* interactively processes all clearing and settlement activities, as well as reconciliation with the CCPs and CSDs;
- *SLIB Position Keeping* assists in all the tasks related to account / position keeping and custody;
- *SLIB Voting* automatically collects and transmits the voting instructions of shareholders, prior to a General Meeting. SLIB is the provider of VOTACCESS, the innovative platform chosen by the French marketplace;
- *SLIB Risk* monitors in STP mode and optimises the clearing risk across more than 10 CCPs in the world.

However, if we were constrained to discussing just one solution with you, it would be *SLIB Middle Office for Brokers*. In the wake of T2S, the speed of settlement across Europe is being harmonised at T+2. It is therefore essential for brokers to be able to allocate and confirm trades more quickly. At the same time, the broker has to reduce risks and costs, in the context of a constantly changing business environment.

We would emphasise two key features of *SLIB Middle Office for Brokers*. One is its adaptability. No matter how complex the trade and post-trade landscape is, or will be, our solution can cope. It is easily integrated with all kinds of IT environments. It can handle multi-venue, multi-currency, multi-instrument and multi-channel confirmation. The other aspect is inter-connectivity. Thanks to the integration with our existing *SLIB Confirmation* product, a broker may connect to networks or exchanges using various protocols — such as CTM, SWIFT, SBI, fax, mail and so on.

SLIB is both a software publisher and an Application Services Provider.
For almost 25 years, SLIB has been a reliable partner to the financial services industry, in step with the changes in the European securities landscape, by supplying its customers with innovative software solutions to streamline their securities processing and improve their performance, whilst mitigating their risks. The SLIB solutions support securities order and trade, clearing, settlement, custody, online vote of shareholders prior to General Meetings and risk control. To date 50 securities services providers throughout Europe are using SLIB solutions.

Company contact details

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SLIB
securities software solutions

Bernard Tardy,
Sales and Marketing Director of SLIB

What are the key benefits to customers of this product?

First of all, the product offers better quality of information to the user. The dashboards that are available to the user can handle the user's global middle office needs. The dashboards provide alerts which enable the user to respond more quickly to situations that require attention.

We would also note the operational excellence of *SLIB Middle Office for Brokers*. By relying on a high-performance technical architecture (i.e. modules exchanging through a JMS bus, developments in Java resting on the Eclipse RCP framework), *SLIB Middle Office for Brokers* provides a unique user interface for the middle office function. Users can enjoy the full power of the ergonomics of this framework: Drag & Drop, column sorting, user preferences, driving views, colour highlighting, etc. By making use of standard and effective Internet services for the client/server dialogue, the data uploading time is optimised and balanced: the modules are independent and can be adapted to the broker's own information systems.

With advanced parameterisation level ranging from 'fully manual' to 'full STP', SLIB's solution allows reconstituting and processing of executions, orders and allocations with a minimum of clicks.

How long does the implementation of this product typically take?

There is no 'implementation' as such. We connect the client, take-over the data and switch the service on after the necessary training. Based on our experience, a new customer can start very quickly, depending on the complexity of the interfaces and the need to include a migration from a previous system or not. We can have a client working with *SLIB Middle Office for Brokers* in three months. By contrast, some of our larger projects can last up to 12/15 months when the scope is wider (front to back) and extensive migration of data is to be included.

How would you describe the competitive position of this product?

We are providing *SLIB Middle Office for Brokers* to about a dozen organisations, including four very large ones. As a matter of policy, we do not discuss competitors or their products. However, we think that the competitive advantages of *SLIB Middle Office for Brokers* are as follows:

- The adaptability and inter-connectivity of the solution, as discussed above;
- The centralised support of multiple channels;
- The scalability of the solution, which allows integration with other SLIB suites and components;
- Its ability to absorb 'peak' traffic flows. If a customer's activity levels are materially greater than those which had been expected, SLIB can easily add more capacity to the solution;
- Its cost- effective SaaS business model;
- State of the art technology.

How often is the product upgraded?

Typically, there are two or three releases per year, and a major upgrade every two years. We are planning an extension of the product so that it may be used by buy-side customers.

Finally, what do you see as the most important industry-wide trends affecting the market for this product?

In an increasingly competitive context, ratings, regulations, costs and risk control require brokers to reach the highest level of operational efficiency. If major investments have already borne fruit as far as front office optimisation is concerned, middle office efficiency becomes absolutely crucial. A broker's operational excellence is often judged by the reactivity of its middle office, the strategic hub between trading and operations.

Thank you very much.

Waiting for an Asteroid

The Future of Retail Stockbroking

By Gary Wright, B.I.S.S. Research — An interview with Geoffrey Hoodless, The Share Republic.com

A question I have heard repeated over the years concerns the future of retail stockbroking! This question comes around about every decade, usually because of a market change or the introduction of new rules and technologies. For plenty of people, retail stockbroking still reeks of a bygone age, where you might expect to see some Dickens character walk through the door at any moment. The image is often the fault of the stockbroker who for whatever reason prefers to concentrate on their business and pretty much slam the door in the face of modern innovations.

Many times, I have discussed with various retail stockbrokers, the latest developments in the market, how are they incorporating new technologies and reacting to the latest regulatory thrusts. Often as not a glazed look comes over them,then they retrench and defer to APCIMS their trade association, to fight their corner. And it is not unusual to find retail stockbrokers still using the original 1980s system, which was probably their first technology investment. Although over years they regularly berate their software supplier for charging too much for keeping the old system alive.

How do these firms still survive and will they eventually meet their inevitable demise; like Dinosaurs waiting for the Asteroid to hit?

Retail Stockbroking has had a massive resilience to modern trends and innovations, but would anyone seriously set up a new retail stockbroker today, when it looks like the business is on its last legs. Thus, I was intrigued to learn — when I spoke to Geoff Hoodless, one of the founders of Stockbroker Hoodless Brennan, which was successful through the late nineties and early 2000 and was eventually purchased by TD Waterhouse — of his decision to set up a new online retail stockbroker “The Share Republic”. So to get his views on retail stockbroking and some of the challenges it faces was an opportunity not to be missed.

Geoff, what is the future for retail stockbroking?

Advisory stockbroking has been in relative decline for a number of years. Retail online or internet trading in contrast has been growing and continues to increase its market share. As the acceptance of trading across the internet increases, the volume of share trading across the internet will also increase. The internet also makes the stock markets far more accessible to retail investors, whereas in the past access to stockbrokers was mainly by introduction by other professional firms e.g. accountants or solicitors.

How will new regulatory changes and political initiatives impact retail stock broking?

The true impact of the Retail Distribution Review has yet to be seen, as it only came into force in January. That said, in my view it can only lead to higher costs for practitioners in terms of training and recruitment of skilled individuals, Whilst this should raise standards, there is great reluctance on the part of investors to pay fees for financial services, and my sense is that there will become a greater divide between advisory and execution only business in terms of charging, which will favour execution only services.

The imminent changes to the regulatory system with the separation of Prudential Regulation and Business Conduct, ought to progressively have a more positive impact within the industry, but until the structures are properly in place together with the systems to achieve their objectives, I suspect it will be more of the same for the time being, with the possible exception of financial reporting that will change later this year.

Does the increase of trading venues benefit retail investors?

I don’t think the retail investors understand what the different trading venues are, and probably have little interest, as long as he gets the best price. From a practitioner’s viewpoint, if the

Geoff has over a 40 year career within the financial services sector. His enterprising activities started in 1979 first as a freelance investment analyst; he then set up an insurance broking firm, before establishing a stock broking firm Hoodless Brennan plc in 1992. The business grew from the original seven people to almost 150 at its peak with interests in small market cap companies, market making, corporate finance, online trading, general advisory broking and settlements. The firm won several awards which culminated in the Investors Chronicle Stockbroker of the Year Award in November 2008. Geoff resigned as a CEO in April 2009, following the sale of the online execution only broking business to T D Waterhouse Investments Services Ltd. He was a member of the London Stock Exchange and is a Chartered Fellow of the Chartered Securities Institute.

It all started after completion of his business studies. Geoff joined Mullens &Co (Stockbrokers) as bond analyst in 1970. He then moved to Touche Remnant & Co (Fund Managers) as investment analyst and portfolio adviser covering financial companies, then onto W.N. Middleton (Stockbrokers) and Carr Sebag & Co in the same capacity. He subsequently worked in institutional sales at Quilter Goodison & Co; W Greenwell & Co; and Scott, Goff Layton — Smith New Court plc. He then subsequently set up Hoodless Brennan plc.

Geoff was a member of the London Stock Exchange and is a member of the Worshipful Company of International Bankers. He is a Fellow of the Chartered Institute of Securities & Investment and the Royal Society of Arts. In his spare time, Geoff races his March-Toyota 803, a 1980 Historic Formula 3 motor racing car, and occasionally pilots Cessna planes.

venues provide more competition on securities pricing and the cost of trading, then it ought to be a good outcome. However, there is a cost to linking to these venues and will they all survive? I believe there will be progressive consolidation, so that venues are reduced to a core three or four.

How does HFT impact the price for retail investing?

In theory HFTs add liquidity to the market and as such should make it easier for retail investors to trade, and at keener prices. HFTs will usually be operating in markets and securities where there is already significant liquidity. In the smaller to medium sized companies I suspect their impact is very limited. However, if HFTs take on the role of speculating and building up large positions in individual companies (as a hedge fund might), then the retail investor could well be disadvantaged if he or she acts on the associated price movements.

Does the proliferation of CCPs in Europe benefit retail investors?

I doubt it. CCPs are set up to guarantee the settlement of a trade, and inevitably there is a cost involved. Historically in the UK, the broker has settled a failed trade in the retail client's favour and then gone on to seek recovery from his counterparty. I suspect this situation will continue, and is a key factor in the production, for regulatory purposes of the Counter Party Risk report. For large scale institutional business it might be a different matter and it may give regulators greater comfort to know that a CCP is supporting trades.

What is the major concern for retail investors in the next ten years?

I suspect it is one of confidence. Despite the recent recoveries in major market indices, most of the political and economic comment is about austerity and slow, if any, growth. Miss-selling scandals don't help either, but that should promote DIY share trading, and DIY financial services and this, plus the growth in internet trading is a driver for our software. On the execution only front, I think costs will fall, but for those using advisers a significant cultural change will be required as the customer will have to pay fees. RDR will create some uncertainty and could lead to a significant reduction in the sale of some products e.g. long term life assurance contracts.

Do you see a major growth in retail investing if so please say why and what markets/products?

The outcome of RDR is still uncertain. People engaged in the financial services industry have been preparing for it, but have the customers? With commission on many products going, and no trail commissions allowed, the incentive to promote some products will be diminished. On the other hand there will be a tremendous political and consequent industry pressure for people to invest in pensions, and this should significantly help the pension's market place, especially SIPPs. As a consequence of this, I would see retail investing progressively growing, and as people become increasingly involved with their pension saving, this will go some way to increasing the volume of retail investing.

This interview with Geoff Hoodless clearly shows a very positive outlook for retail stockbroking. He and The Share Republic have a clear understanding of some of the greatest challenges in this sector. For this reason this venture has a good chance of success. Unlike the old sleepy retail stockbrokers Geoff is building a business that recognises the needs of the market and is utilising modern technology and creative thinking to develop a 21st century version of stockbroking. I wonder if we are seeing a new breed of retail stockbroker ready to step into the outgoing shoes of the old and it did not need an Asteroid just a bit of imagination and bravery to evolve.

Financial IT highlights what corporate press releases said about some of the deals. We also note some of the recent moves by executives and a number of high profile mandates that have been awarded.

IN THE NEWS DEALS

Glory Global Solutions Began Trading on 1st of April, 2013

2 April 2013

Following the acquisition of Talaris by the GLORY Group of Japan in July of last year, the official launch of Glory Global Solutions completes the establishment of one of the largest international cash management solutions providers in the world, with more than 2,500 direct employees and a distribution network spanning more than 100 countries globally. Combined with GLORY Group the total global business now has more than 9,000 employees and revenues exceeding $1.5 billion per annum.

Linedata Finalises Acquisition of CapitalStream

22 March 2013.

Linedata has finalised its acquisition of the CapitalStream business and launched a strategic partnership with HCL Technologies Ltd. The revenues of this business will be consolidated into Linedata's accounts immediately. During the twelve months ending June 2012, CapitalStream posted annual revenues of $30 million, according to US GAAP. The business has some 100 employees in the USA and Canada.

icubic AG Acquires Consultancy Specialist HighQIT

20 March 2013

icubic plans to further promote the expansion of business activities in the system integration and consulting areas with this acquisition. "With HighQIT, we can deliver intelligent software solutions and excellent consulting competence from one source. Our clients thereby profit from a larger service spectrum. This also enables us make product integration even more effective," says Dietmar Jakal, Chairman of the Board at icubic AG. The merger increases icubic's workforce to over 150 employees.

ACI Worldwide Completes Acquisition of Online Resources Corporation

11 March 2013

ACI Worldwide has completed the acquisition of Online Resources Corporation, a provider of online banking and full service bill pay solutions. The acquisition adds Electronic Bill Presentment and Payment (EBPP) solutions as a strategic part of ACI's Universal Payments portfolio. It also strengthens ACI's online banking capabilities with complementary technology, and expands the company's leadership in serving community banking and credit union customers.

FIS Completes Acquisition of mFoundry

31 January 2013

FIS™ has signed a definitive agreement to acquire the remaining 78% interest in mFoundry, a provider of mobile banking and payment solutions for financial institutions and retailers. Previous to this transaction, FIS held a 22% interest in the company. The addition of mFoundry creates one of the leading mobile entities in the financial services space and enables FIS to leverage its technology assets across a broader client base. FIS anticipates paying approximately $120 million in cash to acquire the remaining 78% ownership interest in mFoundry. The transaction, subject to customary regulatory approvals and contractual closing conditions, is expected to close by the end of the first quarter.

ConvergEx Announces Definitive Agreement to Sell Eze Castle Software and RealTick Businesses to TPG

23 January 2013

ConvergEx Holdings, LLC, has signed a definitive agreement to sell its software platform business, consisting primarily of Eze Castle Software LLC and RealTick LLC, to an affiliate of TPG Capital. After the close of the transaction, Eze Castle Software and RealTick will operate under the name Eze Software Group and ConvergEx will continue to focus on and expand its remaining global execution, institutional brokerage and trading related businesses. ConvergEx and Eze Software Group will maintain a close relationship after the close of the transaction. The parties have established a cooperative marketing agreement that will ensure that each firm's services will continue to be offered on an integrated basis. Each firm will also cross-sell the other company's services.

Fiserv Acquires Open Solutions Inc.

15 January 2013

Fiserv, Inc. has acquired Open Solutions Inc., a provider of collaborative, enterprise core account processing technology for financial institutions. The purchase price was $55 million, and Fiserv assumed approximately $960 million of debt. In conjunction with the acquisition, Fiserv will benefit from an acquired tax asset with a net present value at the time of purchase of approximately $165 million.

Open Solutions is a Glastonbury, Conn.-based technology provider to banks, thrifts and credit unions. Through this acquisition, Fiserv will add several new technologies to its offerings, including DNA™, a real-time, open technology account processing platform. DNA is an attractive alternative for financial institutions that seek a modern technology architecture and want to benefit from the power of data and integration.

IN THE NEWS PEOPLE MOVES

Alaric Hires 20-Year Industry Veteran to Head Up Middle East

3 April 2013

Alaric is responding to significant market interest in the Middle East by hiring Tausif Ahmed, a veteran with 20 years' financial technology and payments expertise, to drive the company forward in the region. He joins Alaric from Logica, where he was the Regional Sales Manager based out of Dubai, and prior to that he was the Regional Territory Manager for Middle East, Levant and Pakistan for ACI Worldwide in Bahrain.

Chi-X Australia Appoints John Fildes CEO

3 April 2013

Chi-X Australia Pty Ltd announced the appointment of John Fildes as Chief Executive Officer effective 1 May 2013. To ensure a smooth transition, Peter Fowler will continue in his role as CEO until 1 May 2013 and John Fildes will join the team in early April. John Fildes' experience includes senior capital markets roles at MSCI, Morgan Stanley, Instinet and Getco. Mr. Fildes is a former board member of the Stockbrokers Association of Australia.

Reval Hires John Keeton to Lead Professional Services Team in APAC

6 March 2013

John Keeton has joined Reval as VP, Professional Services APAC, tasked with leading a superior global professional services team in the Asia Pacific region. Keeton brings 20 years' experience in client-facing roles and leadership in the treasury technology industry. Keeton joins Reval from Veda, Asia Pacific's leading provider of consumer and commercial data intelligence and insights. Prior to joining Veda, he worked 14 years at Sungard in various client-facing roles.

Avaloq Appoints Andreas Bittner as New Managing Director

1 March 2013

Andreas Bittner is appointed MD by Avaloq Sourcing AG. Andreas is a proven manager with considerable know-how of the German financial industry. Most recently Bittner held the position of COO and Managing Director of Fondsdepot Bank GmbH and MD of its subsidiary XISG mhH. Other stations in his career were Accenture and DAB bank Munich. As Managing Director, Bittner is responsible for the divisions' Sales and Key Account Management.

David Kelly Joins Calypso Technology as Director of Financial Engineering

19 February 2013

Calypso appointed David Kelly as Director of Financial Engineering. Kelly has nearly 20 years of experience in finance as a trader, quant and technologist and is responsible for the Financial Engineering team at Calypso. David was most recently the Director of Credit Product Development at Quantifi. Prior to Quantifi, he was a senior trader on Citigroup's CVA desk and a former Head of the Global Analytics group at JPMorgan Chase.

Misys Appoints Himanshu Raja As Its New CFO

13 February 2013

Misys announced the appointment of Himanshu Raja to the role of Chief Financial Officer. Before, Raja was the CFO for Logica plc where he led the sale process that resulted in the company being acquired by CGI. Prior to Logica, Himanshu worked at BT Group for more than nine years in a number of divisional finance director roles. His early career included finance and systems roles at Worldcom International, UUNET and MFS Ltd.

IN THE NEWS MANDATES

TSYS Signs Long-Term Renewal Agreement with Columbia State Bank

Provider: TSYS
Client: Columbia State Bank
Mandate value: Undisclosed

2 April 2013

TSYS announced the signing of a long-term renewal agreement with Columbia State Bank. TSYS' Merchant Services segment will provide full-service payment processing solutions and tools to support the bank and its clients. Based in Tacoma, Columbia Bank was recognised in 2012 and 2011 as the best bank headquartered in the state of Washington on Forbes' list of America's Best Banks. Terms of the agreement were not disclosed.

ISBANK Deploys Diasoft tech

Provider: Diasoft
Client: ISBANK
Mandate value: Undisclosed

2 April 2013

Diasoft, a global provider of innovative financial software solutions, and a world's technology leader IBM have successfully completed the first stage of the joint complex implementation in ISBANK. ISBANK entered the Russian market with an expansive long-term business strategy. To support the realisation of this strategy, the bank needed to implement a modern software complex based on a reliable hardware platform. Finally, the bank selected Diasoft's software complex incorporating a renowned component-based Diasoft FA# back office and a flexible high performance FLEXTERA Front Office.

Napier Park Global Capital Chooses Options as its Managed Infrastructure Provider

Provider: Options
Client: Napier Park Global Capital
Mandate value: Undisclosed

25 March 2013

Options announced that the Citigroup spinout, Napier Park Global Capital ("Napier Park"), has chosen the firm's PIPE® Core and Momentum services as its fund's technology infrastructure. Napier Park is an independent asset management firm with approximately $6.8 billion under management and more than 110 employees in offices in New York and London. The company will utilise Options' PIPE® Core and Momentum services, key components of the Options' Private Financial Cloud platform.

FIS Signed FirstBank Puerto Rico

Provider: FIS
Client: FirstBank Puerto Rico
Mandate value: Undisclosed

20 March 2013

Building on an 18-year trusted partner relationship, FIS™ (FIS) has entered into a seven-year agreement with FirstBank Puerto Rico to assume full on-site operational responsibility for the bank's IT operations and staff. A leading global provider of outsourcing solutions, this new deal is the first of its kind for FIS in the Caribbean. Under the terms of this multi-year agreement, FIS will assume operational control of FirstBank Puerto Rico's IT operations including hardware and software upgrades, application management, skilled operations personnel, help desk and desktop services.

Thomson Reuters Signs Three-Year Eikon Deal with the European Central Bank

Provider: Thomson Reuters
Client: the ECB
Mandate value: Undisclosed

4 March 2013

Thomson Reuters has signed a three-year deal with the ECB to roll out Thomson Reuters Eikon desktops across the ECB and 18 participating national central banks. It is so far the largest market data purchasing initiative managed by the Eurosystem Procurement Coordination Office (EPCO) which has a role to foster the participation of the ECB and the national central banks in joint procurement actions.

NBF Expands Use of Orc Technology

Provider: Orc
Client: NBF
Mandate value: Undisclosed

19 February 2013

Orc announced that National Bank Financial (NBF) has expanded their use of Orc technology to provide global market participants with algorithmic execution and market access in the Canadian markets. NBF will provide global customers with trading tools, execution algorithms and direct market access to trade Canadian equities, options and futures. NBF is a wholly owned subsidiary of the National Bank of Canada, the 5th strongest bank in the world, according to Bloomberg Markets, and recognised as a market leader in Canadian ETF and options flow business.

Financial IT

Financial Technology Buyers' Guide

Spring · 2013

INDATA is a leading industry provider of software and services for buy-side firms, including trade order management (OMS), compliance, portfolio accounting and front-to-back office. INDATA's iPM — Intelligent Portfolio Management technology platform allows end users to efficiently collaborate in real-time across the enterprise and contains the best of class functionality demanded by sophisticated institutional investors. The company's mission is to provide clients with cutting edge technology products and services to increase operational efficiency while reducing risk and administrative overhead.

INDATA provides software and services to a variety of buy-side clients including asset managers, registered investment advisors, banks and wealth management firms, pension funds and hedge funds. Assets under management range from under $1 billion to more than $100 billion across a variety of asset classes (i.e. equity, fixed income, etc.) both domestic and international. What these organisations have in common is a desire for the latest technology — not only for today but for tomorrow. What sets INDATA apart is its single-minded focus on reducing costs and increasing operational efficiency as part of the technology equation.

COMPANY PROFILE	
Company type	Limited Liability Company (LLC)
Annual turnover	Undisclosed
Number of Customers Total	Over 200
Number of Employees	Over 150
Inception	1968
Geographical coverage	North America, Europe

COMPANY CONTACT DETAILS	
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Job Title	Marketing Communications Manager
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Homepage address	www.indataipm.com

ARQA is a part of a global structure. It connects brokers' technology operations with those of exchanges and trading platforms. The company offers comprehensive solutions for automation of front- middle- and back- office operations. The company provides outsourcing, hosting and backup services for its QUIK program complex (with additional modules from the company's technical centres located in Moscow, Kiev and Novosibirsk). ARQA's key product is the QUIK Information and Trade Systems Family, a leader among Russian Internet-trading systems. QORT, a new software platform intended for end-to-end automation of standard broker operations, has been developed since 2007, as has its application midQORT, a middle-office software for brokers.

COMPANY PROFILE	
Company type	LLC
Annual turnover	Undisclosed
Number of Customers Total	250
Number of Employees	100
Inception	2000
Geographical coverage	Estonia, Kazakhstan, Russia, Ukraine, United Kingdom

COMPANY CONTACT DETAILS	
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With an average of 15 years experience in the financial services industry, Brokerway's people combine knowledge of securities with leading edge technology. Brokerway understands the systems that securities markets need. Its focus areas are clearing, settlement, corporate actions and risk analysis. Brokerway works with customers to boost efficiency and competitiveness.

COMPANY PROFILE	
Company type	PLC
Annual turnover	SEK 17 Million
Number of Customers Total	15
Number of Employees	10
Inception	2006
Geographical coverage	Europe

COMPANY CONTACT DETAILS	
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Compass Plus provides proven software and services for financial institutions, including retail banks and payment processors across the globe that operate in complex and rapidly changing business and technology environments. Compass Plus builds and quickly implements comprehensive and integrated payment technologies that allow customers to increase revenue and profits, and improve their competitive position by implementing flexible systems that meet market demands. With hundreds of successful projects spanning card, account and merchant management, card personalisation, mobile and electronic commerce implemented in record breaking time, Compass Plus ensures its customers make the most of their technology investments.

COMPANY PROFILE	
Company type	Limited Partnership
Annual turnover	Undisclosed
Number of Customers Total	Undisclosed
Number of Employees	Undisclosed
Inception	1989
Geographical coverage	Global

COMPANY CONTACT DETAILS	
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Equipos is a leading international supplier of client reporting and communications solutions. The award-winning Coric™ Client Communications Suite delivers robust institutional and private client reporting solutions with remarkable performance and proven scalability. Their international client base includes private banks, institutional asset management firms, third party administrators and global custodians. Client services teams have the flexibility to change the format and content of client communications quickly and cost-effectively. Reports can be designed, built and modified by client services users without technical assistance. Reports and other communications are delivered via the channel preferred by clients (print, online, via a mobile device).

COMPANY PROFILE	
Company type	Joint Venture
Annual turnover	Undisclosed
Number of Customers Total	Undisclosed
Number of Employees	Undisclosed
Inception	1999
Geographical coverage	Global

COMPANY CONTACT DETAILS	
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FERNBACH is a niche market provider for IFRS (multi-GAAP) accounting and risk management solutions in accordance with Basel II/III. Their modular software packages and best-practice methodology can be integrated quickly into customers existing environments. By using their flexible reporting tools it is possible to quickly perform any analysis required. The design logic incorporated in the application allows rules and formulas to be adjusted and optimised quickly and easily. The FERNBACH solutions enable customers to meet their business and technical requirements for everyday operations in the finance, risk and compliance sectors at highly competitive prices and implementation timeframes.

COMPANY PROFILE	
Company type	PLC/Listed firm
Annual turnover	Undisclosed
Number of Customers Total	More than 50
Number of Employees	150
Inception	1986
Geographical coverage	Asia, Europe, Africa

COMPANY CONTACT DETAILS	
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icubic AG, based in the "City of Science", Magdeburg, develops, produces and distributes successful software solutions for the international financial community. In just a few years, an established company with products for electronic securities trading and its associated services has emerged from the original group of committed Risk Management Advisers. icubic offers intelligent software covering every area of trading on electronic markets and platforms throughout all financial sectors. The software makes it possible to be active on multiple markets simultaneously while utilising only one system. Intelligent automation and the streamlining of trading workflow lead to a distinguishable speed advantage, while maintaining a focus on execution management.

COMPANY PROFILE	
Company type	Corporation
Annual turnover	$13 Million
Number of Customers Total	12
Number of Employees	104
Inception	1999
Geographical coverage	Global

COMPANY CONTACT DETAILS	
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InfoReach is an independent provider of multi- and cross-asset, broker-neutral solutions for electronic, algorithmic and high-frequency trade analysis, management and execution of global equities, futures, options and forex. The signature of InfoReach is functional depth, flexibility and enterprise-strength performance, with intelligent adaptability for future needs. The technology is configurable to deliver customer-unique adaptations without adding development time and costs. InfoReach streamlines clients' workflow and allow them to rapidly respond to market opportunities by consolidating all the trading tools, global market connectivity and execution capabilities that they need in a single system.

COMPANY PROFILE	
Company type	Corporation
Annual turnover	Undisclosed
Number of Customers Total	Undisclosed
Number of Employees	Over 250
Inception	2000
Geographical coverage	Global

COMPANY CONTACT DETAILS	
Contact	Peter Van Wely
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Lombard Risk provides risk management and regulatory compliance solutions to the financial services industry and large corporations around the world. Their solutions reduce the risk inherent in collateralised trading operations, enable firms to measure and manage liquidity and meet the demands of global regulators. The clients of Lombard Risk include over 30 of the world's "Top 50" banks, nearly half of the banks operating in the UK (where the corporate headquarters is located), as well as several industry leading banking businesses, investment firms, asset managers, hedge funds, fund administrators and large corporations worldwide.

COMPANY PROFILE	
Company type	PLC/Listed firm
Annual turnover	Undisclosed
Number of Customers Total	Undisclosed
Number of Employees	over 120
Inception	1986
Geographical coverage	Global

COMPANY CONTACT DETAILS	
Contact	Rebecca Bond
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Markit is a leading, global financial information services company with over 2,800 employees. The company provides independent data, valuations and trade processing across all asset classes in order to enhance transparency, reduce risk and improve operational efficiency. Its client base includes the most significant institutional participants in the financial marketplace.

COMPANY PROFILE	
Company type	Corporation
Annual turnover	Undisclosed
Number of Customers Total	Undisclosed
Number of Employees	2800
Inception	2003
Geographical coverage	Global

COMPANY CONTACT DETAILS	
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Milestone Group is a global provider of advanced software solutions to asset managers, fund product manufacturers and distributors, life and pension companies, and fund administrators. Its pControl funds platform is a single application platform delivering market leading operational efficiency, transparency and control to key business functions. Milestone Group brings global insight and proven technology to deliver a unique business partnership.

COMPANY PROFILE	
Company type	Limited Partnership
Annual turnover	Undisclosed
Number of Customers Total	Undisclosed
Number of Employees	Undisclosed
Inception	1998
Geographical coverage	Global

COMPANY CONTACT DETAILS	
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NICE·ACTIMIZE

Actimize, a wholly owned subsidiary of NICE Systems, provides financial crime prevention, compliance and risk management products and services to the financial services industry. Primarily headquartered in New York City, Actimize sells its software to all types of firms and regulators worldwide. Actimize is the only vendor with core offerings across all financial crime prevention and compliance areas built on a unified reporting and case management platform. Actimize is best known for its development and innovative use of sophisticated analytics and modeling techniques that uncover anomalous financial transactions, like fraud, money laundering and market manipulation.

COMPANY PROFILE	
Company type	Public company
Annual turnover	$600 Million
Number of Customers Total	Over 250
Number of Employees	Undisclosed
Inception	1996
Geographical coverage	Global

COMPANY CONTACT DETAILS	
Contact	Irene Harvey
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NASDAQ OMX

The inventor of the electronic exchange, The NASDAQ OMX Group, Inc., fuels economies and provides transformative technologies for the entire lifecycle of a trade — from risk management to trade to surveillance to clearing. In the U.S. and Europe, OMX owns and operate 24 markets, 3 clearinghouses and 5 central securities depositories supporting equities, options, fixed income, derivatives, commodities, futures and structured products. Their award-winning data products and worldwide indexes are the benchmarks in the financial industry. Home to approximately 3,400 listed companies worth $6 trillion in market cap whose innovations shape our world, OMX give the ideas of tomorrow access to capital today.

COMPANY PROFILE	
Company type	PLC
Annual turnover	$2,560 Million
Number of Customers Total	Undisclosed
Number of Employees	Over 2,500
Inception	1971
Geographical coverage	Global

COMPANY CONTACT DETAILS	
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Otkritie Financial Corporation

Otkritie is one of the Russian largest financial groups. Through its five core businesses — investment bank, broker, commercial bank, asset management, and insurance business — Otkritie offers financial solutions to private, corporate, and institutional clients, as well as global investors. The group capitalises on their top-notch team and transparent ownership and governance structure to make swift decisions, and move forward quickly, in the meanwhile sustaining their business resilient and reliable. In recognition of its performance, Otkritie was admitted to World Economic Forum's Global Growth Companies Community which consists of nearly 400 members.

COMPANY PROFILE	
Company type	Corporation
Annual turnover	$1.767 Trillions
Number of Customers Total	Over 2,000,000
Number of Employees	Over 7,000
Inception	1995
Geographical coverage	Asia , Europe , North America

COMPANY CONTACT DETAILS	
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PROFILE Systems & Software

Founded in 1990, PROFILE Software is a specialised financial solutions provider, with offices in Geneva, Dubai, London, Singapore, Athens and Nicosia, delivering market-proven solutions with an exceptional track record of successful implementations in the Banking and Investment Management industries. PROFILE is recognised as an established and trusted partner in a number of regions, offering a wide spectrum of solutions to the financial services sector. PROFILE's solutions enable institutions worldwide to align their business and IT strategies while providing the necessary business agility to proactively respond to the ever-changing market conditions.

COMPANY PROFILE	
Company type	PLC/Listed firm
Annual turnover	Undisclosed
Number of Customers Total	200
Number of Employees	102
Inception	1990
Geographical coverage	Global

COMPANY CONTACT DETAILS	
Contact	London office
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SAGE SA, a privately-held software publisher, develops leading financial software that satisfies the needs of global financial organisations and assists them in improving their productivity while focusing on their core competence. SAGE SA, which was founded in 1986, has its headquarters in Switzerland, and has branches in Dubai and Singapore. Over the years, it has developed a cutting-edge front to back-office banking system, called Prospero, the Global Banking & Wealth Management System.

COMPANY PROFILE	
Company type	Private company
Annual turnover	Undisclosed
Number of Customers Total	Undisclosed
Number of Employees	80
Inception	1986
Geographical coverage	Asia, Europe

COMPANY CONTACT DETAILS	
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Both a software publisher and an Application Services Provider, SLIB is a trusted partner to the financial services industry, always on the lookout for changes in the European securities landscape, by supplying its customers with innovative software solutions to streamline their securities processing and improve their performance, whilst mitigating their risks. SLIB solutions support securities order and trade, clearing, settlement, custody, online vote prior to General Meetings and risk control. To date 50 securities services providers throughout Europe are using SLIB solutions.

COMPANY PROFILE	
Company type	Limited Partnership
Annual turnover	More than $18 Million
Number of Customers Total	Over 50
Number of Employees	110
Inception	1988
Geographical coverage	Europe

COMPANY CONTACT DETAILS	
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Truphone is a mobile network with a unique voice and SMS recording facility. As financial regulation continues to tighten on a global basis, mobile recording is emerging as one of the steeper technical and operational challenges for the global banking community. Truphone Mobile Recording has the flexibility to comply with evolving legislation whether you are doing business in the UK or internationally. The platform records to Truphone's secure managed service or a customer-designated site. Truphone's in-network solution does not interfere with user behaviour — calls do not need to be made through an application and there are no call connection delays.

COMPANY PROFILE	
Company type	Limited
Annual turnover	Undisclosed
Number of Customers Total	Undisclosed
Number of Employees	Undisclosed
Inception	2006
Geographical coverage	Global

COMPANY CONTACT DETAILS	
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ValidSoft offers world-class telecommunications based security solutions, custom built for the new mobile landscape, and are the only software security company in the world with three European Privacy Seals. ValidSoft has the world's only indigenous, IP based, secure multi-layer, 5-factor indigenous platform, preventing fraud before it happens and virtually eliminating very costly false-positives. At the heart of their security model is a focus on real-time "invisible" authentication and transaction verification.

COMPANY PROFILE	
Company type	Private Limited Company
Annual turnover	$11.7 Million
Number of Customers Total	Undisclosed
Number of Employees	up to 30
Inception	2003
Geographical coverage	Global

COMPANY CONTACT DETAILS	
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ARQA TECHNOLOGIES

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New technologies from ARQA

FIX2Markets interfaces for low-latency (HFT suitable) infrastructures—FIX2LSE, FIX2MICEX, FIX2Plaza2—with pre-trade control for external platforms based on FIX

DMA solutions for all Russian exchanges, LSEG, WSE (UTP) as well as 20 other trading venues via technological partners

QUIK as a risk-server with inbuilt online pre-trade control supporting all major models of risk calculation

Test environment is available

The company

ARQA Technologies is a leader in Russian IT for financial institutions. The company provides front to back solutions to a wide range of market participants. Today the clientele of ARQA Technologies includes more then 300 banks, asset management and investment companies from Russia, Ukraine, Great Britain and Cyprus.

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