A report on the completed acquisition of Wincor Nixdorf AG by Diebold, Incorporated

Appendices and glossary

Terms of reference and conduct of the inquiry

Terms of reference

1. In exercise of its duty under section 22(1) of the Enterprise Act 2002 (the Act) the Competition and Markets Authority (CMA) believes that it is or may be the case that:

   (a) a relevant merger situation has been created, in that:

      (i) enterprises carried on by, or under the control of, Diebold Incorporated have ceased to be distinct from enterprises previously carried on by, or under the control of, Wincor Nixdorf AG; and

      (ii) the condition specified in section 23(1)(b) of the Act is satisfied; and

   (b) the creation of that situation has resulted, or may be expected to result, in a substantial lessening of competition within a market or markets in the United Kingdom for goods or services, including the supply of automated teller machines (ATMs) in the UK.

2. Therefore, in exercise of its duty under section 22(1) of the Act, the CMA hereby makes a reference to its chair for the constitution of a group under Schedule 4 to the Enterprise and Regulatory Reform Act 2013 in order that the group may investigate and report, within a period ending on 13 February 2017, on the following questions in accordance with section 35(1) of the Act:

   (a) whether a relevant merger situation has been created; and

   (b) if so, whether the creation of that situation has resulted, or may be expected to result, in a substantial lessening of competition within any market or markets in the UK for goods or services.

Sheldon Mills
Senior Director, Mergers
Competition and Markets Authority
30 August 2016

Initial enforcement order

3. The CMA made an initial enforcement order (IEO) on 15 August 2016 and derogations were granted on 15 August, 17 August, 30 August, 16 September, 11 November and 5 December 2016. The order and redacted derogations were published on our webpages.

4. On the 18 October we agreed to a proposal submitted by Diebold and Wincor for arrangements to be put in place in lieu of a formal monitoring trustee. These arrangements saw the appointment of a 'Monitor', an employee from the merged global entity Diebold Nixdorf, who reports to the CMA on a fortnightly basis on Diebold's and Wincor's compliance with the IEO.

Conduct of the inquiry

5. We published biographies on the members of the inquiry group conducting the inquiry on 30 August 2016 and the administrative timetable for the inquiry was published on our webpages on 12 September 2016.

6. We invited a wide range of interested parties to comment on the acquisition. These included customers and competitors of Diebold and Wincor. Evidence was also obtained from third parties through hearings, through telephone contact and through written requests. We also used evidence from the CMA's phase 1 inquiry into the merger. Summaries of hearings and of calls that took place at phase 1 can be found on our webpages.

7. We received written evidence from Diebold and Wincor and a non-confidential version of their main submission is on our webpages. We also held separate hearings with Diebold and Wincor on 8 November 2016.

8. On 27 September 2016 we published an issues statement on our webpages, setting out the areas of concern on which the inquiry would focus.

9. On 28 September 2016 members of the inquiry group, accompanied by staff, visited the offices of Diebold and Wincor.

10. In the course of our inquiry, we sent to Diebold and Wincor and other parties some working papers and extracts from those papers for comment.

11. On 20 December 2016, we published on our webpages our provisional findings report, along with a notice of provisional findings and a notice of possible remedies. We also extended the reference period by eight weeks until 10 April 2017 under section 39(3) of the Act.

12. A non-confidential version of the final report was published on our webpages on 16 March 2017.

13. We would like to thank those who have assisted us in our inquiry.

Industry background

Introduction

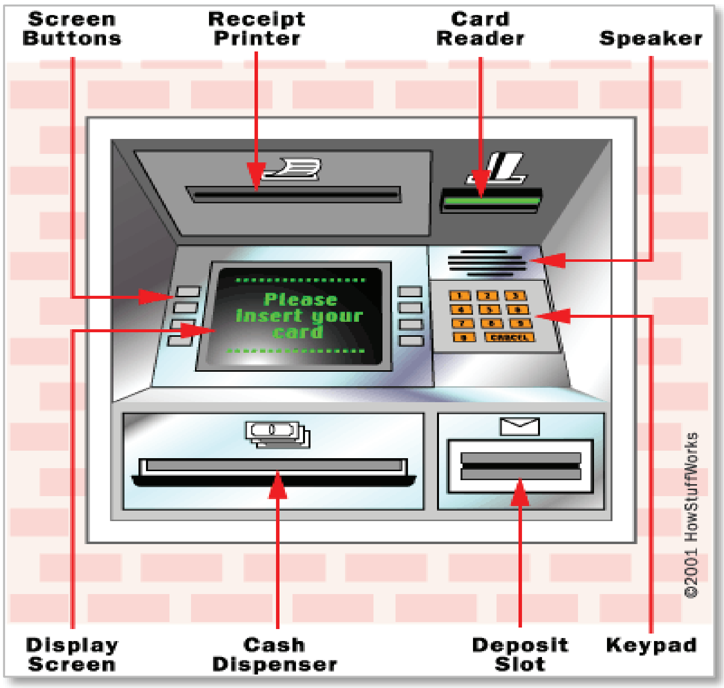
1. This appendix provides further information about the financial self-service (FSS) solutions industry in the UK, as it applies to the Parties' main lines of business ie ATMs and related software and services. It also provides further details regarding the Parties' UK operations.

Products and services

ATM hardware

2. Figure 1 illustrates the standard components of an ATM, to which a safe is attached.

Figure 1: Standard components of an ATM



Source: Diebold.

3. Virtually all ATMs in the UK are connected to the LINK network (LINK), the national cash machine network, which enables banks to offer their customers access to cash across the whole of the UK.[1]

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[1] LINK scheme. www.link.co.uk.

4. LINK is recognised as an inter-bank payment system under section 184 of the Banking Act 2009,[2] and is regulated by the Payments Systems Regulator.[3]

5. According to a World Class Payments Report published by Payments UK, by the end of 2014, the UK had 1,074 ATMs per million inhabitants compared to the EU average of 960. In Western Europe, only Portugal and Spain had more ATMs per head of the population.[4]

6. According to Payments UK, by the end of 2015, only 25% of ATMs in the UK were pay-to-use.[5] The number of free-to-use ATMs grew by 4.4% while the number of pay-to-use ATMs fell by 7.0% in 2015.[6] Consistent with these trends, pay-to-use machine withdrawals in 2015 accounted for just 2% of the total number of cash withdrawals and 1.7% of the total value.[7]

7. ATM operators cover the cost of free-to-use ATMs through a per-transaction ATM interchange fee paid to them by the card issuing banks and building societies. ATM interchange is cost-based and recalculated on an annual basis before being approved by the LINK membership. The total cost of running the UK's free-to-use ATM estate (over £900 million per annum) is divided by the number of transactions to give an average cost per transaction.[8]

ATM locations

8. The categorisation of ATMs by their location is shown in Figure 2.

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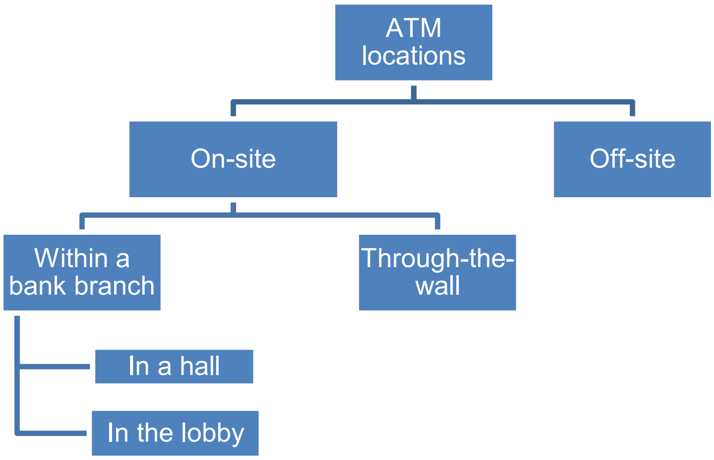
[2] LINK membership consists of all the UK's main debit and cash machine card issuers (predominantly banks and building societies) and also all the main ATM operators (banks, building societies and independent ATM deployers (IADs)).
[3] Introduction to Link, 2017.
[4] Payments UK (2016), *World Class Payments: A report on how consumers around the world make payments*, p16.
[5] Payments UK (2016), *UK Cash & Cash Machines*, p11.
[6] Payments UK (2016), *UK Cash & Cash Machines*, p11.
[7] Payments UK (2016), *UK Cash & Cash Machines*, p11.
[8] Introduction to Link, 2016.

Figure 2: ATM locations



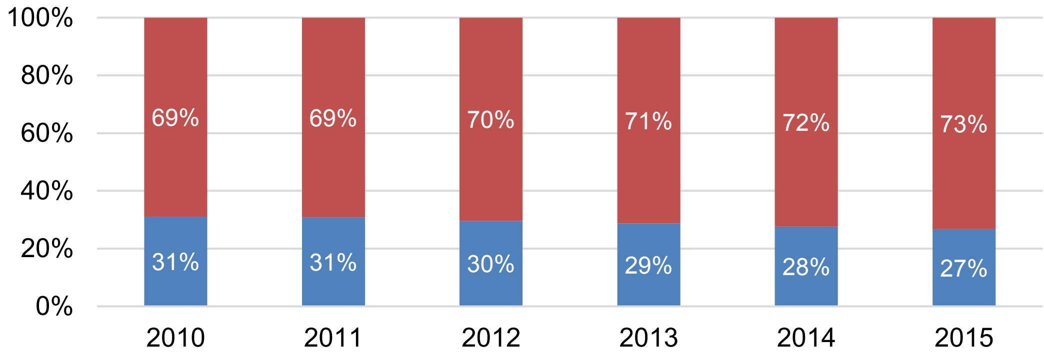
Source: CMA, RBR, 2016.

9. The proportion of on-site ATMs in the UK has continued to fall, and stood at 27% at the end of 2015 – see Figure 3. This in part reflects the trend of bank branch closures and is also linked to the growth in the number of ATMs owned by IADs.[9]

10. An IAD is an organisation independent of a bank that owns and typically places ATMs at off-site premises such as convenience stores and supermarkets. At the end of 2015, the IADs accounted for 75% of off-site machines, up from 71% in 2014.[10]

11. Cash replenishment for on-site ATMs is generally (for 81%) undertaken by the bank staff, while a majority (68%) of off-site ATMs are replenished by third party providers.[11]

Figure 3: Proportion of on-site and off-site ATMs



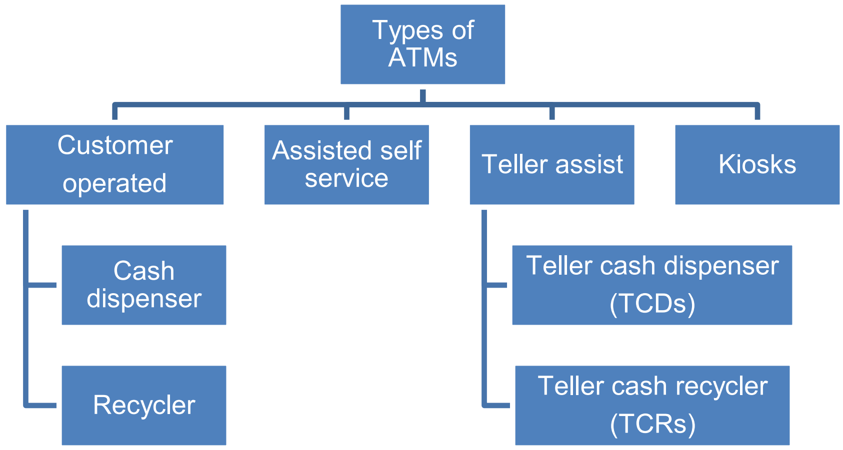
Source: Based on data presented in Payments UK (2016), *UK Cash & Cash Machines*, p55.

[9] The term 'deployer' refers to ATM customers ie banks and the IADs.
[10] Payments UK (2016), *UK Cash & Cash Machines*, pp28 & 55.
[11] RBR (2016), *ATM Hardware, Software and Services*, p28.

Types of ATMs

12. There are two main categories of ATMs – customer operated and teller-assist – see Figure 4. Within these categories, ATMs can either just dispense, or 'recycle'[12] cash to the customers. There are also 'assisted self-service' ATMs, which are operated by the customer but usually with the help of a teller or other bank staff. 'Kiosks' are limited functionality ATMs, and are rarely used in the UK.

Figure 4: Types of ATMs



Source: CMA.

Customer-operated ATMs

13. In relation to customer-operated ATMs, cash dispensers are ATMs that only dispense banknotes, whereas recyclers have an automated deposit functionality.[13] The latter ATMs dispense banknotes and are also able to accept cheque and banknote deposits, an operation which involves checking, sorting, authenticating and storing banknotes. These ATMs have the ability to dispense the banknotes deposited by consumers, ie to 'recycle' cash. However, ATMs with deposit automation do not necessarily recycle the cash deposited by consumers, as they may only dispense bank-stocked cash.

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[12] See paragraph 13.
[13] A 'multifunction ATM' is also a type of customer-operated ATM, which generally refers to devices that provide functionality in addition to cash dispensing. Typically this would include devices that provide deposit (notes, coin or cheque), passbook printing, and bill payment services.

Figure 5: Customer-operated ATM (Wincor CINEO)

Source: The Parties.

Assisted self-service ATMs

14. These are relatively new and advanced customer-operated ATMs with multiple functions that can be used by customers, but – due to the machine's complexity – with the assistance of bank staff. The Parties told us that assisted self-service ATMs were a relatively new concept within the UK branch banking environment that enabled interaction with a member of staff as and when required.

Teller-assist ATMs

15. 'Teller-assist ATMs' are mechanically similar to customer-operated ATMs but are installed in locations for teller access, for example under the teller's counter, and can be subdivided into teller-cash dispensers (TCDs), which only dispense cash, and teller-cash recyclers (TCRs), which can dispense as well as recycle cash.

16. According to Payments UK, teller-assist ATMs essentially relate to over-the-counter activities undertaken by bank staff, and as such are not categorised (by Payments UK) as ATMs or cash machines.

Kiosks

17. Kiosks comprise stand-alone statement printers and non-cash dispensing transaction terminals with integrated statement printers. They are used by customers in bank branches to access their bank accounts, to check their balance and to make wire transfers. The Parties told us that the supply of kiosks is very rare in the UK.

Growth trends

18. Payments UK has noted that ‘even though there has been strong growth in different payment methods there has been a rise in the number of cash machines [ATMs] available for consumers to acquire cash and utilise additional features.’[14] However, demand for ATMs tends to be lumpy, and the buying decision is subject to the replacement policy and business strategy of a deployer.[15]

19. According to RBR, the number of ATMs in the UK grew at a compounded annual growth rate (CAGR) of 2.3% during the period 2011 to 2015.[16]

ATM software

20. In 2015, ‘ProCash’ by Wincor was the [✂] application software in the UK, with a market share of [✂]% in respect of the ATM installed base. NCR packages had a combined market share of [✂]%.[17]

21. All ATMs in the UK are monitored remotely, and proprietary solutions were the most common for status management and monitoring software with a share of about 27% in respect of installed base in 2015. NCR’s ‘Gasper’ [✂] with a share of [✂]%, followed by Wincor’s ProView and Triton’s Connect with a share of [✂]% and [✂]% respectively.[18]

22. A variety of remote distribution software solutions are in use in the UK, with IBM having the [✂] share of the installed base in 2015, followed by Microsoft and Triton at [✂]% and [✂]% respectively.[19]

23. The vast majority of ATM deployers in the UK do not use customer relationship management solutions (a type of marketing software).[20] In 2015, 41% of ATMs were protected by dedicated ATM security software, with NCR’s Solidcore (share of [✂]% of the installed base) and Wincor’s ProTechOne (share of [✂]% of the installed base) being the other [✂].[21]

Future of cash and ATMs

24. A trend that could have potential implications for the ATM industry is that the number of cash payments in the UK as a percentage of the total number of

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[14] Payments UK (2016), *UK Cash & Cash Machines*, p22.
[15] The replacement period for a bank typically ranges between 7 and 12 years.
[16] RBR (2016), *ATM Hardware, Software and Services*, p13.
[17] RBR (2016), *ATM Hardware, Software and Services*, p22.
[18] RBR (2016), *ATM Hardware, Software and Services*, p24.
[19] RBR (2016), *ATM Hardware, Software and Services*, p25.
[20] RBR (2016), *ATM Hardware, Software and Services*, p26.
[21] RBR (2016), *ATM Hardware, Software and Services*, p27.

payments has continued to fall. From 64% in 2005, this percentage has fallen to 45% in 2015, and is expected to fall to 27% by 2025.[22]

25. Further, the principal payment method which cash payments have migrated to in recent years is debit cards. This is likely to continue as both debit card usage rates increase and contactless payments grow.[23] Growth in mobile payment services such as Paym may also provide alternative ways for consumers to make small value payments that may otherwise have frequently been made using cash.[24]

26. Payments UK anticipates improved integration between the mobile phone and the ATM, so that one can request cash from a mobile banking app, which will connect to the ATM wirelessly for the delivery of cash.[25]

27. Despite these trends, predicting the 'death of cash' is still premature, since cash is still highly valued for its familiarity and wide acceptance, and therefore ATMs are likely to have a continuing presence on the high street in the coming years.[26] Further, cash remains the most frequently-used payment method in the UK, accounting for 45% of all payments made in 2015.[27]

28. According to a recent industry report 'Overall and despite having been introduced as long as 50 years ago, ATM remains central to the banking industry in what appears to be a complementary role to the more recently introduced electronic payments facility'.[28]

29. Since 2005, the number of ATM users in the UK has actually increased by around 10 million; in 2015, 48 million adults used a cash machine, an increase of 3% compared to the previous year.[29] Whilst some of this increase is attributed to population growth, the share of people who used an ATM machine increased from 92% in 2014, to around 94% in 2015.

30. Further, the role of ATMs in financial inclusion will help ensure their longevity, and people with cards and limited budgets will continue to find cash useful in budgeting, an oft-overlooked function of notes and coins.[30]

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[22] Payments UK (2016), *UK Cash & Cash Machines*, p19.
[23] Payments UK (2016), *UK Cash & Cash Machines*, p9.
[24] Payments UK (2016), *UK Cash & Cash Machines*, p9.
[25] Report commissioned by Payments UK and authored by Consult Hyperion (2015), The Future of Payments, p17.
[26] Report commissioned by Payments UK and authored by Consult Hyperion (2015), The Future of Payments, p17.
[27] Payments UK (2016), *UK Cash & Cash Machines*, p19.
[28] Accenture and the ATM Industry Association (ATMIA), ATM Benchmarking Study 2016 and Industry Report. p6.
[29] Payments UK (2016), *UK Cash & Cash Machines*, p24.
[30] Report commissioned by Payments UK and authored by Consult Hyperion (2015), *The Future of Payments*, p17.

31. In respect of innovations, Payments UK refers to 'Smart ATMs' and 'Screenless ATMs' as well as innovations relating to enhancing the experience of customers with disabilities – 'talking' ATMs.[31]

32. However, given the overall market trends, the growth in the number of ATMs in the UK is likely to be modest. According to RBR, the UK installed ATM base is forecast to grow at 1.5% per year between 2015 and 2020.[32]

Diebold's operations

33. All Diebold's trading activity in the UK is conducted through Diebold International Ltd (DIL). DIL's principal activities are the supply of computer software, computer hardware, business and banking equipment.[33]

34. Diebold also has another entity in the UK, Diebold EMEA Processing Centre Limited (EPC) which provides management and support for Diebold's activities in the EMEA-wide region.[34] There are [✂] Diebold employees in the UK, [✂] of which are employed by DIL and the remainder by EPC.

35. Most of Diebold's ATMs delivered to the UK are manufactured at its factory in [✂], with a number also manufactured at other sites worldwide as required.

Wincor's operations

36. Wincor's global business is divided into two operative segments, ie 'Banking', which represented 65% of its global revenues in 2015 and 'Retail', which accounted for 35%.[35] The banking segment's proposition includes hardware, software and services for customers in the banking industry. Through the retail segment, Wincor provides hardware, software, IT services and consulting services to its retail customers.

37. Wincor's operations in the UK are conducted through two entities:

(a) Wincor Nixdorf Limited (WNL), the main operating entity in the UK; and

(b) Wincor Nixdorf Banking Services Limited (WNBSL, a wholly-owned subsidiary of WNL).

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[31] Payments UK (2016), *UK Cash & Cash Machines*, pp32-33.
[32] RBR (2015), *Global ATM Market and Market Forecast to 2020*.
[33] DIL Annual Report 2015.
[34] Diebold has three additional UK subsidiaries that are not active and have no employees: Diebold Software Solutions (UK) Ltd, Phoenix Interactive UK Limited, which are both in the process of being liquidated and Diebold One UK Ltd, which is dormant.
[35] Wincor, 2014/15 Annual Report.

38. There are two other Wincor entities active in the UK, but neither is active in any way in relation to the provision of ATM hardware or software for financial services.[36]

39. [✄].

[36] These are Aevi UK Limited and Projective Limited.

Merger and its rationale

Introduction

1. This paper provides further details on the completed acquisition by Diebold Inc[1] of Wincor Nixdorf AG[2,3] including the background to the Merger, the structure of the transaction and the expected benefits and synergies.

Background

2. The Merger originated in an initial approach by Diebold to Wincor's chief executive officer in March 2015 stating that it would be potentially interested in exploring a strategic transaction with Wincor. The Parties then set about exploring potential options for a strategic combination.

3. Section 7 of Diebold's offer document[4] describes how the Merger came about:

> The board of directors of the Bidder and the management board of Wincor Nixdorf continually review the respective companies' results of operations and competitive positions in the industry in which they operate as well as strategic alternatives. In connection with these reviews, each of the senior management teams of the Bidder and Wincor Nixdorf from time to time evaluates potential transactions that would further its strategic objectives, including by meeting periodically with the senior management of other companies in the industry, investment bankers and investors to discuss industry trends and opportunities to enhance shareholder value.

4. On 2 March 2015, after consultation with the board of directors of Diebold and discussions with its financial advisers and external legal advisers, Mr Andy Mattes, president and chief executive officer of Diebold, indicated in a discussion with Mr Eckard Heidloff, chief executive officer of Wincor, that Diebold would potentially be interested in exploring a strategic transaction with Wincor.

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[1] Diebold Inc is also referred to as 'Diebold' or 'the Bidder'.
[2] Wincor Nixdorf is also referred to as 'Wincor' or 'the Target'.
[3] Diebold and Wincor Nixdorf are referred to as 'the Parties'.
[4] English convenience translation of the offer document. Voluntary Public Takeover Offer by Diebold, Incorporated.

5. On 19 March 2015, Mr Mattes had a further discussion with Mr Heidloff about potential options for a strategic combination between Diebold and Wincor.

6. Following this approach, Mr Heidloff and Mr Mattes (as well as the two respective chief financial officers), entered into high-level preliminary discussions on a potential business combination. To facilitate these discussions, on 27 March 2015, the Parties entered into a confidentiality agreement regarding the exchange of certain information.

7. [✂].

8. However, after internal discussions, the management board of Wincor Nixdorf decided that any business combination in the structure of a takeover offer by the Bidder to the shareholders of Wincor required a premium significantly above what the Bidder had indicated. As a consequence, the management board of Wincor decided not to negotiate with Diebold further and the members of the management board of Wincor had no further contact or discussions with representatives of Diebold until mid-June 2015.

9. Between mid-June and August 2015, there were a series of meetings between the Parties, and their financial and legal advisers to discuss the possibility and the terms of a potential business combination.

10. In a telephone call between Mr Heidloff and Mr Mattes on 7 September 2015, it was agreed that the value of any offer consideration of cash and shares should amount to €52.50 per Wincor share. In parallel to these discussions, Wincor and Diebold also exchanged first working drafts of a non-binding term sheet regarding the potential transaction, and reached preliminary agreements on various key terms of a potential transaction.

11. Diebold and Wincor entered into a non-binding term sheet on the key terms of a potential transaction on 24 September 2015. These included:

   (a) the exchange offer and closing conditions to the offer;

   (b) allocation of risk with respect to obtaining regulatory approval for the transaction; and

   (c) parameters for future integration of their respective business operations.

12. On 17 October 2015, Wincor published an ad-hoc notification pursuant to Section 15 of the German Securities Trading Act (Wertpapierhandelsgesetz) confirming that Wincor and Diebold were currently in discussions regarding a potential business combination and had entered into a non-binding term sheet. Shortly thereafter, Diebold also made a similar public announcement

on 17 October 2015 which confirmed the information published by Wincor.[5] According to these announcements, the proposed offer price of €52.50 per Wincor share was to be paid in cash and Diebold shares.

13. Promptly after execution of the non-binding term sheet, Diebold proceeded with a formal due diligence process.

14. At a meeting held on 21 November 2015, after consultation with Diebold's management and the legal and financial advisers, Diebold's board approved the Business Combination Agreement, the consummation of the exchange offer and the other transactions contemplated by this agreement.

15. Diebold's board considered a number of factors in connection with its evaluation of the proposed transaction, including significant strategic opportunities and potential synergies, while generally supporting its decision to enter into the Business Combination Agreement and proceed with the transactions contemplated thereby.

16. On 22 and 23 November 2015, Wincor's supervisory board and management board, respectively, also approved the Business Combination Agreement and the transactions contemplated thereby. The Wincor management board considered a number of factors, including the interests of Wincor customers and employees, pertaining to the strategic rationale for the business combination, while generally supporting its decision to enter into the Business Combination Agreement.

17. Negotiations between the Parties culminated in the signing of a Business Combination Agreement[6] on [✂], when Diebold also published its decision to launch a voluntary public offer to all shareholders of Wincor.[7] The transaction was structured as a cash and stock offer.

Transaction structure

18. The Merger was contemplated and initiated by the way of a Business Combination Agreement, including a public offer, which was intended to result in a business combination of Diebold and Wincor. It was structured as a cash and stock offer.

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[5] Soon after the execution of the non-binding term sheet, the Bidder proceeded with a formal due diligence process, which continued up to and following the Business Combination Agreement.
[6] Business Combination Agreement. 23 November 2015.
[7] The timeline of Wincor's interactions with Diebold culminating in signing of the Business Combination Agreement is shown in Annex 1.

Business Combination Agreement

19. The Business Combination Agreement set out the principal terms and conditions of the Merger as well as the mutual goals of the Parties with regard thereto, the future organisational and corporate structure, and the strategy of the Combined Group.

20. According to this agreement, Diebold was to offer Wincor shareholders €38.98 in cash plus 0.434 Diebold common shares per Wincor share. Based on this, Wincor was valued at approximately $1.8 billion or €1.7 billion.

21. On 23 November 2015, Diebold also announced in a press release that in order to progress the transaction, it had committed financing in place. In addition to cash on hand, it expected to raise approximately $2.8 billion to fund the transaction, refinance existing debt of both companies and provide liquidity.

Public offer[8]

22. On 5 February 2016, Diebold published a voluntary public takeover offer to all Wincor shareholders for the acquisition of their bearer shares without par value for a consideration of a payment of €38.98 in cash plus 0.434 Diebold offer shares per Wincor share.

23. The purpose of the offer was for Diebold to acquire control over Wincor and, following the offer, depending on the percentage of Wincor ordinary shares acquired by Diebold in the offer, and to the extent legally permissible, in the open market, Diebold and Wincor aimed to consummate a post-completion reorganisation.

24. The public offer was, among others, subject to the satisfaction or, where permissible, waiver of the following conditions:[9]

    (a) minimum tender condition;

    (b) regulatory condition;

    (c) registration statement condition;

    (d) no market material adverse change condition; and

[8] English convenience translation of the offer document. Voluntary Public Takeover Offer by Diebold, Incorporated, p62.
[9] See Annex 2 for details.

(e) no Wincor material adverse change condition.

25. Further, according to the offer document:

(a) if the public offer was not consummated due to the failure to satisfy the regulatory condition, the registration statement condition, or the no market material adverse change condition;[10]

(b) Diebold and Wincor Nixdorf were unable pursuant to the Business Combination Agreement within a period of two months; and

(c) either party terminated the Business Combination Agreement under specific conditions according to the provisions of the Business Combination Agreement;

a termination fee was to be paid to Wincor by Diebold under the Business Combination Agreement as follows:

(a) €20 million if the registration statement condition had not been satisfied, except an exception applied pursuant to the Business Combination Agreement;

(b) €30 million if the no market material adverse change condition had not been satisfied; or

(c) €50 million if the regulatory condition had not been satisfied on or before 21 November 2016.

26. The management board and the supervisory board of Wincor in principle recommended the acceptance of the offer on 11 February 2016 in a published statement.

27. The initial acceptance period of the public offer expired on 22 March 2016. The additional acceptance period commenced on 30 March 2016 and expired on 12 April 2016. By the end of the additional acceptance period, the offer had been accepted for 69.1% of Wincor shares.

28. The tendered shares were transferred to Diebold KGaA on 15 August 2016. On this date, Diebold KGaA held 22,876,760 or 69.1% of the share capital of Wincor, which corresponded to 76.7% of the voting rights of Wincor (excluding Treasury shares, which carried no voting rights).[11]

[10] English convenience translation of the offer document. Voluntary Public Takeover Offer by Diebold, Incorporated, p70.
[11] On 4 August 2016, Diebold also announced that it had received antitrust clearance in Poland for its planned acquisition, and as a result, the company had attained all antitrust clearances required as a closing condition

29. On 15 August 2016, Diebold formally announced that it had successfully completed the acquisition of Wincor through its voluntary takeover offer for all the company's ordinary shares. The total offer consideration consisted of approximately €891.7 million in cash and 9,928,514 newly issued Diebold common shares.[12]

30. The Diebold common shares issued to Wincor shareholders commenced trading on the NYSE under the symbol DBD, and all Diebold common shares commenced trading on the Frankfurt Stock Exchange under ISIN US2536511031 (symbol DBD).

Domination and profit-and-loss transfer agreement

31. Prior to launching the tender offer, Diebold and Wincor intended, depending on the percentage of Wincor ordinary shares acquired by Diebold KGaA in the offer and, to the extent legally permissible, in the open market, at their discretion and subject to applicable law, to effect, following the closing of the tender offer, the following post-completion reorganisations:[13]

    (a) a domination agreement and/or a profit and loss transfer agreement, in which case remaining Wincor shareholders will be offered to elect either (i) to continue to hold their Wincor ordinary shares and receive a fixed or variable annual compensation payment or (ii) to receive a cash settlement in exchange for their Wincor ordinary share; and/or

    (b) a squeeze-out transaction with respect to the Wincor ordinary shares that Diebold and its subsidiaries did not already own following the consummation of the offer, which we refer to as a squeeze-out transaction.

32. Under a domination agreement, Diebold would be able to give legally binding instructions to the management board of Wincor. In the case of a profit and loss transfer agreement, Wincor would be required to transfer its annual profits and losses to Diebold.[14]

33. Figures 1 and 2 illustrate (1) simplified pre-combination structure of Diebold and Wincor, (2a) simplified structure of Diebold and Wincor assuming that following the offer Diebold holds at least 75% of Wincor's voting share capital and Wincor and Diebold enter into a domination agreement, and

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under the offer document for the acquisition. The completion of the Transaction was not subject to clearance in the UK.

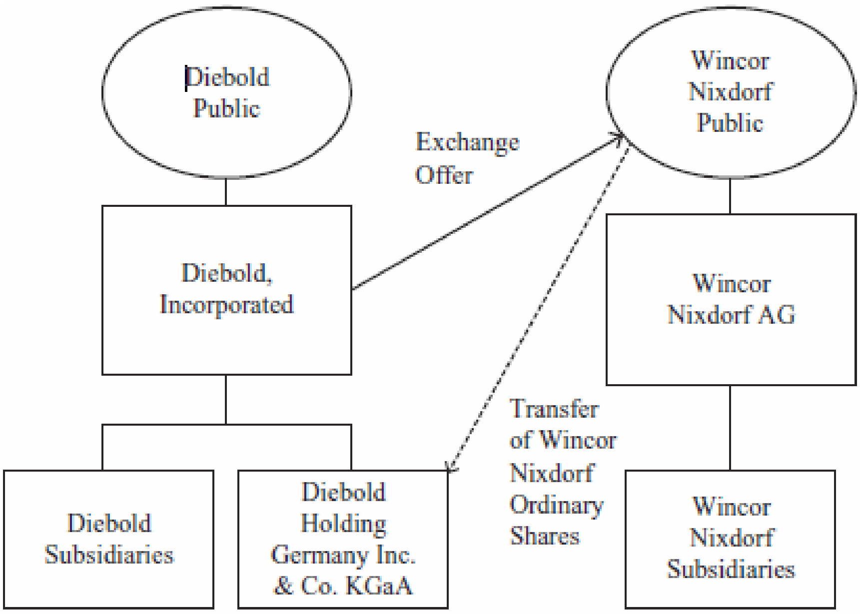
[12] Diebold's press release regarding completion of the Transaction, 15 September 2016.

[13] Form 4. Registration statement filed by Diebold with SEC. 24 November 2015, p129.

[14] Ibid, p130. Both, a domination agreement and a profit and loss transfer agreement are agreements between affiliated business entities under the German Stock Corporation Act (*Aktiengesetz*).

(2b) simplified structure of Diebold and Wincor assuming that following the offer Diebold holds at least 95% of Wincor's issued share capital and effects a corporate squeeze-out (pursuant to Sections 327a *et seq.* of the German Stock Corporation Act).[15]

Figure 1: Pre-combination structure and the offer

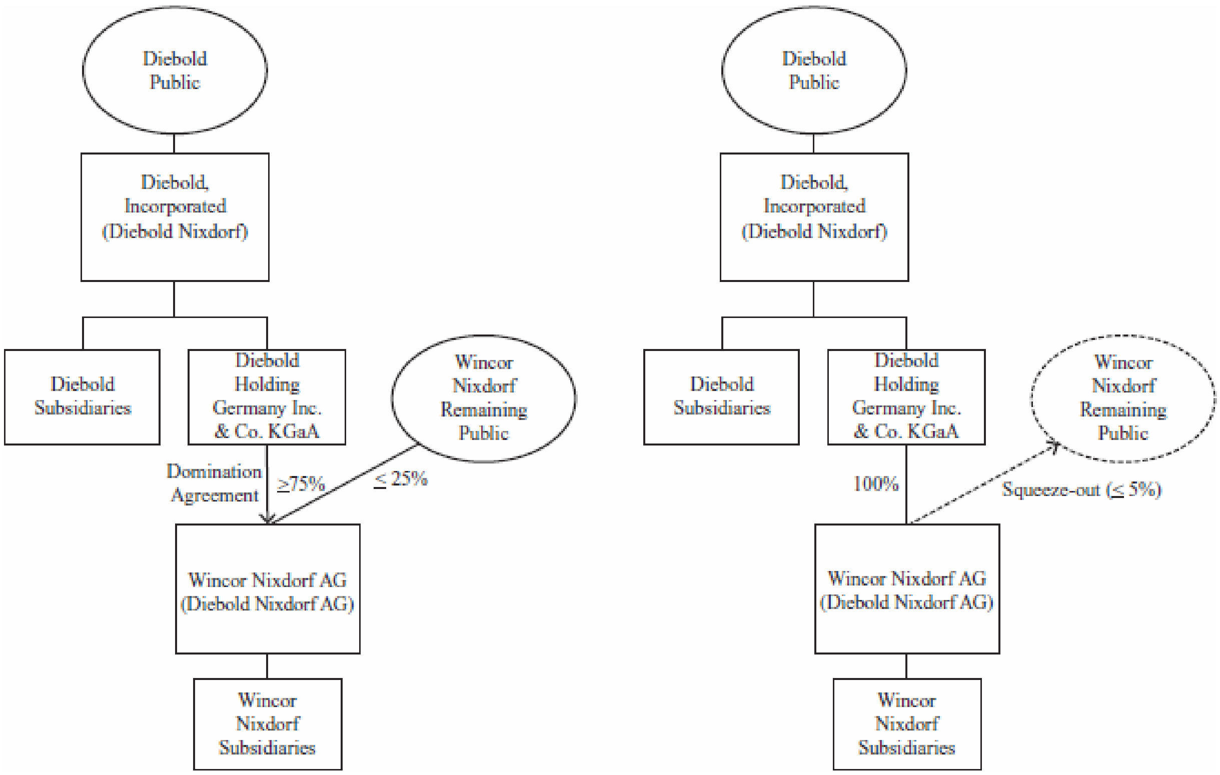


Source: Diebold.

[15] Diebold KGaA is a subsidiary of Diebold Inc and organised as a partnership limited by shares, having its registered seat in Eschborn, Germany. Wincor Nixdorf AG is the holding company of the Wincor Nixdorf Group; it runs the business of the group and performs the typical administrative tasks of a group holding company. Diebold Inc is the holding company of the Diebold Group.

Figure 2: Potential post-combination structures

(a) Domination agreement **(b) Corporate squeeze-out**



Source: Diebold.

34. On 8 April 2016 Diebold Inc and Diebold KGaA announced that they intended to enter into a domination and profit-and-loss transfer agreement (DPLTA) with Diebold KGaA as the controlling company and Wincor Nixdorf AG as the controlled company.[16]

35. According to this agreement:

(a) Wincor Nixdorf AG was to subordinate its management to Diebold KGaA[17] and undertake to transfer all of its profits to Diebold KGaA; and

(b) Diebold KGaA was to undertake to compensate any loss incurred by Wincor Nixdorf AG and to grant an adequate recurring compensation and an adequate exit compensation to outside shareholders.

36. Wincor and Diebold believed that a close cooperation between the involved companies after the DPLTA took effect would strengthen the strategic development and expansion of the Diebold Group into a premium service and

[16] Based on the number of shares acquired, Diebold was in a position to conclude a DPLTA, but not a squeeze-out.
[17] Diebold KGaA, a subsidiary of Diebold Inc is a partnership limited by shares *(Kommanditgesellschaft aufAktien*), having its registered seat in Eschborn, Germany. DPLTA Report. 16 August 2016, p7.

software company and enable it to achieve synergies, inter alia through product consolidation, the rationalisation of services in overlapping regions as well as improved purchase conditions.

37. By a resolution dated 2 May 2016, the management board of Wincor Nixdorf AG resolved to enter into negotiations with Diebold Inc and Diebold KGaA regarding such an agreement.

38. The Parties believed that the DPLTA provided a sufficient legal basis for the intended integration of Wincor Nixdorf AG into the Diebold Group.

39. The management of Diebold KGaA, the Diebold board of directors and both the management and supervisory board of Wincor Nixdorf AG approved the final draft of the DPLTA on 16 August 2016, and the shareholders' approval was obtained on 26 September 2016.[18]

40. On 14 February 2017, Diebold Nixdorf announced that the DPLTA had become effective on this date by entry in the commercial register at the local court of Paderborn (Germany).[19]

Rationale for the Merger

Strategic rationale

41. The Parties' geographic footprints are complementary (see Figure 3), with Diebold being larger in North America and Wincor in Europe.

Figure 3: [✄]

[✄]

Source: [✄].
Note: [✄].

42. According to the Parties:

(a) Diebold would benefit from Wincor's strong relationships with customers and suppliers in EMEA while the Combined Group's strong service presence would also benefit Wincor's Retail business. Therefore, the Parties expect that the business combination would create a geographically expanded business with opportunities for an amplified global presence, including entry into new markets.

[18] Final DPLTA, 26 September 2016.
[19] Press release about DPLTA becoming effective.

(b) The Parties' complementary regional footprints and strengths in software, hardware and services are also expected to allow the Combined Group to provide customers with greater worldwide access to an integrated solution across the aforementioned product segments.

(c) The complementary combined global coverage was also likely to reduce integration risks. The combined installed base also provided cross selling opportunities, and synergies in hardware and procurement to help fund R&D and innovation, and focus on software in parallel to innovative hardware.

(d) The combination would provide a more diverse business split and source of revenues (see Figure 4).

Figure 4: [✂]

[✂]

Source: [✂].
Note: [✂].

43. The expected benefits from the combination were underlined by the considerable ongoing technological change in the supply of cash handling software, hardware and after-sales services to the banking sector in Europe.[20]

44. [✂],[21] [✂].[22] [✂].

45. [✂].[23] [✂].

46. In summary, the Parties see a strong strategic rationale for the Transaction, which will help them create a runway for growth for the combined businesses based on the following:

(a) Service leadership: through substantial revenue from services and software, an enhanced services portfolio and increased up-sell of services.

(b) Omnichannel software innovation: through Wincor software and large professional services organisation and Diebold multi-vendor software capabilities.

[20] In addition, the global ATM marketplace was driven by branch automation and technological advances in security and functionality leading, eg to the adoption of smart ATMs.
[21] Shift led by financial and retail industries as labour costs increase.
[22] Broad adoption of alternative exchange media such as Bitcoin.
[23] [✂].

(c) Dynamic industry changes: which will enable capitalising on the automation wave as banks and retailers seek operating efficiencies, and provide an opportunity to compete for a larger addressable market.

(d) Innovation accelerated via significant scale (combined installed base of nearly 1 million ATMs): by shifting more resources to innovative R&D.

(e) Complementary geographic presence and customers: Diebold is a leader in North America; Wincor in Europe; serving blue-chip financial institutions and retailers.

Synergies and financial benefits

47. [✂], see Figure 5.[24]

Figure 5: [✂]

[✂]

Source: [✂].

48. The Parties told us that the cost synergies principally included the following:

(a) [✂];

(b) [✂];

(c) [✂];

(d) [✂]; and

(e) [✂].

49. [✂]. [✂].

Figure 6: [✂]

[✂]

Source: Diebold.

Evaluation of the Merger and synergies by the Parties

50. In summary, the Diebold board evaluated a number of factors and significant strategic opportunities as generally supporting its decision to enter into the Business Combination Agreement and proceed with the transactions

[24] See Annex 3 for details.

contemplated thereby. These factors and opportunities included the following material factors:[25,26]

(a) The expectation that the combined company would create long-term shareholder value through:

(i) the strategic focus on growing its high-value services and software business, supported by innovative hardware offerings;

(ii) possible significant cost synergies facilitated by the business combination; and

(iii) the ability to leverage the complementary strengths of each business into additional growth opportunities.

(b) The expectation that the business combination would enable the combined company to better compete with a number of players in the self-service market.[27]

(c) The expectation that the business combination would complement the Diebold 2.0 transformation.[28]

(d) The expectation that the business combination would bring together two firms with a complementary geographic business presence.

(e) The expectation that the increased scale would:

(i) create potential for cost-savings and efficiencies;

(ii) enable the combined company to deliver fully-integrated and transformative solutions faster; and

(iii) provide the combined company the opportunity to partner with other leading technology companies on innovation.

(f) The expectation that the business combination would be accretive to Diebold's (non-GAAP)[29] earnings per share.[30]

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[25] Ibid.
[26] Overall, Diebold's board of directors concluded that the potentially negative factors associated with the business combination were outweighed by the potential benefits that it expected Diebold and its shareholders to achieve as a result of the business combination.
[27] Such as mobile and online payment providers, low-cost hardware providers, transaction processors, and multinational software and managed services companies.
[28] This is a multi-year transformation programme implemented by Diebold in 2013, which focused on costs, cash, growth and talent.
[29] On a non-GAAP (generally accepted accounting principles) basis.
[30] In the first full fiscal year following a potential adoption of a domination agreement and/or profit and loss transfer agreement, excluding integration costs.

51. Similarly, the [✂]:

(a) [✂]:

(i) [✂]; and

(ii) [✂].

(b) [✂];

(c) [✂].

(d) [✂].

(e) [✂].[31]

[31] [✂].

Annex 1: Timeline of Wincor's interactions with Diebold

Apr. 09th, 2015	**Wincor Nixdorf announces to pursue a stand-alone strategy with restructuring program Delta**
Jun. 30th, 2015	**Diebold** sends an unsolicited letter to Wincor Nixdorf, **suggesting a takeover**
Jul. 10th, 2015	**Wincor Nixdorf turns down Diebold proposal,** stating that the offered price is no basis for friendly negotiations
Jul. 20th, 2015	**Diebold approaches Wincor Nixdorf again,** signaling willingness to negotiate both a more adequate price and overall package
Jul. – Sep., 2015	**Wincor Nixdorf negotiates a far-reaching term sheet with Diebold**
Sep. 24th, 2015	Wincor Nixdorf and Diebold sign a **non-binding term sheet**
Oct. 17th, 2015	**Following media speculations, Wincor Nixdorf has to make the ongoing negotiations public**
Nov. 23rd, 2015	**Signing and communication of Business Combination Agreement**

Source: Wincor.

Annex 2: Summary of certain offer conditions[32]

1. Minimum Tender Condition: At the time of the expiry of the acceptance period, the sum of number of:

   (a) tendered Wincor Nixdorf shares;

   (b) Wincor Nixdorf shares held directly by the Bidder (Diebold), any member of Diebold Group or any person acting in concert with the Bidder;

   (c) Wincor Nixdorf shares that must be attributed to the Bidder or any member of Diebold Group; and

   (d) Wincor Nixdorf shares for which the Bidder, any member of Diebold Group or any person acting in concert with the Bidder has entered into an agreement outside of the takeover offer, giving them the right to demand the transfer of title of such Wincor Nixdorf shares;

   equals at least 22,362,159 Wincor Nixdorf shares (approximately 67.6% of all Wincor Nixdorf shares existing at the time of the publication of the offer document.

2. Regulatory Condition: After publication of the offer document and no later than 21 November 2016, the transactions contemplated by this takeover offer have been approved by the competent anti-trust authorities in the following jurisdictions or the statutory waiting periods in the following jurisdictions have lapsed, with the result that the transactions contemplated by this takeover may be completed: (1) Australia, Poland, Portugal, Slovakia and Spain and/or the European Union, if and to the extent the European Commission has authority pursuant to Council Regulation (EC) No. 139/2004 of 20 January 2004; (2) The United States of America; (3) Brazil; (4) China; (5) Russia; and (6) Turkey.

3. Registration Statement Condition: The Registration Statement regarding the Diebold Offer Shares: (1) has been declared effective by the SEC between the publication of the offer document and the expiry of the Acceptance period; and (2) at the expiration of the Acceptance Period is not the subject of any stop order by the SEC pursuant to section 8(d) of the Securities Act or any proceeding initiated by the SEC seeking such a stop order.

4. No Market Material Adverse Change Condition: (1) Between the publication of this offer document and the expiration of the Acceptance period trading on the

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[32] English convenience translation of the offer document. Voluntary Public Takeover Offer by Diebold, Incorporated, p62.

Frankfurt Stock Exchange shall not have been suspended for more than three consecutive trading days for all shares admitted to trading on the entire Frankfurt Stock Exchange. (2) Furthermore, the closing quotations of the DAX, as determined by Deutsche Börse AG, Frankfurt am main, Germany, or a successor thereof, and published on its website, of the two trading days prior to the end of the Acceptance Period, are no more than 28.5% below the closing quotation of the DAX on the trading day immediately preceding the day of approval of the publication of this Office Document by BaFin (namely, not below 6,745.90 points).

5. In relation to securing antitrust clearances, the Business Combination required the Bidder to:[33]

   (a) offer, agree to or accept any disposal or other obligations, commitments or conditions' in order to secure clearances in the United States and Germany;[34] and

   (b) offer such commitments as would be necessary to obtain approvals from the other specified competition authorities unless that would require the Bidder to divest businesses of either the Bidder or the Target that, in aggregate, would represent more than 8% of the consolidated annual revenues of the combined group.

6. Further, if the Bidder would have been required to divest business representing more than 8% of consolidated annual revenues of the combined group in order to secure antitrust clearances, the Parties were required to use their 'reasonable best efforts' to re-negotiate the public offer and the business combination.[35]

7. A 'Break Fee' was payable by the Bidder to Target if the above-mentioned negotiations failed, and either party terminated the Business Combination Agreement.[36]

[33] Section 8 of the Business Combination Agreement.
[34] Including to eliminate any concern expressed by any competent authority under EU merger regulation.
[35] The substance of sections 8 and 9 is also reflected in the offer document at Annex 4, paragraph 13.7.6.4.
[36] Section 20 of the Business Combination Agreement.

Annex 3: Details of synergies and benefits

[✂]

Source: Diebold.

The counterfactual

Introduction

1. This appendix provides further details and evidence that supports our view on the counterfactual, including possible counterfactual scenarios.

2. The counterfactual is the most likely situation in the absence of the merger, against which the prospects for competition with the merger are compared in order to determine whether the merger gives rise to a substantial lessening of competition (SLC).

3. The CMA's approach to the counterfactual is set out in its *Merger assessment guidelines* ('the guidelines').[1]

4. The Merger was conceived, structured, introduced to the market and completed as a global transaction. It was driven by industry trends, complementary global footprints as well as global synergies.

5. The consummation of the Merger was subject to certain closing conditions and regulatory approvals, but there is no evidence to suggest that in the absence of the Merger, either of the Parties would have entered into a similar transaction with another entity or exited the market.

6. In the event that the Merger was blocked or remedies were required in any jurisdiction, the Parties committed to addressing these concerns so that the transaction could proceed in the remaining jurisdictions.[2]

Framing the counterfactual assessment

7. The analytical context of the counterfactual assessment is set out briefly in this section.

8. According to the guidelines, the application of the SLC test involves a comparison of the prospects for competition with the merger against the competitive situation without the merger.[3] The latter is called the

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[1] *Merger assessment guidelines (CC2/OFT1254)* (2010).
[2] Unless that required the Bidder to divest or cause or result in the divestment of (i) existing businesses, business divisions or product lines of either the Bidder or the company or (ii) businesses, business divisions or product lines of the future combined group that in aggregate would represent more than 8% of the consolidated annual revenues of the combined group.
[3] *Merger assessment guidelines (CC2/OFT1254)* (2010), section 4.3.

counterfactual.[4] The counterfactual is an analytical tool used in answering the question of whether the merger gives rise to an SLC.[5]

9. According to the guidelines, the CMA will select the most likely scenario absent the merger. Determining the most likely scenario for the counterfactual may require assessment of several scenarios, including continuation of the pre-merger situation. When we consider that the choice between two or more scenarios will make a material difference to the assessment, we will carry out additional detailed investigation before reaching a conclusion on the appropriate counterfactual.[6]

10. However, we will typically incorporate into the counterfactual only those aspects of scenarios that appear likely on the basis of the facts available and the extent we are able to foresee future developments; we seek to avoid importing into the assessment any spurious claims to accurate prediction or foresight. Given that the counterfactual incorporates only those elements of scenarios that are foreseeable, it will not in general be necessary to make finely balanced judgements about what is and what is not the counterfactual.[7]

11. The counterfactual could be a situation either more or less competitive than the prevailing competitive conditions. Therefore, the selection of the appropriate counterfactual may increase or reduce the prospects of an SLC finding.[8]

Evidence

12. In deciding on the relevant counterfactual, the CMA has considered evidence as to how the Merger was conceived by the seller(s), what the acquirer(s) sought to acquire, and the rationale for the way the transaction was structured.[9]

Structure of the transaction

Wincor

13. [✂] [✂].

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[4] ibid, paragraph 4.3.1.
[5] ibid, paragraph 4.3.1.
[6] ibid, paragraph 4.3.6.
[7] ibid, paragraphs 4.3.2 & 4.3.6.
[8] ibid, paragraph 4.3.4.
[9] For examples of this approach, see *Reckitt Benckiser/K-Y Brand*, *Sonoco/Weidenhammer*, *VPS Holding Ltd/SitexOrbis Holdings Ltd* and *Clariant/Kilfrost*.

14. [✂]:

[✂]

15. [✂]:

[✂]

16. [✂]:

[✂]

17. [✂]:

[✂]:

- [✂];
- [✂];
- [✂];
- [✂];
- [✂]

18. [✂]:

[✂]

19. [✂]. [✂].

20. [✂].

Diebold

21. Diebold's internal documents indicate that it also conceived and viewed the Merger, including the potential synergies arising from it, at a global level.

22. [✂]:

[✂]

Possible counterfactual scenarios

Exit

23. In light of submissions from the Parties concerning price decreases and profitability, we have considered whether one of the Parties might have exited the market, either globally or in the UK.

24. [✄]:[10]

    (a) [✄];

    (b) [✄]; and

    (c) [✄].

25. [✄].

26. The following extract from Wincor's[11] 2014/2015 annual report and financial accounts also points towards it growing and investing in its business in the UK:

    > Looking forward, we will build on the successful renewals and contract wins in 2014/15 and benefit from Wincor Nixdorf group's continued investment in research and development into new products and solutions to meet customer requirements and to deal with the challenge they face.

Alternative merger arrangement

27. [✄]:

    (a) [✄];

    (b) [✄]; and

    (c) [✄][12] [✄].

Figure 1: [✄]

Source: [✄]

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[10] Parties' initial submission.
[11] The annual report and financial accounts referred to are for Wincor Nixdorf Limited (the main UK trading entity of Wincor).
[12] [✄].

28. [✂]:

[✂]

29. Given that:

(a) the Merger was always conceived, structured, introduced to the market and completed as a global transaction; and

(b) the rationale for the Merger was driven by industry trends, complementary global footprint as well as global synergies rather than the financial attractiveness of different regions or businesses of the parties;

the counterfactual in this case is a situation in which the entire (global) transaction, and consequently in the UK, had not happened.

Competitive effects

Overview

1. This appendix provides further details and supplementary evidence to our assessment of the competitive effects arising from the merger.

2. We set out:

   (a) The theoretical economic framework used to assess competitive effects in markets with bidding processes, which focuses on the distinction between 'first-price' and 'second-price' auctions and between 'common values' and 'private values' auctions, and present the evidence we gathered.

   (b) The competitive process in ATM hardware.

   (c) Supplementary evidence gathered from market shares and the bidding data provided by suppliers.

   (d) Evidence on the analyses of GUPPI and of Wincor's margins submitted by the Parties.

Assessing competitive effects in markets with bidding processes

3. In this section, we discuss some properties of bidding processes that are relevant to the assessment of competitive effects. We first discuss the relevance of the distinction between two categories of auction or tender process from the theoretical literature, namely 'first-price' and 'second-price' auctions. Then, we discuss the distinction between 'common values' versus 'private values' auctions.

First-price and section-price auctions

4. As set out in Section 6 of the final report, in our discussion of the nature of pre-merger competition, the literature relating to auction processes distinguishes between 'first-price' auctions and 'second-price' auctions. In that section, we explain that an important difference between these two types of auction is that in a pure second-price auction, the marginal bid (ie the closest competitor to the winner) is of exclusive importance in constraining the winner, whereas in pure first-price sealed bid auctions, all competitors may be important in constraining suppliers (and this importance depends on their relative strength and the number of other strong competitors).

First-price auctions

5. In the case of 'first-price' auctions, a supplier's optimal bid depends on what it believes about the bids of each other supplier. Each supplier faces a trade-off when it considers whether or not to increase the price it will bid.[1] The upside is that a higher bid price means that the supplier will earn greater profits if the bid wins. The downside is that a higher bid price increases the risk that the supplier will lose the tender (and miss out on the associated profits) because it turns out to be worse than another supplier's bid. The optimal bid will balance these two factors and maximise the supplier's expected profit.

6. In the context of a first-price auction, each additional competitor may make it riskier[2] for a supplier to worsen the bid it offers, thereby adding to downward price pressure. An additional competitor will not make a price increase significantly riskier (and thereby contribute to downward price pressure) if it is perceived to be too weak (in terms of its competitive offering) to have a chance of winning, or if there are so many strong bidders that there is little incremental effect from an additional competitor.

7. Conversely, an additional competitor will make a price increase riskier for a supplier if the additional competitor is perceived as a strong bidder that would have a significant chance of submitting a bid that would beat a higher-priced bid. The merger between two suppliers would be more likely to reduce competitive pressure in future tenders if each of the merging parties is perceived as having a significant chance of submitting a bid that could win (if other suppliers increase their prices).

Second-price auctions

8. In second-price auctions, the level of the winning bid is determined by the level of the second-best bid. Take for example a classical open auction. In an open auction,[3] the tender proceeds in multiple stages, with each bidder observing the level of the currently leading bid and having the opportunity to make a better offer or otherwise drop out of the auction. The winner is selected when only one bidder remains. Here, a supplier's optimal behaviour is to continue improving its bid until no other bidder remains, or until it can no

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[1] Here, increasing price may also be replaced with introducing costly improvements to the bid (for example, by offering a higher quality), with no change in the logic.
[2] We use the term 'riskiness' of a price increase to refer to the increased probability of losing resulting from such a price increase.
[3] Another type of auction categorised as 'second-price' is a 'second-price sealed bid auction', wherein bidders submit bids without observing their competitors' bids, and the bidder that submits the lowest price must pay the bid of the marginal bidder. We do not discuss 'second-price sealed bid' auctions further because we did not find any evidence of this specific type of second-price auction occurring in the supply of ATM hardware.

longer improve its bid without incurring a loss (whichever eventuality occurs first).[4] Therefore, the winner's final bid will be equal (or slightly better than) the second-ranked bid (or the 'marginal bid'). As such, all bids other than the second-ranked bid are, in this setting, of no direct relevant to the outcome.[5]

9. The precise impact of a merger between two suppliers in this pure second-price setting depends on the rankings that the merging suppliers would have achieved absent the merger. In particular:

   (a) If the suppliers would have ranked first and second, a merger in a classical second-price auction removes (relative to the counterfactual) the constraint imposed by the second-ranked bid. As such, the winning bidder would instead be constrained by the third-ranked bid.[6] In this case, the customer's outcome is worsened by the difference in value between the second-ranked and third-ranked bids.

   (b) If the suppliers would have ranked second and third, there is no effect as long as the merged entity submits a bid that is at least as good as the second-ranked bid.[7]

10. As can be seen from paragraphs 4 to 9 above, the conditions under which a merger may raise concern differ depending on whether the tender has the properties of first-price or second-price auctions. The key difference between the two is that in a pure second-price auction, the marginal bid is of almost exclusive importance in constraining suppliers, whereas in pure first-price auctions, all competitors may be important in constraining suppliers (and this importance depends on their relative strength and the number of other strong competitors).

11. We have therefore considered, in Section 6 of the final report, the evidence on which framework is most appropriate for our assessment.

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[4] There are some important exceptions. If a supplier believes it ultimately cannot offer the best price and suppliers incur even a small cost of bidding, it may be optimal not to bid at all.
[5] Take as an alternative example a second-price sealed bid auction, where the customer commits to award the contract to the most attractive bidder, but selects the second-best price.
[6] That is, the bid that would have ranked third absent the merger.
[7] Under certain circumstances, a merger may eliminate or weaken the constraint exerted by the marginal bidder. First, it is generally assumed in the assessment of merger effects in bidding markets that the entity resulting from a merger will be at least as efficient as the more efficient of the two merging suppliers. However, this is not always the case. For example, the merged entity may discontinue the product of one of the bidders in order to achieve efficiencies, but potentially removing the second-best product for those customers whose preferences it closely matches. Alternatively, if the strength of individual bidders' competitive offerings are affected by random developments that are difficult to respond to in the short run (such as, for example, short-term capacity constraints or other unavailability of a model that matches a customer's particular requirements), a merged entity may not be likely to submit a bid that is as equally strong as the bid that the better of the two separate entities would have submitted.

Common versus private values

12. A second consideration important in determining the correct approach to assessing competitive effects in a bidding market relates to whether auctions are characterised by what are known as 'common values' or 'private values'. We explain this concept below before considering how it relates to the supply of ATM hardware.

13. In many procurement auctions, the cost of supplying a customer depends largely on variables that depend on each supplier's individual characteristics and are known to the supplier at the time of its bid. That is, the optimal bid of a supplier is driven by 'private values'.[8] In some auctions, the cost of supplying a customer may significantly depend on some uncertain cost that is not specific to the identity of the winning supplier and will only be known by the winner after they have won the contract. In this case, the cost of supplying a given customer or satisfying a particular contract is influenced by 'common values' (or 'common costs').[9]

14. In common values auctions, suppliers' optimal bids depend on an estimate of those uncertain costs. Where this is the case, a supplier can sometimes win an auction, not because they are the most efficient or competitive supplier, but rather because they make an over-optimistic estimate of these common costs. This supplier is said to suffer the 'winner's curse': the winner will on average be the supplier that most underestimates these unknown costs (and would therefore suffer a sub-optimally narrow margin or loss).

15. The potential to suffer the winner's curse affects the optimal bidding behaviour of suppliers (and therefore potentially affects the assessment of merger effects), as they adjust their bids to take into account the potential cost of the winner's curse. The more important these common costs are relative to the overall cost of fulfilling a contract, the more likely there will be a winner's curse and the greater the influence this may have on bidding behaviour.

16. ATM hardware suppliers offer a range of ATM models that are produced on demand, over which the costs associated with fulfilling an individual contract are to a large extent associated with manufacturing a product in which most suppliers in the UK market will have significant experience. Customers'

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[8] It may aid understanding to think of these as 'private costs' when discussing procurement auctions.
[9] One example is in the case of a contract to extract underground natural resources (say, oil) on behalf of a customer, for a fee set in advance through a tender process. All suppliers will incur a cost in carrying out this work that depends on the difficulty of extracting the oil, which in a large part is independent of which supplier wins the contract. It may be difficult to estimate in advance how much it will cost to extract the oil and the cost of extraction is extremely important in driving the cost of fulfilling the contract. In this case, suppliers when bidding must reckon with the likely value of this significant unknown common cost when deciding what their optimal bid should be.

requirements are set out in considerable detail in an RFP process and therefore, even where some significant customisation is necessary, suppliers are likely to be able to make a good estimate of the relevant costs in advance of submitting a bid.

17. The Parties have, in describing the dynamics of procurement tenders in the supply of ATM hardware, not commented in their submissions on whether tenders are common value or private auctions.

18. As referred to in Section 6 of the main report in light of this evidence we have assessed these tenders as auctions characterised by private values.

The competitive process in ATM hardware

19. In this section, we describe the evidence we have gathered on the functioning of competitive processes in the supply of ATM hardware. We first discuss the types of bidding process observed in ATM hardware and then whether (and to what extent) those tenders might be characterised as having the properties of first-price or second-price auctions.

Procurement of ATM hardware

20. The typical features of auctions have been described in Section 6 of the main report. The following describes the general approach to tender processes in the supply of ATM hardware in the UK, based on evidence on tenders provided by the Parties and third parties, including the bidding data (described in more detail in paragraph 31).

Types of auction process

21. As explained in paragraph 5, an important difference in the assessment of mergers in markets characterised by first-price auctions and by second-price auctions is that in the latter the marginal bid is exclusively important in constraining the winning bidder in the latter. This exclusive importance of the marginal bid arises for different reasons in different second-price auction structures. In the case of second-price sealed bid auctions, the marginal bid is important because the customer commits to award the contract to the supplier with the best price, but also commits to pay the price submitted by the second-ranked bidder. In the case of descending or open auctions, the mechanism that gives rise to the exclusive importance of the marginal bid is the ability of suppliers to transparently observe the level of the marginal bid that they must surpass in order to win, and also know that they will continue to have opportunities to submit an improved bid in a subsequent round if they are surpassed.

22. As mentioned in Section 6 of the final report, the Parties submitted that tenders in this market were significantly different from pure first-price auctions because bidders had multiple opportunities to lower their price; because customers sometimes provided information on the bid necessary to win; and because customers sometimes eliminated suppliers during the auction process.

23. Our assessment of the appropriate framework is set out and summarised in Section 6 of the provisional findings. We set out below in greater detail evidence relating to multi-stage auction processes, information flows taking place in the course of tenders; and evidence based on suppliers' margins.

Multi-stage and single-stage tenders

24. Tenders for customer-operated ATMs generally incorporate multiple stages. Classical first-price auctions are modelled as taking place in a one-shot game. In the following paragraphs we set out in detail our views on the implications of multiple rounds of bidding for our approach to the assessment of competitive constraints.

25. We discuss in Section 6 of the final report the importance of tenders being a 'one-shot game' or proceeding in multiple stages, and the implications of this for whether suppliers take into account the risk of losing to multiple competitors, or rather are exclusively constrained by one competitor. We expand on this discussion below.

26. An important characteristic of open auctions which gives rise to the winning supplier being exclusively constrained by its closest competitor, is that suppliers can expect always to get another opportunity to improve their bid if they are about to be eliminated. Absent this mechanism, they must make a bid that will beat not only the currently leading bid, but all bids submitted in that round, or face the prospect of elimination.

27. The Parties submitted that it was unclear why customers would eliminate bidders in a pure first-price auction setting. In addition to our comments set out in Section 6, we note the following:

(a) The bidding data are of insufficient quality to permit us to assess the extent to which such elimination of bidders occurs.

(b) In any event, we believe that the ability of suppliers to increase the prices or worsen the quality they offer at any shortlist stage would be limited by the fact that customers could reinstate eliminated bidders, and by the fact that suppliers would have revealed levels of price and quality at which they were willing and able to fulfil the contract.

Information flows in tenders

28. In the main report, we discussed the extent of information flows taking place in tenders for customer-operated ATMs in the UK. In the following paragraphs, we discuss the evidence relating to the information available to suppliers when making their bids based on our assessment of the bidding data.

Data provided by suppliers – additional information

29. We first discuss the quality of the bidding data. We then discuss evidence from the bidding data on the extent to which suppliers have clear information on the level of the bids of their competitors and on the level of the leading bid.

30. We found a number of inconsistencies across the bidding data provided by different suppliers. For example:

(a) With regard to the tenders to supply Barclays and Bank of Ireland in 2013, [✄]. This suggests that Diebold, which did not win either of these tenders, had imperfect information about their final outcomes.

(b) With regard to the tender to supply PayPoint in 2015, [✄]. This appears to suggest that Wincor did not have accurate information about the result of the tender, albeit it was not the winner.

(c) With regard to the tender to supply DC Payments in 2013, [✄]. This suggests that the bidding data may be incomplete, in that some tenders were not recorded by all participating suppliers.

31. In light of the potential for the data on tenders to be incomplete, we consider that the bidding data are not reliable to calculate averages or other summary statistics which rely on correctly identifying the total number of tenders, particularly in the context of an overall small number of tenders. However, we consider that the consideration of the available bidding data, despite being incomplete, is useful to provide a description of the information available to suppliers when bidding, albeit noting the following:

(a) The information suppliers were able to provide may have been improved by ex-post feedback. This implies that the information described by suppliers in the bidding data may overstate the information that was available to them at the time of bidding.

(b) In some cases, although suppliers were able to identify a tender, they were unable to provide all of the requested data on a given tender. We

have therefore focused on the data they were able to provide, which we consider was sufficient for the following assessment.

Evidence on information flows

32. The bidding data indicate that suppliers generally did not have access to information on the level of the bids of their competitors. [✂].[10][✂] indicated that, in almost all cases for which it had information,[11] it relied on publicly available information and received no information from the customer. GRGI indicated that banks did not share information on bid prices.

33. In relation to the identity of competing suppliers, the Parties and other suppliers indicated that they frequently knew or believed to know who else was participating (in [✂]% of tenders suppliers had beliefs about the participation in the same tender of at least another competitor) but frequently did not know or had no beliefs about which supplier was the runner-up (in [✂]% of tenders suppliers had no beliefs about who the runner-up was).

34. Table 1 summarises the extent of missing information about the ex-ante expected ranking of the other participants. The data suggest a significant degree of uncertainty in relation to the ex-ante expected ranking of suppliers in a tender, or on their contemporaneous ranking at any given stage of a tender. On average, suppliers were unable to provide reliable ex-ante estimates for the ranking of participants in 80% of the tenders they participated in.

Table 1: Information available ex-ante on suppliers' rankings during the tender process

	Information on ranking		*No information on ranking*	
	N	%	N	%
Diebold	[✂]	[✂]	[✂]	[✂]
Wincor	[✂]	[✂]	[✂]	[✂]
NCR	[✂]	[✂]	[✂]	[✂]
GRGI	[✂]	[✂]	[✂]	[✂]
Overall	8	21	31	79

Source: CMA analysis of data provided by Diebold, Wincor, NCR and GRGI.

Supplementary evidence gathered from market shares and the bidding data provided by suppliers

35. We set out below the supplementary evidence from market shares and bidding on whether (and to what extent) past competitive interactions between

[10] NCR told us that even in the case of the e-auction, it was aware only of its ranking and not the level of competitors' bids.
[11] [✂].

the Parties and their competitors can provide information on future tenders and of the competitive pressures they exert on each other.

Market shares

36. The Parties provided the CMA with estimated shares of supply in customer-operated ATMs, based on their installed base and on numbers of units shipped.

37. Table 2 sets out shares of supply based on shares of installed base and Table 3 shares of supply based on shares of units shipped for the years 2013, 2014 and 2015. These data were collected in volume terms by RBR through a survey of market participants.

Table 2: Installed base market shares for customer-operated ATMs in the UK (2013 to 2015)

	2013		2014		2015	
	Installed base (units)	*Market share (%)*	*Installed base (units)*	*Market share (%)*	*Installed base (units)*	*Market share (%)*
Diebold	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Wincor	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Combined	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
NCR	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Triton	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Nautilus Hyosung	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Total market size	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]

Source: CMA analysis of data provided by RBR.

Table 3: Shipment-based market shares for customer-operated ATMs in the UK (2013 to 2015)

	2013		2014		2015	
	Shipments (units)	*Market share (%)*	*Shipments (units)*	*Market share (%)*	*Shipments (units)*	*Market share (%)*
Diebold	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Wincor	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Combined	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
NCR	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Others	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Total market size	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]

Source: CMA analysis of data provided by RBR and Diebold.

38. NCR is the largest competitor, holding a share by installed base of almost [✂]% since 2013 and a share of units shipped ranging from [✂]% in 2013 to [✂]% in 2015.

39. Wincor is the second-largest competitor and has a significant share of supply by both installed base and units shipped based on the RBR estimates ([✂]% and [✂]% in terms of units shipped in 2014 and 2015 respectively).

40. [✂] and some limited sales to IADs.

41. The Parties’ combined share of supply in 2015 was [✂]% by installed base (with an increment of [✂] since 2013) and [✂]% by units shipped (with a reduction of [✂] since 2013).

42. Triton and Hyosung are the only other suppliers with a share of the installed base. Triton’s share of installed base was [✂]% in 2015, a decline of three percentage points since 2013, reflecting annual net decline in Triton’s installed base. Hyosung’s installed base is smaller than Triton’s, but also declining (from [✂]% in 2013 to [✂]% in 2015). This is in the context of an overall growth in the installed base.

43. These declines in Hyosung’s and Triton’s shares of installed base also likely reflect both suppliers’ small shares of shipments. While the shipment data provided by the Parties did not distinguish between these suppliers, the ‘Others’ category, which groups suppliers other than NCR, Wincor and Diebold (and therefore would include both Hyosung and Triton if they had shipped units), accounted for 12% of shipments in 2013, 3% in 2014 and 2% in 2015.

Participation

44. In this section, we set out the evidence on the extent to which suppliers participate in tenders and the extent to which this might be indicative of the competitive constraint they would exert on other suppliers.

Participation costs

45. Participation in tenders can be a meaningful signal of a supplier’s perception of its own probability of winning a tender. The interpretation of any such signal depends in part on the size of the cost of participating in a tender relative to the expected margins that are available in the event of winning (ie taking into account the probability of winning those margins).

46. The interpretation is to an extent asymmetric. If the margins available to be won in a tender are small relative to the cost of participating in the tender (ie participating is expensive in light of the small profits), a decision to participate

may suggest that the supplier is confident in its competitive strength (whereas a decision not to participate would be less probative).[12]

47. Conversely, if the margins available to be won in a tender are instead large relative to the cost of participating in that tender, then a decision by a supplier to participate is not very probative (because it is worth taking a shot at the large profits, even if winning is unlikely), whereas a decision not to participate may suggest that the supplier perceives its own probability of winning as low. An alternative hypothesis in this case may be that the supplier was capable but not invited, because customers incur significant costs by inviting additional suppliers (relative to the benefit of inviting additional suppliers in terms of improved prices or quality).

48. Evidence from suppliers provided a range of views and estimates of the costliness of participating in tenders.

(a) The Parties said that the cost of participating in a bid depended on the scope, duration and complexity of each bid.

(b) The Parties provided an estimate of Wincor's cost for a typical two-week tender which came to approximately [✄], including costs for the bid, commercial, governance and technical teams. However, the data provided by Wincor on tenders show that the typical tender lasts longer than this – between [✄].

(c) NCR said that the costs were based on sales time and effort and were costs they incurred as part of being in business. We believe that this suggests that the incremental cost of participating in a bid is very low. NCR said that small presales effort may be required for 'proof of concept' where there was a new customer requirement, but that this was recoverable.

(d) Glory said that the cost of participating in a tender [✄] but estimated on average between [✄].

(e) GRGI said that it could be costly to prepare for a tender, but also to undertake certifications, evaluations, software development, component integration and site visits. It said that participation was more costly when bidding for bank customers. It told the CMA that it could cost 'quite a few thousand pounds' to respond to a tender invitation.

[12] Included in the margin should be any more opaque benefits that will increase margins in the future, for example the ability to gather market information (or other 'learning') from participation.

49. Using the above cost estimates, it is possible to estimate at what point it becomes profitable (in terms of likelihood of winning) to compete for a given contract, and thereby interpret an upper or lower bound on a supplier's own perceived chance of winning based on its decision to participate or not to participate. Some example combinations are set out in Table 4 for illustrative purposes.

Table 4: Probability of winning above which participation is optimal, by prospective margin/value available in the tender versus the cost

Participation costs	*Prospective margin/value to be earned*					
Basis for estimate	Cost	£0.1 m	£0.5 m	£1 m	£2 m	£5 m
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]

Source: CMA analysis of the estimates of participation costs provided by Wincor and Glory.

50. We note that these may overestimate the cost of participation. To the extent the relevant resources are viewed as fixed costs (ie because the salaries for these employees will be incurred anyway and cannot be avoided by deciding not to participate in any tender), the actual participation costs (and therefore 'participation thresholds') would be lower.

51. However, we note the wide range in the probability of winning a contract at which it becomes worthwhile to participate. For example, if a contract is worth [✂], and assuming the cost of participation is [✂], it would be worthwhile to participate if the value of winning a bid (in terms of margin available and any other benefits such as learning or improved prospects of winning subsequent tenders) were [✂], it would be worthwhile for a supplier to participate if it believed it had a [✂] chance of winning (or even lower, given Diebold's lower cost estimate).

Win ratios and win probabilities

52. In a market characterised by bidding processes, the share of tenders won (win ratios) may act as an indicator of the (ex-ante) probability of winning any given tender (win probabilities). However, in light of evidence that the data on tenders may be incomplete, we consider that the bidding data is not

sufficiently reliable to calculate the share of tenders won (such as win ratios).[13]

Evidence on the analyses of GUPPI and of Wincor's margins

GUPPI

53. GUPPI (gross upward pricing pressure index) is an index measure constructed using diversion ratios, prices and margins in order to 'score' the post-merger incentives of merging parties to increase prices. GUPPI is sometimes used to screen mergers when data on diversion ratios, margins and prices is available but other evidence, for example on the relevant market, is more limited.

54. The Parties have constructed GUPPIs intended to capture probabilistic diversion. In standard markets, the unilateral effect can be modelled to arise because the merger allows the acquirer to 'recapture' the value of sales that would be lost to the target in response to a price increase in the counterfactual (and vice versa). The Parties submitted that in first-price sealed auctions, unilateral effects arose for the same reason as in 'ordinary' (posted-price) markets – the merging parties' internalised the (expected) recapture of sales by the other merging party when determining their bid – and should therefore be assessed using a standard UPP/GUPPI analysis, albeit based on 'probability diversion ratios'. That is, the risk to merging party A that a customer will instead be won by merging party B if merging party A submits a bid with a higher price (or lower quality) no longer represents a risk, post-merger, and therefore merging party A would be expected to increase its price.

55. The Parties used data on the Parties' margins, market shares (which were used to calculate proxy measures of probabilistic diversion), and price levels to construct a GUPPI of [✄]% (for Diebold) and [✄]% (for Wincor). The Parties submitted that a GUPPI below 5% was typically considered not to give rise to unilateral effect concerns. We have considered the possibility that the implementation of GUPPI in this market may be affected by a number of issues, including the potential for diversion, margins and relative prices (and therefore GUPPI) to vary across tenders in a bidding market; the risk that customer-operated ATM hardware margins do not capture the full economic value to suppliers of individual tenders for customer-operated ATM hardware; whether or not the appropriate margin should incorporate transfer margins;

[13] Particularly in light of the fact that the overall number of tenders is relatively small to mean that a small number of missing tenders may influence suppliers' win ratios.

the potential for out-of-market diversion; and the presence of customer or tender-specific fixed costs.

(a) We make the following observations: The GUPPI does not take into account the highly concentrated nature of the market (which is discussed in Section 6 of the provisional findings report). In a highly concentrated market, firms are more likely to respond to each other's strategies, rather than simply acting as price takers. The extent of potential responses of competitors, especially NCR, would, all else equal, be much more significant in this context, than in a more fragmented market. This does not affect the GUPPI as computed.[14]

(b) As prices are set in individual tenders and negotiations, upward pricing pressure may be greater for certain customer groups (such as for banks) or certain tenders for which margins are greater than the average.

(c) Third, the GUPPI computed by the Parties does not account for the full value of sales, because the actual value of winning a tender includes the increase in expected margins from resulting cross-selling of software and services. We have seen evidence that suppliers take into account the prospect of future relationship-based sales when bidding [✄].

56. The Parties submitted that their computation of the GUPPI was conservative (ie overstating the level of the GUPPI) for several reasons. In particular:

(a) The Parties submitted that the total margin (incorporating local UK margin and parent-level transfer margin) overstated the margin relevant to the Parties' pricing incentives. They submitted that their own financial targets were set in terms of local margin, and that they did not consider the transfer margin in their 'bid review' analysis.

(b) They submitted that the use of market shares to proxy for probabilistic diversion did not take into account out-of-market diversion (and therefore overstated diversion between the Parties).

(c) They submitted that because the Parties did not frequently rank in first and second place in tenders, market shares overstated the probabilistic diversion between the Parties.

57. With respect to the use of local or transfer margins, we believe it is a reasonable expectation that the incentive of a wholly-owned subsidiary would

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[14] Consider the example of two firms, each with 20% share, each with 20% diversion ratios to each other. The GUPPI from the merger between them would be the same whether the remaining 60% of the market were accounted for by a single firm with 60% share, or 60 firms with 1% share.

be to maximise the profits of its parent rather than solely the profits of the subsidiary. We found evidence in internal documents, from which we interpret that the level of transfer prices are set for specific bids or are influenced by local competitive conditions, or are taken into consideration.

58. For example, a Wincor internal document describes a conversation in which Wincor seeks to submit 'sharp pricing' to [✂] in order to avoid a competitive tendering process with Diebold and NCR. In the following conversation, staff request a review of the transfer price ('TP'), and describe how the price appears high in the context of the tender, stating that 'All in all, we [Wincor] as a business need to put something compelling to [✂] or this will go to RFP…. Can you therefore review and revise the TP?'

59. With respect to out-of-market diversion and, in particular, suppliers delaying purchases, we believe that such delay or cancellation may be limited in its extent for several reasons. In particular:

(a) We have seen evidence that some large contracts are triggered by a 'compelling event', such as the end of support for old hardware, which suggests purchases may not be delayed.[15]

(b) The cost of maintaining old machines may be too high to make this a viable alternative.

(c) 'Sweating assets' implies incurring greater maintenance costs in the short run, which may make this alternative unprofitable relative to other suppliers' offers, even after a price increase. Furthermore, the practice of delaying ATM purchases has already been used following the financial crisis, and the scope to do so further may therefore be limited.

(d) Where customers do decide to incur greater maintenance costs as a result of higher ATM prices, some of the margins associated with greater maintenance costs would be recaptured by the Parties and therefore any 'out-of-market diversion' of this nature may not contribute to a significant reduction in the GUPPI.

60. Even in the case of significant out-of-market diversion the impact on upward pricing pressure would be small. Assuming 10% out-of-market diversion, impacting all suppliers in proportion to their market share, the impact on the GUPPI would be a reduction of [✂] percentage points for Diebold and [✂] for Wincor. However, this overstates the impact, because suppliers would recapture some margins from out-of-market diversion because (i) they would

[15] [✂].

still be expected to participate in the postponed tender and (ii) the customer may have reduced bargaining power if the need to replace machines becomes more urgent (eg if maintenance costs rise rapidly or if there is a compelling event).

61. With respect to market shares and their ability to proxy for out-of-market diversion, we disagree with the view that market shares overstate probabilistic diversion between the Parties because they do not frequently rank first and second in the same tenders. In a typical consumer market, the diversion ratio from Supplier A to Supplier B is the proportion of all customers switching away from Supplier A in response to a price increase (or lack of availability) that would choose Supplier B. The corresponding proportion in the customer-operated ATM market is not the proportion of all tenders in which the Parties ranked first and second, but rather the proportion of all tenders won by Diebold where Wincor ranked second, and vice versa for Wincor with respect to Diebold.[16]

62. To the extent suppliers earn or expect higher margins for any particular group, it may be appropriate to estimate specific GUPPIs for those groups. The margin data provided by the Parties shows that margins can vary significantly. For example, while Diebold's average margins were [✂]%,[✂]% of its sales were for tenders where Diebold earned margins of [✂]%. Holding all else equal, this would increase Wincor's GUPPI by over [✂]%. At the Parties' current estimates, this would imply an increase from [✂].

63. Moreover, suppliers' competitive strength may vary when supplying different customers, customer groups or even for individual tenders. These customers, groups and tenders can account for a large proportion of demand for ATM hardware. The scope for error in estimating win probabilities (using historical win frequencies) for these smaller groups may be even more pronounced given there would be even fewer data on historical tenders. Higher chances of winning may also be correlated with higher margins, so these effects may be multiplicative.

64. The margin data supplied by the Parties refers to the expected margins on hardware. It is possible that the sale of hardware to customers can give rise to an advantage in subsequent tenders for other software and services contracts (and thus, that losing a contract may impose a greater risk of losing other contracts). If this was true, pre-Merger, when bidding for hardware contracts, the Parties may take into account not only the risk of losing the hardware

[16] Although the bidding data submitted by the Parties present a number of inconsistencies, assuming the Parties have correctly identified the tenders they won, we can make the following observations. [✂].

contract itself, but also the additional risk of losing subsequent service or software contracts.

Impact of Diebold's re-emergence on Wincor's margins

65. The Parties submitted that the re-emergence of Diebold in 2012 did not appear to have a significant effect on Wincor's prices (discounts) or margins. They submitted that this suggested that the presence of Diebold as an independent competitor was not necessary to ensure that customers obtained competitive prices.

66. We make one general observation before considering the data itself. Before-and-after analyses must be interpreted carefully, because when using event analysis to assess the impact of an event on margins (or any other variable), the relevant comparator is not the level of margins that prevailed prior to the event, but rather the margins that would have prevailed had the event not taken place.[17] The margins that would have been observed in the counterfactual may be influenced by confounding factors that are related to local margins, but may also be affected by other variables that develop over time.

67. Figure 1 shows the evolution of Wincor's margins over the period 2007 to 2015.

Figure 1: Wincor's local margins (in %) before and after Diebold's re-entry in early 2012

[✄]

Source: Compass Lexecon analysis on behalf of the Parties.

68. The margin [✄].

69. As mentioned above, it is important to consider what happens absent the counterfactual. [✄].

70. The Parties submitted that local margins declined following the 2008/09 financial crisis. To the extent margins are expected to fall when general demand conditions (or, relatedly, the financial health of banks) decline, it should equally be expected that margins would climb when general demand conditions recover. We have therefore plotted local margins and GDP growth rates over time in Figure 2.

71. The Parties submitted that GDP growth rates were unlikely to represent a good proxy for Wincor's margins as the correlation coefficient between the

[17] Unless there are no factors other than the event itself that might affect margins.

two variables was not sufficiently high. We note that this statistical measure was computed over a very small number of time periods.

Figure 2: Wincor local margins (%) compared to GDP growth (%) before and after Diebold's re-emergence in early 2012

[✄]

Source: Compass Lexecon analysis on behalf of the Parties and the World Bank (GDP growth rates).

72. Figure 2 shows the impact of the financial crisis in 2008/09 on GDP growth rates, which fell sharply in 2010. [✄]. [✄].

73. The recovery from the financial crisis coincided approximately with Diebold's strategy for re-emergence. However, Wincor's margins did not recover along with the wider economy, but rather continued to decline. While this may be consistent with Diebold's re-emergence having posed an incremental constraint on Wincor's margins, we believe it is probable that there are also other explanations.

74. The correlation of any two or more time series should be interpreted with caution. However, it may be reasonable to expect that recovering demand conditions (and the recovering financial health of local banks) would be associated with higher local margins in ATM hardware. [✄].

Barriers to entry and expansion

1. This appendix looks at potential barriers to entry or expansion into the market for customer-operated ATMs in the UK. In Section 7 of the final report we summarise the key themes from the evidence gathered from third parties including customers (banks and IADs), competitors, potential entrants and independent maintenance providers. This appendix sets this evidence out in more detail.

Reputation and scale

2. In relation to reputation, customers' views are:

   (a) Lloyds Banking Group (LBG) told us that, in order to be considered credible, a supplier must have a proven track record of delivery in the UK. It explained that LBG would be highly unlikely to be a supplier's first UK customer. Following our provisional findings, LBG indicated that it was currently exploring the global market for further options and had therefore engaged with 16 global suppliers in its ongoing RFI.

   (b) Royal Bank of Scotland (RBS) said it was important that its ATM hardware supplier had a UK or European presence in terms of scale of total deployment.

   (c) Nationwide said scale of operations was important for credibility.

   (d) Barclays told us that in order to consider a supplier credible it must have a proven, established technology. Relatedly, it submitted that a supplier must have a large global installed base. Barclays also said that an established footprint in the country of purchase was an important factor when choosing between credible suppliers.

   (e) Santander identified lack of confidence/trust in a new product as an important barrier to entry. It noted however that it was increasingly easy to overcome this barrier through witnessing deployments globally, and with customer references available.

   (f) [✂] said that it required the supplier to have proven capability within the ATM market.

   (g) [✂].

(h) [✂] told us that in their most recent tender they had considered Triton and Hyosung as part of their market research but had ruled them out among other things because neither was particularly big in the UK financial institution market.

(i) Cardtronics said that a supplier must have an established footprint and therefore credibility in the UK.

3. Suppliers told us:

(a) Glory said that one would often hear that customers would only purchase products of those that had a large estate, so ATM customers would not really entertain suppliers other than Wincor, NCR or Diebold.

(b) GRGI said that potential customers looked for evidence that the company was positioned and committed for the long term so that they could buy with confidence.

4. Regarding customer references, most responses did not indicate a strong tendency for customers to treat references from banks and IADs differently.

(a) YourCash, an IAD, submitted that although it would reference customers similarly, it were more likely to be influenced by IAD recommendations due to similar requirements for products and services.

(b) Barclays described that a supplier with IAD reference customers only, may raise quality concerns as IADs had different expectations. However, Barclays would not discount the supplier for this reason and would still carry out an assessment of the suitability of the supplier for a potential contract.

(c) HSBC said that [✂].

(d) [✂], Raphaels Bank and Nationwide said that they would treat all references similarly. Cardtronics submitted that the functionality, quality of the ATM and associated services and price would be the main decision factors ahead of customer references.

Local support operations

Customers' requirements for availability of local maintenance (SLM)[1]

5. Several third parties, both customers and suppliers, have identified the need to develop support operations locally as a barrier to entry in the UK market for ATM hardware.

6. Banks have told us:

   (a) LBG submitted that the cost of setting up UK maintenance and distribution facilities was one of the barriers a new entrant would have to overcome. LBG said that it required potential ATM hardware providers to have UK/European maintenance and distribution facilities. After our provisional findings, LBG told us that that in its view the market was changing towards a hardware agnostic maintenance model which it planned to adopt in the future.

   (b) RBS told us that it was essential that a reputable company in the UK (which could either be the original equipment manufacturer (OEM) or another ATM hardware supplier or a non-OEM maintenance provider) had the capability to maintain the hardware on an ongoing basis. RBS said that building up maintenance capabilities, ie having a maintenance provider that understood the product and had the required training, was among the barriers a new entrant faced.

   (c) Barclays submitted that for a supplier to be considered credible it would need to have established (or be able to set up) servicing and maintenance support operations (parts availability, engineering resource, service management experience, helpdesk etc) with capability to manage an estate equivalent to that of Barclays.

   (d) HSBC told us that a local presence for maintenance was required when choosing a supplier of ATM hardware.

   (e) Santander said that ensuring spare parts availability constituted a barrier to entry.

[1] Support services for ATM hardware and software, include so-called first-line maintenance (FLM) services, second-line maintenance (SLM) services, and business services. FLM comprises simple maintenance tasks, eg replenishing consumables and fixing bank card jams. SLM refers to the more sophisticated repair and maintenance of FSS hardware, including software repair. Business services comprise varying ranges of so-called managed services and professional/advisory services. Most customers fully insource the provision of FLM services or, in the case of IADs, rely on merchants (where ATMs are deployed) to replenish their machines. We therefore have not considered FLM services further.

(f) [✄] considered the need to ensure nationwide availability of parts and trained engineers to service ATMs to be a barrier to entry.

7. IAD customers told us the following:

(a) YourCash cited the need to provide a full end-to-end solution that ensured maintenance of hardware as a barrier to entry in the UK market for ATM hardware. It said that the number of maintenance providers that could service and support the manufacturer's machines was a factor in its choice of ATM supplier.

(b) [✄] suggested that an entrant needed to invest in initial support and aftercare in the UK, in order to give potential customers confidence to consider it as a credible supplier. It told us that UK presence and support was among the factors driving its choice of ATM hardware provider.

(c) Cardtronics maintained its own machinery. However, it said that the need to establish other support infrastructure relating to people, logistics and spare parts in the UK was a barrier to entry. Cardtronics submitted that, apart from maintenance services, the presence of technical support in the UK was a necessary factor driving its choice of ATM provider.

8. Suppliers told us the following:

(a) NCR told us that a firm would be required to invest in the resources required for maintenance services or partner with one of the multi-vendor service partners in order to enter the UK ATM market.

(b) GRGI told us that it did not consider that not having local maintenance operations in the UK was a disadvantage, as it could work with the existing maintenance suppliers used by its customers.

(c) Hyosung said that the banking sector had stricter requirements around maintenance services compared to IADs. Hyosung said that due to its insufficient local presence in the UK, it had never been successful in trying to win business with the banks.

(d) The Parties identified the recruitment of a hardware maintenance and/or servicing team as one of the country-specific investments that Diebold had made as part of its re-emergence strategy. Diebold opted for 'in-house maintenance' but the Parties submitted that the national maintenance requirement could also be satisfied through an agreement with one of the third-party maintenance providers operating in the UK.

9. KAL, an ATM software provider with a small presence in the UK, described the need for local maintenance capability as a chicken-and-egg problem. KAL submitted that banks demanded that vendors were able to service their hardware across the nation, but a new entrant could not justify this investment until banks had purchased a sufficient number of ATMs.

Availability of local maintenance services

10. Based on the evidence we have gathered, there are a number of options available to a customer to access SLM services:

    (a) The customer maintains its own ATM estate.

    (b) The customer purchases SLM services from:

    (i) the OEM of the device, which has its own servicing capability (supplier maintains);

    (ii) another OEM with servicing capability (third party OEM provision); or

    (iii) a third party provider of SLM services (third party non-OEM provision).

11. Each of the options listed above are used at least to some extent by ATM customers in the UK. Figure 1 illustrates how common each of the options is (as a share of the installed base) among those customers that responded to the relevant question in our market questionnaire. As the data we have gathered do not capture the entire UK installed base, we have considered this information alongside other relevant evidence.

Figure 1: Provision of SLM services in the UK based on installed base

[✂]

Source: CMA calculations based on data submitted by customers.

Customer maintains its own ATM estate

12. Cardtronics and Travelex told us that they provided SLM services for their own machines. The Parties also submitted that other large IADs, in particular NoteMachine and DC Payments, self-supplied SLM services.[2]

[2] We have received no responses from DC Payments, which has been identified by the Parties as one of the IADs that run their own maintenance operations. We note however that Cennox told us that it had won a maintenance contract with DC Payments. [✂]. We also note that we have not been able to confirm whether NoteMachine has its own maintenance operations or whether it subcontracts a third party.

'Supplier maintains'

13. It is quite common for customers to run a 'supplier maintain model' for all or part of their estates. For example:

    (a) [✄] has [✄] and [✄] to maintain their respective machines;

    (b) [✄] has [✄] to maintain its own ATMs;

    (c) [✄] uses [✄] to maintain [✄] MFDs[3] and [✄]to maintain [✄] ATMs on its estate;

    (d) Nationwide purchases maintenance services from its ATM hardware suppliers; and

    (e) Santander has switched back to a supplier maintain model and [✄].

Third party OEM provision

14. Customers can also purchase maintenance services from another OEM (not the manufacturer of the original ATM hardware) which supplies ATM hardware in the UK. For example, Barclays uses Wincor machines for its off-branch estate and these are maintained by NCR.

Third party non-OEM provision

15. ATM hardware providers can also be supported by third party non-OEM maintenance providers. As is shown in Figure 1 above, several customers award maintenance contracts for all or some ATMs on their estate to third party non-OEM providers. For example:

    (a) HSBC, Raphaels Bank and Santander (until recently when Santander switched to [✄]) have used [✄] to provide SLM services for their [✄] machines;

    (b) PayPoint uses [✄] to maintain its NCR estate;

    (c) [✄] uses IBM to maintain its Wincor and NCR estate;[4] and

    (d) Cardtronics maintains a number of ATMs for the [✄].

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[3] Multi-functional devices are a type of customer-operated ATM providing additional functionalities (services, deposit, passbook printing) other than cash-out.
[4] Apart from NCR's Scalable Deposit Module that NCR maintains itself as it was the only organisation capable at the time of purchase. RBS told us that it was not aware whether IBM had the capability.

Views on third party maintenance providers and current coverage of the SLM market

16. A majority of customers said that they would have no objection to using a third party maintenance provider, but frequently this was subject to ensuring that the provider could demonstrate it was sufficiently capable of satisfying the customer's requirements for SLM services and that it would not suffer a disadvantage in relation to spare parts availability, repair expertise and/or diagnostic tools. Three customers indicated that there was a particular risk for multifunctional devices or newly released models of ATMs.

17. Third party non-OEM maintenance providers provided the following views:

    (a) IBM told us that customers had no strong preferences that the OEM maintained their machines, provided that a third party could demonstrate the ability to deliver the service.

    (b) Cennox said that IADs were likely to purchase SLM services from independent providers as they aggressively sought the best available deals, whereas banks had a preference to purchase SLM services from the OEM. It said that banks may be reluctant to use third party maintenance providers for machines that were new to the market because of an incorrect perception that parts may be difficult to obtain.

18. Suppliers provided the following views:

    (a) Hyosung said that it had sought a partnership with a local maintenance and distribution company as a means to expand in the UK, but that it had encountered difficulties in finding a suitable partner.

    (b) [✄].

19. The Parties submitted that in 2015 over 70% of ATMs installed in the UK were not maintained by an OEM and that of the remaining 30% at least some were maintained by an OEM other than the manufacturer, according to RBR data.

20. These numbers are consistent with the data we have gathered. Based on this data 28% of the installed base is maintained by the manufacturer, 2% of the installed base is maintained by an OEM other than the manufacturer, 36% is maintained by the customer and the remaining 44% by non-OEM third party maintenance providers.

21. According to RBR, the share of ATMs for which SLM is performed by third parties has been falling for several years, which is primarily the result of the

steep rise in the number of ATMs deployed by the large IADs. These ATMs are usually serviced by the in-house maintenance teams of these deployers.[5]

Third parties' ability and incentive to maintain the devices of a new entrant OEM

22. We asked two major independent service providers, IBM and Cennox, to describe the barriers (technical, financial, economic or other) that they would have to overcome in order to be able profitably to maintain the machines of a new entrant.

23. IBM said that it was quite likely that it would be available to provide maintenance services for new entrants, provided it could access diagnostics, training and spare parts at reasonable prices (as for a new entrant these were more difficult to access). It said that the investments involved would include training, sourcing a stock of parts and setting up diagnostics. [✂]. IBM told us that the cost for a new entrant would depend on the geographic spread of the machines and that if they were relatively concentrated, it could be profitable to start maintaining a new entrant even for a relatively low number of devices.

24. [✂]. IBM also told us that the cost of training engineers depended on how different the new device was compared to other products, and therefore how much time was required to support the new technology.

25. Cennox submitted that it would be willing to support a new entrant even for a small number of devices provided that there was a prospect for the entrant to expand its installed base.

26. Cennox told us that it would need a contract to acquire spare parts, product training diagnostic tools and software in order to be able profitably to maintain the machines of a new entrant. It said that developing its credibility to maintain machines for bank customers would also be important because bank customers were considerably more profitable, but Cennox did not currently carry out maintenance for any banks. Cennox submitted that it would take 8 to 12 weeks to train its existing engineers and probably 12 months to become profitable. [✂].

Local services other than maintenance

27. The Parties have included the recruitment of a new management team, the recruitment of a new sales team and investments in infrastructure among the

[5] RBR (2016), ATM Hardware, Software and Services, UK section, p35.

country-specific investments that Diebold undertook upon its re-emergence in the UK.

28. Several customers have stressed the importance of locally available non-maintenance related support operations when assessing the credibility of a hardware supplier. In particular:

(a) Cardtronics said that when choosing suppliers of ATM hardware it was important that they had sales and account relationship presence on the ground so that Cardtronics could work with them closely. Cardtronics also told us that recent experience had shown that local availability of software and hardware experts that could come on site and confer with Cardtronics' engineers was important~~.~~

(b) Barclays said that it was important to have relationship management based in the UK.

(c) The Co-operative Bank told us that the client relationship would need to be in the UK.

(d) Metro Bank submitted that it was very important for a supplier to have a presence in the UK so that Metro Bank could go to their offices and speak to them, and for them to be readily available, within UK hours of operation, since Metro Bank was expanding its presence and opening new branches every few months.

(e) YourCash said that the local presence of sales and account management was important for relationship building.

(f) Raphaels Bank told the CMA that although not critical it was useful if the supplier had physical presence in the UK especially regarding subject matter experts and relationship teams.

29. HSBC however told us that the location of sales operations did not matter.

30. Comments from ATM suppliers were as follows:

(a) NCR told us that a firm would need to invest in the resources required for marketing and sales as well as the costs related to running a business (eg human resources, legal, finance and administration), in order to enter the UK ATM market. Alternatively a firm may choose to work in the UK through a reseller agreement with a third party.

(b) GRGI cited the need to create a suitable organisation with office facilities, attracting the appropriate personnel and funding among the barriers to entry in the UK ATM hardware market. [✂].

31. Cennox considered the acquisition of an experienced sales team critical for the successful promotion of [✂] products to financial customers in the context of its plans to become [✂] exclusive reseller in the UK.

Certification, technical requirements

32. Several third parties have identified in their submissions costs and deployment delays associated with certification (both at the national and at the customer level) as important barriers to entry.

Certification requirements

33. The term ‘certification’ is widely used among customers, competitors and other third parties. We note that: (i) there isn’t a compulsory process of certification either at the national or at the customer level and (ii) the term ‘certification’ is used in responses we have received to refer to global industry standards as well as UK-level testing and integration processes that have to be obtained from local organisations/authorities as well as customers in the UK.

34. We distinguish between international standards of the electronic payments industry (eg PCI)[6] that all manufacturers have to comply with, and national- and customer-level testing and integration processes, such as:

    (a) Link Scheme certification: Link told us that it did not mandate any hardware testing at all. There were technical standard requirements that the ATMs deployed by Link’s members (ie ATM deployers such as banks and IADs) had to comply with (eg the software kernel is of the EMV standard or the PIN pad meets PCI standards). Link tested the connection of the customer’s host with the ‘ATM switch’ which was provided by VocaLink.[7] The term ‘Link certification’ therefore referred to the testing process that ensured that integrating an ATM with the customer’s host did not disrupt the connection with the Link switch. Whenever there was a change in the host (that could be due to a variety of reasons including a newly introduced feature of the ATMs that connect to it), Link encouraged its members to run a regression test to make sure it did not affect their connection to Link.

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[6] The Payment Card Industry Data Security Standard, comprises a common set of industry tools and measurements designed to ensure secure handling of sensitive information.
[7] VocaLink provides the IT infrastructure that connects the ATMs of the Link network to card-issuing members. The ‘ATM switch’ is the central switch operation that delivers a transaction processing infrastructure and provides access to all major card schemes.

(b) Card Schemes certification: ATM deployers also need to test that their ATM systems connect to the host systems of the major card schemes to ensure the correct transaction routing for each card type. Link told us that Visa and MasterCard had some specific requirements and mandated some testing of the ATM especially around software kernels.

(c) Certification with the Bank of England:[8] The Bank of England has introduced a voluntary framework to test automatic banknote handling machines in the UK with known counterfeit types. ATM models that successfully pass the tests are listed on the bank's website. This is a requirement only for machines that accept deposits. According to the Parties, standard cash dispensers (for which the Bank of England certification is not a requirement) comprise 93% of the installed base.

(d) Certification with individual customers: The process of integrating the ATM with the customer's systems.

35. This is not an exhaustive list of all testing and integration procedure for ATMs in the UK. In light of the evidence we have received we understand that these are the minimum customer requirements to which an ATM has to conform in order to be deployed.[9]

36. Customers provided the following views on certifications:

(a) Barclays listed hardware certification with EMV[10] and Link among the factors taken into account when deciding between credible suppliers of ATM hardware. Barclays told us that if the hardware was EMV and Link certified it was easier to ensure quick deployment. Barclays also told us that if a device was purchased in a particular geography for the first time there would be an increased requirement for domestic card scheme certification and/or global card scheme certification which could cause a delay to the deployment of hardware.

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[8] Based on publicly available information from the Bank of England's website we note the following. These tests are conducted at the Bank of England and are free of charge. OEMs incur their own costs (travel and accommodation, packaging and transportation of machines to and from the testing location in all circumstances. If multiple tests have to be performed outside of the standard tests the Bank of England reserves the right to impose charges. Large machines that are logistically difficult to move will be tested at a mutually agreeable location, subject to additional charges. The Bank of England encourages manufacturers to loan their machines to the bank so that additional tests with new counterfeit types can be checked by the bank in between regular testing.

[9] The Parties submitted that a new entrant into the UK market of customer-operated ATMs (like every established UK supplier introducing a new model) would need to obtain Payment System certifications (corresponding to 1(a) and 1(a) above), Bank of England (and other sterling-issuing banks) certification and customer specific certifications.

[10] Card Schemes (Euronet, Mastercard Visa).

(b) [✂] told us that certification had to be done for all suppliers in order to ensure that their equipment was compatible with various technology platforms. [✂] told us that this process required investment on both sides and that this had already been undertaken for NCR and Wincor. [✂].

(c) Nationwide described Link certification requirements around software and hardware builds as stringent and the process of meeting those requirements as lengthy. Nationwide also told us that the costs of certification and software customisation with individual banks' legacy systems, which are complex, pose a barrier to entry.

(d) Raphaels Bank described the cost of the development and certification required to add a new hardware type to a network as the main barrier to entry. Raphaels Bank identified development costs for integration with its central systems and scheme certification effort as some of the key factors driving its choice of ATM provider.

(e) Travelex would only view a hardware supplier as credible if it had already been certified to be a host without recertification.

(f) YourCash mentioned hardware approval by Card Schemes and the Link scheme as a requirement.

(g) Cardtronics mentioned certification and testing costs among the barriers to entry. It also listed the requirement that an ATM had to be tested and proven on its ATM estate as a factor driving its choice of ATM supplier.

37. OEMs provided the following views on certifications:

(a) GRGI told us that there were no specific compulsory certification exercises that needed to be met in order to sell a machine in the UK and that vendors only needed to make sure that they complied with the appropriate local and international standards.

GRGI however said certification with appropriate software platforms and the need for cash acceptance systems to meet Bank of England requirements[11] were among the barriers to entry. GRGI told us that obtaining the Bank of England certification was a costly exercise.

(b) [✂].

[11] For more information on the Bank of England certification see www.bankofengland.co.uk. The bank has introduced a voluntary framework to test Automatic Cash Handling Machines (ie machines that accept, count or sort banknotes and automatically decide whether a banknote is counterfeit or genuine) with known counterfeit types on a regular basis.

(c) NCR, while mentioning certification among the barriers to entry, pointed out that Link and the use of multivendor software greatly simplified the certification and switching process in the UK compared to other markets. [✂].

NCR told us[12] that there were no national certifications. According to NCR, if a vendor supported XFS[13] and PCI, which were the global standards, then its ATMs could operate in the market. NCR told us that in the UK there wasn't a requirement for the vendor to certify with Link as it was the customer's responsibility to certify against its own network.

Certification costs incurred by the supplier

38. We present the evidence on the level of the costs associated with satisfying national-level certification requirements (Card Schemes and Bank of England) to be considered eligible for the UK market in Section 7 of the final report.

39. In addition, there appear to be other costs that would have to be incurred by suppliers when introducing a product to the market or when introducing a new model. These include customer-level certification and other technical switching costs incurred at the customer level.

40. We therefore considered the magnitude of these costs, and the extent to which they may be greater for suppliers seeking to enter or expand in the UK (in general or for specific types of ATM hardware) compared to suppliers that are already established in the UK (again, in general or for the sale of specific types of ATM). This is because costs that apply symmetrically to new entrants and established competitors do not constitute a barrier to entry.

41. NCR told us that customer-level certification for a new supplier (assuming that the customer operated multivendor software and that no new functionality was introduced) depended on getting a certification slot in the customer's IT process, and that this could cost the supplier circa £100,000.

42. These costs are likely to vary with customer requirements and product type. For some IADs, Link certification is sufficient whereas for other IADs and most banks the vendor would need to obtain customer-level certification. Bank of England accreditation is required for deposit-taking machines to demonstrate that they can identify counterfeit currency, store it and match it to the

[12] Summary of the hearing between NCR and the CMA, 6 October 2016.
[13] Interface software developed and delivered by the ATM manufacturer. CEN/XFS or XFS provides a client-server architecture for financial applications on the Microsoft Windows platform, especially peripheral devices such as ATMs. It is an international standard. XFS provides a common platform for accessing and manipulating various financial services devices regardless of the manufacturer.

depositing user. Customer-level certification for proper functioning with multi-vendor software may not be required for a customer that runs parallel software programmes.

43. Diebold told us that although it may be the case that all new ATM models had to be certified, the costs, time and effort associated with introducing new versions of a previously certified device were likely to be lower.

44. In GRGI’s view differences associated with the costs and effort necessary to certify a model with a customer for the first time and to certify a subsequent version of an already certified model with an existing customer depended upon the customers’ preferences and the change being introduced.

Certification costs incurred by the customer

45. Several customers have submitted different cost and time estimates for completing the testing and integration of ATMs of new and existing suppliers with their systems.

(a) Raphaels Bank specified the costs associated with introducing a new ATM supplier to be [✄] and the period for host development and card scheme certifications to be achieved to take [✄]. Raphaels Bank told us that for an existing supplier the respective costs/time would depend on the difference in specification of the new model. If no scheme certifications were required these costs would [✄] and the process would take around three months. If scheme certifications were required then costs and time aligned to those for introducing a new supplier.

(b) Barclays submitted that the integration process was likely to take longer and cost more for a new ATM supplier compared to an existing one. Six months and about £200,000 per device were required to integrate a new ATM supplier while half the time and money were required for an existing one.

(c) [✄] told us that according to its past experience (as it no longer operated an ATM estate), the costs around testing, configuration and development of ATM software for existing suppliers depended on how different the new models were compared to what had already been certified with the host.

(d) Nationwide also told us that less integration and customisation was required for an existing supplier, reducing deployment times to [✄] compared to [✄] for a new ATM variation.

(e) Cardtronics submitted that the level of testing required for a new ATM from an existing supplier would depend upon the extent to which the new

model was similar to an existing model in the ATM estate. Cardtronics explained that if the components were the same as an existing ATM then it would just need a quick test to ensure it functioned as expected. However, if it had a different dispenser, card reader, etc a full test may be needed. Cardtronics told us that it was currently investigating the use of Diebold ATMs in the UK and that it had gone through extensive testing of the Diebold ATMs on Cardtronics' infrastructure over the last six months and this was expected to take nine months in total. Cardtronics further submitted that the recertification process took time and cost and therefore it would only do it if a new supplier could offer a significant cost difference.

(f) HSBC submitted that unless significant operating system and software upgrades/changes were involved, the development, testing and piloting associated with introducing a new model from a new supplier would incur costs of about [✄] and require approximately [✄] to be completed. HSBC told us that respective costs and delays for introducing a new model from an existing manufacturer would be [✄].

(g) LBG[14] and [✄] told us that all new hardware (including that of existing suppliers) went through similar testing and certification.

46. We have identified internal documents [✄]. [✄]. This is in line with what the Parties told us at the site visit ie that unless major upgrades were introduced, certification of subsequent versions of an already certified hardware/software build was restricted to the additional features being introduced.

47. In relation to whether certification presents a barrier to switching, we were told of one example where a customer had favoured an already certified supplier despite the new supplier offering similar machines at a lower price. [✄].

48. [✄].

Wall apertures and Disability Discrimination Act compliance

49. The Parties submitted that there were no conflicts between design requirements in the UK and those in other countries. Moreover, according to the Parties' estimates, adapting an existing ATM model to meet the UK-specific requirements could be accomplished for [✄] for simple modifications (depending on functionality and customer requirements).

[14] LBG said that costs varied with the process and could be as high as £1,000,000 per device based on the most recent estimate.

50. The Parties did not submit how much it would cost for more substantial modifications.

Through-the-wall apertures

51. [✂].

52. We have therefore gathered evidence in order to understand to what extent a machine's compatibility with existing apertures affects the deployers' choice of customer-operated ATM hardware and whether this may reduce the likelihood of timely and sufficient entry and expansion.

53. The Parties submitted that[15] through-the-wall (TTW) aperture compatibility issues did not obstruct entry. In particular, the Parties submitted that:

   (a) there was no 'UK standard' aperture size or a size to which the ATMs were expected to conform;

   (b) accommodating an ATM of a different size was a matter of installation rather than design, and it was usually the aperture, rather than the ATM that was resized as there were a number of straightforward options for making an ATM fit an existing aperture and customers used 'blanking plates and collars' which allowed ATMs to fit apertures of various dimensions; and

   (c) GRGI's models were comparable to Wincor's and compatible with all UK deployers' requirements (both banks and IADs).

54. In their responses, customers confirmed that there were no standard TTW aperture dimensions in the UK as these were defined by the dimensions of the legacy machine (which was usually a Wincor or NCR machine). As a result the costs related to resizing TTW apertures could vary greatly if the ATM of a new supplier did not fit through the existing aperture, in particular if the device was larger than the existing aperture.

55. Customers submitted that if major building works were required, additional installation costs for ATM models that were not compatible with existing TTW aperture size fell in the range of £2,000 and £20,000 per device.[16] These

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[15] Parties initial submission.

[16] Santander UK specified these costs to be about £3,000 for resizing a through-the-glass aperture and up to £7,000 for TTW aperture, [✂],[✂] and Cardtronics placed them to be around £2,000, Barclays and [✂] at [✂] on average. Barclays submitted a range between £2,000 and £20,000. [✂] further specified an additional £1,000 of planning costs per site.

costs depended inter alia on the material around the aperture (brick wall, plaster, glass).

56. Costs for minor works are significantly smaller. According to Barclays even if the new machine was in theory compatible with the TTW aperture, some amendments were almost always required. HSBC estimated the costs for minor amendments, which represented the majority of cases (tidying up around new devices in existing apertures, minor infills etc), to be around [✂] per device.

57. GRGI told us that if the resizing of the aperture required the lintel to be removed and replaced with a new lintel above, the building costs became quite significant. GRGI also told us that if the resizing works affected an external wall, and they were not completed within a day, costs would be further inflated by the need to have security on site.

58. [✂].

59. [✂][17] [✂].

60. [✂].

61. With respect to the documents cited above, the Parties have clarified that they represent sales pitches and therefore seek to highlight to the customer every benefit that their models could offer.

62. Customers also referred to deployment delays associated with resizing TTW apertures. Cardtronics and HSBC specified the average time such amendments took to be completed to be between [✂]. Significant delays could occur if, due to the building's location, building works were restricted to limited hours overnight.[18] Moreover, one customer said that if the building was listed, a special planning permission was needed which could add 12 to 15 weeks[19] lead time to installation. In this case, there was also a risk that consent was not given and consequently no amendment was feasible. We note however that the Parties submitted that there were only 500,000 listed buildings in the UK and that most of these buildings were not ATM locations.

63. Despite the costs and difficulties associated with resizing apertures to accommodate larger devices, several customers[20] stated that their choice of hardware would primarily be based on hardware functionality requirements

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[17] Installation Move And Change.
[18] As noted by Raphael's Bank.
[19] Santander.
[20] Santander, YourCash, Raphael's Bank, Nationwide and [✂]. Cardtronics told us that aperture compatibility was a concern for new locations only.

and branch strategy and that they would undertake related costs for resizing the aperture if necessary.

64. Barclays, HSBC and LBG however responded that they usually replaced TTW devices with ones of similar size. Barclays said that strong consideration was given to the size of the ATM to ensure minimum structural work on installation. Barclays also told us that manufacturers were increasingly aware of this risk and were designing devices that minimised these transition costs.

65. Cardtronics told us that the additional cost would be a consideration when looking at the upgrade of existing sites where change of ATM model and size would be needed.

66. NCR[21] has characterised having a replacement product that would fit in the aperture vacated by an NCR, a Wincor or a Diebold device (being the standard in the UK market for what is being replaced) as 'a must have requirement' and 'almost a hygiene factor'. NCR also told us that most vendors complied because they knew that failing to comply would reduce their chances of winning a contract. It also told us that resizing the aperture would only be required in approximately 2% of the installations. NCR told us that resizing costs could rise to a significant amount for listed buildings, noting however that this latter was the exception rather than the norm. Moreover, NCR told us that tenders were usually structured around machine functionality rather than whether they were to be located in the lobby or through the wall.

Accessibility requirements

67. The Disability Discrimination Act (DDA) was introduced in the UK in 1995. In 2002, the Centre for Accessible Environments (CAE) in collaboration with ATM manufacturers and ATM deployers created a set of guidelines to ensure that product design, installation and deployment meet their legal duty under the DDA to make ATMs more accessible. The DDA was replaced by the Equality Act (EA) in 2010. Both the DDA and EA place a duty on providers of goods and services to anticipate their disabled customers' needs.

68. The Parties submitted that accessibility requirements were largely aligned at an EU and global level and it was therefore not difficult for ATM manufacturers to design products that complied with such requirements in all major markets including the UK.

69. The Parties submitted that the legal requirements of the DDA/EA were principles-based and that the CAE guidelines were not binding. The Parties

[21] Phase 2 hearing with NCR.

submitted that equivalent US guidelines, the American with Disabilities Act Accessibility Guidelines (ADAAG), were more prescriptive. Therefore, if an OEM like Nautilus Hyosung was ADAAG compliant, it followed that its ATMs would also be DDA/EA compliant.

70. Despite the voluntary nature of the DDA/EA and the CAE guidelines, we observe that some suppliers are ruled out on DDA/EA grounds.[22] Moreover, customers told us that DDA/EA compliance was of critical importance in the choice of ATM hardware.

71. Based on the responses we received from ten customers,[23] all customers in the UK market (both banks and IADs) considered compliance with DDA/EA to be an important factor driving their choice of hardware despite the fact that the CAE guidelines were not binding. Barclays told us that its requirements would often exceed the guidelines' requirements.

72. [✂].

73. [✂].

[22] See Hyosung and Barclays.
[23] For which we have a response (Santander, [✂], YourCash, Raphaels Bank, Nationwide, Barclays, Cardtronics, [✂], RBS and LBG). YourCash however explain that this was not a requirement whenever refurbished ATMs were purchased.

Potential candidates for entry

1. In Section 7 of the report we present our assessment of GRGI and Nautilus Hyosung (Hyosung), the two suppliers of customer-operated ATM hardware that we consider as the most likely candidates for entry or expansion in the UK market.

2. In this appendix we set out this evidence in more detail and present the evidence we have received on other suppliers that the Parties have identified as potential entrants, namely Global Glory Solutions (Glory), Fujitsu, IBM/G4S, KEBA, OKI and Banking Automation. We also discuss the upcoming tenders that will take place in the next one to two years.

3. We note that several customers ([✄], Cardtronics, Barclays and Lloyds Banking Group (LBG)) indicated that Asian providers, such as Hyosung and GRG Banking have good market opportunities in the high growth Asian markets and this is the reason why they are mainly focused there. This is consistent with NCR's view. Moreover, the Parties told us that the reason why suppliers like GRGI and Hyosung had not invested resources in the UK may be because they had found it relatively easier to enter and be successful in other markets.

Hyosung

4. We have gathered evidence on Hyosung's position in relation to the four barriers to entry that we have identified and discussed in the main report and the appendix on barriers to entry or expansion,[1] namely:

   (a) reputation and scale;

   (b) local support services;

   (c) certification and testing; and

   (d) UK customer-specific design requirements.

Reputation and scale

5. Hyosung currently does not have a UK reference customer for banks.

[1] Appendix F to the Final Report.

6. Hyosung said that some customers would take into account US or European reference customers but several customers identified a UK reference customer or UK footprint as important for credibility. Hyosung has thus far sold fewer than 200 ATMs in the EEA (outside the UK), but has a substantial presence in North America.

Local support services

7. We present below (i) the views of customers with requirements for local support operations for whom Hyosung has tendered and (ii) evidence on Hyosung's strategy for and progress towards improving availability of local support operations for its devices.

8. Barclays and [✂] provided views on the availability of maintenance services for Hyosung devices and how that impacted on their decisions not to purchase from Hyosung. In particular:

   (a) Barclays told us that one of the reasons why discussions with Hyosung did not proceed was that Barclays felt uncomfortable with the transition risks as Hyosung was favouring a third party servicing model.[2] Barclays also noted that it believed that Hyosung was focused on high-growth markets and was reluctant to invest locally before ensuring it would have sufficient demand. Barclays also noted other reasons, including Hyosung's inability to satisfy Barclays' preferences for accessibility.

   (b) [✂].

9. Cardtronics has also referred to the lack of a UK-based support team as one of the problems that it faced with Hyosung.

10. We discussed with Hyosung its progress towards forming a partnership in order to improve the availability of local support services for its products. We also discussed this with Cennox, a third party, non-OEM (original equipment manufacturer) maintenance provider and distributor, which was identified by the Parties as having engaged with Hyosung in the past to form a partnership.

11. Hyosung confirmed to us that it did not have local maintenance in the UK nor a local sales and marketing team. Hyosung submitted that it had faced difficulties in the past in establishing a partnership with an independent maintenance provider. In particular, Hyosung told us that it was difficult to find sufficiently large and qualified providers, and also it could not find a partner that would provide both maintenance and sales services. It was considering

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[2] [✂].

finding a sales and marketing partner that would outsource maintenance, but this had not yet been achieved. It said that potential suppliers were focusing on other markets and were not willing to commit. [✂].

12. We asked Cennox to provide details on discussions relating to its publicly announced partnership with Hyosung, as well as any further negotiations that had been held with Hyosung.

13. Cennox explained that the partnership it had made with Hyosung was conditional upon Hyosung winning a contract with Barclays. After Hyosung subsequently failed to win that contract, the arrangement to partner lapsed, as it did not apply to future opportunities.

14. [✂].

15. Cennox believed that its credibility as an ATM maintenance provider would be strengthened if it had the support of an OEM, and a way to achieve this, would be by supporting a new entrant into the market in some form of partnership or distributorship arrangement.[3]

16. We asked Cennox to explain why it was not credible to compete for a contract to maintain banks' ATMs. Cennox told us that in order to win a maintenance contract with a bank, a third party maintenance provider would need to (i) establish credibility by having a banking customer reference, (ii) prove access to diagnostic software, and (iii) prove access to spare parts. Cennox said that (ii) and (iii) could be addressed if a new entrant would be willing to provide their support either through a partnership or collaboration.

17. Cennox told the CMA that in any event, subsequent to our hearing, Hyosung had informed Cennox that it had chosen to postpone negotiations.

Certification and testing

18. Hyosung told us that it was investing in LINK certification for some of its models. Hyosung has not given us any further information on what progress it has achieved with certification compliance either at the national or at the customer level.[4]

[3] One means Cennox suggested would be through the acquisition [✂].
[4] Hyosung is already certified with Cardtronics but the latter told us that it would not seek to purchase ATM hardware equipment from it any longer.

UK customer-specific design requirements

19. According to Barclays, it had considered Hyosung as an example of a potential supplier. However it did not proceed further as Hyosung had not, in Barclays' view, taken into account the requirements set out in the UK Disability Discrimination Act (DDA)/Equality Act (EA)[5] requirements in its product design.

20. Hyosung told us DDA compliance was one of the reasons why it had struggled to compete in the UK.

Lead times

21. Hyosung told us that its manufacturing operations were based in Korea and China and that it took on average 35 days to ship to the UK. Cardtronics, Hyosung's only customer in the UK, referred to port and customs delays as well as shipping costs as one of the problems that eroded its relationship with Hyosung.

22. Another IAD, [✂] also raised a similar point in its submission. In an internal document submitted by [✂] there is a recommendation against choosing a Hyosung ATM model on the grounds that the company does not have a warehouse in Europe, let alone in the UK.

GRGI

23. The Parties submitted that GRGI was present in the UK and that it had participated in tenders for UK contracts including invitations for RBS, Barclays, Santander and Lloyds Baking Group (LBG).

24. GRGI told us that there had been ATM tenders raised by banks where it had chosen not to participate as it perceived that there was no prospect of success and so the costs of submitting a tender could not be justified.

With respect to Barclays

25. Barclays told us that GRGI [✂]. That said, Barclays told us that GRGI had hardware options and a flexible software platform to facilitate integration. Barclays also told us that in relation to one specific project it had concerns about whether the proposed machines were DDA compliant.

[5] The Disability Discrimination Act is now known as the Equality Act 2010.

26. [✂].

With respect to RBS

27. RBS, in its response to the CMA, [✂].

With respect to Santander

28. Santander assigned no rank to GRGI for its tender.

With respect to Lloyds

29. GRGI responded to a request for information for Lloyds in 2015. The bank told us that GRGI at the time was in the process of developing its presence in the UK and in Europe with regard to its distribution and maintenance and therefore could not provide responses to the questions raised.

30. [✂].

31. GRGI told us that it had in the past not participated in tenders for banks because the likelihood of success was deemed insufficient to justify the costs. [✂].

Specific barriers to expansion identified by GRGI

32. GRGI identified the following factors as the main barriers that a supplier needs to overcome to start competing for and winning significant contracts for the supply of ATM hardware in the UK:

    (a) The need to ensure that ATM products meet UK market-specific requirements [✂].

    (b) The need to secure certification with the appropriate software platforms (in particular from VocaLink) and for cash acceptance systems to meet the requirements of the Bank of England.

    (c) Having the financial ability to establish a UK presence (a suitable organisation with office facilities and demonstration equipment, attracting appropriate personnel etc) for the length of time needed to secure orders.

    (d) The need to overcome customers' perceived risk of a new entrant (particularly among banks where inertia is strongest).

    (e) The need to establish relationships with service partners.

UK market-specific requirements

33. The Parties submitted that GRGI had the models required to satisfy UK deployer demand (both banks and IADs), with models comparable to every ATM sold by Wincor in the UK.

34. [✂].

35. [✂].

36. [✂].

37. [✂].

38. With respect to DDA/EA compliance, GRGI told us that its machines were DDA compliant. Barclays had in the past been sceptical about GRGI's DDA compliance but told us that its requirements often exceeded the accessibility standards.

Certification

39. GRGI markets seven models in the UK. [✂]. GRGI told us that all other models were suitable for the UK market. [✂].[6] For those IADs that had their own processing capacity and for banks, GRGI's ATMs would need to be certified for each potential customer on their individual platforms. [✂].

40. From the responses we have received, we understand that among the IADs Cardtronics, Travelex and PayPoint all run their own processing capacity and note that GRGI would have to obtain customer-level certification to be considered credible with these deployers.

41. GRGI considered certification to be a process that affected all OEMs in the same way. It did however acknowledge that, depending on the customers' preferences, it may be easier to achieve certification for subsequent versions of already certified machines.

Reputation

42. GRGI explained [✂].

43. GRGI told us that potential customers looked for evidence that the company was positioned and committed for the long term so that they could buy with

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[6] [✂].

confidence. GRGI submitted that it did not have an office presence in the UK but also said this was not required at this initial stage. GRGI told us that it expected the embryo UK organisation to expand (increasing the existing capability, recruiting staff etc) but it did not specify any timelines for this expansion. It told us that in the absence of any significant expansion the bulk of administration would stay within the USA.

Service partners

44. GRGI told us that there was currently no business case for setting up a maintenance organisation in the UK and therefore this was not a market where it planned to compete.

45. To provide non-hardware aspects of its offering it had established relationships with third party suppliers (including cash-in-transit organisations, field service and bonded warehousing service providers).

46. GRGI told us that in principle it could collaborate with a customer's preferred maintenance provider, for example with [✂] on an opportunity by opportunity basis. [✂].

47. GRGI told us that if a customer wanted it to have a maintenance provider as part of its supplier offering, it would approach a suitable supplier [✂].

48. [✂].

Funding constraints

49. The Parties submitted that GRG Banking had deep pockets based on its legal monopoly in China which could be used to launch market entry in new markets worldwide. However, GRGI explained that it was a standalone firm[7] and did not have subsidiary status.

50. GRGI submitted [✂][8] [✂].

51. [✂].

Additional evidence of GRGI's ability and incentive to expand in the UK

52. GRGI submitted that it thought the benefits of overcoming the aforementioned barriers would outweigh the costs, as banks were expanding the use of self-service devices into new transaction types, thereby creating demand for new

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[7] See GRGI's phase two hearing summary.
[8] In their hearing with the CMA GRGI mentioned [✂].

solutions. GRGI clarified that banks moving into new transaction environments would hopefully give GRGI a new opportunity. This related to GRG Banking's video terminal machines (VTMs), [✂].

53. We note that HSBC is using GRG Banking's VTMs in China. Moreover, HSBC told us that if a vendor was strong in another market and if it already supplied HSBC in another market, HSBC would consider it for its UK operations. HSBC told us that if it were to consider VTM technology for implementation in the UK, it would strongly consider utilising the GRG Banking VTM devices, as it would expect to see a commercial benefit by avoiding additional development and testing effort and costs.

54. HSBC noted that for GRG Banking to be considered in the UK, HSBC would have to be confident that the support and maintenance would be adequate.

Global Glory Solutions

55. The Parties submitted that Glory was currently the primary source of teller-assist ATMs for most of the major UK banks and had a significant customer-operated ATM portfolio, in respect of which it had not yet generated sales in the UK. On the basis that it had all of the necessary products, customer contacts and infrastructure in place, the Parties submitted that it was a significant potential entrant in the supply of customer-operated ATMs. They also told the CMA that Glory had a significant presence in Portugal in customer-operated ATMs.

56. Glory told us that it had a very limited presence in the global ATM industry globally or in the EEA and none in the UK, and it currently had no plans to enter the customer-operated ATMs space, as it was not deemed commercially viable.

57. Glory also told us that while it did have a customer-operated ATM series in its portfolio[9] and had gone through procurement processes with that product prior to 2015,[10] it was no longer entering tenders with the product.[11] Moreover, [✂]. Glory also told us that it currently actively sold a limited number of dispense-only ATMs in Switzerland. When asked to provide a list of its customer-operated ATM hardware models offered in the UK, Glory responded that it did not provide any.

[9] Its ATM offering is known as the Cash Star.
[10] Cash Star systems have been sold to the Netherlands (less than 100 units), Switzerland (around 300 units), Portugal (more than 7,000 units) and certain African countries (less than 500 units).
[11] Moreover, we understand that Glory's customer-operated ATMs are not approved by the LINK.

58. Glory told us that it had not participated in a tender for ATM hardware in the UK market since 2009,[12] and that despite having participated in a few global tenders[13] in the last few years, without being successful, it did not actively participate in ATM tenders.

59. Glory had participated in a branch transformation project for Unicredit, Italy since 2014, which had involved the provision of customer-operated ATMs. However Glory told us that the relevant product[14] had never been made available in any other country. We were told that Glory recently started to market in the UK an assisted self-service product, TellerInfinity™.[15]

60. Glory said that it could not see any incentive to move to the provision of customer-operated ATMs and remained adamant on the distinction between assisted self-service units and customer-operated ATMs. It said it was focusing on more technical and sophisticated solutions for teller automation. It said that as equipment evolved, customers were likely to want more rather than less, so it couldn't see Glory developing a standard ATM. However, it said that it would always be driven by customer requirements and if the future evolved in such a way that customers decided that they really required standard ATMs as the term was currently understood, Glory might consider developing a new product and entering although it argued that it would be debatable whether Glory would be able to gain any foothold with this product. Barclays said that Glory was undergoing a hardware refresh and would be a better supplier of customer-operated hardware at that point.

61. [✂] told us that it had a relationship with Glory as Glory produced teller cash recycle units. [✂].

Fujitsu

62. The Parties submitted that Fujitsu had an established ATM hardware portfolio, well-established UK operations for other parts of its business and would be easily able to launch a UK ATM hardware business.

63. Fujitsu told us [✂].

64. [✂].

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[12] Glory told us that it had responded to an RFP from the Bank of Ireland in June 2014 for the supply of a fleet of up to 1,000 internal retail ATMs, which had it been successful would be provided by third parties.
[13] Including Unicredit and BNP Paribas.
[14] S 200 is being sold in Italy by Sitrade which is a joint venture between Glory Ltd and Gabrielle Conte
[15] TellerInfinity's installed base in the UK stands at zero units. TellerInfinity's installed base outside of the UK stands at around 20 units.

Other candidates

65. In the course of our investigation we also gathered evidence on the prospects of entry for IBM/G4S, KEBA, OKI and Banking Automation.

66. IBM submitted that [✂], it currently did not supply customer-operated ATM hardware [✂]. IBM noted that [✂] it had sold ATM hardware modifications (to make them more vandal proof) but not actual ATMs – not since divesting its ATM business in 1990.

67. The Parties submitted that KEBA was the market leader in Austria, was also active in France, Germany, Italy, Poland and Romania, was rapidly expanding and had secured contracts with customers including Commerzbank, Deutsche Bank, Co-operative Bank and VKB. KEBA (KePlus, division for ATMs) told us that it had no current plans to enter the UK market.

68. The Parties submitted that OKI had an established ATM hardware portfolio, well-established UK operations for other parts of its business and would be easily able to launch a UK ATM hardware business. OKI has not engaged with us.

69. The Parties also submitted that Banking Automation, which produced coin machines, was a recent entrant which now supplied 'FSS hardware' in the UK. Banking Automation did not respond to the CMA's request for information.

Upcoming tenders

70. The Parties told us that several tendering opportunities would arise within the next one to two years for which both Hyosung and GRGI would be considered as credible bidders and so would exert a competitive constraint upon the merged entity.

71. [✂].

72. [✂];

   (a) [✂];

   (b) [✂]; and

   (c) [✂].

73. [✂].

74. We have considered the evidence that we have received from these customers and their requirements to help inform our assessment of potential candidates for entry and expansion.

Lloyds Banking Group

75. In its submissions LBG identified the following factors as driving its choice of ATM supplier:

(a) UK/European presence;

(b) UK/European maintenance and distribution facilities;

(c) the supplier must have a proven track record of delivery within the UK;

(d) purchase price;

(e) total cost of ownership;

(f) footprint of devices; and

(g) compatibility with existing software systems.

76. We note that LBG currently runs a 'supplier maintain' model whereby OEMs are expected to provide the maintenance solutions for their machines. LBG told us that in order to be considered credible a supplier should be able to provide maintenance of its devices across the UK.

77. LBG told us that it would be 'highly unlikely' to be a supplier's first customer in the UK market and indicated NCR, Wincor and Diebold as its potential ATM suppliers.

78. In the past Hyosung had been invited by LBG to participate in a request for information for ATM hardware but declined to make a submission.

Cardtronics

79. In its submissions Cardtronics identified the following factors as driving its choice of ATM supplier:

(a) the ATM needs to be tested and proven on its ATM estate;

(b) the ATM must meet the requested functionality;

(c) the supplier must have an established footprint and credibility in the UK market;

(d) the supplier's software platform; and

(e) the level of account management and support (HD, tech support) in the UK.

80. Cardtronics is in the process of completing the testing and certification of Diebold's ATMs on its host and told us that it intended to approach NCR, Diebold and Wincor in relation to its next tender in late 2016.

81. Despite running a fully insourced maintenance model (it serviced the machines on its estate), Cardtronics considered it important that the ATM supplier had a sales and account relationship in the UK and that there were software and hardware experts in the UK who could work with Cardtronics.

82. Cardtronics told us that it would no longer purchase from Hyosung. It said that it used to purchase a very basic dial-up model from Hyosung but that this model was no longer in its estate strategy. Cardtronics also told us that it had not looked into Hyosung's newer machines as its relationship with Hyosung was problematic (due to no UK representation, high total cost of ownership, customs duties and delays etc).

Tesco Bank

83. [✄].

84. [✄].

85. [✄].

86. [✄].

87. [✄].

Nationwide

88. In its submissions Nationwide identified the following factors as driving its choice of ATM supplier:

(a) relationship with suppliers;

(b) previous experience with the equipment; and

(c) references with competitors.

89. Nationwide named NCR, Diebold and Wincor as its potential ATM hardware suppliers.

Other tenders

90. We have not received any relevant information from Sainsbury's Bank and PayPoint.

Customer views about the Merger

1. This appendix provides a detailed overview of comments received throughout the course of the merger inquiry from ATM customers. The views are grouped on the basis of comments on:

   (a) discontinuation of products and/or support;

   (b) impact on competition;

   (c) customer specific benefits;

   (d) perceived rivalry enhancing benefits;

   (e) complementarities; and

   (f) other views.

Comments in relation to discontinuation of products and/or support

2. A number of customers expressed a concern that the merger might be detrimental to them if the merged entity decided to no longer support both Wincor and Diebold products and focused only on one of the two. In particular:

   (a) Cardtronics told us that: ‘It would be concerning if as a result of this merger Diebold and Wincor decided to focus only on the Diebold product range and no longer support Wincor products. If the older Wincor products were no longer supported then this would create additional costs for the Cardtronics business as these ATM units would need to be replaced. Therefore if the market is to remain competitive post the merger it is important that the merged entity continues to support existing ATM models for a significant period of time.’

   Cardtronics also told us that: ‘If as a result of the merger, one of the product lines was suddenly to cease in the UK and it was no longer supported with software, it was no longer supported with spare parts [it] would create a lessening of competition and an issue for us in terms of moving forward as a business.

   (b) YourCash submitted that its ‘minor concern would be around how would Diebold continue to support legacy Wincor hardware – ie would support stop and we (would) be required to buy new?’.

(c) Raphaels Bank raised such concerns both in relation to hardware as well as software. In particular Raphaels Bank told us that its ‘only concern is around our ability to continue to purchase Wincor hardware and software which was compatible with its central ATM driving system’.

(d) NoteMachine told us that ‘Almost certainly they (the Parties) would (following a merger) support one software type going forward, meaning higher costs for all ATM providers.’

(e) [✂] communicated a ‘concern around assurance for ongoing support for Wincor software.’

(f) [✂] also made reference to a discontinuation of products and services but not in relation to the Merger. Tesco said that ‘there’s clear evidence from the market that they (OEMs) will put a shelf-life on machines. Are Diebold and Wincor any different?’.

3. Diebold told us that its policy when it discontinued a product [✂]. To the extent that this was contractually agreed, some of the concerns may not materialise.

Views on the merger’s impact on competition

4. Some customers referred to a potential loss of competition from the Merger. In particular:

(a) Cardtronics told us that ‘it is a reduction in the number of suppliers’.

(b) Barclays ‘probably agree with the fact that, over the short term, there may be some cost implications as a result of lessening of competition in the UK.’

(c) NoteMachine expressed concerns in relation to the impact of the merger on the market for customer-operated ATMs hardware, software and services. In particular, NoteMachine told us that it had concerns because ‘there are relatively few hardware providers’; ‘market changes for ATM software are not adequately contested’ and the ‘merger would lead to further reduction in a market which does not operate adequately at the present.’ Moreover, regarding the provision of services there was ‘limited choice for financial institutions in the UK and independent operators’.

(d) [✂] told us that NCR had been historically the leader in the UK market and that Wincor ‘started to erode that (NCR’s position) and provide some good challenge’. Regarding Diebold’s entry, [✂] said that ‘Diebold have started to make a little bit of a dent’. Therefore the Merger ‘potentially,

moves that back a little bit, but we will see what happens with these other parties that are starting to make a little bit of headway.'

(e) In the same vein, Clydesdale and Yorkshire Banking Group (CYBG) told us that 'Wincor and NCR were the two main players a few years ago' and 'they seemed to just juggle the market share between them'. Regarding Diebold's re-emergence, CYBG told us that: 'it was refreshing to see a third company in the market that seemed on an even playing field with the two we already had. I guess it gives us more choice than just having the two. I think the third one drove out a little bit of complacency that might have sat between Wincor and NCR.'

However, CYBG also said that 'at this point in the near future wouldn't be concerned a great deal just dealing with just the two companies. I guess, it's like anything, you always want a little more choice'.

(f) Tesco Bank said that 'in any market if you have more suppliers competing for the consumer, you generally get a better outcome'. However Tesco Bank also acknowledged that 'if it was down to two, they're still going to compete. But you've just got slightly less choice.'

5. In some cases, these concerns were qualified by the possibility of future entry. For example:

(a) Barclays 'would hope that, over the medium-to-longer term, Barclays and other purchasers of ATMs in the UK could work with global manufacturers who are not in the UK to encourage them to come into the UK marketplace and participate in future contracts that we might put out to market much in the same way as, five or six years ago, we did with Diebold.'

(b) In HSBC's view 'It is likely that Asian manufacturers will grow their presence in Europe in coming years.' In relation to the tender process, HSBC said: '[✂]; whereas, perhaps some players that are UK only may have a different perspective.'

(c) CYBG told us: 'if we wanted the choice we could go to someone smaller, one of the new advent players'.

(d) For Cardtronics 'other suppliers can come in from around the world but it is not a no-brainer; it is not immediately easy; it is not quick'. However, Cardtronics' concerns are also to some extent placated by the fact that it 'can acquire older machines that have been refurbished by a number of different suppliers in the market'.

(e) In Lloyds' view 'the market has almost stayed small because of some of the policy decisions that we have made. We are starting to see forays into other suppliers. Certainly, at Lloyds, we are investigating now the global market in terms of what options are there.'

Customer specific benefits

6. Some of the existing customers of the Parties told us that they expected to benefit from having a single supplier for their entire estate:

   (a) Barclays 'saw a significant short-to-medium-term benefit as a result of this merger because [✂].'

   (b) Based on HSBC's prior decision to '[✂]' the Merger would bring 'reduced complexity in managing two competing companies to deliver solutions for the HSBC Retail Bank' as HSBC would have a single point of delivery. Therefore, HSBC would expect some delivery benefits because it would '[✂].'

   (c) Travelex said that 'the Merger leaves Travelex in a better position' because 'now that it is Diebold-Nixdorf it will be a lot easier to introduce both new Diebold software (which we may consider purchasing) and also introduce new machine types. This probably would have been near impossible if we operated under the current regime as Wincor would not let them in as it simply would not be in Wincor's commercial interest to do so.'

7. HSBC, [✂] said that: 'We are unique compared to some of the other parties you spoke to. We tend to focus things very globally and around global presence, so we probably have a slightly different view on things in terms of the benefits for us of the merger… [✂].'

Perceived rivalry enhancing benefits

8. Several customers said that they expected the Merger to provide a stronger competitor to NCR, which is currently the market leader. In particular:

   (a) Cardtronics said that 'in theory, we may end up with a bigger scale competitor to NCR but this is counter balanced by having one less supplier in the market.' For Cardtronics [✂]';

   (b) HSBC said that it 'would like to think that it can only benefit people within RFP processes.' HSBC also said that '[✂].'

(c) [✂] said that 'NCR are very much the dominant force in the UK market so this merger would introduce a credible large player that could drive better competition, stronger service delivery and performance, and cost benefits to customers in the market place.'

(d) PayPoint said that it expected a benefit from 'the creation of an entity that is keen to challenge NCR's dominance of the UK market.'

(e) [✂] commented on the scale and capability improvements that the combined body could bring and how the combination of the hardware and software from the two merging parties would bring synergies to help it compete with NCR [no verbatim quote is available].

Complementarities between the merging parties

9. Some customers mentioned the existence of more general complementarities between the Parties that would result in customer benefits. In particular:

(a) Cardtronics told us that 'a combined Diebold Wincor may manage to drive in the long term an improved software offering but this is unclear'.

(b) HSBC said that: 'we understand that the plan for Diebold Nixdorf will be to consolidate the best of the technologies into a single roadmap for hardware and software. We anticipate that this should result in better devices and software.' Moreover, HSBC said that: 'one of the strategic goals for that merger was to increase their ability to invest in R&D.'

(c) Bank of Ireland 'believes that there will be synergies in both hardware and software that will benefit customers.'

(d) The Co-operative Bank told us that 'Both companies complement each other. Diebold are small in the UK, if anything this will enable a better all-round provision of services and hardware that the UK can take advantage of, either through new tendering services or existing agreements.'

(e) RBS believes that 'by combining the two organisations, any potential future hardware release may be enhanced e.g. taking the best bits of Wincor and Diebold models, which could provide a better overall proposition for the customer'. RBS also said that: 'Best practice shared between the two organisations may also drive down cost of production, which could in theory reduce the cost to customers of goods and services.'

(f) In a more impartial tone [✂] told us that: 'The kit that they (the Parties) have developed, their approach to their hardware, is very different, so, it will be interesting to understand how they are going to consolidate all of that, which products they will take forward. I am assuming that one of them has strengths in the software space, one of them has some strengths in the hardware space and they (the Parties) view it as a good thing.'

(g) [✂] told us that 'the merger with Wincor Nixdorf would give Diebold a credible UK presence and support infrastructure that would make us more confident in working with them'.

Other views

10. There have also been customers that have not expressed any specific concerns or benefits to arise from the Merger. For example:

(a) Metro Bank said: 'Metro Bank recognise that there are times when companies merge to remain sustainable and or competitive, and this sometimes improves the quality of the product and drives down prices. If the merger between Wincor Nixdorf and Diebold improves the quality and models available in the industry, along with a competitive price reduction then we acknowledge this.'

(b) Virgin Money has not communicated any concerns around the Merger or any expected benefits as it no longer operates an ATM estate.

Glossary

Act	The Enterprise Act 2002.
Assisted self-service ATMS	These are customer-operated devices with multiple functions, but due to its complexity, the user receives the assistance of a bank teller or other member of staff.
ATM	Automated teller machine – also known as a cash machine. ATMs are machines which dispense cash and which may also offer facilities such as cash/cheque deposit, transaction enquiry, printed statement account-to account transfer, bill payment or PIN change. Some ATMs also provide options for topping up mobile phone and electronic wallets and making charitable donations, as well as options to withdraw foreign currency at airports and train stations.
Installed base	The number of ATM units installed in locations for public use.
Barclays	Barclays Bank PLC, a customer of ATM manufacturers and suppliers.
BOI	Bank of Ireland, a customer of ATM manufacturers and suppliers.
Business combination agreement	The agreement setting out the principal terms and conditions of a transaction as well as the mutual goals of the parties, with regard to the future organisational and corporate structure and the strategy of a merged entity.
CAE	Centre for Accessible Environments.
CMA	Competition and Markets Authority.
Counterfactual	An analytical tool used in answering the question of whether a merger gives rise to an **SLC**. The application of the SLC test involves a comparison of the prospects for competition with the merger against the competitive situation without the merger. The latter is called the counterfactual.
DDA	Disability Discrimination Act 1995.
Diebold	Diebold Incorporated, a US public company, headquartered in North Canton, Ohio. A manufacturer and supplier of ATMs.

	Diebold's trading activity in the UK is conducted through Diebold International Ltd (DIL).
DPLTA	Domination and Profit and Loss Agreement.
EA	Equality Act 2010.
First price auction	Auctions or tenders where suppliers without observing the bids of their competitors, usually in a 'one shot game' with the auction being awarded to the supplier with the most attractive bid.
FLM	First line maintenance which comprises simple maintenance tasks for ATMs, eg replenishing consumables and fixing bank card jams.
FSS	Financial self-service. Suppliers of ATMs such as **Diebold** and **Wincor** provide FSS products and solutions. These solutions include services, software, and hardware.
Glory	Glory Global Solutions, a manufacturer and supplier of ATMs and other **FSS** products.
GRGB	GRG Banking, a manufacturer and supplier of ATMs.
GRGI	GRG International, a supplier of ATMs.
HSBC	HSBC Holdings plc, a customer of ATM manufacturers and suppliers.
Hyosung	Nautilus Hyosung, a manufacturer and supplier of ATMs.
IAD	Independent ATM deployer. An organisation that owns and deploys places ATMs at sites such as convenience stores and supermarkets.
Inquiry group	A group of **CMA** members constituted to decide the questions set out in section 35 of the **Act** in respect of **the transaction**.
InterBold	The UK joint venture between **Diebold** and IBM from 1991 to 1998.
LBG	Lloyds Banking Group, a customer of ATM suppliers.

LINK	LINK network. The national cash machine network enabling banks to offer their customers access to cash across the UK which can either be free or pay-to-use.
Kiosks	Standalone devices used by customers in bank branches to access their bank accounts, to check their balance and to make wire transfers. Kiosks have limited functionality and are rarely used in the UK.
M&A	Markets and acquisitions.
Merged entity	The entity formed by the combination of **Diebold** and **Wincor**.
MFD	Multi-function display
Middleware	Software that connects two otherwise separate applications.
Multi-vendor software	A form of software that can be used with hardware from different ATM suppliers.
Nationwide	Nationwide Building Society, a customer of ATM manufacturers and suppliers.
NCR	NCR Ltd, a subsidiary of NCR Corporation. A manufacturer and supplier of ATMs.
OEM	Original equipment manufacturer.
Off-site	Cash machines that are accessed at premises other than banks and building societies, for example, at shopping centres, retail outlets, petrol stations and supermarkets.
On-site	Cash machines that are accessed on the premises of banks and building societies, including those that are accessed from the street.
The Parties	**Diebold** and **Wincor**.
Phase 1	The investigation, by the CMA, of **the transaction** to determine whether the statutory test for reference to an in-depth phase two investigation has been met.
Phase 2	An in-depth investigation by the CMA of **the transaction** following the reference from phase one.

POS	Point of sale. The point or location where a sales transaction takes place, such as a checkout line or retail counter.
R&D	Research and development.
RBR	A strategic research and consulting firm specialising in banking and retail automation, cards and payments.
RBS	Royal Bank of Scotland Group, a customer of ATM manufacturers and suppliers.
RFP	Request for proposal.
Santander	Santander UK, a customer of ATM manufacturers and suppliers.
Second price auction	A category of auctions wherein the rules or operation of the auction process mean that the price (or quality) of the winning bid is determined by the level of the second-best bid.
SLM	Second line maintenance, which refers to the more sophisticated repair and maintenance of hardware and software repair.
SLC	Substantial lessening of competition within the meaning of section 36 of the **Act**.
Teller-assist ATMs	Devices designed to dispense or 'recycle' cash for bank tellers in order to assist them in carrying out in branch transactions. These are installed under the teller's counter or at other teller locations.
TCD	Teller cash dispensers store cash of various denominations in a secure unit and dispense cash, as required.
TCR	Teller cash recyclers store cash of various denominations in a secure unit and dispense cash as required, but have the added functionality of recycling bank notes.
The transaction	The acquisition by **Diebold** of **Wincor**.
TTW	Through-the-wall ATMs. Machines located on the exterior wall of the branch and are accessed by the street.

Wincor

Wincor Nixdorf AG, a German public company headquartered in Paderborn, Germany. Wincor's operations in the UK are conducted through two entities:

Wincor Nixdorf Limited (WNL) and Wincor Nixdorf Banking Services Limited (WNBSL, a wholly-owned subsidiary of WNL).