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European Securities Markets Expert Group (ESME)

***Fact finding regarding
the availability of post-trade data in equities in the EU***

The European Securities Markets Expert Group (ESME) provides legal and economic advice to the European Commission on the application of the EU securities Directive. ESME was created by Commission Decision 2006/288/EC of 30 March 2006 (OJ L 106, 19.4.2006, p.14).

CONTENTS

	page
1. Introduction	3
2. Overview - Market Data industry structure and market participants	4
3. ESME's assessment on the availability of Market Data	6
I. Terms and conditions under which Market Data is made available	6
II. Fees charged for Market Data and other components of Market Data costs	10
III. Availability of Market Data affected by the terms and conditions and its effect on market participants	12
IV. Different types of Market Data Users and the role of Market Data in order execution and investment decision processes	16
V. Availability of alternatives in the area of Market Data	21
4. ESME's conclusions and recommendations	24
Annexes	32
Annex I - ESME's questionnaire on data availability in the EU	
Annex II - Fact Finding - Addressees of questionnaire and additional on-site visits	
Annex III - Overview Market Data Fees	
Annex IV - Membership of ESME	

1. Introduction

On 18 September 2008 the European Commission asked ESME for its assessment of whether there is an appropriate level of access to post-trade data in equities in the EU ("Market Data"). The general questions addressed to ESME were:

- Under what terms is trade data in equities currently made available?
- How is general data availability affected by such terms (including fees) and what effect does this have on market participants?

According to the DG Internal Market, the majority of industry queries relate to the availability of post-trade data in equities and ESME was asked to focus on this. This report, therefore, focuses on post-trade data availability in the key European markets¹. During its investigation, ESME identified that there were also issues on pre-trade data, in particular indications that fragmentation was creating difficulties in getting quotes due to a lack of consolidated data and that this, coupled with the increased number of sources, means that the costs to get a sufficiency of data have increased. Additionally, in some instances non-discriminatory access to pre-trade data does not seem to be granted. If required, ESME could also look into the issue of pre-trade data availability within the EU at a later time.

ESME formed a sub-group to look into the issue of data availability and prepare a report to be issued by ESME after the review. This sub-group had its constitutive meeting on 29 September 2008.

Following this, members of ESME, in addition to their own knowledge and experience of the Market Data industry, undertook a fact-finding mission using both onsite meetings and a questionnaire survey. ESME circulated a questionnaire, specifically compiled for this process, to more than sixty addressees. The addressees comprised Market Data Sources (e.g. Regulated Markets, Multilateral Trading Facilities), Data Vendors, Market Data Users, Trade Data Monitors (TDM) and Systematic Internalisers. In addition, industry organisations of the above groups were approached. The questionnaire consisted of thirty specifically designed questions to cover both users and sources of Market Data and is attached to this report as **Annex I**.

In addition, the sub-group conducted on-site fact finding visits to discuss the question of data availability with industry participants (cf. **Annex II**).

These activities were to ensure a broad and well informed basis for this report.

¹ France, Germany, Italy, Spain and the UK.

2. Overview - Market Data Industry structure and market participants

The Market Data Industry, which is an estimated global 1 billion US-dollar business, focuses on the creation, consolidation and dissemination of Market Data. Market Data comprises pre- and post-trade data, corporate data, static data, reference data, etc. In broad terms, the Market Data Industry comprises Market Data Sources, Market Data Vendors, and Market Data Users. The distinction between these categories used to be clear cut. Today, with a still growing number of MTFs and the introduction of OTC post-trade transparency, the different players in the capital markets usually undertake a number of roles within the Market Data Industry, and these categories are becoming blurred.

The production of Market Data at the Market Data Sources is costly. The inherent value of data for Market Data Users increases with the quality of the Market Data and the speed of its delivery to the Market Data Users. (Post-) trade data in equities is made available from various Market Data Sources.

Although the Market Data industry is a global business, it is dependent on the individual Market Data Sources which are important for the quality of the Market Data and its low latency delivery. The Market Data industry is a competitive market in which efficiency has increased over the past years.

Generally, real-time Market Data is either made available to Market Data Users usually for a Data Fee or in some cases in return for providing liquidity (order flow).

Market Data Sources are usually entities which provide proprietary data to the market, e.g. Regulated Markets, MTFs and Brokers. This data is made available either via direct contract and direct technical connection with the Market Data Sources, or via a third party, which is usually a Market Data Vendor.

Market Data Vendors re-sell data from a number of Market Data Sources. In some instances, they may be a Market Data Source themselves, for example, where they operate a market or provide news or reference data. The distribution service of a Market Data Vendor is subject to a contractual arrangement with the relevant Market Data Sources. Market Data Vendors usually provide consolidated trade data from different Market Data Sources and combine this consolidated trade data with relevant analytical data and reference data. This Market Data is then distributed via information terminals and, in some instances, also via direct data feeds. Market Data Vendors always charge a fee for the data and services they provide and set terms that are an independent superset of the Market Data Sources to which they provide access.

The group of **Market Data Users** is large and varied. Investment Banks, Hedge Funds, Pension Funds, etc can generally be described as **Professional Market Data Users**. Other Market Data Users include **Retail Investors** and, depending on the way they use third party data, also **Regulated Markets** and **Multilateral Trading Facilities (MTFs)**. Professional Market Data Users, when participating in equities trading, make use of pre- and post-trade data as a basis for their trading, price quotations etc. Retail Investors base their investment decisions on various sorts of Market Data, in particular post-trade data. MTFs use Market Data of incumbent

Regulated Markets as an integral part of their trading systems, and Regulated Markets need access to static data.

Market Data Sources and Market Data Vendors provide a number of different solutions to provide the Market Data Users trading data of their choice.

Market Data can be made available to Market Data Users via **various technical solutions**, e.g. direct data feeds, internet, co-location centres etc. Market Data Users can independently choose which technical channel they want to use to access the Market Data. This decision depends on individual client needs in terms of the magnitude of data to be delivered, latency and costs.

The fees charged for the (pre- as well as post-trade) Market Data are generally dependent on the quality of the data. Important factors which determine the quality of Market Data are (i) whether quotes are tradable or indicative only, (ii) whether the data is delivered in real-time or delayed and (iii) whether the trade data is provided by a liquid market or not. Other factors which influence data quality are the quality of the market's operation and regulation and whether, in consolidated data, the identification of the execution venue is possible. In addition, trade data of large sized trades usually provides a higher information value than data on trades below or at standard market size.

3. ESME's assessment on the availability of post-trade data in equities in the EU

I. Terms and conditions under which Market Data is made available

Terms and conditions of Market Data usually comprise provisions concerning the following: scope and use of information, reporting procedures and obligations, audit rights and procedures, fees and payments, intellectual property rights and technical access to Market Data. Regulated Markets usually have the most sophisticated terms and conditions based on their long-term professional experience in this industry sector.

Regulatory regime under which Market Data is made available

- In response to the questionnaire, Market Data Sources generally stated that post-trade Data is being published according to post-trade transparency requirements defined in the Commission Regulation (EC) No 1287/2006 of 10 August 2006, the transposition of the **Markets in Financial Instruments Directive (2004/39/EC) (MiFID)** into national law, and, in the case of Regulated Markets in accordance with applicable respective **Exchange Rules**. To our knowledge, most of the Regulated Markets provide data greater than these regulatory requirements.

Key Terms and conditions

- High quality Market Data with low latency is **costly to produce and to be made available. At the same time**, it has value for market participants, although this value will differ depending on how and for what purpose the Market Data is used.
- Market Data is generally made available under contractual terms and conditions, bespoke to each Market Data Source. The Regulated Markets, in particular, have detailed contractual terms and conditions. **The terms and conditions usually govern technical access to Market Data, permitted forms of Market Data usage and fees to be paid to the Market Data Source by the contracting parties for the use of Market Data and for its onward dissemination.**
- The fee structures are designed for the data product tailoring. Each particular group of Market Data Users and their respective needs has its own fee structure. Regulated Markets tend to have highly advanced Market Data products. Fees usually comprise **Data Fees to be paid by a Market Data User and Licence Fees (also known as "Vendor Fees")** which have to be paid by the Market Data Vendor for the right to distribute the data.
- **Licence Fees** can, for example, be "Distribution Licence Fees" or "Web-hosting Licence Fees", depending on the data product and the use of the Market Data by the contracting party. These contracting parties are usually Market Data Vendors, or direct feed clients (Investment Firm or MTF). **A Non-Display Licence Fee** is levied by some Market Data Sources for applications (e.g. Algorithmic Trading) running on its Market Data. In this case, the contracting party is usually an Investment Firm or MTF.

- **Data Fees** are charged by the Market Data Sources and the Market Data Vendors to the Market Data Users and depend on the data products to which they subscribe. Data products are designed for the different needs of Market Data Users and can differ in market depth, latency and means of accessing the Market Data (e.g. via vendor terminals, internet or direct feed access). Usually, Regulated Markets differentiate between Data Fees for Professional Market Data Users and Data Fees for Retail Investors which are usually substantially lower than those for professional usage. Data Fees can apply to the right to create/distribute **derived data** (derived data is data which also is created completely or in part from an original set of Market Data and can neither be reversely engineered to recreate the original set of data nor be used as a substitute for the original set of data).
- **Terms and conditions usually include restrictions by Market Data Sources on the use of Market Data to protect the rights of the Market Data Sources.** Restrictions vary between the different Market Data Sources. The most common restrictions of data seem to be in relation to the **external and internal distribution and re-distribution of data.**
- Within the Market Data Industry, **certain common practices** have developed which are usually adhered to (e.g. free access is usually granted by Market Data Sources to Market Data User for data which is delayed by 15 minutes).
- **Market Data Vendors** usually have contracts with Market Data Sources governing how they can re-sell data. Market Data Vendors always charge for the real-time data they provide, although delayed data is also made available by Market Data Vendors free of charge.
- Market Data use has to be reported to the Market Data Sources by the Market Data Users or the Market Data Vendors which, in return, have the right to conduct audits to prove the correct reporting for payment purposes.

Differences in Terms and Conditions

- **Regulated Markets** allow access to Market Data on a non-discriminatory basis. In practice different Market Data Users will subscribe to different Market Data real-time products offered by the Regulated Markets depending on their particular needs and intended forms of use.
- **Investment Firms** (Brokers, Systematic Internalizers, Investment Funds Management Companies etc.) either publish their OTC post-trade data via OTC post-trade service providers (e.g. Regulated Markets, Market Data Vendors or other third-party service providers) or via their own internet web-site in order to comply with MiFID. Apart from making this OTC post-trade data publicly available, Brokers, when acting as Systematic Internalizers, are often making their pre- and post-trade data available to their customers free of charge in exchange for liquidity (order flow). In individual cases, the terms and conditions of the Investment Firms may differ substantially from each other. As regards delayed Market Data, for example, one new service provider for the publication of OTC post-trade data has introduced stricter restrictions as regards the standard delay period for delayed Market Data and the fees charged compared to the current common practices (cf. pages 10, 13). Where OTC post-trade transparency service providers

deviate from common practices, the relevance of these deviations will depend on their significance in the relevant market.

- **MTFs** allow access to their Market Data (pre- and post-trade data) on a non-discriminatory basis. For the time being, MTFs are distributing their Market Data under a fee holiday free of charge. The underlying motivation for such fee holidays is to make their Market Data available as broadly as possible as a marketing tool in the competition for trading volume amongst the MTFs and with the Regulated Markets.

Expected changes in terms and conditions

- Market Data Sources do seem to **review regularly their product offerings including fees** (one Market Data Source indicated that this happens once per year). Such reviews do not, however, necessarily result in fee increases for the Market Data products. One Regulated Market stated that equity Market Data fees have been kept stable over the last three years in spite of higher costs on production side, and indeed have even been reduced for one particular data product.
- Over the past years **use of real-time Market Data by application (e.g. Automatic Trading Machines)** has steadily increased. Market Data Sources have reacted to this industry evolution by an enhancement of their services (e.g. delivery of Market Data with increasingly lower latency). A fee for non-display information usage by applications like Automatic Trading Machines has recently been introduced by some Market Data Sources. However at present, only two Regulated Markets are currently charging a fee for such non-display information usage while others are seriously considering the introduction of such a fee within their terms and conditions.

Although it appears that those Market Data Users using Automatic Trading Machines fed with low latency Market Data (pre- and post-trade data) have significant advantages both in cost savings (i.e. use Market Data as reference prices to substitute own costly price-building mechanisms) and competitive selling points (e.g. offering new services to clients like Algorithmic Trading or Smart Order Routing), it appears to be difficult for the respective Market Data Sources to change their terms and conditions accordingly.

- Also **MTFs or Investment Firms** (e.g. operating dark pool's of liquidity) are making use of real-time Market Data. As an example some MTFs feed third-party Market Data into technical applications either to use such data directly as reference prices or to use data from multiple Regulated Markets to calculate "virtual" reference prices. In doing so, such MTFs replace the traditional and costly price building mechanism as applied by Regulated Markets. Both, MTFs and Investment Firms, are competing with Regulated Markets for liquidity and make use of Market Data from Regulated Markets in order to compete with them at a much lower cost-structure. Furthermore, their Market Data is derived from the Regulated Market's data and it is distributed by MTFs to Market Data Users as a marketing tool in order to attract additional liquidity.

Data availability via various media

- **Market Data Users** have ample choice of technical delivery channels by which they can receive post-trade Market Data. The channel chosen usually has a direct impact on the quality of Market Data in terms of latency. Each Market Data User has a choice of data products in terms of usage rights, quality, latency and the technical access which it can select according to its needs.
- **Direct feeds** provide the highest quality in terms of latency and comprehensiveness. Direct feeds are often used in combination with hosting trading applications of the Market Data Users in co-location centres close to the trading platforms of the Regulated Markets and MTFs.
- **Vendor Terminals** are used for “view access” by Market Data Users. A prominent example is the trader of an Investment Bank. Usually, Market Data provided via these terminals is available with a slightly higher latency compared to direct data feeds. **Internet access** is usually the cheapest alternative and is therefore the favoured access point for Retail Investors. Market Data which is made available via the internet is usually slower than access to data via the other delivery channels described above.

Summary

Market Data seems to be made available either for a fee (e.g. by Regulated Markets), or in return for business (e.g. Brokers, including Systematic Internalizers) or as a marketing tool in order to attract liquidity (e.g. MTFs). Where fees are charged, it seems to be industry standard that a Licence Fee (for Market Data Vendors) and a Data Fee (for Market Data Users) is charged by Market Data Sources. For the fee structure cf. page 9.

It appears that established Market Data Sources usually have a range of Market Data products in order to provide a choice for diverging client needs. Data products are made available to all interested parties via various technical channels of distribution on a level playing field. Extensive terms and conditions seem to exist, governing the permitted usage of Market Data. These terms can vary in detail, but usually follow established common practices within the Market Data industry

Market Data made available to Market Data Users with a 15 minutes' delay is usually free of charge.

It appears that only one new Market Data Source does not follow current common practices established within the Market Data industry in relation to its delayed data offering and fees charged (cf. pages 10, 13).

II. Fees charged for Market Data and other components of Market Data costs

Fees charged to Market Data Users by Market Data Sources

- If Market Data is fee liable (cf. page 7), Market Data Users generally pay a **Data Fee** to Market Data Sources for such Market Data. The Data Fee depends on the type of the intended data use, and the medium by which the data is made available. Some Brokers only provide data in exchange for trading business. As would be expected, fees usually increase in line with the comprehensiveness of Market Data (instruments, market depth in case of pre-trade transparency), with speed of availability (real-time or delayed) and with regard to how it is accessed (streaming data or pull data).
- The pricing for **OTC post-trade data** in real-time format, which is made available by various Market Data Sources, does not appear to be unreasonable. In addition, delayed OTC post-trade data is also made available free of charge. Most Market Data Sources have favourable fee structures for Retail Investors as well. This applies in particular to data available by the Regulated Markets, which also offer OTC post-trade transparency services. The Data Fees for Retail Investors range from free access to up to EUR 10 per user per month.

Fees charged to Market Data Users by Market Data Vendors

- **Market Data Vendors usually charge a fee in addition to the Data Fees** charged by Market Data Sources (e.g. 10-15% on the top of the Market Data Fees charged by the Market Data Sources).
- **Major Vendors usually contract with all Equity Market Data Sources** and provide a consolidation of post-trade data in equities, which may be partly included in the above fee.
- One major Market Data Vendor charges an **additional fee** of EUR 10 per user per month for access to a **consolidated view of post-trade data in equities**.

Data available free of charge

- Delayed post-trade data in equities is usually made **available to Market Data Users free of charge**. Despite its delay, such data has still information value for the market. The European Industry standard delay for data is usually **15 minutes**. There are currently two exceptions to this standard delay. In one case, a Regulated Market offers delayed data with a delay of 30 minutes, while one UK based Market Data Source offers delayed data with a delay of 120 minutes.
- This longer delay seems to cause some problems for Market Data Vendors and, consequently, for Market Data Users as well. According to one Market Data Vendor the longest delay period automatically defines the overall delay period for all Market Data within an information product. As consolidated data will then be accessible for free only after a 120 minute delay, instead of a 15 minute delay, some Market Data Vendors are

now recommending to their clients to order real-time data instead, which has an impact on fees for the Data Users.

- Some new **MTFs** currently publish real-time Market Data free of charge². This data is usually created by referencing third-party Market Data (in particular from Regulated Markets) for the same financial instrument. As some MTFs have indicated that they would intend to introduce Data Fees in future, this distribution of Market Data free of charge (fee holiday) seems to be aimed at attracting liquidity to the relevant trading platform.
- **Free real-time access to post-trade data from Regulated Markets as well as from Brokers** is usually offered to Retail Investors by their online brokers in exchange for placing orders via the online-broker system. As part of their service, online brokers pay the relevant Data Fees to the Market Data Sources on a price-per-quote basis (e.g. Data Fee for one price quote could be as low as EUR 0.0001). Arrangements similar to these available for Retail Investors also exist for Professional Market Data Users, provided they have a business relationship with their Investment Firm.

Access to Market Data – overall costs

- **Total costs of Market Data access** for a **Professional Market Data User** usually comprise the Data Fees paid to the Market Data Sources, the fees paid to Market Data Vendors (e.g. terminal fees, line costs), the costs of supporting internal distribution platforms (e.g. hardware, software, telecoms, management, data centre space and power, technical support, training) and the costs of administration (e.g. cost accounting, invoice reconciliation, contract management). These components can vary significantly between the different Professional Market Data Users depending on the company's size and specific requirements. However, in light of the numerous cost factors to access Market Data, it appears that **Data Fees only make up for a small fraction of such costs**.
- Stand-alone information terminals of a major Market Data Vendor are used by professional dealers, portfolio managers and middle-office staff of the Professional Market Data Users. For such information terminals the costs are about EUR 8,000 to EUR 12,000 per person per year (excluding Data Fees).
- Overall costs of Market Data for Retail Investors are not comparable to the costs of a Professional Market Data User. In most of the cases, Retail Investors access post-trade data in equities via the internet only, which keeps costs reasonably low.

² "Chi-X to waive market data charges" Inside Market Data, 2006-12-04 Vol 22 No 11, "Burgundy preps free Scandinavian Data", Inside Market Data, 2008-10-06 Vol 24 No 2, "BATS readies European Data Feed Plans", Inside Market Data, 2008-04-14 Vol 23 No 28 and "Turquoise to waive Data Fees at Launch", Inside Market Data, 2008-01-14 Vol 23 No 15.

Summary

Addressees have not provided detailed costs information, However, it seems that overall costs to access post-trade Data are composed of various technical, administrative and fee components, and that **Data Fees are only a smaller fraction of the overall costs.**

Costs for **Professional Market Data Users** usually seem to be composed of Data Fees paid to Market Data Sources, the fees paid to Market Data Vendors, the costs for internal distribution platforms of the market participant and the costs of administration.

Costs for **Retail Investors** are not comparable to those of **Professional Market Data Users** as usually Retail Investors access post-trade data in equities solely via the internet and/or use delayed data free of charge. Either real-time Market Data is sponsored by their Broker, or moderate Retail Investor fees apply. Indirect costs – which might occur depending on the Broker supplying the data as part of their service – cannot be part of this fact finding.

Market Data Sources also have costs to bear: costs for research and development of new information products, production costs (higher data quality causes higher production costs), operating costs, and administration costs. Finally, costs of **Market Data Vendors** comprise: Licence Fees, technical development costs, line costs, operational and technical support, and administrative costs.

III. Availability of Market Data affected by the terms and conditions and its effect on market participants

Accessibility of Market Data

- Members admitted to trading at a Regulated Market or at a MTF have access to their Market Data required for trading. Direct access is usually provided via the **interface of the trading application**. No potential shortcomings have been reported in this respect.
- **Availability of relevant data feeds for the delivery of the (consolidated) Market Data was stated to be good** and available without any discrimination.
- Numerous new Market Data Sources have evolved since the introduction of MiFID. It was explicitly stated by one respondent and mentioned by others that **not all Market Data Vendors** appear to have yet incorporated or completed incorporation of all the new trading venues. Consequently the professional Market Data User in question indicated that he has to subscribe to data products of several Market Data Vendors in order to get comprehensive Market Data coverage.
- It appears that **consolidation of Market Data** is a challenging task due to the increased number of Market Data Sources, the variety of rules for trading sessions at the various

trading venues and the different terms and conditions regarding delayed data (cf. page 10). Integrating a new Market Data Source is time and resource heavy.

Potential short-comings of post-trade data

- It was explicitly stated by one Market Data Vendor and mentioned by other respondents that one OTC post-trade transparency service provider submits Market Data of poor **quality**. Poor quality of post-trade data has a distorting effect on the post-trade analysis of Market Data Users. This Market Data Vendor also pointed out that **multiple reporting of the very same trades further distorts the data available**. It was also stated that there is no transparency regarding which financial institutions are submitting incorrect trade reports to the service provider for reporting, and therefore it is nearly impossible for Market Data Users to identify the source of incorrect data, obtain corrected data, and encourage better data quality in the future.
- Under certain conditions, MiFID allows to delay the publication of trades which are large in size. One addressee indicated that the implementation of the block-trade delay by OTC post-trade transparency service provider(s) might have been set-up in such a way that it is possible that not all pre-conditions for a delayed publication are taken into consideration. Therefore, the addressee **assumes that more OTC trades are actually delayed than should be allowed in accordance with the MiFID requirements**. This worsens the quality of Market Data.
- Additionally, it was reported to ESME that in the UK **MiFID allowed for substantially longer delays of large trades compared with the pre-MiFID regime**, which obviously leads to a decrease of information value for Market Data User.

Obstacles to Market Data access

- One Market Data Vendor stated that in Italy, in particular, OTC post-trade data is often made available by Investment Firms via their internet websites, which makes consolidation of data difficult. Although internet publication of such data is compliant with MiFID, ESME can see that this form of publication does not make consolidation of Market Data easily viable which would be potentially detrimental to post-trade transparency.
- According to one Market Data Vendor, costs for Market Data Users have risen since the introduction of MiFID, however no specific details have been submitted. It appears that only one particular OTC post-trade transparency service provider currently charges exceptionally high Data Fees (EUR 120 per user per month), while other OTC post-trade transparency service providers charge relatively low fees (EUR 0 - EUR 10). One argument why the fees of this particular OTC post-trade transparency service provider are exceptionally high results from the comparison of the number of instruments which are included in the respective data products. The data package provided by this particular

Market Data Source encompasses mainly post-trade data for approximately 6.900 instruments as well as price quotes from Systematic Internalizers for a subset of up to 1000 instruments. In comparison thereto, one Regulated Market offers pre-trade data for approximately 80.000 instruments and post-trade Market Data for approximately 430.000 instruments for less than half of the Data Fees charged by this OTC post-trade transparency service provider. However, this OTC Market Data Source has recently announced a change in its pricing structure effective as of 1 May 2009. Nine regional data packages will be introduced for Market Data Users who do not require Pan-European Market Data. In addition the introduction of a reduced scaling fee for the Pan-European data product dependent on the number of individual users per Market Data User will be implemented but no overall reduction of Data Fees had been announced.

- Apart from the aforementioned exception the Data Fees charged do not appear to be unreasonable (cf. table of Data Fees from major Market Data Sources and Market Data Vendors attached as **Annex III**) and that the Data Fees of most of the major Regulated Markets rather have been reduced or kept stable (one Regulated Market even indicated it has not raised Data Fees for three years).

Market Data made available on a non-discriminatory basis

- The majority of Data Users confirmed that Market Data is being made available to them on a non-discriminatory basis.
- Regulated Markets confirmed that they provide access to their Market Data on a non-discriminatory basis to all Market Data Users and Market Data Vendors irrespective of any competition between each other.
- However, one respondent pointed out that Brokers usually offer two levels of access permissions, depending on whether Market Data Users are a trading client or not. Trading clients have access to tradable (pre-trade) data, while only indicative quotes are provided to other Market Data Users.
- One Market Data Vendor stated that one OTC post-trade transparency provider attempted to impose terms on Market Data Vendors for carrying OTC post-trade data in equities that would have resulted in discriminatory treatment and impeded an effective consolidation of Market Data. This was subject to some discussions, including with the UK regulators, and the attempt was not pursued further.

Summary

Post-trade Data in equities from various Market Data Sources is made available either via Market Data Vendors or other distribution channels, (e.g. direct feeds from the Market Data Sources). Market Data is made available in unconsolidated as well as in consolidated formats.

However, it appears that currently not all Market Data Vendors provide a complete set of consolidated post-trade data, as new Market Data Sources constantly enter the market and full consolidation requires sufficient capacity and resources on the Vendor side. Furthermore, consolidating OTC post-trade data published only via the internet (e.g. mainly by smaller Investment Firms within Italy) is likely to be technically difficult and economically unattractive for Market Data Vendors. This situation could be improved if these Investment Firms used another form of publication channel in addition to the internet which would be easier to consolidate. A lack of regular reliable consolidation means Market Data Users have to subscribe to a number of different Market Data Sources or to one or more Market Data Vendors with consequent cost implications.

There is also a concern, particularly in the UK, that MiFID has meant that reports on large trades are being delayed longer than previously.

From the feedback received it can be concluded that there are still some shortcomings with regard to the quality of OTC post-trade data. Also some mistakes have been submitted (e.g. some trade reports seem to have been submitted erroneously in pence but were passed through by the publisher along with other trade prices that have been correctly submitted in GBP so that the trade feeds consequently show some prices which are 100 times higher than the expected trading range). Multiple reportings also seem to have been an issue, distorting the quality and reliability of data which is available. A recommended solution, which has been implemented in the UK, is the introduction of "Best Practices" for the OTC post-trade data reporting. Once such "Best Practices" have been established this may be sufficient to remedy the reported shortcomings. At the present time no change of the MiFID provisions seems to be required.

Only one new OTC post-trade transparency service provider seems not to comply with established common practices in the Market Data industry. This service provider is alleged to charge exceptionally high Data Fees and to have an unexceptionally long delay period for its delayed data offering (120 minutes instead of 15 minutes) compared with the overall industry standard.

IV. Different types of Market Data Users and the role of Market Data in order execution and investment decision processes

Multilateral Trading Facilities (MTFs)

- **MTFs use third party Market Data mainly within their trading systems. Market Data used is best bid / best offer data and last trade information, e.g. for purposes of pegged orders as well as referencing the Market Data for price checks.** Market Data is also used for market surveillance purposes to compare the trades conducted on the MTF against the primary markets. Sometimes the scope of Market Data is limited to a few traded instruments depending on the liquidity of the primary market shares only. As the immediate receipt of the data is essential for these Market Data Users, they usually have various direct feeds from the original Market Data Sources which they consolidate themselves or which they receive consolidated by a third party service provider directly at their site in order to avoid any “unnecessary” latency created by technical intermediation.

Professional Market Data Users - Investment Firms (Sell side)

- **Market Data Users** within Investment Firms consist of traders (e.g. Market Makers, Proprietary Traders), analysts, sales personnel, middle-office staff as well as compliance employees.
- **Traders** often require real-time Market Data from various trading venues that may contain significant liquidity in order to get a better picture of the market. They have access to all data from trading venues at which they trade, and they can also obtain access to additional data via Market Data Vendors or Direct Feeds. Some respondents pointed out that for some purposes using “aggregated data” (e.g. “Total Volume” which aggregates the overall volume traded in a particular share over the day could be an alternative to real-time Market Data).
- In particular **Market Makers** who are using automated market making programs (essentially trading algorithms) to quote instruments in the market usually prefer to have access to comprehensive real-time Market Data from various sources. Investment Firms making markets manually without using automated trading machines have a requirement for real-time Market Data to monitor constantly their trading positions.
- **Proprietary Traders** increasingly use trading algorithms in automated trading to carry out designated trading strategies (e.g. to perform statistical arbitrage in the market); this form of trading requires real-time access to Market Data as well as simultaneous access to execution capabilities. In this case, the speed at which Market Data is received from the Market Data Sources (low latency) and processed by automated trading applications is essential for optimal performance.
- **Analysts** require the broadest possible range of Market Data, although not necessarily in real-time. Indeed, analysts often need data with as much history as possible. With regard to the scope of data, the focus is not necessarily limited to liquid instruments alone. In

most cases, these Professional Market Data Users use Market Data which is made available to them by Market Data Sources via terminal solutions with comprehensive data coverage of Market Data Vendors.

- **Sales personnel** can use various data products ranging from real-time Market Data to historical data.
- **Middle-office staff** dealing with the matching confirmation and settlement of trades executed by traders. In order to check the details and the accuracy of trading prices, access to post-trade data is required. However, this does not need to be in real-time; delayed data is sufficient.
- **Compliance** reviews trading activities within Investment Firms. Compliance personnel need access to data from various trading venues in order to check for any potential inconsistencies. However, Compliance does not usually require access to data in real-time; delayed or even historical data is usually sufficient.

Professional Market Data Users - Investment Firms and Institutional Investors (Buy side)

- This group of Professional Market Data Users comprises **long-term oriented investors** as well as **short-term oriented investors**
- **Short-term oriented Institutional Investors** do need access to high quality Market Data, usually via direct feeds including execution capabilities (e.g. Electronic Trading Systems), as their trading systems and employed trading strategies require access to this information (e.g. for statistical arbitrage). Given the increasing market fragmentation some market participants deem it necessary in order to trade in a specific financial instrument to have access to Market Data for such instrument from all trading venues at which the instrument is traded and not only from those trading venues at which the market participant actually trades.
- **Long-term oriented Institutional Investors** might **need access to real-time Market Data at millisecond speed only in some areas of activity**. Access to post-trade data in real-time is required in order to **make an investment decision and to check the loyalty, honesty, and professionalism of the Brokers**. Real-time Market Data relating to the price situation at various trading venues could be obtained on demand directly from the Investment Firm's Brokers. Usually, Investment Firms check prices with various Brokers at the same time before trade execution. This real-time Market Data is usually made available by Brokers without Data Fees in return for business.

Within the group of Professional Market Data Users (Buy-Side and Sell-Side), the following user categories which usually require Market Data in real-time or in delayed format can be identified:

- **Portfolio Managers** (including asset managers, investment funds managers, pension funds managers etc). Traditional Portfolio Managers usually base their investment

decision regarding specific instruments on fundamental facts and information including the price. Once an investment decision has been made, the orders are submitted by the Portfolio Manager or via their own traders to the trading venues..

- **Treasury** – These Market Data Users need access to Market Data in real-time in order to select the financial instruments and make an investment decision. Any delay of the Market Data might impact the performance of the portfolio they manage. This group has access to the relevant Market Data via their financial intermediaries to the respective trading venues. Additionally, they might find it useful to have view access to real-time Market Data from other trading venues, where they do not execute trades.
- **Traders** – Depending on the scope of activity traders usually need access to real-time Market Data. In some cases using delayed Market Data may even impair the proper execution of an order. However, Dealers and Traders have access to the relevant Market Data via the trading venue at which they are admitted for trading. Additionally, Dealers and Traders might find it useful to have additional view access to real-time Market Data from other trading venues, where they are not admitted for trading and thus do not execute trades.
- **Hedge Funds and Quantitative Investment Schemes** – Hedge Funds and Quantitative Investment Schemes using algorithmic trading machines require access to real-time Market Data in high quality, especially delivered in low latency and virtually error free. Please also refer to the paragraph about Short-term oriented Institutional Investors above (p. 16).
- **Mid-office** – Middle office staff will need access to post-trade Market Data for the confirmation of correct trade matching and settlement. There is no need for real-time Market Data for this purpose but delayed Market Data is sufficient to verify the correctness of the trade, ensure proper settlement, and compliance with the best execution policy.
- **Back office and Valuation** – For the purpose of valuation of instruments contained in the portfolios, the end-of-day prices of an instrument are usually used. Some investment vehicles like investment funds, mutual funds or pension schemes disclose their valuation methodology including the category of Market Data used for evaluation purposes in the prospectuses. In some cases e.g. collateral management, the reference price used for the valuation of an outstanding derivative position is usually agreed between the parties to the transaction. In the above mentioned examples and for liquidity management and cash reconciliation purposes no access to real-time Market Data is required either.
- **Risk Management and Compliance** – Risk management and compliance will need only access to delayed Market Data as their checks and controls are conducted *ex-post* rather than *ex-ante*.
- **Research** – Research uses Market Data to assist Portfolio Managers in analysing the respective markets. Delayed and historical Market Data is required only.

Retail Investor

- Retail Investors generally access real-time or delayed Market Data either via the internet or on television. Internet access is usually provided either by a Market Data Vendor or by the Retail Investor's Broker. Some Market Data Sources have designed a special product for the display of post-trade data in real-time on websites (e.g. for Online-Brokers). In addition, some Regulated Markets make delayed Market Data available on their websites free of charge.

The use of Market Data by Investment Firms for Best Execution

- MiFID requires Investment Firms (meaning in the context of MiFID institutions providing investment services or performing investment activities for clients) to take reasonable steps to obtain the best possible trading result for their clients and to record the arrangements for achieving this in a Best Execution Policy. Investment Firms therefore need access to Market Data in order to compare the execution of trades on different trading venues and to decide which trading venues to include in their Best Execution Policy. This Market Data does not need to be real-time but can be delayed or even historical data. Once the Investment Firm has decided on the trading venues to which it will direct its orders, the firm will need access to trading on that venue as well as real-time data, from the venue in question.
- "Best Execution" according to MiFID does not mean that the Investment Firm has to guarantee the execution of an order at the best price available at each and every moment at the different trading venues where a given instrument is listed. Rather the entity has to set up a policy to define best execution arrangements and trading venues, and have it revised from an angle of its effectiveness on a regular basis. This policy should mention the best trading venues regarding e.g. price, likelihood of order execution, speed, which guarantee the best results on a permanent basis.
- However, it should be noted that following the introduction of MiFID market fragmentation and as a consequence the number of trading venues to be regularly monitored by an Investment Firm has increased and is still increasing significantly. An Investment Firm has an increasing need to have a view on multiple trading venues before making decision about including a trading venue in its Best Execution Policy. In order to monitor these trading venues, access to real-time Market Data is not necessary.

However, when an Investment Firm is actually placing an order according to its Best Execution Policy, access to Market Data from the respective trading venues is required. Moreover, due to fragmented liquidity, some large orders might even have to be executed on more than one trading venue which additionally requires Market Data from all trading venues listed in the Best Execution Policy to ensure efficient order allocation (e.g. in case of "pooled orders"). In both cases, however, access to the respective trading venue

encompasses access to the relevant Market Data of such trading venue (pre- as well as post-trade).

Delayed post-trade data suffices to ensure “Best Execution”. However, in case additional access to real-time Market Data is requested, and given the increasing number of Market Data Sources due to market fragmentation post-MiFID from which the Market Data has to be sourced in, the technical cost of obtaining this data might increase even if the respective trading venues do not raise their Data Fees. This is due to the necessity of technical consolidation of Market Data from multiple Market Data Sources (which requires additional software and hardware for employees, etc.) or due to purchasing a consolidated data product e.g. from a Market Data Vendor.

Summary

Market Data in equities may be used for decision-making support, for verification of executed trades in terms of price and volume, for market analysis and compliance checks. Different forms of market participation require different data qualities (e.g. real-time or delayed Market Data). In addition to access to data via Vendor Terminals, Institutional Investors acquire prices from their eligible Brokers (usually as many as 10), in order to find the best price to trade. However, it is not always the price that is critical: sometimes it is more important to sell a position quickly rather than obtaining the best price. MiFID’s best execution requirements take this into account by focusing execution factors other than just the price.

An Investment Firm can put in place a Best Execution Policy using aggregated, delayed or even historical Market Data. Access to all European real-time prices is not a necessity. However, observing the provisions of the Best Execution Policy to ensure compliance therewith does require access to real-time Market Data in most of the cases. Usually, the access to real-time Market Data is ensured by trading access of the market participants to the respective trading venues.

There is, however, a concern, particularly in the UK, that some of the problems arising from increasing market fragmentation post-MiFID (such as quality issues resulting from multiple trade reporting, momentary problems in getting consolidated data) can mean it is difficult to gauge whether compliance with a Best Execution Policy has been achieved.

However, the trend to automated trading has further increased demand for reliable real-time data to feed algorithmic trading engines. The group of Market Data Users which uses such engines usually expects Market Data to be made available to them at the highest possible speed (within milliseconds) and in the highest quality, so that they can trade electronically at the same trading venue or use the Market Data as a benchmark for trading the same instrument at another trading venue.

Also, certain agency brokers, and Investment Firms providing Direct Market Access (DMA) to clients may make suites of algorithms available for clients to use. In this case, the requirements for proprietary trading firms referred to above may also be relevant. Also, where Smart Order Routing (SOR) technology is employed, access to real-time Market Data

at speed is critical to the routing decision.

V. Available alternatives, e.g. in the form of using aggregated, delayed or less comprehensive Market Data

- New **MTFs require real-time access to Market Data from the Regulated Markets** for those instruments traded at the MTF. Fundamental price determination for an instrument still takes place at the trading venue with the highest trading liquidity in such instrument, and usually these prices are used as reference prices for the various trading venues in order to trade. Due to these interdependencies the trading systems of MTFs are dependant on the Market Data provided by those competing trading venues (e.g. Regulated Markets) having a higher trading liquidity and thus the “real” price in an instrument. Usually, MTFs require access via direct feeds at the lowest latency.
- Accordingly, some Market Data Users told ESME that it would be sufficient to have real-time access to the main trading venue with the highest trading liquidity in an instrument, as **price determination fundamentally takes place in the most liquid market**.
- In addition, another respondent indicated that – **as long as execution is not possible at all trading venues at the same time – it does not really matter what price is available at another trading venue**. “In our opinion information from particular markets, where at the same time no access to trading is available, provides the least useful information to dealers since it does not help to answer the most important question as to where to go in order to have the best chance of executing a trade with the least price impact.”
- However, a **Market Maker** has told ESME that he would like to monitor Market Data in an instrument in real-time from all trading venues on which an instrument is traded despite the fact that no access to trading on all trading venue is available for him in order to assess the overall market situation at the time of Market Making.
- Also other Market Data Users indicated that it would be most convenient for them to have access to all Market Data from all trading venues in real-time if possible. Especially with regard to newly established services like **Smart Order Routing**, some Professional Market Data Users may want to have access to all available Market Data in real-time.
- **Institutional Investors usually check the execution quality of their Brokers**. They tend to use post-trade Data and consequently access to real-time Market Data is not of primary importance. Delayed data could also be used as well. If proof has to be provided that a transaction in an instrument has been executed at the best price under the respective market conditions, the Institutional Investor may request additional price information from the execution Broker itself, for which no extra fees are charged.

Alternatives to the use of real-time Market Data

- In order to comply with MiFID’s **Best Execution** requirements access to aggregated, delayed or even historical Market Data is usually sufficient. Some Professional Market

Data Users stated that, depending on activity levels of Traders and Sales personnel, **delayed or aggregated data can be used as a substitute to real-time Market Data.**

- **Instead of real-time streaming Market Data** (data being automatically updated on Market Data Vendor terminals) Market Data Users could **use real-time pull Market Data** (where prices are updated on the request of the Market Data User) which is slightly less convenient to use but cheaper than streaming data.
- As Market Data of a Regulated Market or MTF is provided to its admitted trading members, this might also constitute an alternative to real-time Market Data received from a Market Data Source or a Market Data Vendor.
- Some Regulated Markets provide **Best Execution Analytics and Statistics** to their admitted trading members. Such data is usually free of charge, and can be used as the basis for devising a Best Execution Policy. Market Data Vendors are also considering offering similar Best Execution Analytics in the future.
- Institutional Investors generally use several Investment Firms (Brokers) as their eligible trading partners, and thus receive access to real-time Market Data in return for liquidity.

Summary

The feedback provided to ESME suggests that various alternatives to real-time Market Data access appear to exist. Product offerings of established Market Data Sources seem to provide for a sufficient choice of alternatives, e.g. delayed data free of charge, cheaper access to data on demand (“pull access”) compared to the more costly data stream access.

It appears that, to some extent, delayed Market Data could replace access to real-time Market Data. For example, in order to comply with MiFID’s Best Execution requirements, it is not mandatory for Investment Firms to have access to real-time Market Data from all European trading venues. In fact it might be even more convenient to use data that has already been aggregated as otherwise aggregation would have to be organised by the Investment Firm itself. In addition, delayed data or historical data, which is generally free of charge, can also be used.

Furthermore, Investment Firms need trading access to the trading venues which they have listed in their Best Execution Policy and - as an admitted trading member - have access to the Market Data provided to them by the trading venue.

In the course of introducing new services and business models like Smart Order Routing, some Professional Market Data Users may want to have access to Market Data in real-time for all trading venues within Europe. Whilst access to data is possible on non-discriminatory terms, respective Data Fees for Market Data will obviously apply.

4. ESME's conclusions and recommendations

Market Participants

Very broadly, the Market Data Industry comprises Market Data Sources, Market Data Vendors, and Market Data Users. However, in various instances there is an overlap between these categories.

Post-trade data offering

Market Data Sources for post-trade data in equities are Regulated Markets, MTFs as well as third-party service providers for OTC post-trade transparency. **Regulated Markets** make their post-trade data in equities available either via Market Data Vendors or via Direct Feeds to interested Market Users (e.g. to Professional Market Data Users like Investment Firms or MTFs) or via their internet homepage (e.g. to Retail Investors). In addition to their own post-trade Data, some Regulated Markets also provide access to other Regulated Markets' Market Data as a distribution service provider. Furthermore, various Regulated Markets, acting as a distribution service provider, disseminate OTC post-trade transparency data, which has been reported to them by Investment Firms as a data product separate from the Regulated Market's Market Data. MTFs provide access to their Market Data as well, via Market Data Vendors, Direct Feeds and/or internet access. Other Market Data Sources (third party providers) provide access to OTC pre- and post-trade transparency data.

Usually, Market Data Users are able to select various Market Data products for their respective needs. Market Data is offered in real-time, delayed or historical format (either in raw or aggregated form) either via push or pull mode, and is accessible either via direct data feeds, Market Data Vendors (i.e. information terminals) or the internet.

Conclusion: Subject to quality issues referred to later, it appears that there is a sufficient choice of Market Data in equities, packaged in multifaceted data products for different client needs.

Before the introduction of MiFID, Market Data in equities was mainly made available by Regulated Markets. Overlaps of traded instruments on various Regulated Markets were rare, with some exceptions, e.g. the German Market with its Regional Stock exchanges. Subscribing to data of the most Liquid Markets usually guaranteed access to the relevant data.

With the advent of MiFID, new MTFs have been established, which usually trade a subset of instruments from all European Exchanges (usually only the most liquid instruments). Each of these sources provides additional (pre-and) post-trade data to be consolidated regardless of the quality of such information. However, as MTFs currently offer their data on a "fee holiday" (ie. where no Data Fees apply) and tend to use their Market Data as a marketing tool to attract liquidity to their trading platforms, the advent of MTFs does not seem to have increased the overall Data Fees for Market Data Users. Market Data Vendors, however, have increasing work to integrate ever new Market Data Sources into their customer products offering a consolidated

market overview. In order to ease the integration efforts of Market Data Vendors, some MTFs have recently announced that they will provide their Market Data in a consolidated format. Today consolidated Market Data is available for interested Market Data Users from Market Data Vendors or third party service providers and consolidation of new Market Data Sources is ongoing.

Conclusion: Fragmentation of markets post MiFID leads to the need for data consolidation in a subset of instruments traded within the EU. Market Data Vendors are already taking over this task as they have the required knowledge and expertise in consolidating different Market Data Sources. Such consolidation is not happening as quickly as some Market Data Users would like. The process of consolidating new Market Data Sources may even take some more time since new trading venues are still developing. This seems to be understandable as consolidation requires time as well as financial and technical resources.

Different forms of distribution

Market Data can be made available via a variety of technical distribution channels, each of them differing in relative speed or latency of Market Data in different ways. In addition to direct access to a Market Data Source, Market Data is distributed via various technical delivery channels.

The choice of the technical distribution channel to access Market Data mainly depends on the goals a market participant wants to achieve. Access to such channels is generally provided on non-discriminatory terms to every Market Data User.

Direct Feeds are usually chosen for trading purposes especially for Algorithmic Trading such as Statistical Arbitrage. **Market Data Vendors** consolidate Market Data from many Market Data Sources into one format, distribute data and usually make it available on a desktop display or via a technical interface to the Market Data Users which, compared with direct feeds, already introduces additional latency. The **Internet** is usually used as a cheap access alternative by Retail Investors or any Market Data Users for whom latency is not an issue as Market Data made available via the internet has in most cases the highest latency.

Conclusion: A sufficient choice of technical distribution channels for Market Data, dependent on different client needs, seems to exist.

Conclusion: Where different technical distribution channels exist, access is provided to the Market Data Users on a non-discriminatory basis.

Terms and conditions

Market Data is being published according to post-trade transparency requirements defined in the Directive 2004/39/EC of the European Parliament and of the Council of 21 April 2004 and the Commission Regulation (EC) No 1287/2006 of 10 August 2006 (MiFID), the transposition of MiFID into the national law at Member States, and, in case of Regulated Markets in accordance with the respective Exchange Rules. Regulated Markets provide data even above those regulatory requirements.

The Contractual Terms under which post-trade data can be accessed are relatively similar as a consequence to established industry standards. The key terms are: 1) permitted form of usage, 2) onward distribution to third parties, 3) fee structure and 4) reporting obligations and audit rights. Market Data seems to be made available at a level playing field.

Terms and conditions are expected to be modified in the future to reflect the new data usage by electronic trading systems. Some Regulated Markets feel that the use of real-time Market Data by application (e.g. Automatic Trading Machines) is currently not appropriately addressed in their terms and conditions. Only two Regulated Markets are currently asking a relatively low fee for this kind of use while the Market Data Users have a significant advantage both in cost savings and competitive selling points.

Conclusion: The terms and conditions of Market Data Sources and Market Data Vendors under which they provide Market Data to Market Data Users do not appear to be discriminatory.

Conclusion: Further development of distribution policy of Market Data Sources is expected due to ongoing evolution of the financial industry. One example is the introduction of fees for the non-display usage of Market Data e.g. for algorithmic trading using Automated Trading Machines feeded with low latency Market Data.

Fees

Fees usually comprise **Data Fees and Licence Fees**. Fees reflect the quality and information value of the Market Data in question. Important quality criteria are: the liquidity of the underlying market at the Market Data Source, market integrity and the timeliness of data availability.

Various **Licence Fees** apply, depending of the data product version chosen by Market Data Vendors or Direct Feed clients. **Data Fees** are collected from the Market Data User and depend also on the product versions used by the data user. Product versions are tailored to different data user needs which can differ in market depth, latency and ways of data access; this is also reflected in a differentiated fee structure.

Data which is delayed by a minimum of 15 minutes (“delayed data”) is free of charge. Although this is an established common practice, one new Market Data Source for OTC post-trade data does not seem to follow it, as the free of charge usage is only allowed in that case after a delay of 120 minutes, which means that the consolidated view of equity post-trade data is available free of charge after 120 minutes rather than after 15 minutes.

With the introduction of MiFID, data volume has increased and additional Market Data Sources have entered the market. Looking at the **fees for post-trade data** in equities, most data provided seems to be reasonably priced with fees for new OTC post-trade data ranging between EUR 0 to EUR 10 per Market Data Source. However, the same Market Data Source (owned by an Investment Firm consortium) which introduced the longer delay period of 120 minutes charges EUR 120 per user per month for the data in question considerably higher than the average.

Regulated Markets review their Market Data offerings regularly. One Regulated Market stated that Data Fees have been stable now **for almost 3 years or have even been reduced**.

Various **MTFs**, which concentrate on trading liquid shares only, have entered the market. Their trading systems usually rely heavily on data from the incumbent exchanges and usually execution is closely tied to imported trade data from Regulated Markets. There seems to be no own price

discovery based on liquidity. Equity post-trade data from MTFs are therefore currently made available without a Data Fee, and are mainly used as marketing too, in exchange for liquidity.

Conclusion: There is a direct connection between data quality in its various aspects (see above) and the fees charged for such data. High-quality data and the delivery of such data in low latency seems to justify higher fees due to the higher production and development costs required to provide such high-quality data products.

Conclusion: ESME could not find evidence for the assertion that, since the introduction of MiFID Data Fees for Market Data have risen substantially. If Market Data Users require comprehensive access to all Market Data in equities within Europe, most of the newly established Market Data Sources which have entered the market since the introduction of MiFID either provide access to Market Data under a current fee holiday (for marketing reasons), or the Data Fees do not appear to be unreasonable. It seems to be only one Market Data Source located in the UK which does not seem to comply with common practices in the Market Data industry, and which charges exceptionally high fees for its Market Data. It may be that this particular Market Data Source has been the reason for such allegations. Still concerns remain that fragmentation arising post MiFID means that certain Data Users have to obtain Market Data from a broader range of Market Data Sources or Market Data Vendors in order to get a complete view and that this will lead to increasing costs in the future.

The fee structures are designed to reflect the differences of the data products available. For example, Retail Investors generally choose data products that differ from those for Professional Market Data Users in terms of delay and depth, and, therefore, pay lower Data Fees than Professional Market Data Users. Additionally, depending on the required level of convenience, “pull data” (access to Market Data on request) can be used instead of Market Data distributed in “push” mode (i.e. self-updating set of Market Data), which is cheaper. However, one new Market Data Source does not provide for choice regarding its data offering and fee structure as it does not offer a special fee structure for Retail Investors.

Conclusion: There seems to be ample choice of Market Data products for different Market Data Users.

Conclusion: The Market Data industry has developed common practices according to which non-discriminatory treatment of Market Data Users is generally ensured.

Conclusion: Problems with data quality of OTC post-trade data (especially in UK) should be addressed by common market efforts and development of “Best Practices”.

Total costs of Market Data access for a Professional Market Data User usually comprise the Data Fees paid to the Market Data Sources, fees paid to Market Data Vendors (e.g. terminal fees, line costs), costs of supporting internal distribution platforms (e.g. hardware, software, telecoms, management, data centre space and power, technical support, training) and costs of administration (e.g. cost accounting, invoice reconciliation, contract management).

Stand-alone information terminals of a major Market Data Vendor cost about EUR 8,000 to EUR 12,000 per year per person. Additionally, Market Data Vendors usually make a charge in addition to the Data Fees levied by Market Data Sources (e.g. 10-15% on top of the Market Data

Sources' fees). One major Market Data Vendor charges an additional fee of EUR 10 per user and month for access to a consolidated view of post-trade equity Market Data.

Overall costs of Market Data for Retail Investors are not comparable to costs of a Professional Market Data User. In most of the cases, Retail Investors access post-trade data in equities via the internet only, which keeps costs reasonably low.

Conclusion: Data Fees usually represent a fraction of the overall costs for the Market Data Users to have access to and to display the Market Data at the premises of the Market Data Users.

Accessibility of Market Data

No shortcomings have been reported or observed regarding access to Market Data from Regulated Markets. Access is provided on a non-discriminatory basis, via various technical channels.

New MTFs are constantly entering the market. Data consolidation can be complex and not all Market Data Vendors seem to have incorporated or completed incorporation of all the new trading venues yet. MTFs do, however, also make their data available via their internet homepage.

Availability of relevant data feeds for the delivery of Market Data in consolidated or unconsolidated form was said to be good and without any discrimination.

However, one new Market Data Source seems to impede timely access to delayed data. Instead of granting free access to its data with a 15 minutes delay (the industry standard) the delay period has been extended to 120 minutes, which means that the consolidated view of equity post-trade data is available free of charge after 120 minutes rather than after 15 minutes.

Conclusion: The availability of Market Data from Regulated Markets and MTFs as well as the availability of data feeds and other means to access Market Data is reported to be generally good.

Conclusion: Various Market Data Vendors already provide consolidated Market Data. As new Market Data Sources (e.g. MTFs) still continue to enter the market, the consolidation of Market Data from newly established Market Data Sources is obviously an ongoing task. Some MTFs support such consolidation efforts by agreeing on one common data format. There is some concern from Data Users as to the speed with which this consolidation is incurring and the cost of it.

Conclusion: Accessibility of fully consolidated OTC post-trade data is impeded by deviations from common practices. Although being compliant with MiFID, some forms of OTC post-trade data publication (e.g. publication via the Internet only) require a higher consolidation effort compared to other forms of publication. There is also a concern, particularly in the UK, that there is increasing delay in the reporting of large trades following MiFID.

Types of Market Data Users

MTFs need access to real-time Market Data (usually highest quality Market Data with lowest latency via Direct Feeds) from incumbent exchanges mainly in order to source such Market Data as a reference price which then is used by the MTF for trading and price making purposes.

Professional Market Data Users working in a trading room often require access to a variety of Market Data Sources in real-time, e.g. Market Makers, Proprietary Dealers.

Institutional Investors needs regarding access to real-time Market Data vary considerably. The more short-term oriented Investors are likely to require access to ultra-low latency Market Data, whereas long-term oriented investors usually use data in order to check their Brokers' performance.

Retail Investors usually obtain Market Data for free from their retail broker, or via various internet websites. Access to real-time data does not seem to be necessary, although various fee structures are offered by the Market Data Sources and Market Data Vendors to support Market Data access in real-time even for Retail Investors.

Conclusion: Different types of Market Data Users require different types of Data in different timeframes. ESME found that there was a broad range of products servicing different needs.

Conclusion: It appears further that some Market Data Users require real-time Market Data from one or multiple Market Data Source (e.g. MTFs, Market Makers).

Alternatives

Best execution in accordance with MiFID's requirements, is process-based and multi-faceted, taking into account various other aspects than execution price only (e.g. execution time, trading fees, etc.). In order to comply with MiFID's Best Execution requirements, it is not necessary to have real-time access to all equity Market Data Sources within Europe. In fact, in order to define an Investment Firm's "Best Execution Policy", access to delayed, aggregated or even historical Market Data can be sufficient. Using free-of-charge aggregated post-trade Market Data with implied analytical data can be even more convenient in order to define an Investment Firms' Best Execution Policy. Once a trading venue has been chosen and listed in the Best Execution Policy, the Investment Firm needs trading access to the selected trading venues and can access the Market Data of the trading venue as an admitted trading member.

Conclusion: In order to be compliant with MiFID's Best Execution requirements, access to real-time Market Data from all European trading venues is not necessary. To devise its Best Execution Policy, an Investment Firm or Asset Manager may also use aggregated Market Data. Aggregated data, historical data or delayed data may also be used. However, the quality of the data is crucial and there is concern, particularly in the UK, that bad quality data e.g. caused by multiple reporting of the very same trades further distorts the Market Data available which may make it difficult to justify to clients the integrity of the Best Execution Policy.

There are alternatives offered to the Market Data Users which could be used instead of “real-time streaming Market Data” via a direct data feed. Such alternatives are provided both for the timeliness of the data (Market Data in real-time versus delayed format) and regards to the convenience of access (Market Data delivery in self-updating “push mode” versus pull data delivery upon request). By making use of such alternatives, savings with regard to Market Data Fees may be possible. Consequently, some Professional Market Data Users stated that depending on activity levels of Traders and Sales personnel, delayed or aggregated data can be used as a substitute to real-time Market Data.

Conclusion: It appears that in some instances alternatives for the use of real-time Market Data do exist and are used. Making use of such alternatives may reduce the fees and other costs for Market Data (e.g. when using delayed data instead of real-time data or “pull-access” instead of streaming data).

Dedicated Plans exist within the US, which aggregate pre- and post-trade data across all relevant trading venues in respective pre- and post-trade data consolidated tapes. This is enforced by regulation and access to the overall data is mandatory by law, as such data usage is legally tied to a best execution obligation (unlike the MiFID approach, this best execution obligation is “on a trade-by-trade basis” where the price at which the order is executed is the only relevant factor) and a Trade-Through Rule. Competition is thereby neutralised within the US market data industry by regulation³. Market Data Fees would not react to competition and technical innovation is taken out of this industry by law as well. In contrast to the US system, the Market Data industry in the EU is a separate industry, in which the different players in the industry compete with each other and where competition is the intrinsic factor of MiFID as the most-relevant EU-legislation for capital markets.

Conclusion: Some market participants have indicated they would welcome such consolidated models. On balance, however, ESME considers that any form of monopolistic supply⁴ of Market Data from the different Market Data Sources in Europe may harm the future development of the European Market Data industry in which low latency of data delivery is a key factor of competition. Monopolistic supply could reduce competition amongst Market Data Sources and Market Data Vendors as any innovation and further development in the area of data collection, consolidation and distribution of Market Data would give no competitive edge and, therefore, would decline.

Conclusion: There is also a danger that were a US-style monopolistic supplier of Market Data in equities introduced, this could be to the potential detriment of the Market Data User as a one-fits-all solution could at the same time introduce a potential a “single point of failure”⁵. The competitive Market Data environment within the EU seems to have advantages to the “monopolistic” plan model within the US.

³ “Euro Consolidated Tape Debate Heats Up”, Inside Market Data, 2009-01-26 Vol 24 No 17.

⁴ Often referred to as a „Consolidated Tape“ taking over the respective terminology from the US.

⁵ “OPRA sneezes, Exchanges get the hiccups”, Inside Market Data, 2008-01-28 Vol 23 No 17.

Recommendation of ESME:

ESME could not find specific evidence which would support recent complaints of an overall and substantial increase of Data Fees since the introduction of MiFID. New Market Data Sources (MTFs) have entered the market; however, most of them provide access to their data currently free of charge, presumably as a consequence of marketing considerations. Other Market Data Sources (OTC post-trade transparency service providers) generally provide their Market Data at fees which do not appear to be unreasonable, apart from one UK based Market Data Source. However, as this seems to be an exceptional case, we would assume that self-regulation within the Market Data industry kicks in. The recently announced changes in the respective Market Data Source's pricing schedule seem to lead into this direction. There is a potential problem, however, particularly for the smaller Market Data Users that an increase in competition due to increasing market fragmentation post-MiFID is leading to increased costs because of the need to obtain data from a wider range of Market Data Sources and Market Data Vendors to obtain a complete picture.

Overall, the availability of post-trade data in equities in the EU appears to be good. Market Data Users have sufficient choice of Market Data products and delivery methods for their needs at reasonable cost. The further development of the situation with the still increasing number of Market Data Sources after introduction of MiFID should be further monitored. Whilst the integration of these sources is ongoing and - taking into account the short time after the introduction of MiFID - appears to be well advanced, a number of Data Users are concerned at the time it is taking. Various new market initiatives either support consolidation of the new sources, or even offer consolidated Market Data already. This development shows that self-regulating forces are an inherent factor of the Market Data industry within Europe. The Market Data Vendors are a key element in this self-regulation.

Annex I - ESME's questionnaire on data availability in the EU

I. Under what terms and conditions are post-trade data in equities ("Market Data") currently made available?

(Please note that the term "Market Data" as used herein refers to post-trade data in equities only.)

Questions to Users of Market Data:

- 1) What are the terms and conditions under which Market Data is currently made available to you by the various Market Data Providers (i.e. Market Data Sources and Market Data Vendors)? Please provide a summary of the key terms.

In doing so, please distinguish, between the terms and conditions of Market Data Sources (i.e. Regulated Markets, Multilateral Trading Facilities, so called MTF's, and Systematic Internalizers) and those of Market Data Vendors.

- 2) Are there differences in the terms and conditions of the different Market Data Providers and, if this is the case, please list the most notable differences.
- 3) To what extent and with what timely lagging is delayed Market Data made available to you by the Market Data Providers? Are there any exceptions from the industry standard of 15 to 20 minutes delay?

Questions to Market Data Sources:

- 1) Under which terms and conditions do you provide access to Market Data from markets operated by yourself and/or from other market places for which you distribute the Market Data on their behalf? Please provide a summary of the key terms.
- 2) Do you envisage any major changes to the terms and conditions under which you provide access to Market Data?
- 3) Does the quality, scope or accessibility of Market Data differ with regard to certain customer groups? If this is the case, please specify the differences as well as the underlying criteria for such differentiations?
- 4) How and to what extent do you use Market Data from other Market Data Sources and what are the interdependencies between this usage of market data and your operation of your business and/or markets?

Questions to both Users of Market Data and Market Data Sources:

- 1) What is, in addition to the terms and conditions under which Market Data is provided or received by you, the regulatory regime under which Market Data is made accessible to you and/or under which you provide access to such data? Please specify applicable laws and regulations both on EU- and national level.

- 2) Which technical channels of distribution are used in order to obtain and/or grant access to the Market Data?
- 3) What are the differences in terms of latency for the different channels of distribution for Market Data?

II. What are the fees for Market Data and what are the other components of market data costs for different market participants?

- 1) What are the fees charged by the Market Data Providers for access to the Market Data?
- 2) What Market Data is fee liable and what Market Data is distributed by the Market Data Providers free of charge? Are there differences in quality?
- 3) Do you envisage any major changes to the fees charged for access to the Market Data?
- 4) What are the overall costs associated with the access to Market Data and how do these additional costs spread over the various cost components (e.g. vendor fees, operational- or administrative costs etc.)?

III. How is the general availability of Market Data affected by the terms and conditions (including fees and overall costs) and what effect does it have on market participants?

- 1) How is Market Data made available to users (in terms of scope, format, quality etc.) and where do you see potential shortcomings regarding the accessibility of this market data (e.g. delays, quality defects, intransparencies)?
- 2) What do you think are the (main) obstacles with regard to the accessibility of Market Data? To what extent are the obstacles based on the terms and conditions (including fees and overall costs) under which this market data is provided? Please specify in detail.
- 3) Is the Market Data made available by all Market Data Providers on a non-discriminatory basis? If not, pls. specify where you have experienced discrimination.

IV. In relation to assessing the effect on market participants it may be relevant to take into account:

- **different types of market participants (type of activity, activity level),**
- **the role of post-trade data in order execution and investment decision processes (is real-time post-trade data important for all market participants?)**

- 1) Please categorize the types of market participants by their type of activity (e.g. proprietary traders, market makers or agents in the form of institutional- and retail investors) and activity level who are currently users of the Market Data.
- 2) What are the respective requirements of the different types of market participants in terms of latency, netted or un-netted trade data, access to Market Data and to trading at the same time etc.?
- 3) How are the Market Data used in detail by the respective categories of market participants (please include potential regulatory requirements if they are the reason for requiring access to specific Market Data)?
- 4) For what purpose does your company need access to Market Data in real-time?

V. Available alternatives, e.g. in the form of using aggregated, delayed or less comprehensive market data

- 1) What are the reasons to request access to real-time Market Data for one instrument from different markets on which the instrument is traded? Do the reasons to request such access differ dependent on the types of instruments (e.g. for blue-chip stocks)?
- 2) Is it necessary to have real-time access to all Market Data for an instrument traded at different markets? If this is the case, please specify the reasons in detail.
- 3) If real-time Market Data is required from particular markets where at the same time no access to trading is available, what would be the reason for requesting such market data from these markets nonetheless?
- 4) Are there alternatives with regard to access to Market Data from all markets on which an instrument is traded (e.g. delayed or aggregated data etc.). If not, please provide a detailed explanation.

Annex II - Fact Finding - Addressees of questionnaire and on-site visits

I. Addressees of questionnaire and respondents

Name of Addressee	Country
AFG-ASFFI - Association française de la gestion financière	FR
AFIC - Association française des investisseurs en capital	FR
Ahorro Corporacion Gestion, S.G.I.I.C., S.A.	ES
Assicurazioni Generali S.p.A	IT
Associazione bancaria Italiana	IT
Assogestioni	IT
Assosim	IT
Axa	DE
Banca Akros	IT
Bankenverband – Bundesverband Deutscher Banken e.V.	DE
Bankinter Gestion De Activos, S.A., S.G.I.I.C.	ES
BBVA Asset Management, S.A., SGIIC	ES
BHF-Bank AG	DE
Bloomberg	EU
BNP Paribas	FR
BOAT Services Limited	EU
Bolsa de Madrid (BME)	ES
Borsa Italiana	IT
BVI – Bundesverband Investment und Asset Management e.V.	DE
Chi-X Europe Limited	EU
Deutsche Boerse AG	DE
Dexia Belgium	BE
DSGV - Deutscher Sparkassen und Giroverband e.V.	DE

Name of Addressee	Country
DZ Bank AG	DE
FESE - Federation of European Securities Exchanges	EU
FISD – Financial Information Services Devision	EU
Fonditel Gestion, SGIIC, SA	ES
Gesmadrid, S.A., S.G.I.I.C.	ES
IMA - Investment Management Association	UK
Instinet Blockmatch	GB
Invercaixa Gestion, S.A., SGIIC	ES
JP Morgan Cazenove	GB
KBL France Banque de Gestion de Fortune	FR
LIBA - London Investment Banking Association	UK
Liquidnet Europe	GB
London Stock Exchange Group plc	GB
Mutuactivos, S.A., S.G.I.I.C.	ES
NYSE Euronext	FR
PLUS Markets plc	GB
Popular Gestion, S.A., S.G.I.I.C.	ES
Santander Asset Management, S.A., SGIIC	ES
Sistema Espanol De Negociacion De Activos Financieros	ES
Societe Generale	FR
SWX Europe Limited	GB
Telekurs AG	DE
Thomson Reuters	EU
TLX S.p.A.	IT
Turquoise Services Limited	GB
UBS Italia SIM S.p.A.	IT

Name of Addressee	Country
Unicredit S.p.A.	IT
Urquijo Gestion, S.A.U., S.G.I.I.C.	ES
VWD AG	DE
WestLB AG	DE

ESME has submitted questionnaires to 60⁶ addressees. 19 addressees have responded to the questionnaire and have provided content which has been used for ESME's analysis reflected in the report. The remaining 41 addressees have not claimed any issues with regard to the availability of post-trade data in equities in the EU.

II. Additional on-site fact finding visits

- 1) Meeting with LSE Group on 13 November 2008 in London
- 2) Meeting with Thomson Reuters on 10 December 2008 in London
- 3) Meeting with NYSE Euronext on 8 January 2009 in Amsterdam

⁶ Some addressees fall into more than one category.

Annex III - Overview Market Data Fees

Pre- and post-trade transparency – Selected Market Data Sources			Pre- and post-trade transparency – Selected Market Data Vendors	
	Data Fee (Retail Customer)	Data Fee (Professional)	Reuters	Bloomberg
	Price per quote (lowest possible)	Data Fees Push	Data fees* plus Reuters add-on	Data Fees* plus Bloomberg add-on
LSE	£ 0,5 (€ 0,57)	£ 37,-- (€ 42,--) ⁷	€ 44,32	\$ 80
Euronext	€ 0,0001	€ 59,--	€ 62,54	\$ 120
DBAG	€ 0,0005	€ 56,--	€ 59,36	\$ 90
Borsa Italiana	€ 0,05	€ 12,--	€ 12,72	\$ 20
BME	€ 0,01	€ 12,-- (€ 34,00 L2)	- € 36,04 (L2)	- \$ 51,-- (L2)
Chi-X	n.a.	€ 0**	€ 0	\$ 0
Turquoise	n.a.	€ 0**	€ 0	\$ 0
BATS	n.a.	€ 0**	€ 0	\$ 0
Equiduct	n.a.	€ 0**	€ 0	\$ 0
NASDAQ OMX Europe	n.a.	€ 0***	€ 0	\$ 0
OTC post-trade transparency - Selected Market Data Sources			OTC post-trade transparency - Selected Market Data Vendors	
	Data Fee (Retail Customer)	Data Fee (Professional)	Reuters	Bloomberg
	Price per quote (lowest possible)	Data Fees Push	Data Fees* plus Reuters add-on	Data Fees* plus Bloomberg add-on
LSE	n.a.	£ 3,50 (€ 3,89) ⁸	n.a. on Reuters ⁹	\$ 8.--
Euronext	€ 0,0001	€ 7,--	€ 7,42	\$ 11,--
DBAG	€ 0,0005	€ 8,--	€ 8,48	\$ 12,--
Chi-X	n.a.	€ 0**	€ 0	\$ 0
Turquoise	n.a.	€ 0**	€ 0	\$ 0
BATS	n.a.	€ 0**	€ 0	\$ 0
Markit Boat	n.a.	€ 120,--	€ 127,20	\$ 170,--

*) Professional Users / Push mode.

**) Market Data Fees currently waived by temporary fee holiday.

***) Fee holiday announced for the years 2008 and 2009 only.

- o Data comprises of Level 1 data (best bid/best offer) per month per user unless stated otherwise.
- o Regulated Market's Data Fees are taken from the respective web-sites.
- o Data fees as required by Bloomberg and Reuters are taken from official Vendor Price lists and comprise of Data Fees required by Regulated Markets plus Vendor Margin.

⁷ Unconverted LSE Data Fees: GBP 37,-- (GBP 1 = € 1,11).

⁸ Includes "on Exchange off book " and OTC trades.

⁹ This LSE data is not implemented as separately permissioned service but can be accessed via Thomson Reuters by subscribing to the the standard LSE Level 1 data service.

Data Fees as stated in the table above are paid to access either real-time pre- and post-trade data from Regulated Markets and MTF's or from OTC post-trade service providers.

In order to provide a rough overview, Data Fees for various product versions are shown, where applicable, depending either on the type of the Market Data User - i.e. as a Professional Market Data User or as a Retail Investor - or on the delivery mode selected.

The number of instruments for which Data Fees are charged usually deviates substantially between the Regulated Markets and the other Market Data Sources. MTFs provide pre- and post-trade data for an average of approximately 300 to 1800 instruments. One OTC post-trade data service provider offers post-trade data for approximately 6900 instruments and price quotes for approximately 1200 most liquid instruments¹⁰. In contrast thereto, one Regulated Market offers access to pre- trade data of approximately 80.000 instruments and post-trade data for approximately 450.000 instruments within one data package.

¹⁰ According to a CESR database on 2009-02-02.

Annex IV - ESME membership

The members of ESME do not represent their respective firms but participate on an individual basis to contribute their expertise and understanding of financial markets to help the Commission understand the potential impact of such issues and the options available to respond to them. ECB and CESR representatives are observers at the meetings of ESME.

Chris Bates - Clifford Chance

Mats Beckman - SEB

Margaret Chamberlain - Travers Smith

Fabrice Demarigny - Mazars

Carmine DiNoia - Assonime*

John Foyle - Liffe

Gianluca Garbi – Dresdner Kleinwort

Wolfgang Gerhardt - Bank Sal. Oppenheim jr. & Cie.

Jane Hiljkjær Lauridsen - Danske Bank

John Holland - UBS Investment Bank

Karl-Peter Horstmann - RWE Trading

Magdalena Jagodzińska - KBC Towarzystwo Funduszy Inwestycyjnych*

Henny Kapteyn

David Meagher

Javier Mendez Llera - BBVA Asset Management*

Roger Müller - Deutsche Börse*

Els Ponnet - Fortis Bank

María Gracia Rubio de Casas - Baker & McKenzie

Florence Sirel - BNP Paribas

Pamela Thompson - Eversheds*

* Participants in ESME sub-group on the Availability of Post-trade Data in Equities in the EU