SPECTRUM

UPTIME STANDARD

Christophe Lehl, COO, Spectrum Markets, explains why we should be talking about trading venues' resilience

Over the past two decades, global capital markets have changed fundamentally under the influence of rapid technological advances and a regulatory paradigm shift as a result of global financial crises. The widespread introduction of electronic trading systems towards the end of the last century was considered a technical revolution at the time. Between then and now, there have been quantum leaps yet again. Latency times are getting ever shorter, algorithms execute automated trading strategies, from the identification of trading signals to the execution of a trade. What is more, there are new market participants on both the institutional and private side, and the interplay of all these factors has resulted in significantly increased trading dynamics.

For us, these dynamics can be described as a base case scenario since we started three and a half years ago, and we consider this development to confirm our strategy. One could counter though that there has been virtually an ongoing crisis situation since the end of 2019 and that stock trading turnover rates and volatility naturally increase in times of crisis. However, statistics that compare the course of shareholdings and share trading over the long term clearly show that increasing dynamism in trading corresponds to a very long-term trend and can therefore be described as systemic. According to calculations by the global stock exchange association WFE[1], the global stock market increased twelvefold between 1990 and 2020 – the global stock trading volume at the end of this observation period was around $186tn, almost 33 times as high as at its beginning.

Shorter holding periods and higher turnover rates should come as little surprise to most observers, as does the realisation that market infrastructures have to "grow" with these higher demands if they have to deal with greatly increased volumes and volatility. In fact, many of them obviously have not yet – which seems astounding given that the disruptions in trading patterns did not appear overnight. Apparently, the European markets supervisory authority (ESMA[2]) took a similar view in its consultation[3] on market outages from September to December of last year. There, it stated that the significant market disruptions seen over recent years had only to a lesser extent been attributable to the increase in volatility. Instead, it suspected the proprietary systems of the trading venues themselves as the most likely cause for concern in association with operating market stability.

The causes of trading failures are very similar to the factors that prove to be obstacles to the scaling of trading infrastructures, thus severely limiting their flexibility in both directions. An outdated, inflexible technology stack doesn't just reach its limits quickly when transaction volumes explode and the market goes up and down very fast. It can also weigh on a venue's flexibility to swiftly adapt to new products. Conversely, a lack of flexibility will also aggravate reducing costs in periods where you employ less storage and computing capacity.

Most of the trading venues within the focus of ESMA's market outage analysis have been in place for a very long time. While they may have overcome the era of mainframe architectures, they still exhibit monolithic designs with batch-based processes performing the data traffic. Additionally, a mix of proprietary developments and standard hardware often hampers the migration towards more contemporary environments. Even if nominal capacities aren't being exceeded by volume peaks and system components interact frictionlessly, proprietary operating systems can also impose unwanted limits to operational stability, let alone their scalability and flexibility. In this context, time is not exactly alleviating things as it's not always just proprietary architectures turning 'legacy' or products and processes that change: bundling the relevant human expertise needed to successfully perform large platform migrations is becoming increasingly challenging, too.

I am aware of the blessing of the late birth of Spectrum Markets, which could be referred to as one of the digital natives among trading venues. Nevertheless, I want to point to the inherent challenges, not just those related to the turbulent market environment of recent times. Entering into a very competitive, highly regulated and technology-driven business means that this market will meet you with a healthy level of scepticism as the relevant players know best about the associated challenges. One shot is all you have to prove that your systems and processes run smoothly and remain resilient, particularly where you are going to offer virtually seamless trading, operating 24 hours a day, five days per week. While maintaining offices and teams across time zones are one thing, reducing the systems' maintenance and reconciliation periods to almost zero is another story.

On the one hand, as a market operator with a modern technology stack, a bespoke matching engine and trading available around the clock, you first have to convince the market that you are not crazy but have a clear plan. In addition, immediately after our launch, we found ourselves in one of the most volatile and active phases in the history of trading – which, we mastered sovereignly. Most recently, as part of the onboarding of Societe Generale as an issuer on our platform, we've increased our capacity significantly to accommodate the additional order volume and quote traffic.

IG Group, our London-based parent company, were able to contribute their expertise to the development of our trading engine. Experience it had gained in the context of their acquisition of U.S. derivates exchange Nadex (which has been sold in the meantime). The flexible design of the trading engine is at the heart of our success story, as you need to plan for what you cannot anticipate in advance given a universe of products that can expand rapidly in terms of volume and heterogeneity. There can be members that decide to take just a fraction of the market data you generate or the market authority saying the entire market has to stop trading in a certain instrument where, as a market operator, you will want to maintain trading in all other instruments. Fluctuations in the admission to trading of instruments are a regular task, with corporate actions, new ISINs or name changes to be performed as well. The more you rely on batch processes, the higher the probability that, during the matching processes, you will end up with two different results for the same transaction. This is why we put a very strong emphasis on the design and development of a trading infrastructure that is based on event-driven data processing and an architecture that is flexible enough to accommodate our clients' needs at any time.

As an MTF[4] under MiFID II[5], we have to comply with the strictest rules regarding the transparency, security and stability of their trading operations. While we can look back at a flawless performance ever since our launch, the industry as a whole can't – which is why ESMA has proposed a number of obligations for venues to meet in relation with outages. These include setting up crisis management procedures, outlining the steps to be taken to restore orderly trading. There must be an outage strategy, including necessary actions during an outage, a strategy for reopening once the problems are fixed, a communication strategy regarding the details of the outage and on how orders are treated.

While this approach is consistent with a view to the regulator's investor protection aims, some doubts may persist as to whether it will tackle the 'systemic' issue of outages. When one venue is down, this will most likely occur at a time when a potential alternative venue of similar size and with a comparable representation of instruments faces similar difficulties. In such a situation, transparency is small comfort to the investor. In my view, there won't be alternatives to an overhaul of the relevant venues' technical trading infrastructures and with DORA[6], there will be uniform requirements for the security of network and information systems in the financial sector, soon. Our own uptime is unchanged at 100% for over three years now. That doesn't mean we're immune to technical breakdowns, but you won't find such a level of performance very often today.

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[1] World Federation of Exchanges (WFE): www.world-exchanges.org: Statistics Portal, Annual Statistics Reports
[2] European Securities and Markets Association
[3] https://www.esma.europa.eu/press-news/consultations/consultation-paper-market-outages
[4] Multilateral Trading Facility
[5] Directive 2014/65/EU, the Markets in Financial Instruments Directive
[6] Digital Operational Resilience Act

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