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NPA Commercial Approach and Economic Models

NPA Blueprint

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1.1 About this Paper

This paper focuses on the commercial and economic models of the New Payments Architecture (NPA). We present a series of frameworks to help the NPSO assess funding options, present our assessment criteria, and identify pre-requisites for the adoption of new solutions. Finally, we outline funding options for the NPA.

This paper will be of most interest to vendors looking to engage in the markets that result from NPA changes and investors looking to invest in new initiatives in the payments industry. As such they may be interested in the implications of providing NPA elements as outlined in sections 1.3.1 and 1.4.1.

For other stakeholders, this section shows how the New Payments Service Operator (NPSO) could fund the development of core NPA components.

1.1.1 Objectives and Scope

The Forum has set out to answer questions about how the NPA and end-user solutions should be funded, particularly the investment stage required to design and deliver the NPA elements to market. We answer the following questions:

- How can we ensure funding approaches facilitate appropriate competition?
- How might NPA elements be funded and what would the incentives be for various investors?
- What impact do the different funding approaches have on the stated assessment criteria?
- What is the NPSO's role in the payments lifecycle?

Any potential funding arrangements must align to the Forum's overall objectives. These are the key criteria we have identified against which funding options should be assessed: systemic risk, competition, accessibility, efficiency, financial risk, and intellectual property.

We analyse the approach to competition, stakeholder incentives and funding arrangements, as well as the impact these will have against our assessment criteria. The NPSO will decide upon the funding models and our findings should inform their decision.

1.1.2 Assessment Approach

A three-step approach has been taken to consider potential funding options.

Firstly, we analyse the current state of the UK market and the commercial relationships underpinning PSOs. This includes a consideration of their procurement processes, governance arrangements and the flow of finances between payments participants. Furthermore, we provide a perspective on how other countries approach some of the challenges identified in payments infrastructure procurement. The detail of our findings can be found in the appendix.

Secondly, in section 1.3 we explain the frameworks we use to assess different approaches to funding. We explain the assessment criteria and discuss the types of competition categories that exist and how these map to elements of the NPA. We then consider the different roles the NPSO, third parties and vendors play across the lifecycle of funding. The prerequisites for successful funding forms our last consideration, where we draw upon findings from past product roll outs.

In the last section (section 1.4) we apply these frameworks to NPA elements. This provides the basis for an analysis of the most viable funding options for those elements, and an outline of the 'deal-levers' which can be used by the NPSO to enable the investment.

1.2 Current State: Commercial PSO Models

To provide context, we outline the current state of the UK payments industry. This allows us to derive a view of who the key beneficiaries are in the current commercial model. Further detail on the funding flows of three PSOs in scope of the NPA can be found in the appendix.

1.2.1 The Current Payments Landscape and Funding Arrangements

The current UK payments architecture consists of PSOs operating services used by PSPs, aggregators and end-users. The three PSOs within scope to be consolidated in the NPSO represent a variety of different governance models, operating structures and funding arrangements.

Bacs Payment Schemes Ltd (BPSL), Faster Payments Scheme Limited (FPSL) and Cheque and Credit Clearing Company Ltd (C&CCCL) operate on a not-for-profit basis by setting prices/tariffs to participants to cover their annual operating and development costs.

In the past, some PSOs (and their systems) have been funded directly by PSPs through upfront funding calls to finance the initial design, build and run stages by vendor financing.

Currently, the three PSOs depend on their participants for revenue/funding through a combination of transaction-based fees and, for some PSOs, calls on members. Calculation of the relevant fees for each participant/member varies and depends on a few usage factors, such as volume and profile of transactions.

Central infrastructure providers are the main suppliers to the PSOs. The PSOs act as single procurers on behalf of their participants to source core services from infrastructure providers.

The systems and services procured by the PSOs typically involve high fixed costs for set-up which must be recovered over a certain time period. Therefore, usage volumes need to be guaranteed in advance so that the commercial risk for the vendor is contained.

The balance between the cost, risk and technology capability associated with the provision of these services is a key consideration of the framework outlined in this paper. They constitute some of the 'deal levers' which can be used to increase competition, accessibility and efficiency in the market.

1.2.2 International Sector Comparison

The payments industry is changing globally and multiple countries including the UK are responding to new user needs and technology changes.

For many years clearing and settlement services have been delivered via central shared infrastructures – typically one single system for each type of payment services. In spite of technological developments in distributed systems, this generally remains the case today. Singapore's real time payments service and planned new payments services in Canada, USA and Australia are maintaining this approach. Even in the limited markets that permit multiple provision (e.g. SEPA), market forces have tended to deliver single solutions, i.e. SCT and SCT Inst cross-border solutions from EBA Clearing.

However, consistent with the NPA, others are starting to focus on fostering competition in overlay services e.g. The Australian New Payments Platform.

1.3 NPA Theories and Assessment Principles

We have developed a series of frameworks to help the NPSO with investor selection, considering the nature of competition in payment systems. The NPSO will have a different role across the value chain depending on the nature of competition of the service provided.

Pre-requisites for the adoption of new payment services which improve the chances of a successful product roll-out have been identified as well.

An overview of the assessment criteria which are based on the Forum's, PSR's, and NPSO's objectives is presented to enable a more competitive, accessible, efficient and resilient UK payments industry.

1.3.1 Competition Categories

The nature of competition in the supply side of the UK's payments services reflects the characteristics and dynamics of our market. Competitive behaviour ranges across a spectrum depicted in Figure 1.1 which shows four competition categories of funding approaches.

At one end of the spectrum, there can be many firms 'in the market' supplying similar services. However, towards the other end of the spectrum the scale and nature of more systemically critical services drives a concentration of suppliers, particularly in the clearing and settlement layers.

Typically, these services are provided by a small number of suppliers with a few providing services concurrently, or at its extreme a single provider 'for the market' which may face competition over time on renewal of its contract with the purchaser. In the NPA, one of the roles of the NPSO is to procure such systemic services. It may also stimulate the market towards commercial self-sufficiency by having a 'market catalyst' effect on some payment services as outlined later in this section.

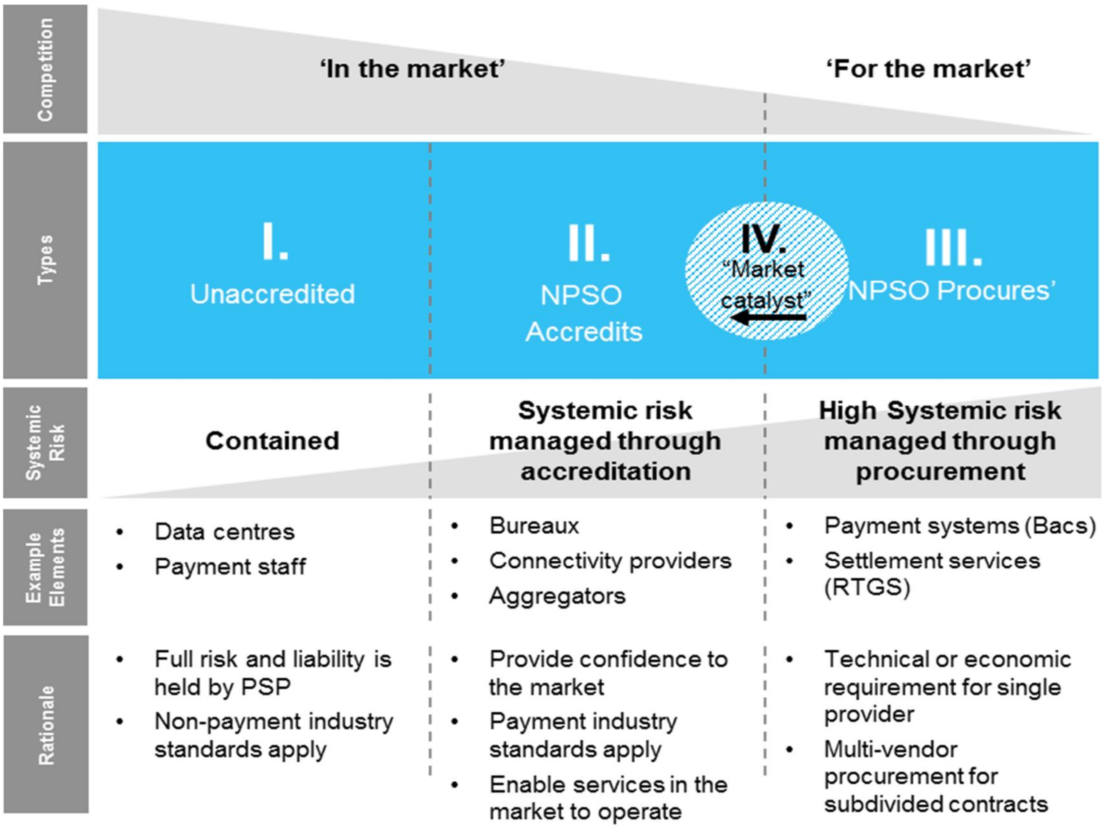

Figure 1.1. NPA Competition Categorisation

Unaccredited Competition

'Unaccredited' means that elements or activities in this category are not required to be accredited by the NPSO. However, they may be required to meet general regulatory expectations or standards set by other bodies. In theory, this category holds the most scope for competition and innovation within the NPA and its ecosystem.

Examples of potential elements include data centres and staff members. The risk for these 'elements' is carried by the providers and PSP customers themselves.

'NPSO accredited' Competition

The Forum is committed to ensuring that maximum competition and innovation is embedded within the overall make-up of the NPA. However, this consideration must be tempered by a fundamental commitment to system stability and resilience. Where there is a perceived risk to stability, security, a critical interoperability requirement, or need for ubiquity, the NPSO must set rules and standards which might have the effect of narrowing the potential sources of supply.

The NPSO mitigates risk by technically accrediting providers and overseeing their application of the rules. Accreditation brings consistency of payments industry standards, protects the functioning of payment services and ensures confidence in the market. In this 'category' there will be multiple providers competing to deliver solutions but to do so they must be accredited by the NPSO.

Some examples of elements of the payments ecosystem which fall within this category are bureaux, connectivity providers and aggregators.

'NPSO procured' competition

Elements posing high systemic risk that are fundamental to the overall payments landscape where there are technical or economic challenges with multiple, concurrent solutions, will fall within this competitive category. It is likely that elements within this category will be best served by a single provider. However, there may be instances where elements could be subdivided and provided by multiple vendors.

Current examples of services within this category include PSOs, as well as clearing and settlement services that enable connectivity with the Bank of England's RTGS service. Since these elements pose high systemic risk, their resilience and stability is paramount. In many cases this is likely to provide rationale for a fixed term, single provider. However, substitutability is a key part of resilience and may give rise to the NPSO procuring multiple vendors delivering replicas of an element and competing for business.

The layered model of the NPA allows for the possibility of procuring parts of the system as individual elements rather than as single layers. This presents new potential opportunities to improve competition.

However, in the case of 'NPSO procured' elements operating on fixed term contracts, competition risk may yet exist. There is a greater propensity for vendor lock-in and barriers to entry due to the standards applied to ensure resilience for systemically important elements. To mitigate this, a wide pool of vendors should be consulted during the initial phase and common standards should be set to enable vendors to compete at re-procurement. One example of a common international standard that will lead to a larger pool of interested bidders is the ISO 20022 standard.

'Market catalyst'

Where there is general recognition that addressing a detriment may bring benefits to the market, it may be appropriate for the NPSO to act as a 'market catalyst' as an option of last resort. The NPSO's role will enable the interoperability and market contestability which drive competition and innovation.

'Market catalyst' models will be needed when supply-side players do not immediately see the commercial opportunities of participating in a new payments market. Vendors may be unwilling to enter the market since potential market adoption is unknown. Potential market entrants may be deterred by the risk of developing new solutions outweighing the benefits of exploring the potential of the market.

To prove a specific market solution, the NPSO could undertake a number of optional steps depending on the requirements. Initially, the NPSO could define the principles of the market solution by **setting**

standards, rules and guidelines for the new service. Consumer protection frameworks and liability models are prime examples of where the NPSO could play a valuable role relieving the burden on market participants by determining market characteristics.

The NPSO can **stimulate the market** further through a range of direct and indirect activities. For instance, the NPSO could stimulate market participation indirectly by commissioning industry research, thought leadership and consult the industry and experts. A key example of this is the work FPS did with challenger banks to spur providers into developing the 'technical aggregators' new access model. The use of a sandbox environment can also lead to stimulation of the market. This would be an interesting proposition mostly for smaller FinTechs and vendors. We would expect the NPSO to fund this from its Research and Innovation (R&I) budget or if more substantial, by way of interested market participants or venture capital.

In all these cases, accreditation and proof of market would provide the foundations for increased interest from financial investors, as well as support for new services. This interest can only be guaranteed when spending transparency of the NPSO is fulfilled and governed by the board as well as the regulator.

We elaborate further on the 'market catalyst' risks and mitigations in the Appendix.

Model types		Description
'Market catalyst'		• Driven by end-user needs which are served by a specific service offering • Market participants currently do not envisage a positive business case therefore the NPSO will provide a proof of market
A	Setting standards	• NPSO defines rules and guidelines on how the new service should be operated • NPSO defines the consumer protection framework and liability models
B	Stimulate the market	• NPSO will commission research, thought leadership work or provide the industry with an environment within which to drive innovation (e.g. sandbox)

Figure 1.2. Market Catalyst Model

1.3.2 NPSO and Third-Party Roles in the Payments Lifecycle

In our discussions, we identified new and/or different roles for the NPSO and third parties across the four-stage payments lifecycle (specify, build, accredit, and run) in the NPA.

In all of the different lifecycles where it does have a role, the NPSO is always the accrediting body. As such, it is the enabling 'gateway' for any new payments products that require accreditation or procurement, no matter who requests the change. Furthermore, the NPSO never 'builds' a product but rather must procure or facilitate the procurement of a service. The roles are illustrated in Figure 1.3 per lifecycle stage and NPA competition category type.

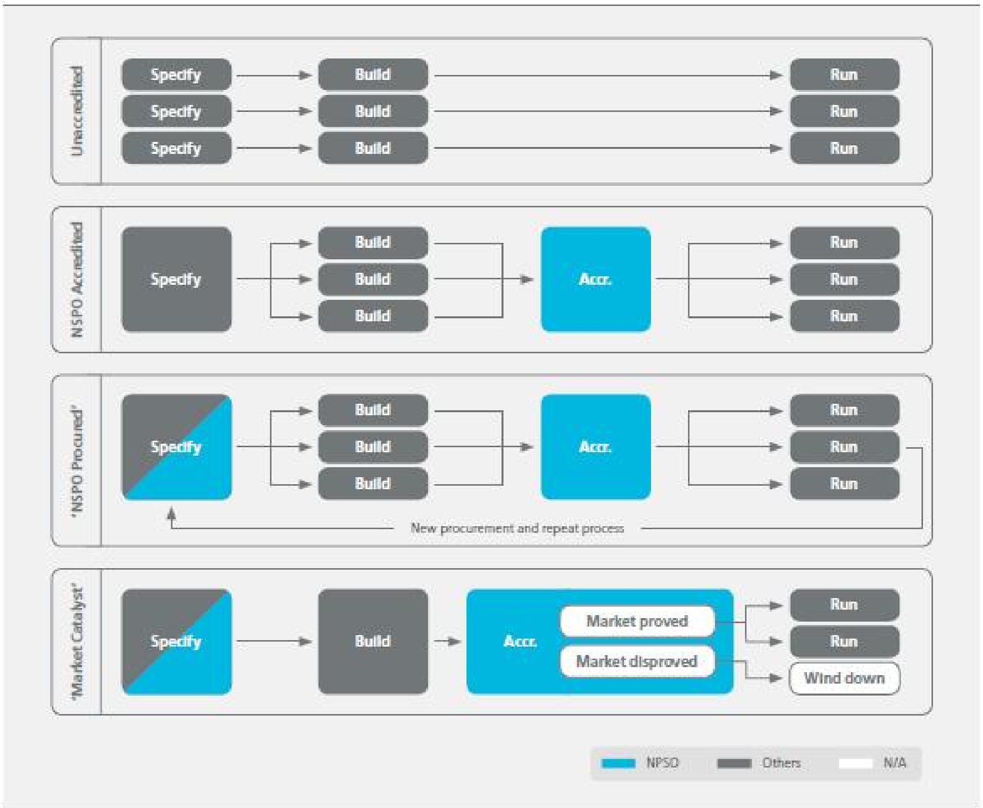

Figure 1.3. Payments Lifecycle

Funding

In its report on the funding of the NPSO, the PSO Delivery Group identified different types of funding requirements. These included: initial set up of the NPSO, business as usual operating costs, research and innovation costs, reserve capital and development/extraordinary funding.

Our analysis draws on the PSO DG's work and forms the basis of the funding rationale we use later.

During the **specify** stage, the NPSO's role is to design the rules and standards (except for elements within unaccredited competition to be served by the market alone). The NPSO will collaborate with vendors and others on how the solution should be built, aligning on technical specifications and regulatory requirements.

In the next stage, **build** costs represent the costs associated with developing a solution.

At the **accreditation** stage, vendors will pay for accreditation by the NPSO, granting them the opportunity to provide payment services.

Finally, within the **run** stage, operational costs are covered by the pricing mechanism chosen by the NPSO, including costs associated with operational enhancement and upgrades, capital recovery and sinking fund expenses.

1.3.3 Pre-requisites For Successful Funding

This section provides a framework for pre-requisites to be considered for a successful roll-out of payments solutions to the market.

After examining the cases of Paym, contactless payments and CASS, we found common themes which would contribute to the successful roll-out of market catalyst payment solutions:

1. **Promotion and adoption of the new service roll-out needs to be done synchronously by all payment market participants.** The proposition for all parties needs to be compelling, which may require stimulating investment by those working on each side of the market.
2. **Commitment and collaboration between industry participants is vital** to deliver the network effect needed for major industry change. Co-ordination is required when a new product is brought to market to ensure take up is as quick and efficient as possible.
3. **Recourse to further action is needed if there is limited adoption and promotion.** If uptake is lacking, where a solution is viable there should be alternative action such as adjusted pricing mechanisms or regulatory intervention.

We recommend the NPSO to carefully consider these pre-requisites when solutions are deployed.

The following two frameworks have been identified based on the experience of previous 'market catalyst' payment services. It is important to understand that these examples represent initial analysis into payment service roll-outs within this model, and that future offerings may encourage further learnings which may adjust or produce additional risk models to those discussed below.

Overall, the models represent similar development challenges and risks relating to consumer, corporate and end-user adoption. The fundamental difference is that single-channel demand is adopted and promoted solely by PSPs, whilst dual-channel demand depends on the adoption and promotion of PSPs and other market participants, for example, merchants.

Single-Channel Considerations

This model applies when new products or services rely solely on PSPs for market, consumer and end-user adoption. As such, PSPs represent the single and most important channel for carrying the new offering from development, through adoption and promotion, to consumers, corporates and end-users.

The development stage presents low levels of risk, since solution development is normally proven by PSOs beforehand. There is a moderate level of risk surrounding product technology failure, which can be mitigated through the avoidance of 'bleeding edge' technology and uncertified vendors. A crucial factor in preventing technical failure lies in hiring skilled personnel, as well as the use of agile development methods.

Adoption by PSPs presents higher levels of risk since the roll-out of products requires a level of ubiquity in adoption, which can be difficult to achieve amongst multiple PSPs. Further, PSPs may be reluctant to adopt new services due to increasing IT complexity and the cost of change (sometimes without clarity on the return on investment and proven benefits of the new service). To mitigate these challenges, solutions should be designed to minimise IT change and complexity burdens for banks. In addition, regulatory pressure, identifying early adopters, or pricing structure adjustments could further mitigate non-adoption risks.

The most significant risk is that PSPs do not promote the model due to limited resources and insufficient timeframes allocated to the promotion of new services. These risks can be mitigated by agreeing the parameter for promoting the service in advance or applying regulatory pressure for increased promotion.

Lastly, there are end-user adoption risks because adoption needs to be coordinated across a number of participants. Corporates need to enable the adoption of new services for consumers, whilst communicating the benefits. Since new services often require a critical mass of users to be valuable and drive usage, ubiquity is also required amongst end-users. Consumer and end-user adoption can be promoted by agency adoption, think-tank and NGO initiatives, effective consumer research and mock-up testing at early stages of development.

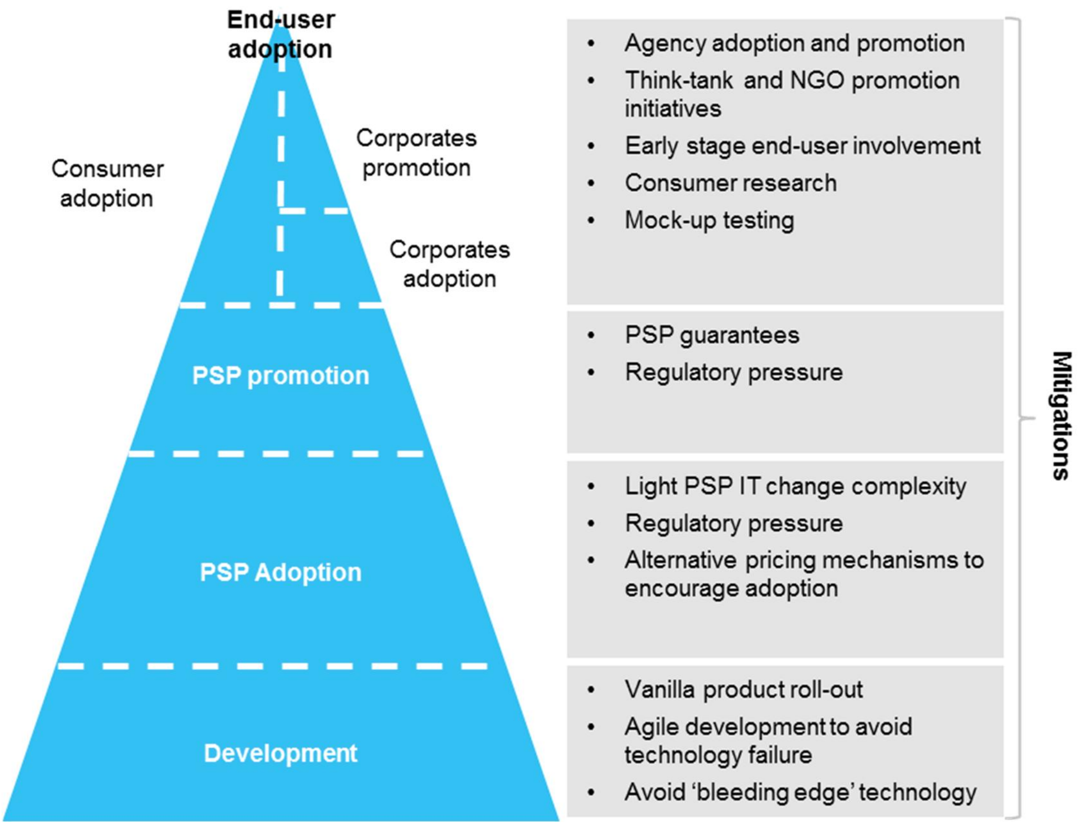

Figure 1.4. Single-Channel Considerations

Dual-Channel Considerations

This demand-side risk assessment framework also requires the adoption and promotion of both PSPs and third-party market participants (such as merchant acquirers, terminal providers, PSOs, retailers and other payment technology providers). As such, adoption and promotion amongst PSPs presents similar risks and mitigations to the single-channel model. Within the dual-channel model however, PSPs and market participants are mutually dependent upon each other since the solution could not be scaled to a critical mass without the adoption and promotion by both. Market participant promotion and adoption presents distinct but related challenges.

Firstly, there is a risk that market participants may not adopt solutions if there is no feasible business case behind change. Since promotion is driven by competitive pressures amongst market participants, there is a risk that adoption and promotion will not reach a critical mass of market participants. In order to address these challenges, pressure from PSPs can be used to drive adoption and promotion, whilst sound business cases can be presented to market participants to compel participation. PSPs and market participants moreover, face a related challenge of mutual dependency between PSPs and market participants. This presents a demand and supply side risk in that both are relying upon the other to adopt and promote the offering, which may obstruct adoption. Collaborative promotion agreements could be used to mitigate this.

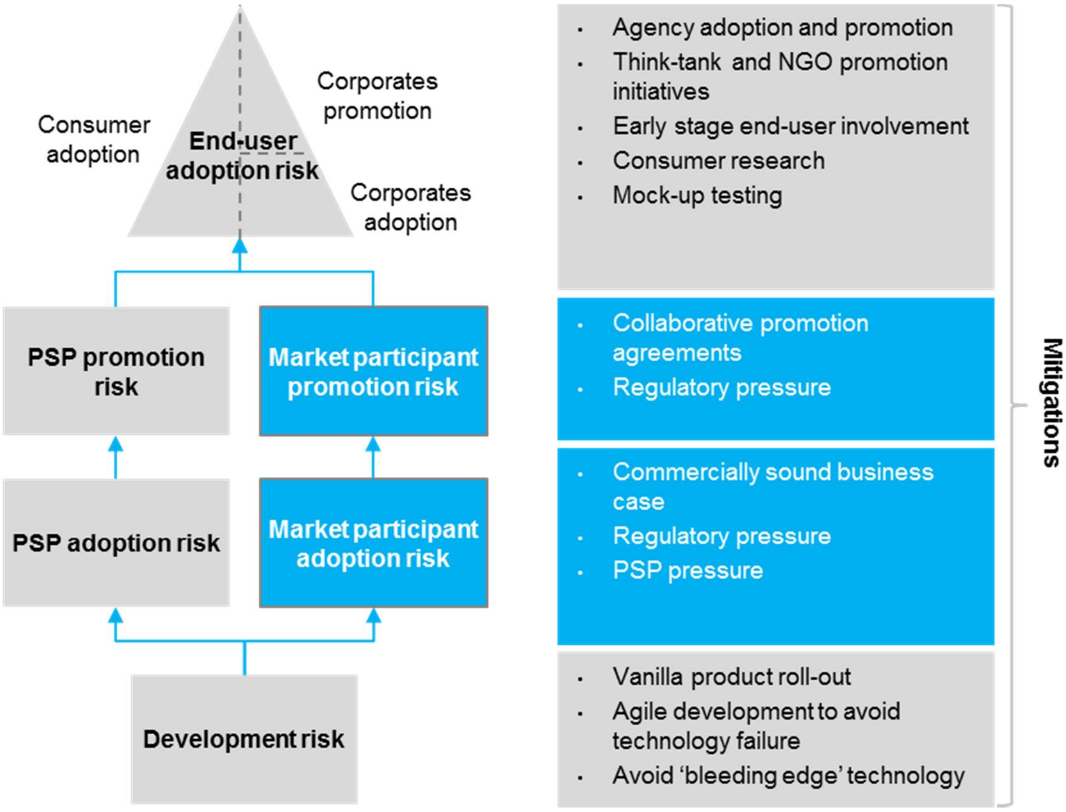

Figure 1.5. Dual-Channel Considerations

1.3.4 Assessment Criteria

The NPSO will determine the appropriate type of funding needed for different elements of the NPA. We outline our assessment criteria which the NPSO could use to help determine its objective. Other criteria can be added to this list to strengthen the robustness of the assessment framework such as tax implications of funding instrument or stakeholder, contingency plan viability and complexity.

Assessment Criteria	Definition
Systemic Risk	· Risk of failure of vendor solution and the impact it has on continued provision of payment services within the ecosystem. · State of the security and stability of the operations to provide a stable service.
Competition	· Number of competitors interested in the market and wanting to compete on price and quality. · Level of innovation that is driven by vendors to differentiate themselves. · Barriers to entry for other vendors.
Accessibility	· Level of accessibility for PSPs (large or small).
Efficiency	· Efficient delivery of the system and innovation to the end-users. · Corporate governance structures in place. · Reduced overheads and efficient operational structure. · Pricing impact for the end-user.
Financial Risk	· Financial risk (investment at risk) carried by the investor. · Size of investment required to design, build and operate service. · Risk profile of the investment.
Intellectual Property	· Opportunity and restrictions in the usage of IP to develop other products or use the IP in other countries/sectors.

Table 1.1. Assessment Criteria

Systemic Risk

Systemic risk is the possibility of failure of one or more elements and the impact this may have on the environment as a whole. A key consideration for the NPSO is the extent to which an element may present risk to the system, how it is managed and the propensity of potential investors to cover the associated cost of managing it.

Competition

Increasing competition in both the infrastructure market and the PSP market are key objectives of the NPA. The NPSO must take into account the number of competitors in the market, as well as their interest in competing on price and quality. Barriers to enter a market should be considered in order to assess the complexity of competing in a new market for smaller players.

Access

Simplifying and increasing access to smaller PSPs and FinTechs is another key objective of the NPA. In light of this, the NPSO must consider the views of all relevant stakeholders and the motivations of potential investors.

Efficiency

Resilience of service is paramount, and it must be balanced by the efficiency of service provided. The NPSO must consider vendor pricing in relation to the stringency of SLA's that the vendor commits to whilst appropriate corporate governance structures ensure effective service provision. It is in the interest of the NPSO to protect the end-consumer and therefore any price increases resulting from investments and funding selection should be carefully monitored by the regulator.

Financial Risk

The NPSO must consider the level of capital of various funding stakeholders. This entails a view of the size and risk profile of the investment.

Ownership of Intellectual Property

Intellectual property (IP) ownership represents our final assessment criterion because of its value. Historically infrastructure providers have been able to utilise their UK IP in other geographies.

Other

This list of criteria is not exhaustive and can be expanded to ensure a robust evaluation of the funding stakeholder's suitability but we believe these are the important criteria that should be included in any assessment. The NPSO should also consider the tax impact on the service and selection of funding stakeholders.

1.4 Commercial, Funding and Competition Assessment

This section seeks to provide a view on viable funding options by applying the assessment criteria and the NPA's competition framework.

1.4.1 Elements of the NPA

We have applied the NPA competition framework to the NPA architecture. 'NPSO procured' solutions sit at the bottom of the Figure 1.6, followed by competition in the market. Key elements that may be categorised as 'market catalyst' at this stage are circled.

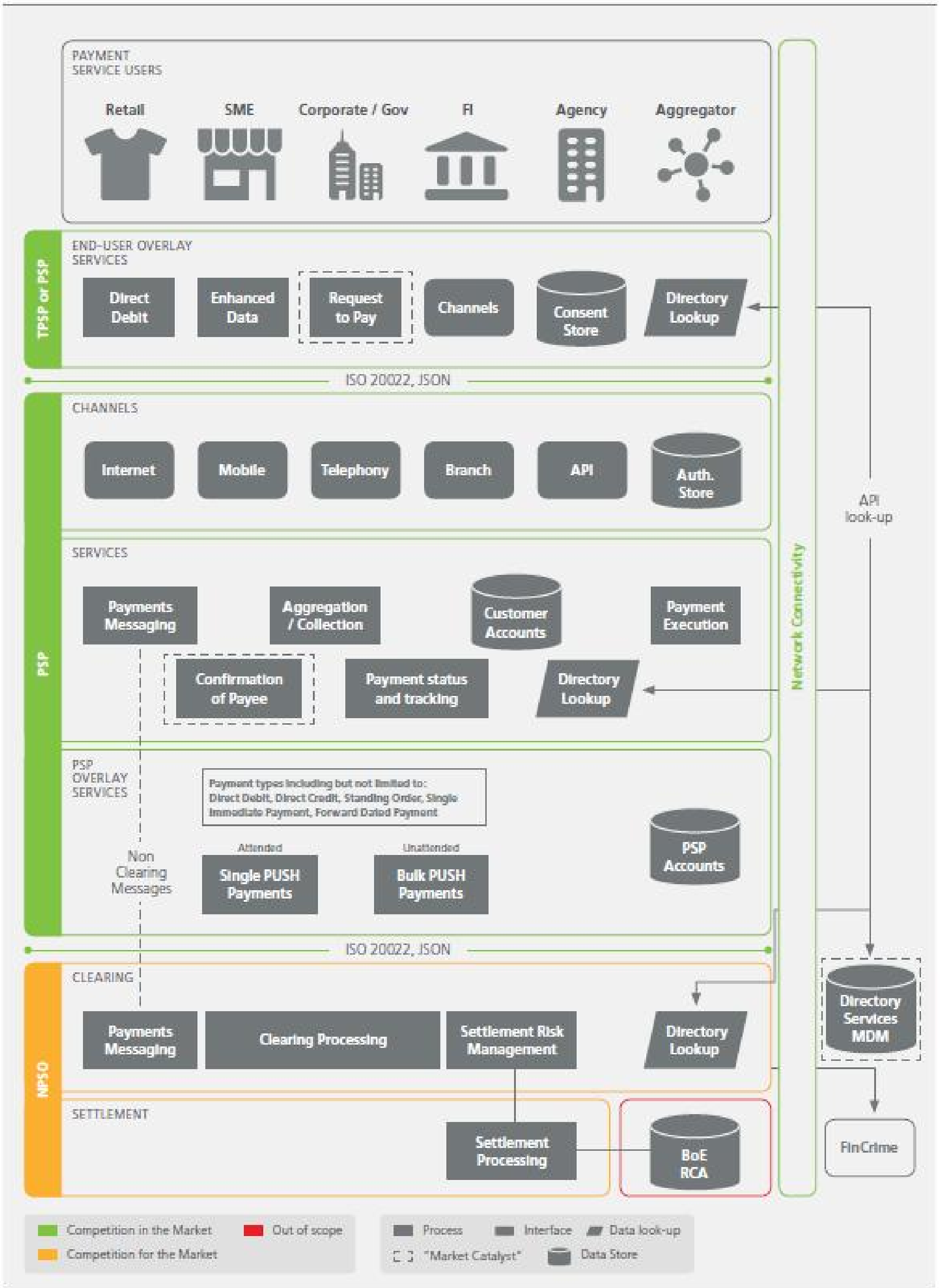

Figure 1.6. NPA Competition Elements

1.4.2 Assessment of the NPA's Competition Categories

This section applies the assessment criteria we outlined in 1.3.4 to two types of competition categories we outlined in 1.3.1, 'NPSO procures' and 'market catalyst', in order to identify appropriate funding models. In addition, we identified a number of risks and their 'deal levers'.

'NPSO procured' Considerations

We understand NPA elements falling within this category pose high **systemic risk**. Splitting the clearing and settlement contract into multi-vendor deployment could help mitigate the spread of systemic risk.

Since the resilience and stability of these elements is critical, the NPSO is limited in the levers it can use to alter the level of **competition** of this market category. Barriers to entry are high since the solutions may only be provisioned by a single vendor for some elements. Splitting clearing into individual elements or running procurement with multiple vendors, may have an impact on competition.

The NPSO must take **accessibility** for smaller PSPs and FinTechs into account. This entails ensuring that the cost of access is kept to an acceptable price range, without necessarily relying on aggregators or direct access PSPs. Pricing model innovation represents a potential 'deal lever', whereby tiered pricing could provide greater inclusivity for PSPs and FinTechs. The NPSO should be flexible in its approach to pricing, maximising market adoption while limiting detrimental forms of cross subsidisation.

We foresee that the procurement of new solution providers on a fixed contract basis may have a negative short-term impact on operational **efficiency** where the infrastructure provider has changed and PSPs are required to implement system changes. The NPSO can consider setting up penalty systems with SLAs to control operational efficiencies of the service. If this is done, the NPSO must ensure it has the monitoring capabilities to enforce the SLAs.

We anticipate the **financial risk** for procured vendors to be low due to volume commitments from PSPs and the fact that these services are crucial to the functioning of the payments industry. Given that market solutions are likely to be large in scale, a limited number of vendors will possess the capital and capabilities to deliver these services. As such, the NPSO should consider allowing vendors to bid in consortia or work with financial investors to lower the risk of entering the market.

Vendors may have the potential to re-use **intellectual property** (IP) and sell services in other countries, especially if the IP developed is built on international standards. The NPSO could have a role in the control of future IP usage in the setup of licensing agreements, whilst the inability to re-use IP may impact vendors' interest in participating in the bidding process.

'Market catalyst' Considerations

NPA elements falling within the 'market catalyst' model pose a medium to low **systemic risk** since the provision of these solutions is not viewed as critical to the functioning of the payments ecosystem. While elements within this category will be served competitively once the market has been proven, there is still some risk that established solutions might end up as 'for the market' solutions. As such, the NPSO could test solutions in its sandbox first on a small scale to enable multiple vendors to engage.

The 'market catalyst' model provides a key mechanism for the NPSO to increase **competition** within the market. Competition can be facilitated through consulting with multiple and diverse vendors to ensure the rules do not inadvertently favour one vendor. Commissioning industry research or the creation of sandbox environments should positively impact competition and innovation.

A large number of market participants should be consulted during the launching of new services or solutions to ensure **accessibility** for smaller PSPs is maintained. This ensures standards are achievable by a range of PSPs. And as noted above accessibility can be improved through thought leadership addressing key issues or testing new approaches in the sandbox.

The 'market catalyst' model is not driven by standard demand, supply and competition rules and might fall behind the market in terms of **efficiency**. Development of solutions and bringing them to the market are dependent on collaboration between vendors and the NPSO's funding reserves. Learnings from previous roll-outs detailed in section 1.3.3 will help mitigate this risk.

In comparison to 'NPSO procured' solutions, there is increased **financial risk** within the 'market catalyst' category due to the uncertainty of the market demand. Financial risk can be limited with a phased approach to investing to prove market demand with minimum required investment.

There is increased scope for the NPSO to retain **intellectual property** (IP), which may be beneficial in promoting competition, for 'market catalyst' solutions. The NPSO then has the option to set up legal structures to retain IP and recover its initial costs if the market has been proven.

Commercial Considerations for End-User Solutions

To provide a view on the competitiveness and commercial approach to the proposed end-user solutions presented in this paper we have focused our attention on two solutions: Request to Pay and Assurance data - Confirmation of Payee (CoP). Remaining subcomponents of Assurance Data and Enhanced data are not discrete architectural elements and thus are not suited to this analysis. The Realtime balance component lies entirely in the competitive domain of the PSPs and vendors.

Request to Pay

Several solutions already exist in the market that offer Request to Pay functionality (e.g. pay.me from Monzo and Receive on Pingit). These solutions however, lack interoperability, are non-standard, and cannot be used on all schemes. This has been one of the hindrances to Request to Pay being adopted and attaining ubiquity. The Forum is seeking to address the detriments identified and drive ubiquity by setting out a minimum standard that allows competitive market solutions that are interoperable, ubiquitous and easily recognised by end-users.

Initially we expect the NPSO to be involved in publishing the minimum standards for Request to Pay as well as proving demand in the market for this solution. This strongly aligns to our 'market catalyst' category. Once demand is established, it is assumed it will move into 'NPSO accredited' competition.

To ensure successful funding and product roll-out, we foresee three main parties being involved – the payee (corporate, utility company or individual), payer and a Request to Pay service provider (vendor, PSP or TPSP). The NPSO can draw upon the findings in the single-channel framework presented in section 1.3.3 in order to best catalyse Request to Pay.

To support Request to Pay the Forum has conducted numerous interviews with corporates, the outcome of which suggests that there could be demand among them to develop such a product and offer it to their customers. The design of Request to Pay has also been developed through working groups to ensure that potential problems that arise from, for instance, 'late payment' or 'non-payment' have been addressed within the current proposition.

Confirmation of Payee

Confirmation of Payee (CoP) can be classified as a 'market catalyst' solution with the intent to move to 'in the market'. It is crucial that the CoP solutions, which can be developed internally or offered by vendors, are interoperable between PSPs and comply with the same standards.

CoP creates positive benefits for end-users and market participants. The solution is largely dependent on universal acceptance among the PSPs and thus the NPSO should learn from the findings in the single-channel framework in section 1.3.3 (e.g. collaborative approach). Furthermore, market participants will be able to build on CoP to both innovate and address a major detriment identified in the current systems, including the fraud identified by the Which? super complaint.

Others

Both Payment status tracking and Enhanced data are capabilities which will be developed as inherent functions of the NPA on the underlying infrastructure. The delivery of actual services and innovation on top of this architecture will be dependent upon the PSPs.

1.4.3 Funding Stakeholders

The NPSO has access to a diverse range of investors. We have identified four major stakeholder categories which are most likely to be interested in financing solutions within the NPA based on evidence in the payment industries in the UK and abroad:

- Vendors
- Financial investors
- Retail investors
- Other market participants

The NPSO itself may also choose to fund initiatives.

Vendors

Vendors enter into a managed-service contractual agreement with the NPSO to design, build and operate a service according to upfront agreed SLAs and rules in a vendor finance model.

Vendors are motivated by the prospect of entering into a financing agreement granting strategic access to the UK payments market, and gaining market share over competitors.

Vendors can fund the proposition over its full lifecycle from inception to its fully scaled state. Therefore, we expect vendors to take a longer-term view as to the pay-back period and overall return due to their potentially lower cost of capital than for example, financial investors.

The NPSO may consider that vendor financing for central infrastructure elements is suitable only for large players since others may lack the capital and skills to deliver large scale solutions. Smaller vendors will be encouraged to participate in the NPA and may bid in consortia to deliver larger scale solutions. The 'sandbox' may provide a useful environment within which to incubate new vendors.

A risk the NPSO faces with vendor financing is that vendors may reuse existing technology rather than providing best in class solutions once they have won the contract. The NPSO must consider appropriate arrangements to mitigate these issues, such as SLAs. Should the NPSO wish to take more ownership of the NPA's intellectual property this could have an impact on vendor financing.

Financial Investors

Financial investors can finance the creation of a market solution directly for the NPSO or for vendor(s). We anticipate their investment motivations to be driven mainly by maximising value from their investment. They are mostly interested in the prospect of business growth, with an ultimate objective of provisioning a sound business model to maximise value upon exit in a timeline of three to seven years. They will place emphasis upon the strength of the management team, achievability of the business plan and associated risks to deliver their required returns.

There are varying appetites for financial risk depending on the stage of the investment lifecycle and the type of investor. Table 1.2 details the investment size differences between investor type, their return requirements and maturity of businesses they invest into. Early stage and venture capital (VC) investors are most likely to finance the design and build stage.

Private equity and infrastructure investors are more likely to invest in established businesses that generate positive cash flows. Due to a perceived lower risk, they look to invest larger amounts of money for a longer period of time.

On the other hand, debt funds have different risk appetite and investment requirements than equity investors. Debt investors are looking for a fixed return and are unable to take equity risk. Therefore, they only consider investing into established cash flow generative and repeat revenue businesses.

The NPSO should consider the exit process when provisioning investment from financial investors. For example, sale processes must be run as wide auctions to ensure no preferential follow-on treatment is granted through investor choice.

Furthermore, the public perception of private capital and the potential large returns achieved should also be considered. The relationship between financial investors and the vendors providing solutions should be clearly defined with the NPSO's objectives in mind.

Investor Type		Business Stage	Rates of Returns	Invest. Term	Approx. Quantum
Early Stage		Start-up, seed, early development	50-70%	1-3 years	Up to £5m
Venture Capital		Growth and expansion	40-60%	5-10 years	£5m to £10m
Private Equity		Established, scaling, cash generative	20-30%	3-5 years	From £20m to over £1bn
Infrastructure		Fully scaled, cash generative	10-15%	10-20 years	From £500m
Debt	Senior Debt	Fully scaled, cash generative	3-5%	3-5 years	Up to £25m
	Unitranche		5-8%	5-6 years	£25m+
	Mezzanine		10-15%	3-5 years	£10m+

Table 1.2. Illustrative Investor Profiles

Retail investors (Crowdfunding)

Another funding source is crowdfunding which has been gaining strong traction in recent years across various sectors. People invest through crowdfunding platforms to test new products, identify new investments and be at the forefront of innovation.

The benefit of using crowdfunding is the opportunity to either raise funds against equity or pre-pay for a product delivered in future. Crowdfunding, unlike other funding sources, provides a fundraising campaign targeted at end-users (customers).

Crowdfunding requires strong in-house marketing and public relations capabilities to build a successful campaign. Due to the customer-centricity, overlay services might be more suitable for funding than non-customer centric solutions, e.g. clearing.

Other Market Participants

Since the NPA will work to benefit the broader payments ecosystem and stakeholder community, the PSO DG report suggests that there may be instances when market participants (such as PSPs, FinTechs, industry bodies, etc.) propose beneficial changes to the solutions or design. In these cases, the market participant(s) would fund the NPSO effort to amend the standards and deliver change.

The risk in this model is that incumbent market participants are more likely to be in a position to propose and pay for changes which are advantageous to them. In this case, the NPSO would have to ensure that any proposed alterations would not work to the detriment of other market participants by limiting competition or access to payment services and systems. These kinds of funding arrangements must not be used to negotiate changes to make the governance structure less independent.

NPSO

The NPSO could invest in developing an element from its R&I budget. There may be instances where the NPSO may choose to fund certain NPA elements beyond the R&I development threshold which would require an additional funding source.

In this case, the NPSO secures finance and offers a build and operate contract to a vendor. It may therefore need skill sets to enable this.

The NPSO should be aware of the risks of the funding of 'NPSO procured' solutions and avoid instances where it would act as a driver of a monopolist market. It must not stifle competition or innovation in overlay services.

1.4.4 Financial Instruments Viable for Funding the NPA

The NPSO has a number of financial instrument options available depending on the stage of solution maturity. There are three main ways to fund any NPSO efforts: self-fund with existing resources, raise external debt or equity investment from public or private markets.

To raise equity, we envisage that the NPSO would create a subsidiary that would sell equity to a financial or strategic investor, such as an investment fund. Equity raising is beneficial since it can be used across all lifecycle stages of a business even when there may not yet be positive cash flows. The NPSO should however, consider the overall cost of this financial instrument, as well as the level of control of equity stakeholders. Lining up financial investors across early (Venture Capital) as well as late (Private Equity or Pension funds) stages upfront can help limit the risk of delivery. This is aligned to the findings of the PSO DG report which described the sources of funding for the NPSO in further detail.

Debt can be raised from a bank (senior debt) or debt fund (unitranche or high yield bonds). This instrument would bear the advantage of limiting the influence of funding providers on the governance and operation of the service. Debt financing may not be appropriate for certain parts of the payments lifecycle but for more established products with a clear cash generative profile. Unitranche and high yield bonds providers may be more suitable than bank's senior debt to support the investment into future growth. The NPSO should also consider the effect of debt financing and interest repayments on cash flows, anticipating any constraints.

1.4.5 'Deal Levers'

The following section provides 'deal levers' against our assessment criteria, building upon the analysis of various investor types and financial instruments.

Each 'deal lever' provides a way of reducing potential risks relating to each of the criteria but may have an impact on other areas of the assessment criteria. For instance, it may be possible to use a deal lever to reduce systemic risk but in doing so decrease competition.

Assessment criteria	Indicative Deal levers
Systemic risk	· Setup contractual SLA's with penalty-pricing to ensure strong service delivery. · Split procurement contracts into smaller elements.
Competition	· Setup 'Chinese walls' between infrastructure and overlay services provided by the same party. · Temporarily prohibit access to overlay services market for infrastructure providers. · Incorporate innovation as an evaluation factor for procurement of services.
Accessibility	· Setup consultation channels with wider payments community to ensure open access. · Set standards, that investors will comply with, which will consider access to the market for all PSPs (small or big).
Efficiency	· Explore Joint Venture (JV) structures for procured services to grant efficient service delivery. · Set up standards that will enable efficient service delivery by a wider group of vendors. · Use governance structures that enable NPSO services oversight.
Financial risk	· Volume guarantees set by users (PSPs) to limit investment risk. · Allow investors to form consortia or bid with financial or strategic investors backing. · Limit risk of future solution by building standards, customer research and vanilla products.
Intellectual property	· Utilise licensing agreements to protect the NPSO IP ownership.

Table 1.3. Illustrative 'deal levers'

In order to mitigate the risks associated with **systemic risk**, the NPSO should ensure investors and service providers are credible and capable to deliver. The NPSO should only offer contractual arrangements which ensure vendors fulfil the NPSO's design and facilitate increased competition in the overlay market. Contractual arrangements should bear this in mind, and should ensure that financial investors are limited in their ability to create barriers to competition and innovation. Therefore, the NPSO should have internal resources able to handle the evaluation of investors and vendors.

Vendors may have a **competitive** advantage in providing overlay services on the back of their 'for the market' contract. Constructing 'Chinese walls' between infrastructure and overlay services could be an option for the NPSO to mitigate this. Alternatively, the NPSO could consider prohibiting vendors from entering the overlay market for a short period to allow other providers to establish themselves.

The NPSO should ensure that vendor solutions will not limit **access** of other market participants, smaller PSPs and FinTechs. Increased consultation with smaller PSPs and FinTechs will be necessary to ensure any standards for access are suited to their needs.

To ensure **efficient** service delivery, the NPSO should consider governance structures which enable oversight of the service. This will require negotiations with investors and the NPSO will need internal resources to handle the workload. Alternatively, the NPSO can consider Joint-Venture (JV) structures where the vendor (service operator) is not restricted in its operations by the financial investor's interest in increasing investment returns. Financial risk per party can be split if investors bid in consortia or in hybrid models (e.g. cooperation with strategic or financial investors).

Lastly, the NPSO should consider licensing agreements that will ensure control over **intellectual property** and provide better control over the managed service. Strong restrictions on the usage of IP however might limit vendors' interest in providing a service and thus a balance between stakeholder interests has to be found. The NPSO should consider appropriate mechanisms to obtain the right skill set to monetise its value in other geographies or markets (if possible).

The NPSO can also consider bridging any knowledge gaps by contracting with vendors and external advisors, which brings with it a financial impact and dependencies. There may be instances where alternative hybrid models, such as joint ventures, may be the most appropriate option. This is most likely to occur if there is a requirement to diversify the risk of delivery amongst investors with different competencies.

In all cases, exit requirements for financial investors will need to be taken in to account.

1.5 Conclusion

A spectrum of funding options that the NPSO can consider has been identified. The NPA represents an opportunity, not only for vendors, FinTechs and small PSPs, but also for financiers that can enter this dynamic market.

We believe there are four NPA competition categories that cover NPA components, two of which will be funded competitively by the market. For the other two, the 'NPSO procured' and 'market catalyst', the NPSO should explore alternative funding options.

End-user solutions presented in this paper have been designed to foster competition and deliver benefits to the wider payments ecosystem. It is assumed that both Confirmation of Payee and Request to Pay will move from 'market catalyst' to 'in the market' solutions once the market has been established.

We have identified four types of potential investors (financial investors, retail investors, vendors and market participants) in addition to the NPSO. The extent to which NPA elements will be of interest to potential investors depends on the amount of risk, investment size and investor capabilities.

The NPSO has a wide selection of funding options to choose from for the delivery of the NPA and the funding does not need to be rigid or overly concentrated.

1.6 Next Steps

This final version of the paper will be handed over to the NPSO at the end of 2017. The Forum has considered the consultation responses of the public and reflected on them in this paper. Further development of the approach now rests with the NPSO.

2 Appendices

2.1 Current Financial Flows Between Participants in BPSL, C&CCCL and FPSL

In order to provide a foundational knowledge of the current commercial and economic arrangements between the PSOs, their participants, users and suppliers, this section details the current financial 'flows' between participants.

As it stands currently, the three PSOs depend on their participants/members for funding through a combination of transaction-based fees and, for some PSOs, calls on participant/members. Calculation of the relevant fees for each participant/member varies and depends on a few factors, such as volume and profile of transactions.

Bacs Payment Schemes Ltd (BPSL), Faster Payments Scheme Limited (FPSL) and Cheque and Credit Clearing Company Ltd (CCCL) operate on a not-for-profit basis by setting prices/tariffs to participants only to cover their annual operating and development costs.

2.1.1 Bankers' Automated Clearing Service (BPSL)

Bacs is the UK's low-value bulk system, owned at the scheme and operator level by Bacs Payment Schemes Ltd (BPSL). Products of this PSO include two main payment instruments: Direct Debit (a 'pull' payment used, for example, to pay bills) and Bacs Direct Credit (a 'push' payment used, for example, to pay employee salaries and benefits).

BPSL is a not-for profit company limited by guarantee, with operating costs recovered through a combination of membership fees and income through other services. BACS services are supported through the use of central infrastructure services (charges no. 1, 2, 3 and 4 in Figure 2.1), BoE's RTGS charges (charge no.6) and Payments UK's charges (charge no. 9) who charge BACS' participants directly. BACS charges its participants membership fees (charge no. 7); transaction fees (charges no. 1,3) which are equally split between payee and payer; Bureau approval scheme charges (charge no. 8) applicable for bureaux; and cost recovery charges for Payments UK services for supplying the right sort codes, billing updates and affiliates services (charge no. 9).

VAT is charged on services that are classified as value add payment services (e.g. CASS, Cash ISA transfer) on top of the core payment services (Direct Debit and Direct Credit) as per HMRC's taxation rules.

Settlement for Bacs and FPS moved from a collateralised loss-sharing agreement to full pre-funding of all participant liabilities with cash held in each participant's reserve account at the Bank of England (BoE). Bacs currently relies on its Members' approval and input for investment, who may or may not provide adequate coverage for new projects. The PSODG has noted that this may have an impact on research and innovation funding.

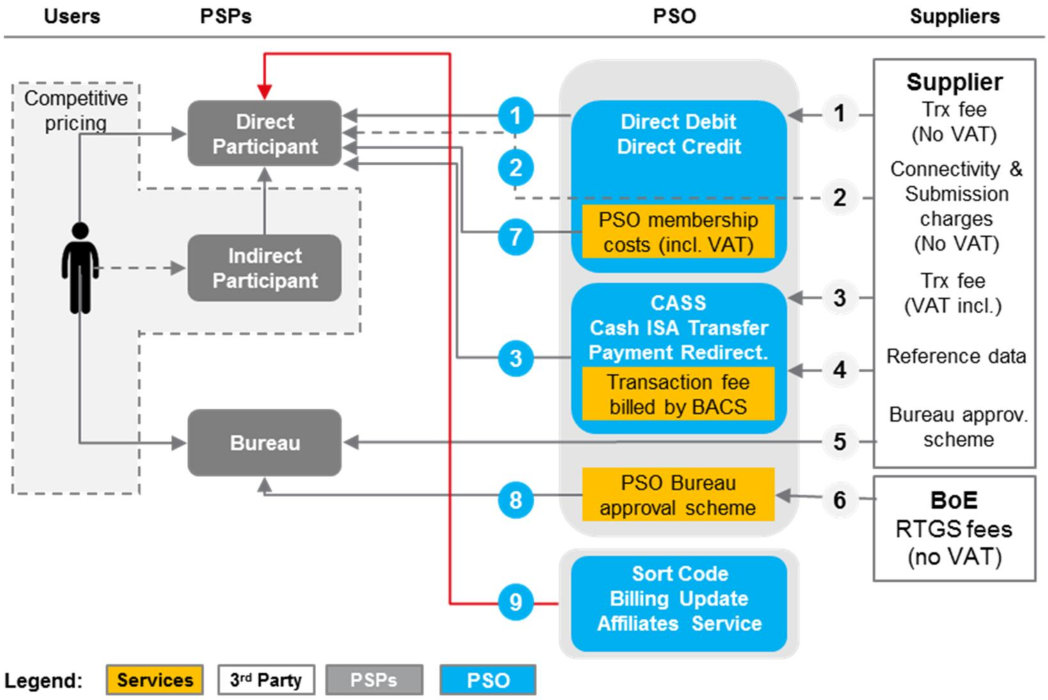

Figure 2.1. Bacs Financial Flows

2.1.2 Cheque & Credit Clearing Company (C&CCCL)

Cheque and Credit processes cheques and other paper instruments in England, Scotland and Wales, operated by the Cheque and Credit Clearing Company Ltd (C&CCCL). C&CCCL was founded in 1985 to co-ordinate more centrally a 300 year-old payment instrument, and is still relied upon by 2 million users each day who prefer to use cheques.

Processing a cheque in ICS requires a switch and a settlement participant. A switch participant is a C&CCCL accredited entity (e.g. bank, technology provider or even a sole trader) which processes cheques and is able to send the digital version of a cheque to ICS for processing and execution of payment. To operate as a settlement participant requires C&CCCL accreditation and an account at the Bank of England.

C&CCCL's objective with the setup of ICS is to lower the operating costs to process cheques and lower the barriers for smaller PSPs to offer cheques as a service to its clients. ICS' pricing mechanism allows participants to pay transaction fees by volume without any further membership and funding calls, thus lowering the barrier of entry. The transaction fee (single digit pence charge) charged by ICS is split equally between payer and payee. Other costs that the participants bear with the usage of ICS are connectivity charges via DTS. An alternative to DTS connectivity is a free of charge online portal provided as part of the ICS central infrastructure.

Unlike Bacs and FPS, which are both entities limited by guarantee, C&CCCL has a shareholder structure. Similarly to Bacs, the C&CCCL does not have a self-sufficient funding model and depends on its Members for investments. All C&CCCL services are part of the payment and no VAT.

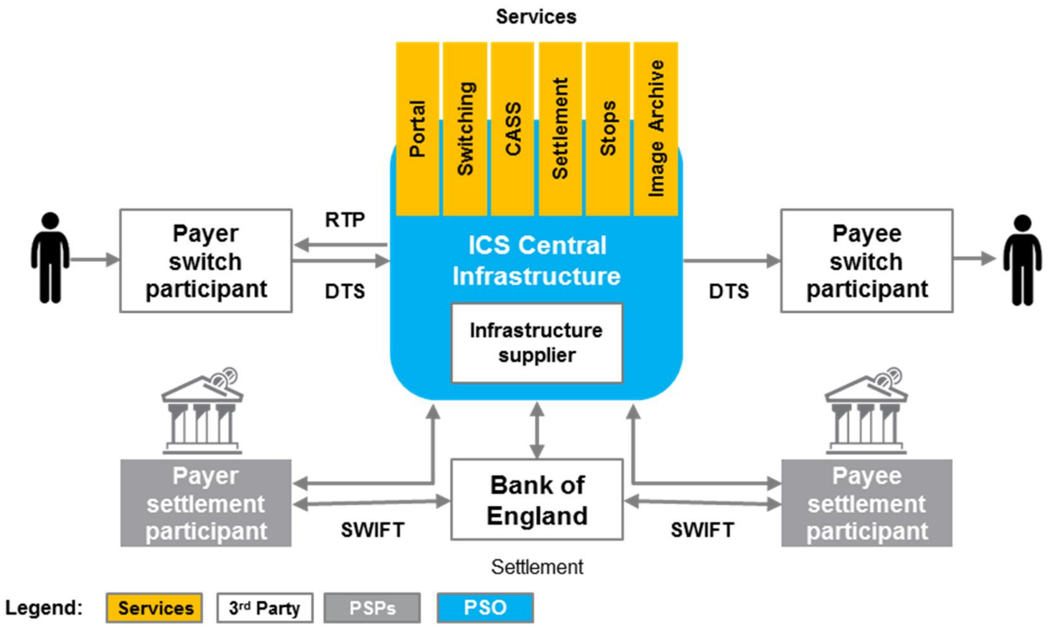

Figure 2.2. ICS Financial Flows

2.1.3 Faster Payments Scheme Limited (FPSL)

The Faster Payments service is the UK's 24x7, real-time retail payments provider, operated by Faster Payment Scheme Limited (FPSL). The Faster Payment service was launched in 2008 and became an independent PSO in 2012, having previously been a service line within CHAPS Co. It is recognised as a systemically important financial markets infrastructure (FMI) designated by HM Treasury, and thus falls under the oversight of the BoE. Virtually all mobile banking, internet banking and telephone banking initiated account to account payments in the UK are now processed through FPS as well as the bulk of standing order payments. Other than some merchant payments, FPS does not participate in card payments.

FPS currently procures core clearing and settlement services under a contract re-awarded in 2014, following an independent industry benchmarking process, expiring on the 30 June 2020.

FPSL operates on a cost recovery basis and aims to make no profit for distribution. FPS participants pay for all the costs of operating the system, whilst the amount paid by individual PSPs is directly proportional to their payment volumes processed in the system. FPSL has incorporated a research and innovation budget to allow the company to carry out projects with greater agility. This budget is funded from a mark up to the service transaction costs. The figure below outlines the current financial flows between FPS's suppliers, FPSL, PSPs and end-users.

FPSL provides core payment services (e.g. Standing Order Payments, Single Immediate Payments, Forward Dated Payments and Direct Corporate Access) to its participants which are exempt of VAT according to HMRC rules as payment services. The contracted central infrastructure provider for FPSL charges FPSL monthly core managed service fee and a network connectivity fee per PSP for their direct access. FPSL charges its participants fees for connectivity and transactions that cover all its outsourced technology costs, internal operating costs, and development, research and innovation costs.

FPSL charges its direct participants (and technical aggregators for some components) a transaction fee per volume of usage (charge no. 3 in figure 2.3) which is split in half between payer and payee, fixed connectivity charges per PSP (charge no. 4) and an FPSL overhead cost charge (charge no. 5) calculated based on volume usage per last half year per participant.

Optional services (e.g. PKI services) of FPSL are VAT applicable and the central infrastructure services provided by the PKI technology vendor are passed through UTSP (subsidiary of FPSL) to its participants that use the PKI service.

Charges between the aggregators, PSPs and end-users are competitive territory outside of FPSL's and this consultation's scope.

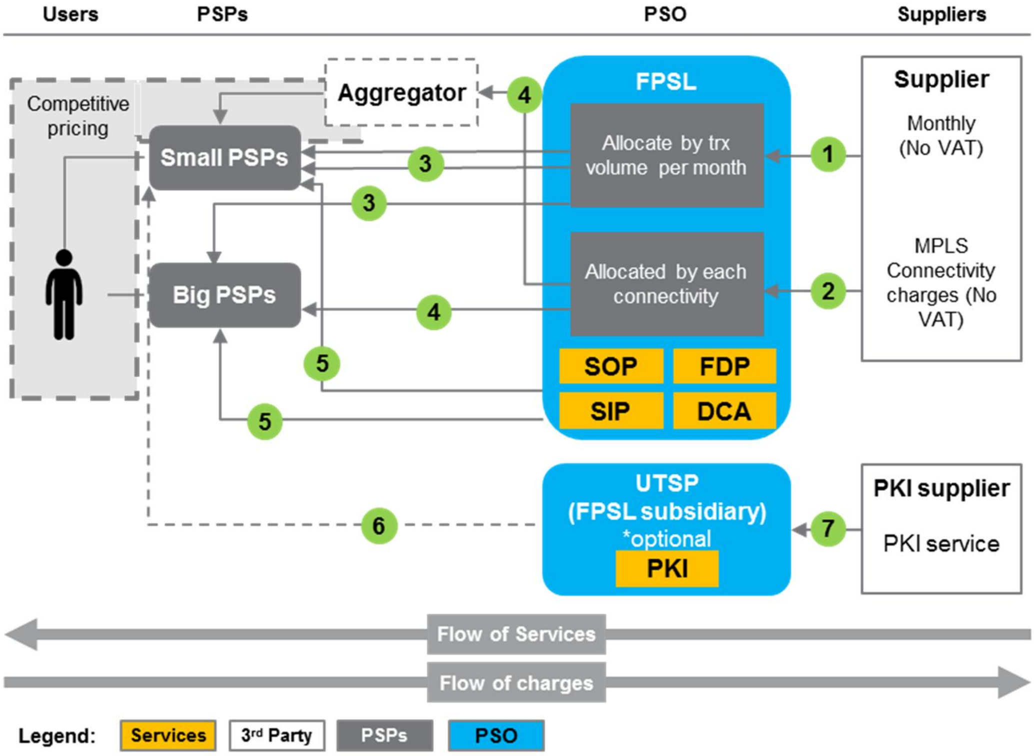

Figure 2.3. FPSL Financial Flows

2.2 'Market catalyst' Model Risks

Whilst we understand that the role of the NPSO as a 'market catalyst' brings a number of benefits, we have anticipated a number of risks, and in turn have proposed mitigations.

In the first instance, we understand that there may be risks associated with raising appropriate awareness of the standards set by the NPSO. The NPSO needs to ensure that it has used all possible channels and opportunities to raise awareness of the standards amongst potential market entrants to encourage their participation and contribution to setting those requirements. This would ensure that any standards issued by the NPSO can be met by the vendors, whilst greater competition can be provisioned by a wider set of vendors.

As a remedy to this issue, the NPSO should seek regular consultation with the payments community by way of the Advisory Councils recommended by the NPSO DG to ensure that standards meet the expectations of end-users and can be met by participants. Further, the NPSO should maintain direct communication channels with a wide network of vendors to facilitate the transmission of knowledge about industry standards.

Within the market stimulation category, we have also identified a number of risks. In particular, there is a risk that the NPSO may unknowingly restrict innovation by narrowing the specifications for specific solutions. This could create barriers to entry for other potential market entrants if preferential treatment has been granted to vendors in a 'sandbox' environment. The NPSO should be aware of the potential consequences of over-specifying standards and should ensure any such standards can apply to a wide pool of vendors, thereby lowering the barriers to entry for innovation in and outside of a 'sandbox' environment. The NPSO should ensure maximum participation by regular consultation on requirements with the wider FinTech community and payments industry.

2.3 Composition of the Advisory Group

The Forum currently consists of a Chair who is independent of the payments industry and 23 members appointed jointly by the PSR and the Forum Chair. This report was delivered by the following working group:

1. Faith Reynolds – Chair
2. Angelina Kouznetsova – EY
3. Craig Tillotson – FPSL
4. Daniel Morgan – Innovate Finance
5. Glyn Warren – HSBC
6. Jonathan Bye – RBS
7. Mike Chambers – BPSL
8. Nick Ogden – ClearBank
9. Stuart Cole – C&CCCL
10. Tim Piggott – Nationwide

2.4 Glossary

Account Information Service Provider (AISP): A payment service provider which provides account information services.

Aggregator: An organisation that provides one or more PSPs with technical access to one or more payment systems.

Application Programming Interface (API): A set of functions and procedures that allow the creation of applications which access the features or data of an operating system, application, or other service.

Auth Store: A data store that holds the payer's authentication code that is tied to a specific transaction.

Authorised payment: A payment where the customer has given their consent for the payment to be made – and this can include situations where the customer has been tricked into giving that consent.

Bacs Payment Schemes Ltd (BPSL): the operator of the Bacs payment system.

Bacs Payment Services (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).

Bank of England (BoE): The Bank of England provides the RTGS Service used for settlement in central bank money and is the prudential supervisor of some types of PSPs as well as payment systems with an objective of protecting and enhancing financial stability.

Bureaux: Over half of the organisations using the BPSL service make their payment submissions through one of our approved bureaux rather than submitting directly to BPSL. BPSL inspectors review the appropriateness of the bureaux to ensure they meet the standards set by the scheme.

CHAPS: The sterling same-day system that is used for high-value/wholesale payments as well as for other time-critical lower-value payments.

Cheque & Credit (C&C): Payment system providing net settlement of cheques and paper credits between financial institutions. It operates on a three-day cycle and settles net once a day in RTGS.

Cheque & Credit Clearing Ltd (C&CCCL): Operator of the Cheque & Credit Clearing payment scheme.

Clearing House Automation Payment System (CHAPS): A process in which two main functions may be performed: (a) the exchange of a payment instrument or relevant payment information between the payer's and the payee's financial institutions, and (b) the calculation of claims for settlement. The outcome of this process is a fully processed payment transaction from payer to payee, as well as a valid claim by the payee's institution during the clearing process.

Clearing Processing (attended): The processing of a payment submission where the customer is awaiting a 'real-time' response.

Clearing Processing (unattended): The coordination of clearing of unattended (bulk) payments and the receipt of payments where all payments in the file are separated in to single sending PSP to a single receiving PSP. Clearing processing expects that payments that are submitted for clearing and settlement are funded and authorised by the payer's PSP.

Competition and Markets Authority (CMA): The CMA is a non-ministerial department of the UK government that promotes competition for the benefit of consumers, both within and outside the UK.

Confirmation of Payee (CoP): it's a capability which will provide a payer assurance that the account to which they are making the payment belongs to the intended payee.

Consumer: A person who buys goods or services for their own use.

Corporate: Relating to a large company.

Crowdfunding: People invest through crowdfunding platforms to test new products, identify new investments and be at the forefront of innovation.

Current Account Switch Service (CASS): Free to use service that lets consumers and small businesses switch their current account from one participating bank or building society to another. It has been designed to be simple, reliable and stress-free and is backed by the Current Account Switch Guarantee.

Detriment: The state of being harmed or damaged.

Direct credit: A payment service for crediting a payee's payment account, with a payment transaction or series of payment transactions, from a payer's payment account, by the Payment Service Provider which holds the payer's payment account, based on an instruction given by the payer.

Direct debit (DD): A payment service for debiting a payer's payment account, where a payment transaction is initiated by the payee on the basis of the payer's consent given to the payee, to the payee's PSP or to the payer's own PSP.

End-user: Person or organisation that actually uses a product.

End-User Needs (EUN): The functionality of payments infrastructure required for consumers, businesses and Government identified by the Strategy. These are listed as greater control, greater assurance, enhanced data, as well as a reduction in financial crime.

Faster Payments Service (FPS): Faster Payments provides near-real time payments on a 24/7 basis, and is used for standing orders, internet and telephone banking payments. Faster Payments settles net, three times every business day in RTGS.

Faster Payments Scheme Limited (FPSL): Operator of FPS payment system.

Financial Conduct Authority (FCA): A regulatory body for financial services industry in the UK. Its role includes protecting consumers, keeping the industry stable, and promoting healthy competition between financial service providers.

FinTech: Fintech is a portmanteau of Financial Technology that describes an emerging financial services sector in the 21st century and includes any technological innovation in the financial sector, including innovation in financial literacy and education, retail banking, investment and even crypto-currencies like bitcoin.

High Yield debt: Also referred to as junk bonds, High Yield debt is a debt instrument which carries a higher risk of default and typically pay a higher yields.

Image Clearing System (ICS): The proposed new method revolutionising how cheques are cleared in the UK. The cheques will be cleared using a digital image of the cheque rather than via the current paper-based clearing system where the actual paper cheque is transported around the country to be cleared.

Intellectual Property (IP): Intangible property that is the result of creativity, such as patents, copyrights, etc.

ISO 20022: An international standard for the development of financial messages which ICS will be the first UK payment scheme to adopt.

JavaScript Object Notation (JSON): A lightweight data-interchange format that is easy for humans to read and machines to parse and generate.

Joint Venture (JV): Is a business entity created by two or more parties. Parties tend to provide capital, resources, know-how and IP into JV vehicles.

Market participant: A Participant is an entity that has a payments service relationship with the NPSO. It can include settlement Participants, direct Participants, indirect Participants, service Participants, Third Party Service Providers and aggregators.

New Payments Architecture (NPA): The NPA Design Hub has been established by the Forum to progress the detailed design of the New Payments Architecture ahead of the handover to the New Payment System Operator (NPSO) by the end of 2017.

New Payment System Operator (NPSO): The new PSO which will be made up of BPSL, C&CCCL and FPSL.

Payee: A person who is the intended recipient of transferred funds.

Payer: A person who holds a payment account and allows instructions to be given to transfer funds from that payment account, or who gives instructions to transfer funds.

Paym: Paym is run by the Mobile Payments Service Company Limited (MPSCo), a company limited by guarantee. The Paym service is offered directly to customers by Payment Service Providers that are participants in MPSCo.

Payment gateway: is a merchant service provided by an e-commerce application service provider that authorizes credit card or direct payments processing for e-businesses, online retailers, bricks and clicks, or traditional brick and mortar.

Payment Initiation Service Provider (PISP): A Payment Service Provider which provides Payment Initiation Services.

Payment Service Provider (PSP): A Payment Service Providers can be any of the following when carrying out payment services; authorised payment institutions, small payment institutions, registered account information service providers, EEA authorised payment institutions, EEA registered account information service providers, electronic money institutions, credit institutions, the Post Office Limited, the Bank of England, the European Central Bank, and the national central banks of EEA States (other than when acting in their capacity as a monetary authority or carrying out other functions of a public nature), government departments and local authorities (other than when carrying out public functions) and agents of Payment Service Providers and excluded providers.

Payment Service User (PSU): A person when making use of a payment service in the capacity of payer, payee, or both.

Payment System Operator (PSO): A company that operates one or more schemes. All PSOs are regulated by the PSR and additionally certain PSOs are supervised by the Bank of England.

Payment Services Directive 2 (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.

Payments Strategy Forum (PSF): A forum made up of payment industry and end-user representatives with the aim to develop a strategy for payment systems in the United Kingdom. The PSR, the Financial Conduct Authority and the Bank of England attend the Forum as observers.

Payment System Operator Delivery Group (PSO DG): PSO DG was set up by the BoE and the PSR as a response to the PSF proposed consolidation of the three retail PSOs; Bacs, C&CCC and FPS.

Payment Systems Regulator (PSR): The economic regulator of payment systems in the United Kingdom. The PSR aims to promote competition, innovation and interests of end-users of payment systems.

Private Equity fund (PE): Is a general partnership formed with the intent to invest equity into companies.

Real-Time Gross Settlement (RTGS): The accounting arrangements established for the settlement in real-time of sterling payments across settlement accounts maintained in the RTGS system.

Request to Pay (RtP): A flexible payment and bill management service concept that offers payers more control over bill payments that is initiated by the payee.

Research and Innovation (R&I): Budget defined by the PSO DG which stands for research and development of new solutions.

Sandbox: The regulatory sandbox allows businesses to test innovative products, services, business models and delivery mechanisms in the real market, with real consumers.

Service Level Agreement (SLA): Is a contractual agreement between a service provider and end-user that defines the conditions and level of service expected from the service provider.

Settlement: The process by which a valid claim from the payee's institution is discharged by means of a payment from the payer's institution to the payee's institution. Specifically, the steps in the settlement process are: (a) collection and integrity check of the claims to be settled, (b) ensuring the availability of funds for settlement, (c) settling the claims between the financial institutions, and (d) logging and communication of settlement to the parties concerned.

Simplified Payments Platform (SPP): Relates to only the clearing and settlement functions within the NPA.

Single Euro Payments Area (SEPA): SEPA is a payment-integration initiative of the European Union with the objective to simplify bank transfers denominated in Euro. As of 2015, SEPA consists of the 28 member states of the European Union, the four member states of the European Free Trade Association (Iceland, Liechtenstein, Norway and Switzerland), Monaco and San Marino. The project's aim is to improve the efficiency of cross-border payments and turn the fragmented national markets for euro payments into a single domestic one.

Single Immediate Payment (SIP): A payment set up to be paid straight-away.

Small and Medium sized Enterprises (SMEs): Any business with fewer than 250 employees

Standing Order (SO): A payment for a fixed amount to be paid regularly to the same beneficiary.

Standing Order Payments (SOP): an instruction to a bank by an account holder to make regular fixed payments to a particular person or organisation.

Third Party Service Provider (TPSP): TPSPs provide services across the payments value chain to facilitate the processing, acceptance, management and/or transmission of payments, as well as provision of information (e.g. technology providers, telecommunication providers, payment gateways/platforms, point of sale terminal providers, fraud management services).

Unitrache debt: Is a debt instrument that combines senior and subordinated debt in one instrument.

Vendor: A technology provider of payment services. Those that offer clearing and settlement services are also referred to as infrastructure providers.

Venture capital fund (VC): Is a form of general partnership which invests into early stage corporations with a higher risk profile.

Which?: Brand name used by Consumer' Association, UK's registered charity, to promote informed consumer choice in the purchase of products and service.