

Market efficiency achieved through regional integration

Just six short years ago, the Nordic Baltic market comprised of eight separate exchanges based in Copenhagen, Iceland, Helsinki, Oslo, Riga, Stockholm, Tallinn and Vilnius. Today, these exchanges make up the NOREX Alliance, a model market that was created based on regional expertise and technological infrastructure. The NOREX Alliance is fast becoming a showcase of efficiency and increased liquidity, and is reducing costs for a range of stakeholders, including exchanges and traders. [...story continues on p.2](#)



An opportunity for efficiency

By Anders Fridlund, Senior Advisor, Professional Services

Few industry participants would dispute that inefficiencies in back office processing are taking a toll on profitability. This mantra has been repeated over and over behind closed doors and on the conference circuit. According to an OMX study conducted by McKinsey & Co. in 2004, 70 percent of the securities processing costs in the transaction value chain are generated within the back offices of market participants, like banks and brokers. How did we allow ourselves to become so inefficient?

The answer can be found in the culture, economics and technological limitations of our industry. Traditionally, financial institutions target investments in technology toward profit centers like front office trading. Since this is where the money is made, heads of trading wield the power to get what they ask for. With the recent economic downturn, budgets have been squeezed beyond proportion. As a result, technology investments in general have been limited, especially in cost centers like the back office. On top of [...story continues on p.4](#)

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President's Letter



2004 was an exciting year at OMX Technology. We made many changes, one of the most notable being the launch of our new brand platform. We also strengthened our senior management team. Paul Bennett, President of OMX Technology Asia Pacific, Carl-Magnus Hallberg, President Global Services, Maria Khorsand, President Financial Markets, Elizabeth Sipiére, President Banks & Brokers and Roland Tibell, President of OMX Technology Americas are all working to strengthen our business and improve our financial and operational performance.

Still, we recognize that many challenges lie ahead for our industry. Among them is the need to revitalize the technology infrastructure to strengthen competitiveness, embrace standards, improve efficiency and cut costs. The global economy is in recovery, and now is the time to forge alliances and create a solid platform for growth.

This issue of **market view** contains articles that illustrate how some of our customers are coming to grips with these issues. In particular, you can read about the the NOREX Alliance, which was created to capitalize on economies of scale across the Nordic Baltic region. We also explain how the exchanges in Helsinki, Tallinn and Riga migrated their systems to a single trading platform.

We hope you will find this newsletter both interesting and informative. We welcome your feedback. Please send all comments to info@omxgroup.com. And as always, we thank you for your business.



Klas Ståhl, President, OMX Technology

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Market efficiency achieved through regional integration

More importantly, there are lessons to be learned by exchanges in other parts of the world. This model proves that exchanges in the same geographic area can improve their external efficiency and pursue a growth strategy through partnerships.

The NOREX Alliance members are required to standardize on the same technology platforms and synchronize their rules, processes and procedures. Alliance members benefit from reduced overheads, because they can share the cost of systems, research and development, as well as maintenance of the IT infrastructure. At the same time, the partnership increases the pool of potential investors and improves liquidity, since they have connectivity to several exchanges through one system. And, with greater reach, member exchanges can extend their market offerings.

Improving the efficiency of the market infrastructure is the key to market growth. "A study conducted by McKinsey & Co. for OMX shows that trade volumes and market liquidity are higher in more efficient markets," says Jukka Ruuska, President of OMX Exchanges and Chairman of NOREX. "There is a clear correlation between the size of the transactions, the unit cost and the velocity of the market."

Like smaller marketplaces in other parts of the world, prior to the formation of the NOREX Alliance, the various Nordic Baltic exchanges were finding it progressively difficult to compete on their own in an increasingly global market. A basic set of fundamentals inhibited their growth. Disparate, nonintegrated systems made it difficult to distribute information in a standardized, timely fashion. As a result, investors lacked sufficient data to make informed choices, discouraging them from venturing beyond their domestic markets.

Physical limitations also came into play. The space available on trading desks is limited, and it is impossible to fit in every exchange's trading screen in addition to market data dissemination systems, analytical tools and so forth. "With NOREX, banks, for example, don't need eight different interfaces to link to the various exchanges in the Nordic Baltic region. They also don't have the burden of updating each of these with every new release," says Ruuska. "Now they can deal with one system, interface and access point for all NOREX markets. They can trade on several international exchanges without incurring additional costs."

Taking integration a step further, OMX has a vision of integrating the Nordic Baltic markets into one single market through both mergers and alliances. Today, OMX Exchanges comprise the stock exchanges of Helsinki, Riga, Stockholm, Tallinn and Vilnius. OMX has also signed a letter of intent with the Copenhagen Stock Exchange.

But it is not essential for exchanges to merge in order to take advantage of integration. Oslo Börs and Iceland Stock Exchange, for example, are strong NOREX Alliance partners that have retained their independence while still benefiting from the cooperation with other exchanges in the region.

The goal, according to Ruuska, is to enhance the attractiveness of the region by creating more efficient transaction solutions, integrating markets and developing more compelling service offerings. As the markets become more integrated, there will be more opportunity to introduce stronger sector offerings. For instance, the Nordic Baltic information technology sector is the largest in Europe, representing 50 percent of the market capitalization.

"This model proves that exchanges in the same geographic area can improve external efficiency and pursue a growth strategy through partnerships."

"We are inviting other Nordic exchanges to participate in our vision, regardless of whether they are independent entities or merger partners," says Ruuska. "Our primary focus is on increasing efficiency in the Nordic Baltic region. We have fulfilled our targets for 2004, and by 2006 we intend to be an integrated market." ■





that, market participants are extremely reluctant to invest heavily in back office technology until a dominant standard emerges.

Academic research shows a high correlation between the efficiency of the value chain and velocity (the rate at which money flows from one transaction to another) on the exchanges. The bottom line is that high costs and inefficiency in the back office affect the turnover on exchanges. Therefore, reducing transaction costs in the securities value chain

should be a priority for all players in the securities industry.

This cannot be done unless firms commit to integrating the IT infrastructure of the entire value chain from the exchange to the back office. One way is to deploy a solution that increases automation, real-time clearing and straight through processing (STP). STP is desirable because it lowers risk and improves overall efficiency. Markets such as OTC derivatives, for instance, would benefit tremendously by reducing the time it takes to confirm and clear trades from weeks to seconds.

By its nature, consolidating back office processing into a utility consolidates volumes and increases scale economies. This can reduce total costs dramatically. At the same time, consolidation frees firms to concentrate on delivering value added services to their clients. In the Nordic market, where players are fairly homogenous, small, back office utilities

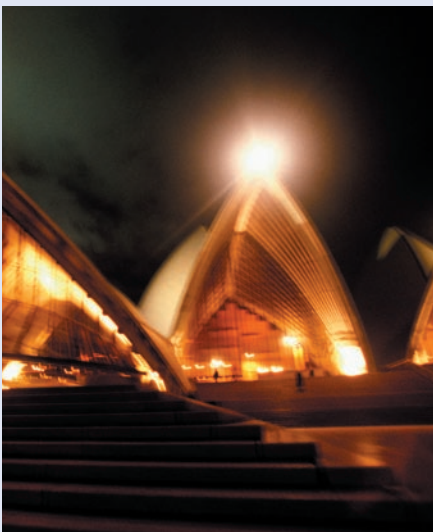
can cut costs by up to 50 percent. Although the percentage savings may vary slightly depending on the region, the scale economies in back office processing are enormous.

In addition, through utilities and outsourcing agreements, banks and brokers can take advantage of a variable cost structure. In particular, consolidation helps firms rectify the mismatch between their fixed cost base and variable revenue stream based on fluctuating volumes.

Without improving efficiency and integrating the value chain, the cost of complying with new regulations – from Basel II to Sarbanes-Oxley – will be significant. Firms that are part of a shared utility can share the development costs with others, which yields tremendous benefits in terms of reduced costs and risk, as well as faster time to market. And, more importantly, these firms can then focus their activities on delivering value added services to their clients. ■

Market Focus

OMX-Palion merger strengthens offering in Asia-Pacific



OMX recently acquired Palion Pty Ltd. of Australia. Palion has a strong track record of providing systems for derivatives accounting and clearing, trade order management and risk management to exchanges, clearinghouses and market participants in Asia-Pacific. Drawing on the strengths of both parties, the combined entity is expected to meet the strong demand for integrated solutions across the region.

During early discussions, OMX and Palion identified several areas of synergy. The companies have similar expertise across the transaction chain. One of Palion's strengths, however, is in the banks and brokers community, especially in Asia-Pacific. There is

now real potential to leverage the OMX presence across the region to reach those markets that already run an OMX trading, clearing or depository system. In this way, OMX can become a true facilitator in driving efficiency across the transaction chain, from broker execution all the way through to settlement.

"Through the combined entity, we can help exchanges in the region deliver front office execution and back office processing services to their members," says Paul McKeown, general manager, Banks and Brokers at OMX. "As a team, we have far more potential to provide a full service offering than if we were to do it separately." ■

How to speed up a complex migration

As the owner of the stock exchanges in Stockholm, Helsinki, Riga, Tallinn and Vilnius, OMX wanted to migrate all systems to the same technology platform that was used in Stockholm and in the NOREX Alliance. Considering the multitude and variety of affected systems, this complex migration practically set a record for speed. The success of this complex change management process can be attributed to careful planning and solid teamwork. Now other financial institutions can learn from this experience and benefit by following the same methodology.

Five completely new systems were installed in Helsinki and nine in the Baltic exchanges. In addition, 10 systems were adapted to the new infrastructure. It required a lot of interaction between the exchanges and their members, as well as close cooperation among business and IT managers.

“The project risk was limited by implementing the system in stages...”

The migration was done in four stages: the design study, integration, testing and member rollout. During the design study, a team of experts analyzed the existing Helsinki systems from a business and technical perspective and mapped their functionality to the new systems. This exercise revealed several gaps. For instance, the plan was to replace the Helsinki cash trading system with another platform. Yet two functions, company disclosure distribution and index calculation, could not be mapped to any existing systems. The decision was taken for OMX Technology to develop a new system for distribution of company disclosures and for a partner to develop a new system for index calculations.

The design study also resulted in a long list of downstream systems that had to be changed, including all external interfaces from trading to clearing and settlement at the CSD. A thorough analysis of the internal interfaces between these systems resulted in some additional adaptations.

Before the migration, the various exchanges ran a multitude of disparate systems, many of which were not harmonized. “The main challenge was to consolidate everything onto the same platform so the members could log in to one system,” explains Conny Andersson, vice president

at OMX Technology and project manager for the migration. “We wanted a single interface to trade on all OMX exchanges.”

At the outset, two potential vulnerabilities were identified: the interfaces would not function if the relationships between the systems were not defined properly, and there was a chance that the members would not be able to comply with the time schedule, thus causing delays. “Since all these systems are interlinked, we couldn’t allow a failure on any of them,” says Claes Urban Dackberg, vice president Member & Products, Cash Market, OMX Exchanges.

To resolve these issues, the project leaders created a road map defining the relationships between the systems. Dedicated project managers and migration teams were assigned, and the entire migration was supervised by an overall steering committee.

The project risk was limited by implementing the system in stages instead of going live “big bang” style. That way, the project team could evaluate subsystems individually and avoid resource problems on the final production date.

According to Dackberg, good planning was essential to the success of the project. “Without good planning and controls, the project could have failed,” he says. “It was an excellent project and everything was delivered on time.”

For member firms like Instinet Group, the largest global electronic agency securities broker, the migration was straightforward and beneficial. Instinet had already implemented the solution for the Stockholm Exchange, so repeating the exercise for Helsinki simply involved a relatively minor amount of testing and updating over the course of a few weeks. “Since we had laid out a detailed migration plan, there was almost no risk associated with the project,” says Alain Leroux, vice president, senior project manager - Exchange Linkage Group at Instinet. “The key benefit for us is reduced workload, since we can use one piece of software to access two exchanges.”

Institutions that are planning a similar exercise should not underestimate the importance of having project managers that can work to agreed timeframes and contribute extra resources when necessary, Dackberg adds. It also helps to have an internal integrated test system that replicates the full production environment so issues can be resolved at an early stage.

Andersson also offers some sound advice. “Spend a lot of time planning details like the interfaces between the systems,” he says. “Then, do the migration roll out very fast.” ■

News roundup

OMX and Copenhagen Stock Exchange sign Combination Agreement

OMX AB and the Copenhagen Stock Exchange have signed an agreement regarding the combination of Copenhagen Stock Exchange and OMX AB, pending, among other things, shareholder approval. The move represents the next step in realizing the vision of an integrated Nordic and Baltic securities market and further establishes OMX as one of Europe's leading exchange organizations.

Issuers, members and investors will reap the advantages of increased liquidity, efficient member access and a broader range of services. Shareholders will also benefit through cost synergies as well as an expected higher activity on the cash and derivatives markets over time, resulting in increased revenues for the combined entity.

Singapore Exchange wins award for trading platform powered by technology from OMX

Singapore Exchange (SGX) has won the prestigious 2004 Adaptive Enterprise Award for creating the world's first combined equities and derivatives trading platform, powered by technology from OMX.

SGX's trading platform – SGX Quest (SGX Quotation and Execution System for Trading) – is based on CLICK XT™ from OMX. The system supports multiple markets on a single platform, so that global investors would have access to the widest possible range of trading opportunities. And the versatility of the solution means that SGX can continue to pursue strategic alliances and enter new market areas without having to invest in additional trading platforms, adding up to greater efficiency for both the exchange and its members.

HCL Technologies India chosen as offshore development partner

OMX Technology has signed a five year agreement with HCL Technologies of India to collaborate on the offshore development, enhancement and maintenance of certain OMX systems. The move will enable OMX to remain flexible and competitive, and increase its focus on research and development.

With 13,500 employees and \$387 million in revenues, HCL Technologies is a leading technology supplier. The company has four development centers in India, and services customers such as Deutsche Bank, Cisco and British Telecom. Its key securities markets include LCH Clearnet, Thomson and National Stock Exchange.

OMX to provide the CONDICO™ trading and clearing system to OPCOM, the Romanian power market operator

The Romanian Power Market Operator (OPCOM) has awarded OMX a contract to deliver the trading and clearing system CONDICO™ for financial energy trading. Recognized as a leader in the Romanian power market liberalization, OPCOM has operated the Romanian power day-ahead market for four years. By starting the deployment of a new platform for trading and clearing of power derivatives, this contract represents the next step towards the establishment of a well-functioning power market.

“OPCOM considers the partnership with OMX to be a solid base for the future success of this new financial power marketplace,” declared Victor Ionescu, CEO, OPCOM.

ISE executive joins OMX Technology

Paul Bennett has joined OMX as president of OMX Technology for the Asia-Pacific region. Previously, Bennett was senior vice president for market operations at the International Securities Exchange (ISE). A member of the team that founded ISE, Bennett was responsible for daily operations, product development for ISE trading systems and the project management office. Prior to joining ISE, Bennett worked for the Australian Stock Exchange where he managed the project to migrate the trading of ASX options products from floor based to fully electronic markets.

Agreements signed regarding merger of APK and VPC

Final agreements have been signed in the merger between the OMX-owned Finnish CSD, APK and its counterpart in Sweden, VPC. The creation of a Finnish-Swedish CSD, known as NCSD, will further facilitate the harmonization of rules and settlement processes. It will also promote the development of a common technology platform, based on the EXIGO CSD™ system, which will accelerate the horizontal integration of the post-trade part of the securities transaction chain. The move will make the Nordic financial markets more efficient and competitive for issuers, market participants and investors. ■

Trends affecting marketplaces

OMX recently appointed Maria Khorsand as president of its Financial Markets business area. Khorsand, a technology veteran with extensive experience in international marketing and sales, recently spoke to **market view** about the trends and challenges facing marketplaces today.

What technology trends are affecting marketplaces today?

I see three key trends – the move towards integrated trading platforms, a strong focus on standardization, both from a systems and connectivity perspective, and an increased awareness of the monetary and technical benefits of partnerships, whether they take the shape of marketplace alliances or selective outsourcing.

The high cost of automation, the need to achieve economies of scale and the demand for fast, efficient access to global markets is driving mergers and partnerships. We expect to see that trend continue as exchanges strive for increased market share and profitability.

What are the main IT challenges facing exchanges?

The economic recovery has shifted exchanges' focus from cost reduction to efficiency and growth. On a high level, maintaining a flexible infrastructure and an IT strategy that is aligned with long-range business plans are critical to future success. On a daily basis, exchanges are being challenged to maintain high levels of performance and stability. And, with an increasing proportion of automated trading leading to smaller trades, but at faster speeds, capacity is becoming more

“Exchanges must be creative and find ways to use technology to increase revenue.”



of an issue. Finally, as margins continue to be squeezed, technology can no longer be viewed as only a cost center. Exchanges must be creative and find ways to use technology to increase revenue.

What is OMX's philosophy on technology development?

As a company, OMX follows six simple development principles: **interoperability** to create an open environment for future products; **compatibility** with earlier versions of similar technology; **scalability** to migrate into expanded capabilities without total replacement; **accessibility** in terms of sales, timely delivery and equipment maintenance; **reliability** to assure maximum uptime and **simplicity** to facilitate platform and interface standardization.

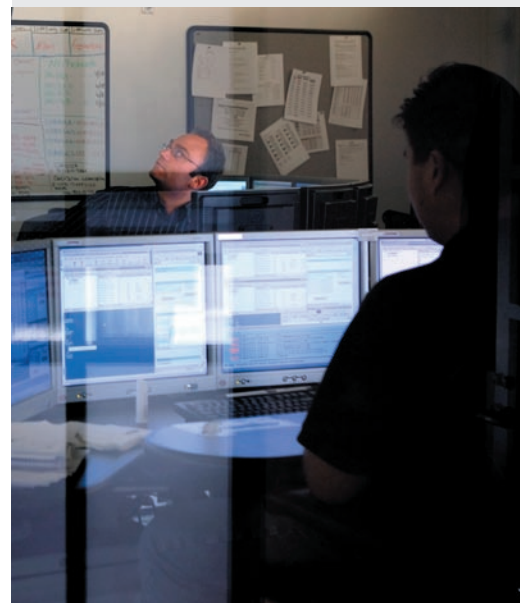
The integration of platforms based on open standards is a core competency of OMX. A strong and effective interaction between our application software and systems and network management software is critical to our business. As we continue to develop our products, we will add service-oriented architectures to improve connectivity to our applications. ■

Robust architecture proved by HP/ISE benchmarks

Recent benchmark tests at the International Securities Exchange (ISE) confirm the robustness of the architecture provided by OMX and Hewlett-Packard (HP). The results also indicate that the scalability of the architecture will continue to meet customers' needs in the future.

There are six options exchanges in the US, all generating trades and market data, making performance and capacity planning perhaps more challenging than in any other options market. The six options exchanges are required to contribute data to the Options Price Reporting Authority (OPRA) and route orders to the exchange with the best prices. According to HP, six years ago the options industry was hitting peaks of about 600 messages per second (MPS). Now, it is seeing peaks of over 12,000 MPS. ISE is currently certified at 32,000 MPS and plans to advance to 52,000 MPS in the near future.

HP is soon to publish a detailed white paper on the benchmark tests. More information about the ISE implementation can be found on the web at <http://h71000.www7.hp.com/openvms/brochures/ise/>. ■



Magnus Böcker speaks at SIBOS

A time for growth – that was the theme of SIBOS 2004, SWIFT's annual conference held in Atlanta in October. At SIBOS, delegates attended four days of sessions and panel discussions on how financial institutions can prepare for the challenges that lie ahead in payments, securities processing and trade finance. They talked about how they can automate to improve efficiency and reduce costs, inspire customer confidence and contend with regulations old and new.



OMX president and CEO Magnus Böcker had the opportunity to share his views in a session entitled: *The future of securities trading technology: Where's the payback for automating the front office?* He was among a group of panelists from Credit Suisse First Boston, Franklin Templeton, Gartmore Investment Management and Clearstream International.

Exchanges around the world are increasingly relying on automated trading, although some, most notably the New York Stock Exchange, have remained loyal to open outcry. In an industry that has suffered mass layoffs, some markets purposely have not jumped on the bandwagon because they believe it will put employees out of work. But reality has set in. Those who run from technology are going to be replaced by people who know how to leverage it to improve operations and performance.

Böcker commented that the financial services industry has come a long way in advancing technology in the last 10 to 15 years. Yet, industries like telecommunications have achieved a much higher level of efficiency. "Our industry is still very fragmented," he said. "We are still just at the beginning of the change."

The lack of agreed upon standards, especially for back office processing, is hindering progress in the industry. Market participants

have delayed making technology investments until they know which standards will emerge as the dominant ones. This is where newer markets have a lead over older ones in the US and Europe. As Böcker said, "A lot of Asian players travel to the US and Europe to learn how not to do it."

Older stock markets in the US and Europe, for example, never really had a master infrastructure plan, although every incremental technology decision made sense at the time. But now they have grown into a mish-mash of nonintegrated systems that are expensive to support and maintain. Their economic viability depends on coming to grips with this problem.

More technical integration is the answer. Exchanges need to decide what type of market model they want to have, Böcker commented. In 2000, for example, the European stock exchanges agreed on a common market model for blue chips, but they still have different technology, he added.

He also pointed out that exchanges and market participants need to choose solutions that will give them the best "bang for their buck" and join with technology partners that can ensure quality service, scalable long term cost structures and the flexibility to meet future challenges. ■

OMX Technology

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