

# Completed acquisition by NCR Corporation of Cardtronics plc

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

**ME/6928/21**

The CMA's decision on reference under section 22(1) of the Enterprise Act 2002 given on 10 August 2021. Full text of the decision published on 10 September 2021.

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

### SUMMARY

1. On 21 June 2021, NCR Corporation (**NCR**) acquired Cardtronics plc (**Cardtronics**) (the **Merger**). NCR and Cardtronics are together referred to as the **Parties** and, for statements referring to the future, the **Merged Entity**.
2. The Competition and Markets Authority (**CMA**) believes that it is or may be the case that each of NCR and Cardtronics is an enterprise; that these enterprises have ceased to be distinct as a result of the Merger; and that the turnover test is met. Accordingly, the CMA therefore believes that it is or may be the case that a relevant merger situation has been created.
3. NCR supplies customer-operated automated teller machine (**ATM**) hardware and associated components, ATM software and ongoing support, point-of-sale (**POS**) software and self-checkout (**SCO**) solutions globally and in the UK. Cardtronics is an independent ATM deployer (**IAD**) and is active in deploying ATMs at high-traffic, retail, and hospitality locations (**Sites**) and in offering ATM services to users across ten countries, including the UK.
4. The CMA considered whether the Merger would give rise to a substantial lessening of competition (**SLC**) as a result of vertical and conglomerate effects.

## Vertical effects

5. The CMA considered whether the Merger could give rise to input foreclosure of IADs that compete closely with Cardtronics in the UK currently or in the future (**IAD Competitors**) and purchase NCR ATM hardware in the UK. In particular, the CMA focused on IAD Competitors which might depend on NCR for middleware software licences and/or Encrypting Pin Pads (**EPPs**).
6. The CMA has found that the Merged Entity would not have the ability to foreclose IAD Competitors using NCR ATM hardware.
  - (a) In relation to a foreclosure strategy based on restricting access to middleware software for refurbished NCR ATM hardware, the CMA considers that IAD Competitors could switch to alternative brands of refurbished ATMs. Demand for ATMs from IADs is moderate and expected to decline, and sufficient supply of refurbished ATMs from other brands, in particular Diebold Nixdorf, will continue to be available, both from the UK and the wider European and global market, for the foreseeable future. All IAD Competitors in the UK already multi-source their supply of ATMs, which would limit their switching costs, and the feasibility of switching is further underlined by evidence of recent switching in practice.
  - (b) In relation to a foreclosure strategy based on restricting access to NCR-branded EPPs for newly deployed refurbished NCR ATM hardware and/or for the installed base of NCR ATM hardware, the CMA found that IAD competitors could switch to a viable alternative supplier of NCR-compatible EPPs, S.z.z.t Electronics (**S.z.z.t**). In addition, IAD Competitors that require replacement EPPs for newly deployed refurbished ATMs would also be able to switch brand of refurbished ATMs (with, as noted above, sufficient supply of refurbished ATMs from alternative brands being available).
7. The CMA also considered whether the Merger could give rise to input foreclosure of IAD Competitors purchasing NCR ATM software in the UK. The CMA has found that alternative providers to NCR would be available for each of application software, security software, and remote software distribution, with Diebold Nixdorf, in particular, being the closest alternative to NCR. The CMA also found that although the time and cost to switching are material, most IAD Competitors have switched in the past or are currently switching

either to a different ATM software supplier or to ATM software developed in-house. Accordingly, the CMA believes that the Merged Entity would not have the ability to foreclose IAD Competitors purchasing NCR ATM software in the UK.

## **Conglomerate effects**

8. The CMA also assessed whether the Merger could give rise to conglomerate effects, by enabling the Merged Entity to leverage NCR's position in POS software and/or SCO solutions to bundle these products with Cardtronics' ATM deployment, thereby restricting IAD Competitors' ability to compete effectively for the supply of ATMs to UK retailers and hospitality providers purchasing POS software and/or SCO solutions.
9. The CMA found that NCR has high shares in the supply of POS software and SCO solutions in the UK but that these shares fluctuate over time, and are the product of supply to a small number of large and sophisticated customers. The CMA also found that retailers and hospitality providers in the UK were not attracted to purchasing POS software and/or SCO solutions together with ATM deployment and that it would be difficult, in practice, for the Merged Entity to link sales of these products and services in the UK. The CMA also found that there is ultimately limited overlap between UK retailers and hospitality providers requiring POS software and/or SCO solutions from NCR and those requiring ATMs at their sites in the UK. Moreover, the evidence indicated that IAD Competitors would be unlikely to be foreclosed given the ability that they hold to develop their own combined offering (either alone or in partnership). Accordingly, the CMA has found that the Merged Entity would not have ability to foreclose IAD Competitors.
10. As a result, the CMA does not believe that it is or may be the case that the Merger has resulted, or may be expected to result, in an SLC as a result of vertical or conglomerate effects.
11. The Merger will therefore **not be referred** under section 22(1) of the Enterprise Act 2002 (the **Act**).

## ASSESSMENT

### Parties

12. NCR is a global services and software-led enterprise with operations categorised into three main segments: banking, retail and hospitality.<sup>1</sup> NCR's banking offering includes the supply of customer-operated<sup>2</sup> ATM hardware and associated components, ATM software and ongoing support, and ATM-related services, primarily to banks and building societies (**BBSs**) and IADs globally and in the UK.<sup>3</sup> NCR's retail and hospitality offerings include the supply of electronic point-of-sale (**ePOS**) solutions, POS software and SCO solutions to retailers and hospitality providers globally and in the UK.<sup>4</sup>
13. NCR is headquartered in Atlanta, United States, and is listed on the New York Stock Exchange. Its turnover in 2020 was £4,834 million worldwide and £[✂] million in the UK.<sup>5</sup>
14. Cardtronics is an IAD and is active in deploying ATMs at Sites and in offering ATM services to ATM users across ten countries, including the UK.<sup>6</sup> Cardtronics also owns and operates the Allpoint network (**Allpoint**), a surcharge-free ATM network.<sup>7</sup>
15. Cardtronics is headquartered in Houston, United States and was listed on Nasdaq.<sup>8</sup> Its turnover in 2020 was £852.15 million worldwide and £[✂] million in the UK.<sup>9</sup>

### Merger and Rationale

16. Through an acquisition agreement dated 25 January 2021, NCR agreed to acquire all issued ordinary shares of Cardtronics for \$39.00 in cash per

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<sup>1</sup> The Parties submitted that NCR also provides third-party networking products and related services in the telecommunications and technology sectors, which accounted for 5% of its global turnover in 2019. Merger Notice, paragraphs 131, 132(d).

<sup>2</sup> The Parties submitted that NCR also has a negligible business of teller-assist ATMs. Merger Notice, footnote 100 to paragraph 158.

<sup>3</sup> Merger Notice, paragraphs 131, 132(a), 477(a).

<sup>4</sup> Merger Notice, paragraphs 131, 132(b) and (c), 477(b) and (c).

<sup>5</sup> Includes turnover recorded in the Republic of Ireland. Merger Notice, Table 3 and related footnote 67.

<sup>6</sup> Merger Notice, paragraph 137.

<sup>7</sup> The Parties submitted that around [✂] of Cardtronics' UK ATMs recognise Allpoint enabled cards, but no UK BBS is a member of Allpoint or issues cards that are enabled on Allpoint in the UK. Cardtronics does not generate any revenue in the UK from Allpoint. Merger Notice, paragraph 142 and related footnote 84.

<sup>8</sup> Cardtronics ceased to be listed on Nasdaq after the Merger was completed on 21 June 2021.

<sup>9</sup> Merger Notice, Table 3.

ordinary share,<sup>10</sup> representing an enterprise value of \$2.5 billion.<sup>11</sup> The Merger completed on 21 June 2021.<sup>12</sup>

17. NCR submitted that the Merger concerns two complementary businesses and builds on its longstanding relationship as a supplier of ATMs to Cardtronics. NCR also submitted that the Merger will allow NCR to develop its strategy of providing software and services and further shift its revenue mix to recurring revenue. [✂].<sup>13</sup>
18. The CMA has found that NCR's internal documents indicate two additional, related factors informing the rationale for the Merger:
  - (a) acceleration of ATM-as-a-Service (**ATMaaS**).<sup>14</sup> NCR considers that the Merger will enhance NCR's ability to capitalise on the trend of BBSs outsourcing their ATM operations as part of their branch rationalisation strategy;<sup>15</sup> and
  - (b) cross-selling opportunities. NCR considers that the Parties' existing partners and customers across the financial, retail and hospitality sectors are complementary, providing an opportunity for revenue synergies. For instance, NCR will be able to offer ATM deployment and related services to its existing retail and hospitality customers.<sup>16</sup>
19. Cardtronics submitted that its Board of Directors decided to consider strategic options to sell the company in 2020. Cardtronics received a combined offer from Apollo Global Management Inc. (**AGM**) and the existing shareholder Hudson executive Capital LP (**HEC**),<sup>17</sup> and a separate offer from NCR.<sup>18</sup> On 15 December 2020, Cardtronics entered into an acquisition agreement with AGM/HEC on the basis of a \$35.00 per share cash proposal.<sup>19</sup> On 31 December 2021, Cardtronics received a \$39.00 per share cash proposal from

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<sup>10</sup> Merger Notice, Annex 003.

<sup>11</sup> [NCR press release of 25 January 2021](#).

<sup>12</sup> [NCR press release of 21 June 2021](#).

<sup>13</sup> Merger Notice, paragraphs 78-79.

<sup>14</sup> The Parties submitted that ATMaaS involves an ATM estate owner handing over the full responsibility for ownership and management of an ATM estate to a third party ATMaaS provider. Merger Notice, paragraph 64.

<sup>15</sup> [NCR presentation to investors of 25 January 2021](#) (pages 12, 18). See also, Merger Notice, Annex 009; Annex 019; Annex 020; Annex 021; Annex 022; Annex 024; Annex 028; Annex 031; Annex 035; Annex 036.

<sup>16</sup> [NCR presentation to investors of 25 January 2021](#) (pages 13, 16). See also Merger Notice, Annex 019; Annex 020; Annex 021.

<sup>17</sup> As at 24 March 2021, HEC and Affiliates hold a 19.2% stake in Cardtronics. Merger Notice, Table 2.

<sup>18</sup> Merger Notice, paragraphs 121, 128.

<sup>19</sup> [Cardtronics press release of 15 December 2020](#).

NCR. Cardtronics subsequently terminated the transaction with AGM/HEC, entering into the acquisition agreement with NCR on 25 January 2021.<sup>20</sup>

## Procedure

20. The Merger was considered at a Case Review Meeting.<sup>21</sup>

## Jurisdiction

21. Each of NCR and Cardtronics is an enterprise under section 129 of the Act. As a result of the Merger, these enterprises have ceased to be distinct for the purposes of sections 23(1)(a) and 26 of the Act.
22. The UK turnover of Cardtronics in 2020 exceeded £70 million. Accordingly, the turnover test in section 23(1)(b)(i) of the Act is satisfied.
23. The CMA therefore believes that it is or may be the case that a relevant merger situation has been created.

## *Statutory period for reference*

24. The Merger was completed on 21 June 2021.<sup>22</sup> The four-month deadline for a decision under section 24 of the Act is therefore 21 October 2021.
25. The initial period for consideration of the Merger under section 34ZA(3) of the Act started on 15 June 2021 and the statutory 40 working day deadline for a decision is therefore 10 August 2021.

## Counterfactual

26. The CMA assesses a merger's impact relative to the situation that would prevail absent the merger (ie the counterfactual).<sup>23</sup> For completed mergers, the counterfactual may consist of the pre-Merger conditions of competition, or conditions of competition that involve stronger or weaker competition between the merger firms than under the prevailing conditions of competition.<sup>24</sup> In determining the appropriate counterfactual, the CMA will generally focus only

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<sup>20</sup> Merger Notice, paragraphs 123-125.

<sup>21</sup> [Mergers: Guidance on the CMA's jurisdiction and procedure](#) (CMA2 revised), December 2020, paragraph 9.38 and Figure: The key stages of a typical Phase 1 investigation.

<sup>22</sup> [NCR press release of 21 June 2021](#).

<sup>23</sup> [Merger Assessment Guidelines](#) (CMA129), 18 March 2021 (**Merger Assessment Guidelines**), paragraph 3.1.

<sup>24</sup> [Merger Assessment Guidelines](#), paragraph 3.2.

on potential changes to the prevailing conditions of competition where there are reasons to believe that those changes would make a material difference to its competitive assessment.<sup>25</sup>

27. The Parties submitted that, absent the Merger, Cardtronics would likely have been acquired by AGM/HEC (see paragraph 19 above).<sup>26</sup> They also submitted, however, that an acquisition of Cardtronics by AGM/HEC would not have led to any change in the pre-Merger conditions of competition given that there are no material overlaps in the activities of Cardtronics and AGM.<sup>27,28</sup>
28. On that basis, the CMA believes the pre-Merger conditions of competition to be the relevant counterfactual.

## Background

### *The Parties' activities*

29. The Parties are both active in the ATM industry in the UK. For the most part, the Parties operate at different levels of the supply chain:<sup>29</sup>
- (a) NCR is an ATM supplier and is active upstream in supplying BBSs and IADs with new customer-operated ATM hardware<sup>30</sup> and associated components, and different types of ATM software and associated ongoing support in the form of maintenance and updates; and

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<sup>25</sup> [Merger Assessment Guidelines](#), paragraph 3.9.

<sup>26</sup> Merger Notice, paragraphs 114-115.

<sup>27</sup> Merger Notice, paragraph 115.

<sup>28</sup> As noted at footnote 17 above, as of 24 March 2021 HEC and Affiliates hold a 19.2% stake in Cardtronics.

<sup>29</sup> The Parties both offer ATM managed services and ATMaaS to BBSs, other IADs, and the Post Office. ATM managed services range from simple hardware maintenance tasks to more sophisticated hardware and software maintenance, transaction processing, and cash replenishment. ATMaaS is the most complete form of ATM managed services and involves an ATM estate owner handing over full responsibility for ownership and management of an ATM estate to a third-party provider (Merger Notice, paragraphs 62-65). In relation to ATM managed services, the Parties only overlap in the provision of first line maintenance (**FLM**) and second line maintenance (**SLM**). The Parties' combined shares in the supply of FLM by installed base in 2020 were approximately [0-5%] with an increment of only [0-5%] (Merger Notice, Table 19). The Parties' combined shares in the supply of SLM by installed base in 2020 were approximately [20-30%] with an increment of only [0-5%] (Merger Notice, Table 21). In regard to ATMaaS, [§], and there are a number of other competitors. For these reasons, the CMA does not believe that the Merger gives rise to a realistic prospect of an SLC in respect of ATM managed services or ATMaaS. The CMA has therefore not found it necessary to consider ATM managed services and ATMaaS further in this decision.

<sup>30</sup> NCR submitted that it does not sell refurbished ATMs in the UK. Merger Notice, footnote 298 to paragraph 371.

- (b) Cardtronics is an IAD and is active downstream in deploying ATMs predominantly at Sites (owners of these Sites are referred to as **Site Owners**).
30. NCR also supplies POS software and SCO solutions to retailers and hospitality providers in the UK.<sup>31</sup> These customers may also have ATMs deployed by Cardtronics, other IADs and, to a lesser extent, certain BBSs.

### ***Upstream supply of ATMs in the UK***

#### *ATM Hardware and Software*

31. Customer-operated ATMs are electronic banking outlets that allow ATM users to complete two core banking services without the aid of a branch representative or teller: cash dispensing and balance enquiry.<sup>32 33</sup> The operation of such ATMs requires ATM hardware and different types of associated software.
32. A customer-operated ATM's hardware comprises different components, including EPPs. These maintain the cryptographic keys required for cardholder usage and perform the encrypted keypad function that protects the privacy of the cardholder's personal identification number when using the ATM.<sup>34</sup>
33. ATM hardware also requires three main software layers to function:<sup>35</sup>
- (a) the first layer largely consists of the basic operating system (**OS**) (eg Windows), which is integral to – and always supplied with – ATM hardware;<sup>36</sup>

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<sup>31</sup> NCR also supplies ePOS solutions to retailers and hospitality providers in the UK. As NCR's shares of supply for ePOS solutions in the UK are not significant (ie approximately [5-10%] in terms of shipments in the grocery sector and approximately [5-10%] in terms of shipments in each of the general merchandise and hospitality sectors in 2019), the CMA does not believe that the Merger gives rise to a realistic prospect of an SLC in respect of ePOS solutions. Therefore, the CMA has not found it necessary to consider ePOS solutions further in this decision.

<sup>32</sup> Merger Notice, paragraphs 34-35. See also RBR, Global ATM Market and Forecasts to 2025 (**GA25 RBR Report**), May 2020 (UK, Figure 4.4).

<sup>33</sup> Some ATMs have additional functionalities, such as deposit acceptance, note recycling (ie re-dispense deposited notes) and bill payment. Merger Notice, paragraphs 34-35. Further examples of additional functionalities are set out in GA25 RBR Report (UK, Figure 4.4).

<sup>34</sup> Merger Notice, paragraph 420.

<sup>35</sup> Merger Notice, paragraphs 56-57 and Annex 253.

<sup>36</sup> Merger Notice, paragraphs 58, 445 and Annex 253.



- (b) the second layer largely consists of middleware software, which is also integral to – and always supplied with – ATM hardware and enables the ATM to run additional software;<sup>37</sup> and
- (c) the third layer includes various other types of software performing different functions, including:<sup>38</sup>
  - i. application software, which enables core ATM functionalities (eg cash dispensing, deposit taking), the consumer interface and the integration with other systems;
  - ii. security software, which helps protect the ATM (eg from fraud and cyber-attacks); and
  - iii. remote software distribution, which allows ATM software to be upgraded remotely (eg for application and security software updates).

34. All ATM software requires ongoing support in the form of upgrades to maintain functionality, compliance and security requirements. This is typically provided by the software supplier as part of an ongoing contract.<sup>39</sup>

### *Suppliers of ATM hardware*

35. In the UK, customer-operated ATM hardware is supplied by:
- (a) NCR and other original ATM hardware suppliers, in particular Diebold Nixdorf<sup>40</sup> and Cennox (selling both Hyosung<sup>41</sup> and Diebold<sup>42</sup> hardware), which supply new ATM hardware;<sup>43</sup> and
  - (b) Cennox and a range of non-original ATM hardware suppliers, such as SPL Computer Trading GmbH (**SPL**), ATM Refurbishment Centre

<sup>37</sup> Merger Notice, paragraphs 58, 163(a), 445 and Annex 253.

<sup>38</sup> Other examples of ATM software include, (a) monitoring and management software; (b) terminal driving software; (c) cash forecasting and management software; and (d) advertising and customer relationship management software. Merger Notice, Annex 253.

<sup>39</sup> Merger Notice, paragraphs 22(b), 59, 446, 455(a).

<sup>40</sup> In June 2017, Diebold, Incorporated completed its acquisition of Wincor Nixdorf AG and changed its name to Diebold Nixdorf, Incorporated. See [Diebold / Wincor Nixdorf merger inquiry - GOV.UK](#).

<sup>41</sup> In 2018, Cennox entered into an exclusive distribution agreement with Hyosung. By virtue of such agreement, Cennox supplies Hyosung's ATMs in the UK. Merger Notice, paragraphs 202, 366(b) and (c).

<sup>42</sup> In June 2017, Diebold, Incorporated completed its acquisition of Wincor Nixdorf AG after the CMA approved the divestment of Diebold, Incorporated's customer-operated ATM business in the UK to Cennox. By virtue of such divestment, Cennox supplies Diebold's customer-operated ATM hardware in the UK. Merger Notice, footnote 288 to paragraph 366(a). See also [Diebold / Wincor Nixdorf merger inquiry - GOV.UK](#).

<sup>43</sup> New ATM hardware are manufactured in global manufacturing facilities. Merger Notice, paragraph 160.

Limited (**ATMRC**), SPC International (**SPC**) and TestLink,<sup>44</sup> which supply refurbished ATM hardware of different original ATM hardware supplier brands, including refurbished NCR ATM hardware. Refurbished ATMs are ATM hardware whose modules have been rebuilt to an ‘as new’ status.<sup>45</sup> Evidence submitted by the Parties and third parties indicated that ATM hardware for refurbishment may be sourced on at least a European-wide basis.<sup>46</sup>

36. In addition to purchasing new and refurbished hardware from original ATM hardware suppliers and/or non-original ATM hardware suppliers, IADs, and to a lesser extent certain BBSs, in the UK may also:
- (a) reshuffle and/or refurbish their own ATM hardware. Reshuffling involves taking ATMs from their own estates and re-deploying them in different locations.<sup>47</sup> Some IADs (eg Cardtronics and NoteMachine) can refurbish their ATM hardware in their own refurbishment facilities.<sup>48</sup> Other IADs, and to a lesser extent certain BBSs, may contract refurbishment services from third parties (eg Cennox);<sup>49</sup> and
  - (b) purchase second-hand ATM hardware from BBSs (ie ATM hardware that BBSs no longer require within their ATM estates).<sup>50</sup>

### *Suppliers of ATM software*

37. In the UK, the types of ATM software listed at paragraph 33(c) above are supplied by ATM hardware suppliers (eg NCR, Diebold Nixdorf, Cennox/Hyosung)<sup>51</sup> and specialist software/technology companies (eg KAL, Auriga, GMV, McAfee, Fujitsu, Symantec, Microsoft and IBM). BBSs and IADs may also develop software in-house. As noted above, the types of ATM

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<sup>44</sup> Merger Notice, footnote 307 to Table 34(a), paragraph 371. See also Parties’ Response to the CMA’s Issues Paper of 16 July 2021 (**Response to Issues Paper**), paragraph 14.

<sup>45</sup> Merger Notice, paragraph 373.

<sup>46</sup> Response to Issues Paper, paragraph 14. [REDACTED]

<sup>47</sup> Merger Notice, paragraphs 11 and related footnote 6, 15, 370, 372, 374, 382.

<sup>48</sup> The Parties note that Cardtronics operates its own ATM refurbishment facility at Rotherham which processes Cardtronics’ de-installed ATMs into refurbished ATMs for redeployment. The Parties also note that pursuant to the NoteMachine acquisition of TestLink in 2017, NoteMachine owns a refurbishment facility similar to Cardtronics. Merger Notice, paragraph 317 and related footnote 298, paragraph 413.

<sup>49</sup> For example, one IAD that responded to the CMA’s market testing [REDACTED] submitted that it contracts refurbishment services from Cennox.

<sup>50</sup> Response to Issues Paper, paragraph 15. See also GA25 RBR Report (UK, pages 8, 17, 35, 37); RBR, Global ATM Market and Forecasts to 2026, May 2021 (**GA26 RBR Report**) (UK, pages 16, 35).

<sup>51</sup> As noted in footnote 41 above, in 2018, Cennox entered into an exclusive distribution agreement with Hyosung. By virtue of such agreement, Cennox supplies Hyosung’s ATMs in the UK.

software listed at paragraph 33(a) and 33(b) above are always supplied with the ATM hardware.

### ***Downstream deployment of ATMs in the UK***

38. ATMs are typically deployed in the UK by either BBSs or IADs, which tend to operate under different ATM deployment models.
- (a) BBSs typically deploy ATMs in or near their branches, and less frequently at select Sites.<sup>52</sup> They mainly purchase new, rather than refurbished, ATM hardware.
  - (b) IADs, such as Cardtronics, typically deploy ATMs at Sites, and less frequently in or near BBSs branches.<sup>53</sup> When needing additional ATMs, IADs may purchase new ATM hardware, but more typically use reshuffled or refurbished ATMs.
39. To operate and provide cash transactions, ATMs must be linked to a network which may be either that of the BBS that deploys the ATM or a third-party network. In the UK, nearly all ATMs are connected to the LINK network (**LINK**), which enables multiple BBSs and card issuers to offer their customers access to cash at ATMs deployed by other BBSs and IADs across the UK.<sup>54</sup>

### ***Recent developments and trends in the ATM industry in the UK***

40. The ATM installed base in the UK has been declining every year since 2016, with an average annual fall of [5-10%].<sup>55</sup> At the end of 2020 there were approximately [x] ATMs deployed in the UK and it is forecast that the ATM installed base will fall to [x] ATMs by 2026.<sup>56</sup> This represents a withdrawal of approximately [x] ATMs in the UK from 2021 to 2026.<sup>57</sup>
41. The main causes for the long-term decline in the total number of ATMs deployed in the UK include:
- (a) the closure of BBSs branches. The number of BBSs branches in the UK has been reducing since 2016 and the COVID-19 pandemic has

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<sup>52</sup> BBSs deploy free-to-use (FTU) ATMs, offering free cash withdrawals to ATM users and receiving interchange fees for withdrawals by those users who are not their customers.

<sup>53</sup> IADs deploy a mix of FTU ATMs and pay-to-use (PTU) ATMs.

<sup>54</sup> See [LINK / Home](#).

<sup>55</sup> GA26 RBR Report (UK, page 8).

<sup>56</sup> GA26 RBR Report (UK, pages 1, 33).

<sup>57</sup> GA26 RBR Report (UK, pages 1, 33).

accelerated this trend.<sup>58</sup> For instance, around [X] UK branches were closed in 2020, representing a decline of [5-10%] in comparison to 2019; and

- (b) the growing number of locations where it is not economically viable to deploy ATMs. This is the result of, for example, diminishing cash withdrawal volumes as people increasingly use cards and digital solutions to make payments – another trend accelerated by the COVID-19 pandemic<sup>59</sup> – and reductions to the LINK interchange fees.<sup>60</sup>

42. Despite this decline, ATM density remains relatively high in the UK compared to similar markets.<sup>61</sup> There are also a number of ongoing initiatives to guarantee free access to cash in underserved locations. For instance, LINK has put forward social inclusion programmes to secure broad geographic coverage of FTU (free-to-use) ATMs.<sup>62</sup> The UK Government has also been working on legislation to protect access to cash in underserved locations.<sup>63</sup>

## Competitive assessment

### *Frame of reference*

43. Market definition is an analytical tool that forms part of the analysis of the competitive effects of the merger and should not be viewed as a separate exercise from the competitive assessment.<sup>64</sup> It involves identifying the most significant competitive alternatives available to customers of the merger firms and includes the sources of competition to the merger firms that are the immediate determinants of the effects of the merger.<sup>65</sup>

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<sup>58</sup> GA26 RBR Report (UK, page 4).

<sup>59</sup> GA26 RBR Report (UK, pages 14, 35).

<sup>60</sup> In January 2018, LINK announced a phased 20% reduction in interchange fees over four years. The first and second 5% reductions took effect on 1 July 2018 and 1 January 2019 respectively. In July 2018, LINK announced it was cancelling the third reduction (due in January 2020) and postponing the fourth due to fears that falling interchange fees in combination with declining cash withdrawal volumes would make operating ATMs economically unviable. In July 2020, LINK announced it had also cancelled the fourth planned interchange fee reduction (due in January 2021). See [LINK / LINK update to Interchange rate implementation](#).

<sup>61</sup> GA26 RBR Report (UK, page 9).

<sup>62</sup> LINK, [Annual Report 2019/2020](#), page 16.

<sup>63</sup> In the Budget 2020, the UK Government announced it would bring forward legislation to protect access to cash in the UK (see [Budget Speech 2020](#)). In April 2021, the Financial Services Act 2021 was enacted, setting out that the provision of cashback without a purchase by shops and other businesses as a non-regulated activity (Section 44). In July 2021, the UK government issued its 'Access to Cash Consultation' seeking views on legislative geographic access requirements upon designed firms to protect access to cash across the UK (see [Access to Cash Consultation](#)).

<sup>64</sup> [Merger Assessment Guidelines](#), paragraph 9.1.

<sup>65</sup> [Merger Assessment Guidelines](#), paragraph 9.2.

44. As discussed at paragraph 29 above, there are vertical relationships between the Parties. NCR supplies customer-operated ATM hardware and associated components, and ATM software and ongoing support to BBSs and IADs, including Cardtronics.
45. As discussed at paragraph 30 above, there are also conglomerate relationships between the Parties. NCR supplies POS software and SCO solutions to retailers and hospitality providers in the UK, which may also contract ATM deployment from Cardtronics and/or its competitors across the UK.
46. Accordingly, the CMA has also focused on these products and services in its assessment of the frame of reference. The CMA notes that its assessment of competitive effects does not need to be based on a highly specific description of any particular market definition (including, for example, descriptions of the precise boundaries of the relevant markets).<sup>66</sup> In this context, the CMA has identified the appropriate frames of reference for its assessment of the Merger below.

## *ATM hardware*

### *Product scope*

47. The Parties submitted that the exact product frame of reference can be left open because Cardtronics does not manufacture or supply ATM hardware. However, the Parties focused their analysis on customer-operated ATM hardware,<sup>67</sup> as this is the product that is supplied by NCR and deployed by Cardtronics.<sup>68</sup>
48. The Parties referred to the CMA's decision in *Diebold/Wincor*, in which the CMA found that customer-operated ATMs formed a distinct market from teller-assist ATMs and kiosks.<sup>69</sup> In that case, the CMA considered that customer-operated ATMs differed in terms of features and ATM deployers' requirements and preferences,<sup>70</sup> but did not segment the relevant product market further.

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<sup>66</sup> [Merger Assessment Guidelines](#), paragraph 9.5.

<sup>67</sup> In contrast to, for example, teller-assist ATMs; kiosks; banknote and coin handling products.

<sup>68</sup> Merger Notice, paragraph 158.

<sup>69</sup> CMA, Case ME/6613/16, completed acquisition by Diebold, Incorporated of Wincor Nixdorf AG, [Phase 2 decision of 16 March 2017 \(Diebold/Wincor \(phase 2 decision\)\)](#), paragraphs 4-10-4.21 and 4.22-4.27.

<sup>70</sup> The CMA considered whether the supply of customer-operated ATMs should be further segmented, including (a) by functionality or design feature (eg 'monofunctional', or multifunctional, assisted self-service ATMs); (b) by suitability for

Instead, the CMA took account of any variations in requirements and preferences across ATM deployers in its competitive assessment.<sup>71</sup> In the current investigation, the CMA has found no evidence that warrants departing from the approach adopted in *Diebold/Wincor*. Despite indications that customer-operated ATM hardware vary in terms of features and that BBSs and IADs may have different preferences for customer-operated ATM hardware to some extent,<sup>72</sup> there are also material overlaps in these preferences.<sup>73</sup> As BBSs are optimising their UK ATM estates and IADs are purchasing second-hand ATM hardware from BBSs,<sup>74</sup> it is also likely that IADs will increasingly own customer-operated ATM hardware models that were used in BBSs' ATM estates across the UK. Moreover, ATM suppliers can supply different types of customer-operated ATM hardware.<sup>75</sup>

49. In *Diebold/Wincor*, the CMA also focused on new ATM hardware and did not consider ATM upgrades or refurbishment of old ATMs to form part of the same product relevant market as new customer-operated ATM purchases.<sup>76</sup> In the current investigation, the Parties' submissions, third party evidence and market reports indicated that IADs in the UK mainly rely on upgraded, refurbished and second-hand ATM hardware.
50. The CMA has not found it necessary to consider in detail whether upgraded and/or refurbished and/or second-hand ATM hardware are part of the same product frame of reference as new customer-operated ATM hardware. The CMA has considered a frame of reference for the supply of customer-operated ATM hardware, and assessed the different constraints exerted by new and upgraded, refurbished and second-hand ATM hardware in the competitive assessment.
51. The CMA therefore considers that the appropriate product frame of reference is the supply of customer-operated ATM hardware. For the purposes of this

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certain applications (eg 'through-the-wall' installations must be waterproof and physical dimensions may affect installation costs in comparison to freestanding in-lobby ATMs); (c) by type of customer (ie whether BBSs and IADs have different preferences or requirements). [Diebold/Wincor \(phase 2 decision\)](#), paragraph 4.9.

<sup>71</sup> [Diebold/Wincor \(phase 2 decision\)](#), paragraphs 4.9, 4.28-4.56.

<sup>72</sup> For example, the Parties' submissions, NCR's tender data and market reports indicate that BBSs are more inclined to purchase customer-operated ATM hardware with additional functionalities (eg deposit), whereas IADs typically purchase cash dispense ATM hardware. In addition, the Parties' submissions and market reports indicate that BBSs are more inclined to deploy through-the-wall (TTW) ATM hardware, whereas IADs typically deploy freestanding ATM hardware.

<sup>73</sup> For example, the Parties' internal documents, third party evidence and market reports indicate that BBSs also purchase cash dispense ATM hardware and IADs also purchase ATM hardware with additional functionalities. The same evidence indicates that BBSs also purchase freestanding ATMs and IADs also purchase TTW ATMs.

<sup>74</sup> See GA25 RBR Report (UK, pages 8-9, 17, 35-37); GA26 RBR Report (UK, pages 9, 16, 33-35).

<sup>75</sup> Merger Notice, Annex 253. See also Parties slide-deck for meeting with the CMA, pages 28-30.

<sup>76</sup> [Diebold/Wincor \(phase 2 decision\)](#), footnote 90 to paragraph 4.9(b).

investigation, the CMA has not found it necessary to consider a separate product frame of reference for spare parts and these are considered as part of the same frame of reference as ATM hardware for the purposes of the competitive assessment in this decision.<sup>77</sup>

### *Geographic scope*

52. The Parties submitted that the exact geographic frame of reference can be left open, but considered that the geographic scope is at least Europe-wide and could be global.<sup>78</sup> While the Parties recognised that some features of the supply of customer-operated ATM hardware are national (eg servicing), they also argued that key ATM suppliers operate globally, with NCR's manufacturing facilities being located outside the UK.<sup>79</sup> In this respect, the Parties noted that in *Glory/Talaris Topco* the European Commission considered the geographic relevant market to be EEA-wide, or at least EU-wide.<sup>80</sup>
53. In *Diebold/Wincor*, the CMA found that the geographic relevant market included all suppliers that actively participated in competitive processes to sell customer operated ATM hardware in the UK.<sup>81</sup>
54. The CMA has taken a similar approach in this decision and considers that the appropriate geographic frame of reference for the supply of customer-operated ATM hardware is the UK (including all suppliers that actively participate in competitive processes to supply ATM hardware to UK customers).<sup>82</sup> However, as discussed further in the competitive assessment, the CMA has also taken into account that ATM hardware for refurbishment may be sourced from outside the UK.

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<sup>77</sup> As noted at paragraph 60 below, for the purposes of this investigation, the CMA has also considered middleware software as part of the same frame of reference for ATM hardware for the purposes of the competitive assessment in this decision.

<sup>78</sup> Merger Notice, paragraphs 160, 162.

<sup>79</sup> Merger Notice, paragraph 160.

<sup>80</sup> European Commission, Case COMP/M.6535 – Glory/Talaris Topco, [decision of 2 July 2021 \(Glory/Talaris Topco\)](#), paragraph 36.

<sup>81</sup> [Diebold/Wincor \(phase 2 decision\)](#), paragraphs 4.59-4.62.

<sup>82</sup> NCR's tender data and third-party evidence indicated that from a demand standpoint, BBSs and IADs typically procure customer-operated ATM hardware through UK-wide tenders and/or bilateral negotiations. In addition, the Parties' internal documents and third-party evidence indicated that local configurations, technical certifications (eg LINK network and card schemes) and/or testing are required to supply customer-operated ATM hardware in the UK.

## ATM software

### Product scope

55. The Parties submitted that the exact product frame of reference in relation to ATM software can be left open.<sup>83</sup>
56. The Parties referred to the CMA's decision in *Diebold/Wincor*, in which the CMA did not conclude on the exact product frame of reference. However, the CMA noted that different types of ATM software are likely to constitute separate product frames of reference given their different purposes.<sup>84</sup>
57. The Parties noted that ATM hardware requires different types of ATM software to operate and that each of these types of software have different functions.<sup>85</sup> The Parties also noted that OS and middleware are integral to ATM hardware and are always supplied by the ATM hardware supplier, whereas all other types of ATM software are not integral to ATM hardware and can be sourced from different suppliers.<sup>86</sup> The Parties further noted that some types of ATM software are essential for the ATM to operate (ie OS, middleware, application software, terminal driving software), whereas other types are not essential (eg security software, software distribution systems).<sup>87</sup>
58. RBR Reports<sup>88</sup> and third-party evidence<sup>89</sup> support the Parties' submission that different types of ATM software have different functions. This indicates that different types of ATM software are not demand-side substitutes.
59. The Parties' submissions and RBR Reports<sup>90</sup> further indicate that competitive conditions differ between different types of ATM software. For instance, shares of supply (including the shares of supply accounted for by ATM hardware suppliers) vary substantially between the different types of software.<sup>91</sup>
60. The CMA therefore considers that the appropriate product frame of reference is the supply of each type of ATM software. As middleware software is integral

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<sup>83</sup> Merger Notice, paragraph 164.

<sup>84</sup> CMA, Case ME/6613/16, completed acquisition by Diebold, Incorporated of Wincor Nixdorf AG, [Phase 1 decision of 27 September 2016 \(Diebold/Wincor \(phase 1 decision\)\)](#), paragraphs 65-66.

<sup>85</sup> Merger Notice, paragraphs 56-57 and related footnote 48 and Annex 253.

<sup>86</sup> Merger Notice, paragraphs 58, 445.

<sup>87</sup> Merger Notice, Annex 253.

<sup>88</sup> GA25 RBR Report (UK, pages 19-25); GA26 RBR Report (UK, pages 18-23).

<sup>89</sup> [X].

<sup>90</sup> GA25 RBR Report (UK, pages 19-25); GA26 RBR Report (UK, pages 18-23).

<sup>91</sup> Merger Notice, Tables 14.



to – and always supplied with – ATM hardware, the CMA has, for the purposes of this merger investigation, considered this as part of the same product frame of reference as ATM hardware (see paragraph 51 above) within the competitive assessment set out below. The CMA has also not found it necessary, for the purposes of this merger investigation, to consider a separate product frame of reference for ongoing software support, and this is considered as part of the same frame of reference as ATM software within the competitive assessment set out below.

### *Geographic scope*

61. The Parties submitted that the geographic scope of the supply of ATM software is global.<sup>92</sup> The Parties noted that while local teams are needed to implement ATM software into the ATM hardware, ATM software is developed and supplied globally and can be remotely supported by overseas teams.<sup>93</sup> The Parties also noted that neither the European Commission in *Glory/Talaris Topco* nor the CMA in *Diebold/Wincor* addressed the geographic scope of the supply of ATM software.<sup>94</sup>
62. NCR's tender data<sup>95</sup> and third-party evidence<sup>96</sup> indicated that ATM software procurement typically occurs on a national level through UK-wide tenders or bilateral negotiations. Third-party evidence also indicated that local expertise, track record and reputation in the UK are important factors when purchasing ATM software. Furthermore, third-party evidence indicated that local configurations, technical certifications and/or testing are required to supply ATM software in the UK, including certification with the LINK network and card schemes.
63. Consistent with the approach to ATM hardware, the CMA considers that the appropriate geographic frame of reference for the supply of ATM software is the UK (including all suppliers that actively participate in competitive processes to supply ATM software to UK customers).

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<sup>92</sup> Merger Notice, paragraph 165.

<sup>93</sup> Merger Notice, paragraph 165.

<sup>94</sup> Merger Notice, paragraph 165.

<sup>95</sup> Tenders for the supply of ATM software (together with ATM hardware or standalone) in which NCR took part from 2018-2020 appear to have been UK-wide tenders. Merger Notice, Annex 257.

<sup>96</sup> None of the BBSs and IADs that responded to the CMA's market testing have procured ATM software through European/global-wide tenders or bilateral negotiations.

## Supply of ATMs to Site Owners

### Product scope

64. The Parties submitted that the product frame of reference is the deployment of ATMs.<sup>97</sup> The Parties referred to the CMA's decision in *Cardtronics/DirectCash Payments*, in which the CMA drew a distinction between the supply of ATMs to Site Owners and for BBSs' branches on the basis of the different competitor set serving Site Owners and BBSs' branches.<sup>98</sup> In that case, the CMA found that ATMs are typically supplied to Site Owners by IADs (with only certain Site Owners being supplied by IADs and a limited number of BBSs), whereas ATMs at BBSs' branches are often deployed by BBSs themselves or large IADs (the CMA noted Cardtronics and NoteMachine as large IADs).<sup>99 100</sup>
65. The CMA has found no evidence that warrants departing from the approach adopted in *Cardtronics/DirectCash Payments*. For instance, the evidence received from the Parties and third parties indicated that ATMs at Sites are mainly deployed by IADs, with a limited number of BBSs deploying ATMs to select Site Owners. On the other hand, ATMs at BBSs' branches are mainly deployed by the BBSs themselves, with a limited number of IADs (eg Cardtronics,<sup>101</sup> NoteMachine)<sup>102</sup> deploying ATMs to select BBSs.
66. The CMA therefore considers that the appropriate product frame of reference is the supply of ATMs to Site Owners.

### Geographic scope

67. The Parties submitted that this market is national in scope, in part because Cardtronics is only active in a few countries.<sup>103</sup>

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<sup>97</sup> Merger Notice, paragraph 176.

<sup>98</sup> CMA, Case ME/6648/16, completed acquisition by Cardtronics plc of DirectCash Payments Inc., [Phase 1 decision of 3 May 2017 \(Cardtronics/DirectCash Payments \(Phase 1 Decision\)\)](#), paragraphs 53-59, 63(a) and footnote 20 to paragraph 58(a).

<sup>99</sup> The CMA also saw evidence of ATM hardware suppliers participating in tenders for BBSs' branch ATMs. [Cardtronics/DirectCash Payments \(Phase 1 Decision\)](#), footnote 20 to paragraph 58(a).

<sup>100</sup> In *Cardtronics/DirectCash Payments*, the CMA identified an additional frame of reference for the supply of cash withdrawal and other ATM services to ATM users. The CMA did not identify any additional competition issues arising from the Merger in this frame of reference, and therefore has not considered it in this decision.

<sup>101</sup> The Parties note that Cardtronics deploys a very small number of ATMs ([REDACTED]) for small BBSs (ie [REDACTED] and [REDACTED]). Merger Notice, paragraph 145 and footnote 242 to paragraph 290.

<sup>102</sup> The CMA found that NoteMachine deploys some ATMs on behalf of certain small BBSs, including [REDACTED] and [REDACTED]. See GA25 RBR Report (UK, page 10); GA26 RBR Report (UK, page 10).

<sup>103</sup> Merger Notice, paragraph 177.

68. The Parties also referred to the CMA's decision in *Cardtronics/DirectCash Payments*, where the CMA identified a UK-wide geographic frame of reference for the supply of ATMs to Site Owners.<sup>104</sup> This was mostly because the competitor set was the same across different UK regions and there was no significant variation in shares of supply between them.<sup>105</sup>
69. The CMA has found no evidence that warrants departing from the approach adopted in *Cardtronics/DirectCash Payments*. For instance, third-party evidence indicated that multi-site Site Owners procure ATMs for their sites on a UK level;<sup>106</sup> the same LINK membership<sup>107</sup> and interchange fees<sup>108</sup> apply across the UK; and RBR Reports<sup>109</sup> and LINK<sup>110</sup> provide market data on an UK level.
70. The CMA therefore considers that the appropriate geographic frame of reference is the UK.

## *POS software and SCO solutions*

### *Product scope*

71. POS software runs on POS hardware, and together POS solutions enable customers of retailers and hospitality providers to execute the payment for the goods and services they wish to purchase.<sup>111</sup>
72. SCO solutions comprise hardware and associated software that enable retail and hospitality customers to complete their transactions without staff assistance.<sup>112</sup>
73. Based on evidence received from the Parties, there does not appear to be demand-side substitution between POS solutions (and thus POS software) and SCO solutions based on intended purpose. In particular, while POS solutions (and thus POS software) are used by customers of retailers and

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<sup>104</sup> [Cardtronics/DirectCash Payments \(Phase 1 Decision\)](#), paragraph 68.

<sup>105</sup> [Cardtronics/DirectCash Payments \(Phase 1 Decision\)](#), paragraphs 64-68.

<sup>106</sup> All multi-site Site Owners that responded to the CMA's market testing submitted that they typically contract ATM deployment for Sites across the UK.

<sup>107</sup> See [LINK / Joining the LINK Network](#)

<sup>108</sup> As at August 2021, the LINK interchange fee was £0.25.9 for cash-withdrawals at Sites across the UK (except for ATMs deployed under any of the LINK Financial Inclusion schemes). See [LINK / Interchange](#).

<sup>109</sup> GA25 RBR Report (UK, pages 1, 8-9, 15-16, 35-39, and Figure 3.3); GA26 RBR Report (UK, pages 1, 8-9, 14-15, 33-37, Figure 3.3).

<sup>110</sup> See [LINK / Statistics and trends](#).

<sup>111</sup> See <https://www.ncrsilver.co.uk/retail-pos>.

<sup>112</sup> See <https://www.ncr-hospitality.com/uk>.

hospitality providers with staff assistance, SCO solutions are used by customers without staff assistance. There is also no evidence of supply-side substitution, as the shares of supply provided by the Parties indicate that the set of competitors supplying POS software and SCO solutions in the UK is different. For instance, for shipments of SCO solutions for grocery and general merchandise, the main UK suppliers are NCR and Diebold Nixdorf.<sup>113</sup> Although NCR and Diebold Nixdorf also supply POS software in the UK, so do companies such as Oracle, Flooid, Aptos and GK Software, who appear not to be active in the supply of SCO solutions.<sup>114</sup>

74. The CMA therefore considers that the appropriate product frames of reference for its assessment of conglomerate effects are the supply of POS software and, separately, the supply of SCO solutions.

#### *Geographic scope*

75. Evidence provided by the Parties indicated that many of NCR's customers of POS software and SCO solutions in the UK are predominantly UK-focused companies which likely purchase those products through local RFPs and/or bilateral negotiations.<sup>115</sup>
76. The CMA therefore considers that the appropriate geographic frame of reference is the UK.

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

77. For the reasons set out above, the CMA has considered the impact of the Merger in the following frames of reference:
- (a) the supply of customer-operated ATM hardware in the UK;
  - (b) the supply of each type of ATM software in the UK;
  - (c) the supply of ATMs to Site Owners in the UK;
  - (d) the supply of POS software in the UK; and

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<sup>113</sup> Merger Notice, Figures 10-11.

<sup>114</sup> Merger Notice, Figures 14-16.

<sup>115</sup> NCR's retail and hospitality customers of POS software in the UK include [REDACTED]. NCR's customers of SCO solutions in the UK are [REDACTED]. Merger Notice, Annex 275.

- (e) the supply of SCO solutions in the UK.

## **Theories of Harm**

### **Vertical effects**

78. Vertical mergers are those between firms active at different levels in the same industry (ie an upstream firm and a downstream firm), so competition in one market could be directly affected by outcomes in the other.<sup>116</sup>
79. Vertical mergers do not involve a direct loss of competition between merger firms.<sup>117</sup> However, a common concern is that vertical mergers may result in the foreclosure of current or potential rivals – that the merged entity will be able to use its position in one market to harm the competitiveness of its rivals in the other. This would weaken the constraints that the merged entity faces and as result harm competition and therefore customers.<sup>118</sup>
80. Upstream, NCR is the largest supplier of ATM hardware and software in the UK. As explained above, IADs mainly deploy refurbished ATMs and therefore new ATMs are not a vital input to their downstream activities. Downstream, Cardtronics is the largest supplier of ATMs to Site Owners in the UK. As discussed at paragraphs 38(b) and 65 above, evidence from the Parties and third parties indicated that ATMs at Site Owners' Sites are mainly deployed by IADs, with a limited number of BBSs deploying ATMs to select Site Owners.
81. The CMA has focused its assessment on IAD Competitors purchasing NCR ATM hardware and/or software. In particular, the CMA has focused on IAD Competitors which might depend on NCR for middleware software licences<sup>119</sup> or NCR-branded EPPs, or that purchase NCR ATM software.
82. The CMA has considered two vertical theories of harm in relation to the Merger:
- (a) input foreclosure of IAD Competitors purchasing NCR ATM hardware in the UK; and

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<sup>116</sup> [Merger Assessment Guidelines](#), paragraph 7.1(a).

<sup>117</sup> [Merger Assessment Guidelines](#), paragraph 7.2.

<sup>118</sup> [Merger Assessment Guidelines](#), paragraph 7.2.

<sup>119</sup> Middleware software is supplied by the original ATM hardware supplier. Merger Notice, paragraphs 445, 457-458, 463.

- (b) input foreclosure of IAD Competitors purchasing NCR ATM software in the UK.

*Input foreclosure of IAD Competitors purchasing NCR ATM hardware in the UK*

83. The CMA has considered whether, as a result of the Merger, the Merged Entity may foreclose IAD Competitors purchasing NCR ATM hardware, currently or in the future, with the aim of winning contracts to supply ATMs to Site Owners in the UK. In particular, the CMA has considered whether the Merged Entity might adopt the following foreclosure strategies:<sup>120</sup>
- (a) raising the price, delaying or possibly withdrawing the supply of middleware software<sup>121</sup> for refurbished NCR ATM hardware post-Merger; and/or
  - (b) raising the price, delaying or possibly withdrawing the supply of NCR-branded EPPs for refurbished NCR ATM hardware, and/or for the installed base of NCR ATM hardware, post-Merger.
84. The CMA's approach to assessing input foreclosure theories of harm is to analyse (a) the ability of the merged entity to foreclose competitors, (b) the incentive of it to do so, and (c) the overall effect of the strategy on competition.<sup>122</sup>

*Ability*

85. When assessing whether the Merged Entity would have the ability to foreclose IAD Competitors, the CMA has considered (a) the strength of NCR in the supply of ATM hardware in the UK; (b) the importance of NCR-branded hardware components to IAD Competitors in the supply of ATMs to Site

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<sup>120</sup> NCR supplies new ATM hardware in the UK. The CMA considers that the Merged Entity would not be able to foreclose IAD Competitors with the aim of winning contracts to supply ATMs to Site Owners in the UK by raising the price, delaying or possibly withdrawing the supply of new ATM hardware. IAD Competitors mainly deploy refurbished (rather than new) ATM hardware at Sites, but insofar as IAD Competitors decide to deploy new ATM hardware, credible alternatives are available to NCR ATM hardware (eg Diebold Nixdorf and Cennox/Hyosung new ATM hardware) and switching barriers would not prevent IAD Competitors from moving away from NCR. For these reasons, the CMA does not believe that the Merger gives rise to a realistic prospect of an SLC in respect of the supply of new ATM hardware. The CMA has therefore not found it necessary to consider the supply of new ATM hardware further in this decision.

<sup>121</sup> The CMA is assessing input foreclosure based on access to middleware software under a theory of harm based on access to ATM hardware because middleware software is supplied by the original ATM hardware supplier both for new and refurbished ATM hardware. IADs and BBSs need to use NCR middleware software with NCR ATM hardware. Merger Notice, paragraphs 445, 457-458, 463.

<sup>122</sup> [Merger Assessment Guidelines](#), paragraph 7.10.

Owners; and (c) IAD Competitors' ability to switch from NCR ATM hardware.<sup>123</sup>

*NCR's strength in the supply of ATM hardware in the UK*

86. The Parties submitted shares of supply of ATM hardware in the UK, Western Europe and globally, by installed base and shipment, over the past four years. The CMA considers these shares of supply to be reliable estimates as they are sourced from RBR Reports.<sup>124</sup>
87. As shares of supply by installed base include installed refurbished NCR ATM hardware,<sup>125</sup> they provide an indication of NCR's strength in the refurbished ATM hardware segment.<sup>126</sup> The CMA has considered these shares of supply in 2020 in its assessment.

**Table 1. ATM hardware in the UK, Western Europe and globally by installed base in 2020<sup>127</sup>**

	UK		Western Europe		Global	
	Units	%	Units	%	Units	%
NCR	[REDACTED]	[60-70%]	[REDACTED]	[40-50%]	[REDACTED]	[20-30%]
Diebold Nixdorf	[REDACTED]	[20-30%]	[REDACTED]	[40-50%]	[REDACTED]	[30-40%]
Hyosung	[REDACTED]	[0-5%]	[REDACTED]	[0-5%]	[REDACTED]	[10-20%]
Vendor A					[REDACTED]	[5-10%]
GRG	[REDACTED]	[0-5%]			[REDACTED]	[5-10%]
Vendor B					[REDACTED]	[0-5%]
Vendor C					[REDACTED]	[0-5%]
Triton	[REDACTED]	[5-10%]	[REDACTED]	[0-5%]	[REDACTED]	[0-5%]
Vendor D					[REDACTED]	[0-5%]
Vendor E					[REDACTED]	[0-5%]
Vendor F					[REDACTED]	[0-5%]
Vendor G			[REDACTED]	[0-5%]	[REDACTED]	[0-5%]
Vendor H			[REDACTED]	[0-5%]		
Vendor I			[REDACTED]	[0-5%]		
Vendor J			[REDACTED]	[0-5%]		
Others			[REDACTED]	[0-5%]	[REDACTED]	[5-10%]
<b>Total</b>	[REDACTED]	<b>100.0%</b>	[REDACTED]	<b>100%</b>	[REDACTED]	<b>100%</b>

<sup>123</sup> [Merger Assessment Guidelines](#), paragraph 7.12–7.14.

<sup>124</sup> These reports collect and disclose relevant market data by market participants.

<sup>125</sup> Merger Notice, footnote 134 to Tables 9.

<sup>126</sup> While shares of supply based on shipments only reflect competitive dynamics in the flow of new ATM hardware, shares of supply of ATM hardware by installed base are relevant to assess foreclosure strategies based on access to EPPs for NCR ATM hardware and middleware software for refurbished NCR ATM hardware.

<sup>127</sup> RBR Reports appear to consider the brand of ATM hardware (eg NCR, Hyosung) as opposed to the identity of the ATM hardware supplier. This appears to explain the lack of reference to Cennox and suppliers of refurbished ATM hardware.

Source: Data supplied by the Parties (Merger Notice, Tables 9(a)-(c)).

88. NCR held a share of [60-70%] by installed base in the UK in 2020.<sup>128</sup> NCR's recent performance in tenders for the supply of ATM hardware in the UK reflects its shares of supply by installed base, indicating that NCR is the largest player in the supply of new ATM hardware, followed by Diebold Nixdorf. Recent tenders also indicate an increased relevance of Cennox/Hyosung as a competitor (eg [X]), which will be reflected on the installed base of ATMs in the coming years. The CMA has found this evidence to be consistent with third party views and the Parties' internal documents, which identify Diebold Nixdorf as NCR's closest competitor and Cennox/Hyosung as a credible alternative to NCR.
89. As noted at paragraph 35(b) above, evidence from the Parties and third parties indicated that non-original ATM hardware suppliers source refurbished ATMs for resale from a European/global open market.<sup>129</sup> Thus, the CMA has also considered shares of supply by installed base in Western Europe and globally for an indication of the availability of brands of refurbished ATMs in the open market. As set out in Table 1, Diebold Nixdorf is the largest supplier at the Western European and global level with a share of [40-50%] and [30-40%] respectively, indicating that its brand of refurbished ATMs is largely available from the open market.
90. On the basis of the above evidence, the CMA has found that NCR is the largest supplier of ATM hardware in the UK, competing closely with Diebold Nixdorf and Cennox/Hyosung. In the European/global market of refurbished ATMs, Diebold Nixdorf is the main brand of refurbished ATMs.

*Importance of NCR-branded hardware components to IAD Competitors*

91. The CMA found that ATM hardware and its components are a vital aspect of the businesses of IAD Competitors.<sup>130</sup>
92. Evidence from the CMA's investigation indicates that there is at least one IAD Competitor [X] that deploys mostly NCR refurbished ATM hardware and has

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<sup>128</sup> NCR holds a stable share of supply by installed base over the past four years (ranging from [60-70%] to [60-70%] since 2017) and a variable share of supply by units shipped (from [X] in 2017 to around [X] in 2018 and 2019, up to [X] in 2020). Merger Notice, Tables 9(c) and 10(c).

<sup>129</sup> IADs may also source refurbished ATMs on a European/global level.

<sup>130</sup> Price, quality and timely availability of ATM hardware and its components are an important dimension of ATM hardware suppliers' competition.



a large installed base of NCR ATM hardware. The CMA has assessed the extent to which any IAD Competitor would depend on NCR (i) for middleware software licences for refurbished NCR ATM hardware, and/or (ii) for NCR-branded EPPs for refurbished NCR ATM hardware and/or for its installed base of NCR ATM hardware.

- *Middleware software licences*

93. The Parties submitted that middleware software is integral to the ATM hardware and it is essential to the functioning of an ATM.<sup>131, 132</sup> When IADs purchase a refurbished NCR ATM from the open market, they need a separate middleware licence from NCR for each refurbished NCR ATM. The Parties submitted that demand for refurbished NCR ATMs is typically low, as IADs prefer to self-refurbish ATMs.<sup>133</sup> The Parties further submitted that NCR's low sales of middleware licences between 2018 and 2020 support this position.
94. Evidence from third parties indicates that at least one IAD Competitor [X] self-refurbishes a low proportion of ATMs every year, mainly deploying refurbished NCR ATMs that it purchases from the open market. However, the evidence indicates that such IAD Competitors would not depend exclusively on refurbished NCR ATMs and that alternatives would be available.
95. In particular, the CMA considers other brands of refurbished ATMs to be the most credible alternative to NCR refurbished ATMs for IAD Competitors. As discussed at paragraphs 89-90 above, there is ample supply of alternative brands of refurbished ATMs from the European and global open market, particularly refurbished Diebold Nixdorf ATMs. Moreover, analysis submitted by the Parties indicates that, even in the UK alone, a significant proportion of non-NCR ATMs will continue to be made available by BBS customers shedding ATMs for the foreseeable future. For example, Diebold Nixdorf's

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<sup>131</sup> The Parties and third parties submitted that middleware is purchased with new ATM hardware.

<sup>132</sup> Since [X], NCR operates a [X] covering the supply of middleware licences, [X]. This [X] covers the supply of middleware licences [X]. The Parties submitted that withholding or limiting supply of middleware licences is not possible as they are already in [X]'s possession. The CMA's assessment of the Merged Entity's ability to foreclose its rivals is unlikely to place material weight on contractual protections ([Merger Assessment Guidelines](#), paragraph 7.15). NCR might have the ability to foreclose IAD Competitors at contract termination, subject to evidence on their ability to switch, and contractual protections would not protect any IAD Competitor which does not have contracts in place with NCR, currently and in the future. Furthermore, NCR might still be able to withhold, raise prices or delay supply of middleware software patches and updates.

<sup>133</sup> A middleware licence is not needed for self-refurbished ATMs. Given the declining market, IADs have access to their own ATMs that can be refurbished.

installed base among BBS declined by almost [REDACTED] ATMs in 2019-2020.<sup>134</sup> The Parties provided a lower bound estimate for refurbished Diebold Nixdorf ATMs becoming available from BBSs in the UK up to 2023, based on continuation of observed past trends. This analysis indicates that the availability of refurbished Diebold Nixdorf ATMs from BBSs in the UK is likely to increase in the coming years.<sup>135</sup>

96. The CMA notes that the supply of redundant Diebold Nixdorf ATMs over the past two years, in the UK alone, would have satisfied the requirements for refurbished ATMs from IAD Competitors [REDACTED] during that period (approximately [REDACTED] per year). The CMA considers that this is likely to remain the case in the future, as evidence indicates that demand from IADs is moderate and expected to decline given the broader decline of cash,<sup>136</sup> while the stock of Diebold Nixdorf's refurbished ATMs is likely to increase due to BBSs' branch closures and fleet reductions.
97. The CMA also considered other options that may be available to IAD Competitors but did not put significant weight on them as alternatives to NCR refurbished ATMs. For instance:
- (a) Self-refurbished ATMs may be an alternative, although this may not be sufficient if some ATMs in stock are reaching the end of their life. IAD Competitors might still need to purchase more recently refurbished ATMs from the open market in order to continue to compete with Cardtronics; and
  - (b) Purchasing new ATM hardware from non-NCR suppliers may be an alternative. However, third-party evidence indicates that IAD Competitors generally purchase a low proportion of new ATM hardware and prefer refurbished ATMs, which suggests they are a weak substitute.

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<sup>134</sup> Response to Issues Letter, paragraph 17.

<sup>135</sup> [REDACTED] ATMs in 2021; [REDACTED] in 2022; [REDACTED] in 2023. Parties' responses to the CMA's follow-up questions on 23 July 2021.

<sup>136</sup> Response to Issues Letter, paragraph 35. See also, GA26 RBR Report (UK page 35). See also paragraphs 40-41 above.

- *NCR-branded EPPs*

98. The Parties submitted that, while spare parts for NCR ATM hardware are generally available from providers other than NCR, EPPs are typically sourced from the original ATM hardware supplier for security reasons.<sup>137</sup>
99. The CMA understands that IAD Competitors might need to replace NCR-branded EPPs either on their installed base of NCR ATM hardware or when they deploy refurbished NCR ATMs, generally for compliance requirements (all installed ATMs need certified and compliant EPPs at the time of deployment).<sup>138</sup> The Parties submitted data showing low demand for NCR-branded EPPs to satisfy these needs, as EPPs are rarely replaced (generally not earlier than 10 years from the deployment of ATM).<sup>139</sup>
100. NCR also submitted that it is aware of third-party suppliers providing EPPs (eg S.z.z.t. and Cryptera). Further, the Parties submitted that IADs typically have a stock of EPPs to meet demand if there is immediate interruption of supply.
101. Third parties confirmed that EPP replacement on the installed base of ATMs is generally rare, although at least one IAD Competitor [X] submitted it had ongoing EPP requirements. As regards EPPs needed on newly deployed refurbished ATMs, at least one IAD Competitor [X] submitted it typically required an EPP upgrade for any refurbished NCR ATM it deployed. The CMA received mixed views from IAD Competitors that use NCR ATMs on the extent to which they depend on NCR for NCR-branded EPPs [X]. Further, at least one IAD Competitor [X] submitted it generally does not keep stocks of EPPs.
102. The evidence available to the CMA indicates that S.z.z.t provides EPPs compliant with the most recent compliance standards, and at least one IAD

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<sup>137</sup> NCR explained that it has contractual arrangements in place to ensure the supply of NCR-branded EPPs. The CMA's assessment of the Merged Entity's ability to foreclose IAD Competitors is unlikely to place material weight on contractual protections ([Merger Assessment Guidelines](#), paragraph 7.15). In any case, the CMA received evidence that (a) [X] (Merger Notice, Annex 265 and Annex 266) and (b) [X] (Merger Notice, Annex 265 and Annex 266).

<sup>138</sup> Replacement of EPPs can also be required due to vandalism or faulty devices, typically every 10 years.

<sup>139</sup> The Parties submitted that each EPP has a 'Deployment Lifecycle' of 6-9 years during which they can be deployed with new or refurbished ATMs. At the end of the 'Deployment Lifecycle', EPPs are considered compliant in their deployed ATM for typically 10 additional years ('Compliance Lifecycle'). As such, EPPs are used in the field from 11-20 years dependent on when in the Deployment Lifecycle they entered service.

- If IADs deploy refurbished ATMs with EPPs that have passed their Deployment Lifecycle, they need to purchase a new EPP adhering to current certification standard.
- EPPs on the installed base of ATMs might require replacement for (a) one-off compliance requirements (eg implementation of TR31 by the end of 2024); or (b) if they meet the end of Compliance Cycle. This affects oldest ATMs, that have been in use for 17-20 years.

Competitor [X] sourced from this supplier in the past. On this basis, the CMA considers that at least S.z.z.t is a viable alternative supplier of NCR-compatible EPPs.<sup>140</sup>

103. Further, the CMA considers that switching brand of refurbished ATMs could be an alternative option for IAD Competitors needing to replace EPPs for newly deployed refurbished ATMs. As discussed at paragraph 99, refurbished ATMs need certified and compliant EPPs at the time of deployment. If NCR was to adopt a foreclosure strategy based on restricting access to NCR-branded EPPs, IAD Competitors would have the alternative to deploy refurbished ATMs of another brand.

*IAD Competitors' ability to switch from NCR ATM hardware*

104. The CMA has also considered whether IAD Competitors would face barriers to switching away from NCR ATM hardware, such as certification, size, spare parts inventory and training staff. The CMA notes, in this regard, that all IAD Competitors currently use other brands alongside NCR. The existing multi-sourcing of ATM hardware materially reduces switching costs for IADs, as the costs of re-training engineers, approving software and adapting Cash-in-Transit (CIT) would be most significant where IAD Competitors only had NCR ATMs in their fleet at present. The CMA further notes that most IADs have, in practice, switched supplier of ATM hardware in the past.
105. One IAD Competitor [X] that mainly relies on NCR refurbished ATMs submitted that it would be costly to replace NCR with alternative brands of refurbished ATMs, because of their limited availability. The CMA notes, however, that this position is not consistent with the broader body of evidence available to the CMA, as discussed at paragraphs 89-90 above, which indicates that alternative brands of ATM hardware, particularly from Diebold Nixdorf, are available both in the UK and from the European/global open market.<sup>141</sup>

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<sup>140</sup> The Parties have provided evidence that S.z.z.t is a PCI-certified supplier of NCR EPP (including PCI TR31 upgrade). Although current offerings of Cryptera's EPPs are PCI TR31 compliant, the Parties were not familiar with Cryptera's EPPs and had not provided an objective evaluation of whether they would fit in current NCR ATMs. Moreover, the Parties submitted that Cryptera's EPPs would likely not be appropriate for NCR older ATMs. Parties' responses to CMA's follow-up questions on 23 July 2021.

<sup>141</sup> IADs may also source ATM hardware for refurbishment on a wider than UK-basis.

106. Therefore, the CMA does not believe that switching barriers would prevent IAD Competitors from increasing their use of alternative brands of ATM hardware.

*Conclusion on ability*

107. The CMA has found that the Merged Entity would not be able to foreclose IAD Competitors using NCR ATM hardware.
108. In relation to a foreclosure strategy based on restricting access to middleware software for refurbished NCR ATM hardware, the CMA considers that IAD Competitors could switch to alternative brands of refurbished ATMs. In particular, demand for ATMs from IADs is moderate and expected to decline, and refurbished ATMs (in particular Diebold Nixdorf ATMs) will be available both from the UK and the wider European and global market. Moreover, all IAD Competitors in the UK already multi-source, which would limit their switching costs.
109. In relation to a foreclosure strategy based on restricting access to NCR-branded EPPs for newly deployed refurbished NCR ATM hardware and/or for the installed base of NCR ATM hardware, the CMA considers that at least S.z.z.t is a viable alternative supplier of NCR-compatible EPPs. Alternatively, IAD Competitors that need replacement EPPs for newly deployed refurbished ATMs could switch brand of refurbished ATMs.

*Incentive and Effect*

110. The CMA has not considered incentive or effect for this input foreclosure theory of harm given that, for the reasons set out above, it does not believe that the Merged Entity has the ability to foreclose in respect of NCR ATM hardware.

***Input foreclosure of IAD Competitors purchasing NCR ATM software in the UK***

111. NCR supplies different types of software and associated ongoing support (in the form of upgrades and/or maintenance) to IAD Competitors.<sup>142</sup> As discussed at paragraph 117 below, the CMA has focused its assessment

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<sup>142</sup> Software referred to in this theory of harm is software that can operate on any brand of ATM hardware and thus excludes middleware software.

under this theory of harm on (a) application software; (b) security software; and (c) remote software distribution.<sup>143</sup>

112. The CMA has considered whether the Merger may lead the Merged Entity to foreclose IAD Competitors purchasing any of those three types of ATM software from NCR, currently or in the future, with the aim of winning contracts to supply ATMs to Site Owners. Foreclosure strategies that the Merged Entity might adopt include raising the price, reducing the quality, delaying or possibly withdrawing access to NCR software and/or associated ongoing support to IAD Competitors.
113. As noted at paragraph 84 above, the CMA's approach to assessing input foreclosure theories of harm is typically to analyse (a) the ability of the merged entity to foreclose competitors; (b) its incentive to do so; and (c) the overall effect of the strategy on competition.<sup>144</sup>

#### *Ability*

114. When assessing whether the Merged Entity would have the ability to foreclose IAD Competitors, the CMA has considered (a) the strength of NCR in the supply of ATM software; (b) the importance of ATM software and associated ongoing support to IAD Competitors in the supply of ATMs to Site Owners; and (c) IAD Competitors' ability to switch ATM software from NCR.<sup>145</sup>

#### *NCR's strength in the supply of ATM software*

115. The Parties submitted that application software, security software and remote software distribution are all multi-vendor, meaning that IADs do not need to use ATM software from the ATM hardware supplier and have other alternatives.<sup>146</sup> Despite this, the Parties explained that some IADs prefer for convenience to source ATM software from the same supplier as they purchase ATM hardware.<sup>147</sup>
116. The Parties submitted that IADs could source application software, security software and/or remote software distribution from other ATM hardware suppliers (ie Diebold Nixdorf, Cennox/Hyosung and Triton) and specialist

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<sup>143</sup> Their functionalities have been discussed at paragraph 33(c) above.

<sup>144</sup> [Merger Assessment Guidelines](#), paragraph 7.10.

<sup>145</sup> [Merger Assessment Guidelines](#), paragraph 7.12–7.14.

<sup>146</sup> Response to Issues Paper, paragraph 108.

<sup>147</sup> Response to Issues Paper, paragraph 111.

software/technology companies (eg KAL, Auriga, GMV, McAfee, Fujitsu, Symantec, Microsoft and IBM).<sup>148</sup> The Parties further submitted that IADs could develop software in-house.<sup>149</sup>

117. The CMA's starting point was to consider NCR's shares of supply to IADs in the period 2018 to 2020, for each type of ATM software in the UK. These indicate that NCR has had significant shares (eg above [40-50%]) over the past three years in the supply to IADs of application software, security software and remote software distribution.<sup>150</sup>

118. The CMA considers the shares of supply provided by the Parties to be reliable, as they are based on RBR Reports. However, the CMA has recalculated the shares of supply for security software and remote software distribution to exclude software developed in-house by IADs. The CMA has considered this constraint separately in its assessment. Shares of supply considered by the CMA are shown in Table 2, Table 3 and Table 4 below.

**Table 2. Installed base shares of supply for application software (IADs)**

	2018		2019		2020	
	Count	Share	Count	Share	Count	Share
NCR	[REDACTED]	[60-70%]	[REDACTED]	[60-70%]	[REDACTED]	[60-70%]
Diebold Nixdorf	[REDACTED]	[20-30%]	[REDACTED]	[20-30%]	[REDACTED]	[20-30%]
Cennox (Hyosung)	[REDACTED]	[0-5%]	[REDACTED]	[0-5%]	[REDACTED]	[0-5%]
Triton	[REDACTED]	[10-20%]	[REDACTED]	[10-20%]	[REDACTED]	[10-20%]
<b>Total</b>	[REDACTED]	100%	[REDACTED]	100%	[REDACTED]	100%

Source: Data supplied by the Parties (Merger Notice, Table 15(a)).

**Table 3. Installed base shares of supply for security software (IADs)**

	2018		2019		2020	
	Count	Share	Count	Share	Count	Share
NCR	[REDACTED]	[60-70%]	[REDACTED]	[70-80%]	[REDACTED]	[70-80%]
Diebold Nixdorf	[REDACTED]	[20-30%]	[REDACTED]	[20-30%]	[REDACTED]	[20-30%]
Cennox (Hyosung)	[REDACTED]	[5-10%]	[REDACTED]	[0-5%]	[REDACTED]	[0-5%]
Symantec	[REDACTED]	[0-5%]	[REDACTED]	[0-5%]	[REDACTED]	[0-5%]
<b>Total<sup>125</sup></b>	[REDACTED]	100%	[REDACTED]	100%	[REDACTED]	100%

<sup>148</sup> Response to Issues Paper, paragraph 109(a) to (c).

<sup>149</sup> Merger Notice, footnote 174 to Table 15(a), paragraphs 213(b), 456, Response to Issues Paper, paragraph 101, 111(a), 112.

<sup>150</sup> Merger Notice, Table 15(a), (g) and (k).

Source: CMA calculations excluding in-house supply, based on data supplied by the Parties (Merger Notice, Table 15(k)). In-house supply accounted for [0-5%], [10-20%] and [10-20%] of total supply in 2018, 2019 and 2020 respectively.

**Table 4. Installed base shares of supply for remote software distribution (IADs)**

	2018		2019		2020	
	Count	Share	Count	Share	Count	Share
NCR	[X]	[50-60%]	[X]	[70-80%]	[X]	[80-90%]
Diebold Nixdorf	[X]	[10-20%]	[X]	[10-20%]	[X]	[10-20%]
CA	[X]	[0-5%]	[X]	[0-5%]	[X]	[0-5%]
Cennox (Hyosung)	[X]	[0-5%]	[X]	[0-5%]	[X]	[0-5%]
Triton	[X]	[20-30%]	[X]	[10-20%]	[X]	[5-10%]
<b>Total</b>	[X]	100%	[X]	100%	[X]	100%

Source: CMA calculations excluding in-house supply, based on data supplied by the Parties (Merger Notice, Table 15(g)). In-house supply accounted for [0-5%], [40-50%] and [40-50%] of total supply in 2018, 2019 and 2020 respectively.

119. The above shares of supply indicate the following:

- (a) for application software supplied to IADs in the UK, NCR is the main supplier with a share of supply of [60-70%] in 2020. Diebold Nixdorf is NCR's main alternative, with a share of supply of [20-30%] in 2020. At least until 2020 in the UK, IADs were not deploying application software developed in-house or sourcing this software from specialist software/technology companies; and
- (b) for security software and remote software distribution supplied to IADs in the UK, NCR is the main supplier with shares of supply of [70-80%] and [80-90%] in 2020 respectively. Diebold Nixdorf is the main alternative to NCR, with shares of supply of [20-30%] and [10-20%] in 2020 respectively. The shares of supply originally submitted by the Parties also indicate that certain IADs deploy in-house software, in particular remote software distribution.

120. As all types of ATM software are typically procured through bidding processes, the CMA has also analysed tender data. The CMA believes that NCR's recent performance in tenders generally reflects its shares of supply,



indicating that NCR is the largest supplier of ATM software to IADs in the UK, followed by Diebold Nixdorf.<sup>151</sup>

121. Consistent with the shares of supply and tender data, third parties identified alternative suppliers for each of the three types of software and Diebold Nixdorf as a close alternative to NCR.<sup>152</sup> In addition to Diebold Nixdorf, third-party evidence indicated that (a) Cennox/Hyosung, KAL and Auriga are alternatives to NCR's application software;<sup>153</sup> (b) IBM, Microsoft and KAL are alternatives to NCR's remote software distribution;<sup>154</sup> and (c) GMV, McAfee, Fujitsu, Symantec, KAL and Cennox/Hyosung are alternatives to NCR's security software.<sup>155</sup> Further, some software suppliers considered that there was nothing unique in NCR ATM software that competitors would not be able to replicate.<sup>156</sup> Also consistent with the shares of supply, third-party evidence indicated that self-supply by IADs is also an alternative for ATM software.<sup>157</sup>
122. On the basis of the evidence above, the CMA considers that NCR is the largest supplier for each of application software, security software and remote software distribution to IADs, with Diebold Nixdorf being the closest alternative to NCR. Apart from Diebold Nixdorf, the CMA has found that other alternatives are available for each type of software. Self-supply by IADs is also a constraint, particularly in the case of security and remote software distribution, although not all IADs are currently deploying software developed in-house in the UK.

*Importance of NCR ATM software and associated ongoing support to IAD Competitors*

123. The Parties submitted that only application software was essential to the operation of ATMs.<sup>158</sup> Therefore, withholding supply of security software and

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<sup>151</sup> The CMA did not receive sufficient data from IADs that responded to the CMA's market testing to carry out its own analysis of tenders for ATM software. The CMA has analysed the Parties' data on tender opportunities for ATM software where NCR participated between 2018 to 2020.

<sup>152</sup> [REDACTED].

<sup>153</sup> [REDACTED].

<sup>154</sup> [REDACTED].

<sup>155</sup> [REDACTED].

<sup>156</sup> [REDACTED].

<sup>157</sup> [REDACTED].

<sup>158</sup> Merger Notice, Merger Notice, Annex 253.

remote software distribution could not plausibly result in disruption that would bolster NCR's market position downstream.<sup>159</sup>

124. The Parties further submitted that (a) software maintenance support is not an essential service and IADs may run ATM software without support from the software provider;<sup>160</sup> and that (b) software upgrades are relatively infrequent and ATMs can run for lengthy periods without any upgrade support.<sup>161</sup> According to the Parties, IADs can take a risk-based approach, not always requiring updates given the age of the software.<sup>162</sup>
125. The Parties further submitted that NCR provides the same software to all its customers. NCR would therefore not be able to selectively reduce quality or effectiveness of the software upgrades supplied to IADs.<sup>163</sup>
126. The evidence received by the CMA during its investigation does not support the Parties' submissions in relation to the importance of the supply of ATM software and ongoing updates to IADs. For instance:
- (a) third parties indicated that while application software is essential, security and remote software distribution are also important to the operation of ATMs. Evidence from certain IAD Competitors [REDACTED] shows that NCR ATM software accounts for a significant proportion of their costs; and
  - (b) IADs<sup>164</sup> considered software quality as a key factor when choosing ATM software. As software updates ensure that software operates at high standards, the CMA considers that these are important to IADs.

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<sup>159</sup> In relation to prices and the possibility to withhold supply of ATM software and ongoing updates, the Parties submitted that IADs would have strong contractual protections. In [REDACTED] NCR introduced a [REDACTED] covering both the supply of ATM software and ongoing updates, [REDACTED]. This [REDACTED] covers the supply of application and security software [REDACTED]. Under such [REDACTED] (Response to the Issues Paper, paragraph 122). Although third party evidence confirmed that software suppliers are contractually obliged to provide ongoing upgrades and despite the provisions of NCR's [REDACTED] contract, the CMA's assessment of the Merged Entity's ability to foreclose IAD Competitors is unlikely to place material weight on contractual protections ([Merger Assessment Guidelines](#), paragraph 7.15). Moreover, the Merged Entity would have the ability to withhold licences and flex prices at the end of contracts with IAD Competitors.

<sup>160</sup> For example, NCR did not have an application software maintenance contract in place with [REDACTED]. NCR also does not have a software maintenance contract in place with [REDACTED] despite providing application software to this IAD. Merger Notice, paragraphs 22(a) and (c), 448. See also Response to the Issues Paper, paragraph 120.

<sup>161</sup> Response to the Issues Paper, paragraph 118.

<sup>162</sup> Response to the Issues Paper, paragraph 118.

<sup>163</sup> Merger Notice, paragraph 455(b).

<sup>164</sup> [REDACTED].

127. The CMA considers that the Parties did not provide sufficient evidence that they would not be able to increase prices, delay supply and/or selectively reduce the quality of ongoing software updates.
128. On the basis of the evidence set out above, the CMA considers that application, security and distribution software and associated ongoing updates are important to the functioning of an ATM.

*Ability of IAD Competitors to switch ATM software*

129. The Parties submitted that there are no significant costs to switch ATM software. The costs of installing a new type of ATM software would range from three to four weeks to certify and deploy to a longer period depending on the scale of change.<sup>165</sup> The Parties further submitted that there have been a number of examples of customers switching to a new ATM software supplier or developing their own in-house solutions.<sup>166</sup>
130. Third parties that responded to the CMA's market testing identified barriers to switching for certain IAD Competitors. Evidence received in response to the CMA's market testing indicates that certain IAD Competitors do not often switch ATM software supplier and that the switching process may take from six to 12 months. One IAD Competitor [X] identified the cost of switching as the main barrier, which would make the investment needed uneconomic.
131. On the other hand, despite barriers to switching, most IADs that responded to the CMA's market testing have switched or are currently switching ATM software either to a different ATM software supplier [X] or to ATM software developed in-house [X]. Therefore, the CMA does not believe that the difficulty of switching ATM software would give the Merged Entity the ability to foreclose IAD Competitors.

*Conclusion on ability*

132. The CMA found that the Merged Entity would not have the ability to foreclose IAD Competitors purchasing NCR ATM software in the UK.

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<sup>165</sup> If the application requires new EMV certification, there could be another two weeks to obtain VISA and Mastercard brand certifications. Response to the Issues Paper, paragraphs 39(a), 113.

<sup>166</sup> Merger Notice, footnote 174 to Table 15(a), paragraphs 451(a), 456. Response to the Issues Paper, paragraphs 101, 111(c), 112

133. Alternative providers to NCR would be available for each of application software, security software and remote software distribution, with Diebold Nixdorf being the closest alternative to NCR. In-house development of ATM software also exerts a constraint, particularly in the supply of security software and remote software distribution. Although there is some cost involved in switching, and it does take some time, most IAD Competitors have switched in the past or are currently switching either to a different ATM software supplier or to ATM software developed in-house.

#### *Incentive and Effect*

134. The CMA has not considered incentive or effect for this input foreclosure theory of harm given that, for the reasons set out above, it does not believe that the Merged Entity has the ability to foreclose in respect of NCR ATM software.

#### **Conclusion on vertical effects**

135. For the reasons set out above, the CMA considers that the Merger does not give rise to a realistic prospect of an SLC as a result of vertical effects in relation to input foreclosure of IAD Competitors in respect of NCR ATM hardware or NCR ATM software in the UK.

#### **Conglomerate effects**

136. The concern with a conglomerate theory of harm is that the merged entity may restrict its rivals in one 'focal' market from accessing customers using its strong position in an 'adjacent' market. The merged entity could do this through linking the sales of the two products in some way, thereby encouraging customers who want its product in the adjacent market to also purchase its product in the focal market, at the expense of rivals.<sup>167</sup> For example, it may only offer the products as a bundle, integrate them within a digital ecosystem, or offer customers of the adjacent product a discount if they also purchase its focal product, potentially through increasing the stand-alone price of the adjacent product.<sup>168</sup>

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<sup>167</sup> [Merger Assessment Guidelines](#), paragraph 7.30.

<sup>168</sup> [Merger Assessment Guidelines](#), paragraph 7.30.

137. This loss of sales by competitors is not problematic in and of itself, and linked sales of related products can result in efficiencies.<sup>169</sup> However, competition concerns may arise if such a strategy would result in rivals in the focal market becoming less effective competitors, which may result in higher prices or lower quality in the long term.<sup>170</sup>
138. A competitor of NCR [redacted]<sup>171</sup> submitted that NCR currently enjoys a significant market position both in the ATM sector and in POS software and SCO solutions in the retail sector, and that this will enable the Merged Entity to significantly reduce the number of IAD Competitors.
139. The CMA has considered whether the Merger may give rise to conglomerate effects by enabling the Merged Entity to leverage NCR's position in POS software and/or SCO solutions<sup>172</sup> to bundle these products with Cardtronics' ATM deployment, thereby restricting IAD Competitors' ability to compete effectively for the supply of ATMs to retailers and hospitality providers purchasing POS software and/or SCO solutions.
140. The CMA's approach to assessing conglomerate theories of harm is to analyse: (a) the ability of the merged entity to foreclose competitors, (b) the incentive of it to do so, and (c) the overall effect of the strategy on competition.<sup>173</sup>

### *Ability*

141. When assessing whether the Merged Entity would have the ability to foreclose IAD Competitors, the CMA has considered (a) NCR's market power in POS software and/or SCO solutions; (b) the feasibility of a combined offering of POS software and/or SCO solutions and ATM deployment; and (c) loss of sales by IAD Competitors.<sup>174</sup>

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<sup>169</sup> [Merger Assessment Guidelines](#), paragraph 7.31.

<sup>170</sup> [Merger Assessment Guidelines](#), paragraph 7.31.

<sup>171</sup> The CMA notes that this competitor submitted that [redacted].

<sup>172</sup> As noted at footnote 31, NCR also supplies ePOS solutions to retailers and hospitality providers in the UK. As NCR's shares of supply for ePOS solutions in the UK are not significant (ie approximately [5-10%] in terms of shipments in the grocery sector and approximately [5-10%] in terms of shipments in each of the general merchandise and hospitality sectors in 2019), the CMA does not believe that the Merger gives rise to a realistic prospect of an SLC in respect of ePOS solutions. Therefore, the CMA has not found it necessary to consider ePOS solutions further in this decision

<sup>173</sup> [Merger Assessment Guidelines](#), paragraph 7.32.

<sup>174</sup> [Merger Assessment Guidelines](#), paragraph 7.33.

*NCR's market power in POS software and SCO solutions*

142. The Parties provided 2019 shares of supply for POS software and SCO solutions in the UK. The CMA considers these shares of supply to be a reliable estimate as they are sourced from RBR Reports.<sup>175</sup> The Parties submitted that NCR faces competition in the UK from a number of large POS software suppliers.<sup>176</sup> The Parties also submitted that NCR's high shares in SCO solutions in the UK result from a bidding market with lumpy demand from a small number of large customers with strong countervailing buyer power.<sup>177</sup>
143. NCR accounted for around [70-80%] of SCO solutions shipments in the UK in 2019, with Diebold Nixdorf as the second largest supplier with [20-30%]. The CMA notes that NCR's share in 2020 and 2021 is likely to be lower, as Diebold Nixdorf recently started shipping to two of NCR's largest customers [X].<sup>178</sup> Further, the Parties submitted NCR's shares split by customer segment, which indicate that NCR accounted for [90-100%] of the supply of SCO solutions to non-grocery customers<sup>179</sup> in 2018. However, these shares were based on a small number of SCO shipments and fluctuate over time: in 2018, NCR's share of supply to non-grocery customers was substantially lower at [30-40%], with Diebold Nixdorf accounting for [60-70%].<sup>180</sup>
144. NCR's shares of supply for the installed base of POS software in the UK in 2019 were [50-60%], while its share of new POS software installations in the UK during that time was [20-30%].<sup>181</sup> Toshiba ([10-20%]) was NCR's main competitor based on installed base. In terms of new POS installation, NCR's main competitors were Flooid ([40-50%]) and GK Software ([10-20%]).<sup>182</sup>
145. Evidence from third parties indicates that NCR is a large supplier of SCO solutions and POS software in the UK, in close competition with Diebold Nixdorf in the supply of SCO solutions. Further, all responding customers of NCR in POS software and/or SCO solutions submitted that they have a strong ability to negotiate contract terms due to their size and scale. This is in line

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<sup>175</sup> Merger Notice, paragraphs 492-493, 495-496 and Figures 10-11 and Figures 14-16.

<sup>176</sup> Merger Notice, paragraphs 495-496.

<sup>177</sup> Merger Notice, paragraph 493.

<sup>178</sup> Merger Notice, paragraph 493.

<sup>179</sup> The RBR reports splits NCR's shares of supply in SCO solutions between grocery and non-grocery customers (eg. general merchandise).

<sup>180</sup> ie [X] shipments. Merger Notice, paragraph 493.

<sup>181</sup> The Parties did not submit shares of supply of POS software in the UK for 2018. However, the significant difference in NCR's shares by installed base and new installations indicates that NCR's market position is not stable over time.

<sup>182</sup> Shares of supply of POS software refer to the grocery sector only. Shares of supply in general merchandise and hospitality were less than [5-10%].

with customer data submitted by the Parties, which indicates that [REDACTED] of NCR's retail business was generated by its top 10 customers, and [REDACTED] came from the 'big four' supermarkets.<sup>183</sup>

146. Overall, evidence set out above shows that although NCR has high shares in the supply of POS software and SCO solutions in the UK, these fluctuate over time and result from the supply of a small number of large and sophisticated customers that can choose from several credible suppliers.

*Feasibility of a combined offering*

147. The CMA has found that the Merged Entity would experience difficulties in combining POS software and/or SCO solutions with ATM deployment in the UK.
148. Third party evidence indicates that retailers and hospitality providers were not attracted to purchasing POS software and/or SCO solutions and ATM deployment together. The majority of retailers and hospitality providers explained that these are currently two separate businesses and that they would be reluctant to consider combined purchasing. The CMA has seen no evidence that these incentives might change in the future.
149. Further, it would be difficult for the Merged Entity to link sales of POS software and/or SCO solutions with ATM deployment. Retailers and hospitality customers purchase new POS software and SCO solutions through separate formal tender processes. This makes it less feasible for the Merged Entity to be able to target customers that also have an ATM on-site with a combined offering, particularly for larger purchases.
150. The Parties' internal documents refer to opportunities to cross sell and bundle their POS software and SCO solutions with ATM deployment. However, these documents are not specific to the UK [REDACTED]<sup>184</sup>.<sup>185</sup> Further, while the Parties stated that they expected revenue synergies from the bundling to be

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<sup>183</sup> Sainsbury's, Asda, Tesco and Morrisons.

<sup>184</sup> The Parties explained that such references in NCR's internal documents predominantly refer to [REDACTED]. Merger Notice, paragraph 480.

<sup>185</sup> The Parties explained that ATMs in the US are not generally FTU and that BBSs typically enter into individual arrangements with ATM deployers to obtain free withdrawals for their customers. Cardtronics' Allpoint surcharge-free ATM network allows the customers of participating credit unions, banks, financial technology companies and stored-value debit card issuers that are predominantly located in the US to withdraw cash from Allpoint-enabled ATMs deployed in retail and hospitality sites across the US. [REDACTED]. In contrast, although [REDACTED] of Cardtronics' UK ATMs recognise Allpoint-enabled cards, no UK BBS is a member of Allpoint or issues cards that are enabled on Allpoint in the UK. Moreover, all BBSs and IADs in the UK are members of LINK, which facilitates deployment of FTU ATMs. As a result, most ATMs in large Sites in the UK already are FTU. Merger Notice, paragraphs 142, 480, 483.

significant, these were not included in the modelling on which NCR based its valuation of Cardtronics.<sup>186</sup>

#### *Loss of sales by IAD Competitors*

151. The CMA has found that the Merged Entity would not be able to deprive IAD Competitors of a substantial volume of sales to retailers and hospitality providers purchasing POS software and/or SCO solutions.
152. There is a limited overlap between retailers and hospitality providers requiring POS software and/or SCO solutions from NCR (typically large retailers and hospitality providers) and those requiring ATM deployment (many of which are smaller retailers and hospitality providers). The Parties' customer data also indicates that the Parties have [X] retail customers in common (out of [X] customers of NCR and [X] of Cardtronics)<sup>187</sup> and [X] hospitality customer (out of [X] customers of NCR and [X] of Cardtronics).<sup>188</sup> Some of the largest retailers and hospitality providers [X] purchasing POS software and/or SCO solutions from NCR submitted that they did not require ATM deployments at their sites.
153. Within this limited overlap, the CMA also notes that some of the largest NCR customers for POS software and/or SCO solutions are already contracting ATM deployment from Cardtronics. The Parties submitted that [X] of NCR's [X] largest POS solutions and SCO solutions customers already have ATMs deployed on their sites, and [X] are current customers of Cardtronics.
154. Further, evidence from some of the responding IAD Competitors and competitors of NCR in the supply of POS software and/or SCO solutions indicated that they would be able to develop or partner to create their own combined offering. One IAD competitor [X] was already able to offer a combination of ATM deployment and POS solutions.

#### *Conclusion on ability*

155. The CMA has found that the Merged Entity would not have ability to foreclose IAD Competitors.

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<sup>186</sup> Merger Notice, paragraph 481.

<sup>187</sup> 75% of Cardtronics' customers in terms of revenues were considered.

<sup>188</sup> 75% of Cardtronics' customers in terms of revenues were considered.



156. NCR has high shares in the supply of POS software and SCO solutions in the UK, but these fluctuate over time, and are the product of supply to a small number of large and sophisticated customers. Retailers and hospitality providers in the UK are not attracted to purchasing POS software and/or SCO solutions together with ATM deployment and it would be difficult, in practice, for the Merged Entity to link sales of these products and services in the UK. The CMA also found that there is ultimately limited overlap between UK retailers and hospitality providers requiring POS software and/or SCO solutions from NCR and those requiring ATMs at their sites in the UK. Furthermore, IAD Competitors would be unlikely to be foreclosed given their ability to develop their own combined offering (either alone or in partnership).

#### *Incentive and Effect*

157. The CMA has not considered incentive or effect given it does not believe, for the reasons set out above, that the Merged Entity has the ability to foreclose.

#### **Conclusion on conglomerate effects**

158. For the reasons set out above, the CMA considers that the Merger does not give rise to a realistic prospect of an SLC as a result of conglomerate effects in relation to bundling NCR's POS software and/or SCO solutions with Cardtronics' ATM deployment to retailers and hospitality providers in the UK.

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

159. Effective entry and/or expansion of existing firms can mitigate the initial effect of the merger on competition, and in some cases may mean that there is not an SLC.<sup>189</sup> In assessing whether effective entry or expansion might prevent an SLC, the CMA considers whether such entry or expansion would be timely, likely and sufficient to prevent an SLC.<sup>190</sup> However, the CMA has not had to conclude on barriers to entry or expansion as the Merger does not give rise to competition concerns.

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<sup>189</sup> [Merger Assessment Guidelines](#), paragraphs 8.28-8.29.

<sup>190</sup> [Merger Assessment Guidelines](#), paragraph 8.31.

## Third party views

160. The CMA contacted customers and competitors of the Parties. Many third parties that responded to the CMA's merger investigation did not express concerns regarding the Merger. Third party comments have been taken into account where appropriate in the competitive assessment above.

## Decision

161. Consequently, the CMA does not believe that it is or may be the case that the Merger has resulted, or may be expected to result, in an SLC within a market or markets in the UK.

162. The Merger will therefore **not be referred** under section 22(1) of the Act.

**Colin Raftery**  
**Senior Director, Mergers**  
**Competition and Markets Authority**  
**10 August 2021**

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### ENDNOTE

<sup>i</sup> Footnote 1 should be read as follows: 'The Parties submitted that NCR also provides services relating to the resale of third-party computer hardware and related professional, installation and maintenance service, including to the third-party networking products and related services in the telecommunications and technology sectors, which accounted for 5% of its global turnover in 2019. Merger Notice, paragraphs 131, 132(d).'

<sup>ii</sup> Paragraph 93 should be read as follows: 'The Parties submitted that middleware software is integral to the ATM hardware and it is essential to the functioning of an ATM. When IADs purchase a refurbished NCR ATM from the open market, they need a separate middleware licence from NCR for each refurbished NCR ATM. The Parties submitted that demand for refurbished NCR ATMs is typically low, as IADs prefer to self-refurbish ATMs. The Parties further submitted that NCR's low sales of standalone middleware licences between 2018 and 2020 support this position.'

<sup>iii</sup> Paragraph 150 should be read as follows: 'NCR's internal documents refer to opportunities to cross sell and bundle their POS software and SCO solutions with ATM deployment. However, these documents are not specific to the UK [X]. Further, while the Parties stated that they expected revenue synergies from the bundling to be significant, these were not included in the modelling on which NCR based its valuation of Cardtronics.'