In the public eye, risk managers have become the new Masters of the Universe. As the notion goes, there's no product, process or publication in the area of finance and financial markets that would see the light of day without their express prior consent. While this is far from a fair description of the role of a risk manager, it is true that the practice of risk management has changed considerably over recent years.

The increased importance of risk management for governance and compliance is however not the result of some valiant knights having captured companies' executive floors. It is the consequence of severe market developments and – maybe to the surprise of some – technological progress. A brief look into trading venue operations may show.

Business continuity and contingency/ disaster recovery planning are important elements to the operating model of any large or mid-sized company. This is inherent to the quite logic correlation between sales and revenues or, reversely put, a closed shop will not yield any return. Where there is any potential damage to 3<sup>rd</sup> parties involved or where an entire market is at risk of being adversely affected, operational stability and security of infrastructures become much more sensitive.

Trading venues definitely belong to those infrastructures whose well-functioning and safety can be considered critical in that disruptions can quickly become relevant beyond the boundaries of their own business. Since they play an important role in the financial system, efficient risk controls and processes are crucial.

Referred to as a blessing more often than not, technology is a critical component. On the one hand, technology has increased the speed, likelihood and quality of execution. It allowed for the formation of new trading platforms and is vital for the facilitation of the majority of today's trading; plus, it put market authorities in a position to collate large volumes of trade and transaction data for analytical and surveillance purposes.

On the downside, these benefits cannot obscure the risks technology may pose to the efficiency and integrity of trading venue – and markets as a whole. Technology failur may affect the network infrastructure execution systems, order routing systems data centres, surveillance systems or other critical components both at a hardware and a software level – threats may also arise from algorithm disorders.

All of the described may either be a result of a malfunctioning of the technology employed or from its vulnerability to force majeure events such as natural disasters, to human errors or to deliberate criminal or terrorist attacks. It seems obvious that any such occurrence will not just be harmful to the business of the operator of the trading venue but that it concerns market integrity at large.

Given modern trading environments' overall reliance on technology, it is hence very plausible that European Union Member States have agreed on obliging operators of trading venues to permanently demonstrate their systems' sufficient stability by having effective business continuity arrangements that address any disruptive incidents. Aside from these business continuity arrangements and the obligation to periodically review them, there are strict legal requirements to operators of trading venues to prevent disorderly trading and breaches of capacity limits. The latter include limits per member of the number of orders sent per second, mechanisms to manage volatility and pre-trade controls.

For that purpose, trading venues must be able to obtain information from any member (i.e. brokers etc.) on their organisational requirements and trading controls, suspend a member's or a trader's access to the trading system on own initiative or at the member's request. Trading venues must operate a kill functionality to cancel unexecuted orders submitted by a member should it deems this necessary or where required to by market authorities. This cancellation must also be conducted where the order book contains erroneous duplicated orders or upon request by the member if that member or its trading client are technically unable to delete their own orders. It must also be ensured that transactions can be cancelled or revoked if the trading venue's volatility management mechanisms or operational functions do not work properly. Finally, for the prevention of disorderly trading conditions, trading venues must also operate an order entrance throttling system allowing them to balance order entrance from multiple gateways if the system would otherwise collapse.

As pre-trade controls, regulation requires trading venues to implement price collars, automatically blocking orders that do not meet pre-set price parameters on an order-by-order basis; maximum order values, automatically blocking uncommonly large orders in value by reference to notional values per instrument; the same mechanism must apply to a maximum order volume, which automatically blocks orders uncommonly large by size.

For an operator of a trading venue, the above is just a fraction of what is necessary to develop, test, operate, test again and so on. From a risk and compliance perspective, pro-active surveillance over all of this is again just a fraction of the role. However, most importantly, these mechanisms and controls are there for good reasons: to ensure the robustness and resilience of trading infrastructures in order to foster market integrity by levelling the playing field, increasing transparency and protecting investors. You will only be sure to find these features when executing transactions on-venue.

Please don't hesitate to get in touch if you wish to receive further detail.

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