FINANCIAL CONDUCT AUTHORITY
PAYMENT SYSTEMS REGULATOR

MR15/2.4 Annex 1 and 2

Market review into the ownership and competitiveness of infrastructure provision: Remedies consultation

Annexes 1 and 2

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Contents

Annex 1
Case studies on competitive procurement

Introduction

1.1 We considered several case studies, in payment systems and in other sectors, to help inform our thinking for our competitive procurement remedy. These focused on:

- how other competitive procurement exercises have been run, to help inform our thinking on the design and implementation of our competitive procurement remedy
- the migration of users between systems and/or services, to help inform our thinking on the ability to switch providers and the associated costs

1.2 We considered case studies relevant to these two areas in turn.

Case studies on running competitive procurements

1.3 The case studies on running competitive procurement exercises include some related to the procurement of central infrastructure services in other payment systems and competitive procurement exercises run in other sectors. The case studies are:

- the procurement of Australia's national payments platform
- Ofgem's procurement of Offshore Transmission Network Owners

1.4 We also considered the EU public procurement directives.

1.5 The case studies are outlined below, followed by a summary which outlines what we take away from these.

Australia's New Payments Platform[1]

1.6 The Australian payments industry ran a program to design, plan, procure and implement its new payments infrastructure for low-value payments, known as the New Payments Platform (NPP). The NPP comprises the basic infrastructure that will support various overlay services.

1.7 The NPP program was a collaborative industry initiative, governed by the NPP Steering Committee (NPPSC). Participation was open to all authorised deposit-taking institutions. The NPPSC was comprised of a broad cross section of industry: it had senior representatives from 17 banks and credit unions, one alternative payments provider (PayPal), the Australian Payments Clearing Association (APCA) and the Reserve Bank of Australia. KPMG was appointed as an independent project manager early in the project, via a competitive process.

1.8 The NPPSC first ran a 'define and plan' stage over the second half of 2013. At the end of this phase, it had determined the high-level specifications for the NPP architecture, including functionality, security and performance. The specifications were outcome oriented – the NPPSC did not specify how they should be met. Workshops were held with payment service providers to test that the conceptual architecture design of the basic infrastructure would meet their future needs. The NPPSC also developed a competitive procurement strategy, which outlined the proposed process and potential risks. This was done to help ensure the desired outcomes were achieved.

1 See Australian Payments Clearing Association website: http://www.apca.com.au/about-payments/future-of-payments/new-payments-platform-phases-3-4

1.9 The competitive procurement process was run over the first half of 2014. The NPPSC oversaw it, with KPMG as the project manager. Three basic infrastructure services were to be procured: switching, addressing and networking. This was for the complete, end-to-end services (design, establishment and operation) of each service. Potential providers could bid for one, two or all three of the complete services. However, the NPPSC evaluated bids for each service separately.

1.10 The competitive procurement process involved the following steps:

- **Registration of intent:** In late January, the NPPSC published high-level information about the procurement process (including key dates), the minimum criteria and evaluation criteria for potential vendors to review when considering their interest in competing. Over 20 vendors registered.
- **Pre-qualification of vendors:** This was done to openly engage with potential vendors, to gauge their appetite, their capability and experience for providing the required services. Registered vendors responded to a questionnaire used to assess them against the key evaluation criteria. Vendors were able to submit queries or clarifications, and any responses were shared with other registered vendors. They had about two weeks to submit their questionnaire response (by 20 February 2014). Vendors were also required to sign a non-disclosure agreement. Between five and ten vendors were then shortlisted for the tender stage. Vendors were notified of their pre-qualification outcomes on 14 March 2014.
- **Request for tender:** The successful vendors received a request for tender on 17 March 2014. The tender pack included a detailed outline of the outcome-oriented solutions definition (see paragraph 1.8) and more detailed evaluation criteria. The pack also included a pro forma contract, with service level agreements and penalties, and proposed testing requirements. This was done to give vendors advance notice of what terms the NPPSC intended, to help avoid delays in the contract negotiations stage. Vendors had to submit their proposals by 24 April 2014. The vendors gave short presentations of their proposals. After evaluating the bids, the NPPSC shortlisted three vendor proposals, and met with each of these to further discuss their proposals. Two providers were approved to proceed to commercial negotiations.
- **Commercial negotiation and solutioning:** In June 2014, the NPPSC began negotiations with the two vendors to further develop the technical design, costings and legal contract. The contract negotiations were concluded in August/September 2014 and the successful vendor, SWIFT, was announced on 2 December 2014.

1.11 The competitive procurement process cost around the low millions of Australian dollars to run. This incorporated costs associated with internal resources provided by APCA and the external resources of KPMG and legal consultants. The banks and other payment providers also provided significant technical expertise for the process.

1.12 SWIFT signed a 12-year 'build and operate' contract with the new legal entity called NPP Australia Ltd (NPPA), established by the financial institutions that funded the new infrastructure. In early December 2014, SWIFT began work with NPPA to develop the technical and operational design of the NPP basic infrastructure. This took around eight months. The NPP has been in the 'build and internal test' phase since August 2015, and is currently on track to meet the expected timeframe to be operational in the second half of 2017. Heavy penalties were included in the contract to reduce the risk of SWIFT not delivering the services.

Ofgem's tender for Offshore Transmission Owners[2]

1.13 Ofgem introduced a competitive tender process in 2009 to appoint the offshore electricity network operators, known as Offshore Transmission Owners (OFTO). Potential operators bid to obtain a licence to own and operate newly constructed offshore electricity transmission network assets.

2 Ofgem website – Offshore transmission tenders: www.ofgem.gov.uk/electricity/transmission-networks/offshore-transmission/offshore-transmission-tenders

These connect offshore electricity generation (wind farms) to the onshore network. In some cases, the tender also included the financing of construction of the assets. This was a novel regulatory approach that involved a competitive bidding for licences of a new asset class.

1.14 The tender process included the following stages:

- an initial pre-qualification stage to identify bidders experience and capabilities
- a qualification to tender stage where bids are assessed against generic and specific criteria to compile a short list of bidders
- an invitation to tender (ITT) stage where bids are assessed to identify a preferred bidder
- a best and final offer stage for instances where a preferred bidder could not be identified in the ITT stage

1.15 There were effectively two stages of contract negotiations. In the first instance, as part of responding to the ITT, bidders could review the potential contract between them and the developer of the offshore transmission asset(s) for which they were bidding. Bidders could request changes to the contract through the clarification process – Ofgem had to approve these requests. The second instance of contract negotiations occurred once the preferred bidder was selected to finalise the contract.

1.16 Ofgem also undertook wide market engagement and promotion of the tenders before launching them. For each tender round, it held marketing events at the outset and then a number of bidder events throughout the tender stages. At these events, the developers of the assets presented on the commercial and technical aspects of the asset. Ofgem presented on the tender process, such as how potential bidders could get involved.

1.17 Given the complexity, scale and novelty of the assets being procured, Ofgem used an external consultancy firm to support it in running the competitive procurement exercises.

1.18 Ofgem estimated the costs it incurred for running the competitive procurement process and arranging the transfer of the asset on behalf of the asset owners (the developers). This also included the cost of marketing and bidder events, as well as external consultancy costs. The cost estimates of running the first two tender rounds were £14 million each. The first round tendered nine licences for assets worth £1.1 billion in total.

1.19 Cambridge Economic Policy Associates (CEPA) and BDO Consulting evaluated the OFTO tender process as a regulatory approach and found it delivered net benefits relative to various counterfactual approaches. They noted that the multi-round tender process created a standardised approach, which is 'likely to have improved the attractiveness of the opportunity for international investors' relative to other regulatory approaches. They added that the competitive tender process introduced new providers of transmission services alongside existing providers in the sector. They said that these new providers had adopted different approaches for managing performance risks (for example, network availability) and their operation and maintenance of the transmission network.

EU public procurement directives[3,4]

1.20 The EU public procurement directives set out the requirements and procedures that must be followed when awarding a contract to suppliers. These apply to contracts above certain values awarded by the public sector and utilities (water, energy, transport and postal services) sectors. The directives aim to ensure that public procurement is:

- transparent, fair and competitive
- based on value for money, defined as 'the best mix of quality and effectiveness for the least outlay over the period of use of the goods or services bought'
- achieved through competition where possible

1.21 The procuring authorities must also comply with EU Treaty principles of transparency, non-discrimination, equal treatment and proportionality.

1.22 The directives allow for several different competitive procurement procedures depending on the circumstances. These procedures follow a broadly similar process which includes the following stages:

- design and planning of the procurement process, including stakeholder and market engagement
- notice of the contract opportunity
- pre-qualification of suppliers
- tender stage

1.23 We outline each of these in turn.

Design and planning of the procurement process

1.24 EU guidance recommends as the first stage to take adequate time to plan the procurement process to avoid risk of disruption when running the process. This includes determining resources, realistic timetables, contingency planning and budget. It also emphasises the importance at this stage of engaging key stakeholders that have an interest in the contract. This allows them to have a say in how the contract should be specified. The updated directives explicitly allow for pre-market engagement with potential suppliers and expert bodies before starting a procurement procedure. This is said to be beneficial in helping to:

- define the requirements and better understand the feasibility, potential approaches and the capacity of the market to deliver the requirements
- reduce procurement timescales by minimising dialogue during the formal tender process
- stimulate increased, and more responsive, participation as suppliers are more informed and can raise queries earlier

1.25 EU guidance recommends that this market engagement is done in conjunction with stakeholder engagement.

1.26 Procuring authorities are also required to take appropriate measures against conflicts of interest in the conduct of the procurement process. This is to avoid any distortion of competition and ensure equal treatment of all suppliers.

3 Public Contracts Directive 2014/24/EU and Utility Contracts Direct 2014/25/EU: www.ojec.com/directives.aspx
4 Crown Commercial Service public procurement policy website: www.gov.uk/guidance/public-sector-procurement-policy

Notice of contract opportunity

1.27 Notice of the contract opportunity and other procurement documentation must be published on the internet and made available to all interested companies. There are some exceptions to this, such as confidential information. In the UK, contract notices must be published on the Contracts Finder website. The contract notice must use standardised formats and terminology.

Pre-qualification of suppliers

1.28 In most circumstances, there is a pre-qualification of suppliers to test that suppliers meet minimum levels of suitability to participate in the tender. This is done using a questionnaire. For complex contracts, at least three suppliers must be shortlisted for the tender stage.

Tender stage

1.29 At the tender stage, submitted proposals are evaluated against the selection criteria to determine the preferred supplier. The selection criteria must be disclosed to suppliers in the invitation to tender documents (or in some circumstances, the contract notice). These must include the relative weighting of each selection criteria. The tender stage must allow reasonable time for suppliers to develop and submit a tender. The normal minimum time for the submission of tender documents is 30 days. These exceptions are open procurements (for which the minimum is 35 days) and for competitive dialogue procedures (for which there is no explicit time limit). However, the directives note that, when setting time limits, the procuring authorities must take into account the complexity of the contract and the time required for suppliers to respond to the tender. The award of contracts must be based on the tender that is most economically advantageous to the procuring authority, not just the lowest price.

1.30 During or following the tender stage, certain procurement procedures may have requirements that are bespoke, complex and/or difficult to precisely define. In these cases, the directives allow for negotiations with the preferred bidder about the requirements, provided there are no material changes to the requirements.

Summary

1.31 The competitive procurement processes described above broadly follow a similar process.

1.32 There is an initial step to design and plan the procurement stage. This is recommended as EU best practice and has been used in major procurement exercises. The procuring bodies also engage with stakeholders and/or the market before launching the tender process. These steps are used to help determine and define the requirements of the goods and services being procured, as well as encouraging more supplier participation. We note the benefits of such market engagement as outlined in the guidance on the EU public procurement directives (see paragraph 1.24).

1.33 Each of the case studies involves open advertisement of the procurement opportunity, allowing all interested suppliers a chance to register their interest. This is followed by some form of process to shortlist credible suppliers. We acknowledge that there is a trade-off between having a sufficient number of shortlisted suppliers to maintain competitive pressure and an economic use of resources for running the procurement.

1.34 Finally, the shortlisted suppliers are then invited to participate in the tender process. Suppliers are provided with relevant documentation and requested to submit their proposals for delivering to those requirements within a reasonable timeframe. This may include presentations of the suppliers' proposals. Suppliers are evaluated against selection criteria to determine the preferred supplier that would deliver the best value for money. In some cases, the selection criteria are provided in advance to the participating suppliers.

Case studies on migration of users

1.35 We looked at some case studies that involved the migration of a large number of users between different technological infrastructure. This was to help inform our thinking about potential switching costs if an alternative provider was selected as the result of a competitive procurement exercise.

1.36 There are limited examples in payment systems of migrating users to different central infrastructure services or a new system: the case study we look at is MasterCard's consolidation of processing services. Another example is the transition to the Single Euro Payments Area (SEPA) euro-clearing system, which we outlined in our final report so do not include here. We also consider the replacement of technology systems, known as Supervisory Control and Data Acquisition (SCADA) systems, in the water utilities. We draw on this case study because these systems have similar features as central infrastructure services in payment systems.

1.37 We now outline the two case studies on:

- the MasterCard migration
- Thames Water's replacement of SCADA systems

1.38 We consider each of these case studies in turn, and then provide a summary on what we take away from them.

MasterCard migration

1.39 MasterCard told us that in the early 2000s it completed a large-scale migration of participants from the processing services of the Switch card scheme to that of the Maestro card scheme. This involved the migration of a large number of users to different central infrastructure services for a payment system with 24/7 operations. It is not possible to estimate the costs involved, given the migration occurred a long time ago.

Thames Water's replacement of SCADA systems

1.40 SCADA systems form part of the infrastructure used in the water utilities sector. They are software applications used to control and monitor the status of assets such as treatment plants and pumps, which may be located at different geographical locations. SCADA systems enable the transfer of critical real-time data from the different assets to a central database via various communication channels. They have a similar architectural structure as central infrastructure services in payment systems.

1.41 Thames Water replaces its SCADA systems around every 10 to 15 years, as technological developments and requirements can change considerably over time. Replacement of a SCADA system requires extensive end-to-end design, migration planning and testing of the new system to ensure there is no disruption to the system's operation. The timeframe for the implementation of a SCADA system, including the migration from the existing system, could range from 6 to 18 months depending on the scale and nature of the systems. The cost of migration to the new SCADA system is factored into the contract price.

1.42 To procure a SCADA system, Thames Water runs a competitive procurement following the EU procurement directive for utilities (see paragraphs 1.20 to 1.30). The contract covers the implementation of the system, and maintenance and support over its lifetime.

Summary

1.43 While we were not able to obtain information about the costs of the migration in these case studies, they demonstrate that it is possible to handle a large-scale migration of users or connection points to new central infrastructure. This includes real-time systems and in areas where it is critical that there is no risk of disruption to the service. In our final report, we noted that transition to the SEPA euro-clearing system also demonstrates this.[5]

1.44 We note the replacement of SCADA systems – critical, real-time communication systems – requires extensive end-to-end design, migration planning and testing of the new system. This is to ensure that there is no disruption to the service provision. However, these systems are replaced around every 15 years to take advantage of technological advancements (see paragraphs 1.41).

5 PSR MR15/2.3, *Market review into the ownership and competitiveness of infrastructure provision – final report* (July 2016), paragraphs 4.218 and 4.225

Annex 2
Our estimate of the size of negative effects to users

Note: The places in this annex where confidential material has been redacted are marked with a [✂].

Introduction

2.1 We consider that the restriction of competition we have found causes negative effects to those who use payment systems (see paragraph 1.4 of our remedies consultation). The negative effects are:

- operators get less innovative services
- operators pay higher prices
- the operators' supplier of infrastructure services faces less pressure to be efficient
- operators could get lower quality of service

2.2 We quantify the negative effect arising from higher prices. We also estimate the loss of contracted-on availability that results from lower quality service.

2.3 We can estimate the size of negative effects due to higher price and worse service on the basis of the LINK request-for-information (RFI) experience. As the LINK RFI was not a competitive procurement, we consider that the estimates we make on the basis of this experience are likely to understate the actual size of the negative effects.

2.4 We do not quantify the negative effects due to reduced efficiency and innovation. These are longer-term benefits of competition. Innovation is by nature difficult to quantify with any degree of reliability. These effects can nevertheless be highly significant, possibly more significant than the other negative effects we have identified. We set out below examples of innovations that have been implemented in other countries and could be implemented in UK payment systems to the benefit of users. Due to the widespread use of the Bacs, Faster Payments Service (FPS) and LINK payment systems, material benefits can arise from a small increase in the per-transaction user benefit.

2.5 This annex is structured as follows:

- We first set out why we consider the LINK RFI experience is informative of the negative effects to users.
- We comment on the negative effect on innovation – the effect due to operators receiving less innovative services.
- We estimate the price detriment, which is detriment due to the high price operators pay for infrastructure services. We comment on the efficiency detriment, which is the detriment due to VocaLink facing less pressure to supply core infrastructure services in a cost efficient manner. We estimate the service detriment, which is the detriment due to operators receiving worse service.

The LINK RFI experience is informative of the negative effects

2.6 We consider that the LINK RFI experience is informative of the negative effects on users. This is because it informs us of the benefits LINK could have achieved by competitive procurement of infrastructure services. We also consider that the experience is informative of at least some of the benefits Bacs and FPS could achieve by competitive procurement of infrastructure services. By not using competitive procurement of infrastructure services, operators are forgoing benefits. These forgone benefits represent negative effects to users.

2.7 The LINK RFI had some characteristics of market testing[6] and is the closest to a competitive procurement process we have seen. As the situation that prevailed for LINK before the RFI was not characterised by competition, we consider that the LINK RFI is informative of the benefits of competition. Specifically, changes to outcomes, measured relative to the pre-RFI situation, are informative of the negative effects to users caused by the restrictions of competition we identified in our findings.

2.8 There are, however, some limits to the conclusions we can draw on the basis of the LINK RFI:

- **First**, the LINK RFI resulted in only limited competitive pressure on VocaLink. For the reasons we set out in our final report, we do not consider that it constituted a competitive procurement exercise or even sufficient market testing.[7] *We therefore consider the LINK RFI is likely to be a conservative measure of the benefits from competition in relation to prices and service levels.*
- **Second**, we cannot isolate changes due to the RFI from changes that would have happened irrespective of the RFI, such as in a re-negotiation of the agreement. Other operators – BPSL and FPSL – re-negotiated existing agreements with VocaLink instead of conducting an RFI. We acknowledge that when the BPSL infrastructure service agreement was re-negotiated, VocaLink made a concession to BPSL by reducing its price.[8] VocaLink made that concession without BPSL doing market testing or competitive procurement. However, we noted in our Final Report that BPSL too had to offer concessions in the form of an extended contract length.[9] It is therefore not clear that VocaLink offered a net concession to BPSL. The evidence we have before us does not indicate that there would have been a net concession to LINK without the RFI.
- **Third**, the LINK RFI was one instance of competition (albeit limited) in a setting that we do not consider to be characterised by competition. *Crucially, the LINK RFI is therefore not informative of the long-term benefits of competition.* It will not capture the benefits of dynamic competition: increased pressure on suppliers to deliver innovative services. Nor will it capture the benefits of increased pressure on suppliers to become more efficient.

2.9 Despite not realising the full benefits of competition, the RFI resulted in VocaLink offering LINK better terms than before: LINK received a [✂]% discount on the current contract. It also received a higher level of service: [✂]% service availability, a 0.2 percentage point increase from the previous level of [✂]%.[10] We also note that one other bidder submitted a bigger discount of between 13% and 29% [✂] than VocaLink.[11] For confidentiality, we have created a range around the true value of the discount. For the upper bound, we have added a positive random number to the true discount. For the lower bound, we have subtracted a different, positive random number from the true discount. The evidence we have shows that this bidder offered a service level of [✂] availability – that is, a level of availability above that which VocaLink was offering before the RFI.

6 PSR MR15/2.3, Market review into the ownership and competitiveness of infrastructure provision – final report (July 2016), paragraph 4.56.
7 MR15/2.3, paragraphs 4.54 to 4.56.
8 MR15/2.3, paragraph 6.117.
9 MR15/2.3, paragraph 6.117.
10 MR15/2.3, paragraph 4.38.
11 MR15/2.3, paragraph 4.56.

2.10 We consider that it is likely that it was the RFI, rather than unrelated contemporaneous events, that produced the changes to the agreement between LINK and VocaLink.

2.11 On the basis of these observations, we consider that it is reasonable to assume that competition in the supply for infrastructure could:

- reduce the fees operators and payment service providers (PSPs) pay for core infrastructure services by [✂] (compared to fees between 2011 and 2015).
- produce improved service levels for operators – we consider that the contracted availability could increase by 0.2%.

2.12 By way of example, a 0.2% increase in availability represents an improvement in FPS's contracted availability of close to three-quarters of a day per year.

2.13 We consider that the LINK RFI experience is informative of the benefits Bacs and FPS could achieve by competitive procurement of infrastructure services.

2.14 We are assessing the negative effects relative to a situation where our proposed remedies are in place. On this basis, we consider that it is reasonable to assume that the operators of Bacs and FPS could at least get benefits similar to those which LINK received through its RFI. We found that bespoke messaging standard made it more difficult to effectively compete for LINK services. We expect that messaging standards will not pose a difficulty for rival providers to provide services to Bacs and FPS when operators have adopted international messaging standards. The benefits that Bacs and FPS could achieve may therefore be greater than those that LINK could achieve.

Negative effect due to less innovation in infrastructure services

2.15 We explained in our final report that there was limited innovation in core infrastructure services.[12] We noted that the major changes to core infrastructure have been largely government driven.[13] We also pointed to several innovations which have been implemented in other countries but have not been implemented in UK infrastructure.[14]

2.16 We noted in our Final Report that effective competition provides incentives for infrastructure providers to innovate to attract and retain their customers. This in turn gives rise to dynamic benefits in the form of improved products and services. This ongoing process of innovation helps ensure that the products and services offered meet the needs of service-users as these evolve.[15] Innovation at the infrastructure level could deliver many benefits to PSPs.

2.17 The Payments Strategy Forum's final strategy points to innovations that would be beneficial to users, including assurance for users that their payments are reaching the correct recipient.[16] There are also innovative features of payments systems in other countries which we believe that UK payment systems could adopt to the benefit of users. These include cloud-based flexible capacity (which allows processing and storage capacity to be scaled up and down depending on users' needs at certain times) and central archiving and retrieval functionality for storing transaction details.[17]

12 PSR MR15/2.3, *Market review into the ownership and competitiveness of infrastructure provision – final report* (July 2016), paragraph 4.188
13 MR15/2.3, paragraph 4.173
14 MR15/2.3, paragraph 4.151
15 MR15/2.3, paragraph 4.1
16 Payments Strategy Forum, *A payments strategy for the 21st century – final strategy* (November 2016): www.paymentsforum.uk/final-strategy
17 MR15/2.3, paragraph 4.161

2.18 The positive effect of competition on innovation is widely recognised – for example, the Competition and Markets Authority guidance on market reviews states that competition 'creates incentives for firms to meet the existing and future need of customers as efficiently and effectively as possible – by [✂] introducing new and better products, often through innovation'.[18] The US Federal Trade Commission's guidance on horizontal mergers states that '[c]ompetition often spurs firms to innovate'.[19]

2.19 We expect effective competition in the supply of infrastructure services would spur the incumbent supplier to innovate in order to reduce its risk of being displaced by alternative suppliers. We also expect such competition to spur alternative suppliers to innovate. This would improve their chances of winning against the incumbent supplier when operators procure infrastructure services.

2.20 For these reasons, we expect improved services due to innovation to bring significant benefits to those who use payment systems. The lack of innovation we have found is therefore a significant negative effect for those who use payment systems. The value of new or improved services that do not yet exist is by its nature impossible to assess. We therefore do not quantify the negative effect that arises due to reduced innovation.

2.21 We also note that in a state of affairs where competition – as opposed to regulatory intervention – spurs innovation, government resources will be freed to focus on other tasks that will benefit the general public. We do not quantify this opportunity cost.

Detriment due to increased cost of infrastructure services

2.22 Our approach to estimating the negative effect due to higher price uses the LINK RFI to establish a benchmark fee. The size of the negative effect is determined by the difference between the actual fees operators have paid and the benchmark fee. This is a common approach to estimating the negative effects for consumers due to higher price in competition investigations.

2.23 Another common approach is to estimate industry excess profitability and then equate any excess to a negative effect on consumers. We have not estimated the negative effect by means of an analysis of excess profits. In this case, the industry has a single participant: VocaLink. We have concerns about the reliability of such an estimate based on only one market participant. Such an approach would also risk understating the negative effect on users in the situation we are looking at, as an incumbent protected from entry may earn low profits due to inefficient operation.[20]

2.24 To estimate the negative effect on users due to higher price:

a. We adjusted VocaLink's annual revenue between 2011 and 2015 to 2015 values. We used the consumer price index (CPI) for this. These revenues represent the fees the operators and PSPs pay to VocaLink for core infrastructure services each year.

b. We calculated the average annual revenue VocaLink has earned for each scheme on the basis of the deflated revenue. (Each of these three averages is the *scheme average revenue* for Bacs, FPS and LINK, respectively.)

c. We calculated operators' and PSPs' *pre-procurement fees*. For Bacs and FPS, the pre-competition fees equal the Bacs and FPS scheme average revenues. For LINK, we calculated pre-competition fees by applying a [✂] reduction to LINK's scheme average revenue. This is to account for the fact that LINK in 2015 ran an RFI, which produced a [✂] reduction of fees.

d. We calculated operators and PSPs' *post-procurement fees*. We calculated these fees by applying a [✂] reduction to the scheme average revenue for each scheme. We chose a [✂] reduction for the reasons we outline in paragraphs 2.6 to 2.14 of this Annex.

18 Competition Commission (2013), Guidelines for market investigations: Their role, procedures, assessment and remedies, paragraph 10: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/284390/cc3_revised.pdf

19 U.S. Department of Justice and the Federal Trade Commission (2010), Horizontal Merger Guidelines, page 23: https://www.ftc.gov/sites/default/files/attachments/merger-review/100819hmg.pdf

20 CC3, para 125(c)

e. We estimated the negative effect on users due to higher price by subtracting the total post-procurement fees for all schemes from the total pre-procurement fees for all three schemes.

2.25 According to this calculation, the annual negative effect on users due to higher price is £[✂] million. We set out the details of the calculation below.

2.26 Table 1 sets out VocaLink's deflated revenues from core infrastructure services sold to Bacs, FPS and LINK between 2011 and 2015. It also shows the average fee for each operator.

Table 1: VocaLink's revenues from core infrastructure services (deflated to 2015 value, £ million)

	2011	2012	2013	2014	2015	Average
Bacs	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
FPS	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
LINK	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]

Source: PSR calculations based on VocaLink and ONS data.

Note: The 2015 figures are estimates.

2.27 Table 2 sets out the schemes' estimated pre-procurement fees (as we described at paragraph 2.24(c)) and schemes' estimated post-procurement fees (as we described at paragraph 2.24(d)). It also shows the estimated detriment, which is equal to the difference between pre-procurement fees and post-procurement fees (as we described at paragraph 2.24(e)).

Table 2: Estimated pre-procurement and post-procurement fees and difference between these (2015 values, £ million)

	Pre-procurement fees	Post-procurement fees	Estimated detriment (difference between fees)
Bacs	[✂]	[✂]	[✂]
FPS	[✂]	[✂]	[✂]
LINK	[✂]	[✂]	[✂]
Total	[✂]	[✂]	[✂]

Source: PSR calculations based on VocaLink and ONS data

May not sum due to rounding

2.28 Table 2 shows that our estimate of the annual negative effect due to higher price is £[✂] million.

2.29 To assess how sensitive the result is to alternative assumptions about the discount the operators receive, we performed the calculation on the basis of alternative assumptions:

- If the discount were [✂]% instead of [✂]%, the annual price detriment would be £[✂] million. This is £[✂] million more than when the discount is [✂]%.
- If the discount were [✂]% instead of [✂]%, the annual price detriment would be £[✂] million. This is £[✂] million less than when the discount is [✂]%.

2.30 We note that the LINK evaluation of bids, conducted in 2015, notes that [✂] offer would offer a '[✂] saving on current costs'. The same document noted that this amounted to a [✂] discount compared to LINK's infrastructure costs at that time. This is consistent with the LINK 2015 figure in Table 1.

Negative effect due to less efficient provision of infrastructure services

2.31 In a competitive market, we would expect suppliers to strive to serve customers' needs as efficiently as possible.[21] If a supplier is not subject to effective competition, it may not have a strong incentive to become efficient. It may have inefficiently high cost, which may result in higher prices.[22]

2.32 For the reasons we set out at paragraph 2.8, the LINK RFI is not informative of the longer-term benefits of competition. It does not allow us to identify the benefit of increased pressure on suppliers to become more efficient.

2.33 If the suppliers that bid against VocaLink in the RFI regularly participate in tenders, or are otherwise subject to competitive pressure, they will have faced pressure to become efficient. If this is the case, the negative effect due to higher prices we have found will reflect the combined effect of inefficiency and VocaLink's market power due to incumbency. We cannot separate these two effects from each other.

2.34 We considered whether we could undertake a benchmarking exercise to quantify whether VocaLink has inefficiently high costs. We concluded that the practical difficulties that are inherent in making a like-for-like comparison made it unlikely that such an exercise would produce a sufficiently reliable answer.

Negative effect due to worse service

2.35 We do not estimate a monetary value of the negative effect due to worse service. We note, however, that a higher level of availability of payment systems would be beneficial to users.

2.36 For the reasons we set out at paragraphs 2.9 and 2.11 above, we consider that the contracted availability would increase by at least 0.2% if supply of infrastructure services were competitive.

2.37 We note that a 0.2% increase in availability represents a material period of time on an annual basis:

- An increase from [✂] availability to [✂], as was the case for LINK, represents additional availability of close to three-quarters of a day per year.[23]
- The contracted availability for the FPS core central system for the processing of transactions is [✂];a 0.2% increase in availability for the FPS core central system would represent additional availability of close to three-quarters of a day per year.

2.38 We do not consider current levels of availability problematic. We also acknowledge that a given increase in contracted availability need not translate into as large an increase in realised levels of availability.

2.39 In addition to system availability, operators and suppliers agree on other indicators of service level. These include how quickly the supplier should respond to PSPs' or operators' calls and how quickly the supplier should process individual payments. While we have no data to indicate how service levels other than availability could change, we think it likely that these service levels would also improve under competition. These would bring benefits other than increased availability to operators and PSPs. Improved service for operators and PSPs are likely to translate into improved services for those that use the payment systems.

21 CC3, para 12

22 CC3, para 125(b) and (c)

23 PSR MR15/2.3, *Market review into the ownership and competitiveness of infrastructure provision – final report* (July 2016), paragraph 4.38

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