

# Anticipated acquisition by Nasdaq Technology AB of Cinnober Financial Technology AB

## Decision on relevant merger situation and substantial lessening of competition

ME/6778/18

The CMA's decision on reference under section 33(1) of the Enterprise Act 2002 given on 31 January 2019. Full text of the decision published on 7 February 2019.

Please note that [X] indicates figures or text which have been deleted or replaced in ranges at the request of the parties or third parties for reasons of commercial confidentiality.

### SUMMARY

1. On 14 September 2018, Nasdaq Technology AB, a wholly-owned subsidiary of Nasdaq, Inc. (**Nasdaq**) announced a public offer to acquire Cinnober Financial Technology AB (**CINN**) (the **Merger**). Nasdaq and CINN are together referred to as the **Parties**, and, for statements referring to the future, the **Merged Entity**.
2. The Competition and Markets Authority (**CMA**) believes that it is or may be the case that each of Nasdaq and CINN is an enterprise; that these enterprises will cease to be distinct as a result of the Merger; and that the share of supply test is met. Accordingly, arrangements are in progress or in contemplation which, if carried into effect, will result in the creation of a relevant merger situation.
3. The Parties overlap in the supply of IT services to financial services industry participants, more specifically, the supply of market technology solutions to financial institutions, including trading solutions, post-trade solutions (eg clearing and settlement services), data and analytics solutions (such as market surveillance solutions) and cross-area applications. These market technology solutions (eg trading, clearing, market surveillance) have different

functions and are often used by different customer types. Customers typically purchase a combination of one or more of these market technology solutions, on a global basis, often from a variety of vendors (including the Parties) based all over the world. The CMA has therefore assessed the impact of the Merger in relation to the following frame of reference:

- (a) Supply of trading solutions on a worldwide basis;
  - (b) Supply of clearing solutions on a worldwide basis;
  - (c) Supply of market surveillance solutions on a worldwide basis; and
  - (d) Supply of risk management solutions on a worldwide basis.
4. In relation to horizontal effects in the supply of each of trading solutions, clearing solutions, market surveillance solutions and risk management solutions, the CMA believes that the Parties are not each other's closest competitor and that there will be sufficient alternative providers remaining post-Merger for each of the different solutions to provide a competitive constraint on the Merged Entity.
  5. In relation to conglomerate effects, the CMA believes that the Merged Entity would not have the ability or incentive to foreclose its rivals using tying or bundling strategies post-Merger. This is mainly due to customers' tendency to procure solutions separately, and the advantages of doing so, which will remain post-Merger. The CMA also notes that both Parties currently provide a number of solutions within the trade life-cycle and therefore the Merger does not materially change the extent to which the Parties are able to provide a bundled offering.
  6. Finally, the CMA believes that there will be sufficient alternatives remaining post-Merger, including other packaged options, to constrain the Merged Entity, and reduce any ability to foreclose rivals.
  7. The CMA believes that these constraints, taken together, are sufficient to ensure that the Merger does not give rise to a realistic prospect of a substantial lessening of competition (**SLC**) as a result of horizontal unilateral effects or conglomerate effects.
  8. The Merger will therefore **not be referred** under section 33(1) of the Enterprise Act 2002 (the **Act**).

## ASSESSMENT

### Parties

9. Nasdaq Technology AB is a private limited company registered in Sweden. Nasdaq Technology AB develops systems for order generation, trade or exchange activities, clearing activities and back-office administration. Nasdaq Technology AB is a wholly-owned subsidiary of Nasdaq, Inc. which is active in the following markets:
  - (a) The operation of securities marketplaces around the world;
  - (b) The provision of information products and other services to financial institutions and public companies globally; and
  - (c) The supply of market technology to banks, brokers and marketplaces globally.
10. The turnover of Nasdaq in 2017 was approximately £3,079 million worldwide and [REDACTED] in the UK.
11. CINN is a public limited company listed on the Nasdaq First North exchange and headquartered in Stockholm, Sweden. CINN is a financial technology provider and is organised around four central business areas: (i) 'Cinnober', the group's main business area providing solutions for exchanges and clearinghouses for the trading and clearing of different asset classes, and risk management; (ii) 'Simplitium', providing trade reporting solutions, pre- and post-trade services, and risk modelling solutions; (iii) 'Minium', providing real-time clearing and risk management solutions and services for banks and brokers;<sup>1</sup> and (iv) 'Market Surveillance', providing solutions (including via subsidiaries Irisium and Scila)<sup>2</sup> to meet surveillance obligations for banks, brokerages, exchanges and regulators.
12. The turnover of CINN in 2017 was approximately £31.69 million worldwide and approximately [REDACTED] in the UK.

### Transaction

13. On 14 September 2018, Nasdaq Technology AB announced a public offer to acquire all outstanding shares and warrants in CINN. The Merger is

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<sup>1</sup> Minium is in its pilot phase [REDACTED].

<sup>2</sup> CINN does not have its own market surveillance products, but passively resells surveillance solutions provided by two companies, Scila and Irisium. Further information on Scila and Irisium is provided in relation to the competitive assessment below.

conditional on, amongst others, the obtaining of merger control clearance (or a Found Not To Qualify decision) from the CMA.

14. The Parties informed the CMA that the Merger is also the subject of review by competition authorities in Australia and Singapore.

## **Jurisdiction**

15. Each of Nasdaq and CINN is an enterprise. As a result of the Merger, these enterprises will cease to be distinct.
16. In addition to its own activities, CINN owns a share of two market surveillance providers, Irisium Ltd and Scila AB, whose solutions it re-sells, though does not actively market (CINN does not have its own market surveillance product). CINN owns 27.89% of Scila and 40% of Irisium. Further information on Scila and Irisium is provided in relation to the competitive assessment below. The CMA has not felt it necessary to conclude on the extent to which CINN exercises control over Scila and Irisium for the purposes of determining the scope of the relevant merger situation, on the basis that no concerns were found in relation to the supply of market surveillance solutions in any event, even if activities of Scila and Irisium are attributed to CINN.
17. The Parties overlap in the supply of trading solutions, with a combined share of supply of [30-40%] of trading solutions in the UK, excluding self-supply (increment [10-20%]).<sup>3</sup> The CMA therefore believes that the share of supply test in section 23 of the Act is met. See the competitive assessment section below for further detail on the Parties' share of supply.
18. The CMA therefore believes that it is or may be the case that arrangements are in progress or in contemplation which, if carried into effect, will result in the creation of a relevant merger situation.
19. The initial period for consideration of the Merger under section 34ZA(3) of the Act started on 11 December 2018 and the statutory 40 working day deadline for a decision is therefore 7 February 2019.

## **Counterfactual**

20. The CMA assesses a merger's impact relative to the situation that would prevail absent the merger (ie the counterfactual). For anticipated mergers the CMA generally adopts the prevailing conditions of competition as the

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<sup>3</sup> Share of supply figures are taken from the Parties' market share estimates on the basis of volume of customers supplied.

counterfactual against which to assess the impact of the merger. However, the CMA will assess the merger against an alternative counterfactual where, based on the evidence available to it, it believes that, in the absence of the merger, the prospect of these conditions continuing is not realistic, or there is a realistic prospect of a counterfactual that is more competitive than these conditions.<sup>4</sup>

21. The CMA notes that CINN is in the process of entering the supply of risk management solutions via its new subsidiary, Minium Ltd. Minium Ltd is not [redacted] and is undergoing a pilot project [redacted]. On a cautious basis, the CMA has considered CINN's planned activities via Minium Ltd in its competitive assessment and has therefore assessed the impact on the Merger on the supply of risk management solutions. As the CMA has found no concerns in relation to risk management solutions (as is set out in further detail in the competitive assessment section), it is not necessary to conclude as to whether there is a realistic prospect that CINN would have successfully entered the supply of risk management solutions absent the Merger.
22. The CMA otherwise received no evidence supporting a different counterfactual in relation to other product overlaps (ie trading solutions, clearing solutions and market surveillance solutions), and the Parties and third parties have not put forward arguments in this respect. Therefore, the CMA believes the prevailing conditions of competition to be the relevant counterfactual in relation to those product overlaps.

## Background

23. The Parties overlap in the supply of IT services to financial services industry participants. Within 'IT services' the Parties provide a range of market technology solutions to the financial services sector, covering trading solutions, post-trade solutions (including clearing and settlement solutions), data and analytics and cross-area applications. Such solutions are integrated in the customer's wider IT system through an Application Programming Interface (API). These market technology solutions can be segmented along the trade-lifecycle ranging from software solutions for pre-trade services, order gateways, order books and order matching systems, market data systems, clearing systems, settlement systems, surveillance systems and risk management systems.

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<sup>4</sup> [Merger Assessment Guidelines](#) (OFT1254/CC2), September 2010, from paragraph 4.3.5. The [Merger Assessment Guidelines](#) have been adopted by the CMA (see [Mergers: Guidance on the CMA's jurisdiction and procedure](#) (CMA2), January 2014, Annex D).

24. Based on the product offerings of the Parties and the way in which customers procure these products, the Parties' overlapping offerings can be grouped according to (i) trading solutions, (ii) clearing solutions, (iii) market surveillance solutions and (iv) risk management solutions.
25. The provision of the above services commonly comprises the licensing of software or the provision of software as a service, and may include the development, customisation, installation and maintenance of the system. The CMA understands that while the core technology is very similar for all customers, the market is specialised, with tailor-made solutions that are typically bespoke to the customer, and a significant amount of resource being spent on customisation and integration with the customers' systems.
26. As a result of these bespoke solutions, contracts tend to be long-term (several years) and relationships between customers and suppliers are generally strong. Customers typically use procurement processes of varying degrees of sophistication ranging from formal tender processes via Requests for Proposal (**RFP**) to more informal beauty parades. The CMA understands that providers are not typically aware of the number or identity of other providers competing for the same contract, only learning of the winner once the contract is awarded.
27. The bidding and switching process requires significant lead times, sometimes of up to a year or more, due to the complexity of the systems and the customisation and integration process. The CMA understands that such procurement exercises would therefore take place relatively infrequently (the CMA has heard that there could be up to ten years between procurement exercises).
28. The CMA also understands that customers sometimes engage IT consultancy firms to design, procure and integrate solutions for customers. Further information on the use of consultancy solutions is provided below, in relation to the competitive assessment.
29. Self-supply or in-house provision is also considered to be a credible alternative by some customers (though this appears to depend on the size of the customer, their IT capabilities and the complexity of the solution required). Further information on the use of in-house solutions is provided below, in relation to the frame of reference and competitive assessment.

## **Frame of reference**

30. Market definition provides a framework for assessing the competitive effects of a merger and involves an element of judgement. The boundaries of the

market do not determine the outcome of the analysis of the competitive effects of the merger, as it is recognised that there can be constraints on merging parties from outside the relevant market, segmentation within the relevant market, or other ways in which some constraints are more important than others. The CMA will take these factors into account in its competitive assessment.<sup>5</sup>

31. The Parties overlap in the supply of (i) trading solutions, (ii) clearing solutions, (iii) market surveillance solutions and (iv) risk management solutions. Table 1, below, sets out the overlaps between the Parties in relation to each of these four solutions, along with their respective number of customers and turnover both worldwide and for the UK.

**Table 1: Overview of horizontal overlaps**

|                            | Nasdaq   |            | CINN  |            |
|----------------------------|--|------------|---|------------|
| <b>Trading solutions</b>   | <ul style="list-style-type: none"> <li>Nasdaq Multi-Matching Engine</li> <li>Nasdaq Hybrid Matching Engine</li> <li>Nasdaq Fixed Income Matching Engine</li> </ul>   |            | <ul style="list-style-type: none"> <li>TRADEExpress</li> </ul>  |            |
| Customers                  | worldwide  | UK         | worldwide   | UK         |
| Turnover                   | [REDACTED]   | [REDACTED] | [REDACTED]  | [REDACTED] |
| <b>Clearing solutions</b>  | <ul style="list-style-type: none"> <li>Nasdaq Packaged CCP</li> <li>Nasdaq Clearing Engine</li> <li>Nasdaq Collateral Management</li> <li>Nasdaq Pricing</li> <li>Nasdaq OTC Workflow Management</li> <li>Nasdaq Settlement Instructor</li> <li>Nasdaq Real-Time Risk</li> </ul> |            | <ul style="list-style-type: none"> <li>TradExpress Real-Time Clearing</li> <li>TradExpress,CCP Risk</li> </ul>  |            |
| Customers                  | worldwide  | UK         | worldwide   | UK         |
| Turnover                   | [REDACTED]   | [REDACTED] | [REDACTED]  | [REDACTED] |
| <b>Market surveillance</b> | <ul style="list-style-type: none"> <li>Nasdaq SMARTS</li> </ul>  |            | <ul style="list-style-type: none"> <li>Scila and Irisium (resell only)*</li> </ul>  |            |
| Customers                  | worldwide  | UK         | worldwide   | UK         |
| Turnover                   | [REDACTED]   | [REDACTED] | [REDACTED]  | [REDACTED] |
| <b>Risk Management</b>     | <ul style="list-style-type: none"> <li>Nasdaq TradeGuard</li> </ul>  |            | <ul style="list-style-type: none"> <li>Minium ([REDACTED])</li> <li>TRADEExpress CCP Risk (integrated clearing and risk management solution)</li> </ul> |            |

Source: MN, Annex 28

\* CINN does not actively market surveillance products. CINN owns 27.89% of Scila and 40% of Irisium.

32. The Parties argue that they do not currently compete in the UK in respect of either market surveillance solutions or risk management solutions, as CINN does not have its own market surveillance solution (and instead resells that

<sup>5</sup> [Merger Assessment Guidelines](#), paragraph 5.2.2.

supplied by Irisium and Scila) and in relation to risk management, CINN's offering is either integrated into its clearing solution or is currently in a pilot stage. This is discussed in more detail in the competitive assessment below.

## **Product scope**

### *The Parties' view*

33. The Parties have submitted that there should be a single product frame of reference for the provision of market technology solutions, on the basis that:
- (a) Customers can purchase a combination of trading, clearing, market surveillance and risk management solutions from a single provider (although may choose not to) using a common platform, for example, Nasdaq's Nasdaq Financial Framework platform;
  - (b) Many global IT service providers are active in multiple segments of market technology;
  - (c) There is a substantial degree of supply-side substitutability in the supply of market technology solutions – in a large part due to the underlying IT operating systems being the same for all solutions;<sup>6</sup> and
  - (d) The Parties' market technology solutions are suitable for use by all categories of financial trading customer (eg exchanges, brokers, banks, customers of exchanges as well as regulators) and across all asset classes.<sup>7</sup> The Parties also submitted that it would not be appropriate to segment market technology solutions more narrowly than by function, eg trading, clearing, surveillance and risk management, as while each service is customised to an extent for each customer, the same underlying core technology is used regardless of the customer type or asset class, and it is the customer who dictates any further customisation, not the supplier.<sup>8</sup>
34. In relation to demand-side substitutability, the Parties submitted that there is no substitutability between the different segments of market technology solution, eg a customer requiring a trading solution would not switch to a clearing solution and vice versa.<sup>9</sup>

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<sup>6</sup> Paragraph 124 of the Parties' Merger Notice.

<sup>7</sup> Paragraph 122 of the Parties' Merger Notice.

<sup>8</sup> Paragraph 125 and 128 of the Parties' Merger Notice.

<sup>9</sup> Paragraph 126 of the Parties' Merger Notice.



## *The CMA's view*

35. The CMA believes that it would be appropriate to define the product frame of reference by function, ie separate frames of reference for each of trading solutions, clearing solutions, market surveillance solutions and risk management solutions, for the following reasons:
- (a) The CMA did not find evidence of demand-side substitutability:
    - (i) The four categories of solutions (trading, clearing, market surveillance and risk management) have different functions and are subject to different regulatory requirements (eg market surveillance solutions are often procured by customers as part of their compliance with the Market Abuse Regulation (**MAR**)<sup>10</sup>).
    - (ii) Third parties have confirmed to the CMA that there is no demand-side substitutability between the different technologies for trading solutions, clearing solutions, market surveillance solutions, and risk management solutions. In fact, some customers will not procure all types of market technology solutions (eg banks and brokers will have less need for trading and clearing solutions).
  - (b) The boundaries of the relevant product market are generally determined by reference to demand-side substitution alone. However, the CMA may aggregate products on the basis of supply-side substitution where firms are able to shift rapidly between supply of different products and the same firms compete to supply these different products with the conditions of competition between the firms being the same for each product.<sup>11</sup> However, the CMA did not find persuasive evidence this was the case. As will be discussed further in relation to the competitive assessment below, the CMA's Merger investigation has showed that while some vendors provide a number of solutions, some vendors only compete in relation to one of the solutions. Further, customers regularly purchase each of their market technology solutions separately, from different providers.<sup>12</sup>
  - (c) The CMA has also heard from third-party customers that despite a relatively high degree of customisation, the set of credible competitors is similar across asset classes, size of contract, or customer type within each of the different solutions, as the underlying technology in each

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<sup>10</sup> Regulation (EU) No 596/2014 of the European Parliament and of the Council of 16 April 2014 on market abuse (market abuse regulation).

<sup>11</sup> [Merger Assessment Guidelines](#), paragraph 5.2.17.

<sup>12</sup> See the competitive assessment section on conglomerate effects below for further detail.

segment would be the same. However, some customers considered that providers may have differing strengths in relation to each of these segments. This will be discussed further in the competitive assessment below.

36. The CMA has therefore, on a cautious basis, considered competition in relation to the four technology solutions provided by the Parties (trading solutions, clearing solutions, market surveillance solutions and risk management solutions) separately in its competitive assessment below.

### *Self-supply*

37. The Parties have submitted that the product frame of reference should include self-supply by customers. The Parties have provided examples of customers who have switched to self-supply in recent years as well as of those who appear to be considering switching to in-house provision.<sup>13</sup>
38. The CMA noted this evidence suggesting that self-supply was a constraint for some customers. However, the majority of customers that the CMA contacted did not consider in-house supply as a viable option. One customer noted that it had chosen to switch to CINN because its in-house solution would not be able to keep in-line with and cope with developments in the fast-moving industry. A large number of customers considered that the costs and time required to maintain or develop an in-house solution would be too high for them. One third-party competitor submitted that self-supply is becoming less common as exchange technology has become more complex and regulatory standards have become higher.
39. The CMA notes the mixed evidence on this topic. Therefore, on a cautious basis, the CMA has excluded self-supply from the product frame of reference, but has taken it into account as appropriate on the evidence available in the competitive assessment below.

### *Conclusion on product scope*

40. For the reasons set out above, the CMA has considered the impact of the Merger in the following product frames of reference:
- (a) Trading solutions;
  - (b) Clearing solutions;

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<sup>13</sup> Paragraph 199 of the Parties' Merger Notice.

(c) Market surveillance solutions; and

(d) Risk management solutions.

41. However, it was not necessary for the CMA to reach a conclusion on the product frame of reference, since, as set out below, no competition concerns arise on any plausible basis.

### **Geographic scope**

42. The Parties submitted that the geographic market for market technology solutions was worldwide for the following reasons:

(a) The Parties and their competitors operate globally;

(b) The Parties' customers do not choose suppliers on the basis of proximity or locality and may have international businesses and be seeking a supplier to serve across a number of locations so will consider suppliers with similarly international activities; and

(c) The Commission found in *Deutsche Börse / NYSE Euronext*<sup>14</sup> that the notifying parties' "exchange solutions are clearly provided on a worldwide basis" (though ultimately left the geographic market open).<sup>15</sup>

### **Conclusion on geographic scope**

43. For the reasons set out above, the CMA has considered the impact of the Merger in a worldwide geographic frame of reference. The CMA notes that no concerns would arise on any narrower frame of reference, including on a UK wide frame of reference for the same reasons as those set out in relation to a worldwide frame of reference in terms of the extent of competition between the Parties and the alternative suppliers available to customers with UK operations.

### **Conclusion on frame of reference**

44. For the reasons set out above, the CMA has considered the impact of the Merger in the following frames of reference, on a worldwide basis:

(a) Trading solutions;

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<sup>14</sup> Commission decision of 1 February 2012 in Case COMP/M.6166- *Deutsche Börse/NYSE Euronext*.

<sup>15</sup> Paragraphs 142-146 of the Parties' Merger Notice.

- (b) Clearing solutions;
- (c) Market surveillance solutions; and
- (d) Risk management solutions.

## **Competitive assessment**

### ***Horizontal unilateral effects***

45. Horizontal unilateral effects may arise when one firm merges with a competitor that previously provided a competitive constraint, allowing the merged firm profitably to raise prices or to degrade quality on its own and without needing to coordinate with its rivals.<sup>16</sup> Horizontal unilateral effects are more likely when the merging parties are close competitors. The CMA has assessed whether it is or may be the case that the Merger has resulted, or may be expected to result, in an SLC in relation to horizontal unilateral effects in the worldwide supply of trading solutions, clearing solutions, market surveillance solutions and risk management solutions.
46. The CMA has considered each of these four solutions in turn.

### ***Trading solutions***

47. The Parties both offer trading solutions, Nasdaq through its technology platform, the 'Nasdaq Financial Framework'<sup>17</sup> and CINN via its 'TRADExpress Trading System', 'Information Manager' and 'Index Engine' platforms.
48. The Parties estimated that they had a combined worldwide share of supply of trading solutions of [30-40%] (with a [0-10%] increment) by number of customers who were currently using an externally supplied (ie non in-house) trading solution.
49. The CMA was not able to obtain reliable estimates of shares of supply by value. The CMA notes that while there is some uncertainty in estimating the size of the addressable market using this approach, as the Parties do not have a comprehensive understanding of supply relationships across the industry, the CMA's own Merger investigation showed that, of those

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<sup>16</sup> [Merger Assessment Guidelines](#), from paragraph 5.4.1.

<sup>17</sup> Pre-trade and trading tools are available to customers through Nasdaq's 'Pre-Trade Risk Management Offers'. Trading solutions are offered via 'Nasdaq Multi-Matching Engine', 'Nasdaq Hybrid Matching Engine', 'Nasdaq Fixed Income Matching Engine' and 'Nasdaq Algo Engine', all of which provide order gateway, order book and trading systems services.

competitors that provided details of the number of customers they supplied, there were only small differences between these figures and the Parties' estimates.<sup>18</sup> Given also that shares of supply may fluctuate from year to year, and may not fully reflect rivalry between market participants; the CMA has placed more weight on other evidence of the closeness of competition between the Parties and their competitors, as set out in more detail below.

#### *Closeness of competition*

50. The Parties submitted that the provision of market technology solutions more generally is a fragmented and competitive market with many large and sophisticated customers and competitors who are and would continue to constrain the Parties.<sup>19</sup>
51. The Parties also submitted that there are a number of ways in which the Parties' trading solutions are differentiated:<sup>20</sup>
  - (a) Nasdaq seeks to differentiate itself from CINN by offering hosted and managed solutions. CINN has more limited technical capabilities in this regard because it does not own and operate downstream exchanges.
  - (b) Nasdaq has a competitive advantage (together with other vertically integrated providers such as London Stock Exchange, Deutsche Börse) due to its practical knowledge of operating exchanges and clearinghouses.
  - (c) CINN markets itself as an 'independent' provider which may give it a competitive advantage when competing for actual or potential competitors of Nasdaq (ie other exchanges or clearinghouses).
52. The CMA has considered the extent to which the Parties were competing closely based on third party evidence, including customer views on the suppliers suitable to serve their needs, and evidence from the Parties' internal documents.
53. Customers told the CMA that trading solution technology is highly bespoke, although the underlying technology is relatively simple. As such, customer responses indicated that suppliers are assessed against a variety of factors. Given that the functioning of these solutions is crucial for customers'

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<sup>18</sup> [X]

<sup>19</sup> Paragraph 185 of the Parties' Merger Notice.

<sup>20</sup> Paragraph 187 of the Parties' Merger Notice.

businesses, reputation and track record (including in relation to timely delivery, reliability and frequency of outages and ongoing support) this was highlighted as a key requirement for customers when they go out to market.<sup>21</sup>

54. The CMA has received evidence from third parties that the Parties differ in some respects in relation to these factors in relation to trading solutions. For example, some competitors noted perceived differences in terms of pricing, performance of technology, reputation for delivery and, consistent with the Parties' observations, independence. However, consistent with the bespoke nature of requirements and the services delivered, customers' views on the suppliers able to serve their needs varied significantly. Overall, while many customers named the Parties as alternatives, customers also named many other suppliers and the Parties did not appear to be particularly well-placed to serve customers relative to those other suppliers.
55. In this regard, the CMA also considered evidence that the Parties may be competing more closely because, as indicated by some third parties, they are two of a relatively small number of competitors who offer a complete end to end solution covering the entire trade life-cycle. Whilst this may be true, the evidence provided to the CMA demonstrates that customers tend to procure their solutions separately and on different procurement cycles (in fact many customers may not need to procure all solutions), suggesting that strength in one area will not necessarily lend itself to increased success in relation to another solution type. (See the section on conglomerate effects below for further detail). In that context, the CMA understands that there are a number of consultancies who assist customers in their procurement of market technology solutions (sometimes 'unbundling' solutions and procuring from a number of different providers in order to get better value for money), meaning that procuring each solution from a different vendor will not necessarily be a more complex process and time-consuming for the customer. Finally, as discussed further below at paragraph 61, the CMA does not believe that the Parties are close competitors in this regard and there are a number of providers remaining post-Merger who offer a suite of market technology solution types, including the London Stock Exchange Group and Deutsche Börse.
56. The Parties' internal documents are consistent with these observations. While they provided detailed analysis across various metrics including the

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<sup>21</sup> Specifically, third party customers reported the following factors (amongst others) which were important to them when procuring trading solutions: fit with functional requirements (including ability to accommodate the desired asset classes), system latency, scalability, performance and resilience, cost, development period and time to launch, service and support team, reputation and quality of team, and customisations available.

comprehensiveness of the offering (on which both Parties appear strong),<sup>22</sup> it was not clear from the third-party customer responses that all customers valued this characteristic as much as the internal documents suggested. These internal documents in any case also referenced a number of other competitors who the CMA believes to be competing equally or more closely across a number of parameters.

57. In conclusion, while there appears to be some scope for suppliers to differentiate themselves and therefore increase their ability to win contracts eg due to their ability to offer high functionality and delivery, evidence from third parties indicates that customers consider and use a wide variety of suppliers and the Parties are often not each other's closest competitors.

#### *Competitive constraints*

58. The Parties listed a number of strong competitors in relation to trading solutions in the UK. The Parties have explained that there may be many other global suppliers who have also participated in UK-based RFPs, but as the RFP process is not public, the Parties cannot be sure of all participants:<sup>23</sup>

(a) **London Stock Exchange Group:** The Parties have submitted that London Stock Exchange Group, a well-known and established exchange provider, offers a full suite of market technology solutions, including trading, clearance, market surveillance and risk management solutions, using its "Gatelab" product as the platform for such services. The Parties expect that London Stock Exchange Group is invited to respond to most or all RFPs to which they are also invited in the UK and elsewhere. London Stock Exchange Group's non-UK customers have included: the Delhi Stock Exchange, the Johannesburg Stock Exchange and Oslo Börse.<sup>24</sup>

(b) **Deutsche Börse:** The Parties also listed Deutsche Börse as another well-known and established exchange provider. In addition, Deutsche Börse provides a wide range of services to financial market operators across the world. The range of services includes trading, clearing and market surveillance software solutions. The Parties are not aware of any of Deutsche Börse's UK customers, but note that Deutsche Börse competes for the same customers as the Parties worldwide. The Parties expect that Deutsche Börse is invited to respond to most or all RFPs to which they

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<sup>22</sup> See for example, slide 43 of Annex 11 to the Parties' Merger Notice and Annex 26 to the Parties' Merger Notice.

<sup>23</sup> Paragraph 217 of the Parties' Merger Notice.

<sup>24</sup> Paragraph 218 of the Parties' Merger Notice.

are also invited in the UK and elsewhere. Nasdaq has identified Deutsche Börse in internal discussions as Nasdaq has also lost out to Deutsche Börse in supply contracts. For example, the Zagreb Stock Exchange used to use Nasdaq's market solutions technology, but has switched from Nasdaq to Deutsche Börse. Deutsche Börse also supplies the Irish Stock Exchange, the Zagreb Stock Exchange, and Wiener Börse in Austria.<sup>25</sup>

- (c) **Euronext:** Euronext offers its Optiq product to exchanges as a platform solution covering both trading and clearing. It also offers a market surveillance solution, via its Euronext Surveillance product. The Parties are not aware of any UK customers to which Euronext supplies market technology solutions. However, the Parties expect that Euronext is invited to respond to most or all RFPs to which they are also invited. Euronext's non-UK customers have included: the Beirut Stock Exchange, the Muscat Securities Market and the Warsaw Stock Exchange.<sup>26</sup>
- (d) **TMX:** TMX is another exchange which sells a full range of market technology solutions to third parties to UK customers. Nasdaq understands that it supplies the London Stock Exchange Group in the UK.<sup>27</sup>
- (e) **Aquis:** Aquis is primarily an exchange provider, but recently started to offer the technology it uses on the Aquis Exchange to customers via the its software division "Aquis Technologies". Aquis Technologies offers third parties trading and surveillance tools as well as operations systems and assistance post-trade to its sell-side customers.

- 59. The Parties also submitted that one of their biggest competitive constraints was self-supply, in some instances enhanced by the assistance of consultancies such as BTA and Accenture. The Parties submit that a move to in-house provision of solutions is a feasible option for customers, and one that is considered alongside those solutions offered by third-party vendors. Nasdaq has provided estimates that it would require between [X] hours (if using third-party middleware rather than self-built) to develop an in-house solution, rising up to [X] hours depending on the scope, technology requirements, and complexity of the product.<sup>28</sup>
- 60. The CMA has considered the constraints that such third-party vendors provide as well as the constraint of self-supply based on third-party evidence and the

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<sup>25</sup> Paragraph 219 of the Parties' Merger Notice.

<sup>26</sup> Paragraph 220 of the Parties' Merger Notice.

<sup>27</sup> Paragraph 221 of the Parties' Merger Notice.

<sup>28</sup> Paragraph 210 of the Parties' Merger Notice.



Parties' internal documents. Evidence available to the CMA indicates significant competition remaining from third-party providers post-Merger.

61. Evidence from third parties was consistent with the Parties' observations on the range and strength of alternative suppliers. Third-party customers contacted by the CMA during its Merger investigation named a total of 37 alternative suppliers of trading solutions in response to questions regarding which other providers had been considered in their most recent RFP and which other providers were currently viewed as suitable alternatives. In particular, the following providers were named consistently by third parties and appear to have a similar offering to the Parties and, consistent with the Parties' submissions, provide a comprehensive range of market technology solutions: London Stock Exchange Group, ICE, Euronext, Deutsche Börse and CME.
62. These competitors are also referred to in a number of the Parties' internal documents. In particular, [X] are regularly mentioned.<sup>29</sup>
63. In addition, whilst evidence from third parties has indicated that self-supply may not be a feasible option for all customers, the CMA has found that some (particularly larger) customers have considered or would consider it an alternative to procuring solutions from third-party vendors, such that it will provide some constraint on the Merged Entity post-Merger. Further, as mentioned above at paragraph 55, the CMA has found that the Parties may also face constraints from 'unbundled' solutions and consultancy-aided solutions.
64. In conclusion, the CMA believes that there are a number of realistic alternative suppliers of trading solutions available post-Merger to constrain the Merged Entity.

#### *Conclusion on trading solutions*

65. For the reasons set out above, the CMA believes that the Parties are not each other's closest competitor and that there will be sufficient alternative providers of trading solutions remaining post-Merger to provide a competitive constraint on the Merged Entity. Accordingly, the CMA has found that the Merger does not give rise to a realistic prospect of an SLC as a result of horizontal unilateral effects in relation to the worldwide supply of trading solutions.

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<sup>29</sup> See for example, slide 43 of Annex 11 to the Parties' Merger Notice, Annex 26 to the Parties' Merger Notice, slide 26 of Annex 5i to the Parties' response to RFI 1, Annex 5j to RFI 1, Annex 19 to the Parties' Merger Notice.

### *Clearing solutions*

66. The Parties both offer clearing solutions, Nasdaq through its technology platform, the 'Nasdaq Financial Framework'<sup>30</sup> and CINN via its 'TRADEExpress RealTime', 'CCP Risk' and 'TRADEExpress' platforms.
67. The Parties estimated that they had a combined worldwide share of supply of clearing solutions of [20-30%] (with [10-20%] increment) by number of customers who were currently using an externally supplied (ie non in-house) clearing solution. As explained in further detail above, the CMA has attached more weight to other evidence on closeness of competition and competitive constraints.

### *Closeness of competition*

68. As set out above at paragraph 50, the Parties have submitted that the provision of market technology solutions more generally is a fragmented and competitive market with many large and sophisticated customers and competitors who are and would continue to constrain the Parties.<sup>31</sup>
69. The Parties also submitted that there are a number of ways in which the Parties' clearing solutions are differentiated on the basis of similar considerations to those noted above at paragraph 51.<sup>32</sup>
70. The CMA has considered the extent to which the Parties were competing closely based on third party evidence, including customer views on the suppliers suitable to serve their needs, and evidence from the Parties' internal documents.
71. As with trading solutions, customers told the CMA that clearing solution technology is highly bespoke, although the underlying technology is relatively simple. As such, customer responses indicated that suppliers are assessed against a variety of factors, noting the importance of factors going to the overall functioning of these solutions.
72. As with trading solutions, the CMA received evidence from third parties that the Parties differ in some respects in relation to these factors when considering clearing solutions. For example, the CMA has received evidence from third parties which indicates that the Parties differ in relation to clearing

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<sup>30</sup> 'Nasdaq Packaged CCP', 'Nasdaq Clearing Engine', 'Nasdaq Real-Time Risk', 'Nasdaq Collateral Management', 'Nasdaq Pricing', 'Nasdaq OTC Workflow Management', 'Nasdaq Settlement Instructor', 'Nasdaq Settlement Engine', 'Nasdaq Custody', 'Nasdaq Corporate Actions' and 'Nasdaq Registry'.

<sup>31</sup> Paragraph 185 of the Parties' Merger Notice.

<sup>32</sup> Paragraph 187 of the Parties' Merger Notice.

solutions in terms of both reputation and, consistent with the Parties' observations, independence. However, consistent with the bespoke nature of requirements and the services delivered, customers' views on the suppliers able to serve their needs varied significantly. Overall, while many customers named the Parties as alternatives, customers also named many other suppliers and the Parties did not appear to be particularly well-placed to serve customers relative to those other suppliers. The Parties' internal documents are consistent with these observations.

73. In conclusion, while the CMA believes that there is some scope for suppliers to differentiate themselves and therefore increase their ability to win contracts, eg due to their ability to offer high functionality and delivery, evidence from third parties indicates that customers consider and use a wide variety of suppliers and that the Parties are often not each other's closest competitors.

#### *Competitive constraints*

74. The Parties listed a number of examples of strong competitors in relation to clearing solutions in the UK, including Calypso, KRX, Tata Consultancy Services (**TCS**) and Digital Asset Holding, as well as examples of recent switching by customers, either between third-party vendors or to self-supply. The Parties list self-supply as a significant constraint in relation to clearing solutions. (See paragraphs 37-39 and 59-60 above in relation to trading solutions and the product frame of reference section for further detail on the approach taken to self-supply). In relation to each of these suppliers, the Parties noted the following:
- (a) **Calypso**: The Parties have submitted that Calypso is expanding its operations. As a technology provider that is not part of a wider exchange group, the Parties have submitted that it may view the Merger as an opportunity to compete even more vigorously, promoting itself as a provider not aligned to an exchange. Calypso is already a credible option for customers and a competitive constraint on Nasdaq. It recently won tenders to supply clearing solutions software to HKEx, SGX and ASX, [REDACTED].<sup>33</sup>
- (b) **KRX**: KRX, the South Korean Exchange, is named by the Parties as another market technology solutions provider that has recently begun offering its solutions to third parties and could readily start to target UK customers.<sup>34</sup>

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<sup>33</sup> Paragraph 258 of the Parties' Merger Notice.

<sup>34</sup> Paragraph 257 of the Parties' Merger Notice.

- (c) **TCS:** TCS is considered by the Parties to be a competing provider, described as a well-funded and reputable recent entrant.<sup>35</sup>
- (d) **Digital Asset Holding:** The Parties have submitted that if Digital Asset Holdings is not already active in the UK, it can be expected to begin targeting UK customers in the near future, in particular in respect of the trading and clearing solutions segments of the market. This company is backed by major exchanges, such as ASX and Deutsche Börse, and its focus on new technology can be expected to make it an attractive option for a growing number of potential customers.<sup>36</sup>
75. Evidence from third parties was consistent with the Parties' observations on the range and strength of alternative suppliers. Third-party customers contacted by the CMA during its Merger investigation named 23 alternative suppliers of clearing solutions in response to questions regarding which other providers had been considered in their most recent RFP and which other providers were currently viewed as suitable alternatives. In particular, the following providers are examples of alternative vendors offering clearing solutions provided by third parties: London Stock Exchange Group, Calypso, Tata, FT India, FIS and Digital Asset Holdings.
76. These competitors are also referred to in a number of the Parties' internal documents, in particular [REDACTED] are regularly mentioned.<sup>37</sup>
77. As mentioned above at paragraphs 37-39, 55 and 59-60, the CMA has found that the Parties may also face constraints from 'unbundled' solutions, consultancy-aided solutions, and out-of-market constraints such as self-supply.
78. In conclusion, the CMA believes that there are a number of credible alternative suppliers of clearing solutions available post-Merger to constrain the Merged Entity.

#### *Conclusion on clearing solutions*

79. For the reasons set out above, the CMA believes that the Parties are not each other's closest competitor and that there will be sufficient alternative providers of clearing solutions remaining post-Merger to provide a competitive constraint on the Merged Entity. Accordingly, the CMA found that the Merger

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<sup>35</sup> Executive summary and paragraph 225 of the Parties' Merger Notice.

<sup>36</sup> Paragraph 256 of the Parties' Merger Notice.

<sup>37</sup> See for example, Annex 5j to RFI 1, Annex 19 to the Parties' Merger Notice, Annex 20 to the Parties' Merger Notice.

does not give rise to a realistic prospect of an SLC as a result of horizontal unilateral effects in relation to the worldwide supply of clearing solutions.

#### *Market surveillance solutions*

80. Nasdaq offers market surveillance technology through its SMARTS system, which allows customers to monitor trading across markets and asset classes. Meanwhile, CINN does not have its own market surveillance products, but resells surveillance solutions provided by two companies, Scila and Irisium in which it also has a shareholding interest (as detailed at paragraph 16 above). The CMA has considered both CINN's resale activities and the activities of Scila and Irisium in its competitive assessment of the Merger.

81. The Parties have estimated that they have a combined worldwide share of supply of market surveillance solutions of [10-20%] by number of customers who were currently using a clearing solution of any type, whether in-house or externally supplied. The Parties were unable to estimate combined share of supply of market surveillance solutions excluding self-supply due to insufficient visibility as to what solution potential customers may use, though Nasdaq estimated that its own share of supply of market surveillance solutions was [10-20%] when self-supply was excluded. As explained in further detail above, the CMA has placed more weight to other evidence on closeness of competition and competitive constraints, as set out below.

#### *Closeness of competition*

82. As set out above at paragraph 50, the Parties have submitted that the provision of market technology solutions more generally is a fragmented and competitive market with many large and sophisticated customers and competitors who are and would continue to constrain the Parties.

83. The CMA has considered the extent to which the Parties were competing closely based on third party evidence, including customer views on the suppliers suitable to serve their needs, and evidence from the Parties internal documents.

84. Customer responses to the CMA's merger investigation indicated that suppliers of market surveillance solutions are assessed against a variety of factors, noting the importance of factors going to the overall functioning of these solutions.

85. The CMA has received evidence from third parties that the Parties differ in some respects in relation to the above factors. For example, the CMA has received evidence from third parties that the Parties differ in relation to market

surveillance solutions in terms of reputation, pricing and, consistent with the observations of the Parties, independence. One third-party customer of market surveillance solutions also told the CMA that CINN is considered to be more of a consultancy than a software provider (perhaps because of its re-sale of surveillance solutions). However, consistent with the bespoke nature of requirements and the services delivered, customers' views on the suppliers able to serve their needs varied significantly. Overall, while many customers named the Parties as alternatives, customers also named many other suppliers and the Parties did not appear to be particularly well-placed to serve customers relative to those other suppliers. The Parties' internal documents are consistent with these observations.

86. In conclusion, while there appears to be some scope for suppliers to differentiate themselves and therefore increase their ability to win contracts, eg due to their ability to offer high functionality and delivery, evidence from third parties indicates that customers consider and use a wide variety of suppliers.

#### *Competitive constraints*

87. The Parties have listed a number of strong competitors in relation to market surveillance solutions, including the London Stock Exchange Group, Deutsche Börse, TMX, Euronext, Aquis, GMEX.<sup>38</sup> The Parties also submitted that self-supply is a significant constraint on the Parties across all market technology solutions (see above in relation to trading solutions and the product frame of reference section for further detail on the approach taken to self-supply).
88. The Parties also provided examples of customers switching to alternative providers of market technology solutions:<sup>39</sup>
- (a) The Zagreb Stock Exchange previously used Nasdaq's market technology solution but has switched to use Deutsche Börse.
- (b) [REDACTED].
89. The CMA has considered the constraints that such third-party vendors provide as well as the constraint of self-supply based on third-party evidence and the

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<sup>38</sup> Descriptions of the London Stock Exchange Group, Deutsche Börse, TMX, Euronext and Aquis can be found above in relation to trading solutions. The Parties describe GMEX as a recent entrant who offers technology solutions through "GMEX Technologies". Currently, GMEX offers both trading solutions and market surveillance technologies. Nasdaq understands that it has won supply contracts with the Blockchain Board of Derivatives in the UK (paragraph 224 of the Parties' Merger Notice).

<sup>39</sup> Paragraph 199 of the Parties' Merger Notice.

Parties' internal documents. Evidence available to the CMA indicates that significant competition will remain from third-party providers post-Merger.

90. Evidence from third parties was consistent with the Parties' observations on the range and strength of alternative suppliers. Third-party customers contacted by the CMA during its Merger investigation named 34 alternative suppliers of market surveillance solutions in response to questions regarding which other providers had been considered in their most recent RFP and which other providers were currently viewed as suitable alternatives. In particular, the following providers were named consistently by third parties and the CMA believes to have a similar offering to the Parties: NICE Actimize, Aparma, B Next, First Derivatives, London Stock Exchange Group, KX, Oracle Mantas, Liquid Metrics and Trading Hub.
91. These competitors are also referred to in a number of the Parties' internal documents. In particular, [X] are all regularly mentioned.<sup>40</sup>
92. As mentioned above at paragraphs 37-39, 55 and 59-60, the CMA has found that the Parties may also face some constraint from 'unbundled' solutions, consultancy-aided solutions, and out-of-market constraints such as self-supply.
93. In conclusion, the CMA believes that there are a number of credible alternative suppliers of market surveillance solutions available post-Merger to constrain the Merged Entity.

#### *Conclusion on market surveillance solutions*

94. For the reasons set out above, the CMA believes that there are a number of credible alternative providers of market surveillance solutions remaining post-Merger. Accordingly, the CMA found that the Merger does not give rise to a realistic prospect of an SLC as a result of horizontal unilateral effects in relation to the worldwide supply of market surveillance solutions.

#### *Risk management solutions*

95. Nasdaq also offers a risk management solution, 'Nasdaq TradeGuard'.
96. CINN provides two risk management solutions: 'TRADEExpress CCP Risk' and 'Minium'. CINN started developing its proprietary clearing solution in 2009 with an incorporated risk management functionality. The risk management solution is part of the clearing solution but can also be sold as a separate system

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<sup>40</sup> Annex 20 to the Parties' Merger Notice, and slide 9 of Annex 26 to the Parties' Merger Notice.

under 'TRADEExpress CCP Risk'. The 'TRADEExpress CCP Risk' solution allows exchanges to monitor and manage their aggregate risk exposure across markets, asset classes, regions and accounts in real-time, through flexible trade controls. In addition, monitoring and analysis software help exchanges control and maximise their regulated exchange limits. It is a risk management solution designed to be used with a clearing solution (for example, 'TRADEExpress Real Time'), although it could equally be used with other parties' clearing solutions. CINN's standalone risk management offering to exchanges and clearing houses was launched in the last year.

97. CINN is also piloting a risk management solution software called Minium, which is a standalone solution that provides risk management to banks and brokers. [X] The pilot was anticipated to begin before the end of 2018 [X].
98. The CMA therefore understands that CINN is relatively advanced in the process of expanding into the market for risk management solutions, and therefore, on a cautious basis, has considered whether the Merger could result in a substantial loss of competition in relation to risk management solutions. However, the evidence suggests that there are sufficient alternative providers of risk management solutions who will continue to provide a constraint on the Parties post-Merger.
99. For example, the Parties' internal documents mention a number of alternative providers of risk management solutions, including [X].<sup>41</sup> Third parties also mentioned alternative suppliers of risk management solutions that provide a similar offering to the Parties, including London Stock Exchange Group, ION and ULLINK Itiviti.

#### *Conclusion on risk management solutions*

100. For the reasons set out above, the CMA has found that the Merger does not give rise to a realistic prospect of an SLC as a result of horizontal unilateral effects in relation to the worldwide supply of risk management solutions.

#### *Conclusion on horizontal unilateral effects*

101. For the reasons set out above, the CMA believes that there are a number of credible alternative providers remaining for each of trading, clearing, market surveillance and risk management solutions post-Merger. Accordingly, the CMA found that the Merger does not give rise to a realistic prospect of an SLC as a result of horizontal unilateral effects in relation to the worldwide

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<sup>41</sup> See Annex 5e to the Parties' response to RFI 1.



supply of trading solutions, clearing solutions, market surveillance solutions and risk management solutions.

### ***Conglomerate effects***

102. Conglomerate effects may arise in mergers of firms that are active in the supply of goods or services that do not form part of the same markets but which are nevertheless related in some way, either because their products are complements (so that a fall in the price of one good increases the customer's demand for another) or because there are economies of scale in purchasing them (so that customers buy them together).<sup>42</sup>
103. Most non-horizontal mergers are considered to be benign or even efficiency-enhancing (when they involve complementary products) and do not raise competition concerns. However, in certain circumstances, a conglomerate merger can result in the merged entity foreclosing rivals, including through a tying or bundling strategy.
104. Similar to its analysis of vertical theories of harm, the CMA's usual approach to assessing conglomerate theories of harm is to analyse (a) the ability of the merged entity to foreclose competitors, (b) the incentive of it to do so, and (c) the overall effect of the strategy on competition.<sup>43</sup>
105. In the present case, the CMA has seen no evidence that the Parties' products were economic complements (ie that the fall in the price of one product would increase the price of another). The CMA also did not find any evidence of economies of scale in purchasing such that customers bought the different products together (though there may be administrative advantages to purchasing all solutions from the same vendor).
106. In fact, the CMA found that customers can and do mix and match between providers and self-supply solutions. Customer responses indicated that customers do not commonly procure different market technology solutions at the same time, due to the complexity of the switching process, in fact some customers would have no need for a bundled offering – for example, the CMA understands that banking and broking customers would typically only ever purchase market surveillance solutions from the Parties or competing market technology suppliers. Consistent with this, the Parties submitted that [X] % of Nasdaq's exchange and clearinghouse customers buy more than one solution

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<sup>42</sup> [Merger Assessment Guidelines](#), paragraph 5.6.2.

<sup>43</sup> [Merger Assessment Guidelines](#), paragraph 5.6.6.

from Nasdaq (just [X] % of all Nasdaq customers), while only [X] of CINN's current customers purchase more than one CINN solution.

107. In addition, both Parties already provide a near full range of solutions across the trade life-cycle, and therefore the Merger does not materially change the extent to which the Parties are able to provide a bundled offering.
108. The CMA therefore believes that the Parties would not have the ability to foreclose competitors using a conglomerate effects strategy. The CMA has therefore not considered any incentive that the Parties may have to pursue such a strategy nor the effect that such a strategy may have on competition.
109. The CMA has also, in any case, also taken into account considerations regarding the advantages or disadvantages of a bundled offering in its assessment of horizontal unilateral effects, as set out above.
110. In conclusion, the CMA has found that the Merger does not give rise to a realistic prospect of an SLC as a result of conglomerate effects in relation to the worldwide supply of trading solutions, clearing solutions, market surveillance solutions and risk management solutions.

### ***Barriers to entry and expansion***

111. Entry, or expansion of existing firms, can mitigate the initial effect of a merger on competition, and in some cases may mean that there is no SLC. In assessing whether entry or expansion might prevent an SLC, the CMA considers whether such entry or expansion would be timely, likely and sufficient.<sup>44</sup>
112. However, the CMA has not had to conclude on barriers to entry or expansion as the Merger does not give rise to competition concerns on any basis.

### **Decision**

113. Consequently, the CMA does not believe that it is or may be the case that the Merger may be expected to result in an SLC within a market or markets in the United Kingdom.
114. The Merger will therefore **not be referred** under section 33(1) of the Act.

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<sup>44</sup> [Merger Assessment Guidelines](#), from paragraph 5.8.1.

**Eleni Gouliou**  
**Director**  
**Competition and Markets Authority**  
**31 January 2019**

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<sup>i</sup> The Parties informed the CMA on 5 February 2019 that Nasdaq completed its acquisition of CINN on 17 January 2019.