COMPETITION COMMISSION

BATS Global Markets, Inc/Chi-X Europe Limited merger inquiry

A report on the anticipated acquisition by BATS Global Markets, Inc of Chi-X Europe Limited

24 November 2011

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The Competition Commission has excluded from this published version of the provisional findings report information which the Inquiry Group considers should be excluded having regard to the three considerations set out in section 244 of the Enterprise Act 2002 (specified information: considerations relevant to disclosure). The omissions are indicated by [✂]. Some numbers have been replaced by a range. These are shown in square brackets. Non-sensitive wording is also indicated in square brackets.

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Summary

1. On 20 June 2011, the Office of Fair Trading (OFT) referred the anticipated acquisition by BATS Global Markets, Inc (BATS Inc) of Chi-X Europe Limited (Chi-X) to the Competition Commission (CC) for investigation and report. The reference required the CC to report by 2 December 2011 on whether a relevant merger situation would be created and if so, whether that situation might be expected to result in a substantial lessening of competition (SLC) within any market or markets in the UK for goods or services.

2. In the UK, BATS Inc owns BATS Trading Limited (BATS) which in turn operates the BATS Multilateral Trading Facility (MTF), which is an order-driven, pan-European MTF. This exchange facilitates the trading of equities that are listed on primary exchanges. BATS offers trades on more than 1,300 of the most liquid securities (primarily equities) across 24 indices and 15 European states. In addition to equity trading, BATS facilitates the trade of Exchange Traded Funds (ETFs), Exchange Traded Commodities (ETCs) and international depositary receipts. It operates both a visible order (or 'lit') book and non-displayed ('dark') order book.

3. Chi-X is a UK company established in 2007 by Instinet (a wholly owned subsidiary of Nomura Holdings). Chi-X is currently owned by several financial institutions. It operates the Chi-X MTF which facilitates trading in 1,386 of the most liquid equities across 23 indices in 15 European states. Like BATS, it operates a lit order book and a dark order book. It also provides customers with a liquidity consolidation service, which consolidates liquidity from its lit and dark order books, as well as external liquidity providers, using smart order routing.

4. As a result of the proposed acquisition, BATS and Chi-X would come under common control and BATS would operate the Chi-X MTF. Based on data supplied by the parties, we found that the acquisition satisfied the share of supply test set by the Enterprise Act 2002 (the Act), and so it had created a relevant merger situation giving us jurisdiction.

5. There are many other registered MTFs, but only one other has acquired significant shares of sales in the UK: Turquoise, which is majority owned by the London Stock Exchange Group (LSEG) but which has substantial minority shareholding by 12 financial institutions. LSEG also offers trading in UK equities through the London Stock Exchange (LSE). Equities may be traded in many other venues, in dark pools and in bilateral trades (ie 'over the counter' (OTC)).

6. We considered what would happen if the merger did not proceed and found that BATS would continue with its pre-existing business plan, supported by its profitable parent, BATS Inc. Chi-X would either remain independent, or would possibly be sold to a new entrant. However, we did not find that its competitive conduct would be different either way. We found that third party conduct would not be affected by whether or not the merger proceeded.

7. We investigated whether the acquisition would lead to an SLC. Our principal concern related to loss of competition between BATS and Chi-X that would continue to be controlled by different companies if the acquisition did not proceed.

8. We considered that the principal candidate relevant market in which to conduct the competitive assessment was the provision of trading services in intra-day on-book lit trading in UK equities, although our view of whether the transaction would cause an SLC was not affected by this definition. We considered that in principle the approp-

riate geographic market included all jurisdictions hosting exchanges which currently compete for trading in UK-listed equities. In practice, the great majority of trading of UK equities is on exchanges that are currently based in the UK. The parties also overlapped in the on-book dark trading of UK equities, and we considered this to be a second candidate relevant market.

9. We assessed the extent of competition between the different exchanges within the relevant market. We found that BATS and Chi-X are currently targeting the same demand and are competing to gain liquidity, even if to date that has largely been at the expense of the LSE. Their customer bases have a high overlap, and given the prevalence of smart order routers (SORs), this means that for those customers connected to both exchanges, switching costs between the two exchanges are very low. The parties have similar business models and are very similar in terms of fee structure and service quality. While there was no persuasive evidence on explicit diversion between BATS and Chi-X, this was to be expected given the relative youth of the market. Accordingly, we found that the parties compete against one another and would do so in future if the merger did not proceed.

10. We found that the only other exchanges that have a significant share of intra-day lit trading in UK equities are Turquoise and the LSE. Turquoise appeared comparable to BATS and Chi-X in terms of the competitive parameters we assessed (ie trading fees and service levels). However, it was in the majority ownership of LSEG and therefore we found that we could not treat Turquoise as fully independent of LSEG in determining its competitive strategy. With regard to the LSE, our view was that since the Markets in Financial Instruments Directive (MiFID) came into force in 2007, the MTFs have driven the competitive landscape. The LSE had responded to such increased competition and introduced new fee structures and upgrading technology. We observed no evidence of market share shifting back from the MTFs to the LSE.

11. We were uncertain whether Turquoise and the LSE would (in the absence of other factors such as the existence of customer power) continue to compete vigorously against the merged entity in the future, or whether they would take advantage of any reduction in competition that the merger may cause by following any worsening of the competitive offering by the merged entity.

12. Accordingly, we examined whether the removal of BATS and Chi-X as independent competitors would affect competition and thought that this might lead to a worsening of the offering of the merged entity in the form of increased trading fees (that element of the total cost of trading over which exchanges have direct control) or decreased service levels (including through reduced investment in technology or reduced innovation).

13. We assessed the extent of constraints from outside the principal relevant market, in terms of trading of European Economic Area (EEA) equities; dark on-book trading (which is trading where there is no pre-trade transparency); and off-book trading (ie trading not on exchanges).

14. With regard to EEA equities, we were interested in venues, traders and equities that are not based in the UK only to the extent that they could constrain the competitive conduct of the merged entity. We found no persuasive evidence of widespread substitutability between equities listed in different EEA states or that the decision to trade a European equity rather than a UK equity is affected by relative trading cost. While the evidence was mixed, most customers considered non-UK equities only in specific circumstances, ie when there is dual listing and they are fully fungible. We therefore found only a limited constraint from these alternatives.

15. With regard to dark trading, we found that the choice between lit and dark trading appeared to be driven by the nature of the trade and customer requirement. Our view was that while the boundaries between lit and dark books were indistinct (especially given the use of SORs and the evidence that investors may split orders and search for liquidity), the different characteristics of dark trading (notably the absence of pre-trade transparency and the fact that trading prices are struck at the midpoint of the bid-offer spread) meant that lit on-book trading on one exchange is in closer competition with other on-book lit providers than with dark trading. We also noted that the exchange trading fee structure differs between on-book lit and on-book dark venues. Further, the volumes of dark on-book trading are far smaller than those of lit, so that its inclusion would make little difference to our competitive assessment. Accordingly, we did not find that dark trading on other exchanges that offered this facility would act as a substantial constraint on the lit book of the merged entity, but acknowledge the constraint it may impose on certain types of transactions.

16. Equally we assessed the constraint that would be imposed by off-book trading. We looked at the trends in on-book and off-book trading for the FTSE 100, and their relationship to changes in fees, but saw no persuasive evidence of switching from one to the other following changes in trading fees. At a high level, we observed that on- and off-book trading (by volume and value) tended to move together. We found that certain factors relating to price, immediacy and market impact might lead a trade to be executed off-book rather than lit. We therefore did not find that off-book trading would act as a substantial constraint on the merged entity in the market for on-book lit trading, but acknowledged the constraint it may impose on certain types of transactions.

17. However, we found that the characteristics of off-book trading that we identified were sufficiently similar to those associated with on-book dark trading to amount to an effective competitive constraint on the merged party in the second relevant market (ie on-book dark trading), so that the merger would not materially affect competition with regard to the provision of dark on-book trading.

18. We examined customer power and barriers to entry and expansion to see if these produced countervailing effects.

19. With regard to customer power, we noted that the principal customers of BATS and Chi-X were well resourced and sophisticated financial intermediaries with strong incentives to keep trading fees low and service levels high. There was a substantial customer overlap between the merging parties and Turquoise and the LSE, so that liquidity could readily switch at negligible cost between exchanges either automatically or at the direction of major customers. Further, we noted that BATS and Chi-X were, and the merged enterprise would be, substantially owned by consortia of major customers, and that the business model adopted to date by BATS and Chi-X relied for its success on competing for sales and market share against the former national exchanges, on the basis of trading fee and service. We considered it relevant that major customers had expressed no material concerns in relation to the proposed merger.

20. Accordingly, we found that customers would have both the incentive and ability to constrain any worsening of the offering of the merged business, by switching trading volumes and liquidity to another existing MTF or exchange, and by exerting influence (via shareholdings or otherwise) over the merged business.

21. In terms of barriers to entry and expansion, we found that regulatory barriers were low and cost barriers only moderate. However, we identified network effects, ie the need to attract liquidity, as a barrier to expansion. There is a virtuous circle: traders

gravitate to where other traders trade; equally they shun empty MTFs. We found that there was a critical share of around 5 per cent of a significant market such as intra-day lit trading in UK equities, at which point many brokers and traders would seek to connect to an exchange because it offered sufficient liquidity to justify the investment necessary to connect and the ongoing costs of maintaining the connection. Until that point is reached, traders would not consider the costs of connection to an exchange justified.

22. We considered the requirements for a newly-established business to achieve minimum efficient scale (ie a level of turnover and market share sufficient to break even), and concluded that this would not be a barrier to entry in circumstances where other considerations took priority. In particular, the large customers we identified have a strong strategic interest in maintaining competition across the sector, and they would recognize that sponsored entry would help drive lower prices and higher service levels on all other competing exchanges on which such customers were active.

23. In this regard, we noted that historically customer consortia had sponsored the establishment of MTFs that had successfully overcome the barrier represented by network effects and we reviewed the evidence on further possible sponsored entry. We concluded that if any worsening of the merged entity's competitive offering or other strategic considerations provided the incentive to do so, new entry supported or sponsored by major customers would overcome the network effects identified.

24. It was thus our view that there were no barriers that would prevent entry and expansion to overcome any competitive detriment that might otherwise result from the merger. In the circumstances under consideration, such entry and expansion would be likely, timely and sufficient.

25. Accordingly, for the reasons given above, we concluded that the proposed merger would not lead to an SLC in any relevant market in the UK.

Findings

1. The reference

1.1 On 20 June 2011, the OFT referred the anticipated acquisition by BATS Inc of Chi-X to the CC for investigation and report. The reference was made under section 33 of the Act. The terms of reference are set out in Appendix A. The reference required us to determine whether a relevant merger situation would be created and, if so, whether the creation of that situation may be expected to result in an SLC within any market or markets in the UK for goods and services.[1] We were required to publish our final report by 2 December 2011.

1.2 This document together with the appendices constitutes our report in respect of the reference which we are required to publish under section 38 of the Act. Further information relevant to this inquiry, including versions of main-party and third-party submissions, and summaries of evidence, can be found on our website.

2. Market background

2.1 This section provides background to the market in which the merger parties operate. It describes the cash equities trading market, the relevant services, and who provides them and buys them. It also considers factors relevant to the provision of the relevant services in terms of legislation, technology and other financial and economic considerations.

Primary and secondary equity markets

2.2 The primary equity market refers to the listing of shares by companies to raise capital (eg via an initial public offering or a rights issue). The secondary equity market is the activity of trading equities between investors, subsequent to their primary issuance. It may further be divided between 'intra-day', which is the period of continuous trading, and opening and closing auctions, which occur at the open and close of trading hours to establish the opening and closing prices of each equity.

2.3 The LSE operates in both the primary and secondary markets for UK equities.[2] It is currently the only exchange in the UK that holds opening and closing auctions for equities.

2.4 MTFs (such as those provided by the would-be merging parties) provide facilities for secondary equity trading, and they do not hold opening or closing auctions. Only one of them operates a primary equity market (LSEG's AIM market for small and growing companies, which is registered as an MTF). They largely developed following the entry into force of MiFID.

MiFID and the emergence of MTFs

2.5 MiFID came into force in 2007. MiFID was a regulatory step change as it reduced the incumbency advantage enjoyed by the former national exchanges and encouraged a competitive market in equities trading across the EU. MiFID abolished the concen-

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[1] Section 36 of the Act.
[2] The LSE is owned by LSEG. LSEG also majority owns an MTF (Turquoise). Throughout this report we use the term 'LSE' when referring to the London Stock Exchange itself, but 'LSEG' when referring to the Group controlling both the LSE and Turquoise.

tration rule which applied under Article 14(3) of the Investment Services Directive (ISD) (*93/22/EEC*) that allowed EU member states to require that retail orders had to be executed on a regulated market. MiFID enabled trading services to be provided by a variety of alternative providers. A Market Operator (also known as a Recognized Investment Exchange (RIE) in the UK), such as the LSE, can obtain regulatory approval to operate Regulated Markets (RMs) and an MTF. An investment firm can obtain regulatory approval to operate an MTF or it may register as a Systematic Internalizer (SI). Further detail is set out in Appendix B.

2.6 Since the implementation of MiFID, there has been rapid growth in the number of secondary trading venues and the main objective of the MTFs has been to gain liquidity and customers in secondary trading from former national exchanges such as the LSE. MiFID is currently under review but the most recent consultation documents suggest that any changes will be at the margins rather than amounting to another regulatory step change for cash equities trading as was the case with MiFID itself.[3] It is anticipated that revisions to MiFID will be mainly directed towards derivatives trading and ancillary services relating to cash equities, such as market data services. On balance, the likely changes in regulation appear likely to favour existing MTFs and potential future market entrants.

Venues for secondary trading in cash equities

2.7 This section describes the different types of facilities that investors use to trade in cash equities in the secondary market, including MTFs, former national exchanges, and off-book trading venues.

On-book trading

2.8 On-book trading takes place on RMs (such as the LSE) and MTFs. MTFs are exchanges on which cash equities are traded by investors. MTFs provide facilities for electronic, order-driven secondary market trading in the most liquid equities, ie including (but not limited to) the constituents of the major country index (such as the FTSE 100, CAC 40, DAX 30) and other equity-like instruments (eg ETFs, ETCs, Depository Receipts (DRs)) during the continuous trading window (ie intra-day).[4] MTFs facilitate trading in multiple EU member states and other countries in the EEA and Switzerland.

Off-book trading

2.9 In addition to on-book trading, equities trades may be executed away from the order book of an exchange (which is sometimes called 'off-exchange', or OTC).

2.10 Equity trading may occur through bilateral agreements between traders. Alternatively a broker may take a principal position against a customer order. Investment firms[5] can operate other trading venues or systems that match client order flow. Generally, these firms receive orders electronically, utilize algorithms to determine how they

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[3] The MiFID II proposals were published on 20 October 2011: http://ec.europa.eu/internal_market/securities/isd/mifid_en.htm.
[4] The period of 'continuous trading' commences after the opening price auction and before the closing price auction (this means between 8.00am and 4.30pm Monday to Friday). The price-setting auctions set the opening and closing prices of the relevant equities and are thus used as a reference point for firms trading on MTFs and for a variety of other purposes, such as fund valuations. Opening auctions for selected equities allow for information gained while the exchange was closed to be incorporated into the price of the equity while closing auctions allow for unmatched orders to be matched before the close of the day's trading enabling market-makers and others to close out their positions.
[5] CESR Technical Advice to the European Commission in the Context of the MiFID Review and Responses to the European Commission Request for Additional Information (July 2010).

should best be executed (given a client's objectives) and then pass the orders through an internal system that will attempt to find matches. In contrast to lit on-exchange trades, off-book trades are reported after the event rather than contemporaneously.

2.11 An SI is an investment firm which on an organized, frequent and systematic basis deals on its own account by executing client orders outside a regulated market or MTF. It must publish a firm quote for shares traded on a regulated market. It must offer pre-trade transparency on trades up to a 'standard market size'.

Lit and dark books

2.12 There are two types of trading books: 'lit' and 'dark'. Lit books operate with pre-trade transparency. That is, they enable investors to see the order book, which shows volume and price for shares offered or sought. The identity of the buyer and seller is not visible.

2.13 By contrast, dark books do not provide pre-trade transparency. Offers to buy or sell may be placed in dark books, which will specify only the equity and price. Neither the available volume nor the identity of the trader is visible. Orders may be sent to the dark books, necessarily somewhat speculatively given the lack of public information regarding available offers. If the order meets a matching offer, the trade is completed and must then be reported. Orders are executed at the mid price of the bid and offer prices available on the lit book of the relevant listing market (eg the LSE).

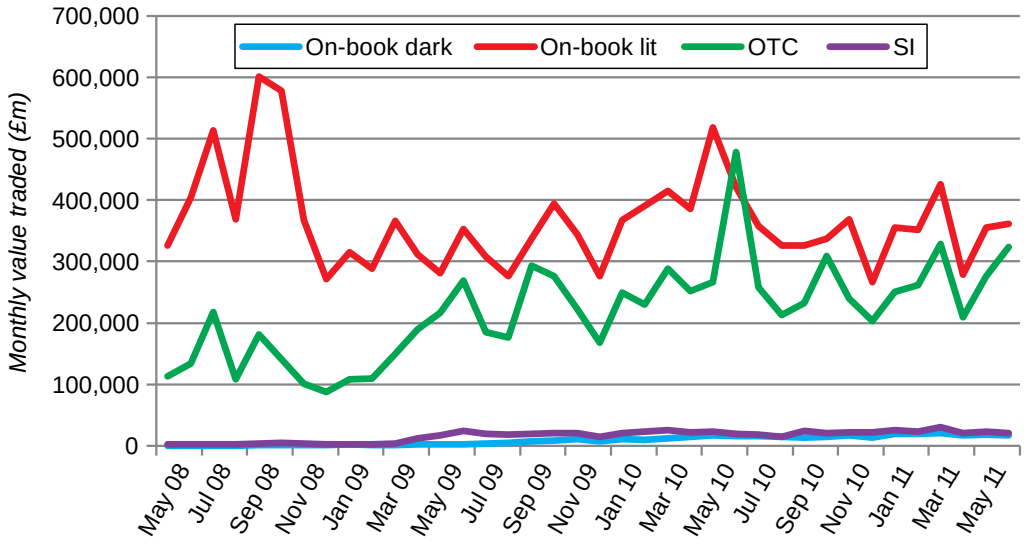
2.14 MTFs may operate both lit and dark books. The LSE operates only a lit book, although it does provide hidden order functionality, including 'iceberg' orders (whereby only a certain volume is displayed at any one time).

Relative size of on-book and off-book trading

2.15 To provide an indication of the relative size of the different trading venues in the UK, Figure 1 displays the monthly value, as reported by Fidessa, traded (in £ million) in on-book trading (for which lit and dark trading is reported separately) and off-book (for which OTC trading and SI trading is reported separately) between May 2008 and May 2011. This data indicates that the highest value traded occurs in the on-book, lit category, and the second highest value traded is in the OTC category. The time series indicates that the gap between on-book lit trading and OTC trading has narrowed during the last three years. In June 2011, on-book lit trading represented approximately 50 per cent of the trading by value, and OTC represented 45 per cent. The balance was SIs and dark on-book trading and trading, both of which represented less than 3 per cent of the total value traded.

FIGURE 1

Monthly trading value by venue (May 2008 to June 2011)



Source: Fidessa.

2.16 There is significant uncertainty regarding the volume and value of OTC trading, given that there is no industry consensus relating to the nature and scale of off-book transactions. The reason is that the current rules for reporting OTC trading are not clear and some traders (for instance, institutional investors) interpret the rules differently and, as a consequence, the extent to which data is double counted or not reported at all within different sources is not clear.[6]

Size of the UK on-exchange cash equities trading market

2.17 In 2010, the estimated value of secondary trading in UK-listed equities trading was €2.1 trillion (£1.9 trillion),[7] and the estimated value of the EEA market was €9.1 trillion (£8.3 trillion) (both values include auction and both on- and off-book trading). Based on these figures, the UK market represents over 20 per cent of all European trades by value.

2.18 The financial performance of an exchange is a function of trading activity because the trading fee that the exchange earns is the product of the aggregate value of equity trading multiplied by the trading fee: trading fees in European equity markets are levied on an ad valorem basis. Consequently financial performance is affected by the volume of trading activity and the value at which equities trade, both of which depend on prevailing financial and economic conditions.

Market share trends in on-book trading

2.19 At the beginning of October 2011, four exchanges accounted for approximately 95 per cent of on-book trading by value (including intra-day and auctions) in the

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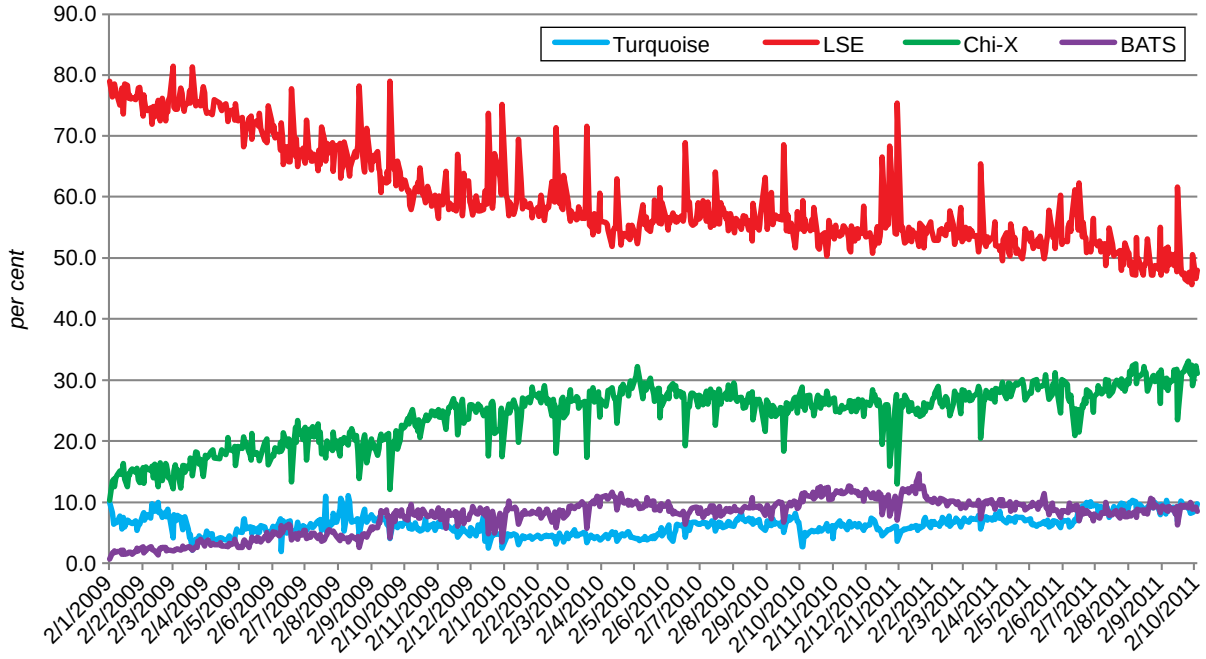
[6] According to analysis by the Association for Financial Markets in Europe (AFME), approximately 60 per cent of all reported MiFID OTC equity trades from Q1 2008 to Q3 2010 were actually duplicate trades already reported elsewhere and therefore not true indicators of transaction volume. The AFME data gives the remainder of OTC trades (OTC Real Liquidity) at only approximately 16 per cent of all European equities turnover in the same period.

[7] These figures relate to on-exchange trading. Exchange rate: €1.1 = £1.

FTSE 100 index. The LSE accounted for approximately 45 per cent of traded value (auctions included), while three MTFs accounted for approximately 50 per cent: Chi-X approximately 30 per cent, BATS and Turquoise each approximately 10 per cent. Figure 2 illustrates how market shares have changed since the beginning of 2009. This shows that the LSE has been losing market share while that of BATS, Chi-X and Turquoise has increased. The minor share of trading not accounted by these four exchanges is distributed between a number of smaller trading venues.

FIGURE 2

Market shares for intra-day lit on-book trade by value FTSE 100 from 2 January 2009 to 4 October 2011



Source: BATS Europe website.
Notes:
1. Market share data includes auctions.
2. The following trading venues have been omitted from this time-series chart for presentational reasons given their small individual market shares in the FTSE 100: Equiduct, ICAP BlockCross, ITG Posit, Liquidnet, Neuro, Nomura NX, Pipeline, Quote MTF, Sigma X MTF, Smartpool, UBS MTF.

Technology trends

2.20 The MTFs are beneficiaries of the growth of electronic trading, and have invested in trading technology, such as matching engines, which have in turn enabled them to attract customers from the former national exchanges through (among other things) reductions in trade processing times (ie latency). They adopted a lower-cost business model that enabled them to offer trading services at significantly lower trading fees than were previously offered by former national exchanges, such as the LSE. The LSE has also invested in new trading technology, systems and upgrades, so that there is now less distinction between the performance of the rival trading exchanges than was the case prior to MiFID. LSEG told us that investment in new technology had been a consistent element of its development and competitive strategy, as it had sought to deliver improved services to its customer base and to lower costs. BATS and Chi-X told us that technological development was continuous, and no major technological changes were expected in the near future.

2.21 Technology has enabled an expansion in electronic trading, an acceleration in frequency of trading by some traders, an increase in the speed with which investors react to market movements and a reduction in time that some traders hold equities (relevant intervals for such activities may be measured in microseconds).

Network effects

2.22 Trading venues exhibit network effects. Such platforms are two-sided, ie customers, which are both buyers and sellers of cash equities, meet in the trading venue to execute their orders. Both buyers and sellers benefit in trading where there are other buyers and sellers. Each customer gains from the presence of other customers trading on the same exchange, as this tends to bring liquidity and so increases the likelihood of prompt order execution at a competitive price. Accordingly, there is a virtuous circle: a popular exchange has liquidity, which attracts more buyers and sellers who in turn add liquidity. Conversely, a vicious circle applies to unpopular exchanges. There are costs associated with connecting to a new exchange that buyers and sellers may not wish to incur for venues lacking liquidity.

2.23 Once connected to an exchange, there are very limited switching costs in placing orders at one exchange rather than another, since SORs (see paragraph 2.32) enable several venues to be tested almost instantaneously. Even if customers are connected, an exchange still needs sufficient liquidity to attract trade, so network effects may continue to operate, although not to such an extent as to preclude competition between trading venues. We consider network effects further in Section 10.

Customers

2.24 This section provides a description of the different categories of customers which trade cash equities; the 'best execution' obligation that they may be subject to; and the SOR technology they typically use. A relatively small number of customers are very important to MTFs. We provide more detail and assess the implications in Sections 9 and 10 in particular.

Category of customer

2.25 In broad terms, trading venues attract two categories of customer. The first category is the investor making the buy/sell decision about an equity. Within this first category of customer, we further distinguished between market-makers and proprietary traders. The second category is the financial intermediary who acts on client instructions to place orders. The intermediary may also decide about the venue on which the order is placed. We have further distinguished this customer group between smaller brokers and larger financial institutions. However, we found that the distinction between the two customer categories is not clear cut, since some intermediaries may also trade on their own account.

Market-makers

2.26 Market-makers are providers of liquidity to equity markets, and their trading is commonly known as passive flow (which means that they make offers, hoping others will accept; accepting offers placed is referred to as aggressive flow, or 'taking'). Market-makers employ their own capital to offer continuously to both buy and sell a range of equities, and they aim to profit from the difference (or 'spread') between their bid and offer prices. Market-makers usually hold limited or no positions overnight, and for this reason are likely to conduct at least some trading activity on exchanges which hold

closing auctions. Market-makers may be paid a rebate by MTFs for their passive trading flow.

Proprietary traders

2.27 Proprietary traders trade with their own capital, rather than as an intermediary for end-customers. Proprietary traders employ a wide range of investment strategies with the aim of making profits. For example, some look to identify undervalued equities or exploit arbitrage opportunities between different equities (or other investment opportunities) or even between the same equity on different venues (if a price anomaly is identified). The trading pattern employed by proprietary traders may be a combination of passive and aggressive orders.

Small brokers

2.28 Some intermediary business conducted by brokers relates to orders to buy or sell equities with a view to longer-term investment. Some brokers we spoke to referred to this as 'natural flow'. The type of order may be somewhat less price sensitive to trading fees, and is less concerned about very rapid execution. Brokers may place orders direct, use their own SOR, or use a third party in order to gain access to a wider range of venues, using more sophisticated routers (this is known as 'sponsored access').

Large financial institutions

2.29 Larger intermediaries (typically large investment banks) are more likely to have invested in advanced technology, and be connected to multiple venues. They may trade on their own account as well as on behalf of clients. They may act as intermediaries for other, typically smaller, brokers (which benefit from the advanced technology and economies of scale that the large investment banks enjoy). They may operate multiple trading desks (such as an agency desk, a proprietary desk, an algorithmic desk and provide sponsored access (see paragraph 2.28) that trade in different capacities and so have different trading strategies.

Best execution obligation

2.30 'Best execution' is an obligation prescribed by MiFID that requires an investment firm (which includes the brokers and financial institutions above which perform an intermediary function for third party customers) to take all reasonable steps to obtain the best possible result for their clients when executing their orders taking into account a number of execution factors: price, costs, speed, likelihood of execution and settlement, size and nature of the order or any other consideration relevant to the execution of the order.[8] This requirement sets a high-level standard which allows firms a considerable degree of flexibility on how to meet it. Firms must set out how they will meet this obligation by publishing a best execution policy. A firm may differentiate its best execution policy depending on the types of clients it services and the types of instruments traded. Generally, where there are several execution venues which would enable a firm to obtain the best possible result, the firm should consider the merits of all such venues. However, MiFID does not prevent a firm from selecting

[8] Source: *FSA Handbook. Conduct of Business Source Book 11.2.1*.

only one execution venue if the firm can show that by doing so it is able to obtain the best possible result on a consistent basis.[9]

2.31 Intermediaries choose venues in line with their best execution policies when acting on behalf of clients and the decision is often implemented by a programmed SOR (see below). However, even where the best execution obligation does not apply (notably where customers are trading on their own account), customers will have strong incentives to execute effectively, and are likely to consider similar factors to those contained in best execution policies. Further information regarding best execution is contained in Appendix C.

Smart order routers

2.32 When an order has a reasonable chance of being executed at more than one location there is an opportunity to search for a better price. Once a customer is connected to an exchange, an SOR facilitates the search function, and allows orders to be switched or split rapidly between venues. It sends orders to (what it determines through a set of calculations and logical tests) to be the best venue or venues available at that time. Trading firms can program the router to prioritize criteria other than price, including execution costs, the availability of liquidity and latency. The router can also be programmed to search various destinations including lit and dark pools. Evidence relevant to the prevalence of SOR use is contained in Appendix D.

Exchange fees and rebates

2.33 The primary source of revenue for an MTF is the exchange fee that it generates for each trade that is executed on its platform. The trading fee is levied on liquidity takers (ie aggressive orders). MTFs also pay rebates to liquidity providers (see Appendix E). This pricing model is known as 'maker/taker', and has become a well-established mechanism for MTFs to attract liquidity providers. The trading fees that customers pay to trade equities may depend on the amount of trading they carry out (number and value of trades), and the type of trading that they engage in (liquidity taking or liquidity provision).

2.34 MTFs may also generate revenue from a range of services which are closely related to trading services, such as on-routing (whereby an order is forwarded to another exchange or venue if it cannot be completed on its exchange); market data; or the provision of sponsored access services, which enable firms to connect directly to the trading on an exchange despite not being a member of it, by using the membership of another firm (the sponsor). The sponsor is responsible for regulatory compliance, clearing and settlement. We view these as activities that are ancillary to the provision of facilities for the trading of equities, rather than as separate or stand-alone activities.

Cost of trading

2.35 From the perspective of the customer (ie the investor), the exchange fee (or rebate) is just one component of the overall cost of trading in equities. In particular, the cost of liquidity (typically measured by the bid-ask spread on an equity) is an important factor that traders take into consideration. Closely related to this is the potential market impact of a particular trading strategy (ie how the specific order will affect the price available on the relevant exchange before trade is executed). In addition, there

[9] CSER Q&A on Best Execution. May 2007 (www.esma.europa.eu/popup2.php?id=4606).

are potential pre-trade costs for market data and connectivity, and potential post-trade costs for clearing and settlement of the trades. The nature and scale of these additional costs of trading is described in Appendix F. The exchange fee will not have the same significance for all customers, for example it may be relatively less important for a long-term investor executing through an intermediary than for a proprietary high-frequency trader.

2.36 Trading exchanges compete on the basis of the trading fees they charge, and the level of service offered, reliability, and the speed and certainty of execution. The exchange operator determines the trading fee, the reliability and the speed of execution. It does not directly determine the bid-offer spread, or the certainty of execution, which both depend upon the volume of liquidity available. However, the volume of liquidity is indirectly influenced by the level and structure of trading fees and the quality of technology offered. We return to how exchanges compete in Section 8 in particular.

2.37 Having described the relevant services and market background, we now turn to describing the parties and their services, and to assessing the constraints that would apply to the merged entity, should the proposed transaction proceed.

3. The companies

BATS

3.1 BATS Inc is a US company founded in 2005 and headquartered in Kansas City. It develops and operates electronic markets for the trading of listed cash equity securities and options. It operates two stock exchanges in the USA, the BZX Exchange (the third largest securities exchange in the USA) and the BYX Exchange. The two exchanges target different customers by offering different pricing alternatives.

3.2 BATS Inc is owned by several large financial institutions. Shareholders owning over 5 per cent of the business are: Citigroup, Credit Suisse, Tradebot Systems, Deutsche Bank, GETCO, JP Morgan, Lime Brokerage Holdings LLC, Lehman Brothers, Merrill Lynch and Morgan Stanley. Further details are contained in Appendix G.

3.3 BATS Inc is regulated in the USA and reports in US dollars. In 2010, BATS Inc had turnover of $834.8 million (£521.8 million) and earnings before interest, tax, depreciation and amortization (EBITDA) of $41.2 million (£25.8 million).[10] Its profit before tax (PBT) was $35 million (£21.9 million). In 2009, BATS Inc had turnover of $908.2 million (£567.6 million), EBITDA of $34.8 million (£21.8 million) and PBT of $30.5 million (£19.1 million). BATS Inc has been profitable since 2008.

3.4 BATS Inc has a number of wholly-owned subsidiaries. In the USA, it owns BATS Options, a US equity options market, and operates the proprietary BATS 1000 Index, which measures the performance of 1,000 US securities in ten equally-weighted sectors.[11]

3.5 In the UK, BATS Inc owns BATS Trading Limited (known as BATS Europe and referred to in this report as 'BATS') which in turn operates the BATS MTF, an order-driven, pan-European MTF. This exchange facilitates the trading of equities that are listed on primary exchanges. BATS offers trades in nearly 1,300 of the most liquid securities (primarily equities) across 24 indices and 15 major European states. In

[10] EBITDA adjusted for stock compensation $47.3 million (2010) and $38.2 million (2009).
[11] BATS website: www.batstrading.com.

addition to equity trading, BATS facilitates the trade of ETFs, ETCs and international depositary receipts.

3.6 BATS operates both a lit and dark order book. BATS had [✂] customers trading lit on-book in 2011. It also offers:

(a) Onward routing: BATS offers a service whereby an order is forwarded to another exchange or venue if it cannot be completed on its exchange (due to an absence or exhaustion of available liquidity) and offers a number of execution strategies.

(b) Market data: BATS provides live data about the stocks' bid-ask prices, available shares of orders accepted in its exchange and executed trades, as well as historical data about volumes and value traded in its exchange and other trading venues.

(c) The provision of sponsored access services.

3.7 BATS is regulated in the UK and reports in sterling. In 2010, the European equities business had a turnover of £[✂] million ($[✂] million)[12] and EBITDA was a loss of £[✂] million ($[✂] million). In 2009, BATS had a turnover of £4.5 million, with a loss before tax of £10.4 million.

3.8 BATS Inc plans an initial public offering (IPO) and filed a 'Form S1 Registration Statement' (its preliminary prospectus) with the Securities Exchange Commission on 13 May 2011, and it has subsequently filed two amendments in August and September 2011.

Chi-X

3.9 Chi-X is a UK company established in 2007 by Instinet (a wholly-owned subsidiary of Nomura Holdings). Chi-X is currently owned by several financial institutions. Shareholders owning more than 5 per cent are: Citadel, GETCO, Instinet, Credit Suisse, Merrill Lynch, Morgan Stanley, Optiver, Ogier and UBS. Further details are contained in Appendix G.

3.10 Chi-X is regulated in the UK and reports in sterling. It had turnover of £42.1 million in 2010 (of which £[✂] million was generated in the UK).[13] This compares with turnover of £23.6 million in 2009 (of which £[✂] million came from the UK). EBITDA was £1.4 million in 2010 (2009: loss of £5.4 million). PBT was £0.8 million in 2010 (including £0.4 million one-off transaction-related costs); this compares with a loss of £5.8 million in 2009.[14]

3.11 Chi-X operates the Chi-X MTF which facilitates trading in over 1,300 of the most liquid securities across 23 indices in 15 European states. Like BATS, it also operates a lit order book and a dark order book. It also provides customers with a liquidity consolidation service, which consolidates liquidity from its visible and dark order books, as well as external liquidity providers using smart order routing. In addition, it offers:

(a) On-routing: Chi-X can forward uncompleted orders to dark pools.

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[12] Translated at £1.00:$1.60 (this exchange rate is used throughout this report).
[13] This is based on client billing address and does not reflect the revenue from sale of UK equities.
[14] *Chi-X: 31 December 2010 Report and Financial Statements*.

(b) Market data: Chi-X provides historical data which contains its historical tick size and real-time order book data (including level 1 data, which is the best bid and offer on the lit book, and level 2 data, which is all available real-time bid and ask prices with the respective volumes, and the last traded prices with the respective volumes). It charges market data vendors (but not Chi-X participants) for real-time market data.

(c) The provision of sponsored access services: Chi-X applies pre-trade risk management controls on behalf of the sponsors in order to assist them to meet their regulatory obligations.

3.12 In 2010, [✂] per cent of revenues were forecast to be from trading in cash equities. [✂].[15] The 2010 forecast was for [✂] per cent of transaction fees to be from lit rather than dark trades. In 2011, Chi-X had [✂] customers trading on-book.

4. The proposed merger and the CC's jurisdiction

Proposed merger

4.1 On 18 February 2011, BATS Inc and Chi-X signed a Share Exchange and Purchase Agreement (SPA) for BATS Inc to acquire control of Chi-X which would as a consequence become part of BATS. This agreement was conditional on clearance by the OFT and the Financial Services Authority (FSA). Since the OFT referred the transaction to the CC, the parties agreed in principle on 12 July 2011 to an Amendment Agreement to cover the period of the CC inquiry, which became effective on 22 July 2011.

4.2 Under the SPA, the final consideration (excluding earn-out) to be paid to Chi-X shareholders (some of whom are shareholders in BATS Inc) was a combination of shares and cash, totalling the equivalent of [✂] per cent of $[✂] billion (£[✂] billion). The shareholders receiving shares rather than cash would receive [✂] per cent of the equity in the combined business, with the remaining consideration to be paid in cash. This valued Chi-X ([✂]) at an equity value on 18 February 2011 of $[✂] million (£[✂] million), as stated in the SPA.

4.3 In addition, there is an earn-out pool of up to $[✂] million (£[✂] million) in cash. The cash earn-out pool is payable dependent upon the [✂] criteria set out in the SPA. All Chi-X shareholders (whether receiving cash or shares on completion) are eligible for a share of the earn-out consideration, if achieved.

4.4 The FSA has given its approval until 30 October 2011 (following that date subject to further extension) to the change of control that would occur on the close of the transaction, with BATS Inc controlling Chi-X.

The CC's jurisdiction

4.5 The first of the statutory questions we must answer is whether the transaction outlined in paragraphs 4.1 to 4.3, if carried into effect, will result in the creation of a relevant merger situation.[16]

4.6 The Act provides that a relevant merger situation is created if two or more enterprises cease to be distinct and either the value of the turnover of the enterprise being

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[15] [✂]
[16] Section 36 of the Act.

acquired exceeds £70 million or the combined share of supply in the UK exceeds 25 per cent.

4.7 BATS and Chi-X both carry on the business of operation of an MTF and ancillary services for reward. Accordingly we are satisfied that both are enterprises for the purposes of the Act.

4.8 We are satisfied that the two enterprises, BATS Inc and Chi-X, will cease to be distinct if the transaction described in paragraphs 4.1 to 4.3 is completed because the transaction will result in the sale of 100 per cent of the shares in Chi-X to BATS Inc bringing both BATS and Chi-X under common control.

4.9 BATS and Chi-X both operate MTFs which provide facilities to trade equities and overlap in the provision of facilities for the trading of UK equities. Combined, the parties' share of supply of these services exceeds 30 per cent. We are therefore satisfied that the share of supply test is met and we are not required to consider the value of the turnover of Chi-X.

4.10 We therefore conclude that if the proposed transaction is carried into effect, a relevant merger situation under section 23 of the Act will be created.

5. The counterfactual

5.1 We assessed the competitive effects of the merger relative to the degree of competition that would have prevailed if it did not occur (the counterfactual). Our Merger Assessment Guidelines explain that we may examine several possible counterfactual scenarios and must select the most likely scenario absent the acquisition.[17] The guidelines note that 'the CC will typically incorporate into the counterfactual only those aspects of scenarios that appear likely on the basis of the facts available to it and the extent of its ability to foresee future developments'.[18]

5.2 Accordingly, we considered the likely conduct of Chi-X, BATS and third parties should the merger not proceed.

Chi-X

5.3 Chi-X told us that following an approach by BATS Inc, Chi-X appointed Lexicon Partners (now Evercore) to run a sales process for the business, although the shareholders were not committed to completing a transaction. Chi-X received [✂] bids, which it narrowed down to [✂] during the course of December 2010: the bids from BATS, [✂]. Ultimately Chi-X decided between the bids from BATS and [✂]. There was a preference for the BATS bid, as its business model (as a challenger to the former national exchanges) was in line with the views of Chi-X's own shareholders.

5.4 We asked Chi-X whether, absent the proposed transaction, it would have been more likely to operate independently or to sell to [✂] (the rival bid that was considered most seriously). Chi-X's management told us that some shareholders were keener to sell than others, while the management team itself was keen to continue as a standalone business. Accordingly it could not give a definitive answer regarding what would have happened.

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[17] *CC and OFT Merger Assessment Guidelines, CC2 (Revised) (CC2)*, paragraph 4.3.6.
[18] *CC2*, paragraph 4.3.6.

5.5 We reviewed Chi-X's board minutes. They noted that throughout the sales process the shareholders considered the option of continuing as a stand-alone business, and reflected a range of views as to whether Chi-X would be better off independent or proceeding with a transaction.

5.6 The [✂] bid was a cash offer for the main business (excluding the derivatives strategy) with earn-out conditions based on the Chi-X business plan to June 2013. It also included [✂]. [✂] would contribute £[✂] million of funding and the board would include representatives of Chi-X's shareholders. Given the earn-out, the indication is that, at least in the short term (to 2013), the business would be operated on a similar basis to Chi-X operating as an independent company. Chi-X told us that this was its expectation. [✂] has a limited European presence and no presence in the UK equities market.

5.7 Having regard to the evidence we have seen, we consider that absent a sale to BATS, Chi-X would have either continued to operate as an independent company or would have been sold, most likely to [✂], which would have been a new entrant into the UK equities market.

BATS

5.8 BATS started trading in the UK in 2008. The company is backed by a profitable parent and it told us that it was committed to the UK and European markets. As at 31 December 2010, BATS had £3.8 million cash on its balance sheet and net assets of £4.7 million.

5.9 BATS was important to the BATS Inc business overall, since having global scale is seen to be a key factor for investors. We have seen no indication that support from the parent company would not be forthcoming in the period to profitability in Europe. BATS told us that if the merger had not been initiated, then it would have proceeded according to its business plan. Chi-X said that it expected BATS would continue to compete in the pan-European market absent the transaction. Accordingly we have accepted that absent the merger it is most likely that BATS would have continued to operate independently in Europe, aiming to achieve profitability.

Third parties

5.10 The UK cash equities trading market has four major participants. Turquoise, which like BATS and Chi-X operates an MTF, is 51 per cent owned by LSEG. BATS, Chi-X, LSE and Turquoise account for approximately 95 per cent of on-book lit trades.[19] We discussed with LSEG (ie the LSE and Turquoise) its future plans. It anticipated further growth by Turquoise in particular, which has recently overtaken BATS in terms of market share in intra-day lit trading in UK equities. LSEG told us that its strategy did not depend on whether or not the merger proceeded. Other third parties that we spoke to also told us that their strategies did not depend on whether or not the merger proceeded. We consider these companies further in Section 8.

Conclusion on the counterfactual

5.11 Having regard to the matters mentioned above, our conclusion is that the most likely counterfactual absent the merger is that BATS and Chi-X would have continued to

[19] A snapshot of market shares for lit on-book trading exchanges in FTSE 100 shares as of October 2011. Source: BATS website.

operate independently, with Chi-X operating either as an independent stand-alone business or under the ownership of a new entrant ([✂]) into the UK equities market, but in either case operating broadly in accordance with its business plan unchanged. We also concluded that third party strategies would be unaffected by the proposed merger.

6. Theories of harm

6.1 At the outset of this inquiry, we identified and published theories of harm in our issues statement.[20] Our view was that there were two ways in which the merger could give rise to an SLC compared with the counterfactual: *(a)* loss of competition in the provision of trading services for UK-listed equities; and *(b)* loss of potential competition in the provision of those trading services.

6.2 Since we concluded (in Section 8) that BATS and Chi-X are currently in actual competition, and that the factors relevant to our competitive assessment in Sections 7 to 10 are the same under either theory of harm, we have not considered in this final report the loss of potential competition separately from the loss of actual competition. Instead we subsumed the second theory of harm within the first.

6.3 In order to assess the loss of competition in the provision of trading services for UK-listed equities, we considered:

(a) the relevant markets (Section 7);

(b) the competitive effects of the proposed merger (Section 8);

(c) customer power (Section 9); and

(d) the extent of barriers to entry and expansion (Section 10).

6.4 We note from the earlier description of the characteristics of exchange trading in Section 2 that the operators of trading exchanges control (through the trading fee) only a relatively small part of the total direct and indirect costs of equity trading, and that non-price factors play a significant role in determining the success or otherwise of an exchange. In those circumstances, in assessing the competitive effect of the proposed merger, we also attached weight to indirect factors including the level of concern expressed in relation to the merger by major customers which are knowledgeable and sophisticated users of exchange trading services.

7. The relevant markets

7.1 As set out in our guidelines, the purpose of market definition is to provide a frame-work for the analysis of the competitive effects of a merger.[21] In practice, the analysis of the identification of the market or markets and assessment of competitive effects overlaps, with many of the factors affecting market definition being relevant to the assessment of competitive effects and vice versa. We do not view market definition and the assessment of competitive effects as two distinct analyses.

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[20] www.competition-commission.org.uk/inquiries/ref2011/bats_chi_trading/pdf/bats_chi-x_issues_statement.pdf.
[21] *CC2*, paragraph 5.2.1.

Product market

7.2 The parties' view was that the competitive assessment of the transaction did not hinge on market definition. They considered that the market comprised at least the trading of all equities listed on EEA stock exchanges and the SIX Swiss Exchange (collectively EEA-listed equities). They did not consider that a rigid distinction could be made between lit and dark on-book trading.[22] The parties believed that dark on-book trading imposed a significant competitive constraint on lit book trading. Further, they considered that off-book trading accounted for a significant proportion of the overall value of trades and imposed a strong competitive constraint on on-book venues.

7.3 LSEG submitted in response to our provisional findings that those findings' focus on the provision of trading services in intra-day on-book lit trading in UK equities (especially FTSE 100 equities) did not adequately take account of the extent and speed with which equities trading had evolved post-MiFID. In particular, it said that the provisional findings' focus on the trading of UK equities was unduly narrow; their focus on FTSE 100 shares was arbitrary and did not reflect the broader offering already available on all trading platforms and which could easily be rolled out in the future; and the distinction drawn between dark and lit, and on- and off-book trading was not backed up by firm evidence and further did not reflect the substitutability between those different trading strategies.

7.4 We did not think that the market was necessarily as wide as the parties and LSEG suggested. Instead, our assessment started with candidate markets for the parties' overlapping activities, in relation to which we then took into account all relevant competitive constraints, including those from outside the relevant markets (see paragraphs 8.55 to 8.71).

7.5 BATS and Chi-X both provide lit and dark on-book trading exchanges for pan-European equities. Our starting point was intra-day trading in UK equities: we are investigating whether the proposed merger would produce an SLC in the UK. Intra-day lit on-book trading is the parties' main activity, although we also considered dark trading as a potential market. Accordingly, such lit and dark book trading is where any adverse effects of the transaction would be most immediate and significant.

Geographic market

7.6 The parties considered that the geographic market was at least as wide as the locations in which exchanges that offered (or could offer) similar services were located and may be wider than Europe and the USA and was potentially global.

Conclusion on relevant product and geographic markets

7.7 In line with our views set out in paragraph 7.1 (regarding the overlap between market definition and consideration of competitive effects), we considered the evidence in paragraphs 8.55 to 8.71 and Appendix H in forming a view of the relevant markets.

7.8 Notwithstanding LSEG's submission on our provisional findings, we considered that there are two relevant candidate product markets within which to conduct the competitive assessment: the principal market comprising the intra-day on-book lit trading

[22] Parties joint initial submission, 8 July 2011, p19, paragraph 5.27.

of UK equities; and a second market comprising intra-day dark on-book trading of UK equities.

7.9 We considered that in principle the appropriate geographic scope of the market included all jurisdictions hosting exchanges which currently compete for trading UK-listed equities. In practice, the great majority of trading of UK equities is on exchanges that are currently based in the UK.

7.10 However, we took into account possible constraints from outside the relevant candidate markets (as noted in paragraphs 8.55 to 8.71), and following our competitive assessment, we were satisfied that no other choice of market definition would have led to a different result on the substantive effect of the transaction. On this basis, we did not reach a firm view on which specific subset of the constraints identified would form a market that would satisfy the hypothetical monopolist test in this case.[23]

8. Competitive effects of the proposed merger

8.1 In this section, we assess the likely effect on competition of the proposed merger by assessing the extent of pre-existing competition between those companies we identified within our relevant markets by considering the extent of customer overlap and the competitive interaction between the trading exchanges. We then consider the likely effects of the proposed merger on competition within the relevant markets.

8.2 As noted in Section 2, after significant changes in market structure following the implementation of MiFID, there are four main exchanges for on-book trading in UK equities. The LSE accounts for approximately 40 per cent of lit on-book intra-day trades in FTSE 100 equities (ie excluding auctions), followed by Chi-X at about 30 per cent, and BATS and Turquoise with approximately 10 per cent each. The remaining 10 per cent fluctuates between these four exchanges and an array of smaller exchanges.

8.3 Table 1 sets out a snapshot of market shares of on-book intra-day lit trading of FTSE 100 equities excluding auctions at October 2011.

TABLE 1 **Market share of trading venues in on-book lit trading of FTSE 100 equities excluding auctions, October 2011**

	Market share (in value) excluding auctions %
LSE	40.5
Chi-X	33.9
BATS	9.6
Turquoise	9.1
Other	6.9

Source: BATS.

Notes: Snapshot market share at 5 October 2011 excludes auctions.

Customer overlap

8.4 BATS' customer base significantly overlaps with Chi-X's, although Chi-X has a broader customer base than BATS. The parties overlap with [✂] customers. In 2011,

[23] CC2 notes in paragraph 5.2.1 that we will ensure that the relevant market we identify satisfies the hypothetical monopolist test.

these UK customers represented [a substantial proportion] of Chi-X's total UK value and volume traded. For BATS these also represent [a substantial proportion] of total UK value and volume traded.

8.5 Turquoise has a similar UK customer base to BATS and Chi-X. It overlaps in [✂] customers with Chi-X and [✂] with BATS. The [✂] overlapping customers with Chi-X represent [a substantial proportion] of Turquoise's UK value and volume, and [a substantial proportion] of Chi-X's UK value and volume. The [✂] overlapping customers with BATS represent [a substantial proportion] of Turquoise's UK value and volume, and [a substantial proportion] of BATS' UK value and volume.

8.6 BATS and Chi-X also share a similar customer base with the LSE. In 2011, these customers that overlap with LSE represent [a substantial proportion] of Chi-X's total UK value and volume traded. For BATS, these represent [a substantial proportion] of total UK value and volume traded. For the LSE, the overlap customers with Chi-X represent [a substantial proportion] of UK value and volume traded. The overlap customers with BATS represent [a substantial proportion] of UK value and volume traded.

8.7 The LSE has a more diverse customer base, with [✂] customers trading UK equities. This compares to Chi-X with [✂] customers, BATS with [✂] customers and Turquoise with [✂] customers (see Appendix I).

Competitive interaction between exchanges

8.8 In this section, we assess: *(a)* the competitive interaction between BATS and Chi-X and the constraint exercised on them by *(b)* Turquoise; *(c)* other MTFs that trade UK equities; and *(d)* the LSE, in each case in terms of the level and structure of trading fees offered, and service quality (in terms of technology which governs latency and reliability and innovation in terms of introducing new products and services).

Constraint between BATS and Chi-X

8.9 The parties[24] stated that they did compete against each other but that their main competitor was the LSE for trade in UK-listed securities. The parties did not agree with the OFT conclusion that because they had very similar offerings they must be close competitors. The main reasons they provided were: *(a)* a similar product proposition was not surprising as they were both seeking to win customers primarily from the LSE; and *(b)* BATS' internal documents show that its projected growth was based on winning market share from the LSE and other incumbent exchanges and not from Chi-X. Similarly, Chi-X's internal documents assume that it was principally targeting incumbent exchanges. The parties stated that most customers which were connected to each of their platforms (and other MTFs) would already be connected to the others. They said that customers that they had not yet managed to persuade to connect to their platforms tended to be smaller customers, which were currently customers of incumbent exchanges only, such as the LSE. Their current and future incentive was to focus their competitive efforts on acquiring the customers of incumbent exchanges that they had, as yet, not connected, rather than on competing with each other.

8.10 The parties also noted that the evidence that Chi-X did not respond when BATS changed its fee structure also suggested that they were not close competitors.

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[24] Parties joint initial submission, 8 July 2011.

8.11 We noted at the outset that it is not straightforward to assess the closeness of competition between the merging parties by means of diversion ratios. There was little historic evidence of diversion, as BATS and Chi-X started trading only in 2008 and 2007[25] respectively. The initial objective of the MTFs was to gain liquidity and customers. Accordingly, calculating a diversion ratio between the two parties on the basis of historic data had limited value in terms of judging the extent to which they might compete with each other going forward. In this case, there had been a period of expanding customer bases (as both parties have competed with each other to attract business from the LSE and other exchanges) rather than direct switching between the two exchanges. We therefore looked at how customers directed trades to different trading venues rather than asking hypothetical questions in relation to one component of the trading decision, ie how a change in the trading fee would affect their conduct.

8.12 In order to assess the closeness of competition, we reviewed the dimensions in which BATS and Chi-X may compete and could directly control: *(a)* the level and structure of trading fees; and *(b)* service quality, which was driven by technology and innovation. We noted that there were several factors that affected competition between trading venues (as detailed in paragraph 2.35). However, they were beyond an exchange's direct control, and so were not something that the merged entity could choose to vary.

Level and structure of trading fee

8.13 The trading fee was a key dimension under an exchange's control to influence liquidity. To date, MTFs have implemented a maker/taker model to attract liquidity for lit on-book trades, which involved providing a rebate to customers that place liquidity and charging customers for removing liquidity. Neither party charged an annual membership fee. The net fee was comparable between BATS and Chi-X with slight variation between the rebate provided and charge given—see Table 2, which also contains the fees charged by Turquoise and the LSE.[26] It is important to note that the LSE's SVTS tariff is applied by reference to the total value traded in whatever combination of passive and aggressive trading activity is undertaken, whereas the MTF tariffs are calculated separately for each of passive and aggressive activity (see Appendix E).

[25] Parties joint initial submission, 8 July 2011, p5.
[26] As of 1 October 2011, the LSE introduced a new pricing scheme, which reduces taker prices to levels closer to those charged by BATS and Chi-X. We have not observed any effect of this as yet.

TABLE 2 **Summary of direct trading fees comparison for lit books**

	*BATS**	*Chi-X*†	*LSE*‡	*Turquoise*§
Structure	Flat	Flat	Scaled by value traded	Flat
Taker (aggressive)	0.28 basis points (bps) fee	0.30 bps fee	*Standard Value Traded Scheme (SVTS):* Fee: 0.45 bps (first £2.5 billion) 0.40 bps (next £2.5 billion) 0.30 bps (next £5 billion) 0.20 bps (all subsequent) *Liquidity Taker Scheme Packages:* Package 1. Monthly fee £50,000. Value of orders executed: 0.15 bps Package 2. Monthly fee £5,000. Value of orders executed: 0.28 bps	0.30 bps fee
Maker (passive)	–0.18 bps rebate	–0.20 bps rebate	*SVTS:* Fee: 0.45 bps (first £2.5 billion) 0.40 bps (next £2.5 billion) 0.30 bps (next £5 billion) 0.20 bps (all subsequent) *Liquidity Provider Scheme (LPS):*¶ Free	–0.20 bps rebate

Source: BATS, Chi-X, LSE and Turquoise.

*Fee for all securities on integrated book. Price list January 2011.
†Trading fee for visible executions. 2011 tariff schedule.
‡Price list at 1 October 2011. Volumes are determined on a calendar month basis. All trading is available for the SVTS, such that a member is eligible for discounts once total value traded (whether passive or aggressive) exceeds the appropriate thresholds. Package 1 and 2 replaced the High Volume Liquidity Taker Scheme (HVLTS), described in the 1 July 2011 price list, which applied a trading fee of 0.29 bps for order values of £3 billion for trading in qualified securities in the current or preceding month.
§Effective May 2011.
¶LPS conditions: To qualify for the scheme for a calendar month, passive continuous trading by value must exceed 75 per cent of all continuous trading by value in FTSE 350 securities sent through a trader group or group of user IDs. Passive trading means flow solely generated from the firm's own capital with no related client orders. Applications must be made by 29 February 2012 and the scheme will apply until 31 March 2012. Nominated client flow may also qualify under certain conditions.

8.14 There was no persuasive evidence of direct competitive interaction between BATS and Chi-X in terms of fee levels and pricing structures. Both BATS and Chi-X stated that they had only ever responded to competitive action by the LSE. BATS claimed that it only monitored its performance against RMs. We note that:

(a) Chi-X ran one short-term pricing promotion in August 2009. It submitted that this was in response to the LSE changing its pricing structure for the lit book and ultimately only four customers qualified for Chi-X's promotion. Chi-X noted [✂]. Chi-X submitted that this slide referred to the potential to alter the methodology of pricing. For example, in the USA the low-cost pricing has been retained but a maker/taker model and other innovative pricing strategies (such as inverted pricing) have been introduced.

(b) BATS introduced a short-term pricing promotion for the FTSE 100 in September 2009 whereby it reversed the maker/taker model, ie the rebate was larger than the charge. BATS sought to encourage participants to increase significantly their value traded on its exchange.[27] BATS' internal documents on pricing noted that the aggressiveness of a promotion was key to it being effective and it was expected to have a significant impact on the growth of BATS' market share, progression towards profitability and growth past that point.

[27] It did this by not charging participants for removing liquidity on UK stocks if the daily average value of their trading of UK stocks on the BATS exchange was £50 million or more during September 2009.

8.15 We did not observe any response (in terms of its fees) by Chi-X following BATS' entry. Equally, we did not observe any reaction or change in market shares as a result of the pricing promotions detailed in paragraph 8.14.

Service quality

8.16 We assessed service quality in terms of technology and innovation.

8.17 Both BATS and Chi-X invest significantly in technology, which indicated that technological development was an important competitive dimension when offering exchange services. BATS and Chi-X said that technological development was now incremental.

8.18 Latency, ie the time it takes to accept, process and execute an available order, was a key attribute for exchanges. Latency figures were difficult to compare as there was no accepted industry method of reporting and every exchange typically applied a different method. Further, latency was influenced by customers' internal systems as well as that of the trading exchange. In broad terms it appeared that latency figures were comparable for Chi-X and BATS. We obtained no evidence that indicated that any customer chose to connect to one rather than the other of these exchanges due to technological differences. Both exchanges appeared similar in terms of availability, scalability and capacity, which were key requirements of a trading exchange.[28]

8.19 In terms of innovation, BATS and Chi-X have innovated in how customers can execute trades and both offer a number of additional services alongside the trading exchange. In response to our customer questionnaire (described in Appendix A), the majority of customers cited MTFs as the trading exchanges they thought most dynamic.

8.20 Chi-X has introduced several offerings since it launched stating that it strives to be an innovator and first mover rather than to respond to competitor actions.[29] BATS has also provided a number of innovative product offerings, citing routing, setter price, dealer support, and directed order proposals within its January 2011 presentation.

8.21 In terms of ancillary services, as noted in paragraphs 3.6 and 3.11, both parties provided a range of additional services to support their primary equity trading activity. We have seen no internal evidence to demonstrate that BATS and Chi-X competed on these ancillary services separately and they did not appear to be the central focus of their business models.

8.22 We therefore considered that although there was competition in relation to the range of products offered by an exchange, it did not appear that they directly competed with regard to each individual ancillary service.

Conclusion

8.23 We noted the parties' view that a similar product offering was not in itself direct evidence of actual competition between the parties. We disagreed in the circumstances of this case. The parties targeted the same demand and compete to gain liquidity, even if to date that had been at the expense of the LSE. Their customer bases have

[28] This means that they operate with very high levels of redundant capacity, in order to be prepared for unpredictable spikes in trading.
[29] Chi-X noted that new products and services were typically introduced as a result of studying the experience in the more mature US market, its own independent strategy, or in response to customer demand.

a substantial overlap, and given the prevalence of SORs, this meant that for those customers connected to both exchanges, switching costs between the two exchanges were very low. The parties had similar business models and were very similar in terms of fee structure and service quality. While evidence on explicit diversion between BATS and Chi-X was limited, this was to be expected given the relative youth of the market. Accordingly, our conclusion was that the parties competed against one another and would do so going forward, given our counterfactual (see Section 5).

Constraint from Turquoise

8.24 Turquoise is an MTF that was initially set up by a consortium of nine banks.[30] At the time of the inquiry, it held a share of trading of UK equities of approximately 10 per cent for lit on-book intra-day trading in FTSE 100 equities (excluding auctions). It has recently increased market share, in part because [✂] customers joined (GETCO [✂]). It offered some derivatives products.

8.25 LSEG acquired a 51 per cent economic interest in Turquoise following a transaction completed in February 2010. Twelve investment banks now collectively hold an economic interest of 49 per cent of Turquoise. These shareholders are among the major customers of Turquoise. Turquoise has two classes of shares. The Class A shares are owned by LSEG and the Class B shares are owned by the investment banks. On 17 February 2010 a shareholder agreement (SHA) was signed by the shareholders of Turquoise as part of LSEG's acquisition of a controlling interest. The SHA contains a number of corporate governance provisions, [✂].

LSEG and parties' views

8.26 LSEG submitted that in selling to LSEG, the former Turquoise shareholders thought that Turquoise had succeeded in this primary competitive purpose as its formation had stimulated sustained competitive pressure on existing European equity securities trading venues. Consequently, it said that there was no longer a need for Turquoise to be an independent investment-bank-owned exchange. LSEG submitted that it had sought to respond to the rapidly changing competitive environment by acquiring a ready-built exchange that, in particular, gave LSEG an existing pan-European non-displayed (ie dark) business and a displayed (ie lit) equity securities trading exchange for all European equity securities (where, in contrast to many of its competitors, LSEG did not yet have an offering).

8.27 Chi-X made three points. First, LSEG owned 51 per cent in Turquoise, with customer-shareholders making up the balance. Chi-X considered that customer-shareholders exercised considerable influence on the pricing and strategic direction of the exchange, and that they were more likely to favour Turquoise's current competitive positioning than to acquiesce to higher or differentiated trading fees. Second, like all MTFs, the key to Turquoise's ability to compete and retain a presence in the market lay in its ability to attract liquidity to its exchange. Notwithstanding that it was majority-owned by LSEG, Turquoise had, and would retain, strong incentives to compete vigorously in the market. Finally, Turquoise remained the cornerstone of LSEG's pan-European strategy and was LSEG's only European foothold outside the UK and Italy. In the foreseeable future, LSEG was likely to be reluctant to jeopardize this foot-

[30] It formally launched as an exchange for trading pan-European equity securities in September 2008. The nine investment banks that were the initial shareholders in Turquoise were: BNP Paribas; Citibank; Credit Suisse; Deutsche Bank; Goldman Sachs; Merrill Lynch; Morgan Stanley; Société Générale; and UBS (the Turquoise Shareholders). Subsequently, three further banks have become shareholders: Barclays, JPMorgan, and Nomura.

hold by altering Turquoise's competitive positioning by increasing or disaggregating fees on a pan-European basis. Furthermore (according to Chi-X), one of the key reasons for the lack of success experienced by other incumbent-led MTFs, including both NYSE Arca Europe (NAE) and Nasdaq OMX Europe (NEURO) (described in Appendix C), was the reluctance to allow the MTFs to compete for the incumbents' 'home' market share. Accordingly, LSEG was likely in the foreseeable future to be equally reluctant to compromise the success of Turquoise by increasing or disaggregating fees in the UK or Italy and thus compromising the pan-European nature of its offering.

Review of evidence

8.28 As we have done in assessing competition between BATS and Chi-X, we reviewed the dimensions in which Turquoise may compete: *(a)* the level and structure of trading fees; and *(b)* services offered (in terms of technology and innovation). As noted in paragraph 8.5, Turquoise had a similar customer base to that of BATS and Chi-X.

8.29 In terms of level and structure of trading fee, Turquoise operated a maker/taker model similar to BATS and identical to Chi-X (see Table 2 above). Turquoise had engaged in some pricing promotion.

8.30 In terms of service levels, Turquoise's technology has been updated following its acquisition by LSEG, and has migrated to a common technology, MillenniumIT.[31] Its technology appeared similar to that offered by BATS and Chi-X (and LSEG told us that it was currently the world's fastest). GETCO told us that this improved technology was a reason for it to connect to, and make markets on, Turquoise.[32]

8.31 With regard to innovation, we observed that Turquoise was expanding its derivatives offering. Other than this, we identified no particular differences in innovation compared with BATS and Chi-X.

Conclusion

8.32 Turquoise appeared comparable with BATS and Chi-X in terms of the competitive parameters we assessed. Again, there was limited direct evidence of substitution between it and BATS and Chi-X. It was the only other MTF to have acquired significant market share, and had been invigorated by its acquisition by LSEG (as could be seen by its improved technology and recent increase in market share).

8.33 In terms of competitive constraint, our conclusion was that, given that LSEG owned 51 per cent of Turquoise, and that it shared a common technological platform with the LSE, we cannot treat Turquoise as fully independent of LSEG in determining its competitive strategy. Equally, the 12 bank shareholders retain certain governance rights and Turquoise has a business plan and business model separate from that of LSEG.

8.34 We concluded that Turquoise was in effect a joint venture between the 12 bank shareholders and LSEG, and so could be considered to exercise a constraint separ-

[31] 99.9 per cent of Turquoise orders are processed within 350 microseconds with a mean latency of 97 microseconds.
[32] Summary of hearing with GETCO, 19 July 2011.

ate to some extent from that exerted by LSEG, although more limited than full independence would produce.[33]

Constraint from other MTFs

8.35 There are several other MTFs offering facilities for the trading of UK equities, such as NAE and Quote MTF. However, these MTFs represented a very small part of on-book trading in the UK, including in FTSE 100 shares. None has achieved 1 per cent market share. In consequence, they have to date failed to reach the liquidity levels necessary to overcome network effects, encourage customer connectivity and attract demand.

8.36 BATS told us that some MTFs established by incumbent exchanges did not allow the trading of all European equities (eg German equities could not be traded on Deutsche Boerse's Xetra International platform). It submitted that customers had been happy with the existing levels of competition (evidenced by the parties' lack of profitability) and so had not seen a need to trade on another exchange. It said that these MTFs had also struggled due to their failure to employ equity participation strategies, as well as suffering from a lack of independence from incumbent exchanges.

8.37 Given their small shares, we did not consider that the other MTFs currently represented an effective competitive constraint on Chi-X and BATS, although we consider them further in Section 10.

Constraint from the LSE

8.38 LSEG is a FTSE 250 listed exchange group dealing in cash equities, fixed income and post-trade services. LSEG was the result of the merger in 2007 of the LSE and Borsa Italiana.

8.39 The LSE had over 400 firms as members (of which [✂] are active in trading equities through the use of the LSE's on-book trading services), mainly investment banks and stockbrokers, with around 2,600 companies from over 70 countries whose shares were admitted to trading on its markets. We were told that the number and variety of trading members contributed to the depth and quality of the liquidity available on the LSE. As well as offering equity trading, the LSE also offered information services for securities trading on its trading services ranging from data on individual trades and share price movements to company announcements.

8.40 Accordingly, the LSE operated a much broader portfolio of services than BATS and Chi-X. LSEG told us that 13 per cent of its revenue came from UK equities trading services. In terms of equity trading, the LSE also conducted opening and closing price auctions, listings and trades all equities and not only the most liquid ones (ie FTSE 100). Conducting auctions was an activity that MTFs did not currently perform, and this was a factor favouring continued customer connection to the LSE. In particular, market-makers and others valued the ability to close out open positions at the end of the trading day.

[33] We did not, as LSEG submitted in response to our provisional findings report, consider LSE/Turquoise 'together'.

The parties' and LSEG's view

8.41 The parties stated that while they did compete against each other, they were not each other's closest competitors and were both seeking to win customers primarily from the LSE. Chi-X's internal documents assumed that it was principally targeting incumbent exchanges. BATS' internal documents showed that its projected growth was based on winning market share from the LSE and other incumbent exchanges and not from Chi-X. BATS submitted that when on-routing to the LSE, it chose to charge a fee of 0.28 bps as that was just below the best price available to LSE customers. In other words, in order to attract the LSE's customers, if its exchange has insufficient liquidity BATS would route to the LSE at a lower price than that charged by the LSE itself. This fee was deliberately chosen based on the LSE's then pricing structure.

8.42 Chi-X said that in order to continue to grow its liquidity and market share in the future, it must focus on obtaining new customers and on growth in total market trading volumes and capitalization. In terms of customer growth, most customers that were connected to other MTFs would already be connected to Chi-X. The customers that Chi-X had not yet managed to persuade to connect to its exchange tended to be smaller customers, which were currently customers of incumbent exchanges only, such as the LSE. Chi-X's current and future incentives were to focus its competitive efforts on acquiring the customers of incumbent exchanges that it had not yet connected. BATS agreed, with respect to its exchange.

8.43 LSEG told us that over recent years it had been rapidly losing share in trading of UK-listed stocks to competing venues for trading equity securities including, in addition to the MTFs, other RIEs (that also provide listing services) (eg Plus Markets Group), broker pools that have internalized trading activity that might formerly have been on-exchange and OTC venues. It said that these alternative venues had all injected competition into the equities trading marketplace and it considered that any legacy advantages that may initially have existed from the LSE's historical position had fast eroded in recent years.

8.44 LSEG said that competition among the LSE, Chi-X, BATS and Turquoise as well as other trading venues continued to be intense, with all three of Chi-X, BATS and Turquoise gaining further trading volumes, while the LSE's share had continued to reduce, even over the most recent few months.

8.45 LSEG said that there was nothing to prevent other trading venues from holding opening and closing auctions in the future, from providing listings or from adding new stocks to their platforms. It said that a number of MTFs already traded a wide range of equities beyond the FTSE 100 and could expand yet further very quickly and at very low cost. It said that BATS, for example, already traded (among others) all FTSE 250 securities, over half of cleared securities traded on the LSE's International Order Book and over a fifth of FTSE SmallCap securities. Similarly, Chi-X also traded the full range of FTSE 250 stocks, provided trading for seven other London traded equity securities and 51 of the cleared securities traded on the LSE's International Order Book. In response, Chi-X said that Chi-X traded 136, rather than seven, 'other London traded equity securities' (of which 60 are ETFs and 76 are stocks).

Review of evidence

8.46 We assessed the competitive interaction between the LSE and the parties by reviewing the customer overlap and then the dimensions in which they may compete: *(a)* the level and structure of trading fees and *(b)* service offered (in terms of technology and innovation).

- *Customer overlap*

8.47 As noted above (paragraph 8.7), the LSE had a diverse customer base, and BATS and Chi-X customers were largely a subset of the LSE's customers. Broadly, larger institutions, market-makers and proprietary traders have connected to those MTFs with a significant market share. More customers which have not connected directly may nonetheless trade on the merging parties' platforms through sponsored access and direct market access. There remained a large number of customers which still traded exclusively on the LSE. BATS and Chi-X told us that they were keen to attract these customers, since they followed different trading strategies and so would enrich the liquidity available on an MTF, thus also increasing the attractiveness of the MTF to existing customers.[34]

- *Level and structure of trading fee*

8.48 When the MTFs entered the market, they adopted different trading fee structures compared with the LSE and offered substantially lower net fees. Since the advent of competition from the MTFs, the LSE's fees for exchange trading have declined substantially (see Appendix E). In particular, the LSE's fee structure for liquidity takers has evolved to become closer in basis point terms to those of the MTFs.

8.49 Since entering the market, some MTFs have paid liquidity providers to attract liquidity away from the LSE, while the LSE has not done so (except for a period from September 2008 to August 2009).

8.50 However, as liquidity has been drawn away from the LSE, it has responded by introducing promotions under which LSE Members and Members' specified end-clients may qualify for tariffs whereby the provision of liquidity would not attract a trading fee in certain circumstances. A full description is provided in Appendix E. Broadly, for those taking large volumes, the LSE's fees are very similar (or somewhat below) those offered by the MTFs. For makers, there remained a clear difference in that the LSE did not offer rebates, while the MTFs did. The LSE offered a revised fee structure from 1 October 2011, under which it offers lower taker fees for customers trading smaller volumes. As with the previous LSE promotion, taker fees will be lower than on Turquoise for certain customers.

- *Service quality*

8.51 In terms of technology, LSEG said that continuous investment in entirely new trading platforms as well as system upgrades and the introduction of new functionality had been a consistent element of its commercial strategy. It appeared that competition from the MTFs since MiFID came into force provided further impetus for LSEG to continue to improve its service offering to customers. LSEG described the equity trading marketplace as one that had evolved at breakneck speed around the LSE and it had sought to respond to the rapidly changing competitive environment in which it found itself. In 2009, the LSE acquired the Millennium technology, which has improved its latency.[35] As noted in paragraph 8.18, latency figures are difficult to compare but there now appears to be no significant difference between the performance of the parties, Turquoise and the LSE. LSEG said that Turquoise had the lowest

[34] LSEG told us that there were a number of qualitative reasons why a customer may still choose to trade on the LSE rather on an MTF. These included, for example, the fact that firms may become members of the LSE to provide corporate broker services to listed or quoted companies on LSE markets; or to trade gilts and fixed income securities under LSE rules.
[35] LSE Millennium has quoted 113 microseconds.

latency. In terms of innovation, the LSE introduced a direct reporting initiative and a new data management agreement.

Conclusion

8.52 Historically, the LSE was the national exchange. In our view, the LSE retained some advantages. In particular, it is the exchange where most equities are first listed, and accordingly market-makers may naturally commence making markets on the LSE. It was currently the only exchange that held opening and closing auctions, which again was a reason for traders to buy and sell there. Many customers traded only on the LSE. We considered that these advantages were demonstrated by the fact that the LSE had not had to rebate passive flow, unlike the MTFs.[36]

8.53 However, it has been losing market share to the MTFs. Both BATS and Chi-X maintain that they have targeted the LSE's customer base and have done so by means of new fee structures and levels and new technology. The LSE has responded by introducing new fee structures, introducing the Millennium technology and its parent LSEG had acquired a majority interest in Turquoise. A comparison of the fee structures suggested that the LSE had been able to resist offering rebates on the maker side (for reasons referred to in paragraphs 8.39 and 8.40), which MTFs have had to in order to attract liquidity. On the taker side, the difference between the LSE and MTFs has narrowed or vanished.

8.54 Based on historic evidence, we observed that the LSE had improved its product offering and competed with the MTFs. We were not in a position to review the effect of the latest price change (which came into effect on 1 October 2011). Looking forward, we were uncertain as to the extent to which the LSE would constrain the merged entity, notwithstanding LSEG's submission that the LSE and Turquoise would continue to compete vigorously. We noted that the LSE retained a competitive advantage in that it was the only exchange that currently operated opening and closing auctions (as described in paragraph 8.52).

Possible constraints from outside the relevant markets

8.55 Having assessed the constraint that would be exercised on the merged entity by competitors within the relevant market, we identified and assessed the following potential constraints from outside the relevant market:

(a) trading EEA equities;

(b) dark book trading; and

(c) off-book trading.

EEA equities

8.56 The parties' view was that the market included at least the trading of all EEA-listed equities. This was because: *(a)* the promotion of pan-European trading was a key reason for the establishment of the MTF structure in MiFID; *(b)* both BATS and Chi-X apply their trading fees consistently to all stocks (although they have occasionally

[36] LSEG disagreed with our conclusions. In particular, it noted that it was not the only exchange where equities were first listed, and in any event other trading venues could easily also offer listing services if it was in their commercial interest to do so, and that further MTFs could start trading listed stocks immediately after they were admitted to trading so did not suffer any trading disadvantage.

launched limited local 'pricing specials' focused on equities listed in particular jurisdictions for a given period of time); *(c)* incumbent exchanges own and operate venues in multiple markets; and *(d)* they expect competition to take place on an increasingly regional and pan-European, rather than a national, basis.

8.57 We recognized that BATS and Chi-X organized themselves on a pan-European basis, and that some customers also operated on a pan-European basis (although such customers tended to be following a diversified trading strategy which includes UK equities as a major component). We were only interested in venues, traders and equities that were not based in the UK to the extent that they affected competitive conditions within the UK, and in particular if they could constrain the competitive conduct of the merged entity.

8.58 UK equities continued to represent an integral component of any trading portfolio, even for those operating on a pan-European basis, whether as operators or customers of trading exchanges. We identified that although the parties each offer a uniform fee throughout Europe, special offers can vary between jurisdictions. BATS has offered three discount schemes focusing on different jurisdictions while Chi-X sales minutes in 2011 proposed a new temporary pricing promotion for Spain.[37] This highlighted the potential scope for price differentiation between jurisdictions. Further evidence on trading fees is contained in Appendix E.

8.59 We found no persuasive evidence of substitutability between different equities or that the decision to trade a European equity rather than a UK equity is affected by relative trading cost. While the evidence from the hearings in relation to UK versus EEA equity trading was mixed, most customers that responded to our questionnaire considered non-UK equities only in specific circumstances, ie when there was dual listing and they were fully fungible with the relevant UK equity. Accordingly, we have identified only a limited constraint from these alternatives and focus on UK equities for our competitive assessment.

Dark trading

8.60 We considered the constraint that dark book trading provides to lit on-book trading. The parties' view was that, notwithstanding that customers might historically have tended to use the lit and dark books for different reasons, the dark book imposed a significant competitive constraint on the lit book.

8.61 Qualitative discussion in hearings indicated that there was a matrix of factors associated with a given trade that tended to direct trade to a particular destination (off-book, dark venue or dark on-book, lit on-book). The price obtained for the particular equity tended to be a key overall consideration. Other than that, considerations favouring dark book trading were similar to those that favour off-book trading (see paragraph 8.69):

(a) it is cheaper, since trades are executed at the mid price of the spread, so both buyers and sellers are willing to use dark books;

(b) the absence of pre-trade transparency reduces market impact;

[37] Chi-X said that this was the only example of Chi-X considering a special offer in any individual jurisdiction. It said that it regarded Spain as unique, for the reason that its adoption of MiFID had been less complete than elsewhere in Europe and Chi-X's market penetration had been correspondingly limited. As a result, the intention expressed in the sales minutes was to launch a temporary pricing special to stimulate growth in its market share in Spain, following which Chi-X would resume the standard single pan-European price for trading.

(c) there may be some value in the potential delay in post-trade reporting;

(d) there is usually a higher trading fee attached, but the advantages above (*(a)* to *(c)*) outweigh this; but

(e) there is uncertainty that execution will take place (at a given price and time).

8.62 The customer questionnaire responses also suggested that customers choosing a trading venue tended to allocate importance to a range of factors, of which explicit fees, liquidity and certainty of execution/settlement appeared the most important. Other relevant factors included other transaction costs (eg bid-ask spread, price impact), latency/speed, system reliability, clearing arrangement, depth of liquidity, nature of order and size of order. However, individual respondents did attach differing weight to different factors, possibly reflecting different trading strategies.

8.63 In terms of fee levels, the dark book trading fee varies from that available on the lit on-book. The MTFs offer a maker/taker fee structure for the lit book (ie a charge to take liquidity and a rebate to offer liquidity). In comparison, BATS, Chi-X and Turquoise charge a flat fee for dark book trading (see Appendix E).

8.64 Based on evidence from the hearings and customer questionnaire, we considered that the choice between lit and dark trading appeared to be driven by the nature of the trade and customer requirement. Our conclusion was that while the boundaries between lit and dark books are indistinct (especially given the use of SORs and the evidence that investors may split orders and search for liquidity), lit on-book trading on one exchange was in closer competition with other on-book lit providers than with dark trading. Accordingly, we did not consider that dark trading exercised a substantial constraint on lit book trading, but acknowledged the constraint it may impose on certain types of transactions.

8.65 We noted further that volumes of dark on-book trading were far smaller than those for lit. In consequence, the inclusion of on-book dark trading volumes in a single market, along with on-book lit trading, would not materially affect the competitive assessment of the latter.

Off-book trading

8.66 We considered the potential constraint from off-book trading. The parties noted that off-book trading accounted for a significant proportion of the overall value of trades, and customers considered whether to execute an on-book or off-book trade and often used a combination of the two, thereby imposing a constraint.

8.67 We did not have clear evidence of the competitive constraint imposed by off-book trading. There was no industry consensus on the off-book market (ie its nature and size) and we observe conflicting reports. The European Commission is currently exploring this area further and we noted that regulators aim to encourage or compel as much of the off-book as possible into the lit book.

8.68 We looked at the trends in on-book and off-book trading for the FTSE 100 equities, and their relationship to changes in fees.[38] We reviewed the introduction of a maker/taker pricing scheme by the LSE in September 2008; the LSE having dropped the maker/taker pricing scheme in September 2009; and BATS' launch of price promo-

[38] Monthly volume and value trade data from Fidessa for the FTSE 100 (May 2008–June 2011). On-book trading includes both lit and dark pools trading. Off-book includes OTC trading and SI trading.

tion in September 2009; ie inverted maker/taker price arrangement. It was difficult to identify the effect of price changes, since the trends were influenced by a variety of internal and external factors (eg changes in regulations, market entries, or changes in fees). Nevertheless, our analysis indicated that on- and off-book trading (by volume and value) tended to move together (ie when one increased, the other increased, and vice versa), and did not provide evidence of switching from one to the other.

8.69 We reviewed the nature of the trades that take place within the respective venues. Customers considered a range of factors when deciding where to execute a trade and look for liquidity. There appeared to be a consensus among the various third parties that the decision of trading on-book versus off-book was often a customer decision. Considerations highlighted favouring executing a trade off-book were similar to those for trading in the dark on-book and include:

(a) that the trade is of a large size and the customer wishes to maximize execution certainty so may prefer not to break the trade into smaller parcels for execution;

(b) immediate execution certainty can be desirable for investors for large orders, reducing their risk exposure, particularly in volatile markets where the time taken between executing different parcels might result in the trade being executed at a less attractive price or there being insufficient liquidity to complete the trade;

(c) off-book trading may minimize a trade's impact on the price of an equity, since it entailed less disclosure of information to the general market (so other traders are not aware of large buy or sell orders and so cannot adjust their prices); and

(d) off-book trading can in some circumstances be less expensive given that there is no need to use a central counterparty (CCP) if the trade is a bilateral agreement.

8.70 This was consistent with MiFID description of off-book transactions as different in nature to those on-book. We further noted that there were no internal documents showing that the exchanges consider off-book trading when setting on-book fees.

8.71 We acknowledged that the line between on- and off-book trading is not distinct. However, we considered that MTFs were in closer competition with other on-book providers than with off-book. We did not consider that off-book trading would exert a sufficient constraint to prevent a material worsening of the competitive offering on on-book trading following the merger, but acknowledged the constraint it may impose on certain types of transactions.

Conclusion on competitive effects on the merged entity's lit book

8.72 We identified four key players as potentially competing closely with each other in the market for intra-day lit trading of UK equities: BATS, Chi-X, the LSE and Turquoise. As set out in paragraph 8.23, our conclusion is that BATS and Chi-X do compete against one another. The merger would remove this competition. Any resultant worsening of the competitive offering would affect those variables currently under the control of BATS and Chi-X, such as exchange trading fees and service levels (relating to technology and innovation).

8.73 In terms of the constraints that would remain if the merger proceeded, Turquoise appears comparable to BATS and Chi-X in terms of the competitive parameters assessed (see paragraphs 8.32 to 8.34). However, Turquoise is in the majority ownership of LSEG and therefore we do not treat it as fully independent of LSEG in determining its competitive strategy.

8.74 With regard to the LSE, our conclusion was that since MiFID, the MTFs have driven the competitive landscape. As noted, the LSE has responded to such increased competition by introducing new fee structures (most recently on 1 October 2011) and introducing the Millennium technology, but we observed no evidence of market share shifting back from MTFs to the LSE.

8.75 Absent countervailing factors (see Sections 9 and 10), we were uncertain whether Turquoise and LSE would continue to compete vigorously against the merged entity in the future (notwithstanding LSEG's submission that they would), or whether they would be likely to take advantage of any reduction in competition that the merger may cause following any worsening of the competitive offering of the merged entity. We noted that standard economic theory would suggest that reduced competition in consequence of a merger would have some upward price effect.

8.76 We did not consider that other MTFs provided a constraint (given their very small size), although we considered them further as potential expanders in Section 10.

8.77 Our conclusion was that constraints from outside the relevant market for on-book intra-day lit trading would not substantially limit the competitive conduct of the merged entity.

8.78 Sections 9 and 10 considered the possible constraints represented by customer power and the barriers to entry and expansion in the market for intra-day lit trading in UK equities.

Conclusion on competitive effects on the merged entity's dark book

8.79 With regard to the dark books operated by the parties, our view was that these appear to be very similar to off-book dark venues operated by financial intermediaries described in paragraph 2.10. Both lack pre-trade transparency, and in each case an order is sent, which may be matched depending on the liquidity within the pool. Any trade is executed at the midpoint of the bid-offer spread. It therefore appeared that these off-book dark venues currently acted as a constraint on the parties' dark books, and would provide an effective competitive constraint on the merged entity's dark books should the merger proceed. We noted further that the dark books were very small (see Figure 1).

8.80 We received no evidence from customers or others raising a concern about competitive issues that related to the merger of the parties' dark books separate from concerns relating to their lit books.

8.81 Accordingly, we found that the merger would not cause a material effect on competition within this market and we did not consider dark books further.

9. Customer power

9.1 Customer power denotes the extent to which customers may directly constrain the competitive conduct of an undertaking. As set out in Section 5.9 of the Merger Guidelines, it is related to a customer's ability to switch supplier. This means (as the parties submitted) that arguments relating to customer power are closely linked to those relating to entry and expansion.[39]

[39] Parties joint initial submission, 8 July 2011, section 9.

9.2 The parties identified three main ways in which customers could promote alternative trading venues: *(a)* moving liquidity to an alternative established or new MTF; *(b)* choosing to invest in an existing MTF;[40] or *(c)* setting up a new MTF. The parties also submitted that customers could exercise buyer power by switching between existing exchanges, as switching could be effected very quickly and those customers that might only have a direct connection to one exchange could access other exchanges by using the various routing options.

9.3 We noted that no customers indicated that they had significant competition concerns resulting from the merger. Several strongly supported it (Credit Suisse Securities (Europe) Ltd, Deutsche Bank AG (London Branch), [✂], Customer C, Customer D, GETCO, Panmure and UBS). This was principally on the basis that the merger would ensure the financial viability of the combined MTF, and would lead to a stronger competitor to the former national exchanges across the EEA. However, IG Group said that its main concern would be a return to a monopoly in the market. A duopoly might be acceptable but it would be disappointed if the market consolidated to two major players.

9.4 To assess customer power, we considered *(a)* customer profile and options to constrain the merged entity; and *(b)* possible influence provided by customer share-holdings. We considered customer-sponsored entry in Section 10, since customer-sponsored entry was a form of entry.

Customer profile and options

Customer profile

9.5 A relatively small number of customers were very important to BATS and Chi-X in terms of volume and value. These are listed in Appendix D and are well-resourced and sophisticated financial intermediaries which used the exchanges to pursue their business. They have a track record of investing in and/or have shown an early willingness to connect to new exchanges (see paragraphs 9.16 and 9.17) and currently have a choice between four on-book trading exchanges that achieve a share in excess of 5 per cent (noting the partial control that LSEG exerts over Turquoise). They tended to be connected to all significant exchanges. In paragraphs 8.4 to 8.6, we set out the current extent of customer overlap: BATS, Chi-X and Turquoise have similar customer bases, while that of the LSE is more diverse.

9.6 For BATS and Chi-X, the top 10 customers accounted for approximately [✂] and [✂] per cent of trading volume and value respectively. [✂] companies were among the top 10 customers on both exchanges. The top 20 customers represented approximately [✂] per cent of Chi-X's value and volume, and approximately [✂] per cent for BATS (see Appendix D).

9.7 Market-makers as suppliers of liquidity were very important to the market share and success of an exchange. For BATS, in 2011 [✂] and [✂] were the largest providers of liquidity (collectively accounting for nearly [✂] per cent of its value traded). [✂] and [✂], accounting for approximately [✂] per cent of Chi-X's value traded, were also important customers. Although not listed in the top 10, [✂] cited [✂][41] as another important market-maker which had the ability to provide liquidity.

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[40] The parties noted that this had recently happened with Equiduct, which recently secured a significant investment by Knight Capital Group and Citadel (both of which hold significant stakes in Direct Edge) and TOM MTF (backed by Optiver and ABN Amro which acquired a 25 per cent stake in July 2010).
[41] [✂]

Customers' options

9.8 Customers might attempt to constrain the competitive conduct of the merged entity by switching, or threatening to switch, all or part of their trade to an alternative exchange in response to a worsening of the offering of the merged entity, either new or existing. The existing principal exchanges alternative to BATS and Chi-X were the LSE and Turquoise, and there was a substantial proportion of customer overlap between these exchanges. This meant that the trade of these likely customers of the merged entity could shift to Turquoise or the LSE very rapidly if their offerings were better than that of the merged entity, and the costs of doing so would be negligible.

9.9 In the circumstances under consideration (ie customer options should the merger proceed), once a customer was connected to an exchange it may either specifically direct orders to that exchange, or alternatively allow orders to migrate there in search of liquidity. Such migration could be accelerated by the use of SORs, since if the SOR identified best execution opportunities on the alternative exchange, then that is where it would trade. We noted that liquidity might migrate naturally. If the merged entity worsened its offering by increasing its fees, this may widen spreads (ie worsen available prices) which would tend to drive liquidity to other venues offering better prices.

9.10 However, a shift of liquidity might be initiated either by a competing exchange obtaining support from a sufficient number of trading firms (which number may be small), or by the trading firms themselves deciding to shift their trading to a different exchange. Should the merged entity worsen its offering to a material extent, it would increase incentives for firms to support the new exchange in one of these ways. The greater the worsening, the stronger the incentive.

9.11 The effect on the merged entity would depend on the type and size of the customer(s) departing. The arrival or withdrawal of a large market-maker,[42] for instance, may have a significant effect on market share. Turquoise attributed its recent 2 per cent increase in share (in part) to the decision of GETCO [✂] to connect to it and trade.

9.12 We recognized that customers acting as intermediaries must follow their best execution policies when trading on behalf of clients. Accordingly, it was unlikely that all customers could move liquidity from one exchange in order to support another. What was more likely was that in the short term liquidity could be directed to an alternative exchange by market-makers and proprietary traders.

9.13 For proprietary trading, there were strong commercial incentives to seek the most liquidity and the best available prices even if it is not formally subject to the best execution obligation. The parties submitted in this regard that in the past proprietary trading firms had shifted liquidity significantly to support new entrants such as BATS, Turquoise and Chi-X.

Conclusion

9.14 We found high customer concentration, and considered that this has two consequences. First, the threat of withdrawal of business (in whole or part) is a potential constraint on an exchange. Given the low cost and transparent nature of the MTF

[42] Market-makers recover the trading fee in the spread they offer. They care about fees (as GETCO told us) because lower fees enable narrower spreads, or in other words better prices, which in turn leads to greater volumes of trading, and so more business for the market-maker.

business model, and the ease with which liquidity can switch, we found this threat to be viable.

9.15 Second, the actions of a relatively small number of trading firms in transferring all or part of their trading activities to a new or alternative MTF would facilitate a shift in liquidity. A new entrant wishing to enter could readily identify key trading firms and would need the commitment of only a few of them to have good prospects of success (see further paragraphs 10.18 to 10.46).

Customer shareholdings and corporate governance

Shareholding customers

9.16 Each of the significant UK MTFs was founded by a consortium of customers, and has extended ownership to additional customers, as set out in Table 3.

TABLE 3 **Customers with equity participation in MTFs**

BATS	*Chi-X*	*Turquoise*
Citigroup	ABN Amro	BNP Paribas
Credit Suisse	BNP Paribas	Citi
Deutsche Bank	Credit Suisse	Credit Suisse
GETCO	Citadel	Deutsche Bank
J P Morgan	GETCO	Goldman Sachs
Lime Brokerage	Goldman Sachs	Merrill Lynch
Merrill Lynch	International Algorithmic Trading	Morgan Stanley
Morgan Stanley	Instinet	Société Générale
	Jane Street	UBS
	Merrill Lynch	Barclays
	Morgan Stanley	JPMorgan
	Nomura	Nomura
	Optiver	
	Société Générale	
	UBS	

Source: BATS, Chi-X and LSEG.

9.17 Collectively, the top [✂] customers of Chi-X and BATS controlled each company. For Chi-X, [✂] of its top 10 customers (based on valued traded between January and July 2011) held shares while for BATS [✂] of its top 10 customers held shares. There was also cross-ownership. [✂] customers[43] have invested in more than one MTF. It therefore did not appear that an existing stake in an MTF need deter the same customer from supporting a new entrant.

9.18 Equity ownership allows some shareholder-customers to have direct representation on the management board of an exchange. The extent of that representation depends on the level of share ownership and the terms of the relevant SHAs.

9.19 In terms of the influence that such shareholding customers have, the Chi-X SHA bound the company to a high-level business strategy to remain competitive in the lit and dark pools. BATS, in its public information in support of its proposed IPO, was committed to a business strategy based on a high-technology/low-cost maker (rebate)/taker (fee) model. The Turquoise SHA ensures that the customers which are also shareholders have certain governance rights (see further paragraphs 8.33 and 8.34).

[43] [✂]

9.20 Management is the responsibility of the board of directors acting on behalf of all shareholders.[44] While shareholders want to maximize revenues, the aim of the shareholder consortia in each case was to introduce competition to the then monopoly national exchanges and to maximize revenues by building market share through use of a low-cost model (as noted in paragraph 9.19). As customers, they retain incentives to keep trading fees low and service levels high.

Conclusion

9.21 With regard to the merged entity, some of the major customers of the merger parties would retain ownership in the combined entity immediately following the merger, and would retain ownership for some time after the planned IPO of BATS Inc.

9.22 In any company where customers are also significant shareholders, management may be more aware of the needs (or dissatisfaction) of customers as those needs (or dissatisfaction) would be expressed directly through board representatives.

9.23 Accordingly, we concluded that the risks of either the merged entity or its competitors altering their respective business models to worsen the offering to customers were reduced by the extent of customer-shareholder influence.

Conclusion on customer power

9.24 The customers of BATS and Chi-X are large and sophisticated institutions, with experience in many jurisdictions, and appear well able to protect their interests in ensuring that trading conditions in equities remain competitive. None has raised significant concerns regarding the proposed merger (see paragraph 9.3).

9.25 Our conclusion was that in circumstances where the merged entity substantially worsened its offering, in terms of increased fees or decreased service levels, then its customers would have both the incentive and ability to constrain it, by switching to another MTF or exchange, or exerting influence (via shareholdings or otherwise). Customers are not bound to trade on BATS or Chi-X and would not be bound to trade on the merged entity. However, should these options not prove a sufficient competitive constraint on the merged entity, we consider in the following section whether customer-sponsored entry (which is another way in which customer power could be exercised) could act as such a constraint.

10. Entry and expansion

10.1 In line with our Merger Assessment Guidelines (paragraph 5.8.3), our approach to the assessment of whether entry or expansion may constrain the competitive strategy of the merged entity is to consider whether such entry or expansion would be timely; likely; and sufficient to mitigate the initial effect of the merger on competition, or may mean that there is no SLC.[45]

10.2 We considered whether any barriers to entry or expansion[46] would give incumbent firms advantages over potential competitors, in particular in the form of:

(a) regulation;

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[44] See sections 171–177 of the Companies Act 2006 for statutory duties and section 178 for consequences of breach.
[45] The Merger Assessment Guidelines sets out the framework for the assessment of barriers to entry: *CC2*, section 5.8.
[46] *CC2*, paragraph 5.8.4.

(b) market entry costs;

(c) minimum efficient scale; and

(d) overcoming network effects to attract liquidity.

10.3 We then assessed whether entry would be timely, likely and sufficient. Given the extent and significance of customer power we identified in Section 9, we focused on customer-sponsored entry.

Regulation

10.4 Market entry might be prevented or inhibited through absolute barriers, such as onerous market entry requirements or regulatory compliance obligations that cannot be overcome.

10.5 Under MiFID, an operator of an MTF must obtain regulatory approval by the competent authority for the relevant EU member state in which it operates to ensure that the MTF is compliant with MiFID. The cost of FSA registration is £25,000 and it takes approximately six months. Once regulatory approval has been granted, an MTF must comply with ongoing regulatory requirements, including passing capital adequacy tests and maintaining adequate internal procedures to comply with market surveillance obligations.

10.6 We noted that the MiFID database contains details of 143 MTFs across the EU, providing evidence that numerous parties have satisfied the regulatory requirements in the past.[47]

Market entry cost

Costs of entry

10.7 Market entry may be deterred by high investment required to set up operations, particularly if this represented a sunk cost that could be recovered in the event of exit. If lengthy timescales were required to develop technology, establish operations and achieve required levels of profitability or return on investment, they could further deter entry due to opportunity costs.

10.8 We examined the investments made by former entrants to produce an estimate of the time and cost required to launch successfully. Further details are set out in Appendix C.

10.9 The core technology that an MTF required was the matching engine and related software and hardware to connect with customers and execute orders. An MTF could choose from a number of alternatives. It may develop its own matching engine; license a matching engine from third party vendors; or acquire exclusive rights from a specialist developer (eg by acquiring the developer).

10.10 A new entrant also needed to design and build an appropriate IT architecture (eg servers, PCs) in order to operate the trading exchange. This system could be built by an experienced team with standard IT hardware, connectivity services and back-up facilities that were available from third party suppliers.

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[47] As of 26 September 2011. See: http://mifiddatabase.esma.europa.eu/Index.aspx?sectionlinks_id=22&language=0&pageName=MTF_Display&subsection_id=0.

10.11 In order to enable connectivity between the MTF and its customers, the MTF required contractual arrangements with connectivity partners, such as BT and data centre partners (eg Interxion, Savvis, Equinix) were required to host and operate the technology. Services of this nature were available on commercial terms.

10.12 An MTF requires a team of skilled personnel to operate the business, with capabilities in technology (eg systems maintenance, development); compliance and regulation; equity trading; sales and business development; and corporate management. The technology team plays a central role in an MTF because the operation of the trading venue requires correct configuration and reliable connections with a range of customers and other parties (eg main market and other MTFs).

10.13 It would appear that the cost of investment incurred by the earlier MTFs was in the region of £30 million and upwards. However, the cost of investment has fallen substantially in recent years because the technology has become more established, with an increased number of vendors of software, and a greater extent of standardization within the sector.

10.14 Based on the evidence available, including with regard to more recent entrants, it appeared that market entry required an initial investment of approximately £10–£20 million in investments and operating cash flow to cover initial operating losses in the build-up phase, and that a timescale of 6 to 12 months would be needed to launch operations. The time required to break even depended on the cost structure and revenue growth, but indicatively appeared to be in the range of two to three years from initial decision to enter the market (assuming that the network effects described in paragraphs 10.18 to 10.21 could be overcome and sufficient liquidity attracted).

Minimum efficient scale

10.15 Market entry may be inhibited if there were factors that meant that the minimum efficient scale of operations (by which we mean the minimum market share that might be required to break even) of an MTF was high relative to the realistic market share that a new entrant could hope to achieve.

10.16 The minimum scale required to achieve profitability depended on the cost structure of the business. Such costs were relatively fixed in the short term, so that profitability was closely linked to the revenues, and thus market share, achieved. In 2010, Chi-X had an operating cost base of around [£10–£20] million, a market share of around 17 per cent in pan-European trading and was profitable. BATS had an operating cost base around [£5–£15] million and a market share of around 9 per cent in pan-European trading, but was not profitable. Accordingly, based on the evidence available, we estimated that the typical operating expenses for a pan-European MTF are in the region of £10–£15 million a year. See further Appendix C.

10.17 Under current market conditions, the minimum scale for a pan-European MTF to break even appeared to be in the range of a market share percentage of high single digits to high teens. This share depended on the size of the overall market (itself a function of stock market values and volume of activity), and in recent years the size of the market has been relatively depressed. However, we noted that market conditions might improve (as the parties believe), and there may be other sources of revenue available to the entrant. Further, and importantly, an entrant might have strategic reasons for entry beyond operating an MTF as a stand-alone business: see in particular paragraph 10.34.

Overcoming network effects and attracting liquidity

10.18 We described the network effects prevailing in the sector in paragraphs 2.22 and 2.23. Our Merger Assessment Guidelines identifies network effects as a strategic advantage that can amount to a barrier to entry:

> [5.8.6] Strategic advantages may be particularly acute in markets with direct or indirect network effects …. Direct or indirect network effects can make the market prone to 'tipping'. Tipping arises where one firm, or technology, gains an advantage in the market and the balance of power in the market moves in its direction, leaving it as the unassailable leader. Tipping may create switching costs for existing customers, and often means that in the presence of one network it may not be possible for a network configured in a different way to be viable. In markets characterised by network effects, a likely entrant will need to take the risk of developing new infrastructure but may not succeed in creating the necessary demand to make this profitable.
>
> [5.8.7] In assessing tipping, the Authorities will consider whether or not customers would be willing to switch to a new supplier. Customers' willingness will depend on the costs and benefits to them of switching.

10.19 Tipping matters in this case, because, as indicated in extracts from the Merger Assessment Guidelines above, any entrant must establish the infrastructure necessary to launch an MTF but may not attract sufficient liquidity to make it profitable. There have been a number of entry attempts, but only three MTFs currently have a share of UK equity lit trading consistently above 5 per cent (BATS, Chi-X and Turquoise).

10.20 Before the entry of the MTFs, the national exchange, the LSE, had a near monopoly in intra-day lit trading of UK markets. This meant that MTFs have had to compete to overcome the network effects of the single deep pool of liquidity previously offered by the LSE.

10.21 Third parties told us with regard to their willingness to connect to a new exchange that there was a critical mass at which point many customers would consider connection. While views varied (and we were given figures ranging between 2 and 6 per cent), there was a broad consensus that 5 per cent of a significant market such as intra-day trading in UK equities amounted to such a critical mass (see Appendix C). Only three MTFs have passed that threshold, ie BATS, Chi-X and Turquoise.

10.22 We assessed how much it cost and how long it took for customers to connect to a new MTF. Detail is contained in Appendix C. Estimates varied from approximately £12,000 a year ([✂]) to several hundred thousand pounds (Customer D, UBS) and three to six months. This depended on the extent of infrastructure changes that would be necessary for the customer, and on the complexity of establishing and maintaining the necessary connections between trading systems. While these costs may not be large relative to trading flows, customers must be convinced that they were worth incurring in order to obtain access to significant liquidity.

Customer-sponsored entry

10.23 Given the networks effect we identified, we assessed whether it could be overcome so that entry would be likely, timely and sufficient if the merged entity worsened its competitive offering. Due to the extent and significance of customer power (detailed in Section 9), we focused on the ease and likelihood of sponsored entry by reviewing:

(a) historic evidence of customer sponsorship;

(b) main and third party evidence;

(c) questionnaire evidence; and

(d) the incentives of customers to sponsor entry.

10.24 We then review the sufficiency of any such entry.

Ease and likelihood of sponsored entry

Historic evidence of sponsorship

10.25 The history of entry and expansion of MTFs is set out in Appendix C. Chi-X, BATS and Turquoise were all a product of customer sponsorship (ie customers invested in them or moved flows to them):

(a) Turquoise was launched in 2008, founded as a bank-owned entity to compete with the LSE and other European exchanges.[48] Customers (ie 12 banks) retain a 49 per cent stake in Turquoise and have certain governance rights.

(b) For BATS and Chi-X, entry was eased by granting options and equity to customers (see Appendix C). Customers still control all the equity of Chi-X and almost all the equity of BATS.

Review of main and third party evidence

10.26 BATS and Chi-X submitted that the support of just five or six significant customers could be enough to launch an exchange successfully, comprising a market-maker, a proprietary trader; the proprietary trading division of one or more large investment banks; and three or four general sponsors, which could be any of the major investment banks trading either on their own account or on behalf of clients. Chi-X told us that no customer had ever guaranteed flow to it, and that such guarantees would not be compatible with the best execution obligation contained in MiFID that applied to non-proprietary trading. It said that it understood that even in the case of customers which were not subject to the best execution obligation, support for a platform would not typically be built through guarantees of flow. Instead, customers might support a platform for commercial or strategic reasons via informal commitments, or as a result of incentives based on the ability to obtain an equity stake in the platform.

10.27 Few third parties at hearings told us that they considered sponsoring entry as an immediate possibility. GETCO, however, was confident that should the merged entity worsen its offering, then GETCO would be able to support or sponsor an alternative exchange and so maintain competition. GETCO had invested in BATS in the USA, approximately $30 million between 2005 and 2007. The original start-up capital required to set up BATS in the USA was approximately $8 million, provided by two investors.

10.28 GETCO also invested in Chi-X in Europe, approximately £[✂] million between 2007 and 2009. It said that Chi-X Europe's start-up model differed from BATS in the USA and was more likely to be used in the future. Instinet already had much of the neces-

[48] The founding consortium was BNP Paribas, Citi, Credit Suisse, Deutsche Bank, Goldman Sachs, Merrill Lynch, Morgan Stanley, Société Générale and UBS.

sary technology infrastructure due to its core business as an agency broker. It acted like a low-cost outsourcer for matching engine technology, office and data centre space and professional fees. It leased its existing matching engine to Chi-X, and charged Chi-X for its in-house support staff, office and data centre space. Over time as the business grew, Chi-X attracted additional investment and started hiring and building those functions for itself. GETCO said that this was similar to the model that many banks were using in Europe to set up their MTF businesses.

10.29 From this experience, GETCO thought in relation to investments in MTFs and barriers to entry that: *(a)* investments tended to be incremental so a sponsor needed to supply funding only if it thought future success likely; and *(b)* most of the firms that invested were getting something of value to their core business (such as an increase in competition leading to reduction of fees, or increased innovation) that made such an investment extremely worthwhile.

Customer questionnaire

10.30 We asked customers in the customer questionnaire[49] if they had or would consider guaranteeing flow to a new entrant. Five respondents noted that they had previously guaranteed flow to Turquoise at its launch. [✂] had a market-making agreement that required provision of liquidity on a principal basis. However, it noted that it would not guarantee flow to a new entrant. [✂] guaranteed flow for specific trading desks.[50] [✂] noted that it would not commit to sending a percentage of flow of orders but it did commit to making prices in stocks on Turquoise. [✂] sent proprietary flow only on Turquoise as part of its market-making obligation when the venue first started. [✂], as part of a market-making scheme, guaranteed flow during the first six months of trading.

10.31 In terms of guaranteeing future flow, seven customers—[✂]—said that they would consider guaranteeing flow in the future individually or collectively. These customers represented approximately [✂] per cent of Chi-X's and [✂] per cent of BATS' market share (by value in 2011) respectively. [✂] (representing [✂] per cent of Chi-X's and [✂] per cent of BATS' market share by value in 2011) noted that in the event that an MTF were to run a specific market-making scheme, then it might consider this again in the future. As a matter of course, however, it would never guarantee flow to a trading venue. As noted in paragraph 10.27, GETCO (which represents approximately [✂] per cent of Chi-X's and [✂] per cent of BATS' market share by value in 2011) also told us that it would also consider supporting new entry. These customers in total represented [✂] per cent of Chi-X's and [✂] per cent of BATS' market share by value.

10.32 Eighteen customers said that they would not guarantee flow in future, representing [✂] per cent of each of BATS' and Chi-X's market share by value. Although these customers said that they would not guarantee flow, the evidence to date suggested that once an exchange attained approximately a [✂] per cent UK market share, others were more likely to connect (see paragraph 10.21).

The incentives of customers to sponsor entry

10.33 The number of firms whose commitment to trading on a different exchange would be required to shift liquidity depended, at least in part, on the volume of trading that would need to shift in order to induce further liquidity to switch (the tipping point). As

[49] Responses to the customer questionnaire represented 50 per cent of BATS and Chi-X value.
[50] All subject to client instruction and best execution policy.

noted above (paragraph 10.21), it appeared that a critical mass of about 5 per cent share of intra-day lit trading in UK equities would induce significant additional connectivity to an alternative exchange.[51] Accordingly, it appeared that a small number of trading firms could, through collective action, facilitate entry or expansion.

10.34 We identified four strategic factors that may encourage a customer to sponsor an entrant (separate from the investment opportunity on its own merits and market conditions, which may affect the priority given to investment in an exchange):[52]

(a) The ability to constrain trading fees generally. MiFID enabled the establishment of exchanges to rival the former national exchanges which has led to a decrease in trading fees generally. Accordingly, customers benefit wherever they trade if a sponsored entrant constrains fees and stimulates service levels on all competing exchanges. This was a rationale for the establishment of BATS, Chi-X and Turquoise as a constraint on the LSE and would be a reason for customers to invest in new exchanges to constrain existing exchanges.

(b) The promotion of competition to reduce the cost of ancillary services such as data provision and maintain innovation by exchanges.

(c) Other reasons such as a customer expanding their business (eg GETCO told us that trading on a new exchange increased its aggregate volumes and flow, rather than diverting flow from other exchanges).

(d) Future regulatory developments such as MiFID II, which is already prompting an increase in applications to the FSA for MTFs.

Sufficiency of sponsored entry

10.35 To be sufficient, the sponsored entrant would have to reach a scale sufficient to act as a competitive constraint on the merged entity. We considered that any sponsored entrant should not only be able to achieve a critical mass, but should do so on a sustained basis. This meant either that it must achieve profitability (with the larger market share this minimum efficient scale may entail), or there should be strategic reasons for the sponsored entrant to be able to sustain losses. Customers had such strategic reasons (set out in paragraph 10.34), in particular the benefit of maintaining competition across the sector.

10.36 If a successful rival was set up, given the network effects, there would be no reason to believe that any customers would be excluded from the benefits that such a new rival would bring. BATS and Chi-X told us that a simple pricing structure was part of their appeal. If a sponsored entrant followed this policy, it might constrain the merged firm's fees to all its customers.

Analysis and conclusion

10.37 We considered whether entry would be likely, timely and sufficient to prevent any SLC arising as a result of the proposed merger, focusing on the ability of customers to sponsor entry.

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[51] Customer A said a 2 to 3 per cent UK market share; Customer C said 5 per cent of UK market share; IG Group told us 5 per cent and above but did not specify whether this was UK or European; UBS said 5 to 10 per cent market share but did not specify whether this was UK or European; and Customer D said 2 to 3 per cent market share.

[52] Recent financial results indicate that several large investment banks have experienced declines in equity trading activities. In recent weeks volatility of global equity markets has increased.

10.38 We concluded that regulatory barriers were not substantial (given the large numbers of MTFs that have been established). Equally, the costs necessary to launch an MTF and achieve an economic scale, approximately £10–£20 million, did not appear sufficient to prevent entry in this sector given the correct incentives.

10.39 However, we did think that there was a barrier to expansion to the critical mass we identified of approximately 5 per cent in at least one major market, such as intra-day lit trading in UK equities, in the form of network effects. The difficulty was not in establishing an MTF, but in attracting customers to connect and trade there. Accordingly, it may not be possible to achieve minimum efficient scale, expressed in terms of revenues and market share necessary to achieve profitability on a stand-alone basis.

10.40 However, in our view, BATS' and Chi-X's customers have it in their collective power to direct sufficient trading volume to a new exchange to provide the initial support that would be necessary for its establishment and to enable it to overcome the initial hurdles including the network effects we identified. Once this is achieved, flow from further customers would naturally accrue as they in turn connect to and trade on an exchange.

10.41 Such customers which undertook substantial trading have a strategic interest in maintaining competition in equity trading as this constrained trading fees and stimulated service levels across all exchanges. This meant that they could obtain a benefit beyond the stand-alone financial return from an investment in a new MTF, and minimum efficient scale was not a barrier to these customers with this wider strategic interest.

10.42 Each of the current successful MTFs (BATS, Chi-X and Turquoise) was established with the support of significant customers in the form of large financial institutions. Those institutions retain a strong interest in ensuring that trading conditions in equities remain competitive. As noted, the required capital is not large (in the context of a substantial institution, or more likely, a consortium of institutions). There was a history and experience of launching MTFs, and we believed that this would be repeated should the merged entity worsen its offering to the detriment of customers.

10.43 In our view, a deterioration in the offering of the merged entity would increase entry opportunities. The success of BATS and Chi-X may be attributed in part to their ability to offer lower trading fees and better technology than the LSE offered in 2007. This opportunity might not now exist if no entrant could significantly undercut the merged entity or offer better technology than it. But if the merged entity worsened its trading fees, did not offer state-of-the-art technology or otherwise worsened its offering, then that opportunity would re-emerge.

10.44 We noted that the MTFs have operated simple fee structures so that any change would be obvious, and all the parties' principal customers operate in many jurisdictions and are familiar with the best technologies available, whether in the USA or elsewhere. Those customers were not concerned by the proposed merger, and many strongly supported it.

10.45 We noted the parties' submission that national exchanges of other EU member states would be interested in establishing a significant presence in UK equities given the current trend towards pan-European trading, and London's significance as a financial centre, although such a new entrant would still need to attract liquidity so as to overcome network effects, and would need to offer a genuine pan-European presence similar to that offered by BATS, Chi-X and Turquoise to be regarded as a plausible competitor.

10.46 For the reasons given above, we found that there were no barriers that would prevent entry and expansion to overcome any competitive detriment that might otherwise result from the merger. In the circumstances under consideration, such entry and expansion would be likely, timely and sufficient.

11. Conclusion on the SLC

11.1 Based on the evidence and analysis above, we concluded that the proposed merger would not lead to an SLC in any relevant market in the UK.