# **Exercise**

- Modular software means financially accessible to all
- Scalable, offering many deployment patterns
- Easily integrated with existing systems
- Real-time monitoring and alerting

xMetrics<sup>®</sup> is a unique modular software solution providing an independent holistic, real-time view of the end-to-end performance of some of the most complex trading environments. Our clients gain critical insight into the behaviour and performance of their systems and the market data they consume, helping them to continuously drive business and operational improvement and comply with regulatory requirements.

We help our clients achieve competitive edge.

## What is Flow Monitoring?

Flow monitoring is the process of capturing, decoding and interpreting network traffic that contains the business objects (buy order, sell order, market data tick, quote, etc.) associated with trading activities and using the decoded or interpreted output to expose the performance and activities of each tier of a highly distributed trading infrastructure.

## Why is it increasingly important?

As automated trading has become the norm across asset classes, investment firms, exchanges, execution venues and their outsourced technology providers need to fully understand the impact of any and all issues in terms of trading performance, business processes, regulatory and operational risk and customer/investor impact. Regulators are now demanding a level of Trading System monitoring, surveillance, alerting and trade reconstruction that only Flow Monitoring systems, with their multi-platform reach, can provide.

## Who needs it and why?

Any firm conducting Electronic Trading activities. When properly integrated a truly open trading performance monitoring product should be able to provide value across the entire organisation including compliance, IT infrastructure, application support, connectivity, trading strategy and the trading desk itself. Uniquely, Xmetrics<sup>®</sup> can be deployed as middleware, providing a control function to mitigate operational and regulatory risk, deliver against compliance obligations, help to significantly enhance execution performance and deliver differentiated client service.

# What makes xMetrics® different?

- The most flexible and cost-effective solution available to the market
- Can be integrated with and consume data from legacy solutions allowing clients to leverage previous investment
- A single pane of glass to Monitor All Execution, Market Data, Infrastructure and Network performance globally
- Fully modular software solution, easily integrated with existing systems and can be deployed as 'middleware'
- Can be run on commodity hardware
- Xmetrics<sup>®</sup> is provided as a managed service, reducing the burden of deploying and managing a comprehensive flow monitoring solution
- Easy Integration with clients' other systems including Big Data environments e.g. Hadoop and Apache Spark



#### Why choose xMetrics?

xMetrics<sup>®</sup> is truly unique in the flow monitoring space, it is the only highly modular, completely open, distributable software solution available and crucially, it is not delivered as an appliance. This means that xMetrics<sup>®</sup> is hugely scalable and can be deployed into new and existing environments in a way that, historically, would have been too complex or expensive. In short, Xmetrics<sup>®</sup> enables the instrumentation of global trading environments in real-time at a price point that is accessible to all. Xmetrics<sup>®</sup> can also be integrated with and consume data from legacy solutions that do not provide the depth of insight now expected by the market and as such clients can now leverage their previous investment more effectively, whilst still benefiting from the market leading data analytics and visualization that Xmetrics<sup>®</sup> provides.

#### xMetrics<sup>®</sup> key benefits

At the heart of xMetrics<sup>®</sup> is an engine that generates rich business and technology data.

Xmetrics<sup>®</sup> can track, alert on and store for analysis any transaction – e.g. Ticks, Quotes and Orders - in any trading environment across all tiers and Asset Classes in real-time, with no impact to production flow.

- Hugely scalable and can be deployed into environments in a way that historically would have been far too complex or expensive
- Highly Powerful Correlation & Root Cause Analysis, including one to many relationships and summarization
- Complete multi-hop visibility of the life cycle of every order and market data tick independent of protocol changes to ensure full visibility of the end to end trading process
- Enrich data captured and created by Xmetrics<sup>®</sup> with data from external data sources
- Create and alert on derived metrics not inherent in the raw data

- Receive powerful summary and per-transaction real-time adaptive alerting from a business, application and network perspective, including all common statistical measures, including arbitrary percentiles and standard deviation (jitter)
- Instantly pinpoint the emergence of any market data, execution, network, application or hardware issues that could damage execution performance, customer experience or potentially breach regulatory requirements
- Easily deliver bespoke data sets, analysis and visualisation for segregated user groups and functions
- Deliver actionable insight for users to take control of issues as they arise
- Forensically replay captured traffic, providing in depth analysis of market or trading system issues after the event and facilitate backtesting

- Can be used with ISV applications such as ION Marketview, Horizon or Fidessa, can support any Exchanges/ Venues and asset classes and can monitor the quality of multicast Market Data Feeds
- Offering fully open access to all data, Xmetrics<sup>®</sup> does away with the "islands of data" problem and provides a mechanism for its rich data to be streamed into or queried by the Client's existing systems using a freely available public protocol specification or standard interfaces

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the evolution of flow monitoring