

A Better Approach to Market Surveillance: A Networked Solution

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This document describes an alternative to centralized market surveillance solutions.

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Introduction

As markets have become ever more fragmented, market surveillance done by exchanges and other execution venues have suffered from a lack of consolidated data. Only having access to data on their own trading platform has obvious drawbacks. As an example a trading participant might be layering on one execution venue and executing the offsetting trade on another. Even though each of these execution venues has sound market surveillance practices they might miss this event due to lack of consolidated data.

What might appear as the most straightforward solution to this is to centralize market surveillance by collecting data from all execution venues. This is indeed the route is taken or being considered by many regulators. One of the more well known examples is the CAT initiative in the U.S.

The purpose of this article is to examine if there are alternatives to the centralized solution market. In order to constitute an alternative a solution must fulfill two criteria:

- Offer the same or at least almost the same advantages as the centralized solution.
- Possible to implement at a lower cost than the centralized solution.

The article starts with defining the advantages and disadvantages of a centralized solution and then goes on to examine an alternative.

Pros and cons of a centralized solution

The obvious and easily understood advantage of a centralized solution is having access to data from all execution venues. For proponents of the centralized solution this is the foremost and indisputable argument. Adversaries have an equally indisputable argument, namely cost. The direct costs associated with establishing these centralized solutions are substantial, adding significantly to the cost of trading.

Since these two arguments are well known they will not be further discussed. Instead two less obvious but maybe equally important drawbacks of a centralized solution will be discussed.

Execution venue specifics

Many execution venues have specialized market models differing quite radically from the standard continuous price-time matching employed by larger exchanges. Examples are previously phone-based OTC-markets moving to automated execution environment as a result of new regulation. But there also many examples of established exchanges deploying non-standard market models such as Börse Stuttgart in Europe.

In other cases it is the asset classes themselves which constitute the complexity. Maybe the best example is the power market which very often overlooked as being just another financial market while in reality displaying more differences than similarities.

Trading participants sometimes have a trading behavior specific to a certain execution venue. This not only true for local trading participants but also for global players adapting to local market models.

A market surveillance team local to an execution venue will have specialized knowledge both with regards to the local market model and trading participant behavior, enabling them not only to fine tune the set of suspicious patterns that are looked for, but also mandate collection of data, specific to the local execution venue.

To build up the same specialized knowledge in a centralized solution is very hard. This constitutes a significant and often overlooked disadvantage of centralized solutions.

Stifling innovation

While innovation and creativity within the financial community have to a certain extent taken on a bad name in recent years it is the driving force that on a long term ensures an efficient market place.

A centralized solution will imply a certain rigidity both in terms of:

- What data that is collected.
- How it is collected.
- What suspicious patterns that are monitored for.

A newly created market place deploying new market models potentially trading new asset classes might not fit into the rigid structure imposed by a centralized solution.

If the entity running the centralized solution is not agile enough to accommodate the changes required by the new market place this runs the risk of effectively creating undesirable entry barriers for new market places or indeed asset classes.

What makes the situation even worse is that new and innovative market places/asset classes often experience an initial phase where it is gradually established how to best perform surveillance and apply existing rules sets. Such a period implies frequent changes to what data that is collected and exactly what rules that are monitored for. From common experience centralized solutions have a hard time coping with such frequent changes.

Lowest common denominator

A process where a centralized solution is established is inherently a complex process involving a multitude of parties representing different viewpoints. Coming to a conclusion will involve compromises, while necessary these tend to lead to the lowest common denominator solution.

An alternative to the centralized solution

A network approach

Is there an alternative to the centralized solution? Yes, there is.

A networked solution where local surveillance entities exchange information between them have most of the advantages of the centralized solutions while avoiding the drawbacks of the centralized solution and indeed offer some unique advantages of its own. The idea is that instead of collecting all data in central repository on a continuous basis data is exchanged only when actually needed.

The solution can operate on several layers; Regulator<->Execution Venue, Execution Venue <-> Trading Participant etc.

What type of information is then relevant to exchange between market surveillance entities? The following list is not exhaustive in anyway but serves to illustrate the idea:

- Request/Response regarding a specific event, example:

Request: Layering was observed at trading venue A, time period T, participant P. Was offsetting trade done at venue B?

Response: Yes, Traded volume V at Price etc.

- General trading information, examples:

Request: Give me all trades during time period T, participant P.

Response: T1, T2 etc.

Request: Give me aggregated trading statistics for time period T, participant P.

Response: Aggregates trading statistics.

In order to achieve for the information exchange to be useful it needs to fulfill a number of practical aspects. These are:

- Formalization. The exchange of information needs to be formalized, i.e. understandable for a computer as opposed to just free text, for several reasons:
 - o Enable market surveillance systems to visualize requests to users. In the layering example above a good system implementation would bring up a market summary view highlighting the activity of the participant during the relevant time period. An answer template would be pre-populated ready to be amended or simply approved by the market surveillance staff.
 - o Facilitate automated responses. Surveillance staff should be able to setup the system to automatically respond to certain type of requests from a selected set of requesters. Natural candidates would be standard requests for trading data as described in the examples regarding trades as well as aggregated trading statistics.
- Use of standard communication protocols. It is vital to minimize the implementation effort, therefore a standard protocol like FIX should be used for communication between systems. Obviously whatever protocol is chosen it will need extensions but is a lot better to start with an established protocol as opposed to invent something completely new.
- A set of well defined base of messages/data should be defined and maintained by a non-for profit organization. This base set should be kept at a minimum.

While there certainly is a need for an agreed set of base messages/data it should be easy for involved entities to extend it. Once again there is a similarity to how FIX works.

Advantages of the networked solution

The base idea of the networked approach to offer almost the same advantages as the centralized solution but at a fraction of the cost. There are however several advantages specific to the networked solution. Some of these will be discussed below

It is possible to create clusters of entities exchanging information. Within a cluster all might agree to exchange information to a certain level involving a specific set of supported request/responses and guidelines for what should be answered automatically etc. Communicating with other clusters, a different level of information exchange can be used.

One can think of several examples of such groups of clusters, such as several regulators within a region that might opt for having a very close co-operation while having a more restricted information exchange with regulators in other regions.

Yet another example would be a cluster of execution venues within a country that in turn have a communication setup with the regulator.

The formalized structure of communication also gives an interesting opportunity for regulators. They could mandate execution venues and trading participants to commit to a certain level of automated communication. I.e. a regulator could specify that a certain set of automated request/responses should be supported.

Summary

Advantages of a network based approach:

- A network based approach provides most of the advantages of a centralized solution at a fraction of the cost.
- Prerequisites for implementing a networked based solution are an agreed common base set of messages/data that is to be exchanged.
- In order to minimize cost established protocols and standards should be leveraged as far as possible.
- Can be implemented gradually.

A network based approach constitutes a serious alternative to centralized solutions.