

MR15/2.3: Annexes

**Final report:
market review into the ownership
and competitiveness of infrastructure
provision – Annexes**

July 2016

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Annex 1

How payment systems are regulated

The PSR's regulatory and competition powers

Regulatory powers

- 1.1** To support our functions and pursue our objectives, we have a range of regulatory and competition powers:
- **Directions:** We may give specific or general directions in writing to participants in regulated payment systems:
 - requiring or prohibiting the taking of specified action(s) in relation to a system
 - setting standards to be met in relation to a system¹
 - **System rules:** We may require the operator of a regulated payment system to establish rules for its system or to change existing rules. We may also require operators to notify us of any proposed change to their rules or require them not to change their rules without our approval.² Requirements to notify changes to rules and to prohibit changes without prior approval may be general or relate to specific systems or categories of systems.
 - **Access to payment systems:** If a person applies to us for access to a regulated payment system, we may require:
 - the operator of that system to enable the applicant to be a payment service provider (PSP) in relation to the system
 - any PSP with direct access to that system to enter into agreement with the applicant to enable the applicant to become a PSP in relation to that system³
 - **Variation of agreements relating to payment systems:** On application of one of the parties to the agreement, we have the power to vary the terms and conditions in existing agreements. For example, we may change the fees, charges, or terms of access that operators or PSPs impose on their customers.⁴
 - **Disposal of interest in payment systems:** With the Treasury's consent, we may require a person who has an interest in the operator of a regulated payment system, or an infrastructure provider in relation to such a system, to dispose of all or part of that interest. We can exercise this power only if we are satisfied that, if it does not do so, there is likely to be a restriction or distortion of competition in the market for payment systems, or a market for services provided by payment systems.⁵

¹ Financial Services (Banking Reform) Act 2013 (FSBRA), S.54.

² FSRBA, S.55.

³ FSBRA, S.56.

⁴ FSBRA, S.57.

⁵ FSBRA, S.58.

- **Concurrent competition powers:** We have enforcement powers under Chapters I and II of the Competition Act 1998 and Articles 101 and 102 of the Treaty on the Functioning of the European Union. We also have market study and market investigation reference powers under Part 4 of the Enterprise Act 2002. This means that when we conclude that a market is not working well, we have the option to refer this market to the Competition and Markets Authority (CMA) for more detailed investigation. These concurrent competition powers will be exercised concurrently with the CMA.

The PSR's interaction with other authorities

- 1.2** Other regulatory authorities in the UK also have powers over payment systems and/or relevant participants. These are the Financial Conduct Authority (FCA), the Prudential Regulation Authority (PRA) and the Bank of England (BoE).

Financial authorities

Financial Conduct Authority (FCA)

- 1.3** The FCA is a conduct regulator, focusing on the regulation of both retail and wholesale financial firms providing services to consumers. It is responsible for the prudential regulation of PSPs not regulated by the PRA, and for the conduct regulation of all PSPs.

The Bank of England (BoE)

- 1.4** The Bank of England performs a variety of roles in relation to payment systems, and supervises certain interbank payment systems 'recognised' by the Treasury.⁶ It has a number of powers over recognised payment systems. The Bank of England supervises payment systems where relevant to its financial stability objective.

Prudential Regulation Authority (PRA)

- 1.5** The PRA is responsible for the prudential regulation of banks, building societies, credit unions, insurers and major investment firms, to ensure that they are run in a safe and sound manner.^{7,8} In particular, it is responsible for authorising firms seeking to become banks, building societies, credit unions, insurers and major investment banks. Firms need to fulfil a number of criteria in order to be authorised, such as a viable business model, suitable governance arrangements, appropriate capital and liquidity levels, and good risk management.⁹ Authorised firms are also subject to the continuous supervision of the PRA to ensure that they continue to meet the Threshold Conditions. All PRA-authorised firms must comply with the PRA Rulebook¹⁰ and with the FCA Rulebook.¹¹

⁶ The payment systems currently recognised by the Treasury for statutory oversight by the Bank of England are Bacs, CHAPS, CLS, CREST, LCH, Clearnet Ltd, FPS, ICE Clear Europe, LINK and Visa Europe: www.bankofengland.co.uk/financialstability/Pages/fmis/supervised_sys/rps.aspx

⁷ CMA, *Retail Banking market investigation: Regulatory framework applicable to the retail banking industry in the UK* (May 2015), page 5, paragraph 17: https://assets.publishing.service.gov.uk/media/5548cde8e5274a1575000047/Regulatory_framework_working_paper.pdf

⁸ Financial Services and Markets Act 2000 (as amended by the Financial Services Act 2012).

⁹ FSMA, Part 4A.

¹⁰ PRA Rulebook: www.prarulebook.co.uk/

¹¹ PRA-authorized firms are sometimes referred to as 'dual-regulated' as they are subject to regulation from the PRA and the FCA – the PRA for prudential purposes and the FCA for conduct purposes. The FCA maintains an online register, the Financial Services Register, that lists all those firms that are regulated by the FCA and the PRA.

The PSR's interaction with other financial authorities

- 1.6** Sections 98 to 99 of the Financial Services (Banking Reform) Act 2013 (FSBRA) regulate the relationship between us and the Bank of England, the PRA and the FCA. FSBRA provides a general obligation on these four authorities to coordinate the exercise of their relevant functions.^{12,13} As part of this obligation these regulators must consult each other if they propose to exercise a function in a way that may have a material adverse effect on another regulator's objectives.
- 1.7** Sections 100 to 102 of FSBRA provide the Bank of England, the PRA and the FCA with a limited right of veto over our actions. This can only be exercised subject to certain conditions that are specific to the objectives of each authority.¹⁴
- 1.8** In March 2015 the PSR agreed a Memorandum of Understanding (MoU) with the Bank of England, FCA and PRA, which set out how the authorities intend to work together and how they expect to apply the statutory duty to coordinate.¹⁵

Other authorities

The Treasury

- 1.9** The Treasury has broad oversight of the regulatory landscape covering payment systems and their participants. It has been the main driver for legislative changes in financial services regulation.
- 1.10** The Treasury has a number of specific statutory functions relating to the market for payment systems and their participants. It is responsible for designations and recognitions across a range of statutes.^{16,17,18} We must consult the Treasury when we propose to take certain actions, and the Treasury has a right of veto over certain actions.¹⁹

12 FSBRA, S.98.

13 Relevant functions are: (in relation to the PSR) its functions under Part 5 of FSBRA; (in relation to Bank of England) its functions under Part 5 of the Banking Act 2009, (in relation to the FCA and PRA) their respective functions under Financial Services and Markets Act 2000.

14 FSBRA, S.100-102.

15 Bank of England, *Memorandum of Understanding between the Bank of England, FCA, PSR and PRA*: <http://www.bankofengland.co.uk/about/Pages/mous/default.aspx>

16 FSBRA, S.43.

17 Banking Act 2009, S. 184.

18 FSBRA, S.68 and FSMA, section (S.234C(1)).

19 For example, if the PSR proposes to appoint or dismiss the Chair of the Panel – FSBRA, S.103(5).

Annex 2

Governance arrangements of VocaLink

Introduction

- 2.1** In this annex we explain the governance arrangements for VocaLink and the interbank payment systems.

Background before 2003²⁰

- 2.2** Payment systems form a vital part of the UK's financial system – they underpin the services that enable funds to be transferred between people and institutions. Interbank payment systems have been developed to enable people to make payments using the accounts they hold with PSPs (for example, their bank accounts).
- 2.3** The first electronic payment system in the UK was created by Dennis Gladwell, then chairman of the Joint Stock Banks Clearing Committee. It started in 1968 as the Inter-Bank Computer Bureau, intended to improve the existing clearing system by transferring funds between banks electronically, avoiding the need for paper documents. The company operating the service adopted the name Bankers Automated Clearing Services Limited in 1971. A telephone service, BACSTEL, was introduced in 1983, reducing the need for magnetic tapes. More banks and building societies joined in 1985, and the company shortened its name to Bacs Limited. This was part of the Child Report²¹ recommendations, which also included the creation of the Association for Payment Clearing Services (APACS) as an umbrella for the clearing companies (Cheque and Credit Clearing Company Limited (C&CCCL), CHAPS Co and Bacs). At this time, the requirement to join all three clearing companies if a member of the Bankers' Clearing House fell away.
- 2.4** In November 1998 the Treasury commissioned a review of competition within the UK banking sector, to be chaired by Sir Don Cruickshank. Reporting in March 2000, The Cruickshank Report recommended that:
- clearance scheme ownership and management should be split from infrastructure operation and delivery
 - infrastructure management should be conducted on a commercial basis with fair and open access to third parties
 - a low-cost way to transfer money quickly should be developed

²⁰ All information in the public domain, including:

i) The Cruickshank Report, *Competition in UK banking – A Report to the Chancellor of the Exchequer* (March 2000): https://www.vocalink.com/media/1603/cruickshank_report_2000.pdf

ii) Bank of England, *Recent developments in UK payment clearing systems, Quarterly Bulletin* (1987): www.bankofengland.co.uk/archive/Documents/historicpubs/qb/1987/qb87q3392394.pdf

ii) Payments UK, *Annual Statistical Publications*: http://www.paymentscouncil.org.uk/resources_and_publications/publications/reports/#anchor5

²¹ The results of the review appeared in a report entitled 'Payment Clearing Systems', published in 1984 (the Child Report). The report's two main recommendations advocated a new structure for the organisation of payment clearing systems and new rules regarding membership of such systems.

- 2.5** In response, on 1 December 2003, Bacs Payment Schemes Ltd (BPSL) was split from Bacs Limited. BPSL was established as a not-for-profit company with members from the banking industry. Its purpose is to promote the use of automated payment schemes and govern the rules of the Bacs scheme. Bacs Limited owned the infrastructure to run the Bacs scheme. Bacs Limited was permitted to continue to use the Bacs name for one year, becoming Voca Limited on 12 October 2004.

Merger with LINK (2007)

- 2.6** In 2005, a joint proposal from Voca and LINK (LINK Interchange Network Limited²²) was selected to deliver the payment-processing infrastructure for the Faster Payments Scheme (FPS), a near real-time interbank transfer for internet and telephone banking. After forming a strong working partnership, which brought Voca's bulk processing together with LINK's real-time payment switching, the companies agreed to merge on 2 July 2007 to form VocaLink.
- 2.7** The merger was approved by the Office of Fair Trading (OFT) and took effect between Voca Limited and LINK Interchange Network Limited on 2 July 2007.²³ A holding company was formed, VocaLink Holdings Limited, which acquired the entire share capital of both Voca and LINK Interchange Network Limited. VocaLink Limited became the principal trading entity (and a wholly owned subsidiary of VocaLink Holdings Limited).

Corporate identity

- 2.8** The VocaLink group companies include VocaLink Limited²⁴, Voca Limited²⁵, and VocaLink Holdings Limited.²⁶
- 2.9** VocaLink is the infrastructure provider to the interbank schemes Bacs and FPS, and to the ATM network LINK.²⁷ It is a for-profit organisation, although it has never distributed dividends. It is 77.6% owned by the four largest retail banks, with other banks and building societies owning the remainder.^{28,29}

Regulatory status

- 2.10** VocaLink is a regulated person within the scope of the PSR's powers.³⁰ Through the Treasury designation of Bacs, FPS and LINK, VocaLink is defined as a 'participant' under the Financial Services (Banking Reform) Act 2013 in its capacity as infrastructure provider for those payment systems.
- 2.11** VocaLink is not currently directly regulated by the Bank of England, although it does maintain a close relationship and dialogue with the Bank of England. The Bank of England exercises some influence over VocaLink through the operators that it oversees (BPSL, Faster Payments Scheme Limited (FPSL) and LINK Scheme Limited (LSL))³¹, to which VocaLink provides critical infrastructure services. For all financial market infrastructures supervised by the Bank of England, the regulatory context will be

22 LINK Interchange Network Limited was formed in 1985 to create interoperability between ATMs across the United Kingdom. It became an international network in the 1990s through connection with the MasterCard and Visa networks. In October 2002 LINK launched the first service that used ATMs as a retail channel, enabling the facility to top-up a mobile phone at an ATM, bringing banking and mobile phones together for the consumers.

23 <https://www.vocalink.com/about-us/our-people/>

24 The previous company name was Vocalink Management Company Limited.

25 This is a dormant company. The previous company name was Bacs Limited (10/09/1971-08/10/2004).

26 <https://www.vocalink.com/privacy-and-legal/>

27 Written evidence submitted by VocaLink to the Treasury Committee's inquiry into competition and choice in the banking market paragraphs 2 and 3, page 10: <http://www.publications.parliament.uk/pa/cm201011/cmselect/cmtreasy/612/612vw08.htm>

28 London Economics, *Competition and collaboration in UK payment systems* (October 2014) section 2.1.2, page 9: <http://www.fca.org.uk/static/documents/psr/london-economics-report-on-competition-and-collaboration-for-the-psr.pdf>

29 Parliamentary Commission on Banking Standards, Written evidence from VocaLink: http://www.publications.parliament.uk/pa/jt201314/jtselect/jtpcbcs/27/27viii_we_f24.htm

30 FSBRA, S.42(2) and FSBRA, s. 58 as amended by the Small Business, Enterprise and Employment Act 2015, s.14.

31 Bank of England, *Recognised Payment Systems*: http://www.bankofengland.co.uk/financialstability/Pages/fmis/supervised_sys/rps.aspx

framed by the internationally agreed CPMI/IOSCO *Principles for Financial Market Infrastructures*.³² These do not apply directly to VocaLink, although Annex F of the *Principles* does set out some factors for regulators and operators to consider where a critical service provider is separate from the scheme operator.^{33,34,35}

Ownership

- 2.12** VocaLink Holdings Limited is a private company limited by shares and has 17 institutional shareholders (or 13 banking groups).^{36,37} While many of the shareholders are listed companies, VocaLink is not.
- 2.13** VocaLink Limited is the principal trading entity, and a wholly owned subsidiary of VocaLink Holdings Limited.³⁸
- 2.14** Membership of the Board of VocaLink Holdings Limited includes six representatives appointed by shareholders, four independent non-executive Directors, a chief executive officer and a chairman. The chairman of the Board is Sir John Gieve, formerly Deputy Governor of the Bank of England.³⁹
- 2.15** Political discussions on the ownership of VocaLink have been going on for a number of years.^{40,41,42} Andrea Leadsom gave evidence before the Parliamentary Commission on Banking Standards on 4 December 2012 and stated: 'The concern I have – and the Treasury Committee has presided over inquiries into this – is that that ownership by a minority of banks leads to the encouragement of anti-competitive practices.'

32 Bank for International Settlements, Committee on Payment and Settlement Systems, Board of the International Organization of Securities Commissions, *Principle for financial market infrastructures: Disclosure framework and Assessment methodology* (December 2012): <http://www.bis.org/cpmi/publ/d106.pdf>

33 The high-level expectations set out in Annex F of the CPMI-IOSCO principles are:

- a critical service provider is expected to identify and manage relevant operational and financial risks to its critical services and ensure that its risk-management processes are effective
- a critical service provider is expected to implement and maintain appropriate policies and procedures, and devote sufficient resources to ensure the confidentiality and integrity of information and the availability of its critical services in order to fulfil the terms of its relationship with an FMI
- a critical service provider is expected to implement appropriate policies and procedures, and devote sufficient resources to ensure that its critical services are available, reliable and resilient. Its business continuity management and disaster recovery plans should therefore support the timely resumption of its critical services in the event of an outage so that the service provided fulfils the terms of its agreement with an FMI
- the critical service provider is expected to have in place robust methods to plan for the entire lifecycle of the use of technologies and the selection of technological standards
- a critical service provider is expected to be transparent to its users and provide them sufficient information to enable users to understand clearly their roles and responsibilities in managing risks related to their use of a critical service provider

CPMI-IOSCO also publishes an assessment methodology against these criteria with more detailed questions.

34 Bank for International Settlements, Committee on Payment and Settlement Systems, Board of the International Organization of Securities Commissions, *Principle for financial market infrastructures: Assessment methodology for the oversight expectations applicable to critical service providers* (December 2014): <http://www.bis.org/cpmi/publ/d123.pdf>

35 Bank for International Settlements, *Payments, clearing and settlement systems in the United Kingdom* (2012): https://www.bis.org/cpmi/publ/d105_uk.pdf

36 A consortium of 17 banks and building societies own VocaLink Holdings Limited, including Barclays Bank plc, Royal Bank of Scotland Group, Lloyds Banking Group and HSBC: <https://companycheck.co.uk/company/06119036/VOCALINK-HOLDINGS-LIMITED/group-structure>

37 Companies House, *VocaLink Holdings Limited, Filing history*: <https://beta.companieshouse.gov.uk/company/06119036/filing-history?page=1>

38 Companies House, *VocaLink Holdings Limited, Filing history*.

39 <https://www.vocalink.com/about-us/our-people/> and Articles of Association, paragraph 22.1.

40 UK Parliament, Corrected Transcript of oral Evidence to be published as HC &10-ii: <http://www.publications.parliament.uk/pa/jt201213/jtselect/jtscbs/c710-ii/c71001.htm>

41 PaymentEye, VocaLink faces Ownership shake-up: <http://www.paymenteye.com/2014/10/07/vocalink-faces-ownership-shake-up/>

42 UK Parliament, Parliamentary Commission on Banking Standards – Written evidence from Tusznet: http://www.publications.parliament.uk/pa/jt201314/jtselect/jtscbs/2727viii_we_f12.htm

Shareholders^{43,44}

- 2.16** Shareholders have not benefited financially from their ownership of VocaLink.⁴⁵ Since the merger of Voca and the LINK Interchange Network in February 2007, shareholders have not received a dividend. VocaLink has had three years of operating losses (2007, 2008 and 2010) and shareholders were required to invest £60 million in April 2009. Recent years have been profitable but all funds have been retained for reinvestment. At the end of 2014, VocaLink had a net pension deficit of over £50 million.
- 2.17** Shareholder votes, for example at annual general meetings, are capped at 24.99% of the total votes cast to limit the voting power of the largest banks⁴⁶ (currently only Lloyds holds more than 25% of the shares).⁴⁷
- 2.18** Shareholders have voting rights on a number of matters:
- (a) Annual general meetings⁴⁸: The ordinary business of an annual general meeting shall be the consideration of the annual report and accounts, Directors' report, a report from the chief executive to provide the shareholders with a commercial update on the business and affairs of the company and a report from the Nomination Committee on the performance and attendance of the Directors, and the retirement by rotation and appointment of Directors.
 - (b) Reserved matters⁴⁹: Reserved matters cannot be undertaken by the Board without the prior consent of shareholders who hold shares that together carry 50% or 75% of the votes (as required by each individual reserved matter). They include:
 1. any change to the rights attaching to any class of shares in the company (75%)
 2. any reduction of the share capital of the company (75%)
 3. any resolution to wind up the company (75%)
 4. the filing of any petition by the company to wind up or make any arrangement with creditors generally, or any application for an administration order or the appointment of a receiver or administrative receiver (unless, in any such case the company shall have become unable to pay its debts within the meaning of Section 123 of the Insolvency Act 1986) (75%)
 5. any proposal to materially change the business of the group (75%)
 6. the approval or adoption of a dividend policy of the company (75%)
 7. the sale, disposal or acquisition of any business, undertaking or assets, whether by a single transaction or series of related transactions, where: i) the gross value of the consideration that will or may be received, paid or issued as a result of the relevant transaction(s) represents more than 25% of the net asset value of the group; or (ii) the gross assets that are the subject of the transaction(s) represent more than 25% of the gross assets of the group (being its total fixed assets plus total current assets) at the relevant time; or (iii) the profits attributable to the assets (after deducting all charges except taxation and exceptional items) that are the subject of the relevant transaction(s) represent more than 25% of the total profits of the group (after deducting all charges except taxation and exceptional items) at the relevant time (provided

43 Company Check, *VocaLink Holding Limited*: <http://companycheck.co.uk/company/06119036/VOCALINK-HOLDINGS-LIMITED/group-structure>

44 Companies House, *VocaLink Limited*: <https://beta.companieshouse.gov.uk/company/06119048/filing-history>

45 VocaLink (February 2015), VocaLink Holdings Annual Report and Accounts 2014, <https://www.vocalink.com/downloads-and-media/reports/vocalink-2014-annual-report/>

46 Articles of Association (adopted by special resolution on 8 April 2015), paragraph 18.1

47 https://www.accenture.com/t20150706T061438_w_us-en/acnmedia/Accenture/Conversion-Assets/DotCom/Documents/Global/PDF/Dualpub_6/Accenture-Review-Governance-Ownership-UK-Payment-Systems.pdf

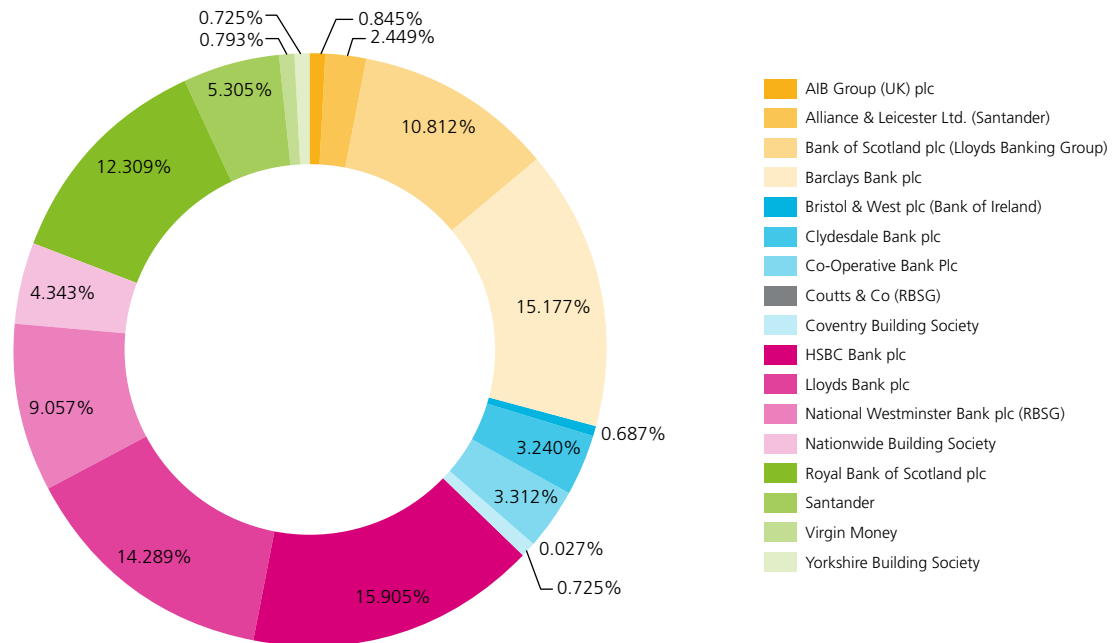
48 Articles of Association, paragraph 15.2.

49 Articles of Association, paragraphs 21(1) to 21(23).

that any sale, disposal or acquisition in respect of which the proposed consideration does not exceed £10 million and which, taken together with the consideration in respect of any other such sale(s), disposal(s) or acquisition(s) by any shareholder of the group in the same financial year, does not exceed £25 million)

8. any material transaction between any member of the group and any related party which is outside the ordinary course of trading at the relevant date or which is other than on commercial arm's length terms (including, without limitation, any loan, investment in loan capital, guarantee, commitment to invest or similar agreement or arrangement between any shareholder and the company) (75%)
9. the admission to trading or public dealings of all or any securities of the company on any recognised investment exchange (75%)
10. any material change in, or derogation from, the Board's authorisation guidelines and escalation procedures applicable to members of the group (as adopted by the Board from time to time with the consent of the shareholders), or the adoption, in respect of any new member of the group, of any such guidelines or procedures materially different from those guidelines and procedures (75%)
11. any change to the auditors (50%)
12. the approval of the annual report and accounts (50%)
13. any change to the company's accounting period (50%)
14. any matter designated a reserved matter by the Operational Oversight Committee (50%)
15. any amendment or alteration to, or derogation from, the terms of reference in force from time to time, or the adoption of any new terms of reference of the Operational Oversight Committee (50%)
16. any decision, direction or resolution concerning a matter designated as a reserved matter, and any consent so given shall be conditional upon the Board making such decision, direction or resolution in the manner determined by the shareholders (50%)

Figure 1: VocaLink’s shareholders



Board⁵⁰

- 2.19** The Board is responsible to shareholders for creating and delivering sustainable shareholder value through the management of the group’s businesses. It should therefore determine the strategic objectives and policies of the group to deliver such long-term value, providing overall strategic direction within a framework of rewards, incentives and controls. The Board must ensure that management strikes an appropriate balance between promoting long-term growth and delivering short-term objectives. The Board, in order to be effective, should demonstrate ethical leadership and promote the company’s collective vision of its purpose, values, culture and behaviours.
- 2.20** The Board is also responsible for ensuring that management maintains a system of internal control that provides assurance of effective and efficient operations, internal financial controls and compliance with law and regulation. In addition, the Board is responsible for ensuring that management maintains an effective risk management and oversight process at the highest level across the group.
- 2.21** When VocaLink was formed in 2007, shareholder Directors accounted for eight out of 15 Board positions. Since 2011, when the current Board structure was approved, the number of Directors has reduced to 12, of whom six are shareholder Directors.
- 2.22** Current membership of the Board of VocaLink Holdings Limited includes six non-executive directors appointed by shareholders, four independent non-executive Directors, the chief executive officer and the chairman. The chairman of the Board is Sir John Gieve, formerly Deputy Governor of the Bank of England.⁵¹
- 2.23** Each shareholder is entitled to nominate a Director, and voting then takes place for candidates. The shareholder Directors make up the six candidates who receive the highest number of votes. In practice this means that the five Directors are the nominees of the largest banks (Lloyds, RBS, HSBC,

⁵⁰ Directors Handbook approved by VocaLink Board on 25 September 2014. See also Articles of Association, paragraph 27.1,

⁵¹ <https://www.vocalink.com/about-us/our-people/>

Barclays and Santander); the sixth shareholder Director is drawn from one of the smaller shareholders (currently Nationwide) to represent the interests of minority shareholders on the board.⁵²

- 2.24** The other six Directors are currently split between four independent Directors and two executive Directors. The Board has the power to appoint and remove the executive Directors.
- 2.25** The four independent non-executive Directors are appointed by the board. The Nominations Committee is consulted and can make recommendations on appointments to the board. 'Independent' is defined in VocaLink's articles of association as 'not having been employed by or acted as a consultant for any shareholder in the last three years or having an interest directly or indirectly in any contract with VocaLink of any shareholder (including being employed by or acting as a consultant to any third party who has entered into a contract with a shareholder) which would cause the Director to not be able to act independently in the best interests of the company at all times.'
- 2.26** Voting at the Board is based on one Director, one vote, but questions arising at any meeting of Directors shall be determined by a majority of votes, and the case of an equality of votes the matter shall be designated as a Reserved Matter.⁵³ The Board also has a Nomination Committee that reviews the Board composition; an external review of Board effectiveness is also commissioned from time to time.

Directors' roles

Chairman

- 2.27** [X]

Chief executive

- 2.28** [X]

Non-executive Directors

- 2.29** [X]

Senior independent Director

- 2.30** [X]

Directors' duties

- 2.31** [X]
- 2.32** The *Directors' Handbook* contains detailed provisions in relation to good corporate governance and VocaLink's expectations of all Directors. It states that all Directors on the Board are responsible to shareholders for creating and delivering sustainable shareholder value, as well as fulfilling the company's obligations, in managing the group's business. Specifically, the chairman has asked Board members to focus on the interests of VocaLink.
- 2.33** All Directors (including appointed shareholders and independent non-executive Directors) are subject to Directors' duties as set out in the Companies Act 2006. This is reinforced by the *Directors' Handbook* and a periodic external audit of the effectiveness of the Board.

⁵² Accenture, *A review of ownership and governance of payment systems*, (2014), page 57, paragraph 10.3.1 and 13.3.2: <https://www.psr.org.uk/sites/default/files/media/PDF/accenture%20governance%20report.pdf>

⁵³ Articles of Association, Article 28.2.

2.34 Sections 170 to 177 of the Companies Act 2006 (incorporated into Vocalink's *Directors' Handbook*) present the provisions that codify the long-standing common law duties of company Directors:

- (a) S.171, to act within their powers – to abide by the terms of the company's memorandum, Articles of Association and shareholders' decisions.
- (b) S.172, to promote the success of the company and a duty to act in good faith and in the best interests of the company – Directors must continue to act in a way that benefits the shareholders as a whole, but there is now an additional list of non-exhaustive factors that they must consider.
- (c) S.173, to exercise independent judgement – Directors must not restrict their discretion to act, other than pursuant to an agreement entered into by the company or in a way authorised by the company's articles.
- (d) S.174, to exercise reasonable care, skill and diligence – this must be exercised to the standard expected of a) someone with the general knowledge, skill and experience reasonably expected of a person in the role of a Director (the objective test); and b) the actual knowledge, skill and experience of that particular Director (the subjective test).
- (e) S.175, to avoid conflicts of interest⁵⁴ – methods for authorising such conflicts by either Board or shareholder approval must be introduced.
- (f) S.176 not to accept benefits from third parties.
- (g) S.177 to declare an interest in a proposed transaction with the company – there are to be carve-outs for matters that are not likely to give rise to a conflict of interest, or that Directors are already aware of. There will be an additional statutory obligation to declare interests in relation to existing transactions.

Appointment of Directors⁵⁵

2.35 There has never been a test of competence that must be passed by a person wishing to act as a Director of a limited company. Nor is there any expectation for such a person to hold any formal qualification (unlike the eligibility rules that apply to company secretaries). The UK Institute of Directors issues the qualification 'chartered Director', which aims to equip individuals with the skills needed by Directors, especially in the listed company environment, but this has no legal recognition or significance. UK law has always made the limited company format very widely available to businesses of all kinds and sizes and, in keeping with this liberal approach, allows persons from all backgrounds to act as Directors.

2.36 The principal statutory restrictions on acting as a Director derive from the Company Directors Disqualification Act 1986 (CDDA). Section 11 of that Act provides that persons who are undischarged bankrupts or subject to a bankruptcy restrictions order may not act as Directors of limited companies. It is an offence for persons to act in contravention of these provisions. The CDDA lays down a number of other grounds on which Directors may be disqualified by law from acting as Directors. Individual companies may, in their own Articles of Association, place further restrictions on who may and may not act as a Director.

⁵⁴ S. 175 the Companies Act 2006 requires a Director to avoid not only situations where there is plainly a conflict, but also those that 'possibly may conflict' with the Director's duty to the company. Thus the Director is obliged to consider whether his outside interests are likely to give others the impression that there may be a conflict. In *Boardman v Phipps* [1967] 2 AC 46, it was held that the term 'possibly may conflict' means 'that the reasonable man looking at the relevant facts and circumstances of the particular case would think that there was a real sensible possibility of conflict'. In the case of *Shepherds Investment v Andrew Walters* [2006] EWHC 836 the court has confirmed that the law no longer regards such conduct as consistent with the Director's fiduciary duty. It has been held separately that executive Directors, who have service contracts with their company, may not become Directors of a competing company (*Hivac Ltd v Park Royal Scientific Instruments Ltd* [1946], Chapter 169).

⁵⁵ *Directors' Handbook*, Annex 4.

- 2.37** The Nominations Committee and the chief executive must take all necessary steps to ensure a diligent and thoughtful process for nominating and electing qualified candidates for each Director's role.
- (a) For shareholder directors, this process will include outreach to the appropriate senior executives (CEO, their direct report and their report once removed) to communicate the required skills, time commitments and expectations for Board candidacy.
- (b) For directors other than shareholder directors, the Nominations Committee and the chief executive must take all steps necessary and appropriate to identify and recommend candidates who reasonably fit the approved profiles, including engaging a search firm with expertise in corporate director searches.
- 2.38** The chief executive and the chairman are responsible for leading the development of the profile for each non-shareholder director.
- 2.39** VocaLink's *Directors' Handbook* lists qualifying criteria which the Nomination Committee has to consider when selecting a person for a director's role. These include various degrees of knowledge and experience of the legal, regulatory and technological environment in which VocaLink operates, an understanding of the risks inherent in the industry, and know-how and expertise in financial services.
- 2.40** Each shareholder director should either be a senior executive or a shareholder with direct management responsibility in the payments area, or a senior executive who has the relevant skills and expertise in a functional area important to the company. Each shareholder director must have significant exposure within their company, be well connected and, ideally, nominated or sponsored by a member of the executive Board of the shareholder, or a direct report. A successful candidate must satisfactorily demonstrate their expertise and willingness to actively contribute in the governance, oversight and development of a systemically important payments infrastructure. Each candidate must be willing to undergo an independent validation of such skills and make an agreed time commitment. Each shareholder director must be prepared to serve for at least three years.
- 2.41** [§<]

Board governance⁵⁶

- 2.42** The Board is responsible to shareholders for creating and delivering sustainable shareholder value in managing the group's businesses. It should therefore determine the strategic objectives and policies of the group to deliver this long-term value, providing overall strategic direction within a framework of rewards, incentives and controls.
- 2.43** VocaLink's Board has reserved a number of matters for its approval – for example, approval of interim and final financial statements, approval of the annual report and accounts, Board structure, size and composition (including appointments and removals) and Board Committee membership.
- 2.44** The Independent Board Effectiveness Review⁵⁷ was conducted in 2014. This review acknowledged the following:
- the Board environment was not completely open and transparent
 - there was not an aligned view for the long term strategy for the business
 - it was not always easy to prioritise the needs of the company with individual shareholder priorities
- 2.45** VocaLink has told us it has been acted upon by its Board.

⁵⁶ Terms of References included in the *Directors' Handbook* adopted by resolution of the Board on 24 July 2014

⁵⁷ The external review was commissioned in February 2014 offers an independent view of the Board's effectiveness, particularly with regards to its ability to contribute to the success (p. 2).

Board meetings

- 2.46** The Board usually has six scheduled meetings a year and all directors are expected to attend each one, unless there are exceptional circumstances.
- 2.47** The Board is collectively responsible for setting its own agenda.
- 2.48** Papers relevant to the agenda of each Board and Board Committee meeting will be sent to Board and Committee members as appropriate approximately one week before the meeting. Regular papers submitted to the Board will include:
- a report from the chief executive
 - a report from the group finance director, including monthly management accounts and updates on capital and liquidity
 - presentations on the implementation of the group's strategy
 - reports from the chief risk officer
 - reports and minutes of Board Committees

Annual strategy meeting

- 2.49** A one-to two-day meeting devoted to strategy will be held each year – usually in the autumn. The Board will review the group's long-term strategic plans and agree its strategic priorities, including capital management, liquidity and risk strategy.

Off-site board meeting

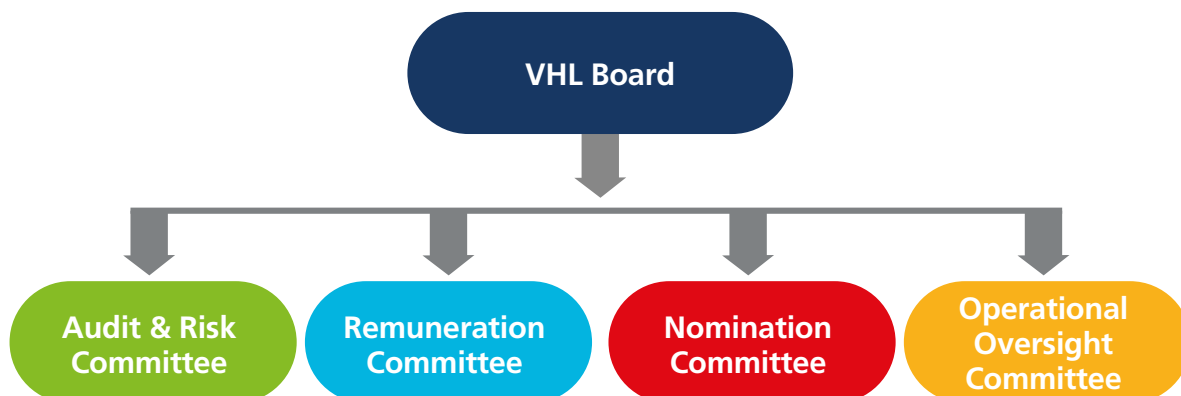
- 2.50** The Board will usually hold at least one Board meeting each year at one of the group's business locations.

Annual general meeting

- 2.51** The annual general meeting is required to be scheduled within three months of the Board's approval of the group's annual report and accounts.
- 2.52** [✂]
- 2.53** [✂]

Board Committees

- 2.54** The Board may also delegate some of its powers, authorities or discretions to Committees.
- 2.55** Currently, the VocaLink Board has delegated five Committees: executive, operational oversight, audit and risk, remuneration and nominations.

Figure 2: VocaLink's Committees

2.56 Executive Committee (ExCo): The ExCo is not formally appointed by the main Board because it is the chief executive's forum for major operational decisions. The authority of the ExCo is generally limited to that vested in its individual members where authority has been delegated by the main Board. However, because the business it conducts is of importance to the group, it should report back to the Board. This may be by circulating the ExCo minutes to all directors, or by a report from the chief executive (oral or written), or both.

2.57 The Committee is made up of the:

- chief executive officer
- chief financial officer
- chief operations officer
- managing director, commercial services
- managing director, strategy and business development
- chief legal officer
- director of Human Resources and Organisational Design
- chief risk officer
- managing director, LINK ATM services

2.58 The quorum necessary for the transaction of business is three members, of whom at least one must be the chief executive officer, chief financial officer or chief operating officer.

2.59 The ExCo assists the chief executive in running the business and/or acts as an advisory Committee for the chief executive. It is made up of the executive directors and the most senior members of the management team – those individuals one level down from the board who report directly to the chief executive.

2.60 Operational Oversight Committee (OOC): The OOC is a sub-committee of the VocaLink Holdings Limited Board, constituted in accordance with the Articles of Association of the company.

2.61 The role of the Committee is to:

- protect the integrity of core services and maintain contracted service levels
- maintain a level of core service investment consistent with being capable of re-tendering for core services contracts when they expire
- ensure that the continued resilience, integrity and viability of the core services are not put at risk

2.62 The Committee is made up of nine members. These are:

- (a) four shareholder directors, or their nominees, and three shareholder representatives who have experience in operational management, systems architecture or design, project management and security
- (b) the chairman of the company
- (c) a senior independent non-executive director

2.63 It is currently comprised of seven members, four of which are representatives of the four largest shareholder PSPs.

2.64 The Bank of England has a standing invitation to attend meetings of the Committee as an observer. The chairman or senior independent non-executive director is chairman of the Committee.

2.65 Each member of the Committee has one vote. In the event of deadlock, the chairman of the Committee has a casting vote. The quorum for the Committee is three members of whom two must be shareholder directors, shareholder director nominees or shareholder representatives.

2.66 The Board of the company ensures that recommendations of the Committee in relation to the operational principles and the core services objectives are promptly considered.

2.67 If the Committee (acting by a majority) reasonably considers that the Board has not implemented, or is unlikely to implement, a decision of the Committee, then the Committee may escalate the matter to the shareholders to determine as a reserved matter. The Committee does not have authority to escalate any matter which, if implemented, would require a change to the core services contracts.

2.68 **Audit and Risk Committee:** This Committee monitors and assesses the adequacy and effectiveness of the internal controls of VocaLink and the companies within the group.

2.69 The primary objectives of the Committee are to ensure that:

- VocaLink and the companies within the group operate in a secure, resilient and effectively controlled manner, and that accounting, financial and other practices comply with regulatory requirements and represent best industry practice as appropriate; the Committee also oversees the activities of, and maintains an appropriate relationship with, the group's internal auditors
- the Committee is forward looking in anticipating potential issues by assessing known or foreseeable risks (through monitoring against risk appetite) and taking action to avoid or mitigate the impact of those risks
- the Committee advises on, and oversees the firm's risk appetite, as articulated by the Board in the firm's risk appetite statement, by adopting an effective enterprise risk management framework and compliance risk management framework, appropriate risk policies and procedures, risk tolerances, and the dissemination and analysis of suitable key risk indicators and other risk reports

- 2.70** The Committee consists of a minimum of six members, as agreed by the Board of the company. The quorum for a meeting is three members of the Committee. Currently, the Committee consists of four independent directors and two shareholders appointed directors.
- 2.71** Appointments to the Committee are for a period of up to three years, which may be extended for further three-year periods, provided the director still meets the criteria for membership of the Committee.
- 2.72** The company secretary acts as the secretary of the Committee. If the company secretary is also an executive director, the Committee may nominate one of its members to act as secretary for any meeting that the Committee wishes to hold without executive directors being present.
- 2.73** Decisions of the Committee are made by majority vote. Each member of the Committee has one vote. If the votes are equal, the chairman of the Committee has a second or casting vote.
- 2.74** **Remuneration Committee:** This Committee establishes a procedure for developing policy on executive remuneration and setting the remuneration packages of individual directors. The Committee reviews the remuneration of directors from time to time and makes recommendations to the company in general meetings for its approval.
- 2.75** The members of the Committee are appointed by the Board and consist of:
- the senior independent Director
 - two shareholder Directors
 - two independent Directors
- 2.76** The quorum for meetings of the Committee is two members. Currently the Committee is resourced with three independent non-executive directors and two shareholder directors.
- 2.77** The chairman of the Committee is appointed by the Board, on the recommendation of the Nomination Committee. In the absence of the chairman of the Committee, the members present select one of their number to chair the meeting.
- 2.78** Appointments to the Committee are for a period of up to three years, which may be extended for further three-year periods.
- 2.79** The company secretary or their designate acts as the secretary of the Committee. If the company secretary is also an executive director, the Committee may nominate one of its members to act as secretary for any meeting that the Committee wishes to hold without executive directors being present.
- 2.80** Each member of the Committee has one vote and if the votes are equal the chairman has one further casting vote.
- 2.81** [X]
- 2.82** [X]
- 2.83** **Nominations Committee:** This Committee establishes a procedure for appointing new directors to the Board and ensuring the appropriate balance of skills and experience on the Board is maintained, taking into account the changing needs of the company and prevailing corporate governance best practice. The Committee leads the process for Board nominations and makes recommendations to the Board.

2.84 The members of the Committee are appointed by the Board and consist of:

- the chairman of the Board
- two independent non-executive directors
- two shareholder directors

2.85 The quorum for meetings of the Committee is two members. The Committee currently consists of the chairman, two independent non-executive directors and two shareholder directors.

2.86 The chairman of the Board is the chairman of the meeting. Each member of the Committee has one vote and if the votes are equal the chairman has one further casting vote.

Services provided (core)

2.87 VocaLink provides a number of services to the operators of Bacs, FPS and LINK.

(a) Bacs

Bacs Payment Schemes Limited (the company that operates Bacs) has 16 members and is responsible for the processing of bulk payments through its two principal payment schemes: Direct Debit and Bacs Direct Credit. Bacs is a high-volume, low-value payment system.

(b) FPS

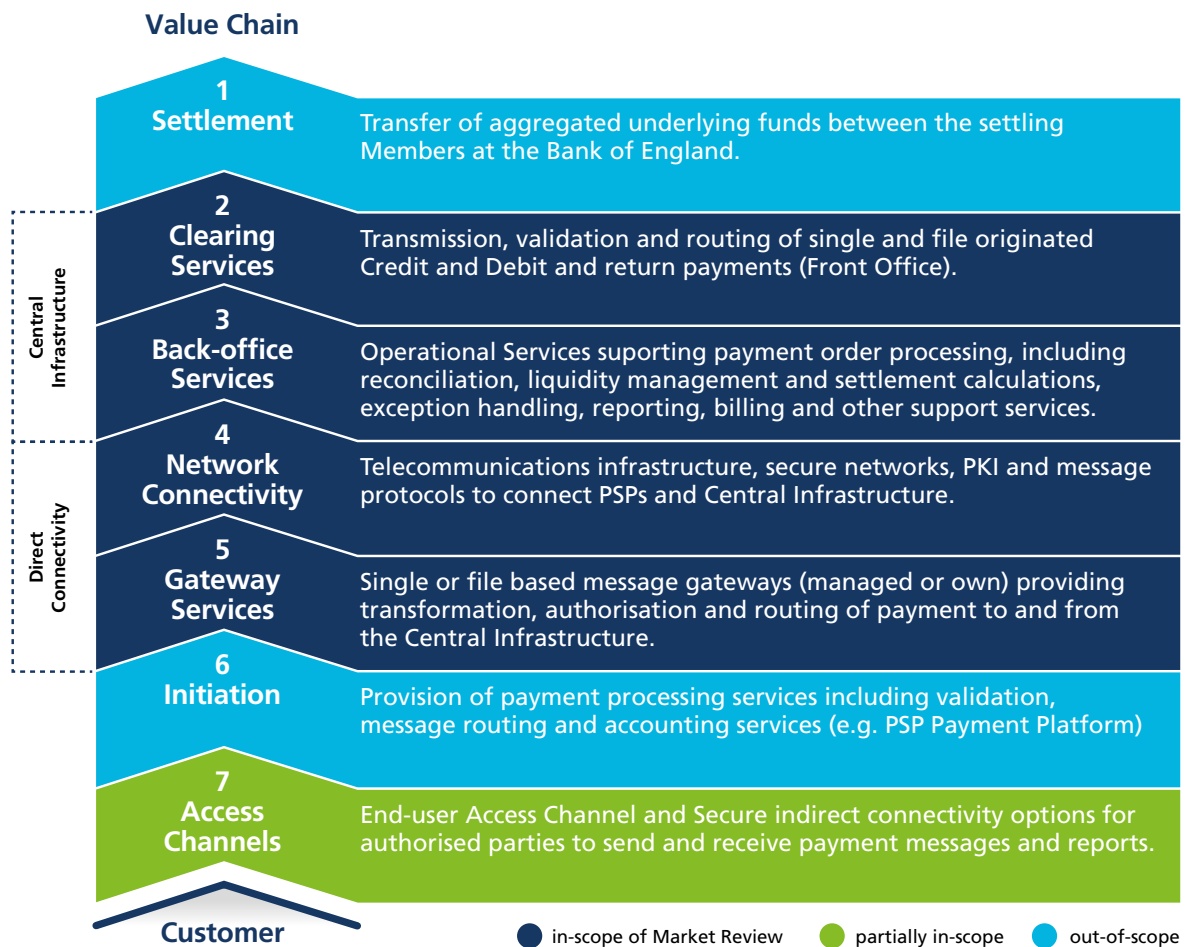
In 2008, the industry introduced the Faster Payments Scheme (FPS), which provides almost real-time payments between banks within the UK. The Faster Payment Scheme Limited (the company operating FPS) has ten direct settling participants. FPS enables internet, mobile and telephone banking payments, as well as standing orders, to be processed almost instantaneously, 24 hours per day, seven days per week. Payments normally clear in under two hours, if both the sending and receiving banks are part of FPS. Standing order payments, faster single immediate payments, payments forward dated payments and return payments can be processed through the FPS system.

(c) LINK

LINK connects the cash machines of its ATM-operating members with the card systems of its card-issuing members. LINK does not install or operate cash machines: these are run by LINK members themselves. LINK operates 24 hours a day, seven days a week, 365 days a year and is a fully online network; all transactions are authorised in real time. The LINK network has 38 members and is operated by Link Scheme Limited.

2.88 Figure 3 describes which part of the chain of transaction forms the services provided by VocaLink to each of the three operators.

Figure 3: Value chain and services in scope



Legal contracts with operators

2.89 Representatives from VocaLink, as a contracted service provider to the payment systems, attend relevant payment system Committees and working groups of bodies such as Payments UK. This is where specific changes to payment systems can be discussed and turned into more detailed proposals. It is for the Boards of the payment systems and, where relevant, the decision-making body for the additional services in scope to consider any recommendations from these Committees.

(a) Bacs

The Bacs service contract was renegotiated in 2014; it was extended to November 2020; notice can only be served in 2018. The contract included £[redacted]million for infrastructure refresh and a ring-fenced £[redacted]million development fund. The service VocaLink supplies is set out in contractual documentation, including a 'Functional specification'. Any changes are at the request of BPSL via a change control process; VocaLink cannot make changes on a unilateral basis. The relationship with Bacs is formalised in a number of different legal agreements:

- [redacted]
- [redacted]
- [redacted]

- [✂]
- [✂]

(b) FPS

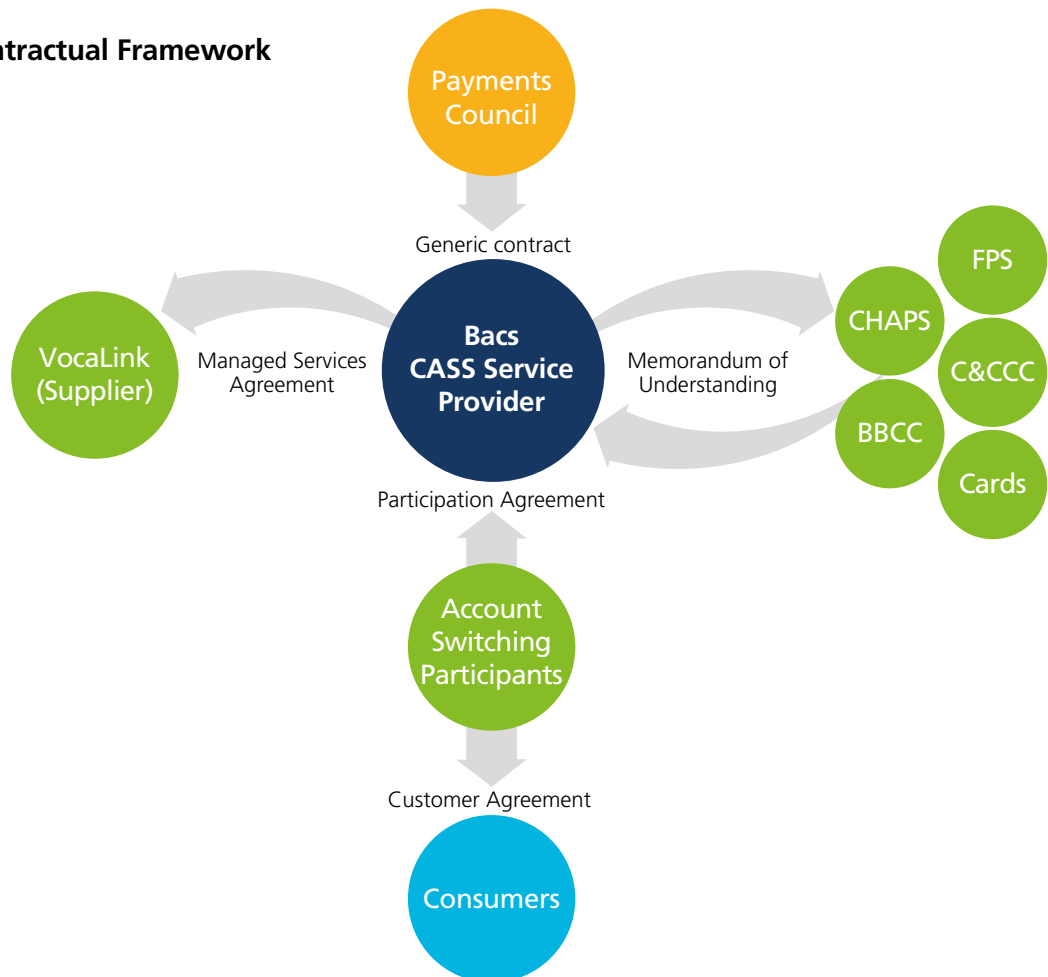
The contractual arrangements for FPS are less complex than for Bacs. There is a ‘managed service contract’ between VocaLink and FPSL. FPSL then has contracts with each of the direct PSPs. The FPS contract was extended to February 2020, but with options to serve notice in 2016 and to break in 2018; in 2017 to break in 2019; and in 2018 to break in 2020.

(c) Current Account Switch Service (CASS)

A managed services agreement is in place between BPSL and VocaLink (as the technical supplier). BPSL contracts on behalf of the account-switching participants and also holds the relationships with the other operators in respect of CASS.

Figure 4: CASS contractual framework

CASS Contractual Framework



(d) Paym

The Paym contract, originally between VocaLink and the Payments Council, was novated to the Mobile Payments Service Company Limited (MPSCo) in December 2014.

(e) LINK

The LINK contractual arrangements were reconfigured as a result of the restructuring of the scheme and its separation from VocaLink. The primary contract for LINK is the Members Agreement (MA) – this is an agreement between the scheme members, collectively, and LSL which defines the governance arrangements between the parties, as well as the powers of the Network Members Council (NMC). LSL and Scheme Members have then entered into a separate service contract with VocaLink (Switching and Settlement Agreement) in 2016.

2.90 VocaLink has confirmed that it has [3<] contracts in place for non-core services.

Annex 3

Governance arrangements of the Operators

Bacs

Corporate identity

- 3.1** Bacs Payment Schemes Limited (BPSL) is a not-for-profit company limited by guarantee, and does not have shareholders. According to the Articles of Association, every member guarantees the company by £10 or under, for payment of the company's debts and liabilities and the costs of winding up.⁵⁸ BPSL operates the Bacs payment system that processes payments through two principal electronic payment schemes: Direct Debit and Bacs Direct Credit.

Membership

- 3.2** BPSL has 16 members⁵⁹, made up of banks and building societies from the US, UK and Europe:

- Allied Irish Bank
- Bank of England
- Bank of Scotland Plc
- Barclays Bank
- Citibank NA
- Clydesdale Bank Plc
- Coutts & Co
- HSBC Bank Plc
- Lloyds Bank Plc
- Nationwide Building Society
- NatWest
- Northern Bank
- Santander
- The Co-operative Bank

⁵⁸ BACS Payment Schemes Limited, MoA: https://www.bacs.co.uk/documentlibrary/memorandum_and_articles_of_association.pdf

⁵⁹ <https://www.bacs.co.uk/About/Pages/BacsMembers.aspx>

- The Royal Bank of Scotland
- Virgin Money

3.3 The four largest shareholders in Vocalink are also the largest processing members of BPSL.

3.4 All members require full participation in the payment system and settlement process. The Bank of England is entitled to membership.

Corporate governance

Board structure and Committees

3.5 BPSL's Board directors' roles and responsibilities are defined in the Memorandum and Articles of Association and are expanded on in the *Directors' Handbook*. The Board of directors manages the company's business and may exercise all the powers of the company.⁶⁰

3.6 The Board is made up 15 directors: a Managing Director/Chief Executive, two independent directors (including the Board Chair and the Chair of the Audit and Risk Committees), and 12 non-executive directors nominated by the members.⁶¹ The Board appoints independent directors, including the Chairman, on the recommendation of the appointment committee.⁶²

3.7 According to the Articles of Association 'independent' in this context means 'a director who the Board, upon the recommendation of the appointment Committee, determine to be independent in character and judgment and whose relationships or circumstances are unlikely to affect, or appear to affect, the director's judgment'.⁶³ The appointment Committee has to have at least one independent director on it.⁶⁴ Non-executive directors also have an alternate that is personally appointed and registered at Companies House.

3.8 All directors have a duty to avoid a situation in which they have or can have a direct or indirect interest that conflicts or could conflict with the interests of the company. In particular, non-executive directors are expected to comply with the Companies Act 2006 by serving in the best interests of the company and by exercising independent judgement.⁶⁵

3.9 According to the Articles of Association, there should be at least two directors and not more than 21.⁶⁶ There have been a number of new members in the past few years.

⁶⁰ *Bacs articles of association, section 54*: https://www.bacs.co.uk/documentlibrary/memorandum_and_articles_of_association.pdf

⁶¹ [bacs.co.uk/Bacs/Corporate/CorporateOverview/Pages/BacsBoard.aspx](https://www.bacs.co.uk/Bacs/Corporate/CorporateOverview/Pages/BacsBoard.aspx)

⁶² *Bacs articles of association, section 66*: https://www.bacs.co.uk/documentlibrary/memorandum_and_articles_of_association.pdf

⁶³ *Bacs articles of association, page 6*: https://www.bacs.co.uk/documentlibrary/memorandum_and_articles_of_association.pdf

⁶⁴ *Bacs articles of association, section 83 (a)*: https://www.bacs.co.uk/documentlibrary/memorandum_and_articles_of_association.pdf

⁶⁵ *Bacs articles of association, section 61*: https://www.bacs.co.uk/documentlibrary/memorandum_and_articles_of_association.pdf

⁶⁶ *Bacs articles of association, section 40 (a)*: https://www.bacs.co.uk/documentlibrary/memorandum_and_articles_of_association.pdf

Decision-making

3.10 At general meetings, the Board makes decisions on matters relating to:⁶⁷

- the appointment of directors
- remuneration
- the operation of the service
- infrastructure provider contracts
- the resilience of the service
- audit processes
- innovation and the development of additional services

3.11 At general meetings, the presence of at least one independent director and other directors making up half of eligible votes are needed for a quorum for the transaction of the business of the directors.⁶⁸

3.12 However, the directors may delegate powers to any single director or to a Committee as decided by the Board. Committees have to contain at least one director and may include a mixture of other directors or non-directors.⁶⁹ Recommendations from the Committees are passed on to the Board.

3.13 BPSL has the following Committees:⁷⁰

- Audit Committee, focusing on third line of defence functions
- Risk Committee, which provides the company's second line of defence services, including risk management and member and key supplier assurance
- Appointment Committee
- Settlement Committee, responsible for supporting the operational, legal and strategic aspects of the Bacs settlement process
- Cyber Oversight Committee
- Rules & Governance Committee, responsible for ensuring that payment system rules and other scheme rules and company governance arrangements meet regulatory, legal and compliance requirements
- Operation & Compliance Committee, which ensures the integrity and reliability of Bacs' clearing and settlement operations
- Development Committee, responsible for the delivery of the strategic direction, including innovation and product development, as set by the board
- Ad hoc specialist committees

⁶⁷ Accenture, *A review of governance and ownership of UK payment systems* (2014), page 41, 1.3.3): <https://www.psr.org.uk/sites/default/files/media/PDF/accenture%20governance%20report.pdf>

⁶⁸ *Bacs articles of association*, section 69: https://www.bacs.co.uk/documentlibrary/memorandum_and_articles_of_association.pdf

⁶⁹ *Bacs articles of association*, section 57, 83: https://www.bacs.co.uk/documentlibrary/memorandum_and_articles_of_association.pdf, Accenture, *A Review of governance and ownership of UK payment systems* (2014), page 41 (1.3.3): <https://www.psr.org.uk/sites/default/files/media/PDF/accenture%20governance%20report.pdf>

⁷⁰ 2015 CPMI IOSCO Bacs disclosure: https://www.bacs.co.uk/documentlibrary/cpmi-iosco_disclosure_for_bacs_payment_schemes_limited.pdf

- 3.14** Investment ideas could come from members, the executive, affiliates or the 'development' group. Only ideas that benefit the end user will be considered. Members may proceed with and fund an investment, but everyone must receive the same service levels from Bacs. The Board of directors makes the final decision on investments.
- 3.15** Bacs has also an Affiliates Interest Group comprising representatives from different stakeholder groups. Bacs Affiliates are told Bacs Board decisions at quarterly meetings.

Voting patterns⁷¹

- 3.16** The Board allocates 1,000 votes to members. Each independent director also has one vote.⁷² Voting rights are allocated in proportion to the percentage of clearing volumes for each member from the previous year ending 31 December. No member is entitled to more than 22.5% of the total votes cast on any resolution and no member is allocated less than one vote.⁷³ Where any resolution affects the public interest, it may not be passed unless 75% of independent directors are in favour.⁷⁴ On occasion, votes can be decided by a show of hands on the basis of one director/one vote but any director can request votes to be counted based on voting rights.⁷⁵ For a resolution to be carried, the general rule is that it needs the support of at least 75% of the votes of all directors entitled to vote.⁷⁶
- 3.17** Sometimes resolutions at member general meetings can be decided by a show of hands. Each member present will then have one vote.⁷⁷ On a poll, every member has the number of votes allocated to that member by the board.⁷⁸ A new member is also entitled to one vote on any resolution. If someone stops being a member, the Board recalculates the voting rights of remaining members.⁷⁹ 75% of eligible votes are needed at member general meetings to pass a resolution.⁸⁰ In the case of an equality of votes, the chairman will not be entitled to a casting vote, in addition to any other vote he may have.⁸¹

Faster Payments Service (FPS)

Corporate identity

- 3.18** The Faster Payments Scheme Limited (FPSL) is a private, non-profit membership company limited by guarantee. The liability of each member is limited to £1. FPSL operates the FPS payment system that provides near real-time payments as well as standing orders.

⁷¹ *Bacs Articles of Association*, section 29(a): https://www.bacs.co.uk/documentlibrary/memorandum_and_articles_of_association.pdf

⁷² *Bacs articles of association*, section 70(a): https://www.bacs.co.uk/documentlibrary/memorandum_and_articles_of_association.pdf

⁷³ *Bacs Articles of Association*, section 29(a): https://www.bacs.co.uk/documentlibrary/memorandum_and_articles_of_association.pdf

⁷⁴ Accenture, *A Review of Governance and Ownership of UK Payment Systems* (2014), page 41 (1.3.3): <https://www.psr.org.uk/sites/default/files/media/PDF/accenture%20governance%20report.pdf>

⁷⁵ Accenture, *A Review of the ownership and governance of payment systems* (2014), page 41 1.3.2, bullet 4: <https://www.psr.org.uk/sites/default/files/media/PDF/accenture%20governance%20report.pdf>

⁷⁶ *Bacs articles of association*, section 65: https://www.bacs.co.uk/documentlibrary/memorandum_and_articles_of_association.pdf

⁷⁷ Accenture, *A Review of Governance and Ownership of UK Payment Systems*, page 41, 1.3.2: <https://www.psr.org.uk/sites/default/files/media/PDF/accenture%20governance%20report.pdf>, *Bacs articles of association*, section 28): <https://www.psr.org.uk/sites/default/files/media/PDF/accenture%20governance%20report.pdf>

⁷⁸ *Bacs articles of association*, section 29: https://www.bacs.co.uk/documentlibrary/memorandum_and_articles_of_association.pdf,

⁷⁹ *Bacs articles of association*, section 31, 32: https://www.bacs.co.uk/documentlibrary/memorandum_and_articles_of_association.pdf

⁸⁰ *Bacs articles of association*, section 39: https://www.bacs.co.uk/documentlibrary/memorandum_and_articles_of_association.pdf

⁸¹ *Bacs articles of association*, section 25: https://www.bacs.co.uk/documentlibrary/memorandum_and_articles_of_association.pdf

Membership

3.19 The scheme has ten member organisations, all banks and building societies:

- Barclays Bank
- Citibank NA
- Clydesdale Bank Plc
- HSBC Bank Plc
- Lloyds Bank Plc
- Nationwide Building Society
- Northern Bank
- Santander UK Plc
- The Co-operative Bank
- The Royal Bank of Scotland Group

3.20 The four biggest shareholders in VocaLink are also members of FPSL.⁸² Member-nominated directors are nominated by a member bank but act in a personal capacity. At Board meetings they must comply with the Companies Act 2006 and act in the best interests of the company, exercising independent judgement.⁸³

Corporate governance⁸⁴

Board structure and Committees

3.21 The business of the Company is managed by the Board, which may convene a general meeting whenever it needs to.⁸⁵

3.22 The Board comprises 14 directors: three independent Directors (including the chair), the Chief Executive and 10 non-executive Directors⁸⁶. The Board appoints the independent Directors, based on the recommendation of an appointment committee⁸⁷. Although the appointment committee that recruited the first independent directors included Directors from the member banks, the Appointment committee is now made up of only independent non-executive directors and the chief executive. As a result, recent recruitments and appointments by the committee have been made without member director involvement.

⁸² Lloyds, RBS, HSBC and Barclays.

⁸³ <http://www.fasterpayments.org.uk/governance/board-directors>

⁸⁴ <http://fasterpayments.org.uk/sites/default/files/FPSL%20FMI%20PUBLIC%20Disclosure%20Summary%20Report%202014%201.0.pdf>

⁸⁵ *FPSL articles of association*, section 20.1: <http://www.fasterpayments.org.uk/sites/default/files/Articles%20of%20Association27042015.pdf>

⁸⁶ <http://fasterpayments.org.uk/governance/board-directors>

⁸⁷ In appointing independent Directors to the Board of FPSL, the position is advertised on FPS website and agencies specialising in executive searches are appointed. These agencies are all wholly independent of FPSL and none have any relationship with any Director of FPSL, including the chairman. The shortlisted candidates are considered by the FPSL Appointments Committee, which comprises the remaining non-executive independent Directors and the Chief Executive of FPSL. *FPSL articles of association*, section 15.3: <http://www.fasterpayments.org.uk/sites/default/files/Articles%20of%20Association27042015.pdf>

3.23 The independent Directors cover the roles of Chairman of the Board, Chair of the Risk Committee and Chair of the Audit and Financial Committee.⁸⁸ According to the FPSL Articles of Association, 'independent' in this context means: 'A Director who the Board, upon the recommendation of the Appointment Committee, determine to be independent in character and judgement and whose relationships or circumstances are unlikely to affect, or appear to affect, the Director's judgement. For these purposes, the following relationships or circumstances shall, unless otherwise determined by the Board, be presumed to preclude a Director's independence'.⁸⁹

Decision-making

3.24 At general meetings, the Board's key decisions include:

- appointment of Directors
- the operation of the service
- collaboration to develop and use the shared infrastructure
- explore opportunities for innovation
- the development of additional services

3.25 A quorum is attained when there are 75% of directors present and who together account for at least 50% of the total clearing volume of the system for the previous year and at least one independent Director.⁹⁰ Where a resolution proposed at a Board meeting relates to the public interest, it won't be passed, nor any decision made unless it's voted for by a majority of the independent Directors present.⁹¹ For these purposes, a matter concerns the public interest if deemed so by one of the independent Directors acting reasonably.⁹²

3.26 The Board may delegate powers to any Director or to a Committee.⁹³ Committees have to contain at least one Director and may include a mixture of other Directors or non-Directors. There is a requirement for an independent Director only in the appointment Committee.⁹⁴ Committees currently include:⁹⁵

- Development Committee
- Audit and Finance Committee
- Access Steering Committee
- Risk Committee
- Settlement Risk Committee
- Rules & Governance Committee

88 <http://fasterpayments.org.uk/sites/default/files/FPSL%20FMI%20PUBLIC%20Disclosure%20Summary%20Report%202014%201.0.pdf>

89 *FPSL articles of association*, section 3.1(p): <http://www.fasterpayments.org.uk/sites/default/files/Articles%20of%20Association27042015.pdf>

90 *FPSL articles of association*, section 21.8 (i): <http://www.fasterpayments.org.uk/sites/default/files/Articles%20of%20Association27042015.pdf>

91 *FPSL articles of association*, section 21.7: <http://www.fasterpayments.org.uk/sites/default/files/Articles%20of%20Association27042015.pdf>

92 *Faster Payments Scheme Limited Articles of Association*, section 21.7: <http://www.fasterpayments.org.uk/sites/default/files/Articles%20of%20Association27042015.pdf>

93 *FPSL articles of association*, section 22.1: <http://www.fasterpayments.org.uk/sites/default/files/Articles%20of%20Association27042015.pdf>

94 *Faster Payments Scheme Articles of Association*, section 22.1: <http://www.fasterpayments.org.uk/sites/default/files/Articles%20of%20Association27042015.pdf>

95 <http://www.fasterpayments.org.uk/governance/committee-structure>

- Appointments Committee
- Remunerations Committee
- Access Committee
- Service and Operations Committee

3.27 One of the independent non-executive Directors chairs each Committee, except for the Access and the Service and Operations Committees, which are chaired by FPSL staff. All Committees, apart from Development and Service and Operations Committees, report to the Board.⁹⁶

3.28 Directors are under a duty to avoid situations in which they have or can have a direct or indirect interest that conflicts or could conflict with the interest of the company.⁹⁷

Voting patterns

3.29 At any general meeting of the Board, a resolution is decided by a show of hands although directors can require a decision to be made by reference to their voting rights. Every director, including the Chief Executive (subject to any Board restrictions), is entitled to cast one vote.⁹⁸

3.30 A decision is deemed to have been made when 75% of directors present in a meeting are in favour, provided the 75% of directors account for at least 50% of the clearing volume (for the prior year ended 31 december) of the system.⁹⁹ FPSL told us that, in the period from 2012 until 2016 (to date) all Board decisions have been unanimously agreed without a need for a vote, with one exception¹⁰⁰.

LINK

Corporate Identity

3.31 In July 2007, LINK Interchange Network Ltd merged with Voca to create VocaLink. VocaLink provides the technical, commercial and settlement services that make ATM sharing possible on the scale seen today.

3.32 The LINK Scheme (which operates the LINK payment system) originally was not a company and had no Board of Directors. Its governance and operation was defined in a single contract called the Network Members Agreement (NMA). The governing body of the scheme was also defined in this agreement and was called the Network Members Council (NMC).

3.33 The NMC is a Members council that was empowered to change the terms of the NMA. The NMA included all aspects of the operation of the LINK Scheme. The parties to the NMA were all 38 of the LINK Members and VocaLink. The NMA also contained VocaLink's processing contract. As part of the NMA agreement, LINK's management team and CEO were provided by VocaLink and remained employed by VocaLink in a ring-fenced team called the Link Scheme Executive (LSE).

⁹⁶ <http://www.fasterpayments.org.uk/governance/committee-structure>

⁹⁷ FPSL articles of association, section 19.1.1: <http://www.fasterpayments.org.uk/sites/default/files/Articles%20of%20Association27042015.pdf>

⁹⁸ FPSL articles of association, section 21.6: <http://www.fasterpayments.org.uk/sites/default/files/Articles%20of%20Association27042015.pdf>

⁹⁹ FPSL articles of association, section 21.6 (iii): <http://www.fasterpayments.org.uk/sites/default/files/Articles%20of%20Association27042015.pdf>

¹⁰⁰ In the FPS CPMI-IOSCO self assessment (March 2015) it is reported that 'the Board Member voting protocol has been changed to better represent the interests of smaller Members by the movement to a 'one director one vote' model'.

Although employed by VocaLink, the LSE were accountable to the NMC. The NMC also has an Independent Chairman.

- 3.34** Link Scheme Ltd (LSL) was incorporated in December 2014 to become the regulated corporate body for the LINK Scheme. It became a party to the NMA in 2015. It had no employees or assets. Its powers were limited to supporting the LSE and all authority remained with the NMC.

Separation of LINK Scheme from VocaLink

- 3.35** Following a lengthy period of negotiation between the parties to the NMA (i.e. LSL, Members, and VocaLink), the LINK Scheme was restructured on 1 April 2016. The LSE and various LINK Scheme assets were transferred to LSL. A new contract was put in place between LSL, Members and VocaLink to define a more typical processing relationship.
- 3.36** The LSE were transferred to LSL and LSL took on formal oversight of the LSE who now report to the LSL Board. The NMC continues to exist with a number of reserved powers that relate to areas such as rules, interchange and scheme fees that can expose Members to costs and other risks.¹⁰¹
- 3.37** The NMA has been replaced by two Agreements.
1. The Members Agreement (MA), a contract stipulated between LINK Scheme Limited and Scheme Members which defines the governance arrangements between the parties as well as the powers of the NMC.
 2. The Switching and Settlement Agreement (SSA), a contract stipulated between Link Scheme Limited, Scheme members and VocaLink which defines a multiyear contestable processing contract for core services related to the LINK Scheme.

¹⁰¹ Refer to 'NMC Decision making' section below.

Box A: The Switching and Settlement Agreement – points to note

Term of the contract and Termination

The Switching and Settlement Agreement is a multi-year processing contract which started on 1 April 2016. The contract is an open-ended agreement with an initial 5 year term (the "Initial Term") linked to the termination and Exit Provisions. The contract can be terminated by LSL on or after 1 April 2021 with 24 months prior notice. Individual scheme members have the right to withdraw from this contract (as well as from the Members Agreement) subject to the payment of a SSA Early Exit Fee and a MA Early Exit Fee.

[REDACTED]

[REDACTED]

Exit Plan and [REDACTED]

The contract provides for an exit plan to be drafted by VocaLink. [REDACTED]

[REDACTED]

Assignment of [REDACTED] and IPRs

The SSA also allocates crucial assets items between LSL, VocaLink and the Network Members. For example:

- [REDACTED]
- VocaLink will own the IPR over the LINK Brand. LSL will obtain by VocaLink an irrevocable, free license shared in perpetuity for its use with the possibility to sub-license its rights.
- VocaLink will own IPR over the LIS5 message standard. LSL will obtain by VocaLink a non-exclusive licence for its use with the possibility to sub-license it to an alternative infrastructure supplier. LSL will pay an annual maintenance fee equal to [REDACTED] % of the Service Fees paid in respect of the last contract year. [REDACTED]

3.38 The new governance arrangements have been set following an Independent Governance Review led during 2015 by Lord David Hunt, and supported by a distinguished panel of experts. The review made a number of recommendation including that:

- the scheme's incorporated entity should have clearly defined objects in its articles of association including public interest commitment to maintain the ATM network in an efficient, accessible, competitive, innovative and sustainable manner
- the reconstituted LINK scheme should commission a full independent economic review of interchange
- the LINK scheme should operate through a Company Limited by Guarantee (CLG)
- there should be a limited number of matters reserved for the members in general meetings
- the CLG board should have 8 directors comprising an independent chair, 3 independent NEDs, the CEO and 3 member nominated NEDs (one each from the big banks, the small banks and the IADs)
- the board should strive for consensus on issues and failing that, board decisions should require a simple majority. Each director will have one vote and the chair should have a casting vote

- the LINK scheme executive should be strengthened and possibly increased in size
- the LINK consumer council should continue changing its membership to exclude scheme members and appointing a separate independent chairman

3.39 Whilst the recommendations of the Independent Governance Review have been accepted in full by LSL and NMC, several elements remain in the course of implementation.

3.40 Already implemented is the new LSL Board which is now majority independent.¹⁰² The other key elements of the Independent Governance Review are still being developed, for instance, a requirement to set up the company as a Company Limited by Guarantee (CLG). This work is underway and is expected to be finalised in the fourth quarter of 2016. A Governance Member Working Group (GMWG) was established to deliver this. The GMWG comprised nine members drawn from across all categories of membership of the scheme.¹⁰³

3.41 Eventually, LSL will become a fully owned subsidiary of the CLG (rather than being closed down). This arrangement is necessary to avoid operational disruption. The current Board of LSL will become the Board of the CLG.

Membership

3.42 LINK has a single tier of membership, with all Members represented at LINK's Members body, the NMC. All Members have a voice through the NMC, and NMC votes are weighted by volume.¹⁰⁴ The NMC sets the rules by which LINK operates and at present Members are not allowed to join to provide any services other than ATM cash withdrawals and balance enquiries (therefore it is the Members who control and govern what services that the LINK Scheme can and cannot provide). All Members are also shareholders of LSL on a one Member one vote trust arrangement.

Corporate Governance

3.43 Following the restructuring, there are two key governance organisations. These include an Operator company LSL and a Members organisation, the NMC. LSL is funded by the Members with fees being approved by the NMC annually.

LSL Board Governance

3.44 The LSL board manages on behalf of NMC all aspects of the LINK Scheme.¹⁰⁵ Its Board is made up of four Independent Non-Executive Directors (including the NMC Independent Chairman, also in the role of LSL Chairman), three Member Non-Executive Directors representing the big banks, small banks and IADs respectively and an Executive Director (who is also the LINK Scheme CEO). Currently, there are only two member non-executive directors on the LSL board.

3.45 According to the LSL articles of association, Directors are appointed onto the board of LSL by ordinary resolution or by a decision of the Directors.¹⁰⁶ The appointments of the LSL Chief Executive and the LSL Chairman are subject to approval by the NMC. Currently, the Chair of the board is Ken Andrew, whose appointment was confirmed by the LSL board in November 2015. The LINK scheme CEO is John Howells

¹⁰² See LSL governance section below.

¹⁰³ General members, card issuers, independent ATM deployers, mobile payment only members:
http://www.linkschemeltd.co.uk/media/1040/link_scheme_membership_structure.pdf

¹⁰⁴ Refer to section below on 'NMC decision making'.

¹⁰⁵ LSL articles of association, paragraph 3.

¹⁰⁶ LSL articles of association, section 20.1.

who was appointed by the LSL board in January 2016. Both of these recommended appointments were also approved by the NMC in December 2015 and January 2016 respectively. The three member non-executive directors were selected from nominations received from the categories of large issuers, net acquirers and others. Their appointments were approved by the LSL board and the NMC in January 2016.

3.46 The quorum for board meetings may be fixed from time to time by a decision of the directors but it is never less than two directors. Where the directors have not fixed a quorum, the minimum number of directors required to transact business is two.¹⁰⁷

3.47 The LSL Board meets monthly, and its minutes are published. As well as acting as the designated Operator in regards to the PSR, LSL also interfaces with the Bank of England as LINK Scheme is also recognised under the Banking Act.

LSL Board Committees

3.48 The directors may delegate any of its powers which are conferred to it under the company's articles to any person or committee as they think fit.¹⁰⁸

3.49 The committees to which directors delegate any of their powers must follow procedures which are based as far as they are applicable on those provisions of the articles which govern the taking of decisions by directors.¹⁰⁹

3.50 LSL contains the usual committee structures, including:

- an Audit Committee
- a Remuneration Committee and
- the LINK Consumer Council

3.51 **Audit Committee:** This Committee is responsible for monitoring the integrity of the financial statements of the company, and any other formal announcements relating to its financial performance. This includes reviewing and reporting to the Board on significant financial reporting issues having regard to matters communicated to it by the auditor. In addition, this Committee is also responsible for:

- reviewing, where requested by the Board, the content of annual report and accounts and advising on whether it is fair, balanced, and understandable
- reviewing the adequacy and effectiveness of the company's internal financial controls and risk management systems
- reviewing the adequacy and security of the company's arrangements for compliance, whistleblowing and fraud
- reviewing and approving arrangements relating to the company's internal and external audit arrangements
- reporting formally to the board on its proceedings after each meeting, including on how it has discharged its responsibilities

3.52 The Committee will comprise three members appointed by the Board. All members of the committee will be non-executive directors, at least one of whom has relevant financial experience. Only members of the committee have the right to attend committee meetings but the external auditor and finance

¹⁰⁷ LSL articles of association, section 15.2.

¹⁰⁸ LSL articles of association, section 6.

¹⁰⁹ LSL articles of association, section 7.

director may be invited to attend on a regular basis (in addition to other non-members) as and when necessary. The Committee Chair is appointed by the Board and Committee member appointments are for a period of up to three years (extendable by two additional three year periods as long as the members remain non-executive directors).

3.53 The quorum for the transaction of business is two members. The Committee must meet at least three times a year at appropriate intervals in the financial reporting and audit cycle and otherwise as required.

3.54 Remuneration Committee: This Committee approves the key terms of employment (including any changes) of any executive director or senior executive who reports directly to the Chief Executive. In addition, this Committee also has responsibility for:

- approving payments or benefits offered to employees in excess of £250,000 and which do not form part of that employee's expected remuneration benefits
- making recommendations to the Board on the key terms of employment (including changes) of the Chief Executive
- setting notice periods for Executive Directors' contracts at one year or less
- determining the policy for and scope of pension arrangements for each Executive Director and senior Executive
- reviewing, at the request of the Board, the structure of the company's package of employee incentives
- ensuring that the objective of the package of employee incentives provides employees with appropriate incentives
- approving any annual grant of awards made to employees under any share incentive schemes, on the recommendation of the Chairman and determining whether targets have been met to trigger the vesting of any award
- agreeing the policy for authorising claims for expenses from the Chief Executive
- selecting and engaging with any consultants who advise the Committee, including authority to commission any reports or surveys which it deems necessary to help it fulfil its obligations

3.55 No one other than the Committee Chairman and members are entitled to attend or vote at a meeting of the Committee. The Chairman of the Board, the Chief Executive and any other executive or member of senior management may be invited to attend all or part of a meeting of the Committee as and when appropriate. In the event that a matter of the Committee is required to be resolved by a vote, decisions will be decided by a majority of votes. A quorum for the transaction of business for the Committee is two members.

3.56 Meetings of the Committee will be held not less than four times a year and at such other times as the Chairman of the Committee or the Chairman of the Board require. The Committee will make whatever recommendations to the Board it deems appropriate where action or improvement is needed. However, decisions to employ or dismiss the Chief Executive, Chief Financial Officer or any other Executive Director will be a decision for the board. The remuneration of non-Executive Directors are also a matter for the Board.

3.57 LINK Consumer Council: The LINK Consumer Council was established by the LINK Scheme in April 2006 to provide advice on consumer matters relating to the UK ATM network. It also represents the interests of consumers in the governance of the scheme, scheme policy and development of the network. The Council has regard to the interests of all groups of consumers including those who may be considered disadvantaged in relation to access to financial services. Issues that the Council

considers from a consumer perspective include signage rules relating to cash machine charges, access to the LINK scheme and financial inclusion. The Council brings together consumer representatives and delegates from LINK Scheme Members, including both card-issuing banks and ATM operators. The Consumer Council became a subcommittee of LSL as part of the restructuring on 1 April 2016.

- 3.58** The Council aims to have four or more independent members to represent the views of consumers. This is in addition to four representatives of NMC members elected by the NMC (providing that at least two are issuers and at least two are from acquirer only NMC members). Representatives of NMC members will not form a majority on the council. The LINK Scheme Executive will attend meetings to provide secretariat support but will have no voting rights. Members of the Committee are appointed for three year terms subject to the Chairman's confirmation of each appointment after the first year.
- 3.59** The Consumer Council is currently chaired by [redacted] and includes as members consumer organisations and independents, as well three NMC Members.
- 3.60** Discussions within the Council are confidential and the council will publish an annual report summarising its findings, providing that a majority of council members approve the report.
- 3.61** **The Link Scheme Executive:** The day-to-day work of the LINK Scheme is managed by a LINK Scheme Executive (LSE), headed by the LINK Scheme CEO appointed by the NMC. The LINK Scheme CEO is also an Executive Director of LSL. The appointment of the LINK Scheme CEO may only be made with the approval of the NMC. These are separate roles as the Members Agreement sets out the duties of the LINK Scheme CEO and the LSL Articles set out the duties of LSL Directors.¹¹⁰
- 3.62** The LSE is employed by LSL and report to the LSL Board. The LSE supports Members, including day-to-day management of the Switching and Settlement Agreement and the Members Agreement. The LSE's duties include:
- supporting agreement of commercial terms between issuer Members and acquirer Members (including, but not limited to, the interchange fee)
 - maintaining compliance with Scheme rules
 - maintaining an appropriate balance between the interests of issuer Members and acquirer Members
 - membership recruitment
 - analysing LINK Scheme management information on behalf of Members
 - notifying Members of new and departing Members
 - providing assistance and seeking to arbitrate in disputes between Members
 - providing secretariat and related services (including premises and catering for meetings) to the NMC and the NMC's sub-committees
 - enabling discussion between Members in a dispute

¹¹⁰ LSL articles of association, Part 2.

The Network Members Council

NMC Governance

- 3.63** There is also a secondary governance body called the NMC which is defined in the Members Agreement and governs changes to the Switching and Settlement Agreement and Members Agreement on behalf of Members. This includes matters such as Rules, fees, and Interchange.
- 3.64** All 38 members of the Link Scheme are voting members of the NMC and can submit proposals. The NMC has an independent, non-Executive chairman without voting rights and the secretariat is provided by the Link Scheme Executive.
- 3.65** Network members appoint an independent non-executive NMC Chairman, taking advice from the Link Scheme Limited CEO. The NMC Chairman's appointment must be proposed by at least four members. The Chairman's appointment must be approved by a simple majority of all Network Members. The Chairman's appointment is renewed every three years. Extension of the Chairman's term by up to three years may be proposed by any member or the Link Scheme Executive and needs approval by a simple majority.
- 3.66** Due to the membership arrangements there is no fiduciary duty for members of the governing body and decisions may be taken in the interests of individual Members as opposed to the best interests of the Link Scheme.

NMC Meetings

- 3.67** Each year, Link Scheme Limited, after consultation with the NMC Chairman, proposes NMC meeting dates to Members for the next calendar year. This schedule will include meeting times and provisional locations. Once agreed, any change in meeting locations must be given at least seven days before it is scheduled to be held.
- 3.68** The quorum for a meeting of the NMC shall be ten or more network Members present and entitled to vote, with at least 20% of all votes.
- 3.69** Any five or more Network Members, accounting for at least 20% of total votes allocated, may require Link Scheme Limited to convene an NMC meeting. This is done by giving notice in writing to the Link Scheme Limited and stating the exact nature of the business, including any poll or vote to be conducted at the meeting.
- 3.70** Network members, the NMC Chairman and Link Scheme Limited have the right to attend NMC meetings. The NMC Chairman and Link Scheme Limited may by mutual agreement invite a party other than a Network Member to attend a particular NMC meeting, or a particular part of an NMC meeting.
- 3.71** Following the PSR directions issued in March 2015, minutes of NMC meetings are now published. The NMC meets quarterly.

NMC Committees

- 3.72** The NMC can make a majority decision to delegate power to a Committee or group consisting of NMC members, their representatives or others from outside the NMC but recognised by it – for example, representatives of Issuer Partners and Reciprocity Partners. Also, operating Committees or groups may be established for specific functions, with the same membership rules as above. Purely advisory Committees may also be established by majority decision.

3.73 All Committees are accountable to the NMC, the role of which is defined in the Members Agreement. Under the terms of the Members Agreement, VocaLink provides secretariat services and technical support to the Technical Sub Group (TSG), User Group (UG) and LINK Security Group (LSG). VocaLink is also invited to attend the Fraud Group.

Voting rights

LSL Voting Rights

3.74 Each director on the LSL board has a vote on the matters of the scheme. If the numbers of votes for and against a proposal are equal, the chairman of the meeting shall have a second or casting vote.¹¹¹

3.75 For General Meetings, resolutions put to the vote are decided on a show of hands unless a poll is demanded. Every Member who is present has one vote and decisions are passed by majority (unless a poll is demanded).¹¹² The Guarantee Company (CLG) will similarly have a one Member one vote structure when it replaces LSL as the Operator. Issues considered at General Meetings could include:

- capital restructuring
- takeover or acquisition
- Appointments to the board of directors

3.76 In relation to the Members Agreement and the Switching and Settlement Agreement, LSL agreement is required for any changes, along with NMC approval at the relevant voting level, and in the case of the Switching and Settlement Agreement, VocaLink approval also.

NMC Voting Rights

3.77 Each Member's voting entitlement on the NMC is included in the Members Agreement. That entitlement is adjusted annually on the basis of the number of LINK transactions made on the LINK Network during the preceding year.

3.78 A total of 1,000 are allocated to members. Currently, 75% of the total votes are allocated on the basis of LINK transaction volumes. The remaining 25% of votes are divided equally among all the Members. Individual Member's votes are capped at 15% (RBS is capped in this way).

3.79 When new members join the scheme, the 25% of votes that are divided equally amongst network Members will be reallocated equally between all Members, including the new network Member. If a network Member withdraws from the scheme, its voting rights shall lapse with effect from the date of such a withdrawal, but there shall be no re-allocation of such votes until the next network Member's adjustment carried out by LSL.

3.80 On this basis, the largest four banks hold about 45% share of the vote.

¹¹¹ LSL articles of association, section 8.3, 13.

¹¹² LSL articles of association, section 71.1, 71.4.

Decision-making

LSL decision making

3.81 Link Scheme Limited, as the operator of the LINK scheme for the purposes of the Banking Act, has the following responsibilities in respect of the LINK scheme:

- implementing decisions of the NMC from time to time in accordance with the Members' agreement
- managing the process for the recruitment of the LINK Scheme CEO and NMC Chairman
- agreeing and monitoring the LINK scheme CEO's personal objectives and performance
- external relations
- infrastructure procurement (subject to the agreement and support of the NMC at the 80% level under MA voting requirements)
- management of the LINK brand
- financial control, including preparing and proposing a budget to the NMC and monitoring spending against it, advising the NMC on progress
- supporting innovation
- acting in the interests of the LINK Scheme and also to promote competition, innovation, service user benefit (PSP and consumer), and financial system stability

3.82 The general rule about decision-making by the Board is that any decision of the Directors must be taken as a majority decisions at a meeting.¹¹³

¹¹³ LSL articles of association, section 8.1.

NMC Decision Making

3.83 The NMC has the power to approve a number of matters set out in the Switching and Settlement Agreement and Members Agreement. These include:

- scheme Rules
- scheme membership fees
- membership criteria
- approving the appointments of the LINK scheme CEO and Chairman
- interchange levels, and
- appointment of supplier

3.84 Some decisions on the NMC, except for decisions to be taken on a show of hands, are taken by a simple majority. Rule changes including agreement of mandated products made on the NMC require a 60% majority of weighted votes to be passed. Votes required for other decisions include:

- simple majority to agree to subcontracting Processing Services to a third-party provider
- simple majority to amend the Technical Specification and the L ATM Scheme Information Security Standard
- simple majority to amend the Processing Services Fees
- 60% majority for material changes relating to Overseas Arrangements and to terminate an Overseas Arrangement
- 60% majority to amend the Operating Rules other than provisions relating to processing services fees
- 60% majority to suspend or terminate membership of a Network member
- 80% majority of the NMC to amend the SSA or MA
- 80% majority to amend the Service Mark User Agreement
- 80% majority to vary the voting entitlement of each network member
- 80% majority for changes to the rights or obligations of the NMC
- 80% majority for any change in Interchange Fee

3.85 Changes to the SSA also require the agreement of the processor Vocalink, and changes to both Agreements require the agreement of LSL.

Annex 4

Drivers of change

Introduction

- 4.1** This annex looks at the principal drivers for change in payments, and their implications for the future of payments infrastructure. Except for the creation of FPS and the ability for Bacs and FPS to support the Current Account Switch Service (CASS), recent innovations in electronic payments have mainly been focused on PSP-to-user interfaces. At that point competitive pressures are more evident than in the provision of central infrastructure, where there has been less innovation.
- 4.2** In a fully functioning market some of the change drivers would generate greater innovation in central infrastructure services.
- 4.3** In this annex we don't focus on the relative merits of any individual 'overlay' or 'wrapper' services that use the electronic payments infrastructure.¹¹⁴

Drivers of change in payments

- 4.4** Most drivers of change in payments fall into three categories:
- evolving customer needs and wants
 - technological advances
 - regulatory pressure

Below we give some examples of each.

Evolving customer needs and wants

- (a) **Mobile banking:** A rapid rise in smartphone adoption by all age groups allowed the role of mobile phones in banking to change dramatically, particularly over the last five years.¹¹⁵ Consumers are increasingly becoming used to, and fond of, 'low-friction' environments and experiences when doing routine tasks. This means accessing information or making purchases with minimal effort at a time that suits them. Using smartphone apps has become commonplace for checking balances and making payments. Many commentators expect mobile phones to take an increasingly prominent role in payments in the next few years.¹¹⁶
- (b) **Tablets as Point of Sale (POS) terminals:** Retailers constantly need to contain costs and find ways to retain and acquire customers. Recent innovations mean that small retailers can

114 For example, Paym and Pingit are existing overlay services that use the FPS infrastructure; ApplePay and some others use card payment system infrastructures.

115 'The Future of Payments', Hyperion, (Q3 2015), p. 6.

116 'The Changing Face of Payments 2015', Financial Services Club and 'The Future of Payments', Raconteur (published by The Independent) (31 May 2015).

use their mobile or tablet devices as POS terminals.¹¹⁷ These solutions may also offer inventory management or other services for retailers.

Leveraging technological advances

- (a) **Improved data processing and storage:** Computing power grows all the time, enabling faster and more efficient processing of larger volumes of data. Similarly, data storage capacity has grown exponentially.¹¹⁸ These developments could facilitate innovative new services.
- (b) **Cloud-based solutions:** PSPs are increasingly interested¹¹⁹ in cloud-based solutions¹²⁰ for data processing and disaster recovery. Businesses want or need to handle increasing volumes of data, and need to recover key IT systems and data quickly. If they don't want to continually expand their physical infrastructure to do this they may look to the cloud. The FCA industry consultation Proposed guidance for firms outsourcing to the 'cloud' and other third-party IT services ran from November 2015 to February 2016.¹²¹ The consultation paper said there was 'no fundamental reason why cloud services (including public cloud services) cannot be implemented, with appropriate consideration, in a manner that complies with [FCA] rules'.
- (c) **Security using biometrics:** For enhanced security in the payment initiation process, some industry participants are increasingly considering using biometric security features¹²² (such as those supported on some newer smartphone models). User recognition based on an individual's fingerprint, face pattern, vein pattern, iris, voice and heart rate could potentially help with customer authentication. Almost all of the publicity so far focuses on 'PSP to customer' applications, in many cases linked to the development of wearable technology such as smart watches. However, it seems feasible that biometric security methods could have other uses, including users' direct submission of payments into a central infrastructure.
- (d) **Distributed ledgers:** Digital currencies, virtual currencies and cryptocurrencies are becoming more publicised, with bitcoin getting special attention as the first decentralised digital currency. Trust in bitcoin is based on the cryptographic verification, by bitcoin users, of a 'distributed ledger' (see Annex 5). The distributed ledger approach and its underlying technology are attracting a huge amount of interest in the payments industry. Annex 5 discusses how this technology, which does not use a central ledger, might fundamentally alter payment processing and could in turn change the needs and role of central infrastructure. The Bank of England has noted that, as most financial assets today exist as purely digital records, the use of distributed ledgers could transform the whole financial system.¹²³

Responding to regulatory pressures

- (e) **Anti-Money Laundering:** Some financial technology (fintech) providers told us that they consider regulatory requirements in these areas to be too rigid. They said rules should be more flexible so that the industry can develop new information-sharing services supported by a central infrastructure. They argued that this would make compliance measures more efficient and effective and would help smaller PSPs access systems and compete effectively with larger

117 A POS terminal is a device used by a merchant to enable its customers to pay for goods and services by card (e.g. a debit card or credit card). Examples of new services include Square and iZettle, amongst others.

118 For example see Computerworld article '*SanDisk announces world's highest capacity SD card: 512GB*' (11 September 2014).

119 For example see BobsGuide article '*The evolving need for centralised payment solutions*' (15 September 2015), available at <http://www.bobsguide.com/guide/news/2015/Sep/15/the-evolving-need-for-centralised-payment-solutions.html>

120 Cloud computing services (sometimes called on-demand computing) enable users to access a shared pool of configurable computing resources. Cloud-based solutions may also provide users with capabilities to store and process their data in third-party data centres.

121 FCA Guidance consultation 15/6 '*Proposed guidance for firms outsourcing to the 'cloud' and other third-party IT services*' (November 2015), available at <http://www.fca.org.uk/static/documents/guidance-consultations/gc15-06.pdf>

122 See <http://www.bbc.co.uk/news/business-31968642> and <http://www.monitise.com/what-we-think/2015/04/24/will-mobile-biometric-authentication-replace-todays-passwords/>

123 Bank of England Quarterly Bulletin for Q3 2014, available at <http://www.bankofengland.co.uk/publications/Documents/quarterlybulletin/2014/qb14q3digitalcurrenciesbitcoin1.pdf>

PSPs.¹²⁴ In August 2015, the Cabinet Office launched a call for evidence for a review looking into the impact on business (including financial institutions) of the current measures to prevent money laundering and terrorist financing.¹²⁵ This was part of the government's Cutting Red Tape programme.¹²⁶ The call for evidence has recently closed and the timeline for the publication of key findings has yet to be revealed.

- (f) **New legislation and initiatives:** After reviewing the original EU Payments Services Directive¹²⁷, in 2013 the European Commission proposed revised legislation, widely known as the Payment Services Directive 2¹²⁸ (PSD2). PSD2 introduces changes to the legislation on payments made to and from PSPs in the EU. It also enables the entry of new types of PSPs. Banks must allow authorised third parties to access their customers' account information and/or initiate payments from customer accounts.¹²⁹ The Treasury is working on developing open standard Application Programming (API) Interface specifications for banks. In its March 2015 Budget statement the UK government announced it would deliver an open API standard in UK banking, starting with a framework for its design by the end of 2015. The long-term implications of these developments for central infrastructure requirements are not yet clear.

- 4.5** Industry initiatives for new or altered collaborative payment services will need to consider all the drivers of change, and how they may affect future requirements. Initiatives may include ones arising from the work of the industry's new Payments Strategy Forum (the Forum).¹³⁰
- 4.6** The industry is not static. The amount of investment in fintech start-ups quadrupled globally between 2013 and 2014¹³¹ and remains high. Many established banks are launching their own innovation labs, incubators or investment funds, and often team up directly with fintech start-ups.
- 4.7** We ran a workshop with NewFinance Partners in October 2015 to get fintech sector views on the catalysts for change and barriers to innovation in payments. The key catalysts named were many of the drivers we discuss in this annex. Attendees thought barriers include access to payment systems, the lack of an 'open standards' approach, lack of awareness by users of their own real needs, and highly rigid AML regulatory requirements adopted by banks.
- 4.8** There are clearly risks if those procuring central infrastructure services are not aware of probable future user needs (including those of PSPs). They may not understand how to make the most of technological advances and so may miss opportunities to innovate, enhance their services, or benefit from efficiency gains. Procurement strategies should test the potential of forward-looking, innovative supplier solutions, rather than just doing things as they always have. The central infrastructure services procured should continue to support future innovation.

Summary

- 4.9** There are a number of different drivers of change. The UK has built a reputation as a leading global centre of fintech excellence. Most recent developments in payments have happened between PSPs and users and often assume that the industry's structure and infrastructure will not change.

¹²⁴ This was the view of a number of participants at a workshop we held with a number of fintech firms on 21 October 2015.

¹²⁵ <https://www.gov.uk/government/news/financial-red-tape-targeted-in-new-review>

¹²⁶ <https://cutting-red-tape.cabinetoffice.gov.uk/>

¹²⁷ Directive 2007/64/EC.

¹²⁸ The Directive has been adopted by European Parliament on 8 October 2015 and published on the Official Journal on 23 December 2015.

It entered into force on 12 January 2016. Member states are required to transpose PSD2 into national law by 13 January 2018.

<http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32015L2366>

¹²⁹ See European Council press release 'Electronic payment services: Council adopts updated rules', 16 November 2015:

<http://www.consilium.europa.eu/en/press/press-releases/2015/11/16-electronic-payment-services/>

¹³⁰ <https://www.paymentsforum.uk/>

¹³¹ Forbes, 22 July 2015 : <http://www.forbes.com/sites/sites/chancebarnett/2015/07/22/fintech-investments-quadruple-top-trends-to-watch/>

Annex 5

Alternative Payment System Models

Introduction

- 5.1** The UK's electronic interbank payment systems are centralised structural models. FPS, Bacs and LINK each have a single supplier of core central infrastructure services that facilitate the secure clearing of payments between PSPs. Currently this supplier is VocaLink in all three cases. Other structural models for payments clearing are present and some of these exist in other economies or for cross-border payments.
- 5.2** In this annex we:
- describe at a high level the existing structural model for payments clearing for Bacs, FPS and LINK
 - take a look at some alternative structural models, including:
 - their pros and cons,
 - stakeholder feedback on them

We do not look at interbank settlement, unless a particular payment processing model also has clear implications for the settlement options that may be available.

Potential alternative structural models for payments clearing

- 5.3** We can see a number of alternative structural models by looking at payment systems in other countries and considering technological developments. In this annex we look at the potential effects of changing the current model for the provision of central infrastructure, such as competition, lower prices, enhanced service quality or greater levels of innovation, to the benefit of service users.

The alternative models we looked at

5.4 The table below summarises the alternative models we looked at and provides examples of where these models are in use (if they are in use).

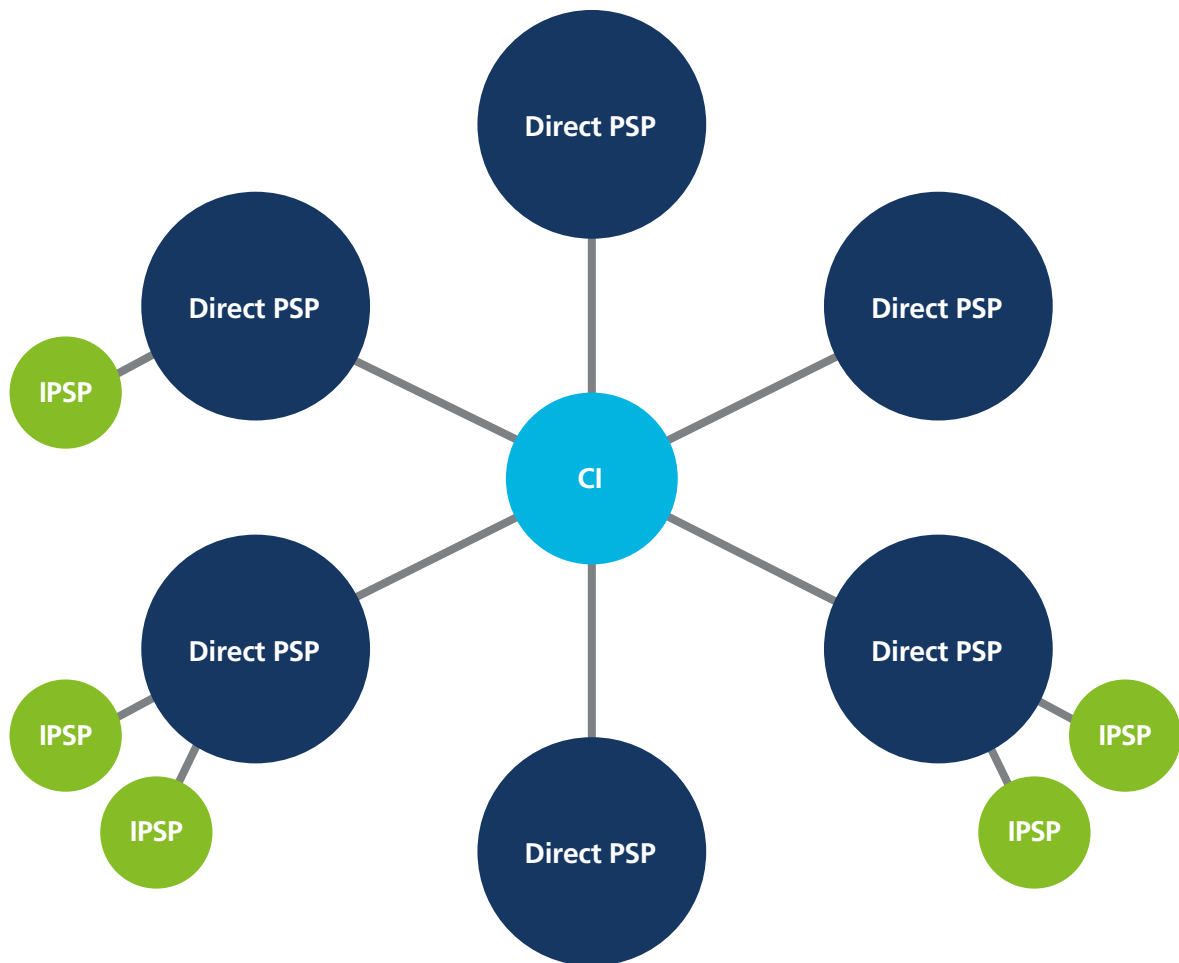
Model	Examples of where used
Centralised, with multiple providers	In Europe, while arguably not centralised, the Single Euro Payments Area (SEPA) ¹³² uses multiple, connected 'Clearing & Settlement Mechanism' infrastructure providers (for low value payments). In Germany there are four ATM switch providers. Each provider serves its own members but is connected to the other three so as to provide full reach.
Centralised, with unbundled central services	Belgium (low value payments). Here the national operator, CEC, ran separate tenders for the provision of payment processing services and a secure messaging network.
Decentralised, using bilateral exchange	Australia (low value payments and ATM), Canada (low value payments), Germany (some use in low value payments), New Zealand (low value payments and ATM)
Decentralised, using distributed ledger	No systems comparable to Bacs, FPS, or LINK are currently in operation using this technology.

Centralised, single provider model (the existing model)

5.5 PSPs can access Bacs and FPS either as a direct PSP, where they have a direct arrangement with the operator, or as an indirect PSP (IPSP), where a direct PSP acts as their sponsor bank. In the case of LINK, all PSPs access the system as direct PSPs. In all three systems the direct PSPs connect to a single central infrastructure (CI) that provides payment processing services. In each case this provider is currently VocaLink. See *figure 5* for a simplified view of this model. We describe this current set up as a centralised, single provider structural model.

5.6 Centrally provided services may also extend to non-processing services, including research and analysis, scheme marketing, training services, and the testing and accreditation of third parties' payment system-related products and services. FPSL has recently contracted with a provider that is not VocaLink for the provision of a suite of testing and accreditation services. Similarly, some years ago BPSL introduced its own Bacs Training Accreditation Scheme to encourage third parties seeking to compete with VocaLink in providing training services to Bacs system users. It has also taken over from VocaLink the running of the Bacs Approved Bureau inspection and accreditation service for parties wishing to provide Bacs bureau services.

¹³² SEPA is a European Union (EU) payments integration initiative. For further details see: <http://www.europeanpaymentscouncil.eu/index.cfm/about-sepa/sepa-vision-and-goals/>

Figure 5: Simple view of a centralised, single provider model

Note: for the sake of simplicity, none of the diagrams in this annex show 'aggregator' or bureaux services, which certain participants may use to get technical access to the central infrastructure.

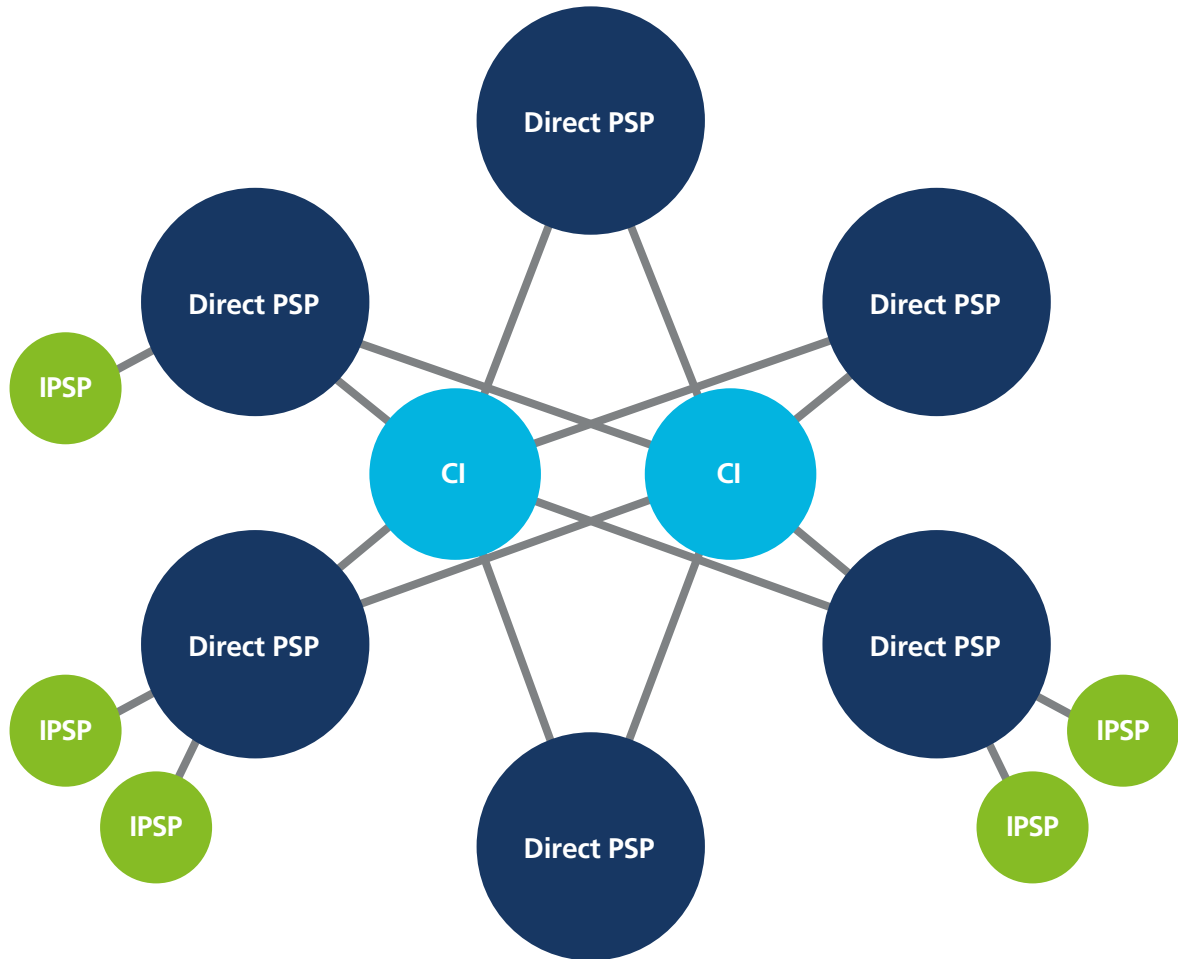
Centralised, with multiple central infrastructure providers

What is it?

- 5.7** It is possible for a payment system to use more than one provider of similar central infrastructure services. However, the system operator(s) would need to ensure that the 'reachability' of the payment system was not compromised. Reachability means the extent to which a system user can send or receive transactions to or from others within their banking community. So if only a subset of banks in a community participate in a system, then the system is said to be lacking full reach.
- 5.8** The SEPA model is sometimes named as a potential alternative to the current approach used in the UK. The box below gives a brief overview of the effects of SEPA on infrastructure provision in Europe.
- 5.9** There are a couple of likely scenarios in which a multiple provider model in the UK might achieve full or near full reach for domestic payments.

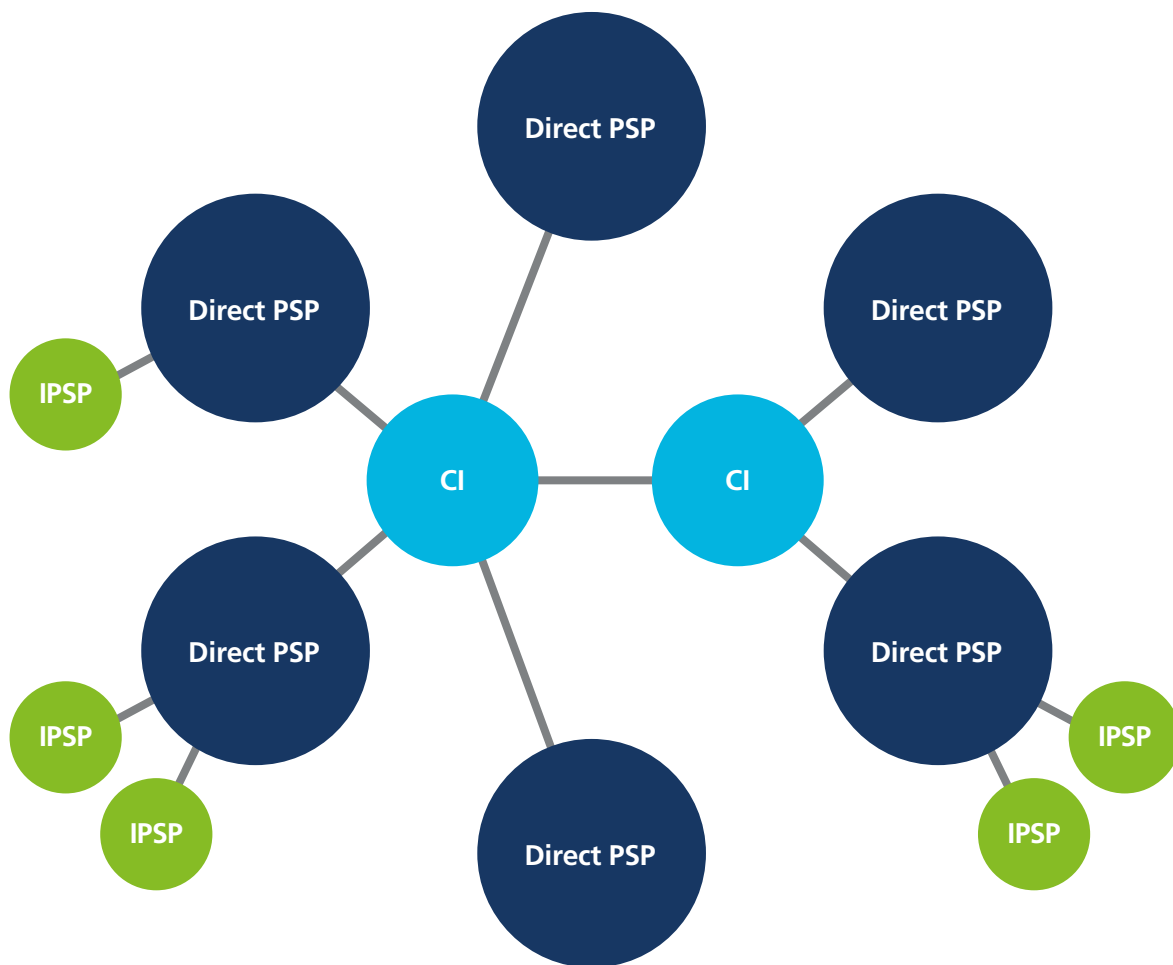
Scenario 1: All direct participants of the payment system would be separately connected to all central infrastructure providers, as the providers do not connect to each other. This is illustrated in Figure 6.

Figure 6: Simple view of a centralised, multiple provider model (Scenario 1)



Scenario 2: To avoid the need for all direct participants to connect to all central infrastructure providers, and therefore enable direct participants to select which provider to use, the providers themselves are each connected and interoperable with each other. See Figure 7.

Figure 7: Simple view of a centralised, multiple provider model (Scenario 2)



5.10 As with the bilateral exchange model, to ensure interoperability there would need to be industry collaboration on processing service levels, system availability, message formats and so on.

Box B: SEPA and its effects on infrastructure provision in Europe

Before the SEPA schemes were created there were many different data formats in place across Eurozone countries to process domestic and cross-border Euro credit transfers and direct debits within the EU. To set up SEPA, participants had to agree on a common set of data to be exchanged in a common format. The SEPA Credit Transfer and SEPA Direct Debit data formats are based on the global ISO 20022 message standards. These provide standard definitions and structure for payment messages.

There are several permitted ways that PSPs can send and receive SEPA transactions. These 'Clearing & Settlement Mechanism' (CSM) approaches must comply with the SEPA scheme rules. They include Automated Clearing House (ACH) infrastructures, bi-lateral or multi-lateral clearing & settlement arrangements (not via ACH), and intra-PSP and/or intra-group clearing & settlement arrangements.

Apart from intra-PSP and intra-group transactions, typically most PSPs send and receive their SEPA transactions using ACH-type CSM infrastructures. This provides them with connectivity to most or all other PSPs within their home country, since most of their SEPA transactions are domestic ones. Often PSPs route international SEPA transactions through one or more alternative infrastructure providers. Or they may be able to use their domestic infrastructure provider where that provider is connected to similar infrastructures in other SEPA jurisdictions.¹³³

The ACH-type SEPA CSM infrastructures have usually evolved from previous national domestic infrastructures. However, there are some examples of infrastructures combining and of former national infrastructures being discontinued. Examples include Finland, where from 2011 banks stopped using the Finnish national payment system PMJ and switched to the pan-European clearing system EBA STEP2.¹³⁴ The Belgian banking community migrated its SEPA transactions to the operational and technical platform of French provider STET in 2013. This let it share operational and future development costs with the French community while retaining governance over its system and control over Belgian domestic needs.¹³⁵

There has been some consolidation of processors so that today approximately 20 SEPA CSMs compete with each other to provide processing services to the 4,500 or so PSPs that offer SEPA transactions.¹³⁶ However, prior to SEPA payments starting in 2008, the European Commission's (EC) view was that the number of infrastructure processors would reduce from over 50 to between five and seven.¹³⁷ This was considered to be enough to make it a competitive market without being so many that it is an inefficient market.¹³⁸

133 The jurisdictional scope of the SEPA Schemes currently consists of the 28 EU Member States plus Iceland, Norway, Liechtenstein, Switzerland, Monaco and San Marino. Refer to the EPC list of SEPA Scheme Countries at: <http://www.europeanpaymentscouncil.eu/index.cfm/knowledge-bank/epc-documents/epc-list-of-sepa-scheme-countries/>

134 See para 4.1, REALISATION OF THE SINGLE EURO PAYMENTS AREA IN FINLAND, https://www.fkl.fi/en/themes/sepa/Dokumentit/Realisation_of_the_SEPA_in_Finland.pdf

135 "Belgian banks complete migration to SEPA CSM", Banking Technology 25/04/2013, <http://www.bankingtech.com/83882/belgian-banks-complete-migration-to-sepa-csm/>

136 The number of CSMs and PSPs is higher for the SEPA Credit Transfer scheme than for the SEPA Direct Debit scheme. For further information on SEPA CSMs see

<http://www.europeanpaymentscouncil.eu/index.cfm/sepa-credit-transfer/sct-scheme-compliant-clearing-and-settlement-mechanisms-csms/>

137 <http://bankingblog.celent.com/2015/06/26/the-next-step-in-european-ach-competition/>

138 See http://ec.europa.eu/finance/payments/docs/sepa/140116_study_en.pdf

A report for the EC published in January 2014 said ‘if there is one market segment where the promise of SEPA has not been delivered as anticipated, it is CSMs’.¹³⁹ It concluded that ‘the regulators will need to enforce further standardisation of messaging’ to address the introduction of local variants of SEPA messages which ‘contributes to the continuance of domestic payment markets, as it is a barrier to non-domestic banks and CSMs’. The report also suggested that the reduction in CSMs up to that point and improvements to fixed costs had led to annual efficiency gains of €340 million.

In a sign that consolidation is still ongoing, in June 2015 six European ACHs formed a joint venture with the objective of processing SEPA payments from a shared service platform. The European Clearing Cooperative (ECC) was founded by Dias, Equens, Iberpay, ICBPI, Kir and Transfond with a view to handling increasing volumes of cross-border SEPA transactions.¹⁴⁰

What do stakeholders say?

5.11 Stakeholders said it would be technically feasible to have multiple infrastructure providers for each payment system in the UK, but most said it may not be practical or beneficial for service-users. PSPs and infrastructure providers said that, in theory, having multiple providers should promote competition between them, leading to lower prices, improved services, and more innovation. In a fully interoperable system it could also improve system resiliency, as one provider could step in for another provider who had suffered a failure. However, the benefits – particularly any price benefits – may not be felt due to the potential extra costs of accommodating multiple providers. PSPs and infrastructure providers identified a number of costs:

- Some costs come from the duplication of PSPs’ or third-party gateway providers’ infrastructure and processes, which is needed to connect to additional providers and interface with back office functions and processes. There is also the cost of establishing and managing contractual relationships with multiple providers (although some infrastructure providers [3] did not think this cost would be excessive).
- The duplication of core service providers’ infrastructure to interface with each other, including duplication of disaster recovery sites and capabilities for both to maintain resiliency, comes at a price.
- There is also the potential loss of economies of scale for central infrastructure providers, as transaction volumes would be split across multiple providers, but they would each have a high fixed-cost base. The resulting payment volumes for each provider may not be viable or sustainable, as the volumes in the UK are significantly lower than for other examples of systems that support more than one provider (such as in SEPA or the USA). Increased costs would ultimately be passed down to users. This argument assumes that UK requirements continue to be poorly aligned with the requirements for other payment volumes processed by alternative infrastructure providers. For instance, if the UK system’s messaging standards and service requirements were highly aligned with those of SEPA, then other providers could potentially get greater benefits from economies of scale if they also win UK business.
- Possible risks to the resilience of the payment systems could arise because of:
 - an increase in the complexity of establishing and upgrading technical connectivity across more parties
 - increased difficulties in coordinating more parties, which may also have negative implications for innovation

¹³⁹ Page 12, “Economic analysis of SEPA”, a report for the European Commission DG Internal Market and Services, by PWC: http://ec.europa.eu/finance/payments/docs/sepa/140116_study_en.pdf

¹⁴⁰ Equens press release, 25/06/2015 <http://www.equens.com/aboutus/newsandpress/ACHs-join-forces-to-optimize-European-clearing-services.jsp>

Centralised, with unbundled central processing services

What is it?

- 5.12** The UK electronic interbank payment systems are often said to have relatively rich central functionality compared to many overseas equivalents. For example, the central services concerned directly with payment processing may include the provision of secure transmission networks, file and payment validation, enrichment, routing, reconciliation, exception handling and reporting, among other services.
- 5.13** An alternative approach to the current situation is to break up or 'unbundle' the provision of some of these services, so that more providers can bid to provide each part.

What do stakeholders say?

- 5.14** Stakeholders told us it would be difficult or inefficient to contract out the central clearing and various back office functions¹⁴¹ separately to different providers. They said that in theory it would be technically feasible and may promote competition, lower prices and more innovation. However, the way the interbank payment systems have evolved means the central clearing services and back office functions are integrated in ways that makes this unattractive. Stakeholders also noted that unbundling core services so that multiple providers supply different services would have similar drawbacks to having multiple providers of the same service – so it may not result in an overall benefit to service-users. There could also be heightened risks associated with the increased complexity and difficulties in coordination within the payment system.
- 5.15** However, a few infrastructure providers suggested that unbundling some back office functions, such as verification, reporting and messaging services, or other value-added services like accreditation, would not have an impact on resilience or security of the payment systems. It could also improve competition and innovation in these areas. They argued that enhanced or additional services come from infrastructure providers having a narrower focus on the service they provide, rather than managing both central clearing and multiple back office functions or access services.

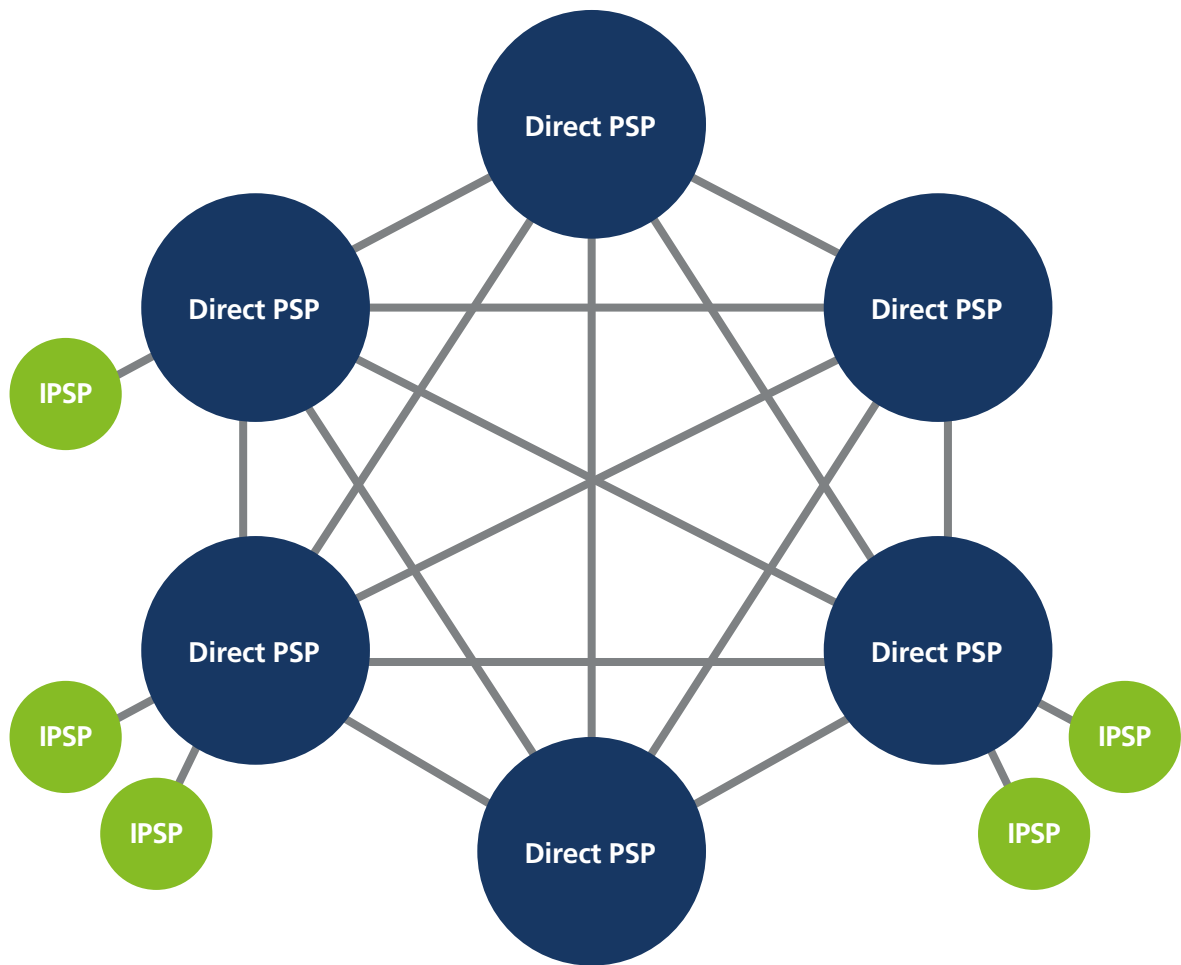
Decentralised, using bilateral exchange

What is it?

- 5.16** With this model, direct PSPs exchange payment details directly with each other. See *Figure 8* for a simple illustration. Interbank settlement of transactions using this model could happen either bilaterally or via submission of totals into a central settlement agent. Typically this model is used in payment systems where a small number of PSPs generate a very high proportion of the system's overall payment volume.

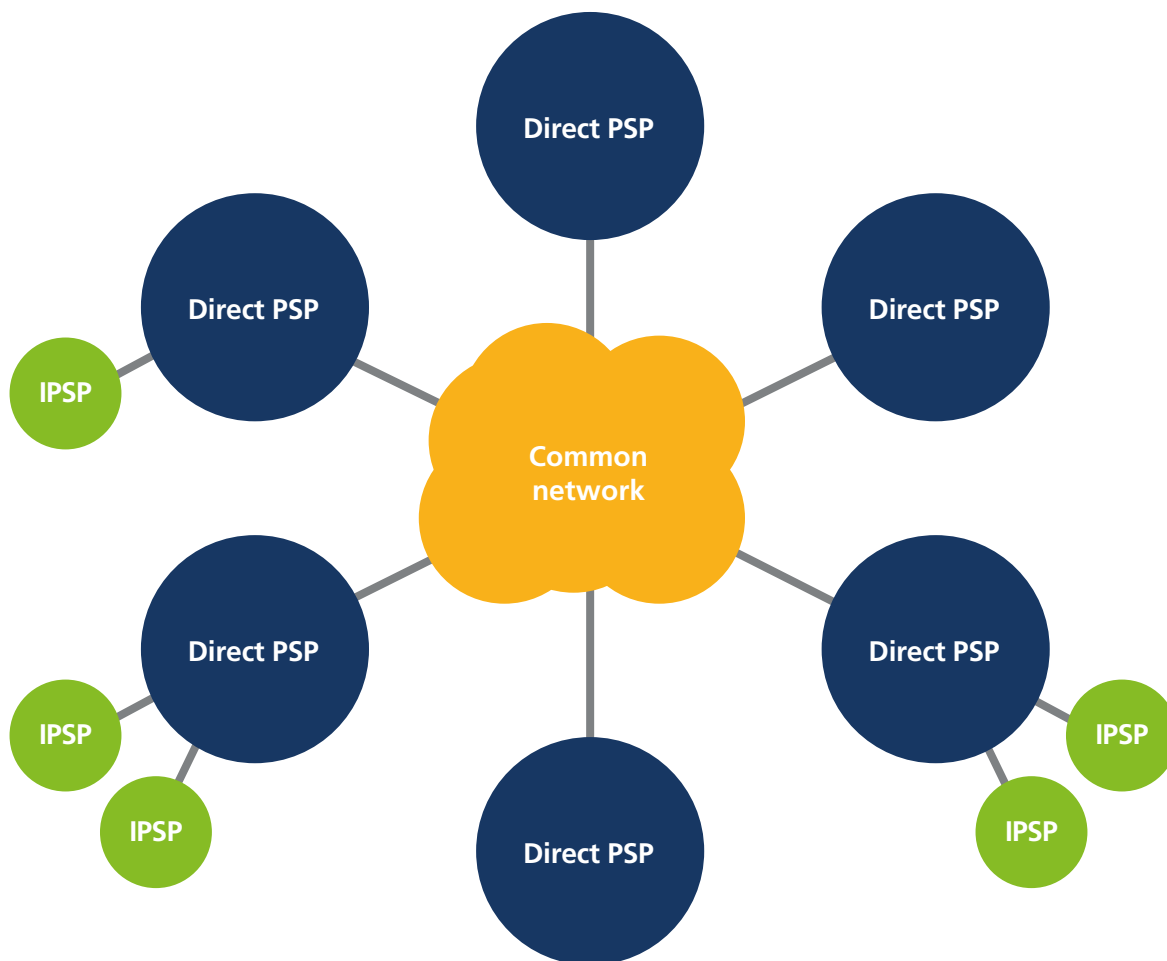
¹⁴¹ In this context, back office functions include those relating to settlement, reconciliation, exceptions management and reporting, amongst others.

Figure 8: Simple view of a bilateral exchange model



Participants in a bilateral exchange system may agree to use a common network to avoid the burden of establishing bilateral links using multiple different communication methods or security protocols, as shown in *Figure 9*

Figure 9: Bilateral exchange using a common network



What do stakeholders say?

- 5.17** In 2014 a bilateral exchange model was considered for the planned new cheque imaging service¹⁴² for the UK. This model was considered to be potentially limiting to smaller PSPs and risked creating a complex network infrastructure. For instance, some central infrastructure would still have to be built to ensure that smaller PSPs could access the payment system. As there would still be many of the same complexities and costs in building this central element, there would not be a significant enough reduction in costs to justify the creation of such a two-tier approach. Another concern was that customer communications might become more complex, with PSPs providing different and confusing customer experiences. Also, a bilateral exchange system might cause difficulties when trying to integrate the service with other industry programmes such as CASS.

¹⁴² See http://www.chequeandcredit.co.uk/cheque_and_credit_clearing/cheque_imaging/

Decentralised, using distributed ledger

What is it?

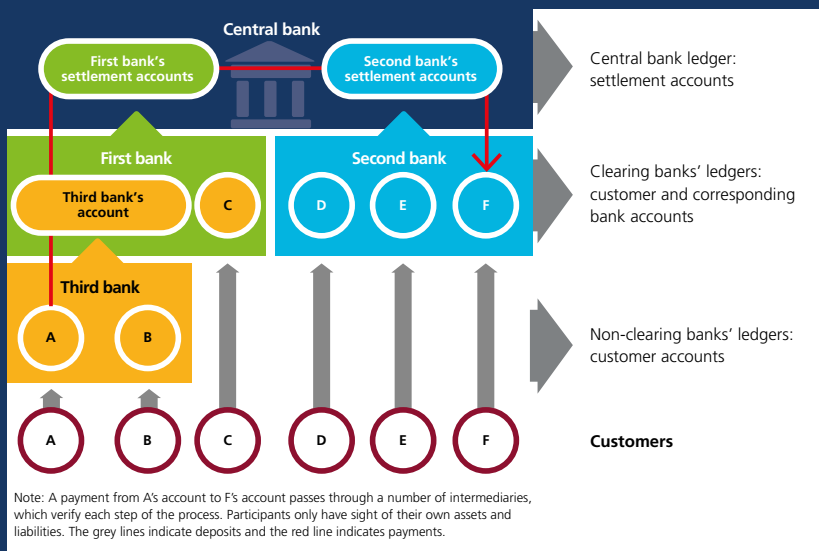
- 5.18** The distributed ledger approach (for example, using blockchain¹⁴³) has been widely praised for having the potential to transform business processes, disrupt established business models and enable new business models that would not otherwise be possible.¹⁴⁴ Box C provides an overview of the traditional centralised approach to bookkeeping that is increasingly said to be at risk of disruption from alternative models based on a distributed ledger approach.

¹⁴³ Blockchain is the underlying distributed ledger technology used by the cryptocurrency 'bitcoin'.

¹⁴⁴ Banking Technology, Jeremy Light, Accenture, *Blockchain: widely discussed but what are the implications?*: <http://www.bankingtech.com/388692/blockchain-widely-discussed-but-what-are-the-implications/>

Box C: Today's centralised tiered ledger approach for payment systems

- Despite the application of new technology over the past 50 or so years, payment systems continue to be based on a model using a centralised ledger. Settlement takes place between direct system participants (clearing banks) across the books of a central authority, such as the national central bank. The balances of these direct participants held on the central ledger are also kept in the clearing banks' internal ledgers.
- Individual customers of the clearing banks, including agency banks and indirect PSPs, hold aggregated balances at their chosen direct participant bank and keep a record of their underlying component customer balances in their own ledgers.
- This tiered payment system structure is illustrated below.¹⁴⁵



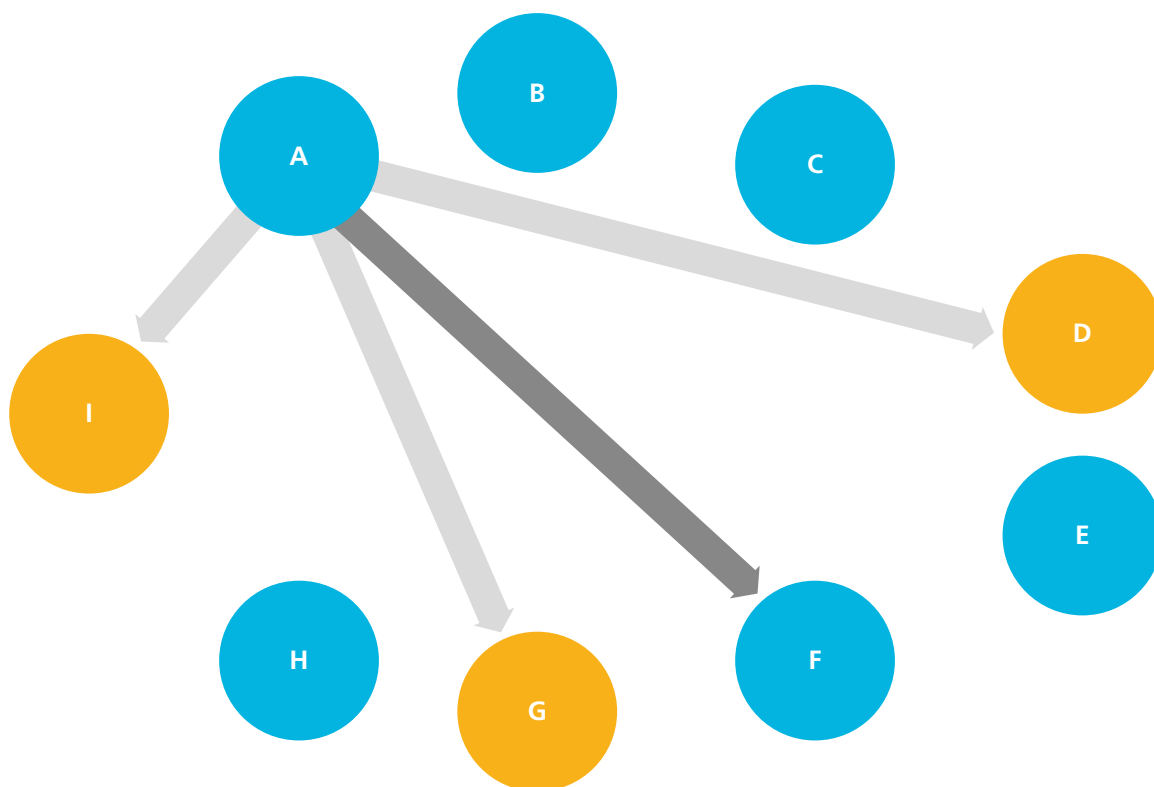
- Risks in centralised tiered payment systems include:
 - **Credit risk:** The risk that a participant becomes insolvent while owing money to other participants
 - **Liquidity risk:** The risk that a solvent participant may not have funds ready to settle a required obligation when it is due
 - **Operational risk:** the risk that one of the participants or the central infrastructure stops working properly (for example due to an IT failure)

¹⁴⁵ Bank of England, *Innovations in payment technologies and the emergence of digital currencies*, Bank of England Quarterly Bulletin, Q3 2014: <http://www.bankofengland.co.uk/publications/Documents/quarterlybulletin/2014/qb14q3digitalcurrenciesbitcoin1.pdf>

5.19 In contrast to today's approach, the use of distributed ledgers eliminates the need for a central authority to certify ownership (or, for example, to clear payments). A distributed ledger can be open, allowing anonymous participants into the network, or closed, where participants must be identified. A fully distributed system removes the credit and liquidity risks found in tiered ledger systems, by eliminating intermediaries. For example, in fully distributed models such as Bitcoin, payments may be made directly between the payer and payee, without any financial intermediary. The distributed ledger approach also avoids the concentration of operational risk that is present in centralised payments infrastructures. In terms of costs, it is claimed by some that significant savings could be made by using the more efficient settlement and reconciliation processes available. There are further savings in avoiding the collateral requirements inherent in many centralised payment systems.¹⁴⁶

5.20 Figure 10 below is one example of a distributed payment system.¹⁴⁷ All participants have sight of the ledgers (and their histories). Payments pass directly between participants. In this example a payment is sent from A to F and is broadcast to a number of other network participants for verification (in this case to D, G and I). Once verified, the new payment transaction is added to the history of the ledger.

Figure 10: Example of a distributed payment system



5.21 While there are some concerns that a distributed ledger system might be at greater risk of system-wide fraud, the completeness and transparency of the transaction ledger could potentially help with anti money-laundering (AML) responsibilities. This is because it is claimed that it would provide more complete data and transaction history. Similarly, given its potentially information-rich properties, there is much interest in the potential of a distributed ledger approach to provide benefits in areas such as transparency, efficiency and innovation.¹⁴⁸

¹⁴⁶ For example, see Santander InnoVenture paper 'fintech 2.0, which claims banks could save \$20bn through streamlining processes using blockchain: santanderinnoventures.com/fintech2/

¹⁴⁷ Bank of England, *Innovations in payment technologies and the emergence of digital currencies*, Bank of England Quarterly Bulletin, Q3 2014

¹⁴⁸ Santander InnoVenture paper 'fintech 2.0'.

5.22 The Bank of England has said that ‘the distributed ledger is a genuine technological innovation which demonstrates that digital records can be held securely without any central authority’ and that its impact ‘could be much wider than payments’.¹⁴⁹ Others have suggested that the potential benefits, if realised, will have a marked impact on the payments industry.¹⁵⁰ In March 2015 the Treasury published its response to its call for information on digital currencies, saying it ‘considers that while there are clear barriers to digital currencies achieving widespread use in their current form, the “distributed ledger” technology that underpins digital currencies has significant future promise as an innovation in payments technology’.¹⁵¹

5.23 A number of high profile initiatives using this technology have recently gained industry attention. The following announcements were made between September and November 2015:

- In September 2015 more than 20 banks teamed up with financial innovation start-up R3¹⁵² to collaborate on research, experimentation, design and engineering to help develop enterprise-scale distributed ledger technology.¹⁵³
- In October 2015 SETL, a blockchain-based institutional payment and settlement infrastructure venture, claimed to have broken through the one billion transactions per day marker on its test network, in an effort to show that distributed ledger technology can be used in high speed, high capacity scenarios.¹⁵⁴ SETL claims that such speeds are achievable because its platform will operate on a ‘permissioned’ basis rather than the ‘permissionless’ environment bitcoin operates in. The system will require that each public key used is certified by one of a number of entities that will undertake due diligence and tie each key back to a Legal Entity Identifier.
- In October 2015, the Australian Securities Exchange (ASX) announced it was considering replacing its clearing and settlement system with one based on blockchain, as part of a cyclical overhaul of its infrastructure.¹⁵⁵
- In October 2015, NASDAQ announced it had signed up an initial batch of clients to its new blockchain-enabled platform for trading shares in private companies. Nasdaq CEO Bob Greifeld commented: ‘We are extremely encouraged by the initial demand for Nasdaq Linq from these innovative, first-mover companies, and the validation it represents of our application of blockchain technology.’¹⁵⁶
- In October 2015, Mastercard announced that it was joining a host of other big-name investors backing the new bitcoin incubator Digital Currency Group (DCG). MasterCard said that DCG are ‘well placed to assess technologies in the digital currency and blockchain spaces’.¹⁵⁷
- In November 2015, Visa Europe announced that its innovation hub is teaming up with a distributed-ledger specialist on a proof of concept project looking into how blockchain and bitcoin can be used for international remittances. It said it was turning its attention to a new

149 Bank of England, *Innovations in payment technologies and the emergence of digital currencies*, Bank of England Quarterly Bulletin, Q3 2014

150 Jeremy Light, Banking Technology, Accenture, *Blockchain: widely discussed but what are the implications?*

151 HM Treasury, *Digital currencies: response to the call for information* (March 2015):

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/414040/digital_currencies_response_to_call_for_information_final_changes.pdf

152 R3 is a financial markets crypto, exchanges and venture practice.

153 Finextra, *More global banks back blockchain collaboration* (2015):

http://www.finextra.com/news/fullstory.aspx?newsitemid=27906&utm_medium=DailyNewsletter&utm_source=2015-9-30

154 *Financial Times*, *UK start-up claims blockchain breakthrough in payment*, (2015):

<http://www.ft.com/cms/s/0/a2260946-7009-11e5-8af2-f259ceda7544.html#axzz3pmzpai8r>

155 Finextra, *ASX considers replacing clearing and settlement system* (2015):

http://www.finextra.com/news/fullstory.aspx?newsitemid=28041&utm_medium=DailyNewsletter&utm_source=2015-10-27

156 Finextra, *Nasdaq signs first clients to blockchain-based*, (2015):

http://www.finextra.com/news/fullstory.aspx?newsitemid=28050&utm_medium=DailyNewsletter&utm_source=2015-10-28

157 Finextra, *MasterCard makes first bitcoin investment*, (2015):

http://www.finextra.com/news/fullstory.aspx?newsitemid=28054&utm_medium=DailyNewsletter&utm_source=2015-10-29

technology that has long been touted as a cheaper and simpler alternative for moving funds across borders.¹⁵⁸

- In November 2015 blockchain payments start-up Align Commerce announced it had closed a \$12.5 million funding round. Align says it is building an electronic 'multi-rail' payments platform that combines blockchain with traditional bank wire and treasury management services, to cut the costs of cross border payments for small and medium-sized businesses.¹⁵⁹

What do stakeholders say?

- 5.24** While our consultation did not focus on the potential use of blockchain technology or distributed ledger approaches to payment systems, this topic did arise at our workshop with NewFinance Partners and fintech companies in October 2015. Attendees supported attempts to use a distributed ledger approach for interbank payments and believed it would reduce costs. However, they acknowledged that a potential drawback in the short term is that this has not yet been stress-tested enough to identify security issues. For progress to be made they felt that the industry has to develop technical standards and introduce governance, security and quality requirements with the help of relevant regulators.

Advantages and disadvantages of alternative structural models

- 5.25** This table provides a summary of some of the possible advantages and disadvantages for each alternative option considered.

Model option	Advantages	Disadvantages
Bilateral exchange	There is no central infrastructure and so none of its creation, maintenance and operation costs. Direct PSPs simply exchange payments between themselves using agreed secure transmission methods.	<p>PSPs have to undertake all validation, routing and warehousing decisions themselves. To avoid a potentially costly proliferation of approaches towards PSPs' transmission and processing of payments, they will still need to collaboratively agree security requirements, processing service levels, message formats and so on.</p> <p>This model may not be suitable given the number and diversity of PSPs in the UK market and the nature and complexity of the existing systems.</p> <p>Bacs, FPS and LINK currently benefit from having near full reachability of UK current accounts and, in the case of Bacs and FPS, integration with CASS. These benefits might be difficult to sustain effectively using a bilateral exchange approach.</p>

¹⁵⁸ Finextra, *Visa Europe explores use of blockchain tech for remittances*, (2015):

http://www.finextra.com/news/fullstory.aspx?newsitemid=28124&utm_medium=DailyNewsletter&utm_source=2015-11-13

¹⁵⁹ Finextra, *Align Commerce raises \$12.5 million to disrupt cross-border payments industry*, (2015):

http://www.finextra.com/news/fullstory.aspx?newsitemid=28138&utm_medium=DailyNewsletter&utm_source=2015-11-18

Model option	Advantages	Disadvantages
Multiple providers (of similar services)	Would introduce competition if PSPs contracted directly with their provider(s) of choice, so could drive down overall prices and act as a catalyst for innovation in centrally provided services.	Could lead to a two-tier market where PSPs with larger volumes can obtain lower prices for central services, giving them an advantage over smaller PSPs which could affect downstream competition in financial services.
Unbundling	Could enable increased competition and innovation within a payment system.	Could introduce additional costs and risks to the overall system. This depends on the nature of the coordination and integration requirements.
Distributed ledger	Said to offer potentially large benefits in the form of reduced costs and easier access for system participants.	<p>At the PSP level, differences in individual firms' appetites to adopt or invest in new approaches to payment execution may lead to a two-tier market, where some PSPs use the new approaches to transact directly with each other, bypassing existing infrastructures, while other transactions remain on traditional systems and infrastructures. This could lead to big differences in unit processing costs and the services available to end customers.</p> <p>There is currently some concern regarding potential security risks linked to this new approach.</p>

Annex 6

Questionnaire to VocaLink, operators and PSPs

Questions for VocaLink Holdings Limited (VocaLink)

In responding to these questions, please provide supporting documents and information.

In addition to the glossary of terms published in the final terms of reference, please note the following definitions:

- 'Contract' refers to any legally binding contract between VocaLink and either the payment system operator or participants for the provision of services.
- 'Core services' refer to the payment services supplied by VocaLink to either the payment system operator or participants under the following agreements: Bacs Framework Agreement; FPS Managed Services Agreement; and Network Members Agreements.
- 'Non-core services' refer to all other payment services supplied by VocaLink to either the payment system operator or participants.
- 'Innovation' or 'innovative projects' refers to changes or projects that result in the development of a new product or service rather than an enhancement or change to an existing service.

'Off-the-shelf' information

Please provide copies of the following documents so we can better understand how VocaLink Holdings Limited ('VocaLink') is governed and operated:

- VocaLink's corporate strategy for each of the last five financial years
- the latest version of VocaLink's Directors' handbook with confirmation of when it was implemented
- a copy of the Network Members Agreement (if different terms are agreed with individual members, please supply a copy of each bespoke agreement)
- copies of Memorandum of association and Articles of association
- the 2014 Governance Review and associated Board minutes for outcomes and implementation of the review
- copies of VocaLink's periodic internal reviews
- copies of external audits of Board composition and/or effectiveness
- the strategic review mentioned at page 4 of your 2011 Annual Report
- the Terms of Reference for the Nomination Committee

- any documents prepared since 2007 regarding VocaLink's expectations for future investment requirements for the payment systems Bacs, FPS, and LINK, such as documents presented to VocaLink's Board used to determine VocaLink's annual spending targets for investment in infrastructure of these payment systems
- VocaLink's user satisfaction survey and survey methodology for 2011-2015 results
- the 'Diagnostic Review of Database Changes, Transaction Charting, and Touch Points' report from 2009
- VocaLink's annual management accounts for the past 5 years
- any documents related to the risk updates on the payment systems and services presented to VocaLink's Board since 2011

Ownership arrangements

Q1: In your view, what are the benefits and drawbacks of the current ownership arrangement of VocaLink for each of the following groups:

- (a) owners of VocaLink
- (b) PSPs that are not owners of VocaLink
- (c) payment system operators
- (d) consumers and businesses that use payment systems
- (e) other, please specify

VocaLink organisational structure and governance

Q2: Please provide an organogram of the corporate structure of VocaLink. Please also:

- (a) describe each function within this structure
- (b) describe the role and purpose of any internal Committees within VocaLink, to whom they are accountable, and what decisions, if any, are delegated to them
- (c) summarise the proposals that internal Committees with responsibilities related to development put to the Board and what the Board decided in respect of each of these proposals
- (d) describe the role and functions of any industry working groups and their relationship to VocaLink

Q3: Please provide an outline of VocaLink's Board decision-making and voting process.

Q4: Please provide strategy documents for the past 5 years that consider the board membership, governance and ownership of VocaLink.

Q5: Please provide a summary of changes in Board composition and the rationale for these changes from 2007 to present day.

- Q6:** Please provide details of the process followed to select and appoint Directors. Please provide a summary of Director attendance and voting patterns at meetings held between 2007 and now.
- Q7:** Please provide a summary of changes to Board voting structure from 2007 to now.
- Q8:** Please provide examples of how the Board has considered the interests of parties other than its biggest shareholders.
- Q9:** How is the representative for smaller shareholders appointed and what are his/her terms?
- Q10:** Please explain how VocaLink sets its strategy. In your response please explain:
- (a) how shareholders' views are taken into account, and
 - (b) how non-shareholders' views are taken into account, such as payment system members in their own right, third-party providers and users of the payment systems.
- Q11:** How is senior management team performance measured and rewarded? Please describe the incentives for senior management to keep costs low.
- Q12:** How does VocaLink's profit share scheme for employees operate?
- Q13:** Please outline the governance structure for Zapp.

Services provided

- Q14:** For each of the Bacs, FPS and LINK payment systems, describe how the change requests to the contract for core services are raised, how these are processed and the role of VocaLink in deciding to implement these changes. Please provide examples. Is there a different procedure for different types of change requests (i.e. mandatory changes, security changes/upgrades, development changes)?
- Q15:** Please provide a summary of all bilateral contracts between VocaLink and PSPs/members, excluding those bilateral contracts under the Network Members Agreement. In your summary, with reference to each contract please explain:
- (a) its purpose
 - (b) the services provided
 - (c) why these services are provided through a bilateral contract and not within the core services contract
 - (d) the value of the contract in annual revenue
 - (e) the names of the parties

(f) the term of the contract and renewal clauses (e.g. rolling contract unless terminated by the parties)

(g) the notice period for termination

Q16: Please explain the accreditation process for third-party providers seeking to connect to the central clearing function for each system. Please explain your role and responsibilities in this process with reference to relevant contract terms and/or operator's rules.

Q17: Please describe the contract negotiations for the core services contract for each of the payment systems. Please explain what VocaLink's objectives were when negotiating these contracts and why these were met or not and how price limits are determined in negotiations.

Q18: For each payment system, please explain how VocaLink calculate the prices and what portion of the prices is allocated to future development, cost recovery and profit.

Q19: For each payment system, please explain whether and how VocaLink is able to influence each of the following:

- (a) prices
- (b) breadth of services
- (c) new products or services
- (d) quality of service

through contract negotiations with each of the payment system operators or elsewhere. Please provide examples.

Q20: Please explain whether and how VocaLink is able to influence the terms of change requests (outside of the contract negotiation) with reference to:

- (a) price
- (b) quality of service
- (c) delivery time of the implementation of the change.

Cost of business

Q21: Please complete template 'VocaLink final data request' which requests a breakdown of revenues, costs and capital expenditure by activity for the financial years 2011 to 2015.

Q22: For each of the cost categories 1) – 24) in 'VocaLink final data request', please provide:

- (a) a description of what functions/activities are included in the category

- (b) a brief overview of what the cost comprises (e.g. labour, new equipment, depreciation etc.)
- (c) a description of any shared costs within a category, including how you have apportioned those shared costs between different activities
- (d) if total revenue and EBIT do not match those in your annual reports, please provide a reconciliation (you may like to use tab 'Reconciliation' in 'Vocalink final data request' to do this).

Q23: For each payment system please list the components of additional cost (and estimate their quantum) required to service a:

- (a) 10% increase in payment volumes
- (b) 30% increase in payment volumes
- (c) 50% increase in payment volumes
- (d) 10% decrease in payment volumes
- (e) 30% decrease in payment volumes
- (f) 50% decrease in payment volumes.

Q24: Please explain what costs would you expect to be minimised from increased competition from each of the following:

- (a) more than one central infrastructure provider
- (b) re-tendering of core service contracts
- (c) tendering of components of the services Vocalink currently provides

Q25: How much does it cost you to provide the gateway accreditation service for each of FPS, the BASS and any other accreditation services provided for Bacs (please list these separately)? Please explain how you recover these costs and from whom. If fees are charged for providing these services, please explain what these fees are and who determines them. If possible, please provide the average, highest and lowest fee levied for the accreditation service.

Q26: How are the development and operation of connections to the central clearing functions funded? Please explain.

Q27: Please list capital raisings since 1 January 2007. For each, please tell us:

- (a) the amount raised
- (b) why funds were raised
- (c) whether shareholders participated in line with their shareholdings. If not, please explain.

Q28: How much of your capital is ring-fenced per annum for each of the payment systems for capital adequacy requirements. Please explain who determines how much is ring-fenced and the role of the operators in ring fencing capital.

Quality of service provision

Q29: Please provide any reports, with brief summaries of their content, on VocaLink's operational performance in each payment system for the financial years 2011 to 2015. For example:

- (a) reports given to operators of Bacs, FPS, LINK
- (b) reports given to member Committees for Bacs, FPS, NMC/LINK
- (c) reports to the Operational Oversight Committee

Q30: For each payment system, please provide the following annually for the period 2011 to 2015:

- (a) SLA targets and actuals
- (b) the number of cyber-attack attempts and number of breaches, and
- (c) approximate time to process a transaction in seconds (within length of clearing cycle)

Q31: What obligations or requirements do you have to invest in the infrastructure? Please explain.

Q32: Over what period do you depreciate computer and ancillary equipment? Please explain.

Q33: Please provide any other performance indicators you feel are relevant, and please explain.

Innovation in infrastructure

Q34: What options has VocaLink considered for raising funds to enable VocaLink to provide services outside of the contracts for the payment systems? In your response please explain the objective of these actual and potential ventures and, where relevant, why they were not pursued.

Q35: For each of the projects listed below please provide:

- (a) a description of the project, how it came to be proposed, and the reasons why it was proposed
- (b) a description of the innovative features of this project
- (c) a description of the investments, if relevant, that had to be made to the core infrastructure in order to implement the project
- (d) who originally proposed the project (e.g. VocaLink Board, payment system operator, PSPs, service-users, other please specify)

- (e) the estimated cost of the project (implementation costs, operational costs)
- (f) details of the mechanism used (or proposed to be used) to fund the project (e.g. shareholder call for capital, rights issue, debt facilities, retained earnings, under contract)
- (g) the annual development costs for the project over the past 5 years
- (h) estimated return and/or payback period
- (i) the amortisation on the project
- (j) if the project was taken up, an explanation of whether it was a success or a failure
- (k) the number of transactions the project accounted for while operational, and how this compares with the total number of transactions for the relevant payment system
- (l) the impact on service-users.

List of projects:

- Zapp
- VocaLink's SEPA CSM
- Department of Work and Pensions products (urgent payments, priority payments, disaster emergency payments service)
- HMRC Real Time Information
- OneVu
- Faster Payments Managed Service
- Immediate Payments
- Management Information Services for members, HMRC, DWP, payroll index
- Bankgirot
- Controlled Access to Payment Services (CAPS) proposal
- Post Office Network Banking
- Mobile phone top-up
- ATM driving platform
- International gateways for connection to Visa and/or MasterCard
- Resilience products for LINK system (stand in processing and dynamic routing)

- Account top-up (similar to mobile phone top-ups)
- Balance enquiries and mini statements
- Foreign currency dispense
- Dynamic currency conversion
- Charity donations
- Automated LINK disputes (indemnity claims)
- Automated notification of Issuer Identification Numbers (IINS)
- Post settlement services

Q36: Please explain how you plan for future investment in infrastructure? In your response, please explain who you consult with, how decisions are made and by whom.

Q37: Please explain how you determine the appropriate funding mechanism for investment in infrastructure (e.g. calls for capital, retained earnings, rights issues, debt facilities or other). In your response please indicate whether this depends on the type of investment required and, if so, explain.

Q38: For each payment system, what are the long-term incentives to innovate in payment systems within the core services contract? What are the incentives to innovate for non-core services?

Alternative infrastructure provision

Q39: How would (i) security and resilience; (ii) incentives to invest; and (iii) incentives to innovate be affected under each of the following scenarios:

- (a) more than one central infrastructure provider
- (b) re-tendering of core service contracts
- (c) tendering of components of the services Vocalink currently provides.

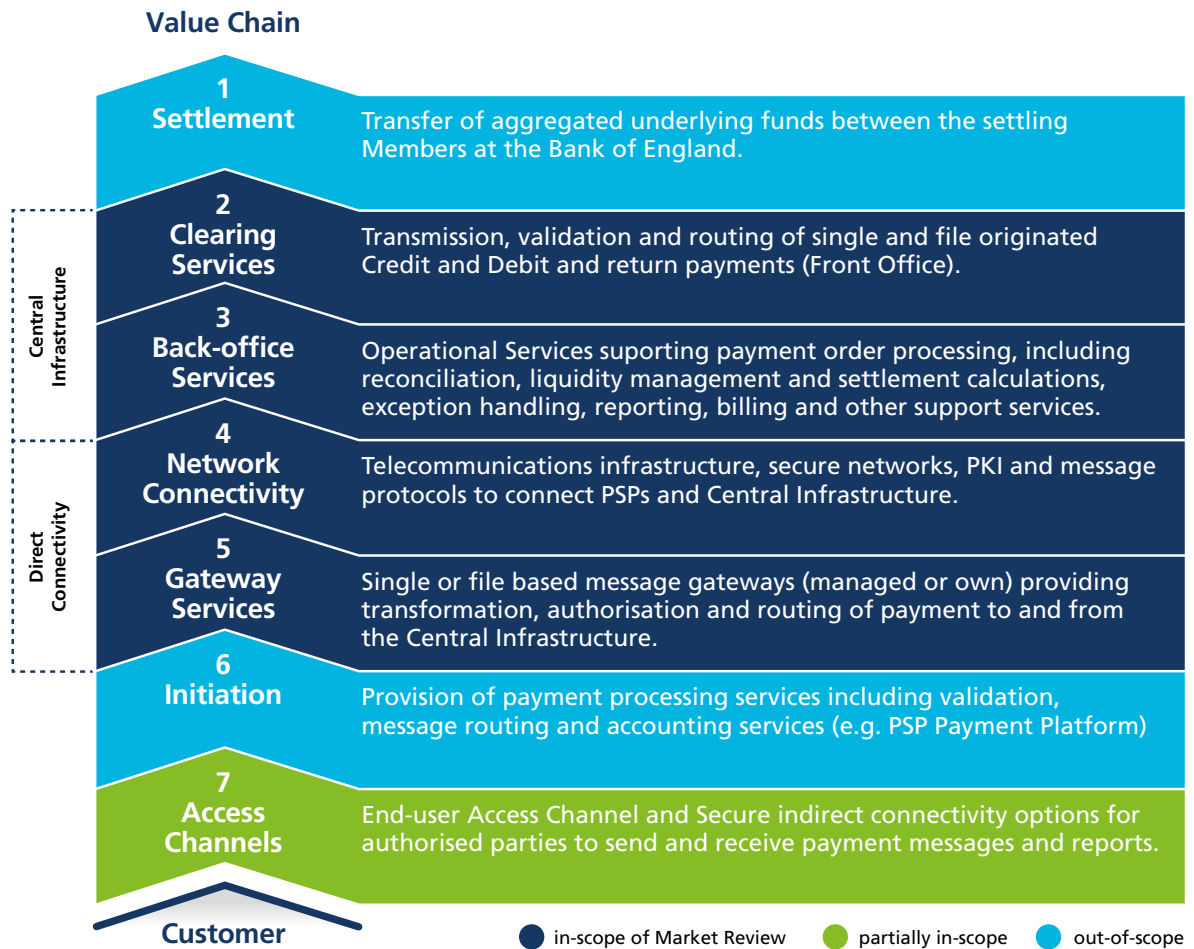
Please explain with reference to examples where possible.

Q40: For each of the payment systems, which parts of the value chain (outlined in the figure below) would need to be replicated for there to be multiple central infrastructure providers and who would ultimately pay for these to be replicated? In your response please provide an estimate of the cost of replication, with reference to the cost of hardware, software, operations and testing.

Q41: How would interoperability be achieved with other infrastructure providers for each payment system? Please explain.

Q42: How is interoperability with other infrastructure provided for within your contracts with each of the payment systems? In your response, please provide reference to the relevant terms within the contract.

Figure: Generic value chain of payment transactions



Q43: What are the factors that may prevent each of the following scenarios from occurring in practice:

- (a) more than one central infrastructure provider
- (b) re-tendering of core service contracts
- (c) tendering of components of the services Vocalink currently provides

Please explain.

Q44: What are the benefits and costs to service-users of having a single provider of central infrastructure as opposed to multiple central infrastructure providers? Please explain.

Q45: What are the benefits and costs to service-users of tendering the components of core central clearing services components to a single provider? Please explain.

Q46: What are the benefits and costs to service-users of re-tendering the core services contracts? Please explain.

Q47: For each of the following, please explain the benefits and costs of having the same infrastructure provider of central clearing functions also provide infrastructure for:

- (a) CASS
- (b) Cash ISA
- (c) Paym
- (d) EISCD management
- (e) government solutions
- (f) Bacs, FPS and LINK.

Where possible, please make reference to the revenues and/or costs provided in the 'VocaLink final data request'.

Questions for payment system operators (BPSL)

In responding to these questions, please provide supporting documents and information.

In addition to the glossary of terms published in the final terms of reference, please note the following definitions:

- 'Contract' refers to any legally binding contract between VocaLink Holdings Limited ('VocaLink') and either the payment system operator or participants for the provision of services.
- 'Core services' refer to the payment services supplied by VocaLink to the payment system operator under the Bacs Framework Agreement.
- 'Non-core services' refer to all other payment services supplied by VocaLink to either the payment system operator or participants.
- 'Innovation' and 'innovative projects' refer to changes or projects that result in the development of a new product or service rather than an enhancement or change to an existing service.

Ownership arrangements

Q1: In your view, what are the benefits and drawbacks of the current ownership arrangement of VocaLink for each of the following groups:

- owners of VocaLink
- PSPs that are not owners of VocaLink
- payment system operators
- consumers and businesses that use payment systems
- other, please specify

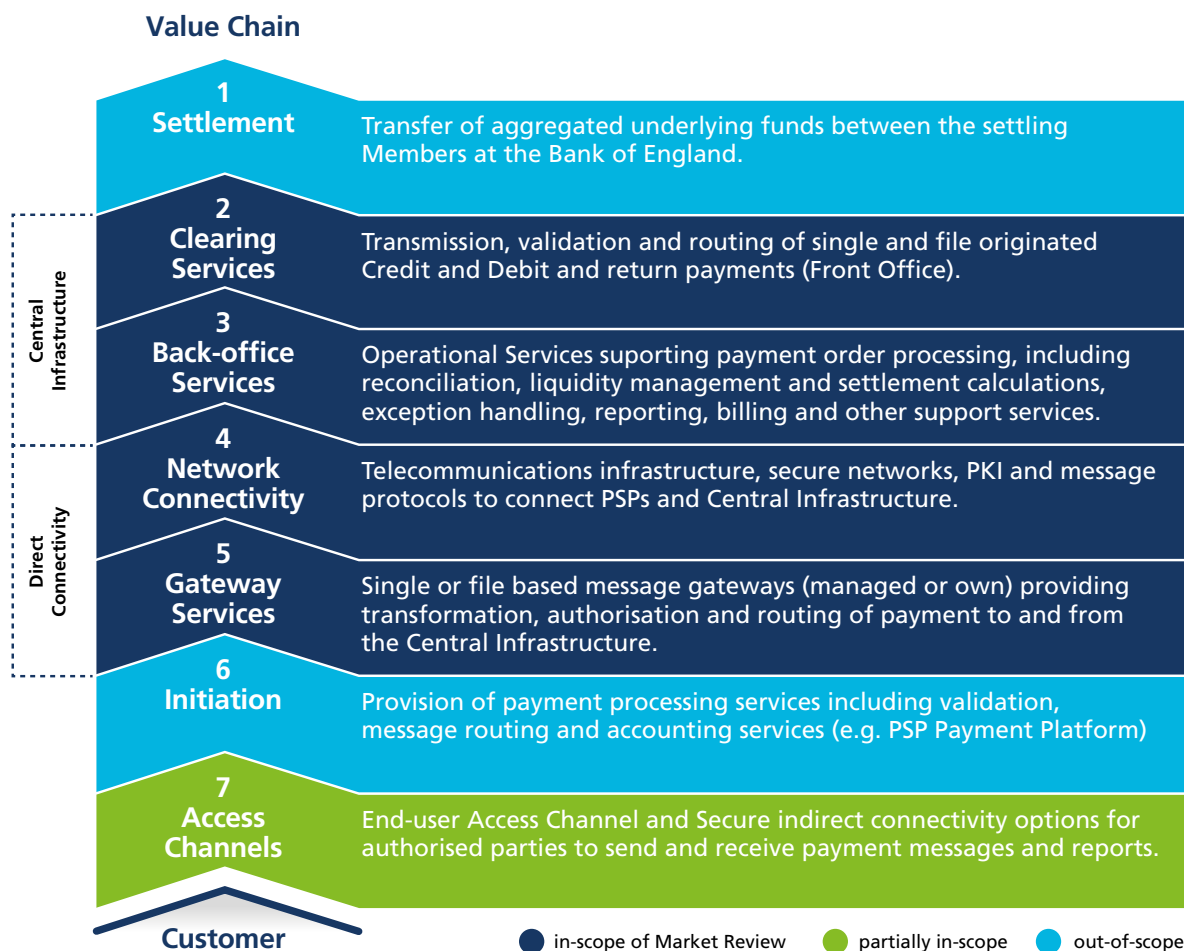
The value chain

Q2: Please identify which areas of the value chain, within scope of the review (i.e. clearing services, back-office services, network connectivity, and gateway services – see figure below), that you are involved in selecting the infrastructure provider(s). For each of the areas that you identify, please provide details on the following:

- Was the current supplier(s) of this service selected by:
 - competitive open tender
 - closed tender
 - grandfathering
 - open market
 - other (please explain).

- (b) What were the key factors you considered when selecting the current infrastructure provider(s) (e.g. price, quality of service, existing business relationship etc.)? Please explain with examples.**
- (c) Please explain whether and how you consider your members or other service-users of your payment system (both non-member PSPs and end-users) in your decision to select the current infrastructure provider(s).**
- (d) What is your view on the competitiveness of the provision of this service? Do you have sufficient choice of providers? Do you get value for money?**
- (e) What are the benefits and costs of greater competition in this area?**
- (f) Who are the other existing competitors/suppliers of this service?**
- (g) Are you aware of any unsuccessful attempts by potential competitors to enter the market? If possible, please explain why they were not successful.**
- (h) Which party owns the intellectual property of associated assets – the supplier, the customer or a third party?**
- (i) Please explain whether and how security/resiliency procedures and standards influence your decision in selecting an infrastructure provider. What are the security/resilience procedures and standards that have been adopted for this service (e.g. data centre standards)? Where these procedures were mandated, please explain who mandated them. Where these procedures were not mandated, please explain the rationale for adopting them.**

Figure: Generic value chain of payment transactions



Contracts with infrastructure providers

- Q3:** Please provide a summary table, or organogram if possible, outlining each of the interbank Committees as well as a summary of their respective terms of reference, VocaLink’s formal role (if any) in each Committee and to whom the Committee is accountable.
- Q4:** Please provide the most recent contracts for the provision of infrastructure services between VocaLink and Bacs Payment Scheme Limited, and for CASS and CASH ISA.
- Q5:** If more than one contract is provided, please explain briefly the interdependencies between each of the contracts provided.
- Q6:** For each contract provided, please:
 - (a) summarise the terms of the contract
 - (b) describe and provide examples of how the change requests that are envisaged in the contract are raised, how these are processed and the role of VocaLink in the decision to implement these changes. Please explain if there is a different procedure

for different types of change requests, for example business as usual changes (mandatory changes, security changes/upgrades) and other changes (for a new product or service, enhancement of existing products or services).

- (c) explain the exit and termination provisions included in the contract, and in particular please explain how assets would be dealt with upon termination.
- Q7:** Please describe the latest contract negotiations process for the core services contract with VocaLink. Please explain what your objectives were when negotiating this contract and your views on whether your objectives were realised.
- Q8:** Please describe the contract negotiations process for the contract for CASS and CASH ISA with VocaLink. Please explain what your objectives were when negotiating this contract and your views on whether your objectives were realised.
- Q9:** Please explain whether you are able to influence, through contract negotiations with VocaLink or separately elsewhere during the life of the contract, each of the following:
- (a) prices
 - (b) breadth of services
 - (c) new products or services
 - (d) quality of service
- Q10:** How many tenders for infrastructure services have you held since 2007? For each tender, please explain:
- (a) the object of the tender (including any separate lots)
 - (b) the rationale for initiating the tender
 - (c) the value of the tender
 - (d) if the object of the tender included multiple services, why these services were included in the tender
 - (e) the number of firms that were invited to tender, the number that responded to the invitation to tender, and the number that were asked to present a bid
 - (f) who won the tender and who did not win the tender
- Q11:** Please explain whether you considered other options for procuring core services, such as retendering the contract for the provision of the payments infrastructure, before or whilst you were negotiating to renew your contract with VocaLink. Please explain any decision made not to pursue other such options. Please provide any supporting documents.

Q12: Why was the contract with VocaLink extended in 2008 for a further five years? Please provide details.

Price and quality of infrastructure services

Q13: For each of Bacs, CASS and Cash ISA, please provide the annual volumes and value of transactions for each financial year 2011 to 2015 or as far back as possible.

Q14: For each of Bacs, CASS and Cash ISA, please describe the types of fees you charge your members. Please identify those fees that are one-off (e.g. joining fees) and those that are ongoing fees (e.g. per transaction fees, administrative fees). Please describe your methodology for allocating fees to individual members, and outline whether and how this has changed over time.

Q15: For each of Bacs, CASS and Cash ISA, provide the following for each financial year 2011 to 2015 or as far back as possible:

- (a) price per transaction
- (b) prices quoted for change requests (please provide the highest, lowest, upper quartile, lower quartile and median for each year)
- (c) prices quoted for services provided on a bilateral contracts (please provide the highest, lowest, upper quartile, lower quartile and median for each year)
- (d) the total fees recouped from members.

Q16: Please explain how price limits are determined in price negotiations.

Q17: Do you set accreditation fees? If so, how are fees for accreditation set? Please explain, in detail, the methodology for setting accreditation fees.

Q18: How do you view the quality of the services provided by VocaLink? Please explain with examples where possible. In your response, please differentiate between core and non-core services.

Q19: Are there any areas where you feel the service provided by VocaLink could be improved? Please explain.

Q20: If you procure services from other infrastructure providers, how does their service provision compare with VocaLink's? Please explain with examples.

Q21: Please provide any user satisfaction surveys for 2011 to 2015 prepared for relevant member Committees.

Q22: Please provide any other performance indicators that are relevant to evaluate the quality of the service provided by VocaLink, and please explain.

Innovation in infrastructure

- Q23:** What are the long-term incentives to innovate in payment systems? Please explain.
- Q24:** How does the payment system operator fund changes? Please explain.
- Q25:** For each financial year 2011 to 2015 or as far back as possible, please provide the total number of change requests for each of Bacs, CASS and Cash ISA, and the total number that fall into the following categories:
- (a) business as usual changes – if possible please distinguish between:
 - i. mandatory changes
 - ii. security changes/upgrades
 - (b) other changes – if possible please distinguish between:
 - i. changes to facilitate a new product or service
 - ii. enhancements to existing products or services
- Q26:** For each financial year 2011 to 2015 or as far back as possible, please provide a descriptive summary of material change requests for the categories listed in question 25 for each of Bacs, CASS and Cash ISA.
- Q27:** For each financial year 2011 to 2015 or as far back as possible, please provide the total number of change requests that were initiated by:
- (a) individual members via the payment system operator
 - (b) the payment system operator
 - (c) VocaLink
 - (d) of these, how many have been vetoed and by whom respectively
- Q28:** For each financial year 2011 to 2015 or as far back as possible, please provide the number of 'other' change requests (i.e. those not considered business as usual) that were initiated by:
- (a) individual members via the payment system operator
 - (b) the payment system operator
 - (c) VocaLink
 - (d) of these, how many have been vetoed and by whom respectively
- Q29:** Regarding the development of CASS and Cash ISA, for each of these projects, and any other innovative projects you think relevant, please provide:
- (a) a description of the project, how it came to be proposed, and the reason why it was proposed

- (b) who originally proposed the project (e.g. VocaLink Board, payment system operator, PSPs, service-users, other please specify) and why
- (c) what are the annual development costs for the project for each financial year 2011 to 2015 or as far back as possible
- (d) the estimated operational costs of the project
- (e) what mechanism was proposed, and by whom, to fund the project (e.g. shareholder call for capital, rights issue, debt facilities, retained earnings, under contract, other please specify)
- (f) the estimated return and/or payback period
- (g) the amortisation policy used for the project
- (h) an explanation of who made the decision to take up the project, and their reasoning for the decision.

Q30: Please give examples of when you suggested any other innovative projects to VocaLink. Please explain whether VocaLink agreed or not with the proposed project. For each example, please specify if the project related to core or non-core services. Please also include details of who initially proposed the project, the reasons why the project was proposed, the estimated cost and delivery time, how it would have been funded, and any other relevant detail.

Q31: Please give examples of when you suggested a change for resiliency and/or regulatory compliance reasons to VocaLink. Please give your views on how VocaLink priced the change request or the delivery time quoted by VocaLink.

Q32: Please give examples of times when VocaLink suggested an innovative project. Please explain whether or not you agreed with the proposed project or whether or not it aligned with your goals and objectives. For each example, please specify if the project related to core or non-core services. Please also include details of who initially proposed the project, the project's purpose and/or motivation, the estimated cost and delivery time, how it would have been funded, and any other relevant detail.

Alternative infrastructure provision

Q33: Please explain what it would take for you to switch your provider of core services. Are there any factors that may prevent you switching from VocaLink?

Q34: How would (i) security and resilience (ii) incentives to invest and (iii) incentives to innovate be affected under each of the following scenarios:

- (a) there was more than one central infrastructure provider
- (b) re-tendering of core service contracts
- (c) tendering of components of the core services Vocalink currently provides to the payment system operator

Please refer to examples where possible.

Q35: What are the factors that may prevent each of the following scenarios from occurring in practice:

- (a) more than one central infrastructure provider
- (b) re-tendering of core service contracts
- (c) tendering of components of the services Vocalink currently provides

Please explain.

Q36: What are the benefits and costs to service-users of having:

- (a) a single provider of central infrastructure
- (b) tendering central clearing as a single provider
- (c) more than one central infrastructure provider
- (d) tendering of components of the services Vocalink currently provides

Q37: For each of the following, please explain what are the benefits and costs to service-users of having the same infrastructure provider of central clearing functions also provide infrastructure for:

- (a) CASS
- (b) Cash ISA
- (c) Paym
- (d) EISCD management
- (e) government solutions
- (f) Bacs, FPS and LINK

Questions for payment system operators (FPSL)

In responding to these questions, please provide supporting documents and information.

In addition to the glossary of terms published in the final terms of reference, please note the following definitions:

- 'Contract' refers to any legally binding contract between VocaLink Holdings Limited ('VocaLink') and either the payment system operator or participants for the provision of services.
- 'Core services' refer to the payment services supplied by VocaLink to the payment system operator under the FPS Managed Services Agreement.
- 'Non-core services' refer to all other payment services supplied by VocaLink to either the payment system operator or participants.
- 'Innovation' and 'innovative projects' refer to changes or projects that result in the development of a new product or service rather than an enhancement or change to an existing service.

Ownership arrangements

Q38: In your view, what are the benefits and drawbacks of the current ownership arrangement of VocaLink for each of the following groups:

- owners of VocaLink
- PSPs that are not owners of VocaLink
- payment system operators
- consumers and businesses that use payment systems
- other, please specify

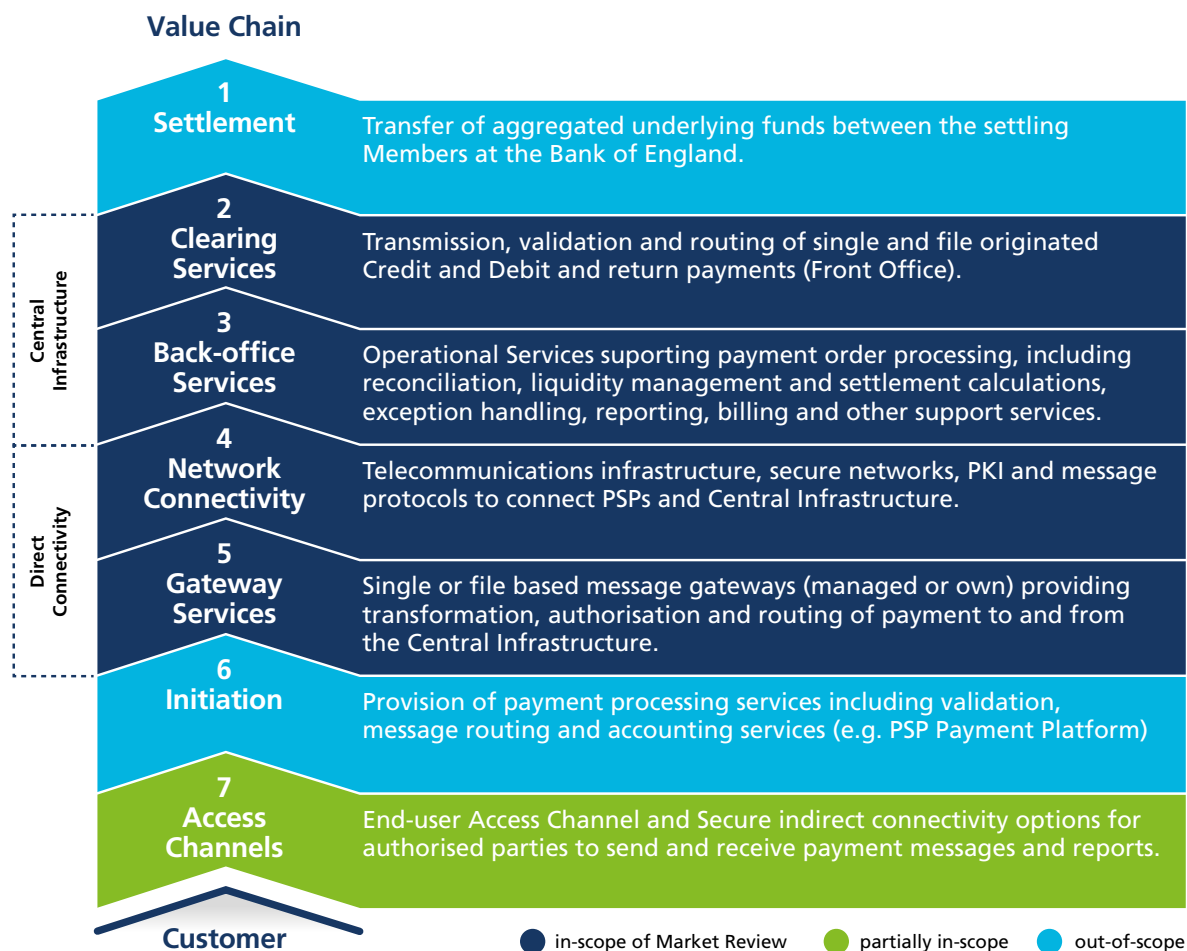
The value chain

Q39: Please identify which areas of the value chain, within scope of the review (i.e. clearing services, back-office services, network connectivity, and gateway services – see figure below), that you are involved in selecting the infrastructure provider(s). For each of the areas that you identify, please provide details on the following:

- Was the current supplier(s) of this service selected by:
 - competitive open tender
 - closed tender
 - grandfathering
 - open market
 - other (please explain).

- (b) What were the key factors you considered when selecting the current infrastructure provider(s) (e.g. price, quality of service, existing business relationship etc.)? Please explain with examples.**
- (c) Please explain whether and how you consider your members or other service-users (both non-member PSPs and end-users) of your payment system in your decision to select the current infrastructure provider(s).**
- (d) What is your view on the competitiveness of the provision of this service? Do you have sufficient choice of providers? Do you get value for money?**
- (e) What are the benefits and costs of greater competition in this area?**
- (f) Who are the other existing competitors/suppliers of this service?**
- (g) Are you aware of any unsuccessful attempts by potential competitors to enter the market? If possible, please explain why they were not successful.**
- (h) Which party owns the intellectual property of associated assets – the supplier, the customer or a third party?**
- (i) Please explain whether and how security/resiliency procedures and standards influence your decision in selecting an infrastructure provider. What are the security/resilience procedures and standards that have been adopted for this service (e.g. data centre standards)? Where these procedures were mandated, please explain who mandated them. Where these procedures were not mandated, please explain the rationale for adopting them.**

Figure: Generic value chain of payment transactions



Contracts with infrastructure providers

- Q40:** Please provide a summary table, or organogram if possible, outlining each of the interbank Committees as well as a summary of their respective terms of reference, VocaLink's formal role (if any) in each Committee and to whom the Committee is accountable.
- Q41:** Please provide the most recent contracts for the provision of infrastructure services between VocaLink and Faster Payments Scheme Limited, and for the Paym service.
- Q42:** If more than one contract is provided, please explain briefly the interdependencies between each of the contracts provided.
- Q43:** For each contract provided, please:
- (a) summarise the terms of the contract
 - (b) describe and provide examples of how the change requests that are envisaged in the contract are raised, how these are processed and the role of VocaLink in the decision to implement these changes. Please explain if there is a different procedure

for different types of change requests, for example business as usual changes (mandatory changes, security changes/upgrades) and other changes (for a new product or service, enhancement of existing products or services).

- (c) explain the exit and termination provisions included in the contract, and in particular please explain how assets would be dealt with upon termination.

Q44: Please describe the latest contract negotiations process for the core services contract with VocaLink. Please explain what your objectives were when negotiating this contract and your views on whether your objectives were realised.

Q45: Please describe the contract negotiations process for the contract for the Paym service with VocaLink. Please explain what your objectives were when negotiating this contract and your views on whether your objectives were realised.

Q46: Please explain whether you are able to influence, through contract negotiations with VocaLink or separately elsewhere during the life of the contract, each of the following:

- (a) prices
- (b) breadth of services
- (c) new products or services
- (d) quality of service

Q47: How many tenders for infrastructure services have you held since 2007? For each tender, please explain:

- (a) the object of the tender (including any separate lots)
- (b) the rationale for initiating the tender
- (c) the value of the tender
- (d) if the object of the tender included multiple services, why these services were included in the tender
- (e) the number of firms that were invited to tender, the number that responded to the invitation to tender, and the number that were asked to present a bid
- (f) who won the tender and who did not win the tender

Q48: Please explain whether you considered other options for procuring core services, such as retendering the contract for the provision of the payments infrastructure, before or whilst you were negotiating to renew your contract with VocaLink. Please explain any decision made not to pursue other such options. Please provide any supporting documents.

Price and quality of infrastructure services

- Q49:** For the FPS payment system, please provide the annual volumes and value of transactions for each financial year 2011 to 2015 or as far back as possible.
- Q50:** For the FPS payment system, please describe the types of fees you charge your members. Please identify those fees that are one-off (e.g. joining fees) and those that are ongoing fees (e.g. per transaction fees, administrative fees). Please describe your methodology for allocating fees to individual members, and outline whether and how this has changed over time.
- Q51:** For the FPS payment system, provide the following for each financial year 2011 to 2015 or as far back as possible:
- (a) price per transaction
 - (b) prices quoted for change requests (please provide the highest, lowest, upper quartile, lower quartile and median for each year)
 - (c) prices quoted for services provided on a bilateral contracts (please provide the highest, lowest, upper quartile, lower quartile and median for each year)
 - (d) the total fees recouped from members.
- Q52:** Please provide a copy of the KPMG report on VocaLink pricing.
- Q53:** Please explain how price limits are determined in price negotiations.
- Q54:** Do you set accreditation fees? If so, how are fees for accreditation set? Please explain, in detail, the methodology for setting accreditation fees.
- Q55:** How do you view the quality of the services provided by VocaLink? Please explain with examples where possible. In your response, please differentiate between core and non-core services.
- Q56:** Are there any areas you feel the service provided by VocaLink could be improved? Please explain.
- Q57:** If you procure services from other infrastructure providers, how does their service provision compare with VocaLink's? Please explain with examples.
- Q58:** Please provide any performance indicators that are relevant to evaluate the quality of the service provided by VocaLink, and please explain.

Innovation in infrastructure

- Q59:** What are the long-term incentives to innovate in payment systems? Please explain.
- Q60:** How does the payment system operator fund changes? Please explain.

- Q61:** For each financial year 2011 to 2015 or as far back as possible, please provide the total number of change requests for each of FPS and Paym, and the total number that fall into the following categories:
- (a) business as usual changes – if possible please distinguish between:
 - i. mandatory changes
 - ii. security changes/upgrades
 - (b) other changes- if possible please distinguish between:
 - i. changes to facilitate a new product or service
 - ii. enhancements to existing products or services
- Q62:** For each financial year 2011 to 2015 or as far back as possible, please provide a descriptive summary of material change requests for the categories listed in question 24 for each of FPS and Paym.
- Q63:** For each financial year 2011 to 2015 or as far back as possible, please provide the total number of change requests that were initiated by:
- (a) individual members via the payment system operator
 - (b) the payment system operator
 - (c) VocaLink
 - (d) of these, how many have been vetoed and by whom respectively
- Q64:** For each financial year 2011 to 2015 or as far back as possible, please provide the number of 'other' change requests (i.e. those not considered business as usual) that were initiated by:
- (a) individual members via the payment system operator
 - (b) the payment system operator
 - (c) VocaLink
 - (d) of these, how many have been vetoed and by whom respectively
- Q65:** Regarding the development of FPS and Paym, for each of these projects, and any other innovative projects you think relevant, please provide:
- (a) a description of the project, how it came to be proposed, and the reason why it was proposed
 - (b) who originally proposed the project (e.g. VocaLink Board, payment system operator, PSPs, service-users, other please specify) and why
 - (c) what are the annual development costs for the project for each financial year 2011 to 2015 or as far back as possible
 - (d) the estimated operational costs of the project

- (e) what mechanism was proposed, and by whom, to fund the project (e.g. shareholder call for capital, rights issue, debt facilities, retained earnings, under contract, other please specify)
- (f) the estimated return and/or payback period
- (g) the amortisation policy used for the project
- (h) an explanation of who made the decision to take up the project, and their reasoning for the decision.

Q66: Please give examples of when you suggested any other innovative projects to VocaLink. Please explain whether VocaLink agreed or not with the proposed project. For each example, please specify if the project related to core or non-core services. Please also include details of who initially proposed the project, the reasons why the project was proposed, the estimated cost and delivery time, how it would have been funded, and any other relevant detail.

Q67: Please give examples of when you suggested a change for resiliency and/or regulatory compliance reasons to VocaLink. Please give your views on how VocaLink priced the change request or the delivery time quoted by VocaLink.

Q68: Please give examples of times when VocaLink suggested an innovative project. Please explain whether or not you agreed with the proposed project or whether or not it aligned with your goals and objectives. For each example, please specify if the project related to core or non-core services. Please also include details of who initially proposed the project, the project's purpose and/or motivation, the estimated cost and delivery time, how it would have been funded, and any other relevant detail.

Alternative infrastructure provision

Q69: Please explain what it would take for you to switch your provider of core services. Are there any factors that may prevent you switching from VocaLink?

Q70: How would (i) security and resilience (ii) incentives to invest and (iii) incentives to innovate be affected under each of the following scenarios:

- (a) there was more than one central infrastructure provider
- (b) re-tendering of core service contracts
- (c) tendering of components of the core services VocaLink currently provides to the payment system operator

Please refer to examples where possible.

Q71: What are the factors that may prevent each of the following scenarios from occurring in practice:

- (a) more than one central infrastructure provider
- (b) re-tendering of core service contracts
- (c) tendering of components of the services Vocalink currently provides

Please explain.

Q72: What are the benefits and costs to service-users of having:

- (a) a single provider of central infrastructure
- (b) tendering central clearing as a single provider
- (c) more than one central infrastructure provider
- (d) tendering of components of the services Vocalink currently provides

Q73: For each of the following, please explain what are the benefits and costs to service-users of having the same infrastructure provider of central clearing functions also provide infrastructure for:

- (a) CASS
- (b) Cash ISA
- (c) Paym
- (d) EISCD management
- (e) government solutions
- (f) Bacs, FPS and LINK

Questions for payment system operators (LINK)

In responding to these questions, please provide supporting documents and information.

In addition to the glossary of terms published in the final terms of reference, please note the following definitions:

- 'Contract' refers to any legally binding contract between VocaLink Holdings Limited ('VocaLink') and either the payment system operator or participants for the provision of services.
- 'Core services' refer to the payment services supplied by VocaLink to LINK members under the Network Members Agreement.
- 'Non-core services' refer to all other payment services supplied by VocaLink to either the payment system operator or participants.
- 'Innovation' and 'innovative projects' refer to changes or projects that result in the development of a new product or service rather than an enhancement or change to an existing service.

Ownership arrangements

Q74: In your view, what are the benefits and drawbacks of the current ownership arrangement of VocaLink for each of the following groups:

- (a) owners of VocaLink**
- (b) PSPs that are not owners of VocaLink**
- (c) payment system operators**
- (d) consumers and businesses that use payment systems**
- (e) other, please specify**

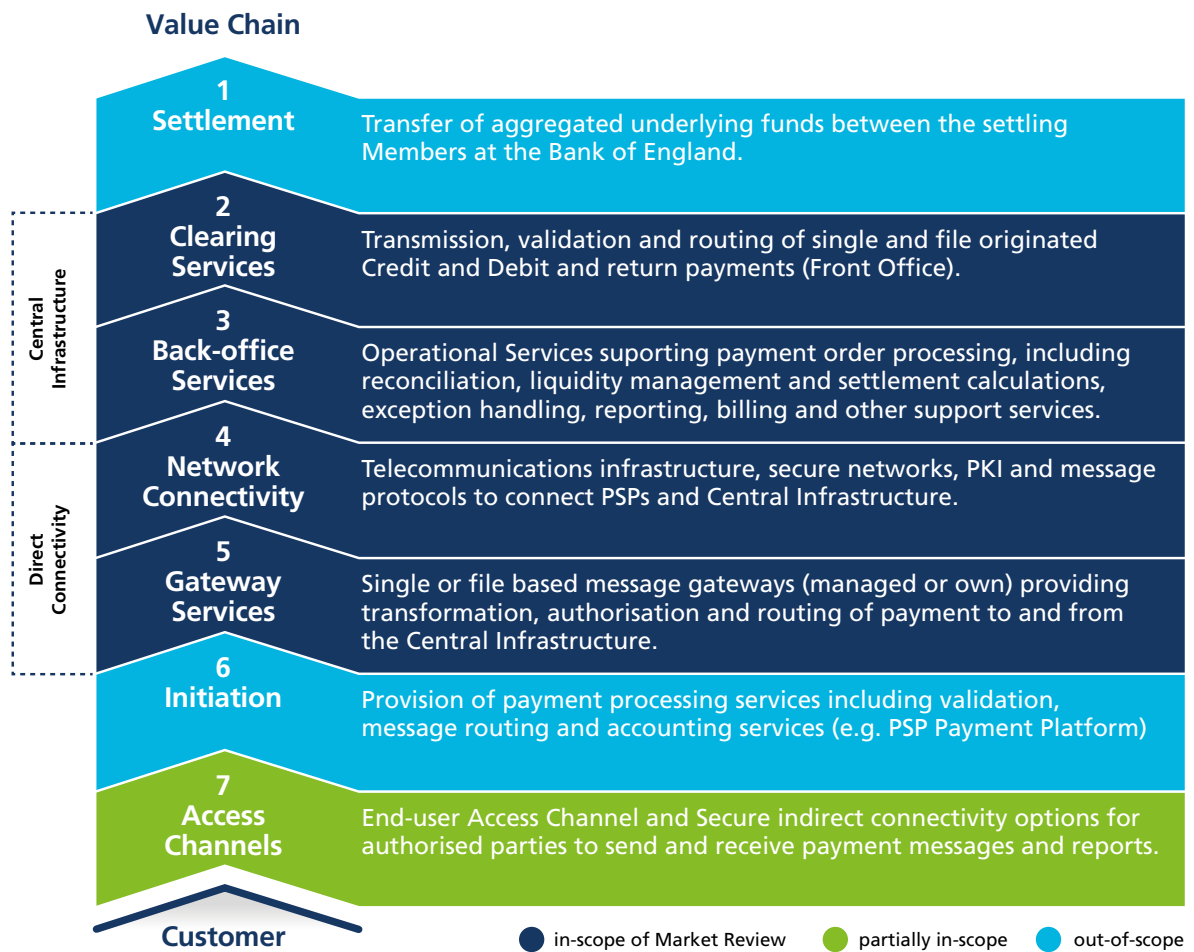
The value chain

Q75: Please identify which areas of the value chain within the scope of the review (i.e. clearing services, back-office services, network connectivity, and gateway services – see figure below) that you are involved in selecting the infrastructure provider(s). For each of the areas that you identify, please provide details on the following:

- (a) Was the current supplier(s) of this service selected by:**
 - i. competitive open tender**
 - ii. closed tender**
 - iii. grandfathering**
 - iv. open market**
 - v. other (please explain).**

- (b) What were the key factors you considered when selecting the current infrastructure provider(s) (e.g. price, quality of service, existing business relationship etc.)? Please explain with examples.**
- (c) Please explain whether and how you consider your members or other service-users (both non-member PSPs and end-users) of your payment system in your decision to select the current infrastructure provider(s).**
- (d) What is your view on the competitiveness of the provision of this service? Do you have sufficient choice of providers? Do you get value for money?**
- (e) What are the benefits and costs of greater competition in this area?**
- (f) Who are the other existing competitors/suppliers of this service?**
- (g) Are you aware of any unsuccessful attempts by potential competitors to enter the market? If possible, please explain why they were not successful.**
- (h) Which party owns the intellectual property of associated assets – the supplier, the customer or a third party?**
- (i) Please explain whether and how security/resiliency procedures and standards influence your decision in selecting an infrastructure provider. What are the security/resilience procedures and standards that have been adopted for this service (e.g. data centre standards)? Where these procedures were mandated, please explain who mandated them. Where these procedures were not mandated, please explain the rationale for adopting them.**

Figure: Generic value chain of payment transactions



Contracts with infrastructure providers

- Q76:** Please provide a summary table, or organogram if possible, outlining each of the interbank Committees as well as a summary of their respective terms of reference, VocaLink’s formal role (if any) in each Committee and to whom the Committee is accountable.
- Q77:** Please provide the most recent Network Members Agreements for the provision of infrastructure by VocaLink.
- Q78:** If more than one contract is provided, please explain briefly the interdependencies between each of the contracts provided.
- Q79:** For each contract provided, please:
 - (a) summarise the terms of the contract
 - (b) describe and provide examples of how the change requests that are envisaged in the contract are raised, how these are processed and the role of VocaLink in the decision to implement these changes. Please explain if there is a different procedure for different types of change requests, for example business as

usual changes (mandatory changes, security changes/upgrades) and other changes (for a new product or service, enhancement of existing products or services).

- (c) explain the exit and termination provisions included in the contract, and in particular please explain how assets would be dealt with upon termination

Q80: Please describe the latest contract negotiations process for the core services contract with VocaLink. Please explain what your objectives were when negotiating this contract and your views on whether your objectives were realised.

Q81: Please explain whether you are able to influence, through contract negotiations with VocaLink or separately elsewhere during the life of the contract, each of the following:

- (a) prices
- (b) breadth of services
- (c) new products or services
- (d) quality of service

Q82: How many tenders for infrastructure services have you held since 2007? For each tender, please explain:

- (a) the object of the tender (including any separate lots)
- (b) the rationale for initiating the tender
- (c) the value of the tender
- (d) if the object of the tender included multiple services, why these services were included in the tender
- (e) the number of firms that were invited to tender, the number that responded to the invitation to tender, and the number that were asked to present a bid
- (f) who won the tender and who did not win the tender

Q83: We understand that the Network Members Agreement with VocaLink and PSPs is renewed on a rolling basis. Please provide details of when the Link Scheme has considered reviewing this arrangement, and reasons for reviewing the arrangements. Where the Link Scheme has conducted such a review, please provide details of the outcome of this review.

Price and quality of infrastructure services

Q84: For the LINK payment system, please provide the annual volumes and value of transactions for each financial year 2011 to 2015 or as far back as possible.

- Q85:** For the LINK payment system, please describe the types of fees you charge your members. Please identify those fees that are one-off (e.g. joining fees) and those that are ongoing fees (e.g. per transaction fees, administrative fees). Please describe your methodology for allocating fees to individual members, and outline whether and how this has changed over time.
- Q86:** For the LINK payment system, provide the following for each financial year 2011 to 2015 or as far back as possible:
- (a) price per transaction
 - (b) prices quoted for change requests (please provide the highest, lowest, upper quartile, lower quartile and median for each year)
 - (c) prices quoted for services provided on a bilateral contracts (please provide the highest, lowest, upper quartile, lower quartile and median for each year)
 - (d) the total fees recouped from members.
- Q87:** Please explain how price limits are determined in price negotiations.
- Q88:** Do you set accreditation fees? If so, how are fees for accreditation set? Please explain, in detail, the methodology for setting accreditation fees.
- Q89:** How do you view the quality of the services provided by VocaLink? Please explain with examples where possible. In your response, please differentiate between core and non-core services.
- Q90:** Are there any areas you feel the service provided by VocaLink could be improved? Please explain.
- Q91:** If you procure services from other infrastructure providers, how does their service provision compare with VocaLink's? Please explain with examples.
- Q92:** Please provide any user satisfaction surveys for 2011 to 2015 prepared for relevant member Committees.
- Q93:** Please provide any other performance indicators that are relevant to evaluate the quality of the service provided by VocaLink, and please explain.

Innovation in infrastructure

- Q94:** What are the long-term incentives to innovate in payment systems? Please explain.
- Q95:** How does the payment system operator fund changes? Please explain.

- Q96:** For each financial year 2011 to 2015 or as far back as possible, please provide the total number of change requests, and the total number that fall into the following categories:
- (a) business as usual changes – if possible please distinguish between:
 - i. mandatory changes
 - ii. security changes/upgrades
 - (b) other changes- if possible please distinguish between:
 - i. changes to facilitate a new product or service
 - ii. enhancements to existing products or services
- Q97:** For each financial year 2011 to 2015 or as far back as possible, please provide a descriptive summary of material change requests for the categories listed in question 23.
- Q98:** For each financial year 2011 to 2015 or as far back as possible, please provide the total number of change requests that were initiated by:
- (a) individual members via the payment system operator
 - (b) the payment system operator
 - (c) VocaLink
 - (d) of these, how many have been vetoed and by whom respectively
- Q99:** For each financial year 2011 to 2015 or as far back as possible, please provide the number of 'other' change requests (i.e. those not considered business as usual) that were initiated by:
- (a) individual members via the payment system operator
 - (b) the payment system operator
 - (c) VocaLink
 - (d) of these, how many have been vetoed and by whom respectively
- Q100:**For any innovative projects you think relevant, please provide:
- (a) a description of the project, how it came to be proposed, and the reason why it was proposed
 - (b) who originally proposed the project (e.g. VocaLink Board, payment system operator, PSPs, service-users, other please specify) and why
 - (c) what are the annual development costs for the project for each financial year 2011 to 2015 or as far back as possible
 - (d) the estimated operational costs of the project

- (e) what mechanism was proposed, and by whom, to fund the project (e.g. shareholder call for capital, rights issue, debt facilities, retained earnings, under contract, other please specify)
- (f) the estimated return and/or payback period
- (g) the amortisation policy used for the project
- (h) an explanation of who made the decision to take up the project, and their reasoning for the decision.

Q101: Please give examples of when you suggested any other innovative projects to VocaLink. Please explain whether VocaLink agreed or not with the proposed project. For each example, please specify if the project related to core or non-core services. Please also include details of who initially proposed the project, the reasons why the project was proposed, the estimated cost and delivery time, how it would have been funded, and any other relevant detail.

Q102: Please give examples of when you suggested a change for resiliency and/or regulatory compliance reasons to VocaLink. Please give your views on how VocaLink priced the change request or the delivery time quoted by VocaLink.

Q103: Please give examples of times when VocaLink suggested an innovative project. Please explain whether or not you agreed with the proposed project or whether or not it aligned with your goals and objectives. For each example, please specify if the project related to core or non-core services. Please also include details of who initially proposed the project, the project's purpose and/or motivation, the estimated cost and delivery time, how it would have been funded, and any other relevant detail.

Alternative infrastructure provision

Q104: Please explain what it would take for you to switch your provider of core services. Are there any factors that may prevent you switching from VocaLink?

Q105: How would (i) security and resilience (ii) incentives to invest and (iii) incentives to innovate be affected under each of the following scenarios:

- (a) there was more than one central infrastructure provider
- (b) re-tendering of core service contracts
- (c) tendering of components of the core services VocaLink currently provides to the payment system operator

Please refer to examples where possible.

Q106: What are the factors that may prevent each of the following scenarios from occurring in practice:

- (a) more than one central infrastructure provider
- (b) re-tendering of core service contracts
- (c) tendering of components of the services Vocalink currently provides

Please explain.

Q107: What are the benefits and costs to service-users of having:

- (a) a single provider of central infrastructure
- (b) tendering central clearing as a single provider
- (c) more than one central infrastructure provider
- (d) tendering of components of the services Vocalink currently provides

Q108: For each of the following, please explain what are the benefits and costs to service-users of having the same infrastructure provider of central clearing functions also provide infrastructure for:

- (a) CASS
- (b) Cash ISA
- (c) Paym
- (d) EISCD management
- (e) government solutions
- (f) Bacs, FPS and LINK

Questions for payment service providers (Owners)

In responding to these questions, please provide supporting documents and information.

In addition to the glossary of terms published in the final terms of reference, please note the following definitions:

- ‘Contract’ refers to any legally binding contract between VocaLink Holding Limited (‘VocaLink’) and either the payment system operator or participants for the provision of services.
- ‘Core services’ refer to the payment services supplied by VocaLink to either the payment system operator or participants under the following agreements: Bacs Framework Agreement; FPS Managed Services Agreement; and Network Members Agreements.
- ‘Non-core services’ refer to all other payment services supplied by VocaLink to either the payment system operator or participants.
- ‘Innovation’ and ‘innovative projects’ refer to changes or projects that result in the development of a new product or service rather than an enhancement or change to an existing service.

Your role in payment systems

Q109: For each of the payment systems Bacs, FPS and LINK, please briefly outline your role and responsibilities at each level (where applicable) in the table below¹⁶⁰:

Category	Bacs	FPS	LINK
Indirect PSP			
Direct PSP			
Own/control of a payment system/ Director of payment system operator			
Owner of VocaLink			

Ownership arrangements

For the following questions 2 and 3, we are looking for a qualitative response to help us understand the pros and cons of the current ownership arrangement of VocaLink. Where it is possible, please provide relevant examples to reflect your views.

Q110: In your view, what are the benefits of the current ownership arrangement of VocaLink for each of the following groups:

- owners of VocaLink
- PSPs that are not owners of VocaLink
- payment system operators
- consumers and businesses that use payment systems
- other, please specify

¹⁶⁰ These set out the different types of users of the payment system which may have the opportunity of influencing the decisions either directly through memberships/ownership a system or operator, or indirectly by requesting services through another direct PSP.

Q111: In your view, what are the drawbacks of the current ownership arrangement of VocaLink for each of the following groups:

- (a) owners of VocaLink
- (b) PSPs that are not owners of VocaLink
- (c) payment system operators
- (d) consumers and businesses that use payment systems
- (e) other, please specify

Price and quality of infrastructure services

Q112: For each of the payment systems Bacs, FPS and LINK that you are a direct PSP of, please provide an estimate of your annual expenditure for the financial years 2011 to 2015 on:

- (a) gateways
- (b) other connectivity costs (not paid to the payment system operator but to a third party)

Q113: Where possible, please provide a high-level estimate (or range), and any assumptions you have made in that estimation, of your annual expenditure on:

- (a) internal IT systems related to each payment system (and please provide a breakdown of costs in respect of mandatory legal changes, maintenance and upgrade, changes required by an infrastructure provider or payment system operator, and changes driven by customers)
- (b) your total expenditure on IT systems related to payment systems (i.e. including funding for central infrastructure, gateways and other connectivity costs).

Q114: Please give your views on the quality of service VocaLink provides, as it relates to:

- (a) core services for the Bacs system
- (b) core services for the FPS system
- (c) core services for the LINK system
- (d) Paym
- (e) Current Account Switch Service (CASS)
- (f) Cash ISA
- (g) other services (e.g. gateways), if relevant.

- Q115:** In your view, do you believe you are getting value for money from VocaLink? Please explain.
- Q116:** What improvements would you like to see in VocaLink's services, if any?
- Q117:** Please provide i) an estimate of the cost of changing your internal systems; and ii) an estimate (in months) of the time taken to implement the necessary changes to your internal systems to handle:
- (a) FPS
 - (b) CASS
 - (c) Paym

Innovation in infrastructure

- Q118:** Where relevant, please give examples of when you suggested an innovative project to VocaLink. Please explain whether VocaLink agreed or not with the proposed project. For each example, please specify the services to which the project related and whether these were core or non-core services. Please also include the reasons why the project was proposed, the estimated cost and delivery time, how it would have been funded, and any other relevant details.
- Q119:** Where relevant, please give examples of times you suggested a change for resiliency and/or regulatory compliance reasons to VocaLink. Please give your views on how VocaLink priced the change request and the delivery time quoted by VocaLink.
- Q120:** Where relevant, please give examples of times you suggested an innovative project to the payment system operators. Please explain whether the payment system operator agreed or not with the proposed project. For each example, please specify the services to which the project related and whether these were core or non-core services. Please also include the reasons why the project was proposed, the estimated cost and delivery time, how it would have been funded, and any other relevant details.
- Q121:** Where relevant, please give examples of times when VocaLink suggested an innovative project. Please explain whether or not you agreed with the proposed project and whether or not it aligned with your commercial goals. For each example, please specify if the project related to core or non-core services. Please also include details of the reasons why the project was proposed, the estimated cost and delivery time, how it would have been funded, and any other relevant details.
- Q122:** In your role as a shareholder of VocaLink, how willing are you in general to provide funding to VocaLink for innovative projects relating to core services and non-core services, respectively? What are your views on the balance to be struck between investing in innovative projects and projects to improve resilience? Do you have a preference on funding routes (e.g. capital calls, external investment, via payment system operator contracts, other)? Please explain.

Q123: Do you see any of VocaLink's funding mechanisms (calls for capital, retained earnings, rights issues, debt facilities or other) as a constraint on innovative projects or other investment? Please explain.

Q124: What do you see are the long-term incentives to innovate in payment systems? Please explain.

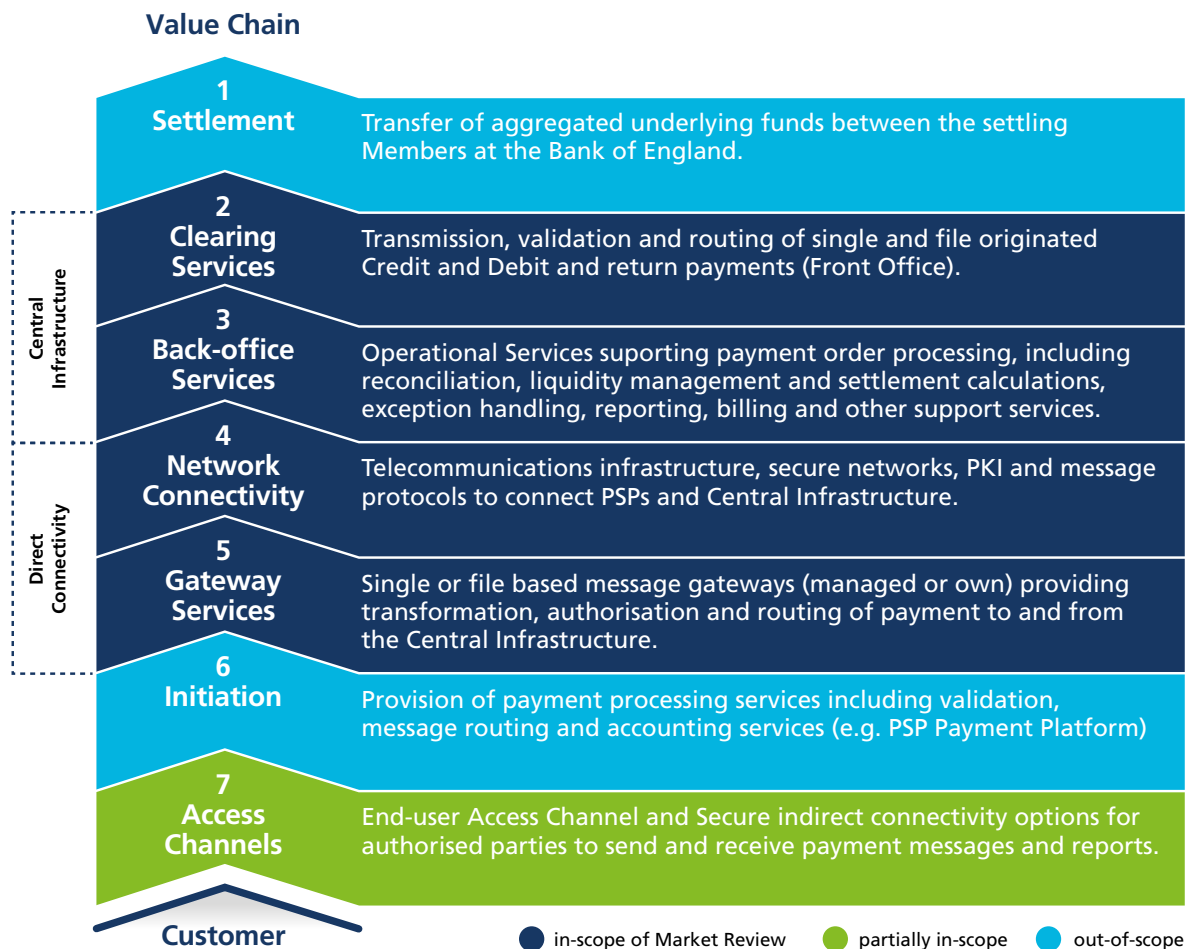
The value chain

Q125: For each of the payment systems Bacs, FPS and LINK that you are a direct PSP of, please identify those areas of the value chain within the scope of the review (i.e. clearing services, back-office services, network connectivity, and gateway services – see figure below) that you are involved in selecting the infrastructure provider in each of the roles set out in question 1. For each of the areas that you identify, please provide details on the following:

- (a) Was the current supplier(s) of this service selected by:
 - i. competitive open tender
 - ii. closed tender
 - iii. grandfathering
 - iv. open market
 - v. other (please explain).
- (b) What were the key factors you considered when selecting the current infrastructure provider(s) (e.g. price, quality of service, existing business relationship etc.)? Please explain with examples.
- (c) Please explain whether and how you consider end-users in your decision to select the current infrastructure provider(s)?
- (d) Are there any factors that may prevent you switching from your current infrastructure supplier(s)? What would it take for you to switch providers for this service? Please explain.
- (e) What is your view on the competitiveness of the provision of this service? Do you have sufficient choice of providers? Do you get value for money?
- (f) What are the benefits and costs of greater competition in this area?
- (g) Who are the other existing competitors/suppliers of this service?
- (h) Are you aware of any unsuccessful attempts by potential competitors to enter the market? If possible, please explain why they were not successful.
- (i) Which party owns the intellectual property of associated assets – the supplier, the customer or a third party?

- (j) Please explain whether and how security/resiliency procedures and standards influence your decision in selecting an infrastructure provider. What are the security/resilience procedures and standards that have been adopted for this service (e.g. data centre standards)? Where these procedures were mandated, please explain who mandated them. Where these procedures were not mandated, please explain the rationale for adopting them.

Figure: Generic value chain of payment transactions



Q126: For gateway services and connection services to central infrastructure, respectively, please provide details on:

- (a) Who your current supplier is (VocaLink, built in-house, other please specify).
- (b) The benefits and costs of insourcing or outsourcing this function.
- (c) Where you use the same supplier for this service as for other services you procure, please explain your rationale for having the same supplier.

Alternative infrastructure provision

One of the questions this review is seeking to explore – as set out in paragraph 2.6 vii of our terms of reference – is what could be the benefits of greater levels of competition in the provision of infrastructure services in interbank payment systems? In order to help answer this, and the question of whether there are any barriers to effective competition, some of the following questions set out some scenarios of alternative forms of competition in central infrastructure provision.

We are looking for qualitative responses and, where you are able to, please provide examples or high-level estimates of costs and benefits to illustrate your views given.

Q127: In your view, how would (i) security and resilience; (ii) incentives to invest; and (iii) incentives to innovate be affected under each of the following scenarios:

- (a) more than one central infrastructure provider for each payment system (like in SEPA, for example)
- (b) re-tendering of core service contracts to a single provider (as per current arrangements)
- (c) tendering of components of the services VocaLink currently provides.

Please refer to examples where possible.

Q128: What changes would you need to make to your IT systems and connectivity to switch to a like-for-like central infrastructure provider? Please provide details of:

- (a) the estimated costs (with reference to what this includes)
- (b) the perceived risk in migrating
- (c) what would prompt you to accept these costs and risks
- (d) are there any factors that may prevent you switching to another infrastructure provider? Please explain.
- (e) what would make switching easier/more difficult.

Q129: What are the benefits and costs to you and your end-users of having a single provider of core services as opposed to:

- (a) multiple providers of the same core services to each payment system (i.e. they compete against each other, like in SEPA for example)
- (b) multiple providers that each provide a different component of the core services functions to each payment system (e.g. if the core services currently provided by VocaLink were unbundled and each function – such as transmission, validation, routing, reconciliation, exception handling etc. as describe in the figure above – was procured separately from different providers).

Q130: What changes would you need to make to your IT systems and connectivity to allow for multiple central infrastructure providers of the same core services? For each, please provide details of:

- (a) what systems and functions you would need to duplicate
- (b) the estimated costs (with reference to what this includes)
- (c) the perceived risk in migrating to this situation
- (d) what would prompt you to accept these costs and risks
- (e) are there any factors that may prevent you from making these changes? Please explain.

Q131: What changes would you need to make to your IT systems and connectivity to switch providers for non-core services (i.e. gateways, connections to central infrastructure)? Please describe:

- (a) the costs involved
- (b) the perceived risk in migrating
- (c) what would prompt you to accept these costs and risks
- (d) are there any factors that may prevent you from switching to another infrastructure provider? Please explain.
- (e) what would make switching easier/more difficult.

Q132: Please explain the benefits and costs of having Vocalink provide the core services for Bacs, FPS and LINK, rather than having separate infrastructure providers for each?

Q133: For each of the following, please explain the benefits and costs of having the same infrastructure provider of core services also provide infrastructure for:

- (a) CASS
- (b) Cash ISA
- (c) Paym
- (d) EISCD management
- (e) government solutions e.g. cross-scheme products provided to the Department of Work and Pensions, and the HM Revenue and Customs' Real Time Information service (also known as aRTIe)

Other

Q134: Are there any other issues regarding the provision of infrastructure within the scope of this review that you think are relevant that you would like to highlight? Please explain.

Questions for payment service providers (PSPs)

In responding to these questions, please provide supporting documents and information.

In addition to the glossary of terms published in the final terms of reference, please note the following definitions:

- 'Contract' refers to any legally binding contract between VocaLink Holding Limited ('VocaLink') and either the payment system operator or participants for the provision of services.
- 'Core services' refer to the payment services supplied by VocaLink to either the payment system operator or participants under the following agreements: Bacs Framework Agreement; FPS Managed Services Agreement; and Network Members Agreements.
- 'Non-core services' refer to all other payment services supplied by VocaLink to either the payment system operator or participants.
- 'Innovation' and 'innovative projects' refer to changes or projects that result in the development of a new product or service rather than an enhancement or change to an existing service.

Your role in payment systems

Q135: For each of the payment systems Bacs, FPS and LINK, please briefly outline your role and responsibilities at each level (where applicable) in the table below¹⁶¹:

Category	Bacs	FPS	LINK
Indirect PSP			
Direct PSP			
Own/control of a payment system/ Director of payment system operator			

Ownership arrangements

For the following questions 2 and 3, we are looking for a qualitative response to help us understand the pros and cons of the current ownership arrangement of VocaLink. Where it is possible, please provide relevant examples to reflect your views.

Q136: In your view, what are the benefits of the current ownership arrangement of VocaLink for each of the following groups:

- owners of VocaLink
- PSPs that are not owners of VocaLink
- payment system operators
- consumers and businesses that use payment systems
- other, please specify

¹⁶¹ These set out the different types of users of the payment system which may have the opportunity of influencing the decisions either directly through memberships/ownership a system or operator, or indirectly by requesting services through another direct PSP.

Q137: In your view, what are the drawbacks of the current ownership arrangement of VocaLink for each of the following groups:

- (a) owners of VocaLink
- (b) PSPs that are not owners of VocaLink
- (c) payment system operators
- (d) consumers and businesses that use payment systems
- (e) other, please specify

Price and quality of infrastructure services

Q138: For each of the payment systems Bacs, FPS and LINK that you are a direct PSP of, please provide an estimate of your annual expenditure for the financial years 2011 to 2015 on:

- (a) gateways
- (b) other connectivity costs (not paid to the payment system operator but to a third party)

Q139: Where possible, please provide a high-level estimate (or range), and any assumptions you have made in that estimation, of your annual expenditure on:

- (a) internal IT systems related to each payment system (and please provide a breakdown of costs in respect of mandatory legal changes, maintenance and upgrade, changes required by an infrastructure provider or payment system operator and changes driven by customers)
- (b) your total expenditure on IT systems related to payment systems (i.e. including funding for central infrastructure, gateways and other connectivity costs).

Q140: Please give your views on the quality of service VocaLink provides, as it relates to:

- (a) core services for the Bacs system
- (b) core services for the FPS system
- (c) core services for the LINK system
- (d) Paym
- (e) Current Account Switch Service (CASS)
- (f) Cash ISA
- (g) other services (e.g. gateways), if relevant.

Q141: In your view, do you believe you are getting value for money from VocaLink? Please explain.

Q142: What improvements would you like to see in VocaLink's services, if any?

Q143: Please provide i) an estimate of the cost of changing your internal systems; and ii) an estimate (in months) of the time taken to implement the necessary changes to your internal systems to handle:

- (a) FPS
- (b) CASS
- (c) Paym

Innovation in infrastructure

Q144: Where relevant, please give examples of when you suggested an innovative project to VocaLink. Please explain whether VocaLink agreed or not with the proposed project. For each example, please specify the services to which the project related and whether these were core or non-core services. Please also include the reasons why the project was proposed, the estimated cost and delivery time, how it would have been funded, and any other relevant details.

Q145: Where relevant, please give examples of times you suggested a change for resiliency and/or regulatory compliance reasons to VocaLink. Please give your views on how VocaLink priced the change request and the delivery time quoted by VocaLink.

Q146: Where relevant, please give examples of times you suggested an innovative project to the payment system operators. Please explain whether the payment system operator agreed or not with the proposed project. For each example, please specify the services to which the project related and whether these were core or non-core services. Please also include the reasons why the project was proposed, the estimated cost and delivery time, how it would have been funded, and any other relevant details.

Q147: Where relevant, please give examples of times when VocaLink suggested an innovative project. Please explain whether or not you agreed with the proposed project and whether or not it aligned with your commercial goals. For each example, please specify if the project related to core or non-core services. Please also include details of the reasons why the project was proposed, the estimated cost and delivery time, how it would have been funded, and any other relevant details.

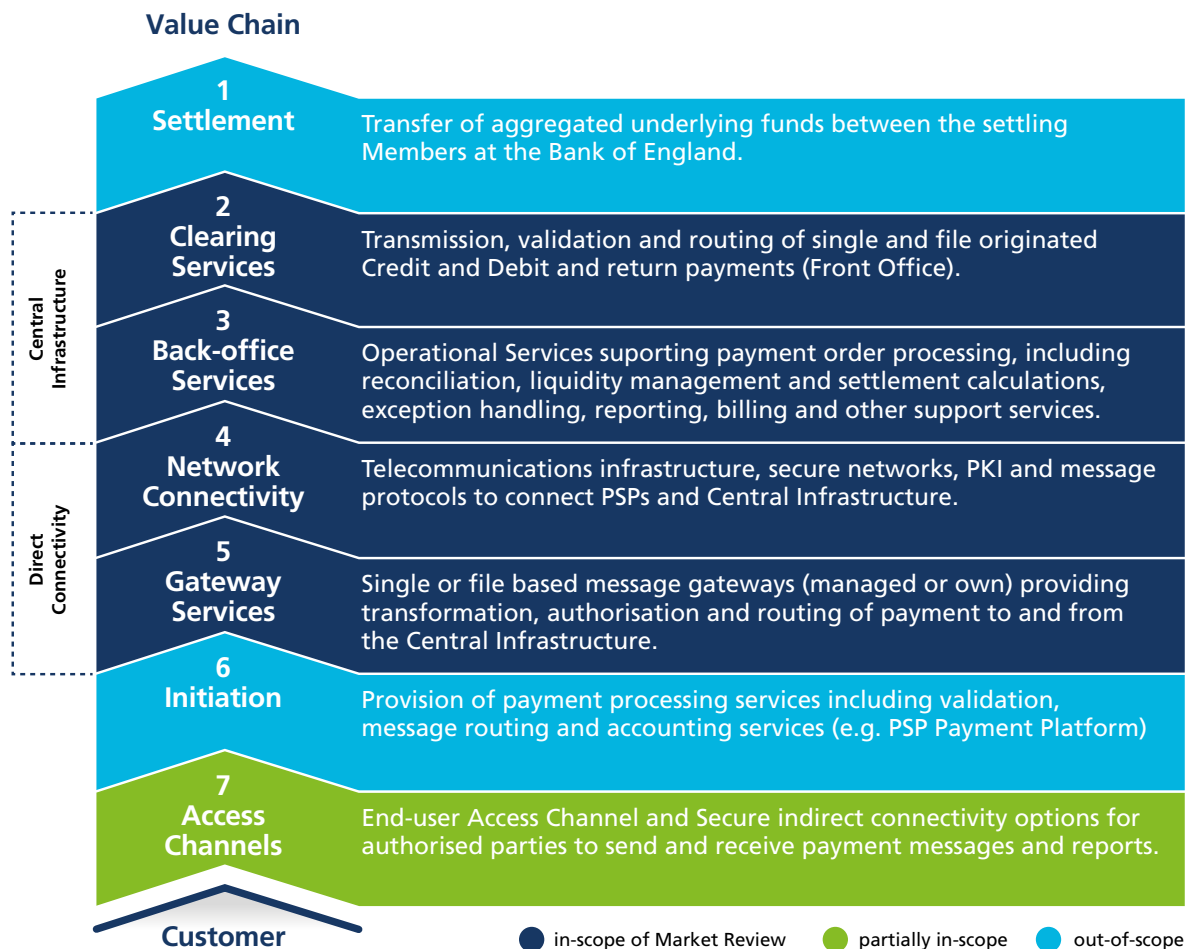
Q148: What do you see are the long-term incentives to innovate in payment systems? Please explain.

The value chain

Q149: For each of the payment systems Bacs, FPS and LINK that you are a direct PSP of, please identify those areas of the value chain within the scope of the review (i.e. clearing services, back-office services, network connectivity, and gateway services – see figure below) that you are involved in selecting the infrastructure provider in each of the roles set out in question 1. For each of the areas that you identify, please provide details on the following:

- (a) Was the current supplier(s) of this service selected by:
 - i. competitive open tender
 - ii. closed tender
 - iii. grandfathering
 - iv. open market
 - v. other (please explain).
- (b) What were the key factors you considered when selecting the current infrastructure provider(s) (e.g. price, quality of service, existing business relationship etc.)? Please explain with examples.
- (c) Please explain whether and how you consider end-users in your decision to select the current infrastructure provider(s)?
- (d) Are there any factors that may prevent you switching from your current infrastructure supplier(s)? What would it take for you to switch providers for this service? Please explain.
- (e) What is your view on the competitiveness of the provision of this service? Do you have sufficient choice of providers? Do you get value for money?
- (f) What are the benefits and costs of greater competition in this area?
- (g) Who are the other existing competitors/suppliers of this service?
- (h) Are you aware of any unsuccessful attempts by potential competitors to enter the market? If possible, please explain why they were not successful.
- (i) Which party owns the intellectual property of associated assets – the supplier, the customer or a third party?
- (j) Please explain whether and how security/resiliency procedures and standards influence your decision in selecting an infrastructure provider. What are the security/resilience procedures and standards that have been adopted for this service (e.g. data centre standards)? Where these procedures were mandated, please explain who mandated them. Where these procedures were not mandated, please explain the rationale for adopting them.

Figure: Generic value chain of payment transactions



Q150: For gateway services and connection services to central infrastructure, respectively, please provide details on:

- (a) Who your current supplier is (VocaLink, built in-house, other please specify).
- (b) The benefits and costs of insourcing or outsourcing this function.
- (c) Where you use the same supplier for this service as for other services you procure, please explain your rationale for having the same supplier.

Alternative infrastructure provision

One of the questions this review is seeking to explore – as set out in paragraph 2.6 vii of our terms of reference – is what could be the benefits of greater levels of competition in the provision of infrastructure services in interbank payment systems? In order to help answer this, and the question of whether there are any barriers to effective competition, some of the following questions set out some scenarios of alternative forms of competition in central infrastructure provision.

We are looking for qualitative responses and, where you are able to, please provide examples or high-level estimates of costs and benefits to illustrate your views given.

Q151: In your view, how would (i) security and resilience; (ii) incentives to invest; and (iii) incentives to innovate be affected under each of the following scenarios:

- (a) more than one central infrastructure provider for each payment system (like in SEPA, for example)
- (b) re-tendering of core service contracts to a single provider (as per current arrangements)
- (c) tendering of components of the services VocaLink currently provides.

Please refer to examples where possible.

Q152: What changes would you need to make to your IT systems and connectivity to switch to a like-for-like central infrastructure provider? Please provide details of:

- (a) the estimated costs (with reference to what this includes)
- (b) the perceived risk in migrating
- (c) what would prompt you to accept these costs and risks
- (d) are there any factors that may prevent you switching to another infrastructure provider? Please explain.
- (e) what would make switching easier/more difficult.

Q153: What are the benefits and costs to you and your end-users of having a single provider of core services as opposed to:

- (a) multiple providers of the same core services to each payment system (i.e. they compete against each other, like in SEPA for example)
- (b) multiple providers that each provide a different component of the core services functions to a payment system (e.g. if the core services currently provided by VocaLink were unbundled and each function – such as transmission, validation, routing, reconciliation, exception handling etc. as describe in the figure above – was procured separately from different providers).

Q154: What changes would you need to make to your IT systems and connectivity to allow for multiple central infrastructure providers of the same core services? For each, please provide details of:

- (a) what systems and functions you would need to duplicate
- (b) the estimated costs (with reference to what this includes)
- (c) the perceived risk in migrating to this situation
- (d) what would prompt you to accept these costs and risks
- (e) are there any factors that may prevent you from making these changes? Please explain.

Q155: What changes would you need to make to your IT systems and connectivity to switch providers for non-core services (i.e. gateways, connections to central infrastructure)? Please describe:

- (a) the costs involved
- (b) the perceived risk in migrating
- (c) what would prompt you to accept these costs and risks
- (d) are there any factors that may prevent you from switching to another infrastructure provider? Please explain.
- (e) what would make switching easier/more difficult.

Q156: Please explain the benefits and costs of having VocaLink provide the core services for Bacs, FPS and LINK, rather than having separate infrastructure providers for each?

Q157: For each of the following, please explain the benefits and costs of having the same infrastructure provider of core services also provide infrastructure for:

- (a) CASS
- (b) Cash ISA
- (c) Paym
- (d) EISCD management
- (e) government solutions, e.g. cross-scheme products provided to the Department of Work and Pensions, and the HM Revenue and Customs' Real Time Information service (also known as aRTIe)

Other

Q158: Are there any other issues regarding the provision of infrastructure within the scope of this review that you think are relevant that you would like to highlight? Please explain.

Annex 7

Glossary

This table includes the glossary and abbreviations used for the purposes of this Interim Report.

Expression or abbreviation	Definition
accreditation	The process that ensures that a person or solution is compliant with the set of criteria predefined by the operator. Being an accredited provider or software solution means that the provider or solution has gone through a process set by the operator and has been considered by the operator to meet the required technical and other standards that make up the accreditation requirements.
(the) Act	The Financial Services (Banking Reform) Act 2013.
ATM (Automated Teller Machine)	An electromechanical device that enables authorised users, typically using machine-readable plastic cards, to withdraw cash from their accounts and/or access other services (for example, to make balance enquiries, transfer funds or deposit money).
ATM deployer	A company which owns and operates ATMs.
ATM managed services	A commercial solution provided to companies, e.g. independent ATM deployers or banks, who wish to operate over the LINK regulated payment system, but who want to outsource their ATM network requirements. ATM managed services commonly include the maintenance and servicing of ATM machines.
authentication (in the context of payment processing)	A procedure which allows the payment service provider to verify the use of a specific payment instrument, including its personalised security features.
authorisation (in the context of payment processing)	Consent given in the agreed form by a person or entity to a PSP (or to a third party acting on behalf of that PSP) in order to allow the transfer of funds.
Bacs	The regulated payment system which processes payments through two principal electronic payment schemes: Direct Debit and Bacs Direct Credit. The payment system is operated by Bacs Payment Schemes Limited (BPSL).
the Bank	The Bank of England.
bank reference data	Information related to banks and building societies and how they participate in the regulated Bacs, C&C, CHAPS and FPS payment systems. The information is used primarily for payment validation, routing, and to generate data extracts (e.g. EISCD) and reports.
BPSL	Bacs Payment Schemes Ltd – the operator of the Bacs payment system.
C&C (Cheque & Credit)	The regulated payment system in England, Scotland and Wales that processes cheques and other paper instruments. It is operated by Cheque and Credit Clearing Company Limited (C&CCCL).
C&CCCL	Cheque and Credit Clearing Company Ltd – the operator of the C&CC payment system.
CA98	Competition Act 1998.
CA98 Guidance	'Enforcement of the Competition Act 1998 – A guide to the PSR's powers and procedures (CA98 Guidance)' – a document published on 13 August 2015 and accessible at psr.org.uk/how-psr-regulates/regulatory-framework-and-approach/written-guidance .

Expression or abbreviation	Definition
Call for Inputs	This refers to the Payment Systems Regulator: Call for Inputs (5 March 2014) requesting feedback from stakeholders on a range of issues. See fca.org.uk/your-fca/documents/payment-systems-regulation-call-for-inputs .
card payment system	A regulated payment system that enables a holder of a payment card to effect a payment.
card systems operator	An operator of a card payment system.
CASS (Current Account Switch Service)	A seven-day switch service that makes it easier for customers to switch their current account. It is described at www.simplerworld.co.uk .
central clearing	The process of clearing through a central entity in a multilateral environment.
central infrastructure	A package of systems and services provided under contract to an operator for the purpose of operating the relevant payment system, and specifically the processing of payment transactions and funds transfers. The package must include at a minimum the provision of hardware and software (including related ancillary support services). It may include additional services such as secure telecommunications networks, facilities, physical security or support staff. Central Infrastructure may be provided to the operator by an external provider, or internally.
central infrastructure provider	An infrastructure provider when providing central infrastructure.
CHAPS (Clearing House Automated Payment System)	The UK's real-time, high-value sterling regulated payment system, where payments are settled over the Bank of England's Real time Gross Settlement (RTGS) system. It is operated by CHAPS Co.
CHAPS Co	CHAPS Clearing Company Ltd – the operator of the CHAPS payment system.
clearing	The process of transmitting, reconciling and in some cases confirming a payment instruction or transfer order (i.e. a 'promise' to pay someone), potentially including the netting of transfer orders and the establishment of final positions for settlement.
communications channels	The infrastructure that enables messaging between PSPs and the central clearing infrastructure. For example, the secure networks, message protocols and transmission services such as Enhanced Transmissions Services (ETS) and SWIFT Transmissions Services (STS).
CMA	Competition and Markets Authority.
CPMI IOSCO Principles (also called CPSS-IOSCO Principles)	Principles for Financial Market Infrastructures published by CPSS-IOSCO in April 2012. These were adopted as principles by the Bank of England under section 188 of the Banking Act 2009 for payment systems recognised by the Bank of England (i.e. Bacs, CHAPS, FPS and Visa).
customer reference data	Information related to end-users who participate in one or more of Bacs, Cash ISA Transfer (CISA), Current Account Switch Service (CASS) and/or FPS.
direct access	<p>Access to a regulated payment system to enable a payment service provider to provide services for the purposes of enabling the transfer of funds using the regulated payment system, as a result of arrangements made between that payment service provider and the operator (and other participants, as applicable). See also s.42(6) FSBA.</p> <p>For the purposes of this terms of reference, 'arrangements' refers to the following:</p> <ul style="list-style-type: none"> • in the case of Bacs, C&CC, CHAPS and FPS the arrangements are made between the PSP, the other existing direct PSPs and the operator. • in the case of LINK (and because of LINK's particular organisation model), the arrangements are those made between the PSP, the other existing direct PSPs and the infrastructure provider to the LINK payment system (Vocalink).
Direct Credit	The Bacs scheme by which a person or entity can transfer funds electronically, directly into a specified bank account (e.g. paying salaries).

Expression or abbreviation	Definition
Direct Debit	The Bacs scheme for collecting pre-authorised debits on the payer's bank account, which are initiated by the payee.
Direct technical access	A technical solution that directly connects a PSP (or other authorised user) with the central infrastructure of a payment system. For the purposes of this Consultation Paper, Direct Technical Access does not include the settlement of funds.
director	In relation to an unincorporated association or a body corporate, any person appointed to direct its affairs, including a person who is a member of its governing body.
EA02	Enterprise Act 2002.
end-user	A consumer, business or other entity that uses a service provided by a payment system as a payer or a payee, and which is not acting as a PSP.
Extended Industry Sort Code Database	A database that contains payments related information for banks and building societies that participate in the regulated Bacs, C&C, CHAPS and FPS payment systems. This information includes the sort code (a six-digit number used for the purpose of routing payments) and branch details of the financial institutions connected to certain payment systems.
FCA	Financial Conduct Authority.
FPS (Faster Payments Scheme)	The regulated payment system that provides near real-time payments as well as Standing Orders. It is operated by Faster Payments Scheme Limited (FPSL).
FPSL	Faster Payments Scheme Ltd – the operator of the FPS payment system.
future clearing model	The programme to implement a 'cheque imaging' model, which would mean that images of cheques are exchanged between the relevant banks, removing the need for the actual paper cheque to be transported physically.
gateway (in relation to payment systems)	The infrastructure that enables the transformation, authorisation, and routing of payment instructions to and from the central clearing infrastructure.
HMRC	Her Majesty's Revenue & Customs.
indirect access	A PSP has indirect access to a payment system if it has a contractual arrangement with a direct PSP to enable it to provide payment services (for the purposes of enabling the transfer of funds using that payment system) to its customers.
indirect payment service provider (or 'indirect PSP')	A payment service provider that has indirect access.
infrastructure (payment systems infrastructure)	The hardware, software, connections and operating environments that support the clearing and/or settlement of a payment or funds transfer request.
infrastructure provider	Any person who provides or controls any part of the infrastructure used for the purposes of operating a payment system (see also s.42(4) FSBRA).
interbank operator	An operator of an interbank payment system.
interbank (payment) system	The regulated Bacs, C&C, CHAPS, FPS, LINK and NICC payment systems (i.e. it does not include card payment systems).
ISO 20022	An international financial messaging standard developed to facilitate electronic data interchange between financial institutions, and which supports interoperability between all parties in the payments process.
LINK	The regulated payment system which enables end-users to take cash out of their accounts (among other activities) using the network of ATMs in the UK. It is operated by Link Scheme.
Link Scheme	The operator of the LINK payment system. The Link Scheme does not itself install or operate cash machines.
MasterCard	The regulated payment systems supporting payments made by cards and operated by MasterCard Inc.

Expression or abbreviation	Definition
mobile payment service	A payment service made available through a mobile device (e.g. a smart phone).
NICC (Northern Ireland Cheque Clearing)	The regulated payment system in Northern Ireland that processes cheques and other paper instruments. It is operated by Belfast Bankers' Clearing Company Ltd.
(our) objectives	The PSR's statutory objectives as set out in ss.50-52 FSBRA – these are the competition objective, the innovation objective and the service-user objective.
Operator (payment system operator)	In relation to a payment system, any person with responsibility under a payment system for managing or operating it; and any reference to the operation of a payment system includes a reference to its management. See also s.42(3) FSBRA.
participant(s)	In relation to a regulated payment system, any operator, payment service provider and infrastructure provider to a regulated payment system. See also s.42(2) FSBRA.
Paym	A service that enables person-to-person payments to be made using mobile phone numbers as a proxy for sort code and account number.
payment service provider (PSP)	A PSP, in relation to a payment system, means any person who provides services to consumers or businesses who are not participants in the system, for the purposes of enabling the transfer of funds using that payment system. This includes direct PSPs and indirect PSPs.
payment system	A system which is operated by one or more persons in the course of business for the purpose of enabling persons to make transfers of funds, and includes a system which is designed to facilitate the transfer of funds using another payment system.
Payments UK (formerly known as Payments Council)	An industry trade association representing the UK payments industry. Historically, it was a membership organisation set up following the OFT's Payment Systems Task Force, which included a focus on payment systems.
PSD (EU Directive on Payment Services)	Directive 2007/64/EC of the European Parliament and of the Council of 13 November 2007 on payment services in the internal market, amending Directives 97/7/EC, 2002/65/EC, 2005/60/EC and 2006/48/EC and repealing Directive 97/5/EC, published on 13 November 2007 published in the Official Journal of the EU on 5 December 2007.
PSD2	Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No 1093/2010, and repealing Directive 2007/64/EC, published in the Official Journal of the EU on 23 December 2015.
PSR (Payment Systems Regulator)	The Payment Systems Regulator Limited, the body corporate established by the FCA under section 40(1) of FSBRA.
recognised payment systems	Interbank payment systems which have been recognised by HM Treasury for statutory oversight by the Bank of England, in accordance with sections 184 and 185 of the Banking Act 2009. As of the date of publication, the regulated payment systems which are also recognised payment systems are Bacs, CHAPS, FPS and Visa.
regulated payment system	Any payment systems designated by the Treasury in accordance with s.43 FSBRA. As of the date of publication, this included Bacs, C&C, CHAPS, FPS, LINK, NICC, MasterCard and Visa.
RTGS (Real Time Gross Settlement)	The continuous (real-time) settlement of funds transfers individually on an order-by-order basis. Each individual payment is settled in real time across the settlement accounts of Direct PSPs.
SEPA (Single Euro Payments Area)	The Single Euro Payments Area aims to create a European single market for retail payments in euros.
SEPA Regulation	Regulation (EU) No 260/2012 of the European Parliament and of the Council of 14 March 2012 establishing technical and business requirements for credit transfers and direct debits in euro and amending Regulation (EC) No 924/2009, published in the Official Journal of the EU on 30 March 2012.

Expression or abbreviation	Definition
service bureau	Provides an outsourced service for the submission and processing of payments on behalf of service-users. Service bureaux may also provide a range of value-added services (such as payroll processing).
service-user	Those who use, or are likely to use, services provided by regulated payment systems.
settlement	The completion of a transaction or process to discharge obligations and settle claims and liabilities that arise between participants in a payment system.
standing order	An instruction from a payer to their PSP to pay a set amount at regular intervals from the payer's account to the payee's account.
technical access	The manner in which a PSP technically connects with either a payment system infrastructure provider, an operator, a provider of indirect access, or a third-party service provider in order to enable the transfer of funds. For the purposes of this document, technical access does not include the settlement of funds.
third-party service provider	A third-party service provider who provides services to facilitate the processing, acceptance, management and/or transmission of payments. Examples include technology providers, telecommunication providers, payment gateways/platforms, point-of-sale terminal providers, and fraud management services.
(the) Treasury	Her Majesty's Treasury.
TSC	Treasury Select Committee.
Visa (Visa Europe)	The regulated payment systems supporting payments made by cards and operated by Visa Europe and Visa UK Limited.

Annex 8

Consultation questions from interim report

We are interested in views on all aspects of the interim report. We welcome views on whether stakeholders have any comments on the evidence and analysis presented, and how we have used the evidence and analysis to reach our findings.

Specifically, we welcome responses to the following consultation questions:

Remedy 1: Competitive procurement processes

1. Would this remedy be effective in addressing the problems we have identified?
2. What are the relevant potential costs and benefits that we should consider?
3. Would this remedy give rise to unintended consequences and how might these be prevented or mitigated?
4. Is there an alternative remedy that would be equally effective but that would be less costly and/or intrusive?
5. What implementation issues do we need to consider, including (but not limited to):
 - Are the operators best placed to undertake the procurement exercise?
 - The timing of the proposed procurement exercises
 - Would there be benefits and/or detriments if these processes were coordinated

Remedy 2: Interoperability

1. Would this remedy be effective in addressing the problems we have identified?
2. What are the relevant potential costs and benefits that we should consider?
3. Would this remedy give rise to unintended consequences and how might these be prevented or mitigated?
4. Is there an alternative remedy that would be equally effective but that would be less costly and/or intrusive?
5. What implementation issues do we need to consider (including the length of a transition period)?
6. Are there any other aspects of the technical standards or other rules (besides common messaging standards) that may act as barriers to entry for potential infrastructure providers?

Remedy 3: Ownership of VocaLink

1. Would this remedy be effective in addressing the problems we have identified?
2. What are the relevant potential costs and benefits that we should consider?

3. Would this remedy give rise to unintended consequences and how might these be prevented or mitigated?
4. Is there an alternative remedy that would be equally effective but would be less costly and/or intrusive?
5. What implementation issues do we need to consider, including (but not limited to):
 - Who should be required to divest their shareholding?
 - Timing of the divestment
 - What (if any) purchaser suitability criteria should be applied?
 - What (if any) additional measures are required to ensure security and resilience?
 - Should the divestment be full or partial?
 - If partial, to what level should an individual PSP shareholding be reduced?
 - If partial, should the total shareholding held by PSPs also be limited?
 - Should changes to Board composition also be stipulated?

Remedy 4: LINK

1. Would this remedy be effective in addressing the problems we have identified?
2. What are the relevant potential costs and benefits that we should consider?
3. Would this remedy give rise to unintended consequences and how might these be prevented or mitigated?
4. Is there an alternative remedy that would be equally effective but that would be less costly and/or intrusive?

For the package of remedies as a whole

1. Would these remedies be effective in addressing the problems we have identified?
2. How effective would the package be if one or more of the remedies above were excluded?
3. Are there any relevant potential costs and benefits of the package as a whole (other than those considered above under each remedy) that we should consider?
4. Are there any unintended consequences of the package as a whole (other than those considered above under each remedy) and how might these be prevented or mitigated?
5. Are there any alternative remedy packages that would be equally effective but that would be less costly and/or intrusive?
6. What implementation issues do we need to consider (including timing)?

Gateways

7. May the accreditation process process for Bacstel-IP prevent other providers from entering the market?

Annex 9

Stakeholder list

We received written responses from and/or had meetings with the following stakeholders:

- Al Rayan Bank
- AccessPay
- ACI Worldwide
- Allied Irish Bank (AIB)
- Association of Independent Risk and Fraud Advisors (AIRFA)
- Bacs Payment Schemes Limited (BPSL)
- Bank of England
- Bank of Ireland (Bristol & West)
- Barclays Bank
- Bottomline
- Campaign for Community Banking Services (CCBS)
- Cardtronics
- CGI
- Citibank
- Clydesdale Bank PLC
- Coventry Building Society
- Credit Mutuel Arkea
- Cumberland
- Danske Bank
- Dotforge
- Dovetail
- Equens
- Experian

- First Data
- FIS Global
- Faster Payments Scheme Limited (FPSL)
- G4S Cash Solutions
- Handelsbanken
- HSBC
- Identrust
- Innovate Finance (aka Level39)
- Link Scheme Limited (LSL)
- Lloyds Banking Group
- Lyddon Consulting Services Ltd
- MasterCard
- Metro Bank
- MoneyCorp
- Nationwide
- NETS
- NewFinance
- NoteMachine
- Orwell
- Pay with Fire (formally Realex)
- PayPoint
- Raphaels Bank
- The Royal Bank of Scotland
- Sainsbury's Bank
- Santander
- SIA
- STET
- SWIFT
- Tech UK

- Tesco Bank
- The Co-operative Bank
- Transpact
- Payments UK
- Virgin Money
- Visa Europe
- VocaLink
- Worldpay
- Yorkshire Building Society
- YourCash

We also hosted a Fintech workshop facilitated by NewFinance Partners. Participants from the following organisations attended the workshop:

- AAT Capital
- BNY Mellon
- Deutsche Bank
- IBM
- Infolayer
- New Global Markets
- NewFinance Partners
- NewFinance Partners
- Pascal Capital
- Payfriendz Ltd
- Sedicii
- TECHNOactivity
- The Human Chain

Annex 10

Financial analysis of VocaLink's costs and revenue

- 10.1** We are interested in the profitability and degree of cost sharing among the different schemes VocaLink provides services to.
- 10.2** In this annex we analyse a number of elements of VocaLink's financial performance and discuss their implications for competition. This is based on information VocaLink has given us. The annex is structured as follows:
- first, we consider the financial performance of VocaLink overall and its various businesses
 - second, we consider the costs and expenditure of VocaLink overall and its various businesses
 - third, we consider VocaLink's profitability
 - finally, we consider whether there are economies of scale and scope in the provision of infrastructure to multiple payment systems

Financial Performance of VocaLink

- 10.3** In this section, we consider the financial performance, as measured by profit, of both VocaLink and the various businesses that it comprises. VocaLink has provided its actual financial data from 2010 to 2014 and its forecasted data from 2015 to 2017. This is not economic data but accounting data, so is subject to variations caused by accounting practice (such as cost allocation, depreciation and amortisation).

Costs and expenditure

- 10.4** In this section we consider the breakdown of costs and capital expenditure within VocaLink.
- 10.5** [§].

Profitability

- 10.6** In this section we discuss the profitability (measured by internal rate of return (IRR) and return on capital employed (ROCE)) of VocaLink's core contracts as a whole. We then look at them on a scheme basis. We also compare them with international benchmarks selected by VocaLink.
- 10.7** [§].

Economies of scale

10.8 [~~§~~].

Economies of scope

10.9 [~~§~~].

Summary

10.10 [~~§~~].

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