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CAPTURE

BIGTECH AND DIGITAL PAYMENT GIANTS DOMINATE THE COMMITTEES EVALUATING THE REPLACEMENT OF PHYSICAL CASH WITH 'BRITCOIN' – A UK 'CENTRAL BANK DIGITAL CURRENCY'

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BOB LYDDON M.A. (HISTORY) THE OPEN UNIVERSITY

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Bob Lyddon is an experienced management consultant now privately and formerly with PwC.

Recent engagements include:

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- Online courses for the accountancy profession on Cash Management, Liquidity Management, Treasury Key Performance Indicators and Anti-Money Laundering/Countering the Financing of Terrorism (AML/CFT)
- Advising Swedish and UK payment institutions on their payments and treasury operations and AML/CFT duties
- Chairing the trade body for the UK's Payment Institutions and lobbying on the issue of their having been cut adrift by the UK's banks
- Expert witness cases on invoice fraud and on international 'cover payments' using the SWIFT MT103 and MT202 COV messages
- Advising a worldwide co-operative for interbank financial telecommunication on opportunities and threats emanating from the establishment of the Payment Systems Regulator, the Payment Strategy Forum and New Payments Architecture

Bob has been a major contributor to public debate about the financing mechanisms of the EU and Eurozone. In 2021 The Bruges Group issued Bob's paper entitled 'The ECB's Pandemic Emergency Purchase Programme: the undermining of the Eurozone as a free financial market, the epitome of the failure of the Euro project, and a coup d'état by the European Central Bank'. In 2020 Politeia published the book 'Managing Euro Risk: Saving Investors from Systemic Risk', of which Lyddon was co-author.

Between 2003 and 2016 Bob ran the central secretariat of the IBOS international banking alliance - www.ibosbanks.com – and expanded it to 70% of global GDP.

With PwC Bob managed several programmes at the time of the initial introduction of the Euro, and prior to that, in a career in international banking spanning 17 years, Bob designed the 'Connector' cash management network – www.connectorbanks.com - for BankBoston, and arranged numerous syndicated loans and derivatives transactions for Chemical Bank/Manufacturers Hanover and for Lloyds Bank International.

Bob Lyddon holds a Bachelor of Arts (First Class) in Modern Languages from the University of Cambridge, gained in 1980, and Master of Arts (Distinction) in History from the Open University, gained in 2022, with dissertation subject 'King's Lynn and the new police, 1830-45'.

Acknowledgement – Gordon Kerr

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Contexting this paper – creeping digitization of UK payments

UK payments have, over the last ten years, become increasingly digital and become the domain of a technocratic elite, working in tandem with Big Tech and the major payment card brands. It is open to debate whether the degree of switchover has been based on genuine demand from UK consumers and businesses, or whether it has been imposed by the UK payments industry because that course best suits the interests of itself, Big Tech and the major payment card brands. Can one even see the join between these groupings? At the very least it can be said that the UK payments industry has pursued a path which has progressively eroded the viability of cheques and cash whilst concentrating focus and investment on digital payment means.

This has come with several meaningful detriments:

- A shift of risk onto the payer, compared to a cheque operation, if a Payment Service Provider pays the money to someone different from the payee named by the payer, a detriment known as Authorised Push Payment Fraud;
- A vast increase in the fees paid by merchants (i.e. sellers of goods and services) when they accept payment by card, due mainly to the increased usage of cards. The fees are the difference between the sticker price of the goods/services and the amount eventually paid to the merchant, and this difference is referred to as the Deduction-from-face-value;
- Difficulties in accessing physical cash through ATMs either at all or without a significant fee, which is known as Access to Cash.

This paper is about a replacement for physical cash, called a 'Central Bank Digital Currency'. It is a digital payment means, as its name infers, and is a further step along the road to full digitisation. As will be demonstrated it is being debated and designed by the same digital payments industry that has been responsible for the new detriments.

The detriments can be eradicated or strongly mitigated, but it is not in the interests of the digital payments industry to do so: it would increase their risks, reduce their revenues and increase their costs. These revenues, risks and costs are the reverse side of the coin of the penalties of digitization for wider society.

The point about this 'Central Bank Digital Currency' is that the digital payments industry should not be permitted to railroad this new payment means onto wider society before the detriments caused by digital payments thus far have been eradicated or strongly mitigated.

The Bank of England's 'Central Bank Digital Currency' project and two associated ones need to be put on ice pending both that and a review of whether the direction-of-travel is the right one for wider society. It is a shame that the Payment Systems Regulator, which was established in order to provide this assurance, appears to have been so thoroughly captured by the digital payments industry.

The two other projects to be put on ice are:

1. New Payments Architecture: the adoption for UK digital retail payments of the data standard first implemented for the Single Euro Payments Area called ISO20022 XML;
2. Open Banking: the facilitation by digital means of the comparison of the terms and conditions of core banking services offered by suppliers, of customers' switching between suppliers, and of customers' operating the services of different suppliers under the same electronic banking service.

It may or may not be too late to do the same with the Bank of England's so-called RTGS Renewal project, which is its upgrade of the CHAPS system – the UK's Real-Time Gross Settlement payment system.[1]

The current CHAPS system uses the SWIFT MT message format which dates back to the late 1970s, and the change has to some extent been forced on the Bank of England by SWIFT's plan to retire the MT message format in favour of ISO20022 XML during a migration period of 2-3 years.[2] There is no compulsion on the Bank of England to make its move at the start of this migration window, however. The European authorities were planning to do this in November 2022 by attempting an all-in-one-go Big Bang in November 2022 by migrating a series of Euro payment systems onto one new one: the TARGET2 system (their equivalent to CHAPS), the TARGET2 securities system (their equivalent to CREST), and the TIPS (TARGET Instant Payment System and their equivalent to Faster Payments).

The go-live has now been postponed until March 2023.[3] It has also been reported in the German press that the SWIFT migration window may not open until then.[4]

At the very least the Bank of England should engage directly with central banks in several Eurozone countries to ascertain the reasons for the delay, and documenting, if they can, why the UK should still go ahead and adopt ISO20022 XML for RTGS Renewal and indeed for New Payments Architecture. We do not need yet another severe detriment caused by the move towards digital payments.

As it is, the digital payments train needs to be shunted into a siding for significant repairs, and to ensure that its proposed future timetable goes to the places and at the times that suit wider society, and not just those aboard the train.

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[1] Real-Time Gross Settlement payment systems are normally those run by central banks to handle payments that are of high value and/or are urgent and/or are characterised as 'systemically-important', a phrase that usually means the payment is being made or received either by the central bank itself or a government entity that the central bank is acting for. These systems are also normally the ones through which cross-border payments are cleared and settled, because the respective payment messages are transmitted over the SWIFT network.

[2] International Standards Organization 20022 XML: a book of messages with layout and options for content, expressed in Extensible Markup Language (XML) and contemplated for global usage for both domestic and cross-border payments. First used for the Single Euro Payments Area schemes in 2008, and imposed for domestic and cross-border payments in euro within the Single Euro Payments Area by the SEPA Migration End Date Regulation 260/2012 of 14 March 2012

[3] https://www.finextra.com/newsarticle/41168/eurosystem-delays-t2-wholesale-payment-system-launch accessed on 21 October 2022

[4] https://finanz-szene.de/payments/nach-target2-migration-steht-auch-swift-umstellung-auf-der-kippe/ accessed on 21 October 2022 – no translation available. Title translates as 'Now, after TARGET2, SWIFT's own migration is up in the air'

Introduction

The specific purpose of this piece of work is to investigate the vested interests in play within the 'Britcoin' Central Bank Digital Currency project, as a token for the government's wider enthusiasm for all things to do with 'Fintech' (Financial technology - a euphemism for digital financial services).

The enthusiasm emanated from HM Treasury while Rishi Sunak was Chancellor of the Exchequer; he is now Prime Minister. Mr Sunak expressly declared that the UK wanted to have the jobs and investment associated with crypto assets.

A digital currency is a form of cryptocurrency, and the introduction of a Central Bank Digital Currency would be a watershed for wider society.

In 2020 the Bank of England formed two committees of supposedly independent experts in payments and all things financially digital with a mandate to investigate the benefits, drawbacks and feasibility of replacing physical cash - £50, £20, £10 and £5 notes, and coins ranging in value from £2 to 1p – with a digital pound which in 2022 was officially named 'Britcoin'. The process is now termed the 'Britcoin Project' because the outcome is already obvious. There will be no careful balancing of benefits and drawbacks, but a rapid progress towards the replacement of physical cash with digital cash.

This paper focuses on the network of connections within the project, between the project and the UK's Payment Systems Regulator Panel, and from the project to the organizations participating in it and the connections those organizations have at Board of Directors level.

It was considered that there might be a nexus of control in alumni of Stanford University, that being Silicon Valley's university, and the alma mater of many figures within the technology and cryptocurrency worlds. Stanford does feature, but then so do a number of other elite US institutions.

The power and representation of the vested interests is clear enough on the surface, and at the next level of detail, but there are indications that the degree of control may be even greater than this and held even more narrowly.

It should not be acceptable that a project of this importance be opined upon by such a narrow section of opinion, with a majority of participants being a priori in favour of going ahead.

The project should be stopped in its tracks and, if it reconstituted at all, be re-launched under direct Parliamentary control, with a louder voice for the UK generally, and with voices for a wider range of interest groups in the UK and not predominantly from the proponents of digital payments, who are conflicted and bound to support Britcoin. The voices for interest groups in the UK need also to come directly from the interest groups, and not be intermediated by pseudo-representative bodies and individuals.

The investigation of Britcoin has inevitably involved investigation of the severe detriments caused by the adoption of digital payments in the UK thus far. It should go without saying that these detriments must be eradicated or strongly mitigated before the digital payments industry is permitted to subject wider society to a further Great Leap Forwards.

Executive Summary

The material considered so far paints a disquieting picture. Important decisions affecting all citizens and businesses in the UK will be made on the basis of what happens in the Britcoin project, and its make-up and way-of-working fall far short of the degree of seriousness and impartiality required for an undertaking of such import.

Vested interests

The Britcoin project is shot through with vested interests. The circle of people and organizations involved is much wider than Stanford alumni alone, and it is clearly some kind of network, but one whose nature of operation is not fully transparent on the surface: it needs to be tracked back through three or four more layers to discover what is really going on and who is pulling the strings. The people and organizations involved in it show considerable overlap with the global elite. There are palpable conflicts of interest.

On first blush we seem to be looking at a sizeable 'concert party', a significant group of powerful and monied interests all singing very loudly from the same hymn sheet. The resulting song is liable to result in increased wealth and power for the members of the 'concert party', at an equal cost to the citizenry of the UK.

The Economic Committee of the House of Lords expressed deep scepticism about the purpose and benefits of the Britcoin project in its January 2022 study entitled 'Central bank digital currencies: a solution in search of a problem?'[5] Nevertheless the project continued on its settled track, raising the suspicion that it has support at the highest levels in government and that the decision in principle to go ahead has already been taken.

Unbalanced and conflicted committees

Two 'forums' have been created to study this Central Bank Digital Currency. There is an 'Engagement Forum' and a 'Technology Forum'. There is a general over-representation of technology companies. There are many figures familiar from various other payment industry forums. The UK is less strongly represented than it should be compared to the US. Many of the people and organizations are financially conflicted.

Inadequate due diligence at the outset

The make-up of the forums betokens inadequate due diligence having been carried out before the forums were established.

It is a moot point whether ongoing due diligence is being carried out, since there have been considerable changes of circumstance affecting a number of forum members that ought to disbar them from participation.

Inadequate evidence base

Due note must be taken of the results of studies of other central banks, and not just where they are supportive. A process is needed to ensure inoculation against circular evidence.

[5] https://committees.parliament.uk/work/1504/central-bank-digital-currencies/publications/ accessed on 25 April 2022

Actions

The Bank of England's 'Central Bank Digital Currency' project needs to be put on ice.

Two associated projects need also to be put on ice:

1. New Payments Architecture: the adoption for UK digital retail payments of the data standard first implemented for the Single Euro Payments Area, called ISO20022 XML;
2. Open Banking: the facilitation by digital means of the comparison of the terms and conditions of core banking services offered by suppliers, of customers' switching between suppliers, and of customers' operating the services of different suppliers under the same electronic banking service.

An urgent review needs to take place on the Eurozone's TARGET2 migration project, to ascertain the difficulties encountered, and to prove that adoption of ISO20022 XML is the right way for forward for CHAPS, the UK's Real-Time Gross Settlement payment system.

A review needs to take place under the auspices of Parliament as to whether the cluster of projects going under the heading of the digitisation of payments represents the correct direction-of-travel for wider society. This review must also take into consideration the governance issues around the 'Central Bank Digital Currency' project since they are illustrative of problems that run through the governance of UK payments as a whole.

This review may be a 1-2 year process. In the meantime the three large detriments caused by the introduction of digital payments in the UK so far need to be eradicated or strongly mitigated, an outcome that cannot be hoped for from the supposed 'solutions' currently being proposed or even implemented. These detriments are:

1. Authorised Push Payments Fraud
2. Inflationary Deductions-from-face-value
3. Access to Cash

Proposals as to how each can be eradicated or strongly mitigated are set out in the Appendices.

Governance

General

The Central Bank Digital Currency project has several governance malfunctions. These will be familiar to anyone who has tracked the UK payments industry over the last ten years, and it would not be concerning if there was no impact on wider society.

However, Authorised Push Payment Fraud, Deductions-from-face-value and Access to Cash have considerable impacts on wider society, and the complete abolition of physical cash would take this a stage further.

It is high time that the standards of governance in the UK payments industry were raised to a proper level, and it is only a shame that the Payment Systems Regulator, established over eight years ago, has failed to ensure this.

Unbalanced and conflicted committees

Two 'forums' have been created to study this Central Bank Digital Currency. This task has been delegated to the Bank of England but there cannot be any doubt that the mandate emanated from HM Treasury, belying any concept of Bank of England independence. There is an 'Engagement Forum' and a 'Technology Forum'. The latter is composed entirely of technology representatives. The former has technology representatives, banks and a number of figures familiar from various payment industry forums.

The CBDC Forums are a form of 'hanging jury', constituted in order to come to the right conclusion: to support the already-taken decision to go ahead, backfill the evidence, and to set out the how and when. Legislation to enable this outcome was in the most recent Queen's Speech: this was premature if the forums were to decide the principle of the matter and if the promised public consultation was to have meaning.

It is unacceptable that such an important matter be decided by a group of people and organizations so financially conflicted. A majority of their organizations stand to draw considerable financial benefit from Britcoin's introduction.

Inadequate due diligence

Clearly there was too little due diligence carried out before the forums were established. There is multiple representation in particular for Visa and Mastercard. Big Tech is over-represented. The UK is represented by people and organizations and in such a manner as to reduce the impact of the UK's voice. The forums need to be stopped, and their existence and mandate re-debated.

If the work is ever re-started, a preponderance of UK interest needs to be achieved, and a balance of the strength of the organizations and people. In particular the credentials of participants need to be rigorously checked where (i) the participant has multiple, part-time appointments (referred to below as a 'portfolio career'); (ii) the participant claims to speak for a constituency of end-users without there being clear and obvious evidence that the participant speaks with the specific endorsement of that constituency for their role in the body and the stance they intend to take in it.

It is a moot point whether ongoing due diligence is being carried out, since there have been considerable changes of circumstance affecting several members that ought to disbar them from participation. When the forums are re-constituted in whatever form, if indeed they are re-constituted, an ongoing due diligence process needs to be built around them.

Clean break

Any new body will need to be given time to review what had been done by the predecessor and to agree it, alter it, commission further work or whatever, but not so that the work of the predecessor is rubber-stamped.

Transparency

For a matter of this importance, a much higher level of due diligence and disclosure is required on a number of transparency-related issues. This should be done retrospectively regarding the two current forums, and result in a template to be applied to future forums and across the UK payments industry:

- Comprehensive list of lobbying activities by, for and on behalf of all the people and organizations who have a seat on the CBDC Forums in the 24 months prior to the establishment of the Forums, and personal and career biographies of all persons identified;
- Documentation of the process of appointments to the Forums: who decided, how, when and on what criteria, from the initial agreement that there would be a CBDC project until the first meetings;
- Addition of all the people and organizations identified in the work above to the lists already contained in this document;
- Research building on that listed above to plot out the many connections in this 'market space' between super-rich private individuals, family offices, venture capital funds, hedge funds, academic institutions, not-for-profit institutes, established Big Tech companies, start-ups and so on. This paper barely scratches the surface of this issue.

To the last point and in order to bottom it out, a research project similar to this one at the University of Lancaster is needed:

https://www.lancaster.ac.uk/news/lancaster-university-historians-will-lead-1-million-project-on-slave-trade-impact

In this project it is 6,500 investors that the project plans to plot into a network. The numbers could easily be the same here, given that it is a multi-layered network with 15-20 individuals typically involved at each market actor.

Consideration of evidence from other central banks

All parallel investigations by other central banks into CBDC, especially where they are negative, must be noted, recorded and listed.

The Swedish Riksbank's e-krona project has uncovered a major practical issue with the underlying technology[6]: CBDC cannot, in effect, give change. It takes far too long for the merchant's wallet to select what tokens to transfer back to the buyer's wallet when no combination of tokens in the buyer's wallet adds up to the exact amount of the sale. This is attributable to the technology upon which CBDC is based, called Distributed Ledger Technology.

[6] https://www.riksbank.se/en-gb/press-and-published/notices-and-press-releases/notices/2022/new-report-from-the-e-krona-pilot-project/ accessed on 29 April 2022

If this is the case, it puts into question CBDC's ability to support a key value point of physical cash, known as fungibility.[7] This means that any amount of cash, in whatever combination of notes and coins it is held, can instantly be combined with existing holdings of notes and coins, and then used in aggregate, in part, in any combination, so as to bring up an exact amount or else an overpayment that results in change, which in turn is fungible with what is retained.

The Hong Kong Monetary Authority's work has thrown up major objections to CBDC:[8]

- As regards resilience: 'a widespread prevalence of e-HKD at the expense of physical cash may actually render the payment system more vulnerable to cyberattacks and power/network outages';
- As regards replicating the anonymity feature of physical cash: 'full anonymity, while technically feasible, is not a plausible option due to anti-money laundering/counter-financing of terrorism (AML/ CFT) requirements';
- As regards the arguments put in favour of CBDC that usage of physical cash is in decline and that CBDC would support financial inclusion: 'issues of declining cash use and financial inclusion do not serve as compelling rationales to introduce e-HKD'.

In short, parallel studies show CBDC cannot give change, it may not deliver fungibility, it cannot be constructed so as to replicate the feature of anonymity, it is irrelevant to financial inclusion, and its implementation would make the payments infrastructure more open to cyberattacks and power cuts. That ought to have been sufficient to bring the Britcoin project to a close.

Surfacing academic and scientific evidence

If the forums recommence, there needs to be a further effort mounted to discover sources that exist in the academic or scientific spheres on the subject-in-hand, much as one would conduct a literature review at the start of a PhD. Any new forum, assuming there is one, must consider all sources, transparently decide which are relevant and not relevant, and indicate what weight is to be given to each piece of relevant evidence.

Inoculation against spurious and circular evidence

Finally the evidence used by these and other similar forums must be subjected to a technique to counter the usage of suspect 'evidence', and to avoid the possibility that committees of enthusiasts are convened who are then allowed to make a distorted selection of evidence so as to endorse the course of action they want, and which has been the predestined outcome of the process.

The inoculation must be applied towards 'evidence' that is presented as independent, third-party, and factual, but where it is subject to one or more of the following shortcomings:

- It emanates from another organization within the 'concert party';
- There is interplay between the user of the 'evidence' and those who contributed to its creation: the Bank of England, for example, participates actively in the machinations of all of the Bank for International Settlements, the Financial Stability Board and the Committee for Payment Market Infrastructures, making its use of any documents from these sources suspect in terms of their independence;

[7] https://www.investopedia.com/terms/f/fungibility.asp accessed on 19 May 2022
[8] https://www.hkma.gov.hk/eng/news-and-media/press-releases/2022/04/20220427-3/ accessed on 29 April 2022

- A piece of 'evidence' quotes secondary sources that are opinion pieces, possibly to the extent that the opinion pieces represent the majority of the content;[9]
- Pieces of 'evidence' quote one another as their corroboration;
- Actors in the processes discussed in this paper use or cite sources without at the same time disclosing their own involvement or that of their organization in the commissioning or creation of the source.

Summary

Matters as important as the introduction of a 'Central bank digital currency' need to be subjected to governance standards far higher than prevail generally in the UK payments industry.[10] The governance of this project is typical of others, and both need to be changed.

[9] As an example, four of the seven chapters in Finextra's 'The Future of Digital Banking in the UK' are an 'expert view' from a market actor in digital banking. The report contains no data tables, footnotes, or bibliography: https://www.finextra.com/researcharticle/250/the-future-of-digital-banking-in-the-uk-2022

[10] See below for how this has occurred within the Payment Systems Regulator's 'Digital Payments Initiative'

Methodology of this paper

The methodology used in this paper to investigate the main question was to look at the membership of the two committees, or Forums, that the Bank of England has established to push forward a UK Central Bank Digital Currency or 'CBDC'. This project has come to be referred to as Britcoin, and Britcoin would be some kind of digital money akin to Bitcoin but managed by the Bank of England, and made available through various intermediaries to the general public.

It has implausibly been denied that Britcoin is meant to replace physical cash.

It is not yet clear whether Britcoin will be 'programmable', which could include that a merchant accepting Britcoin as payment for goods and services would not receive 100% of the sticker price, but would receive that less a deduction-from-face-value as occurs on Visa, Mastercard and PayPal transactions now. The intermediaries between the general public and the Bank of England would presumably be responsible for making and distributing these deductions around the CBDC ecosystem, much as happens in the Visa, Mastercard and PayPal ecosystem now.

Indeed, it cannot be beyond the bounds of possibility that this is exactly the outcome that the members of the Visa, Mastercard and PayPal ecosystems wish to steer the Britcoin project towards, so that they can benefit from Deductions-from-face-value on transactions using digital cash where transactions in physical cash are exempt from them.

At any rate Visa, Mastercard and PayPal, and actors within their ecosystems, as well as Big Tech names, feature prominently in the project: a further area of research would be to see what lobbying took place to get the project on the agenda in the first place, and then for the participants to get their seats at the table.

Other material is included where it realistically bears on the issues in hand:

- How the network in Big Tech, start-ups and FinTech operates
- The nature of the 'FinTech' industry
- The interconnections between the CBDC Forums looking at Britcoin and the Payment Systems Regulator's Panel and its sub-committee called the Digital Payment Initiative, and the tie-ins between these bodies and the major card brands (Visa and Mastercard)
- Discussion of the existing detriments caused by the digitization of payments

The summary biographies of the members of the PSR Panel and the PSR's Digital Payments Initiative are drawn from the PSR website, LinkedIn, background research and by giving the individual the chance of correcting the material, a process undertaken through the offices of the PSR or directly.

The skeleton biographies of members of Boards of Directors used the respective company's website as its anchor point, in which the directors' biographies are normally shown in a section entitled 'Governance' or similar. These were cross-checked with LinkedIn where the individual had a profile, or with an analogous section of the website of one of the other organisations that the individual is involved with. Appointments are mentioned where they appear meaningful, which in the main means a reasonable length of tenure.

How the network in Big Tech, start-ups and FinTech operates

It may be helpful to readers to have some high-level view on how the network around start-up tech companies operates, as it also applies in the sub-sectors of FinTech, cryptoassets and NFTs.

There is a network and a language around the funding of start-ups, and it is based on considerations of risk and return. The principals supplying the money may be borrowing it (hedge fund), or they may be investing family money (family office), or they may be a fund owned by hedge funds and family offices (venture capital fund). These terms may be used interchangeably.

Syndication of risk and obscurity of ultimate owners

The important thing is that everyone wants a piece of the action in a marketplace where no-one can know whether a particular start-up will fail or become the next Google. A rule-of-thumb is that, out of 100 start-ups, 95 will fail with no return to investors, 3 may do quite well, 1 will do very well and the last one is the next Google. How do you avoid always betting on one of the 95 and losing your stake every single time? The answer is to syndicate the risk through an extensive, pyramid-like network, with the result that dozens or even hundreds of market actors are ultimately involved in every deal.

In such an extensive and multi-layered network it is very difficult for an outsider to know exactly who is ultimately supplying the money, and therefore who the ultimate beneficial owner of any enterprise is.

Revealing networks using techniques applied in Anti-Money Laundering

'Layering' is a phenomenon identified in Anti-Money Laundering (AML) regulations where an ultimate beneficial owner wishes to disguise their ownership of an asset, or to evade tax. These techniques feature in the work of the International Consortium of Investigative Journalists, for example on the Panama Papers.[11] Secrecy locations, and offshore locations with minimal or low tax, feature prominently: Cayman Islands, British Virgin Islands, Channel Islands, Curacao, Isle of Man and so on.

Ostensibly similar arrangements pertain to the ownership structures of start-ups and tech companies generally, which in part explains why the Boards of Directors listed later in this paper contain so many representatives from the funds and intermediaries involved.

The ownership structures of the entities associated with members of the CBDC Forums should be investigated, but down to a far lower ownership percentage than is applied in Anti-Money Laundering regulations. Establishing ultimate beneficial ownership is now part of the onboarding process for banks (and other 'obliged entities') under these regulations when a relationship is commenced. Unless the relationship presents certain triggers, the bank only has to identify an ultimate beneficial owner (a natural person rather than a non-natural legal person such as a company, trust or partnership) when the individual owns or controls over 25% of the enterprise. The threshold falls to 10% if certain triggers are presented that classify the relationship as of higher risk and requiring of 'Enhanced Due Diligence'. The tests are not applied to stock exchange-listed companies unless only a minority of the company's stock is listed.

[11] https://www.icij.org/investigations/panama-papers/ accessed on 25 April 2022

Convergence or divergence of ultimate ownership

However, in the tech and start-up business it should be rare – for the reasons given above – for any one investor to take more than a direct 25% share. Even where, at first blush, ownership appears to be diverse such as where 25 investing entities each hold 4%, it is necessary to go further and see whether these investing entities represent an even more diverse base of ultimate beneficial owners, or whether the ownership converges at the next or next-but-one level, possibly revealing a single ultimate beneficial owner owning or controlling in excess of 10%, or even 25%.

In relation to the CBDC Forum the threshold needs to be set at US$1, so as to catch every instance of ownership at each level, and thereby ensure that the entire network is revealed. This is needed to expose opaque arrangements.

The scope must include all intermediary and ultimate owners that are non-natural legal persons, and including where the ultimate owner is a stock-exchange listed company with diverse ownership itself: the exemption allowed under AML regulations where an ultimate beneficial owner is a stock-exchange listed company cannot be applied to this process.

Revelation of networks via analysis of funding rounds

The network will also be revealed through the parties involved in the road of an enterprise from start-up to a stock-exchange listed company. This road runs through several so-called 'funding rounds'. At each round a smaller percentage of the enterprise is sold off to investors but at a higher price per share. This higher price multiplied by the number of the enterprise's shares in issue supplies the enterprise's notional valuation. If a funding round fails, it is likely that, at that point, the enterprise becomes one of the 95% that fail.

One of the participants in the CBDC project has been going through this process actively – Consensys. It recently raised a Series D round of US$450 million in March 2022.[12]

The press release stated that 'ParaFi Capital led this raise after participating in ConsenSys' Series C round in November 2021. They were joined by new investors, including Temasek, SoftBank Vision Fund 2, Microsoft, Anthos Capital, Sound Ventures, and C Ventures. Series C investors — Third Point, Marshall Wace, TRUE Capital Management, and UTA VC, United Talent Agency's venture fund — also participated in this round. Sullivan & Cromwell LLP acted as ConsenSys' legal advisor in this transaction.'

The Series C round of US$200 million occurred only in November 2021.[13] 'New investors Marshall Wace, Third Point, ParaFi Capital, and Think Investments contributed to the round alongside new partners that include Dragonfly Capital, Electric Capital, Spartan Group, DeFiance Capital, Animoca Brands, Coinbase Ventures, and HSBC. Sullivan & Cromwell LLP acted as ConsenSys' legal advisor in this transaction.'

Consensys only completed its US$65 million 'formation round' in April 2021 so it has moved very quickly; the aim of the 'formation round' was 'to accelerate the convergence of decentralized finance (DeFi) and Web3 applications on Ethereum with enterprise blockchain infrastructure.

[12] https://consensys.net/blog/press-release/consensys-raises-450m-series-d-funding/ accessed on 20 April 2022

[13] https://consensys.net/blog/press-release/metamask-surpasses-21-million-maus-as-consensys-raises-200-million-to-make-web3-universally-easy-to-use-access-and-build-on/ accessed on 20 April 2022

Global financial services firms J.P. Morgan, Mastercard, and UBS invested alongside leading blockchain companies, including Protocol Labs, the Maker Foundation, Fenbushi, The LAO, and Alameda Research. Additional investors include CMT Digital, Greater Bay Area Homeland Development Fund, SNZ Holding, NGC Ventures, Quotidian Ventures, and Liberty City Ventures. Several funds invested with Ethereum-based stablecoins, DAI and USDC, as consideration.'[14]

Next steps

The next stage of this research should examine all of the investing entities listed here, and many more, possibly nearing the 6,500 in number that Lancaster University are investigating in their arena. This is in order to capture all the market actors – whether they are natural or non-natural legal persons – to create a taxonomy of them, and to reveal their interconnections.

[14] https://consensys.net/blog/press-release/consensys-raises-65-million-to-accelerate-convergence-of-traditional-and-decentralized-finance/ accessed on 20 April 2022

The Financial Technology or 'FinTech' sector

The government has championed FinTech as a growth sector.

FinTech comes in various guises, and four of the six guises are regulated: the other two - cryptocurrency and Non-Fungible Tokens ('NFTs') - are currently unregulated.

The four regulated guises are:

1. Challenger banks, which have a full banking licence and are supervised by the Prudential Regulatory Authority;
2. Electronic Money Institutions, which are supervised by the Financial Conduct Authority;
3. Payment Institutions, which are in principle supervised by the Financial Conduct Authority but whose regulator for Financial Crime may be HM Revenue & Customs, depending upon the size of the Payment Institution;[15]
4. Third-Party Providers ('TPPs') under Open Banking and under the EU's 2nd Payment Services Directive (transposed in the UK as the 2017 Payment Services Regulations).

Regulated Fintechs

Challenger banks were meant to introduce new competition to the large incumbent banks like Barclays and Lloyds. Starling Bank has made inroads but the others have generally failed to do so. A recent FCA report on the six biggest Challenger banks highlighted failings in addressing Financial Crime.[16]

An Electronic Money Institution (eMI) offers a wallet on which a balance of eMoney can be held to be used to pay for goods and services; the wallet and the physical card (if there is one) are invariably branded to Visa or Mastercard. The value of an eMI is usually to reduce payment fees and offer better rates of exchange when the card is used abroad.

A Payment Institution (PI) cannot hold a balance for a customer other than for the brief period between the PI accepting a payment order and discharging it. The value of a PI is to make migrant remittances and indeed foreign payments generally, quickly and with lower fees and applying better exchange rates than the large incumbent banks.

There have been considerable concerns raised about the openness of eMIs and PIs to financial crime, as they require low investment to be started up.[17] There has been concern about 'nesting', where eMIs and PIs act for other eMIs and PIs, and relay payments as if they were from their own customers when they are not. There is a variation of 'nesting' called Virtual Accounts, where payments are tagged with codes that identify the bank, eMI or PI that is supposedly the Account Servicing Institution of the payer, but where that institution has no relationship with the payer and has not carried out Anti-Money Laundering checks on the payer.[18]

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[15] The author acted as chair of the trade body for the UK's Payment Institutions between November 2019 and September 2020

[16] https://www.fca.org.uk/publications/multi-firm-reviews/financial-crime-controls-at-challenger-banks accessed on 23 April 2022

[17] Example: National Economic Crime Centre: 'A public and private sector view of the money laundering threat from Money Service Businesses operating in the UK' under document 20191010 MSB Public Private Threat Update TOR v0.4 mark-up

[18] http://www.lyddonconsulting.com/virtual-accounts-major-changes-needed-in-wolfsberg-group-guidance-around-on-behalf-of-payments/ accessed on 23 April 2022

Then there is Open Banking, a project aimed at enabling greater transparency and choice for consumers between different financial products, and at facilitating switching between them. The coordination body is The Open Banking Implementation Entity, a creature of the Competition and Markets Authority and with its own a seat on the Forum. It has, however, been mired in controversy itself.[19] Its governance is currently being restructured as a result.

Open Banking pitfalls – including Authorised Push Payment Fraud

The Open Banking service is provided to clients by Third-Party Providers or TPPs, and many have established themselves, the capital needed for set-up being even lower than is needed for eMIs or PIs. One type of TPP – an 'AISP' or Account Information Service provider – handles sensitive customer data and there must be a question as to whether the size of investment deployed enables an IT architecture commensurate with properly discharging the AISP's duty to safeguard this data.

An even more serious issue has arisen at the other type of TPP – the 'PISP' or Payment Initiation Service Provider. This relates to Authorised Push Payment Fraud. A PISP cannot hold customer funds but it relays customers' payment orders to customers' banks. The value of the PISP is convenience: a customer gives it the security credentials for all their bank accounts, enabling the convenience of not having to log in separately to each bank's eBanking service with differences of process, devices, User IDs, passwords and so on. The customer need only concern themselves with the credentials to log in to the PISP's service. This means that a fraudster, obtaining the customer's credentials for their relationship with the PISP, can empty all of the customer's accounts in one go. Major banks are reputedly afraid to raise this issue to the Competition and Markets Authority for fear of being labelled anti-competitive.

As it is, the marketplace success of Open Banking is highly questionable: there has not been a major upswing in account switching, Open Banking's central objective. The Open Banking Implementation Entity issues impressive statistics as to the number of PISPs and AISPs in operation, and the number of what they designate as transactions i.e. a PISP or an AISP making a call via an Application Programming Interface to one of the banks or the bank replying to a call. The carrying-out of a single business event (such as to retrieve an account balance) can require multiple messages to flow. Statistics will give a better or worse impression of the market penetration of Open Banking depending on whether they record just a business event or all of the individual messages comprising it.

Whichever is the case does not alter the fact that the statistics are expressed at a high level, and do not capture situations such as:

- A service that updates an end-user's dashboard at a set frequency whether the end-user looks at the dashboard or not, thereby causing many business events and messages between the TTP and the end-user's banks, but without any value for the end-user;
- The same end-user having multiple Open Banking apps which all access the same accounts: each instance is counted as a separate user;
- An end-user who is unaware that they are using Open Banking, and may be using it unawares behind several services, each of which counts them as a user;

[19] https://www.theguardian.com/business/2021/oct/01/chair-of-uk-open-banking-body-resigns-over-bullying-report accessed on 23 April 2022

- A service that does not benefit the end-user, such as where a credit provider has been enabled to use a PISP to collect loan repayments, and sends multiple requests a day so as to intercept any incoming funds and claim them before the end-user can use them for groceries, energy, transport fares and other normal expenditure.

Open Banking appears at its most successful based on the global statistics issued by the Open Banking Implementation Entity. It would appear less successful if there were found to be instances of any of the situations listed above. The Open Banking Implementation Entity will not be inclined to do this, preferring to mark its own homework: it has a vested interest in making Open Banking appear to be achieving high take-up.

Problems ahead along the direction of travel

Future developments planned for the UK in this area – such as the introduction of the ISO20022 XML data standard – do not necessarily strengthen the UK's defences against financial crime: the author recently had an article published about this in relation to the sanctions against Russia.[20]

Indeed ISO20022 XML is far from the El Dorado it is made out to be, and that is discussed in a later section.

In particular these developments do not promise a definitive end to Authorized Push Payment Fraud, and the author has made submissions about this to official processes in the UK.[21]

Finally there is no official process underway to tackle the high Deductions-from-face-value on card payments, and the PSR recently issued its PS22/2 'remedies' which duck this issue. PS22/2 is discussed in a later section as well.

[20] https://en.irefeurope.org/publications/online-articles/article/payment-technocrats-have-crippled-eus-ability-to-impose-biting-sanctions-on-russia/ accessed on 23 April 2022

[21] http://www.lyddonconsulting.com/lyddon-consulting-submissions-to-the-treasury-select-commitee-on-confirmation-of-payee-and-app-fraud/ accessed on 23 April 2022

Payment Fintechs, Bitcoin, cryptocurrency and Non-Fungible Tokens

It is not for this paper to analyze bitcoin/cryptocurrency and NFTs.

There are two views and little common ground between them:

- They are the future of finance; OR
- They are a Ponzi scheme, where trading and pricing are controlled by a small, secret number of so-called 'whales'.[22]

The author believes the latter. A further element is now coming to the fore – environmental impact.[23] The underlying 'Distributed Ledger Technology' is inefficient, requires large amounts of computing power, and consumes disproportionate electricity.

Finally, here are the author's personal views about the sector:

- Regulated emerging payment means have been subjected to too little scrutiny over what proportion of them are made to fund 'adult', gaming, gambling and cryptocurrency/NFTs;
- Further research is needed on whether the public policy measures taken to facilitate emerging payment means, and which have had impacts on the wider payments ecosystem and on wider society, have been justifiable and proportionate if their main outcome has been to serve these purposes;
- There has been too little research into the way the User Experiences of apps for gaming, gambling and cryptocurrency/NFTs have converged so that they are in essence the same: online gambling, and without a license where the app is for cryptocurrency/NFTs;
- Too little attention has been paid to the interconnections between the detriments of the drive towards digital payments, including the virtual elimination of cheques and the difficulties in accessing cash. The attack on non-digital payment means and the simultaneous promotion of digital ones is well coordinated, whilst the defence of non-digital payment means and the attempts to mitigate the detriments caused by digital payments means are fragmented;
- There is more than a whiff of Victorian moralism in the reforming zeal of the proponents of digital payments. In that era the targets may have been drinking, disorderly behaviour on the streets, breaches of the Sabbath, cockfighting, hare coursing and similar working-class habits and pursuits, but the lobbying, the desire to control, and the propensity to seek support through the law are in the same vein;[24]
- Whatever the merits or demerits of digital payment means that do not involve crypto or NFTs, the crypto and NFT sectors require special attention as categories of financial product, and financial regulators have been far too slow to take a position;
- Already in 2018 it was being noted that the usage of cryptocurrency for buying goods and services was falling.[25] The experiment in El Salvador to make it legal tender has failed.[26] Cryptocurrency has failed the test of being a viable means of payment;

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[22] https://www.investopedia.com/terms/b/bitcoin-whale.asp accessed on 30 April 2022
[23] https://www.climatechangenews.com/2022/02/09/wwf-uk-ends-sale-nfts-backlash-angering-crypto-community/ accessed on 23 April 2022
[24] David Taylor, *The new police in nineteenth-century England. Crime, conflict and control* (Manchester: Manchester University Press, 1997) p. 93
[25] https://www.fastcompany.com/90212831/basically-no-one-is-using-bitcoin-to-buy-things accessed on 25 April 2022
[26] https://fortune.com/2022/04/27/el-salvador-bitcoin-strategy-chivo-losses/ accessed on 25 April 2022

- The liquidity of cryptocurrency is reported as having reduced markedly subsequent to the Russian invasion of Ukraine.[27] The source of liquidity in and the identity of who exercises control over the cryptocurrency market are opaque.[28] It is not a proper financial market, and thus cryptocurrency cannot be viewed as an investment either;
- Its true nature is, in the author's opinion, accurately summed up in a LinkedIn post by John Reed Stark, former head of the Office of Internet Enforcement at the US Securities & Exchange Commission;[29]
- In line with Stark's interpretation, the author's opinion is that the market spaces for cryptocurrency and NFTs have thrown up a number of issues around fraud (such as OneCoin, the large-scale loss of money in connection with an enterprise with its roots apparently in Bulgaria), and about opaqueness to measures to combat money laundering and the financing of terrorism;
- Being an unregulated area, without any 'Fit and Proper Person' tests, and an area where abstruse computer programming techniques result in [what exactly? A financial asset? A commodity?], it will attract some market actors who are well-intentioned and genuine but it is also bound to attract its share, possibly a disproportionate share, of rat-pipers, miracle workers, alchemists, and mountebanks aiming at separating people and business from their money;
- The question is 'cui bono?' And what impact on UK society does the answer to that question infer when it comes to Britcoin? Who obtains more money, status and power through it?

[27] https://www.bloomberg.com/news/articles/2022-02-24/crypto-liquidity-dries-up-as-billions-in-market-value-evaporates accessed on 25 April 2022
[28] https://www.jumpstartmag.com/what-are-whales-and-how-do-they-manipulate-cryptocurrency/ accessed on 27 April 2022
[29] https://www.linkedin.com/feed/update/urn:li:activity:6926891494121373696/ accessed on 2 May 2022

UK as a global cryptoasset hub and issuer of CBDC

Set against this, we have the UK government's enthusiasm for this market space, and we need to be asking what it is based on.

HM Government's recently-announced plans

HM Treasury recently announced a plan to make the UK a global cryptoasset hub: https://www.gov.uk/government/news/government-sets-out-plan-to-make-uk-a-global-cryptoasset-technology-hub

https://www.coindesk.com/policy/2022/04/04/uk-aims-to-become-global-crypto-hub-says-exchequer/

This included having the Bank of England issue a so-called Non-Fungible Token or NFT: https://news.sky.com/story/rishi-sunak-to-launch-an-nft-issued-by-the-royal-mint-to-help-make-uk-global-cryptoasset-hub-12582312

The Bank of England agreed to this order without comment, belying its independence.

According to the BBC, Rishi Sunak, Chancellor of the Exchequer at the time, said that 'We want to see the [cryptocurrency] businesses of tomorrow - and the jobs they create - here in the UK, and by regulating effectively we can give them the confidence they need to think and invest long-term'.[30]

The Lobby Pack for the Queen's Speech issued under the Prime Minister's name pp. 55-6 promises measures in the Bill for 'the safe adoption of cryptocurrencies'. Law firm Simmons and Simmons noted this.[31] James Titcomb in the Daily Telegraph was more specific in expressing the intention as being to legalise stablecoins.[32]

What is a 'stablecoin' and is Britcoin one?

A 'stablecoin' is a form of cryptocurrency whose value is tied to a reference asset. Examples would be Tether and Terra USD, both supposedly pegged at a parity of 1-to-1 with the US$.

Britcoin is intended to be a stablecoin whose value is pegged at 1-to-1 with the £pound. The investigation into Britcoin is being conducted by the Bank of England through two forums – one for 'Engagement' and one for 'Technology'. Representation from the Visa and Mastercard ecosystems is particularly strong. The House of Lords Economic Affairs Committee has named CBDC a 'solution in search of a problem'. Does one believe that the committees will recommend anything else but that this CBDC will go ahead?

A public consultation is promised. It is hard to believe that the consultation will be meaningful and that plans may be delayed, adapted or even scrapped in the light of what the consultation finds. This is unlikely since the legislation to enable CBDC will already be on the statute book, and since all the organisations represented in the two forums, along with other members of the extensive Visa and Mastercard ecosystems, will be permitted to respond to the consultation and the majority will be positive.

[30] https://www.bbc.co.uk/news/business-61011151 accessed on 15 April 2022
[31] https://www.simmons-simmons.com/en/publications/cl32x6nxt1k2i0a24tsrkwmeq/queen-s-speech-introduces-planned-financial-services-and-markets-bill accessed on 15 May 2022
[32] https://www.telegraph.co.uk/authors/j/ja-je/james-titcomb/ accessed on 15 May 2022

Their voices can be elevated via their extensive expenditure on lobbying and PR services to drown out opposition, laying the groundwork for the pre-configured outcome to be announced as having been 'supported by key stakeholders'.

Officialdom pushing digital payments

John Glen, at the time the Chief Secretary to the Treasury, has said that there are no plans to replace physical cash with CBDC. In the light of the 2022 Queen's Speech this assurance cannot be believed. CBDC can be presented as a substitute for physical cash.

Similarly a process has been organized via the Payment Systems Regulator Panel called the 'Digital Payments Initiative'. The PSR charged its own PSR Panel, and this Panel created its own special sub-committee for the purpose, with proposing digital payment 'solutions' to situations where physical cash is used now: in other words to propose substitute products for physical cash.

The sub-committee issued a report in the same week as the Queen's Speech, addressed to the PSR.

The PSR then issued a response to its own creature's report, perpetuating the illusion that the creature has a life of its own: the PSR Panel and the Digital Payments Initiative are marionettes of the PSR.

In point 1.5 of the Executive Summary on p. 3 of the response, the PSR makes an extraordinary statement:[33] 'Removing barriers to new digital payment services, to better meet people's needs, is part of our remit.' The PSR is an **economic** regulator of payment **systems**: it has no brief to steer what payment **services** end-users decide to use or not use.

It is supposed to act impartially towards the payment systems that fall within its remit. It is supposed to represent the voice of end-users, which entails standing up for end-users' right to have a choice of payment means.

It does not entail leaving those payment systems to deteriorate for want of new investment that handle cash (LINK, and the Bank Giro Credit facility within Cheque&Credit), and cheques (Cheque&Credit), whilst favouring Visa, Mastercard, BACS and Faster Payments, the four regulated payment systems understood as being 'digital', even though those using a physical credit or debit card might not recognize themselves as using a digital payment mechanism. Yet this appears to be precisely what the PSR is doing.

The PSR is highly presumptuous in stating an opinion as if it were a fact, namely that digital payment services can meet people's needs better than non-digital ones. This is neither within its remit nor proven. In fact the report of the Digital Payments Initiative suggests that digital payment services have many shortcomings: the barriers to their take-up are their defects. We seem to be in the ludicrous position of having a regulator claiming to have end-user needs in mind but pushing end-users to adopt payment services that do not meet their needs.

On the other hand it benefits the Visa and Mastercard systems greatly to have had themselves endorsed by their regulator the PSR as 'digital' payment systems, and therefore to have adoption of their products pushed as a matter of policy by the PSR. In governance terms, on the other hand, it is an outrage and a cause for the PSR's remit to be overhauled.

[33] psr-response-to-digital-payments-initiative.pdf available through www.psr.org.uk

The overall direction-of-travel to eliminating physical cash

The CBDC project and the 'Digital Payments Initiative' are both attacks on physical cash, and have both been commissioned by official bodies which ought to be impartial and objective. It should not be acceptable that major national decisions are arrived at by such processes, but at the same time it needs to be recognized that the government's agenda is to fully digitize UK payments.
Legal protection for cash has been promised, and was even mentioned in the same Queen's Speech that indicated legislation to enable stablecoins. However, the promise to protect cash cannot be taken at face value.

The attack on physical cash

There has been much apparent official concern about protecting access to cash. This concern has been intermediated through bodies populated with proponents of digital payments. The outcome has been predictable: legal protection for cash is promised, but in a way that will lead to its undermining.

The Queen's Speech in May 2022

The Queen's Speech, delivered on 10 May 2022, promises this protection.[34] It is to be afforded in a new Financial Services and Markets Bill (the 'Bill').[35] One might be forgiven for believing that this will ensure economically viable and convenient services to withdraw and deposit cash, for both consumer and business users. However, the Lobby Pack issued under the Prime Minister's name pp. 55-6 blandly states the related objective as 'Ensuring that people across the UK continue to be able to access their own cash with ease'.

This phrase contains the seeds of the continuing destruction of physical cash:

- It accepts the current, degraded level of service as the benchmark, presupposing that 'people' can withdraw their own cash with ease now, when they cannot;
- It ignores the depositing side of the equation;
- There is no mention of the UK's 5.6 million private businesses as cash users;[36]
- There is therefore no mention of businesses' need to deposit cash if they are to accept it
- There is no obligation on businesses to accept cash;
- There is no acknowledgement of a key advantage for businesses of accepting cash, namely that the business receives the full face value of the sale, and not the sale value less the very substantial deductions-from-face-value imposed when payment cards are used. If the business can give out a portion of that cash received as change, or pay suppliers with it, they experience no bank fees and no deductions – which is not at all to the taste of proponents of digital payments.

Deductions-from-face-value and the expense of digital payments

The deductions, occurring on all payments using either PayPal or a card carrying one of the recognized brands (Visa, Mastercard, and to a lesser extent Amex) are a major source of income for banks and they feed an extensive ecosystem of other market actors. The upswing in online shopping and the reduction in the usage of cash and cheques (brought about as much by banks' policies as by consumers' and businesses' preferences) have dramatically increased this involuntary give-up by businesses of their sales revenues: a contemporary equivalent of coin-clipping.[37]

Ludicrously a payment using new, digital technology is more expensive: the expense falls onto businesses in the first instance as deductions, which are passed on in the form of higher prices to other businesses and to consumers. Digital payments are inflationary.

[34] https://www.gov.uk/government/speeches/queens-speech-2022 accessed on 15 May 2022
[35] https://www.gov.uk/government/news/new-law-to-protect-access-to-cash-announced-in-queens-speech accessed on 15 May 2022
[36] 'Business Statistics': House of Commons Library Research Briefing Number CBP 06152 dated 21 December 2021 p. 4
[37] https://historyhouse.co.uk/articles/coin_clipping.html accessed on 15 May 2022

On 6th October 2022 the PSR issued its PS22/2 Final Decision pursuant to its 'work' on 'Card acquiring market remedies', a 90-page document in which deductions are not mentioned once.[38] Instead there are various measures about information that merchant acquirers should provide, but nothing about the major cost for merchants of accepting by card.

Poor protection for cash and the lock established by Visa and Mastercard over UK payments

The scope of the protection for cash offered by the Bill will at best be the current arrangements after hundreds of bank branches and Automated Teller Machines (ATMs) have been closed, after banks have made it extremely difficult for people and businesses to deposit cash, and after the Visa and Mastercard ecosystems have established a lock over UK payments.

This lock is achieved firstly by the near-duopoly that these two brands have over card issuance, with Amex having a small market share.

Secondly Visa and Mastercard can go to market through an extended network of surrogates who partner with them and promote their interests as well as their services; these go well beyond the bank card issuers to Payment Institutions (like Wise, the former Transferwise), IT companies (like FIS), and sector trade bodies (like Innovate Finance and The Payments Association).

Thirdly, although both are payment systems regulated by the PSR, they have inexplicably been granted a waiver from a rule that their four competitors must adhere to: to separate their system into a scheme company which then contracts with a third-party for the infrastructure required to run the system. Faster Payments, BACS, LINK and Cheque&Credit all have such scheme companies; Visa and Mastercard run their schemes on their own infrastructure. This is flagrantly at odds with Article 7 of the EU Interchange Fee Directive 015/751 which specifies that cards payment scheme management must be separated from its infrastructure.

Finally - and this applies only to Mastercard - Faster Payments, BACS, and LINK use Mastercard as their infrastructure provider; only Cheque&Credit of the four other UK retail payment schemes beyond Mastercard and Visa themselves does not.

It is an absurdity that LINK, the payment system connecting Automated Teller Machines to card issuers and which is integral to access to cash, should have a dependency on a company with a vested interest in seeing physical cash eliminated.

Inadequate advocacy for cash

Unfortunately organizations who purport to represent the interests of users have joined in the applause for what is proposed in the Queen's Speech. Which? – a prominent supposed consumer champion - has lauded the Bill, claiming credit for having campaigned for some aspects in it.[39] It has also, in referring to 'vulnerable groups', fallen into a trap laid by the proponents of digital payments, who include the PSR.

The trap is to accept a qualification to the principle that all people and businesses should have ready access and that it should be up to end-users to decide what payment means to use. Once any kind of qualification is accepted, other limiting sub-clauses can be devised, enabling the universe of people and businesses eligible for protection to be shrunk, and the service level reduced.

[38] PSR document reference PS22/2

[39] https://www.which.co.uk/news/article/access-to-cash-will-be-protected-in-new-law-a1bFg6N5vzeg accessed on 15 May 2022

Allowing a qualification simultaneously acknowledges that some person or body will be empowered to decide what that qualification means in practice and, in UK payments, this decision-making power is vested with the proponents of digital payments.

Diminution of scope of protection for cash

The PSR's objective is stated in their 'Access to Cash' workstream: 'to support access to cash for UK consumers who need it'.[40] This formulation contains an even more dangerous qualification to the exclusions of the Lobby Pack wording.

The universe of consumers defined as 'needing access to cash' can be much lower than the 70 million inhabitants of the UK, can overlook those who might 'want access to cash', and can ignore those whose view might be that cash is a normal payment method, it should be their choice whether to use it or not and when, and not up to HM Treasury, the Bank of England, the PSR, groups of payment technocrats or whoever.

Introducing a test of 'need' enables the digital payment technocrats to make a narrow initial definition of the number of people affected, and to further whittle the number away via the presentation of their own substitute products.

Presenting substitutes is the mandate of the PSR's 'Digital Payments Initiative', whose report was issued in the same week as the Queen's Speech.[41]

Another substitute is the government's Central Bank Digital Currency.

Collapse in bitcoin, NFT and related cryptoassets has been no deterrent

So far none of this has been knocked off course by recent collapses in the cryptoasset markets. Bitcoin has dropped 34% from US$47,000 to USD31,000.[42] Buyers of the Terra Luna coin have lost 99% of their money.[43] Stablecoins like Tether[44] and Terra USD (the stablecoin sister of Terra Luna)[45] have lost their parity with their reference asset, and NFT volumes have crashed.[46]

There is an almost daily flow of media reports of a scam in this market space, the issuance of an Interpol arrest warrant for the sponsor of an arrangement who has disappeared, or simply of people who have lost very large amounts of money.

These aspects are ignored in the corridors of power where the demise of cash and the takeover by digital payment means are plotted.

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[40] https://www.psr.org.uk/our-work/access-to-cash/ accessed on 16 May 2022
[41] https://www.psr.org.uk/publications/general/psr-panel-s-digital-payments-initiative-report/ accessed on 14 May 2022
[42] https://www.coindesk.com/price/bitcoin/ accessed on 16 May 2022
[43] https://www.business-standard.com/article/finance/terra-luna-cryptocurrency-collapses-98-investors-lose-life-savings-122051200809_1.html accessed on 16 May 2022
[44] https://www.cnbc.com/2022/05/12/tether-usdt-stablecoin-drops-below-1-peg.html accessed on 15 May 2022
[45] https://www.cnbc.com/2022/05/11/terra-ust-stablecoin-dives-below-1-peg-luna-cryptocurrency-down-80percent.html accessed on 15 May 2022
[46] https://pitchbook.com/news/articles/nft-trading-crash-outlook-sports-gaming accessed on 16 May 2022

The attack on physical cash is waged through optically independent and unconnected processes, each of which is predetermined to knock another nail in cash's coffin, with the panels of pallbearers carefully selected from 'concert party' ranks. The CDBC project is one such process. The PSR's Digital Payment Initiative is another. The chocolate-fireguard of protection in the new Financial Services and Markets Bill is a third.

The bulk of this paper attempts to take off the outermost wrapper around who this 'concert party' consists of, using the participation in the two CBDC forums as the anchor.

Member organisations of the CBDC Engagement Forum – 31 organisations with 21 guaranteed to vote in favour

Several representatives are in disguise as there on behalf (supposedly) of one group of stakeholders when their activity behind that is more indicative of who they speak for.

Several organisations are conflicted by their roles in other bodies, particularly the PSR Panel (the Payment Systems Regulator Panel) and its sub-committee the Digital Payments Initiative.

Several representatives are people with 'portfolio careers', a status explained later along with its pitfalls.

Banks (7) (all issuers of Visa- or Mastercard-branded payment cards)

Starling Bank

HSBC

Morgan Stanley

Nationwide

NatWest

Standard Chartered

UK Finance (the banks' trade body)

Tech (1)

Google

PayTech (5)

SWIFT

Visa

Mastercard

Pay.UK[47]

PayPal

Cards and digital payments (7)

John Lewis Partnership (major acceptor of payments by **Visa** and **Mastercard**)

Innovate Finance (**Visa**)

The PSR Panel (with a partner in Gauss Ventures – a venture capital fund with interests in the **Visa** and **Mastercard** ecosystems)

Paypoint: https://retailer.paypoint.com/

Checkout.com: https://www.checkout.com/

[47] Pay.UK links to Mastercard through Vocalink were noted earlier

Wise, the former Transferwise: https://wise.com/ whose card is **Visa**-branded

The Diem Association[48]: https://www.diem.com/en-us/:
Diem is the re-launch of Facebook's Libra project but now seems also to have failed, with its intellectual property and assets related to the running of the Diem Payment Network being sold off to Silvergate Capital.

Trade and Representative Bodies (4)

British Retail Consortium

Confederation of British Industry (also represented on the PSR Panel)

Federation of Small Businesses (also represented on the PSR Panel)

Financial Services Consumer Panel (SWIFT)

Economists and think tanks (7)

Cambridge University Judge Business School

Citizens Advice Scotland

Clifford Chance (major law firm)

Frontier Economics, an independent economics consultancy: https://www.frontier-economics.com/uk/en/home/

Overseas Development Institute[49]: https://odi.org/en/

University of California

The Ada Lovelace Institute[50]: https://www.adalovelaceinstitute.org/

[48] From their website, accessed on 12 April 2022: 'The Diem project has been focused on leveraging the benefits of blockchain technology to design a better and more inclusive payment system'

[49] From their website, accessed on 12 April 2022: 'A leading global affairs think tank…We inspire people to act on injustice and inequality. We focus on research, convening and influencing, to generate ideas that matter for people and planet.'

[50] From their website, accessed on 12 April 2022: 'An independent research institute with a mission to ensure data and AI work for people and society We believe that a world where data and AI work for people and society is a world in which the opportunities, benefits and privileges generated by data and AI are justly and equitably distributed and experienced.'

The Payment Systems Regulator Panel (PSR Panel) has several overlaps with the Bank of England CBDC Engagement Forum – but this is not always transparent, nor who the members and organizations are speaking for

The Payment Systems Regulator has an industry panel – the PSR Panel – whose role it is 'to contribute towards the effective development of the PSR's strategy and policy and offer advice and early input on the PSR's work'.[51]

Here are the overlaps between the members of the PSR Panel, their organizations, and the members and organizations in the CBDC Engagement Forum:

PSR Panel		CBDC Engagement Forum	
Name	**Organization**	**Name**	**Organization**
Ruth Wandhofer	Gauss Ventures	Ruth Wandhofer	PSR Panel
Flora Hamilton	CBI	Chris Wilford	CBI
Matthew Hunt[52]	Pay.UK	Matthew Hunt	Pay.UK
Robin Abrams	Federation of Small Businesses	Martin McTague	Federation of Small Businesses
Natasha de Teran	Financial Services Consumer Panel	Natasha de Teran	Financial Services Consumer Panel

The other members of the PSR Panel are:

Name	Organization	Profile
Andrew Hewitt[53]	FIS	US supplier of software for issuing and managing **Visa** and **Mastercard** payment cards, headquartered in Atlanta Ga
Mark O'Keefe[54]	Payment cards consultant	Activities cover a wide range of the payment cards market: 'retailers, issuers, acquirers and payment schemes'. Original background in a card migration project for Marks & Spencer Money, and at Capital One Bank, whose lead product is a card branded to **Mastercard**[55]
Jo Oxley[56]	Head of Government Banking	Government Banking is the fulcrum of UK government 'using the most cost effective payment methods'[57]
Jeffrey Moody[58]	Portfolio career	Multiple non-executive positions and 'passionate about SMEs'
Anne Pieckielon[59]	None apart from the PSR	Formerly aligned with **Mastercard**-backed organizations - The Payments Association and its offshoots Project Inclusion and The Inclusion Foundation CIC[60]

There follow brief notes on the seven people who are either themselves on both panels or whose organizations are represented on both. There is then an explanation of what is meant by a 'portfolio career', and why 'portfolios' are useful to the CBDC project, the PSR Panel, and other pseudo-representative bodies.

[51] https://www.psr.org.uk/about-us/how-the-psr-panel-works accessed on 15 May 2022
[52] Matthew has since left Pay.UK
[53] https://www.linkedin.com/in/andrewhewitt/ accessed on 15 May 2022
[54] From profile on PSR Panel website accessed on 15 May 2022
[55] https://www.capitalone.co.uk/ accessed on 21 September 2022
[56] From profile on PSR Panel website accessed on 15 May 2022
[57] https://www.gov.uk/government/groups/government-banking-service-gbs accessed on 21 September 2022
[58] From profile on PSR Panel website accessed on 15 May 2022
[59] https://www.linkedin.com/in/anne-pieckielon-53b11b1b/ accessed on 20 August 2022
[60] Screenshots available upon request

Ruth Wandhofer[61]

Portfolio career. Chair of the PSR Panel and of the PSR Digital Payments Initiative. Main current occupation appears to be as a partner at Gauss Ventures, which has holdings in a number of companies that are part of the Visa and Mastercard ecosystems or are hoping to profit from digital or crypto: Curve, Traydstream, K, Briskly, Solfy, Jasper, Verse, Zuper, Yello, Bettr, and Hashwatt. Gauss led a US$55 million funding round for Curve in 2019.[62] Two of the five partners in Gauss appear to be Russian nationals, and a further one has a Russian name, whilst now holding British nationality.

Flora Hamilton[63]

The Confederation of British Industry's Head of Financial Services. The CBI represents the largest UK businesses, meaning the largest merchants and users of card acquiring services both at Point-of-Sale and cardholder-not-present. Background in marketing and conferences (BBC Training Videos, Profile Group (UK) Limited, PRCA, Cando Events) before joining the European ATM industry trade body, and then on to the CBI.

Chris Wilford[64]

Director of Financial Services Policy at the Confederation of British Industry up to October 2022. Now moving to be head of public affairs at the Financial Conduct Authority. Background in quangos and representative bodies (SME Open Banking Think Tank, Chartered Institute of Arbitrators, Recruitment & Employment Confederation, British Council).

Matthew Hunt[65]

COO of Pay.UK up to the end of August 2022. Pay.UK runs the three UK retail electronic payment systems that are not card-based: Faster Payments (instant credit transfers up to £1 million), BACS for batch credit transfers and direct debits, and Cheque&Credit for cheque payments and bank giro credits for banking cheques and cash. The two systems that are the focus for new investment via the New Payments Architecture – Faster Payments and BACS – use Mastercard as their infrastructure provider.[66] New Payments Architecture will use the payment data standard whose major current deployment is for the Single Euro Payments Area – ISO20022 XML.

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[61] https://www.rwandhofer.com/about-ruth-wandhofer accessed on 25 April 2022; see also Appendix 2 for supporting screenshots about Gauss Ventures

[62] https://medium.com/gaussventures/gauss-ventures-leads-usd-55-million-round-in-curve-3f42e4760623 accessed on 25 April 2022

[63] From profile on PSR Panel website and https://www.linkedin.com/in/flora-hamilton-418a472/ accessed on 15 May 2022

[64] From profile on PSR Panel website and https://www.linkedin.com/in/christopherwilford/ accessed on 15 May 2022

[65] From profile on PSR Panel website and https://www.linkedin.com/in/matthew-hunt-32a848174/ accessed on 15 May 2022

[66] https://www.wearepay.uk/programmes/new-payments-architecture-programme/ accessed on 17 May 2022; A further enquiry is needed into how it comes about that Mastercard should have so much influence over the trustee of the UK's retail payment systems that the system for cheques and cash (Cheque&Credit) should be excluded from new investment by its being set outside the scope of New Payments Architecture

Robin Abrams[67]

Portfolio career, including the Federation of Small Businesses' Chair of Banking & Finance Policy. Also director of a fintech platform and sits on a trade & investment taskforce. Current and concurrent posts include at the Non-Levy Employer Advisory Group, Financial Ombudsman Service, and Trade Finance Global, preceded by appointments as an 'associate' at Berenberg ('2 yrs'), an 'analyst' at Citibank ('2 yrs') and an 'analyst' at Bank of America Merrill Lynch ('Less than a year').

Martin McTague[68]

The Federation of Small Businesses' National Policy Chair. Has held roles at the Northern Business Forum, the North East Business Forum and the CBI, for which he has been credentialized through long-standing executive positions at UK companies: Ecotech (UST) Ltd (30 years), Pical (14 years) and A3C Solutions Ltd (7 years).

Natasha de Teran[69]

Portfolio career. Writer. Currently on all of the Financial Services Consumer Panel (FSCP), the PSR Panel, the CBDC Engagement Forum and the PSR's Digital Payments Initiative. Journalist before becoming head of PR at LCH.Clearnet and then at SWIFT, the Brussels-based bank cooperative for international payments.

Note on 'portfolio careers'

Having 'portfolio career' people speak for a constituency provides a weak voice for that constituency. The connection of the person to the constituency they represent may be tenuous, and running a 'portfolio career' anyway means a person does a number of things, normally on a 'consultancy basis', and without a single focus. If the person represents several constituencies in different roles, do they maintain a distinction in what they say, or does one get a blended point-of-view?

Having a person on a committee allows the claim to be made that the committee is inclusive of the views of the constituency that the person is inferred to speak for, and then the sponsor can claim that the members of the constituency are bound to what was agreed. The members have then unknowingly been co-opted into a way forward with which they may not agree.

[67] From profile on PSR Panel website and https://www.linkedin.com/in/robi -001b0938/ accessed on 15 May 2022

[68] From profile on PSR Panel website and https://www.linkedin.com/in/martin-mctague-8b3b4615/ accessed on 15 May 2022

[69] https://www.linkedin.com/in/deteran/ and https://www.fs-cp.org.uk/consumer-panel/member/natasha-de-teran accessed on 21 September 2022: screenshots available upon request

The PSR's Digital Payments Initiative, arranged through a sub-committee of the PSR Panel

Background to the PSR's Digital Payments Initiative

As stated above, the PSR published the first report of its 'Digital Payments Initiative' in the same week as the Queen's Speech.[70] This cannot have been coincidental. The PSR commissioned this initiative 'in response to last year's Access to Cash Working Group's recommendation for further work to enable digital payments'.

It ought not to be acceptable that a Working Group named as and charged with protecting access to physical cash should instead be permitted to 'recommend further work' on substitutes for it - digital payments. The Access to Cash Working Group is also a creature of the PSR. This illustrates the pattern whereby authority bodies establish creatures which are optically autonomous but which can be relied upon to do their bidding and reach the right conclusions. The PSR sets the mandates of these marionette bodies, and coordinates the substance and timing of their outputs.

The PSR's stance on access to cash is disingenuous, as its scope eliminates businesses as valid users, is limited to consumers and then only to those deemed as needing it: 'to support access to cash for UK consumers who need it'.[71] This formulation offers a pathway to an extreme narrowing of the number of people who can be defined as requiring access to cash, which in turn radically reduces the protection needed for their access to it.

The formulation of suitably narrow definitions can be delegated to reliable members of the 'concert party' acting within an ostensibly autonomous process, and then further whittled away by the promotion of substitute products, and ones in which the panel participants have a vested interest, being either a reputational stake themselves or where their employers have a financial stake. The substitute products naturally include offerings in which the major card brands are market actors, reflecting that the main PSR Panel and its sub-committee responsible for the report enjoy heavy representation from the payment cards ecosystem.

Governance failure in the make-up of the Digital Payments Initiative

Dealing with the make-up of the Digital Payments Initiative sub-committee first, there is a governance issue in that its members include individuals who are not members of the PSR Panel. A sub-committee of any committee should consist exclusively of members of the main committee, and should not include further individuals appointed for whatever reason. Such individuals can be asked for contributions, but they should not sit on the committee as they have done in this case.

Make-up of the committee of the Digital Payments Initiative

The sub-committee members are given on p. 29 of the report, with the names of those not on the main PSR Panel shown below in **blue**:

Name	Profile
Ruth Wandhofer	Gauss Ventures – see above – and chair of this committee
Flora Hamilton	CBI – see above
Andrew Hewitt	FIS – see above

[70] https://www.psr.org.uk/publications/general/psr-panel-s-digital-payments-initiative-report/ accessed on 14 May 2022

[71] https://www.psr.org.uk/our-work/access-to-cash/ accessed on 16 May 2022

Name	Profile
Matthew Hunt	Pay.UK up to the end of August 2022 – see above
Conor Langford[72]	Visa Europe and until recently a member of the PSR Panel
Mark O'Keefe	Payment cards consultant – see above
Anne Pieckielon	This panel and the PSR Panel – see above
Natasha de Teran	Portfolio career; writer – see above
Mike Banyard[73]	Ordo, a vendor of 'Request to Pay', a proposed substitute for the Direct Debit; formerly with Faster Payments (now part of Pay.UK)
Neira Jones[74]	Portfolio career as advisor, speaker, awards judge on payments, digital innovation, fintech, cyber risk, information security, fraud, social media
Faith Reynolds[75]	Portfolio career as advisor to industry, government and regulators on Fintech, Open Banking and Open Finance & Smart Data; member of committees since 2015 charged with solving payment detriments (Payment Strategy Forum) and Authorised Push Payment Fraud (APPF Steering Group)
Jack Wilson[76]	TrueLayer - vendor of Open Banking digital payment solutions; formerly with the PSR and The Payments Council (now split into Pay.UK and UK Finance)

Selection from established figures who have steered the payments industry

This is a subset of the people and organizations who have been in charge of steering developments in UK payments since at least 2014, and who have invested substantial reputational and monetary capital into the current direction-of-travel.

One can plot the direction back to the World Class Payments Project of 2015 sponsored by Payments UK, the successor of the Payments Council and the incumbent of roles now split between Pay.UK and UK Finance.

This was followed by the establishment of the PSR, through its major exercise The Payment Strategy Forum from 2015-7, and since then into the UK payments landscape that exists now and the plans laid down for the New Payments Architecture ('NPA') project being implemented by Pay.UK.

Inadequacy of the Digital Payments Initiative report

The report from the PSR Panel's Digital Payments Initiative sub-committee is labelled as a 'Summary Report'; the full report and the workings behind it are not available on the PSR's website.

The publicly-available report itself is rather thin. That must have been a disappointment to the PSR, who might have been hoping for a list of digital payment products that were immediately available to serve as substitutes for physical cash in the 'use cases' (aka situations in which real people do real things) where physical cash is employed now. In fact the PSR might have been hoping for a tick-list in which a digital substitute product was already available to cover off every 'use case' where people deemed as 'needing access to cash' use cash now. If the tick-list had been forthcoming, the PSR could have concluded that no measures were needed at all to protect access to cash and those believing they needed access to cash could have been directed towards the substitute products.

[72] https://www.linkedin.com/in/conorlangford/ accessed on 20 May 2022
[73] https://www.linkedin.com/in/mike-banyard-91553a4/ accessed on 20 May 2022
[74] https://www.linkedin.com/in/neirajones/ accessed on 20 May 2022
[75] https://www.linkedin.com/in/faith-reynolds-b95b3837/ accessed on 20 May 2022
[76] https://www.linkedin.com/in/jackfranciswilson/ accessed on 20 May 2022

Instead the report falls far short of that and does its own substitution: it substitutes a different objective from the one it was set up to meet. The framing of the substitute objective – to help the PSR in its future work - is sycophantic towards the PSR, the panel's patron. To this end a large proportion of the report's recommendations relate to Open Banking, the initiative to increase account switching mentioned earlier, on the grounds that the PSR is poised to take on a greater role in it.

The chair's Foreword on p. 1 states that 'The PSR will have a key role in the next stage of the development of open banking', because 'as co-chair of the recently announced joint regulatory committee overseeing the transition in open banking governance the PSR will be working on the development of a strategic roadmap for open banking including unlocking the potential of open banking payments. Recommendations in this report aim to help the PSR in taking forward this role.'

This was not why the Digital Payments Initiative was established. It was supposed to deliver results on the mandate assigned to it and quickly, or to state that substitutes were not available. Instead it obfuscates the latter, by pivoting into Open Banking and pointing towards possible streams of work which will take many years to come to fruition.

Existing solutions re-endorsed for the third or fourth time

The main problem in the ensuing content is the degree to which the report endorses 'solutions' that have been in the pipeline for years and in which panel members have been deeply involved. Open Banking is one of these. Request to Pay ('RtP') and Confirmation of Payee ('CoP') are two others.

RtP and CoP were first proposed in 'World Class Payments in the UK: Enhancing the payments experience - An Initial Report August 2015': p.11 endorses both of them. CoP being supposedly a response to Authorised Push Payment Fraud, the inclusion of CoP in the 'World Class Payments' report indicates that Authorised Push Payment Fraud was already a known problem before 2015.

RtP and CoP were carried through as supposed solutions to meet End User Needs in the Payment Strategy Forum's 'A Payments Strategy for the 21st Century - Putting the needs of users first - November 2016' p. 25, with CoP coming under the heading of 'Assurance Data' and being further detailed on p. 32.

Finally they were included in the December 2017 New Payments Architecture Consultation, within the 'Collaborative Requirements and Rules for the End-User Needs Solutions End-User Requirements and Rules Blueprint', on pp. 10-37 for RtP and pp. 38-59 for Assurance Data.

The Digital Payments Initiative report also brings into the mix another product developed within the 'tent': the Contingent Reimbursement Model (the 'CRM' and formerly the 'CReM'). Together with CoP this was meant to eliminate Authorised Push Payment Fraud.

The Contingent Reimbursement Model

Our views on the CRM were published in an 8-blog series on our website at the time.[77] One of the members of the Digital Payments Intiative was on the APP Scams Steering Group that formulated and endorsed the CRM. The CRM has not worked, if the yardstick is that APPF should have been eliminated. The 'concert party' is at work in the publicity arena to obfuscate that this was the yardstick.

An article about the CRM appeared in the September 2022 edition of 'The Banker', written by Emma Lovell, who is the CEO of The Lending Standards Board, the organization that administers the CRM.[78] The article was self-congratulatory about the CRM's success, and sought to deflect attention onto prevention as the proper focus for further progress. This approach repeats that of the Digital Payments Initiative: to try to re-write the original marching orders. In Ms Lovell's case the claim of success only stands up if one both forgets what the original marching orders were – to eliminate APPF completely in tandem with CoP – and if one overlooks serious logic flaws.

These flaws are contained in the paragraph 'Data shows that in 2018, the number of APP scam cases rose by 93 percent, with the rate of increase slowing to 45 percent in 2019 (when the CRM Code was introduced) and 23 percent in 2020. These statistics indicate that the CRM Code's prevention focus has stalled what could have been an exponential rise in APP scams. They also suggest that without the Code, cases would have continued to increase at a much higher rate..'

Ms Lovell attempts to bury the reality that APPF is still rising, by using percentages that infer a decline. Setting out real numbers demonstrates an almost straight-line increase. If APPF had a base of 100 in 2017, it increased by 93 to 193 in 2018, by 88 to 281 in 2019, and by 65 to 345 in 2020. That is not a drop-off but a very modest reduction in the rate of increase. It is a testament to the failure of the combination of CoP and the CRM.

Ms Lovell's contention that the statistics 'indicate that the CRM Code's prevention focus has stalled what could have been an exponential rise in APP scams' cannot be proven as no control experiment exists. It also introduces a false basis of comparison, that APPF might have gone exponential if they had done nothing. Doing nothing was never an option. The real comparators are what would have happened if the CRM had been better written, or what might have happened if a quite different solution had been attempted. That is a solution not deriving from the digital payments industry itself.

Notwithstanding that, here we have another committee with the same panel member sitting on it (wrongly, on account of the governance principles given above) that is permitted to re-endorse the CRM, along with its sister CoP.

Latest on Confirmation of Payee

The PSR has now announced that a further 400 firms should introduce Confirmation of Payee by October 2024.[79] During a webinar on 13th October 2022 the PSR also announced a consultation on strengthening the cover of the CRM, although not for current cases.

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[77] The 'Crummy CReM Code' blog in 8 parts: http://www.lyddonconsulting.com/blog/page/8/

[78] https://internationalbanker.com/banking/app-scams-putting-prevention-in-its-rightful-place/ accessed on 22 September 2022

[79] https://www.psr.org.uk/news-updates/latest-news/news/psr-directs-400-firms-to-introduce-the-payment-protection-measure-confirmation-of-payee/ accessed on 14 October 2022

Four points emerged during this webinar.

Firstly, the reinforcement of failure. APPF has continued to increase since CoP and the CRM were introduced, but this does not cause a reappraisal by the PSR of whether these measures are the best ones that could be applied. Instead the increase is taken as justification for widening the deployment of these 'solutions'.

Secondly – and one should be grateful for small mercies – the PSR has finally acknowledged that the main conduit for APPF is the Faster Payments system. Its slide deck only mentioned Faster Payments and not either BACS or CHAPS, and its commentary contained an admission that, while APPF can occur over BACS and CHAPS, APPF is mostly connected with Faster Payments.

Thirdly - and one should be grateful for small mercies again – the PSR has finally acknowledged that APPF hinges on the definition in the 2017 Payment Services Regulations of what is an authorized and what is an unauthorized payment. The payer has the right to be made good, up to 13 months after a payment was made by its Payment Service Provider, for a payment that was unauthorized. APPF falls into a gap between the two: the payer is gulled by fraudsters into either sending an authorized payment or surrendering their security credentials so that the fraudster authorizes a payment to themselves. Whatever the detail, the substance is that an incorrect payment was made: the payer did not wish to make a payment to that payee, and has not themselves, explicitly and exactly, authorized the payment that was made.

Fourthly, the appropriate test of whether a payer gave away their payment authorization credentials and should not be made is good is now finally acknowledged to be the same one as applies to any 'payment instrument' in the 2017 Payment Services Regulations, namely that the payer must have behaved with 'gross negligence' and that the burden of proof of gross negligence lies with the Payment Service Provider, not the payer.

Via the three acknowledgements the PSR belatedly edges towards according the payer the protections contemplated in the 2017 Payment Services Regulations for a payment that was unauthorized, but without categorizing the payment as unauthorized. This is illogical. Lyddon Consulting's solution – to make the payee name part of the payment contract – closes the loop, quickly and elegantly. Flogging the two dead horses of CoP and the CRM maintains a loophole, and at best may serve to narrow that loophole over a number of years, with many people's money falling through it in the meantime.

Repeating of tropes about cash usage and employing flawed evidence

In addressing reasons why cash is still in use by consumers, the Digital Payment Initiative report, on p.2, repeats a series of tropes, based not on the panel's own research but by recycling tropes in previous reports like the 2020 FCA Financial Lives Survey[80]: 'a main factor driving some consumers' continued reliance on cash is having a low income or other vulnerability and the associated importance of budgeting and avoiding overspending, which the physical nature of cash makes easier.' The tropes serve to introduce qualifications to the policy of protecting access to cash with phrases like 'some consumers', 'continued reliance', 'vulnerability': these in turn allow sub-clauses like 'particularly for the vulnerable' and 'for those who need it' to be introduced that qualify the principle of universal access.

[80] https://www.fca.org.uk/publications/research/financial-lives-2020-survey-impact-coronavirus accessed on 10 May 2022

There is also the question of the validity of using evidence that has been produced by another member of the 'concert party'. This is a point made in the section 'Governance' towards the start of this paper. The FCA is in a sense the PSR's parent company as the PSR is housed in the FCA's office and the chair of the FCA is automatically the chair of the PSR. The 2020 FCA Financial Lives Survey is cited multiple times as third-party evidence when it at best second-party and second-hand.

Other sources quoted are not just from within the 'concert party', but actually contributed to by panel members or their organizations. What is positioned as independent, third-party evidence is actually the panellists' own work issued under a different process:

- Ruth Wandhofer and Faith Reynolds were both members of the Payment Strategy Forum: 'Payments Strategy for the 21st Century Putting the needs of users first, Payments Strategy Forum, November 2016' and 'NPA Commercial Approach and Economic Models, Payments Strategy Forum, 2017'
- Matthew Hunt was COO of Pay.UK up to August 2022: 'Research commissioned by Pay.UK from Revealing Reality, 2021' and 'Request to Pay, Pay.UK https://www.wearepay.uk/what-we-do/overlay-services/request-to-pay/'

Then there is 'evidence' quoted that derives either from the PSR itself or from organizations who have been supportive of the PSR and its processes in the past:

- PSR: 'Market review into the supply of card acquiring services Interim report, PSR, September 2020', and 'Market review into card-acquiring services Final report, PSR, November 2021'
- Which?: 'Everyday Finances – What consumers need in a changing world of banking and payments, Which?, November 2019'

The result is a poor base of evidence, much of it being opinion, most of it recycled, and in much of which the panellists have been involved: now it is presented as solid and independent evidence.

A proper study would have:

- Listed all the evidence available on the subject including counter-evidence;
- Disclosed the roles of the panellists in the processes leading to the evidence and counter-evidence;
- Set out how the panel sifted the evidence and counter-evidence, how it gave the weight it did to each piece of evidence, and how it reached its conclusions.

Authorised Push Payment Fraud through Open Banking is acknowledged – but not solved

The report proposes, on p. 7, that Open Banking intermediaries should join the CRM, when the problem occurs that we mentioned earlier. At least we should be grateful that the problem is acknowledged, namely that thanks to PISPs (Payment Initiation Service Providers), fraudsters need only obtain one set of the customer's eBanking credentials in order to clear out all their accounts. However, since PISPs are by their nature thinly capitalized, it is a question of pure conjecture whether the PISP will have the resources to reimburse the entirety of a customer's money back even if they are bound by the CRM.

The proposal will only work if the risk can be covered under the PISP's professional liability insurance, and for a sum that will be radically in excess of the PISP's own resources: the maximum possible loss is the entire amount in all the accounts registered at the PISP for all its customers.

How will the PSP even know what that is at any one time? How can that be translated into a maximum amount insured such that the premium can be calculated and paid, and the cover put on-risk? How can it be ensured that the PISP abides by the policy conditions and that the premia continue to be paid, so that any claim is paid out and not refused by the underwriter? How is it ensured that a pay-out from the policy goes to the victims of fraud in the case that the PISP is itself insolvent?

This last one is an important question, since a recent legal case has shown that the FCA, and by extension the PSR, do not know for sure what the legal status of any pay-out from such a policy would be in the situation where the PISP itself was both solvent and insolvent. The FCA has become involved in the iPagoo case in order to obtain this clarity.[81] The FCA joined litigation in relation to funds that should have been safeguarded for clients of an eMoney Institution called iPagoo LLP. The FCA wanted to discover whether a trust was automatically created for the benefit of clients when an eMoney Institution went into administration and, if it was not, why and how client funds were protected and to what extent.[82] This is a quite basic point as to how client funds are safeguarded and it should have been the case that the FCA/PSR had a firm position before any client funds were accepted either by eMoney Institutions or Payment Institutions, two of the forms of regulated 'FinTech'. That would have been some years ago. Instead the FCA/PSR are playing catch-up as regards the safety of client funds, when billions of pounds are already lodged in so-called safeguarding with these two types of regulated FinTech.

Partial admission that cost is a 'barrier to adoption' for digital payments

The Digital Payments Initiative report, on p. 2, alludes to – and again we should be grateful for small mercies – the cost of digital payments for small businesses and small organizations being amongst the barriers to adoption. The wording is that these users may be 'unable to secure digital payment services at prices they are willing to pay for the value of services offered'.

That is an interesting formulation in two ways. Firstly it can be read as not applying exclusively to card payments, when card payments are the main digital payment means open to small businesses and small organizations. Whether the means of creating the accounting entries is a physical card inserted in a terminal, or the same done contactlessly, or the card details entered online, or usage of a payment-enabled phone or watch, the underlying payment instrument is a credit or debit card. For small businesses and small organizations, digital payments means cards.

Secondly, if one first accepts that the formulation refers to cards, it can be read both as referring to the service fees that an organization has to pay to its merchant acquirer (Barclaycard, Elavon, Streamline, SumUp or whoever) and/or to the deductions-from-face-value it suffers on every payment.

The formulation is workable if it is about services fees paid to a merchant acquirer, but it mismatches the reality of deductions-from-face-value: they are not a service to the merchant whereby the merchant can shop around for different service levels and prices until the merchant obtains a proposition in which Price + Performance = Value. Deductions add no value to merchants: they destroy value.

[81] Case No: CA-2021-000740 Court of Appeal judgement of 9th March 2022

[82] There are broadly three options for safeguarding customer funds: (i) holding them at a Credit Institution; (ii) investing them in high-quality, liquid assets like government bills; (iii) setting up an insurance policy that pays out when a firm goes bankrupt, and which must pay out for the benefit of customers and not to the bankruptcy estate of the firm

The deductions do not differ under the propositions of different acquirers: they are an inevitable and non-negotiable aspect of accepting payment by card. As such these deductions fall outside the definition 'at prices they are willing to pay for the value of services offered', a formulation which is doubly disingenuous, because the deductions are the major portion of the cost falling on a small merchant of accepting 'digital payment services', and the service fees paid to the acquirer the minor portion.

The reason why deductions are not an issue for larger merchants is discussed below, but it is not mentioned in the report. As it is, the report manages to find a form of words that obfuscates what the real cost problem is in digital payments for small businesses and small organizations: they do not receive anywhere near the full sticker price of the goods and services they have sold.

This is an aspect of a wider issue: why the nature of the payment cards market in the UK differs so much from that envisaged by the implementation of the EU Interchange Fee Regulation (EU) 2015/751, or the IFR.

IFR - PSR Final Decision PS22/2 on its 'work' on Card-acquiring market remedies

On 6th October 2022 the PSR published its Final Decisions on its major and multi-year 'work' on the costs of accepting card payments for merchants, but not the all-in costs. The PSR has, in line with the narrow focus adopted by the Digital Payments Initiative, concentrated on the service fees aspect and ignored the deductions-from-face-value. In para 1.9 on p. 5 the PSR states that 'it took advice from the PSR Panel' on this matter. No doubt it did. The PSR Panel being to all intents and purposes the Digital Payments Initiative and both enjoying heavy representation from the card payment supplier side, it is not surprising that the PSR Panel has applied the same narrow focus, and that the card payment supplier side has been spared scrutiny over deductions-from-face-value.

The remedies the PSR lays out in para 1.4 on p. 4 are best described as 'hygiene factors': basic information that should be provided by merchant acquirers. There is one minor new item: a limit on the term of an acquiring contract to 18 months.

In para 2.42 on p. 15 the PSR attempts to explain why this new information is different from what should already be provided pursuant to the IFR, a difficult task since positioning some of the information as new depends on arguing that the IFR adopted a more limited approach, which is not true. The PSR refers to the exact same Articles to which we refer below.[83] The PSR attempts to position the IFR requirements as being limited on the grounds that they are addressed at the issue of 'Unblending'. Indeed certain requirements come under a section with that title, but the titling is an irrelevance: the package of information was stated in the IFR, and that is all that matters. The package already required by the IFR since 2016 has the same purposes as the PSR claims for its new 'remedies': giving merchants comprehensive service information in proposals, in contracts and once in production, so they can check what the current fees were, confirm that these fees are in line with their contract with their acquirer, compare offerings of different acquirers, make a business case to switch acquirers, and check afterwards that the winner is charging exactly what they said they would. The disclosures required under the PSR's 'remedies' are not new; they have been obligatory under the IFR since 2016. If that information is not being supplied by the industry now, then the industry has been non-compliant with the IFR since 2016.

This is not the worst of it.

[83] Our position-taking was formulated prior to the issuance of PS22/2

The PSR document, in para 1.116 on p. 52, makes admissions that ought to be shocking. The PSR admits to the possibility that the benefit of the IFR caps on deductions-from-face-value may not be being passed on to many merchants, and the PSR's rendition of how the IFR caps have been implemented operationally by the industry testifies to flagrant breaches of the IFR.

The wording 'cost savings from the IFR caps that were not passed through to merchants' infers that the cost savings exist but are being kept by one or more market actors other than the merchant. The IFR is explicit that only the merchant and no other market actor can benefit from the IFR caps.

Secondly the PSR's formulation indicates an operational treatment by the industry different from that laid down by the IFR. The IFR stipulates no higher deduction-at-source than 0.2%/0.3%. The merchant must receive the 99.8%/99.7% of the sticker price of the goods and services and within the normal settlement cycle, which occurs 2-3 days after the sale was made, a timelag that should be shorter when a payment is in £pounds from a UK-issued card.[84]

Instead, the phrasing that cost savings had to be 'passed through' to some merchants infers that a higher deduction-from-face is made at the outset, and that the industry applies a process of its own formulation to rebate some or none of that deduction, and to keep the remainder. The IFR deprives the industry of the power to install such a process: the IFR caps the deductions-at-source. The deductions cannot be subjected to a rebate process.

Thirdly, the PSR puts an annual figure for 2018 on the amount of savings that were passed through to merchants at £600 million. The PSR then states: 'These are typically the largest merchants'. This indicates that a differentiation is being made by the industry between large and small merchants, as regards to whom to extend the benefits of the IFR caps. No such freedom is granted to the industry by the IFR.

The conclusions to be drawn from this are damning for the industry and still more for the PSR. The industry is operating flagrantly in breach of the IFR. The PSR's PS22/2 is a *de minimis* PR exercise to make out that the IFR was more limited in scope and substance than it is, so as to spare the PSR's own blushes.

For smaller merchants the deductions-from-face are considerably higher than the IFR caps, and they form the majority of the all-in cost of accepting card payments. PS22/2 takes no more than oblique action on all-in costs, by duplicating what the IFR already says, with regard only to the smaller portion of the all-in costs (the service fees paid to and kept by the acquirer) and limiting its 'remedies' to information about these service fees, not their level. In the process the PSR puts a dense smokescreen around what the IFR says, its status as a directly-applicable EU Regulation, what non-compliance means for the wider economy, and what the PSR's role is as 'competent authority' for a piece of applicable law.

[84] This counts as a national payment in a member state currency and should be settled same-day, if the Payment Services Directive was being applied as written – see below for full explanation

Interchange Fee Regulation (EU) 2015/751 (IFR) – what it is

At the risk of duplication but with the intention of delivering complete clarity, it is worth recording the contents of the IFR.

This regulation was a 'maximum harmonization' measure and it stands out from much other EU law-giving, in the author's opinion: it was well-founded and should have eliminated several detriments in the UK payments market.

Being a Regulation, it had direct legal applicability in the UK from its live date; it did not require transposition as an EU Directive did. The 2017 Payment Services Regulations are a transposition of an EU Directive, not the implementation of an EU Regulation, although here we have a problem: the 2017 Payment Services Regulations incorporate the EU Funds Transfer Regulation 847 of 2015.

This blurring in that case of the respective legal status of a Directive and a Regulation has the effect of permitting negotiation and lobbying to take place about the exact implementation of a Directive – which is legitimate – and a Regulation – which is not legitimate.

Being a 'maximum harmonization' measure, the IFR should have been implemented exactly as written.

It is not possible for the author to document the process whereby the IFR ended up not conferring the benefits it was intended to, and instead resulted in a payment cards market unchanged in important ways compared to prior to the IFR.

Suffice it to say that the IFR has been substantially frustrated, and it is worth recording what its main impacts were supposed to be, with extensive quotation from the original EU document.

IFR - cards market as it was supposed to be reshaped

The IFR stated that merchants should receive at least 99.8% of the sticker price when payment was by debit card, and 99.7% if payment was by credit card. It determined this by specifying caps on the deductions-from-face-value of 0.2% for debit card transactions and 0.3% for credit card transactions. These were to be the maximum deductions at source, not rebates made at some future point. The aims of the IFR in this area were to avoid (i) the false subsidy enjoyed by card payment actors due to their fees not being transparent and negotiable; and (ii) the inflationary effect of the deductions whereby merchants increase the price of goods and services to all buyers in order to recoup the fees the merchants suffer when some of their buyers pay by card; and (iii) benefits being made available to cardholders by their card issuers that are paid for by merchants and by higher prices for all.

The IFR did not preclude merchant acquirers from charging service fees as well, but it did limit the all-in cost to these fees plus the capped deduction. The definitions termed this capped deduction as the 'interchange fee', and in a way that precluded any other fees being deducted separately.

However, the UK situation is now crassly at odds with the intended situation described in Recital 20 of the IFR.

Recital 20 described at some length what the attributes of the payments market should be after IFR has been implemented:

'The caps in this Regulation are based on the so-called 'Merchant Indifference Test' developed in economic literature, which identifies the fee level a merchant would be willing to pay if the merchant were to compare the cost of the customer's use of a payment card with those of non-card (cash) payments (taking into account the fee for service paid to acquiring banks, i.e. the merchant service charge and the interchange fee). It thereby stimulates the use of efficient payment instruments through the promotion of those cards that provide higher transactional benefits, while at the same time preventing disproportionate merchant fees, which would impose hidden costs on other consumers. Excessive merchant fees might otherwise arise due to the collective interchange fee arrangements, as merchants are reluctant to turn down costly payment instruments for fear of losing business. Experience has shown that those levels are proportionate, as they do not call into question the operation of international card schemes and payment service providers. They also provide benefits for merchants and consumers and provide legal certainty.'

Put simply, the cost of card payments, for merchants, should be on a level with accepting cash, cheques or any other payment method – but it isn't.

IFR – the size of deductions-from-face-value now in the UK

The total net deductions on account of all fee categories range from 3-8% for small organizations, depending upon the card type that the business' customer proffers. Large organizations, such as might be members of the Confederation of British Industry, are able to use the power that derives from the volume of card payments they take, to obtain rebates against the standard rate card of deductions. PS22/2 put these at £600 million in 2018, for 'the largest merchants'.

This rate card is drawn up by the card issuers and the card brands, and determines (i) the lines of fees and their level that are deducted from each card payment, and (ii) how these deductions are distributed around the market actors in the ecosystem. Merchants with the requisite market power receive their rebates on a monthly or quarterly basis in arrears. Merchants without market power enjoy no rebates, and should, but may not, receive a listing of the fees applied to every card transaction broken down into each type of fee and what its level is by card type (e.g. Visa Electron, Visa Debit, Visa Credit, Visa Platinum Debit, Visa Platinum Credit).

In the worst case (for a small retailer) a premium card can result in a deduction as high as 8%. This comes about particularly where the account linked to the card enjoys generous benefits, such as cashback on purchases, above-market credit interest on balances and so on: these benefits for cardholders are funded directly from the deductions not paid to merchants.

In the very best case the deduction will rarely be less than 3%, of course always subject to a minimum. If the minimum is £0.30, and the standard fee is 3%, all payments below £10 will suffer a deduction in excess of 3%: the £0.30 deduction on a payment of £5 works out to 6%. For example, the September 2020 – August 2021 accounts of a UK arts group compiled by the author showed card fees of £70.01 on card-based sales of £1,176, through PayPal: an average deduction of 5.95%. The minimum deduction was £0.50.

IFR – PSR should be tasked with putting an amount on the overcharged deductions-from-face-value since 2016

It is scandalous that the PSR and the wider UK financial authorities have allowed the IFR to be overwhelmingly frustrated. The PSR should be tasked with determining the annual deductions-from-face-value for the entire UK and comparing them with 0.2% of face value for debit card payments and 0.3% of face value for credit card payments starting in 2016 (the Articles covering the caps went into force in December 2015). The IFR permitted the 'competent authority' to do this but it has not been done in the correct way, by identifying total deductions at source and comparing them with the IFR caps as if the IFR caps had been applied at source, and not been subjected by the industry to some form of rebate process (or non-rebate process in the case of smaller merchants).

The overcharged amount taken by the industry since 2016 from smaller merchants is the difference between the two figures. The amount taken by the industry since 2016 from larger merchants is the difference between the two figures, offset by the rebates they did receive.

Only then would we be able to appreciate the scale of monies being taken by the card payment ecosystems over and above the IFR thresholds, and that amount needs to be paid back.

We will then also be able to draw conclusions about the quality of stewardship exercised by the 'competent authority' for IFR compliance – the PSR itself – as well as about the level of false subsidy enjoyed by the card payment ecosystem.

Main provisions of the Interchange Fee Regulation (EU) 2015/751

Reference	Text	Meaning
Definition 10	'interchange fee' means a fee paid for each transaction directly or indirectly (i.e. through a third party) between the issuer and the acquirer involved in a card-based payment transaction. The net compensation or other agreed remuneration is considered to be part of the interchange fee;	The 'interchange fee' refers to the deduction from the sticker price that is not received by the merchant, and the term is inclusive of the 'net compensation'
Definition 11	'net compensation' means the total net amount of payments, rebates or incentives received by an issuer from the payment card scheme, the acquirer or any other intermediary in relation to card-based payment transactions or related activities;	'Net compensation' includes remuneration under any heading paid to any market actor involved in a transaction, meaning the 'interchange fee' as defined excludes separate fees with different names
Definition 12	'merchant service charge' means a fee paid by the payee to the acquirer in relation to card-based payment transactions	The only other remuneration beyond the 'interchange fee' is the service charge agreed between the merchant and their acquirer
Article 3.1 – interchange fee cap for consumer debit card transactions	Payment service providers shall not offer or request a per transaction interchange fee of more than 0,2 % of the value of the transaction for any debit card transaction.	The deduction-from-face-value cannot be more than 0.2% for debit card
Article 3.5 – verification that debit card cap being correctly applied	The competent authorities [in the UK this is the PSR]…shall, upon their written request, require payment card schemes and/or payment service providers to provide all information necessary to verify the correct application of paragraphs 3 and 4 of this Article [which is that the cap has been properly applied].	The PSR should be running an annual process to verify that the caps are being applied correctly, although because the credit card cap is described in Article 4 and is not a paragraph of Article 3, it could be argued that the credit card cap falls outside this verification process

Reference	Text	Meaning
Article 4 - interchange fee cap for consumer credit card transactions	Payment service providers shall not offer or request a per transaction interchange fee of more than 0,3 % of the value of the transaction for any credit card transaction. For domestic credit card transactions Member States may define a lower per transaction interchange fee cap.	The deduction-from-face-value cannot be more than 0.3% for credit card
Article 5 – prevention of circumvention	For the purposes of the application of the caps referred to in Articles 3 and 4, any agreed remuneration, including net compensation, with an equivalent object or effect of the interchange fee, received by an issuer from the payment card scheme, acquirer or any other intermediary in relation to payment transactions or related activities shall be treated as part of the interchange fee.	There can be no further fees taken in the form of deductions: the 'interchange fee' is the one and only fee and it is all-in
Article 7 - Separation of payment card scheme and processing entities	Payment card schemes and processing entities: (a) shall be independent in terms of accounting, organisation and decision-making processes; (b) shall not present prices for payment card scheme and processing activities in a bundled manner and shall not cross- subsidise such activities; (c) shall not discriminate in any way between their subsidiaries or shareholders on the one hand and users of payment card schemes and other contractual partners on the other hand and shall not in particular make the provision of any service they offer conditional in any way on the acceptance by their contractual partner of any other service they offer.	Visa and Mastercard should separate their scheme management from their infrastructure
Article 9.1 - Unblending	Each acquirer shall offer and charge its payee merchant service charges individually specified for different categories and different brands of payment cards with different interchange fee levels unless payees request the acquirer, in writing, to charge blended merchant service charges.	An acquirer must break down its fees and the deduction to a granular level for 'different categories and different brands of payment cards' in its proposal and its charges if it is selected
Article 9.2 - Unblending	Acquirers shall include in their agreements with payees individually specified information on the amount of the merchant service charges, interchange fees and scheme fees applicable with respect to each category and brand of payment cards, unless the payee subsequently makes a different request in writing	An acquirer must include this granular information in its service agreement
Article 10 – 'Honour All Cards' rule	This article was meant to dissolve the rule whereby, if a merchant decided to accept any Visa or Mastercard payment cards, it had to accept all of them and the deductions that went with them.	This article was meant to work together with Article 9 and enable the merchant to pick and choose which cards to accept and which to reject, and on a granular level as opposed to on the level, for example, of 'Visa Credit Card'

Reference	Text	Meaning
Article 12.1 - Information to the payee on individual card-based payment transactions	After the execution of an individual card-based payment transaction, the payee's payment service provider shall provide the payee with the following information: (a) the reference enabling the payee to identify the card-based payment transaction; (b) the amount of the payment transaction in the currency in which the payee's payment account is credited; (c) the amount of any charges for the card-based payment transaction, indicating separately the merchant service charge and the amount of the interchange fee.	The merchant must receive a full breakdown of fees after a transaction is completed, although this requirement is subject to a sub-clause 'With the payee's prior and explicit consent, the information referred to in the first subparagraph may be aggregated by brand, application, payment instrument categories and rates of interchange fees applicable to the transaction' and to Article 12.2 'Contracts between acquirers and payees may include a provision that the information referred to in the first subparagraph of paragraph 1 shall be provided or made available periodically, at least once a month, and in an agreed manner which allows payees to store and reproduce information unchanged'. These qualifications combine to produce a potential situation, under a Framework Contract, where the merchant does not receive the information they need in a timely manner in order to complete their internal processes and to check themselves that the contract was adhered to.

Inhibitors to take-up of digital payments

The Digital Payment Initiative report is a testament to the digital payment industry's non-compliance with IFR, and indeed with the EU's second Payment Services Directive.

The report provides a list of the inhibitors to the take-up of digital payments by small businesses and small organizations, suitably toned down in the area of deductions-from-face-value for card payments, and otherwise stating that these types of customer:

- Do 'not secure the funds from digital sales rapidly enough, causing cashflow management issues' i.e. payments using new technology are slower!
- Are 'not readily [ ] able to compare and switch digital payment services' i.e. the pricing is opaque and major elements in it are non-negotiable!
- 'Have insufficient data and labelling attached to digital payments, making reconciliation time-consuming' i.e. doing your accounting with digital payments is more difficult than for non-digital payments!

These shortcomings add up to digital payments being slower and more expensive, and less easy to account for and reconcile. That is a powerful list of detriments, and with a major overlap with the detriments that the IFR was drafted to eliminate.

Speed

The point about speed is that, when a merchant accepts a card payment and releases goods, it has not received a payment but a guarantee of a future payment via their merchant acquirer. This guarantee comes ultimately from the card issuer, but the settlement follows 2-3 business days later.

The UK's 2017 Payment Services Regulations – deriving from the EU's second Payment Services Directive 2366 of 2015 - dictate shorter maximum end-to-end timeframes than these, but the Framework Contracts imposed on a merchant through the offices of their merchant acquirer characterize these settlements as 'agreed future-dated payments', undermining the merchant's right to receive the money on the same day, as it should do for a payment in £pounds within the UK. Same-day settlement should apply to a national payment in a member state currency.

It is odd that the report makes no mention of this issue and who is responsible for imposing this clause, why, and how it conflicts with the base wording of the 2017 Payment Services Regulations. This is another area where the competent authority for these Regulations – the PSR – might apply its time and resources.

The merchant switching their acquirer

An inability for a merchant to compare costs of different acquirers betokens non-compliance with IFR Article 9 on Unblending, as well as with IFR Article 12.1 on Information to the payee on individual card-based payment transactions: costs are not fully 'unblended', the merchant's service agreement with their acquirer does not break the costs down into a granular enough level and nor do proposal documents from the current acquirer or potential alternative acquirers. The merchant does not receive the necessary information after each transaction with the current acquirer. The merchant can therefore neither assess the all-in cost from their current acquirer, verify that the current acquirer has levied the fees in line with the contract, or obtain proposals from other acquirers against which it can compare the performance of the current acquirer, and make a business case for switching.

The PSR's PS22/2 claims that these requirements were lower than those it will now be imposing, but this is an argument that has no merit, as was explained above.

The business case for switching acquirers is anyway blunted by a major portion of the fees being both non-negotiable and much higher than the IFR caps, and by the manner in which the IFR's 'Honour All Cards' provision in Article 10 has been enacted in a much less granular manner than is inferred by the wording in Article 9 on Unblending that is supposed to go hand-in-hand with Article 10: 'different categories and different brands of payment cards with different interchange fee levels'. The merchant can in effect only refuse cards at a high 'category' level.

Accounting and reconciliation

The point about accounting and reconciliation is tied up with deductions: a receipt of £96.50 2-3 business days later for a sale whose sticker price was £100 will probably arrive within a larger amount for all the card sales proceeds due for settlement on that day, which cannot be relied upon to be the same as the proceeds of all card sales made on the same day as the £100: the proffering of different card types and with different card issuers will result in differing settlement timescales.

The merchant then has first to unravel the bulk amount into the individual sales settled by it, and then try to determine what percentage of each sale's value the merchant received.

The merchant has to reconcile the sale at its face value and then raise bookkeeping vouchers for the deductions, which it has to enter as 'Bank charges' and reconcile as well. That is a considerable extra burden of work for an organization not large enough to be running a software package for accounting and reconciliation. In fact, even with such a system, it might require manual intervention to unwrap the bulk amount received, and to make and reconcile the bookkeeping entries for the deductions.

This betokens non-compliance by acquirers with Article 12.1 on Information to the payee on individual card-based payment transactions, and could indicate that acquirers have imposed Framework Contracts on merchants under which these requirements on acquirers have been weakened. It would be a point of dispute whether the acquirer had received the merchant's 'prior and explicit consent' if the Framework Agreement was non-negotiable and if the merchant was not required to sign it.

Inadequacy of the report in facing up to these detriments

These problems are not unpacked in the Digital Payments Initiative report. They amount to solid reasons for the rejection of digital payments. In what way can defects and shortcomings be termed 'barriers to adoption'? These are core detriments, not matters of packaging. The 'barriers' are not linked back in the report to the original text of the IFR.

It is a failure of the integrity of the panel's work neither to give adequate weight to what the problems are, nor to point out that they are core problems within the offerings, nor to make reference to the impact that a correct implementation of the IFR would have had.

Rather than make a meaningful contribution by stating these matters, the report pulls its punches. It fails to draw the obvious conclusions from the material it has assembled. That is a failure of process as well as of substance.

Of course, given the committee's make-up, admitting to these failings would be a case of turkeys voting for Christmas. The failure of the PSR, the FCA, the Bank of England and HMTreasury to identify that there were fatal conflicts-of-interest at work on this committee and on the PSR Panel is a matter upon which they should be answering to Parliament.

As regards the solutions to the problems with payment cards, it is simply a matter of implementing the Interchange Fee Regulation properly.[85]

Digital Payments Initiative report spares PSRs blushes

The Digital Payments Initiative report fluffs its lines, skirting around the problems and sparing its patron's blushes. The writers of the report must know that deductions and not service fees are the major portion of the cost of accepting card payments for small merchants, and that the major part of the deduction is the fees that are imposed over and above the Interchange Fee and which are not negotiable by the merchant. The merchant has no influence over the type of card a customer offers: this is agreed between the card issuer (the customer's Account Servicing Institution) and the respective card brand (Visa or Mastercard, as Amex is its own brand and issuer). The merchant may be slightly less tightly bound and gagged by the 'Honour All Cards' rule in the UK post-IFR, but not as loosely bound and gagged as they should have been.

[85] See also Appendix 5

The PSR, rather than encouraging further take up of Visa- and Mastercard-branded cards, should be following our proposal to ensure complete compliance with the Interchange Fee Regulation.

Sycophantic and self-interested endorsement of Open Banking

The main force of the Digital Payments Initiative report is to play up to its patron and endorse Open Banking as a channel through which the adoption of digital payments can be fostered. Open Banking – originally set up to encourage account switching – has in the meantime become a channel for the realization of a lot more than that, under the heading of Open Finance. The report endorses on p. 18 Open Banking's latest scope expansion – Variable Recurring Payments.

Here again one has the sense that the solution had already been built, for whatever reason (like Request to Pay and Confirmation of Payee), and here is a marketing opportunity to re-endorse it, such that it can be held out as a method of eliminating cash this week, when last week it was a way of reducing financial exclusion, or a way of helping people do better budgeting, or a way of paying a lower gas tariff, or whatever is the current horse that can be strapped in to the shafts to pull the digital payments wagon along.

Of course bringing Open Banking into the equation suits the book of one panel member, who has been an Executive or Non-Executive Director of the Current Account Switch Service since 2017, was a member of the Payment Strategy Forum and the APP Scams Steering Group, and was a Consumer Representative to the Open Banking Implementation Entity from 2016 to 2021. This panel member is amongst those with greatest amount of reputational capital invested in the range of 'solutions' mentioned.

Other panel members are connected to organizations that have monetary capital sunk into Open Banking. It is not hard to find evidence of the enveloping presence of Visa and Mastercard in the Open Banking market space, whether that be Visa's whitepaper 'The Future of Banking is Open' from 2020, its acquisition of Tink,[86] or its partnership with Marqeta,[87] or in Mastercard's suite of Open Banking solutions.[88]

The Digital Payments Initiative: dead on arrival

The overwhelming impression left by the report is not the spinning of a dastardly web of conspiracy but a depressing lack of new ideas and common sense, as well as a sycophantic unwillingness to challenge their patron the PSR either in the detail around the Interchange Fee Regulation and the industry-imposed application of 'agreed future-dated payments' to card payment settlement, or on the overall direction-of-travel.

Digital payments are admitted to be slower, costlier and more difficult to deal with than their predecessors. This amounts to a business case for a return to cash and cheques. Instead the report plugs a set of 'solutions' that have been out there for some years but which have not yet had voluntary uptake by customers on the basis that the solutions are better than what they are using already.

[86] https://investor.visa.com/news/news-details/2022/Visa-Completes-Acquisition-of-Tink/default.aspx accessed on 17 May 2022
[87] https://usa.visa.com/visa-everywhere/innovation/digital-payment-innovation-through-open-platforms.html accessed on 17 May 2022
[88] https://openbanking.mastercard.com/ accessed on 17 May 2022

A major reason for the uptake of CoP is that it is not genuinely voluntary: banks have made it perfectly clear that, if the customer does not use CoP or if they do use it and do not get back the response that the payee is confirmed, they will have invalidated any claim they might have under Contingent Reimbursement Model, should they fall victim to Authorised Push Payment Fraud. Correct usage of CoP is the principal contingency upon which reimbursement depends.

The panel members are too conflicted, and too incentivized to back these 'solutions' – either incentivized in terms of reputational capital invested by themselves or of money invested by their organizations – to draw the obvious conclusions and recommend either a general alteration in the direction-of-travel or different specific solutions to known problems such as Authorised Push Payment Fraud.

Instead the recipe is for more busy-work to be conducted within and between the organizations in the 'concert party' in the hope that, eventually, something will take off. If it doesn't, there is always the option of further measures to hobble existing products – as has been done with cheques and now cash – or of adopting the European solution: banning existing products by law.

The European solution: banning existing products by law

This happened under the Single Euro Payments Area Migration End Date Regulation 260/2012. Voluntary customer take-up since 2008 of the Single Euro Payments Area payment schemes (the SEPA Credit Transfer and the SEPA Core Direct Debit) had been slow because these new services contained fewer features and functions than the existing ones, and because the services had to be transacted in a new data format called ISO20022 XML.

The solution to customers' lack of cooperation with the authorities' direction-of-travel was legal coercion. This included suppression of free choice of the data format in which customers might agree to transact business with their bank, an outrageous intervention by officialdom in the free determination by trading partners of their terms-of-trade with one another in a self-professed market economy. A number of well-developed data formats were forcibly retired as a result, such as the German DTA and the French CFONB.

It is not even as if the adoption of ISO20022 XML has taken the industry forward.[89] It is wrongly accepted to be more than a capacious data format, into which more information can be inserted than is the case with data formats like SWIFT MT and BACS Standard18. It is insufficiently appreciated that work needs to be done to make use of the extra capacity and agree what information should be inserted and in what way: that does not automatically come with the format.

The extra capacity has, in practice, proven to be somewhat illusory. The experience with SEPA has been that, when it is used in so many countries, each country wants to specify its own content. Very quickly the fields get re-used and the capacity is expended.

The result is not a globally-used and consistent dataset, but a common high-level framework, each deployment of which differs in its content. This is far from the promise of ISO2022 XML and from the implication of one of the main arguments for adopting 'it', namely that everyone else is. In practice it turns out that there is no single 'it', but multiple versions of 'it'.

[89] https://www.finextra.com/blogposting/23032/iso20022--the-great-leap-sideways accessed on 14 October 2022

Coercive approach as the likely pathway towards the digital future

This coercive approach could be adopted in the UK by the following means:

- Central Bank Digital Currency being introduced and physical cash ceasing to be legal tender; and
- Central Bank Digital Currency being also made 'programmable' and its costs being defrayed onto businesses in the form of a deduction-from-face-value; and
- Open Banking payments (conducted as Faster Payments, and on the basis of a Request to Pay) running through payments infrastructures controlled by Mastercard or Visa.

The result would be a harmonized environment where all means of payment functioned as Visa and Mastercard payments do now, all payments were digital, and all resulted in a deduction-from-face-value and a 2-3 settlement delay. A significant proportion would be conducted in a new data format as well – ISO20022 XML is to be the data format used in New Payments Architecture.

This is a digital-only future that would very much be to the taste of the PSR, but unfortunately its creature the Digital Payments Initiative has already failed, an unsoundly-based effort by the PSR to create a pseudo-autonomous process aimed at delivering to it the corroboration of a predetermined direction-of-travel. The Digital Payments Initiative has seen one ball – Open Banking - floating around within reach, grabbed it and thrown it back to the PSR.

The PSR will be hoping for better from the CBDC Engagement Forum, a bigger panel, with an even stronger core of those who have been in charge of the UK's direction-of-travel in payments for the last 7 or 8 years, and a number specific enthusiasts for all things crypto added in.

Now we move on to examining the CBDC Technology Forum: this is composed 100% of enthusiasts for the digital future, so the PSR can be assured that it will tell the BoE that all things are doable, even if they aren't.

Member organisations of the CBDC Technology Forum – 26 organisations guaranteed to be 100% in favour

Banks (2) (issuers of Visa- or Mastercard-branded payment cards)

Monzo

Barclays

Tech (10)

Google

Amazon Web Services

IBM

Oracle

R3

Idemia – identity technology: https://www.idemia.com/

Quali-sign - mobile phone apps for electronic identification and 'Strong Customer Authentication': https://www.quali-sign.com/

Archax – cryptocurrency and digital asset trading: https://www.archax.com/

Fluency – 'Fluency Aureum was created and developed for the purpose of building and interconnecting national CBDC (Central Bank Digital Currency) networks which is integrated with cash retail banking to support the transition from cash to a CBDC': https://www.fluencytech.com/about.html

Consensys – blockchain technology, Ethereum: https://consensys.net/

Paytech (7)

Open Banking Implementation Entity

Visa

Stripe

Mastercard

Pay.UK (Pay.UK's strong links to **Mastercard** through Vocalink have been noted earlier)

PayPal

Initiative for Cryptocurrencies and Contracts

Cards and digital payments (2)

SETL

eCurrency

Commercial enterprises (2)

ASOS Technology – technology arm of the ASOS clothing retailer: https://asosbrum.wordpress.com/about/

Spotify – media streaming service: https://www.spotify.com/us/

Economists and think tanks (3)

Cambridge Centre for Alternative Finance (at the Cambridge University Judge Business School)

World Economic Forum

University College London

The CBDC Technology Forum is simply an assembly of enthusiasts for digital payments, and, given the presence of the World Economic Forum, for the Great Re-set.

Conclusions on the make-up of the two Forums

The UK organisations look badly outmatched. The US organizations are, or are backed by, the Silicon Valley tech giants. Visa and Mastercard are represented multiple times over.

The CBDC project, on this basis, looks like a channel for delivering the British public even further into the arms of Big Tech and the major payment card brands.

Already we do not seem to be able to operate without Big Tech's approval: on 20 April 2022 The Daily Telegraph reported that the UK's new technology watchdog is to have its powers to block takeovers by Silicon Valley giants curbed after ministers bowed to pressure from the likes of Google and Facebook.[90]

The UK public deserves much better than this.

There is also the question of whether this type of process delivers anything of value. The precedents are not promising: World Class Payments, The Payment Strategy Forum, the APP Scams Steering Group, the PSR Panel, the Access to Cash Working Group, the PSR itself, the Digital Payments Initiative. People from the 'concert party', changing their hats and their seats with monotonous regularity, doing busy-work within and between numerous ostensibly autonomous bodies, designing second-rate solutions that then become sacred cows, at the same time as being dead horses flogged over and over again, re-launched under different flags, and passed on to yet another process or body or committee.

All the while the detriments continue and even expand: Authorized Push Payment Fraud, Deductions-from-face-value, and the hobbling of existing products that have major value points for consumers and businesses: cash and cheques.

Now we go on to look behind the individuals and organizations on the CBDC Forums, to see if there is a pattern of ultimate control, and how prominent Stanford University is in this, if at all.

[90] https://blogh1.com/2022/04/18/tech-watchdogs-wings-clipped-in-wake-of-silicon-valley-pressure/ accessed on 20 April 2022

Members of the BoE CBDC Forums and their connections with Stanford

- Names written in **red** means the organization is represented in both forums both primarily and through a secondary connection
- Names written in **green** means the organization shows indicators of being a surrogate of another that is represented in one or both forums

Conclusions:

- There is little evidence of a specific Stanford connection at this level
- There is greater evidence of connections to a wider spread of business schools and elite universities
- There is also evidence of multiple levels of representation and influence by individual organisations

Engagement Forum			
Name	**Position/Organization**	**Nationality/Residence**	**Stanford connection**
Anne Boden	CEO Starling Bank	UK/UK	None
Georges Elhedery	Co-CEO Global Banking & Markets HSBC	French/UK	None (École Nationale de la Statistique et de l'Administration Économique (ENSAE))
Arun Kohli	COO EMEA Morgan Stanley	Indian/USA	None (Wharton MBA)
Tracey McDermott	Group Head of Conduct & Financial Crime Standard Chartered Bank	British/UK	None
Chris Rhodes	CFO Nationwide Building Society	UK/UK	None
Paul Thwaite	CEO Commercial Banking NatWest	UK/UK	None
Stephen Gilderdale	Chief Product Officer SWIFT	UK/Belgium	None
Charlotte Hogg	CEO **Visa** Europe	UK/UK	None (Harvard – Kennedy Memorial Trust Scholar)
Matthew Hunt	COO **Pay.UK**[91]	UK/UK	None
Jorn Lambert	Chief Strategy Officer **Mastercard**	Belgian/?	None (INSEAD)
Paul Bances	Head of Global Market Development of Blockchain, Cryptocurrency and Digital Currencies **PayPal**	USA/USA	None (Said Business School)
Simon Coles	CTO Paypoint	UK/UK	None

[91] Pay.UK links to Mastercard through Vocalink were noted earlier

Members of the BoE CBDC Forums and their connections with Stanford (cont'd)

Engagement Forum			
Name	**Position/Organization**	**Nationality/Residence**	**Stanford connection**
Diana Layfield	President of EMA Partnerships **Google**	UK/UK	None (Harvard MBA)
Andrew Cregan	Head of Finance Policy British Retail Consortium	UK/UK	None
Martin McTague	National Policy Chair Federation of Small Businesses	UK/UK	None
Andrew Murphy	Executive Director of Operations John Lewis Partnership	UK/UK	None (Kellogg School of Management. Dame Sharon White, now JLP Chair, was a Treasury civil servant)
Chris Wilford	Director of Financial Services Policy CBI[92]	UK/UK	None
Natasha de Teran	Financial Services Consumer Panel	Spanish/UK	None
Simon Gaysford	Founder & Director, Frontier Economics	UK/UK	None
Reema Patel	Associate Director Ada Lovelace Institute	UK/UK	None
Polly Tolley	Director of Impact Citizens Advice Scotland	UK/UK	None
Judith Tyson	Research Fellow Overseas Development Institute	UK/UK	None
Christian Catalini	Chief Economist Diem Association	American/USA (at MIT, Cambridge Mass)	None (Diem has now sold all its assets to to Silvergate; it was the successor organization to Libra, created by Facebook)
Jess Houlgrave	Chief of Staff Checkout.com	UK/UK	None (Said Business School)
Arun Tharmarajah	Head of European Banking Wise	UK/UK	None
Adam Jackson	Director of Policy **Innovate Finance** (**Visa**)	UK/UK	None
Jana Mackintosh	Managing Director Payments and Innovation UK Finance	South African/UK	None

[92] Moving to the Financial Conduct Authority as of October 2022

Members of the BoE CBDC Forums and their connections with Stanford (cont'd)

Engagement Forum			
Name	**Position/Organization**	**Nationality/Residence**	**Stanford connection**
Ruth Wandhofer	PSR Panel (**Gauss Ventures**)	Austrian/UK	None
Bryan Zhang	Executive Director, **Cambridge Centre for Alternative Finance, Cambridge Judge Business School**	Singapore/UK	None ('Agenda Contributor' to the World Economic Forum)
Rodney Garratt	Professor of Economics, University of California Santa Barbara	American/USA	None (Cornell University)
Simon Gleeson	Financial Regulatory Group Lead Clifford Chance	UK/UK	None

Technology Forum			
Name	**Position/Organization**	**Nationality/Residence**	**Stanford connection**
Dominic Black	Money Collective Tech Lead Monzo Bank	UK/UK	None (now left Monzo and started his own company)[93]
Dr Lee Braine	MD Research & Engineering Barclays	UK/UK	None (PhD from **University College London**)
Alan Ainsworth	Head of Policy Open Banking Implementation Entity	UK/UK	None (ex-Barclays)
Max Malcolm	Head of Solution Architecture **Visa**	UK/UK (Winchester)	None
Sean Mullaney	Head of Product & Engineering for EMEA Payments Stripe	Irish/Ireland	None (ex-**Google**)
Patrick O'Donnell	VP Blockchain and Digital Assets **Mastercard**	Irish/Ireland	None (ex-Citibank)
James Whittle	Director of Standards & Architecture **Pay.UK**[94]	UK/UK	None
Edwin Aoki	CTO Blockchain, Cryptocurrency and Digital Currencies **PayPal**	American/USA	None (Harvard)
Will Drewry	Principal Software Engineer **Google**	American/USA	None

[93] This change of circumstance ought to have led him to leave the Forum
[94] Pay.UK links to Mastercard through Vocalink were noted earlier

Members of the BoE CBDC Forums and their connections with Stanford (cont'd)

Technology Forum			
Name	**Position/Organization**	**Nationality/Residence**	**Stanford connection**
David MacKeith	Principal technology Advisor Amazon Web Services	UK/UK	None
Lauren Del Giudice	Senior Architect Idemia	French/France	None
Vikram Kimyani	Cloud Architect Oracle	UK/UK	None
Paul Lucas	Distinguished Engineer **IBM**	UK/UK	None (Said Business School)
Michael Adams	CEO Quali-Sign	UK/UK	None (**IBM** Business Partner; ex-**IBM**; ex-**Barclays**)
Richard Brown	CTO R3	UK/UK	None (ex-**IBM**)
Joshua Jeeson Daniel	Director Payments SETL[95]	?/?	None; appears to be head of the Computer Modelling Group at the University of Southampton; not a director of SETL Ltd
Bejoy Das Gupta	Chief Economist eCurrency	Indian/USA (Washington DC)	None
Andrew Flatt	CTO Archax	UK/UK	None
Inga Mullins	CTO Fluency	UK/UK	None (Angel investor; Fluency is a micro company)
Matthieu Saint Olive	CBDC & Payments Manager **Consensys** (**Mastercard**)[96]	French/France	None (ESCP Business School 'Grande Ecole')
Keith Bear	Fellow **Cambridge Centre for Alternative Finance, Cambridge Judge Business School**	UK/UK	None (ex-IBM and still involved as **member of IBM's Industry Academy**; board Advisor to three blockchain fintechs, and a lead mentor for the Barclay's Techstars Fintech accelerator)

[95] https://www.finextra.com/newsarticle/33768/setl-emerges-from-administration accessed on 14 April 2022
[96] See Appendix 1

Members of the BoE CBDC Forums and their connections with Stanford (cont'd)

Technology Forum			
Name	**Position/Organization**	**Nationality/Residence**	**Stanford connection**
Geoff Goodell	Senior Research Fellow **University College London**	American/USA	None (Harvard; partner and Chief Investment Officer of a boutique asset management firm based in Boston)[97]
Sarah Meiklejohn	Associate Director Initiative for Cryptocurrencies and Contracts (IC3)	UK/UK – Sarah is a 'Reader (Associate Professor) in Cryptography and Security at **University College London**')[98]	IC3 is an 'initiative of faculty members at Carnegie Mellon University, Cornell University, Cornell Tech, EPFL, ETH Zurich, UC Berkeley, **University College London**, UIUC and the Technion'
Simon Brayshaw	Head of Technology ASOS	UK/UK	None
Ashley Lannquist	Project Lead Blockchain and Digital Currency World Economic Forum	American/USA (San Francisco)	None (Haas Business School, University of Berkeley; actually works for the International Monetary Fund)
Mark Shaw	Director of Global Payments Strategy Spotify	UK/UK	None (ex-Vocalink, a **Mastercard** company, and ex-**Visa**)

[97] http://blockchain.cs.ucl.ac.uk/user/goodell/ accessed on 14 April 2022
[98] https://www.initc3.org/people.html accessed on 14 April 2022

Organizations with members in the BoE CBDC Forums, and where the organization is headquartered

This begins to bring out the large number of members that are headquartered in California or elsewhere in the USA, although that alone does not reflect the relative hitting power of the US-based names on the technology side compared to the UK-based ones.

Organization	Location of Head Office	Head Office Country and State
Starling Bank	London	UK
HSBC	London	UK
Morgan Stanley	New York	New York USA
Standard Chartered Bank	London	UK
Nationwide Building Society	Swindon	UK
NatWest	Edinburgh	UK
SWIFT	La Hulpe	Belgium
Visa	Foster City	California
Pay.UK[99]	London	UK
Mastercard	Purchase	New York USA
PayPal	San Jose	California USA
Paypoint	Welwyn Garden City	UK
Google	Mountain View	California USA
British Retail Consortium	London	UK
Federation of Small Businesses	Blackpool	UK
John Lewis Partnership	London	UK
CBI	London	UK
Financial Services Consumer Panel	Crickhowell (near Brecon, Mid-Wales)	UK
Frontier Economics	London	UK
Ada Lovelace Institute	London	UK
Citizens Advice Scotland	Edinburgh	UK
Overseas Development Institute	London	UK
Diem Association	Washington	DC USA
Checkout.com	London	UK
Wise	London	UK
Innovate Finance (**Visa**)	London	UK
UK Finance	London	UK
PSR Panel (**Gauss Ventures**)	London/**George Town + Douglas**	UK/**Grand Cayman + Isle of Man**
Cambridge Centre for Alternative Finance, Cambridge Judge Business School	Cambridge	UK
University of California Santa Barbara	Santa Barbara	California USA

[99] Pay.UK links to Mastercard through Vocalink were noted earlier

Organizations with members in the BoE CBDC Forums, and where the organization is headquartered (cont'd)

Organization	Location of Head Office	Head Office Country and State
Clifford Chance	London	UK
Monzo Bank	London	UK
Barclays	London	UK
Open Banking Implementation Entity	London	UK
Stripe	San Francisco (their rep is based at the European HQ in Dublin)	California USA (European HQ in Republic of Ireland)
Amazon Web Services	Seattle	Washington USA
Idemia	Courbevoie	France
Oracle	Redwood Shores	California USA
IBM	Armonk	New York USA
Quali-Sign	Alderley Edge	Cheshire UK
R3	New York	New York USA
SETL	London	UK
eCurrency	Dublin	Ireland
Archax	London	UK
Fluency	London	UK
Consensys (**Mastercard**)	Brooklyn	New York USA
University College London	London	UK
Initiative for Cryptocurrencies and Contracts (IC3)	Jacobs Technion-Cornell Institute at Cornell Tech, New York	New York USA
ASOS	Worcester	UK
World Economic Forum	Geneva (IMF HQ is Washington)	Switzerland (IMF HQ is in DC USA)
Spotify	New York	New York USA

Boards of Directors and their main executive career and educational experiences for the subset of these companies that are headquartered in the USA and/or who are in the cryptocurrency and digital payments and asset spaces

It is in this area that the interconnections become clearer, and where there is evidence of the CBDC Forums being dominated by a network which needs further, detailed investigation.

Very few of the people have no university degree at all. Where no other employers are stated, this person has worked at the stated company for their entire career.

	Organization	Location of Head Office	Head Office Country and State
1	**Visa**	Foster City	California
2	**Mastercard**	Purchase	New York USA
3	**PayPal**	San Jose	California USA
4	**Google**	Mountain View	California USA
5	Diem Association	Washington	DC USA
6	Checkout.com	London	UK
7	Wise	London	UK
8	PSR Panel (**Gauss Ventures**)	London/**George Town + Douglas**	UK/**Grand Cayman + Isle of Man**
9	Monzo Bank	London	UK
10	Stripe	San Francisco (their rep is based at the European HQ in Dublin)	California USA (European HQ in Republic of Ireland)
11	Amazon Web Services	Seattle	Washington USA
12	Idemia	Courbevoie	France
13	Oracle	Redwood Shores	California USA
14	**IBM**	Armonk	New York USA
15	R3	New York	New York USA
16	SETL	London	UK
17	eCurrency	Dublin	Ireland
18	Archax	London	UK
19	Fluency	London	UK
20	**Consensys** (**Mastercard**)	Brooklyn	New York USA
21	Spotify	New York	New York USA

1. Visa[100]	
Executive Directors	
Name	Profile
Alfred J Kelly	• American Express • TowerBrook Capital Partners, L.P • MBA from Iona College
Non-Executive Directors	
Name	Profile
Lloyd A Carney	• Carney Technology Acquisition Corp II • ChaSerg Technology Acquisition Corp • Brocade Communications Systems • Xsigo Systems • Juniper Systems, Nortel, Bay Networks
Mary B Cranston	• Pillsbury Winthrop Shaw Pittman LLP • A.B. degree Political Science Stanford University • J.D. Stanford Law School
Francisco Javier Fernández-Carbajal	• Servicios Administrativos Contry S.A. de C.V. • Banco Bilbao Vizcaya Argentaria • Harvard MBA
Ramon Laguarta	• Pepsico • MBA ESADE Business School in Barcelona, Spain • Masters International Management Thunderbird School of Global Management Arizona State University
Teri L. List	• Gap Inc • Dick's Sporting Goods, Kraft Foods Group, Procter & Gamble • Certified public accountant
John F. Lundgren	• Stanley Black & Decker • MBA from Stanford University
Robert W. Matschullat	• The Chlorox Company • Seagram • Morgan Stanley • MBA from the Stanford Graduate School of Business
Denise M. Morrison	• Campbell Soup • Kraft Foods, Procter & Gamble, Pepsico
Linda J. Rendle	• The Chlorox Company • Bachelor's degree in Economics Harvard University
Maynard Webb	• Webb Investment Network • eBay • Bay Networks

[100] https://investor.visa.com/corporate-governance/board-of-directors/default.aspx accessed on 20 April 2022

2. Mastercard[101]	
Executive Directors	
Name	Profile
Michael Miebach	• Barclays • Citibank • Harvard Business School
Non-Executive Directors	
Name	Profile
Professor Merit Janow	• Columbia University • World Trade Organization, US Department of Justice
Candido Botelho Bracher	• Itau Unibanco Group
Richard K Davis	• Make-A-Wish America • US Bancorp • California State University & Cornell
Steven J Freiberg	• eTrade Financial • Citibank • TowerBrook Capital Partners
Julius Genachowski	• The Carlyle Group • US government • Harvard Law School • Columbia University
Choon Phong Goh	• Singapore Airlines • Massachusetts Institute of Technology
Oki Matsumoto	• Money Group • Goldman Sachs
Youngme Moon	• Harvard Business School
Rima Quereshi	• Verizon Communications • Ericsson • MBA McGill University
Jose Octavio Reyes Lagunes	• Coca-Cola • MBA Instituto Tecnológico y de Estudios Superiores de Monterrey
Gabrielle Sulzberger	• Two-Sigma Impact • Acorn Advisers • Fontis Partners • JD Harvard Law School • MBA Harvard Business School
Jackson Tai	• DBS Bank Group • JPMorgan

[101] https://investor.mastercard.com/corporate-governance/board-of-directors/default.aspx accessed on 20 April 2022

Mastercard (cont'd)	
Harit Talwar	• Discover Financial Services • Morgan Stanley • Citibank • MBA Indian Institute of Management
Lance Uggla	• HIS-Markit • Toronto Dominion • Canadian Imperial Bank of Commerce • MSc London School of Economics

3. PayPal[102]	
Executive Directors	
Name	Profile
NONE	• --
Non-Executive Directors	
Name	Profile
Rodney C Adkins	• 3RAM Group LLC • IBM • Georgia Tech
Jonathan Christodoro	• Patriot Global Management • Icahn Capital • Harvard • Cornell
John J Donahoe	• Nike • eBay • Bain & Company • MBA Stanford
David W Dorman	• AT&T • Motorola • Georgia Tech
Belinda Johnson	• Airbnb • Yahoo • JD University of Texas School of Law
Enrique Lores	• Hewlett-Packard • MBA ESADE Business School
Gail J McGovern	• American Red Cross • MBA Columbia
Deborah M Messemer	• KPMG
David M Moffett	• Federal Home Loan Corporation • FirstStar bank group
Ann M Sarnoff	• WarnerMedia Studios & Networks • BBC • Dow Jones • MBA Harvard
Daniel H Schulman	• American Express • Sprint Nextel • MBA Leonard N Stern School of Business
Frank D Yeary	• Darwin Capital Advisors • CamberVew Partners • Citibank • Vice Chancellor University of California Berkeley

[102] https://investor.pypl.com/governance/board-of-directors/default.aspx accessed on 20 April 2022

4. Google[103]	
Executive Directors	
Name	Profile
Larry Page	• Founder • Backrub webcrawler • PhD Computer Science Stanford University
Sergey Brin	• Founder • Backrub webcrawler • PhD Computer Science Stanford University
Sundar Pichai	• McKinsey • Applied Materials • Master of Science, Stanford University • MBA Wharton
Non-Executive Directors	
Name	Profile
John L Hennessy	• President of Stanford University • MIPS Project/MIPS Computer Systems Ltd • 'Godfather of Silicon Valley'
Frances H. Arnold	• Chemical engineer and Nobel Laureate • CalTech • US government adviser
L John Doerr	• Kleiner Perkins • Intel • Harvard MBA
Roger W. Ferguson, Jr.	• Federal Reserve Bank • Teachers Insurance and Annuity Association • PhD Economics Harvard
Ann Mather	• Pixar Studios • Walt Disney • KPMG • Cambridge University
Alan R. Mulally	• Ford Motor • Boeing • Massachusetts Institute of Technology
K Ram Shriram	• Amazon • Netscape • Endowed the Shriram Center for Bioengineering & Chemical Engineering at Stanford University
Robin L. Washington	• Gilead Sciences, Inc. • Hyperion Solutions • Peoplesoft • MIPS Technology • MBA. from Pepperdine University

[103] https://abc.xyz/investor/other/annual-meeting/ accessed on 20 April 2021

5. Diem Association[104]	
Diem was the successor to Libra, and was a membership organisation. Founder members were Anchorage, Andreessen Horowitz, Bison Trails Co., Breakthrough Initiatives, L.P., Novi Financial, Coinbase, Inc., Creative Destruction Lab, Farfetch UK Limited, Iliad, Kiva Microfunds, Lyft, Inc., Mercy Corps, PayU, Ribbit Capital, Spotify AB, Thrive Capital, Uber Technologies, Inc., Union Square Ventures, Vodafone, Women's World Banking, and Xapo Holdings Limited	
Executive Directors	
Name	Profile
Stuart Levey	• HSBC • US government • Harvard Law School
Bertrand Perez	• Web3 Foundation • PayPal • Zong
Kurt Hemecker	• PayPal • Zong
Dante Disparte	• Circle • Risk Cooperative • Harvard Business School
Non-Executive Directors = Member appointees to the Board	
Name	Profile
Matthew Davie	• Kiva Microfunds as member • Sega • PhD Environmental Engineering Stanford University
Patrick Ellis	• PayU as member • Standard Chartered • Franklin Templeton • INSEAD
Katie Haun	• Now Haun Ventures fund • Andreessen Horowitz as member • US Justice Department • Stanford University Law School
David Marcus	• Novi Financial as member • Meta • Coinbase • PayPal • University of Geneva
Wences Casares	• Xapo Holdings Limited as member • Xapo said to be the largest custodian of bitcoin in the world

Appears to have failed as Diem Association's assets have been sold to Silvergate Capital as of January 2022.[105]

[104] https://www.diem.com/en-us/updates/inaugural-meeting-minutes/ from 2109 accessed on 20 April 2022
[105] https://www.bbc.co.uk/news/technology-60156682 accessed on 20 April 2022

6. Checkout.com[106]	
Executive Directors	
Name	Profile
Guillaume Pousaz	• Ecole Polytechnique and University of Lausanne
Meron Colbeci	• Novi • PayPal
Celine Dufetel	• T Rowe Price • Neuberger Berman • McKinsey • Masters in Finance Princeton
Ott Kaukver	• Twilio • Skype • MBA Insead
Leela Srinivasan	• SureyMonkey • Opentable • LinkedIn • MBA Tuck School of Business Dartmouth
Kerry van Voris	• Oscar Health • Amazon • Microsoft
Non-Executive Directors	
Name	Profile
NONE	• --

[106] https://www.checkout.com/leadership accessed on 21 April 2022

7. Wise[107]	
Executive Directors	
Name	Profile
Kristo Käärmann	• Deloitte's • PwC
Matthew John Briars	• Google • Lloyds Bank • Oxford University
Non-Executive Directors	
Name	Profile
Clare Elizabeth Gilmartin	• Trainline.com • eBay • University College Dublin
Ingo Jeroen Uytdehaage	• Adyen • KPN • Vrije Universiteit Amsterdam
David Bolling Wells	• Netflix • Deloitte's • MBA University of Chicago Booth School of Business
Terri Lynn Duhon	• Morgan Stanley • JPMorgan • Said Business School • Massachusetts Institute of Technology
Alastair Michael Rampell	• Andreessen Horowitz • TrialPay • Visa • Harvard University
Hooi Ling Tan	• Grab Holdings • McKinsey • Harvard Business School

[107] https://find-and-update.company-information.service.gov.uk/company/13211214/officers accessed on 21 April 2022

8. Gauss Ventures[108]	
Executive Directors	
Name	Profile
Daniel Gusev	• Visa • Paysend • Promsvyazbank • Lomonosov Moscow State University
Mike Burns	• Murray Hill Group • HashWatt Inc • Curve • Zilch • Guggenheim Partners • Wharton Business School
Dr Ruth Wandhofer	• PSR Digital Payments Initiative Panel • PSR Panel • European Banking Federation • European Payments Council • Citibank
Andrew Morozov	• Murray Hill Group • Cisco Systems • Amherst Capital Partners • PhD Moscow Institute of Technology & Physics • Wharton Business School
Nikita Tchesnokov	• Briskly • Claim Makers • Digital Space Ventures • BA University of Essex (no school information)
Non-Executive Directors	
Name	Profile
NONE	• --

See also Appendix 2.

[108] https://www.gauss.vc/team accessed on 20 April 2022

9. Monzo Bank[109]	
Executive Directors	
Name	Profile
Anil Sai Tummalapalli	• Visa • Standard Chartered Bank • Citibank • Capital One
James Davies	• Deutsche Bank • Deloitte's
Non-Executive Directors	
Name	Profile
Gary Hoffman	• Hastings Insurance • Barclays • Cambridge University
Eileen Burbidge	• Passion Capital • HM Treasury Fintech Envoy (current) • Yahoo • Skype
Philip John Riese	• Zopa • American Express • Massachusetts Institute of Technology
Elizabeth Runham	• Facebook/Meta • Standard Chartered Bank • Barclays • Columbia Business School • Stanford University
Valerie Michelle Dias	• Hastings Insurance • Elavon • Visa • University of Bombay
Amy Jane Kirk	• Wonga • OneSavingsBank • MBNA • MBA Thunderbird School of Global Management
Fiona Catherine McBain	• Direct Line • Scottish Friendly Group • Ernst & Young
Keith Woollard	• Marks and Spencers Bank • The Post Office

The person nominally from Monzo Bank has left their employment

[109] https://find-and-update.company-information.service.gov.uk/company/09446231/officers accessed on 21 April 2022

10. Stripe[110]	
Executive Directors	
Name	Profile
Patrick Collinson	• Auctomatic • Massachusetts Institute of Technology
John Collinson	• Auctomatic • Harvard University
Non-Executive Directors	
Name	Profile
Mark Carney	• Bank of England • Bank of Canada • PhD Oxford University • Harvard University
Christa Davies[111]	• Aon • Microsoft • Fulbright Scholar • MBA Harvard
Diane Green	• Google • Intuit • Massachusetts Institute of Technology
Jonathan Chadwick	• Skype • Cisco Systems • Deloitte's
Sir Michael Moritz	• Crankstart • Sequioa Capital • Oxford University
Matt Huang[112]	• Paradigm • Sequioa Capital • Twitter • Goldman Sachs • Massachusetts Institute of Technology

[110] https://stripe.com/newsroom/news/mark-carney-joins-stripe-board accessed on 21 April 2022
[111] https://www.aon.com/about-aon/corporate-governance/corporate/board-directors/christa-davies.jsp accessed on 21 April 2022
[112] https://stripe.com/newsroom/news/matt-huang-joins-stripe-board accessed on 21 April 2022

11. Amazon Web Services[113]	
Executive Directors	
Name	Profile
Adam Selipsky	• Tableau Software • MBA Harvard • Harvard University
Eugene Kawamoto	• IBM • Haas Business School, University of California, Berkeley
Jens Gruenkemeier	• Dell • Siemens
Jeff Barr	• Vertex Development • Microsoft
Ian Wilson	• Microsoft • Honeywell • Cornell University
Frank Fallon	• Informatica • Hewlett Packard • MBA Fordham Gabelli School of Business
Non-Executive Directors	
Name	Profile
NONE	• Since AWS is a 100% subsidiary of Amazon.com Inc, we have included below the Executive and Non-Executive Directors of that company

[113] https://craft.co/amazon-web-services/executives accessed on 21 April 2022

Parent company of AWS - Amazon.com Inc[114]	
Executive Directors (= Officers)	
Name	Profile
Jeff Bezos	• Princeton University
Andy Jassy	• Harvard University • MBA Harvard Business School
Brain Olsavsky	• BF Goodrich • Union Carbide • MBA Carnegie Mellon University
David Clark	• MBA University of Tennessee
Shelley Reynolds	• Deloitte's
Adam Selipsky	• CEO of Amazon Web Service: see above
David Zopolosky	• Dorsey & Whitney • Bogle & Gates • Brooklyn District Attorney's Office • Wachtell Lipton Rosen & Katz • University of California, Berkeley
Non-Executive Directors	
Name	Profile
General (ret'd) Keith Alexander	• IronNet, Inc. • U.S. Cyber Command, National Security Agency, Central Security Service • West Point Military Academy
Edith Cooper	• Medley • Goldman Sachs
Jamie Gorelick	• Wilmer Cutler Pickering Hale and Dorr LLP • Deputy Attorney General of the United States • General Counsel of the Department of Defense • Harvard University
Daniel Huttenlocher	• Massachusetts Institute of Technology Schwarzman College of Computing • Cornell Tech at Cornell University
Judith McGrath	• MTV Networks • Astronauts Wanted: No Experience Necessary
Indra Nooyi	• Pepsico • Yale School of Management
Jonathan Rubinstein	• Bridgewater Associates, LP • Hewlett Packard • Apple • Cornell University
Patricia Stonesifer	• Martha's Table • Bill and Melinda Gates Foundation • Microsoft
Wendell Weeks	• Corning Glass • MBA Harvard Business School

[114] https://ir.aboutamazon.com/officers-and-directors/default.aspx accessed on 21 April 2022

12. Idemia[115]	
Executive Directors (= 'Executive Committee')	
Name	Profile
Pierre Barrial	• Honeywell-Bull • Oberthur Technologies (merged with Morpho to create Idemia) • PSB Paris School of Business
Astrid Warren	• SITA • Microsoft • Standard Bank of South Africa
Didier Fontaine	• Constellium • Plastic Omnium • Schlumberger
Astrid Schoonenberg	• Oxford University
Donnie Scott	• DXC Technology • Hewlett Packard • EDS
Matt Cole	• Cubic Corporation • Endemol • Schlumberger • MBA Oxford Brookes
Fabien Jautard	• Honeywell-Bull
Jean-Christophe Fondeur	• Morpho • Ecole Polytechnique
Matthew Foxton	• Matra Marconi Space • Honeywell-Bull
Non-Executive Directors (= 'Supervisory Board')	
Name	Profile
Yann Delabriere	• Faurecia • PSA Peugeot-Citroen • Ecole Nationale d'Administration
Jan Janshen	• Advent International • Roland Berger Consultants • MBA University of Kiel
Thierry Sommelet	• Bpifrance Investissement • Caisse des Depots et des Consignations • Credit Commercial de France • MBA INSEAD
John Hynes	• US aerospace and defense industry • Naval aviator
Jean-Francois Cirelli	• Blackrock • Advent International • McKinsey's • GDF Suez Group • Ecole Nationale d'Administration

[115] https://www.idemia.com/governance accessed on 21 April 2022

Idemia (cont'd)	
Dominique Cerutti	• Altran • Euronext • IBM
Selim Loukil	• Advent International • Bain & Co • Cap Gemini • MBA HEC Business School Paris
Hadrian de Bardies	• Advent International • MBA HEC Business School Paris

13. Oracle[116]	
Executive Directors	
Name	Profile
Larry Ellison	• Company founder
Safra Catz	• JD University of Pennsylvania Law School • Wharton BA
Dorian Daley	• Landels, Ripley & Diamond • Stanford University
Edward Screven[117]	• (apparently no other employers and no first or second degree; joined Oracle in 1986)
Non-Executive Directors	
Name	Profile
Jeffrey Henry	• Former Oracle CFO • MBA UCLA
Awo Ablo	• Tony Blair Institute for Global Change • BBC Media Action • Masters School of African & Oriental Studies
Jeffrey Berg	• Northside Services, LLC • International Creative Management
Michael Boskin	• Tully M. Friedman Professor of Economics and Wohlford Family Hoover Institution Senior Fellow at Stanford University
Bruce Chizen	• Permira Advisers LLP • Adobe Systems Inc • Apple
George Conrades	• Akamai Technologies, Inc. • Longfellow Venture Partners • Polaris Venture Partners • MBA University of Chicago Booth School of Business
Baroness Rona Fairhead	• UK Department for International Trade • BBC • MBA Harvard Business School
Renee James	• Ampere Computing • The Carlyle Group • Intel • MBA University of Oregon
Charles Moorman IV	• Amtrak • Norfolk Southern Corporation • Harvard Business School
Leon Panetta	• United States Secretary of Defense • Director – Central Intelligence Agency • JD Santa Clara University of Law

[116] https://www.oracle.com/corporate/executives/ accessed on 23 April 2022
[117] https://www.oracle.com/corporate/executives/edward-screven.html accessed on 23 April 2022

Oracle (cont'd)	
William Parrett	• Deloitte's • The Blackstone Group L.P. • Thoughtworks, Inc. • St Francis College New York
Naomi Seligman	• Ostriker von Simson • Research Board Inc. • MBA London School of Economics
Vishal Sikka	• Vianai Systems, Inc. • Infosys • SAP • PhD Stanford University

14. IBM[118]	
Executive Directors	
Name	Profile
Arvind Krishna	• PhD University of Illinois
Non-Executive Directors	
Name	Profile
Thomas Buberl	• Axa • Zurich Insurance Group • MBA Lancaster University • PhD University of St Gallen
David Farr	• Emerson Electric • MBA Owen Graduate School of Management at Vanderbilt University
Alex Gorsky	• Johnson&Johnson • Novartis • MBA Wharton
Admiral (ret'd) Michelle Howard	• George Washington University • United States Navy
Andrew Liveris	• Dow Chemical • University of Queensland
F William McNabb III	• The Vanguard Group • MBA Wharton
Martha Pollack	• President of Cornell University • University of Michigan
Joseph Swedish	• Anthem Inc • Centura Health • Trinity Health Corporation • Hospital Corporation of America • Masters (Health Administration) Duke University
Peter Voser	• Royal Dutch Shell • ABB Group • Zurich University of Applied Sciences
Frederick Waddell	• Northern Trust • MBA Kellogg School of Management Northwestern University
Alfred Zollar	• Siris Capital Group LLP • IBM • Advanced Leadership Initiative Harvard University

[118] https://www.ibm.com/investor/governance/meet-the-board?mhsrc=ibmsearch_a&mhq=Board%20of%20Directors accessed on 23 April 2022

15. R3[119]	
Executive Directors (= 'Executive Committee')	
Name	Profile
David E Rutter	• Liquidity Edge • ICAP • Villanova University
Todd McDonald	• Hyperledger Governing Board • Standard Chartered Bank
Kim Watkins	• Century Link • Masters Northumbria University
Amit Ghosh	• Visa • PayPal • Hewlett Packard • MBA University of Chicago Booth School of Business
Anette Somosi	• Vitech • Luxottica • Simpson Thacher & Bartlett • Carey Law School University of Pennsylvania
Cathy Minter	• SpaceTime Insight • AT&T • Oracle • SAP • MBA Fordham Gabelli School of Business
Charley Cooper	• State Street Global Market • Deutsche Boerse • US Department of Defense • J.D. Georgetown University
Dave Hudson	• Ubicom • Microm Electronics • ICL • Manchester University
James Carlyle	• Barclays • Komatsu • Durham University
Nick Horsley	• 'Finance and management consulting in The City' • Manchester University
Paul Harris	• IHS-Markit • MBA CASS Business School, University of London.
Richard Brown	• IBM • MBA Warwick Business School
Non-Executive Directors	
Name	Profile
NONE STATED	• The apparent absence of NEDs is surprising given the kind of enterprise R3 is – the proponent and designer of CORDA

[119] https://www.r3.com/about/ accessed on 22 April 2022

16. SETL[120]	
Executive Directors	
Name	Profile
Philippe Morel	• Boston Consulting • Harvard Business School
Anthony Culligan	• Aida Capital • Robert Fleming
Katherine Kennedy	• Vocalink (now part of Mastercard) • Slaughter & May • Oxford University
Nicholas Pennington	• Robert Fleming • JPMorgan
Non-Executive Directors	
Name	Profile
Sir David Alan Walker	• Barclays • Morgan Stanley • HM Treasury • Lloyds TSB • Cambridge University
Professor Philip Bond	• Foster School of Business, University of Washington • Wharton School of Business • Kellogg School of Management • PhD University of Chicago
Christian Noyer	• European Central Bank • Banque de France • French Treasury • Ecole Nationale d'Administration

Founded with the name 'Launchpad 39A Limited' and changed its name on 23 April 2019 to SETL Limited when it acquired the assets of the pre-existing SETL Development Limited (09704844) that was in administration. All of the current Executive Directors of SETL Limited as well as Non-Executive Directors Sir David Alan Walker and Christian Noyer were directors of SETL Development Limited, which is in the process of being struck off the Company Register by its administrator Quantuma. Both the accounts and the confirmation statement of SETL Development Limited are overdue. Its last-filed set of accounts – made up to 31 December 2017 – showed accumulated trading losses of £7 million on equity of £13 million over its 18-month existence from July 2015, meaning it lost £333,333 per month. The new SETL's accounts up to 31 December 2020 show losses of £2.8 million on equity of £4.5 million over the 20 months since its inception in April 2019, or £140,000 a month. One wonders whether it was a going concern when it was given a place on the CBDC Forum and whether, 17 months after the most recently-filed accounts, it remains a going concern: continued losses of £140,000 a month will have eliminated its remaining equity. At any rate the UK deserves better representation in this important matter than from a perennially loss-making enterprise that has gone into administration in one name and then re-launched itself under another.

[120] https://find-and-update.company-information.service.gov.uk/company/11860439/officers accessed on 22 April 2022

17. eCurrency[121]	
Executive Directors	
Name	Profile
Jonathan Dharmapalan	• Ernst & Young • Deloitte's • AT&T • Caltech
Bejoy Das Gupta	• Syracuse University • International Institute of Finance • PhD Oxford
Stefan Carlsson	• Indosat • Telenor Pakistan
Thomas Kudrycki	• CNET • Bell Labs • AT&T
Mitch Cohen	• Bayward Consulting • Logyx • Dell
Lars Arvidsson	• Ericsson • Sun Microsystems • IBM
Non-Executive Directors	
Name	Profile
NONE	• --

[121] https://www.ecurrency.net/company accessed on 20 April 2022

18. Archax[122]	
Executive Directors	
Name	Profile
David Buckley	• Royal Bank of Canada (Europe) • Morgan Stanley • Goldman Sachs
Andrew David Flatt	• Infinity Capital • Omni Partners
David Lester	• Montis Digital • London Stock Exchange Group
Matthew James Pollard	• Omni Partners • Deloitte's • Atos Origin
Graham Rodford	• Omni Partners • HSBC
Non-Executive Directors	
Name	Profile
NONE	• --

[122] https://find-and-update.company-information.service.gov.uk/company/11302455/officers accessed on 20 April 2022

19. Fluency[123]	
Executive Directors	
Name	Profile
Inga Mullins	• IM Invest Capital • Bauman Capital
Non-Executive Directors	
Name	Profile
	• None

[123] https://find-and-update.company-information.service.gov.uk/officers/x93YhSpmf-QjQsqof7nmXwRxjTY/appointments accessed on 20 April 2022

20. Consensys[124]	
Executive Directors	
Name	Profile
Joseph Lubin	• Ethereum • Goldman Sachs • Princeton
Amanda Keleher	• ThoughtWorks • Accenture
Chris McKibbin	• PlayGrid • Electronic Arts • Princeton
Simon Morris	• BitTorrent • Openwave Systems • Stanford Graduate School of Business
Cole d'Ambrosio	• CSX • City of Atlantic Beach • MBA University of Florida
Mark Mercuri	• Microsoft
Non-Executive Directors	
Name	Profile
Sarah Friar	• NextDoor • Square • Salesforce • Goldman Sachs • McKinsey • Stanford Graduate School of Business

[124] https://craft.co/consensys/executives accessed on 20 April 2022

21. Spotify[125]	
Executive Directors	
Name	Profile
Daniel Ek	• Advertigo • Stardoll
Martin Lorentzon	• Telia • Traderdouble • Master of Science Chalmers University of Technology
Non-Executive Directors	
Name	Profile
Barry McCarthy	• Netflix • MBA Wharton
C Woody Marshall	• Technology Crossover Ventures • Trident Capital • MBA Kellogg School of Management Northwestern University
Shishir Mehrotra	• Coda Inc. • Microsoft • Massachusetts Institute of Technology
Heidi O'Neill	• Nike • University of Colorado
Ted Sarandos	• Netflix
Thomas Staggs	• Walt Disney Company • MBA Stanford
Cristina Stenbeck	• Kinnevik AB • Georgetown University Washington
Padmasree Warrior	• Nio Inc • Cisco Systems • Master of Science Chemical Engineering Cornell University
Mona Sutphen	• Macro Advisory Partners • Union Bank of Switzerland • White House Deputy Chief of Staff • MSc London School of Economics

[125] https://investors.spotify.com/governance/default.aspx#module-bod accessed on 23 April 2022

Summary and Conclusions

This study has only scratched the surface of the network of vested interests that have been assembled to look into Britcoin and into the hands of which the CBDC project will, if it is allowed to be implemented, deliver all of the UK's citizens and businesses.

There clearly is an extensive network, and not necessarily acting with the best interests of the UK, its citizens and businesses in mind.

The Britcoin project needs to be put on ice together with New Payments Architecture and Open Banking, pending a national review of the overall direction-of-travel of which the CBDC project is a part. The whole and its constituent elements need to be scrutinized directly by Parliament and not left to official bodies like the HM Treasury, the Bank of England, and the PSR who are themselves part of the 'concert party'.

A major amount of disclosure and due diligence should be undertaken if the project were ever to proceed further. Certain participants should not be considered for future involvement.

A precondition for taking the Britcoin project as well as New Payments Architecture and Open Banking out of their respective coolboxes would be the eradication or significant mitigation of the current, severe detriments caused to wider society by digital payments.

It may be thought that these are complicated and intractable, and it is certainly in the interests of the digital payments industry to make them appear so.

However, Lyddon Consulting has designed solutions to all three of them, albeit that the solution to Access to Cash is in two parts, a Quick Fix to protect access, and a Long Term Solution that would be part of a national template for enabling non-digital payment means to compete on a level playing field with digital ones, rather than their being controlled and hobbled by market actors with a vested interest in their elimination.

The solutions to the detriments are:

1. Authorised Push Payment Fraud – to make the payee name part of the payer's 'payment contract' with their PSP, obligating the PSP to either pay the correct person or reimburse the payer: Appendix 4
2. Deductions-from-face-value – to realise the original intention of the EU Interchange Fee Regulation that the merchant suffers just two types of charge (i) service fees levied by their acquirer; and (ii) the interchange fee capped at 0.2% for debit card transactions and 0.3% for credit card transactions: Appendix 5
3. Access to Cash Quick Fix – to introduce a banding for the LINK interchange, whereby a base fee of 30p increases or falls in line with a Payment Service Provider's reduction of its branch network and ATM estate – Appendix 6
4. Access to Cash Long Term Solution – a review of how non-digital payment means will be enabled to compete on a level playing field with digital payment means, after the false subsidies (mainly the Deductions-from-face-value) for digital payment means have been removed – Appendix 7

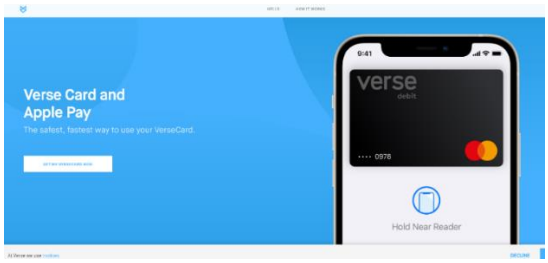
Appendix 9 contains a brief overview of the LINK organization, and how it has become unviable as the mechanism for cash withdrawals. Finally, Appendix 11 contains diagrams of the European market models for cards and for electronic credit transfers and direct debits, which are the PSR's guide for the market model to be followed in the UK.

Appendix 1 – Consensys and Mastercard

Appendix 2 – Screenshots relating to Gauss Ventures

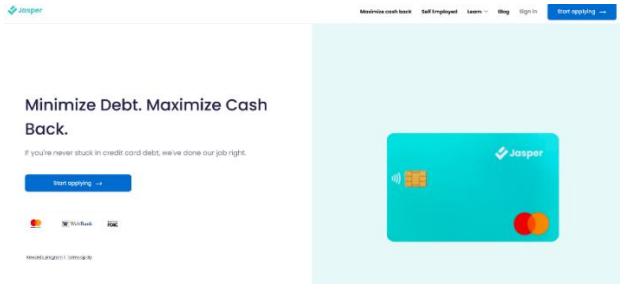
Screenshots of a selection of Gauss' investments in the Visa- and Mastercard ecosystems, from September 2021:[126]

Verse – Mastercard-branded

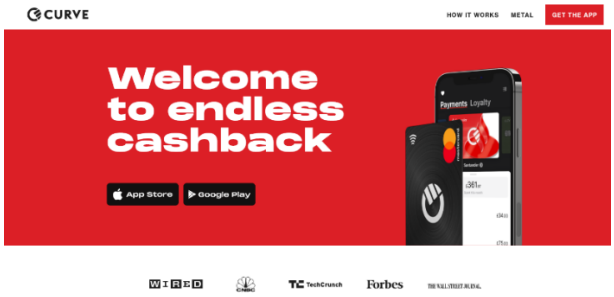


Pulse ID – partner of Visa

Jasper – Mastercard-branded

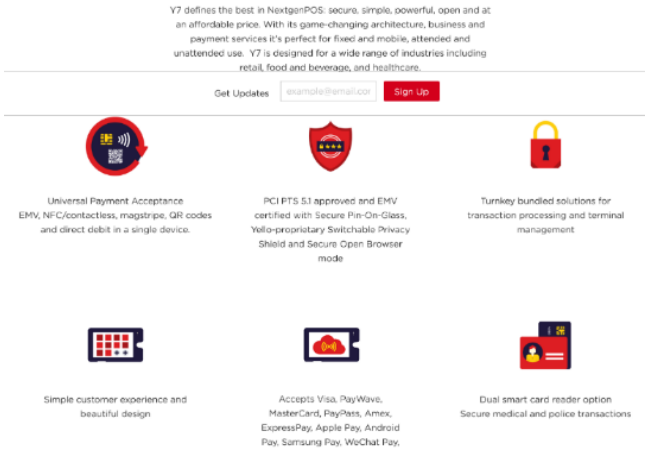


Curve – Mastercard-branded



[126] https://www.gauss.vc/ accessed on 10 August 2022

Yello – integration with Visa, Mastercard, Amex and others

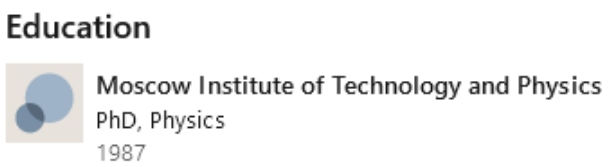


Gauss Ventures itself:

Gauss Ventures is a Cayman/Isle of Man investment vehicle with Russian connections. Three of the four other partners have Russian names.[127] They are Daniel Gusev,[128] Andrew Morozov,[129] and Nikita Tchesnokov.[130]

Gauss Ventures' people:

Andrew Morozov - from his LinkedIn profile



[127] https://www.gauss.vc/team accessed on 20 April 2022
[128] Russian FinTech Association, Visa, VTB24 Bank, Promsvyazbank, Lomonosov Moscow State University: https://www.linkedin.com/in/danielgusev/ accessed on 10 August 2022
[129] Moscow Institute of Technology and Physics: https://www.linkedin.com/in/andrew-morozov-ph-d-7a0281/ accessed on 10 August 2022
[130] https://find-and-update.company-information.service.gov.uk/officers/gdDq_KtbvRUP1zokYR5UNKQK5qA/appointments accessed on 20 April 2022

Daniel Gusev – from his LinkedIn profile

Head of Innovation
Promsvyazbank
Jun 2011 - Sep 2012 · 1 yr 4 mos

Innovation manager
VTB24
Aug 2009 - May 2011 · 1 yr 10 mos

Consultant
Roland Berger Strategy Consultants
May 2008 - Jul 2009 · 1 yr 3 mos

Financial services

Industry Business Consultant (FSI)
SAP AG
Jul 2006 - Mar 2007 · 9 mos

Intern
Ministry for Economic Development and Trade of the Russian Federation
Jun 2004 - Nov 2004 · 6 mos

Internship at Department of Corporate and Financial Legislation

FinTech Envoy
Russian FinTech Association
Jul 2017 - Dec 2018 · 1 yr 6 mos
Moscow, Russian Federation

Establishing international links for a vibrant international fintech ecosystem utilising notable features and skills of the Russian FinTech market players

Education

Finance University under the Government of the Russian Federation
M.A., Finance and Credit
2007 - 2010

Lomonosov Moscow State University (MSU)
M.A., History
2001 - 2006

Nikita Tchesnokov

From his LinkedIn profile:

Nikita Tchesnokov · 2nd
Venture Capitalist and Entrepreneur
London, England, United Kingdom · Contact info
500+ connections
4 mutual connections: Cheryl Woolhouse FMAAT, Pedro Ramon Lopez Garcia, and 2 others
Connect Message More

Gauss Ventures
University of Essex

Search
Home My Network Jobs Messaging

Nikita Tchesnokov
Venture Capitalist and Entrepreneur

Finextra finextra.com • 2 min read

Show all activity →

Experience

Gauss Ventures
4 yrs 5 mos
London, United Kingdom

Partner
Jul 2019 - Present · 3 yrs 2 mos

Principal
Apr 2018 - Jul 2019 · 1 yr 4 mos

Nikita Tchesnokov's appointments listed at Companies House:

Nikita TCHESNOKOV

Filter appointments

☐ Current appointments

Total number of appointments 6

Date of birth
March 1990

KAZENDI LTD (09234614)

Company status	Correspondence address	
Active	**Lytchett House, Wareham Road, Poole, Dorset, England, BH16 6FA**	
Role ACTIVE	Appointed on	
Director	**17 January 2022**	
Nationality	Country of residence	Occupation
British	**England**	**Company Director**

NGT VENTURES LIMITED (11473217)

Company status	Correspondence address	
Active	**50 Altura Tower, Bridges Court Road, London, United Kingdom, SW11 3GZ**	
Role ACTIVE	Appointed on	
Director	**19 July 2018**	
Nationality	Country of residence	Occupation
British	**England**	**Consultant**

SYSTEMIC TRADING LIMITED (10639853)

Company status	Correspondence address	
Dissolved	**50 Altura Tower, Bridges Court Road, London, United Kingdom, SW11 3GZ**	
Role	Appointed on	
Director	**25 February 2017**	
Nationality	Country of residence	Occupation
British	**England**	**Ngt**

CLAIM MAKERS LIMITED (10570745)

Company status	Correspondence address	
Active	**5th Floor, Lansdowne House, 57 Berkeley Square, London, United Kingdom, W1J 6ER**	
Role ACTIVE	Appointed on	
Director	**18 January 2017**	
Nationality	Country of residence	Occupation
British	**England**	**Director**

NEW WAVE DYNAMICS LTD (09838488)

Company status	Correspondence address	
Active	**50 Altura Tower, Bridges Court Road, London, United Kingdom, SW11 3GZ**	
Role ACTIVE	Appointed on	
Director	**23 October 2015**	
Nationality	Country of residence	Occupation
British	**England**	**Project Manager**

CYBERTONICA LTD (09721645)

Company status	Correspondence address	
Active	**69 Wilson Street, Cybertonica Ltd, Idealondon, London, England, EC2A 2BB**	
Role RESIGNED	Appointed on	Resigned on
Director	**23 May 2017**	**1 May 2018**
Nationality	Country of residence	Occupation
British	**England**	**Finance Principal**

Appendix 3 – invitation for comments where individuals are mentioned in this paper more than just by name

Rishi Sunak as Chancellor of the Exchequer – a letter was sent to him at 11 Downing Street on 24th June 2022 with a full hard copy of an earlier draft: no acknowledgement or response was received.

Chris Hemsley, CEO of the Payment Systems Regulator – a letter was sent to him on 22nd August 2022 through the hands of Jonathan Williams in the Payments department, asking him to circulate the paper for comment to all of the members of the PSR Panel and the PSR's Digital Payments Initiative. That is:

- Robin Abrams
- Mike Banyard
- Flora Hamilton
- Andrew Hewitt
- Matthew Hunt
- Neira Jones
- Conor Langford
- Jeff Moody
- Mark O'Keefe
- Jo Oxley
- Anne Pieckielon
- Natasha de Teran
- Faith Reynolds
- Ruth Wandhofer
- Jack Wilson

A follow-up letter was sent by post to Chris Hemsley on 23rd August 2022 enclosing the letter but not the full document, and asking him to send an email back in case he had not received the pdf document from Jonathan Williams. An email was received from Chris Hemsley on 14th September as follows:

QUOTE

Dear Mr Lyddon

Thank you for contacting us and providing a copy of your report before publication.

While we do not agree with many of the statements contained in the report, as requested, I will arrange for the report to be shared with members of the PSR Panel who are mentioned in it. You may wish to consider sharing the current draft of the report with the Bank of England so that they can assess it themselves.

For future reference, the most effective route to communicate with us is via our Contact Us e-mail address contactus@psr.org.uk.

Yours sincerely

Chris

Chris Hemsley
Managing Director

UNQUOTE

Subsequently emails were received from a few of the individuals and suitable amendments made. The descriptions of the individuals were then meaningfully shortened but for different reasons.

A different draft was sent to the Bank of England on 18th September as Mr Hemsley suggested. It was sent through the hands of John Jackson, who heads the RTGS Renewal programme. Comments were originally requested by 31st October, and then the deadline was reduced on 21st October to 24th October.

It was planned to send LinkedIn invitations to connect with Chris Wilford and Martin McTague on 22nd August 2022 with a note to say that the author wished to send them a document for comment in relation to their role on the CBDC Forum. However neither accepts LinkedIn invitations. Instead emails were sent to the CBI press office and info@npolitics.com (quoted as 'Contact info' on Martin McTague's LinkedIn profile) asking them to make the link. The CBI press office responded on the same day with Chris Wilford's email address, and the document was sent to him for comment on that day. Chris Wilford responded on 30th August to say that his correct title was Director of Financial Services Policy, as opposed to the title of Head of Financial Services Policy that appeared in the draft sent to him, and now it has been announced that he is moving to the Financial Conduct Authority.

As no response had been received from info@npolitics.com, an attempt was made to find an email address from the other website quoted on LinkedIn: www.ecotech-ust.com but this returned a response of 'Server not found'. The author then sent an enquiry through the website of the Federation of Small Businesses, of which Martin is National Chair, and received back his email address for that role: the document was sent to him for comment on 23rd August at that email address - psnationalchair@fsb.org.uk .

Appendix 4 – solution to Authorised Push Payment Fraud (APPF)

Background
This problem occurs because payment services providers (PSPs), addressable through the Faster Payments scheme, do not ensure that they pay the payee named in the payment. The payer names the payee in the underlying payment order – it is mandatory information, without which the payer's PSP will not accept the payment order for execution. It is transported through the Faster Payments system to the payee's PSP, but the payee's PSP does not check that the name in the payment is consistent with the name associated with the account as identified by the Sort Code and account number. The Sort Code and account number are required in the payment order, and travel through to the payee's PSP. They constitute a 'Unique Identifier'. Under current UK case law, the 'Unique Identifier' is a sufficient basis for the payee's PSP to credit an account, without checking the name. This is costing UK businesses and individuals hundreds of millions of pounds per annum, and efforts over an 8-year period by the 'payments industry' have delivered ineffective measures such as the Contingent Reimbursement Model and Confirmation of Payee. Under this latter process, PSPs do check the name against the Sort Code and account number associated with it, demonstrating that the name check is technically and operationally possible.

Solution
The 2017 Payment Services Regulations need to be amended to make the payee name part of the payer's contract with the payer's PSP, and to specify that this is a provision that cannot be opted out of in a Framework Contract.

The Funds Transfer Regulation needs to be amended so as to withdraw the dispensation that a national payment in £pounds can be completed solely on the basis of a 'Unique Identifier'.

Outcome
The payer's PSP will have a payment contract with the payer under which it must honour all of the payee name, Sort Code and account number. If it effects payment to an account with any element in this data out-of-line with the contract, the payer's PSP is guilty of defective execution of the payment contract and must provide full restitution to the payer. There will be no get-out as is provided by Funds Transfer Regulation now, that permits processing only on the basis of the 'Unique Identifier', whether that be the Sort Code and account number for a national payment in £pounds, or IBAN (International Bank Account Number) for a cross-border payment or one in foreign currency.

Pushback
There will be pushback from PSPs that they cannot be expected to check the details on the payee's account when it is not an account in their books but in the books of a different PSP. The rejoinder to that is, firstly, that if it is possible in the case of Confirmation of Payee, it is possible for every payment. Secondly, the PSPs designed the Faster Payments scheme as it is today, so they are free to re-design it or invest in another scheme so as to address this issue. If they decide amongst themselves that they do not want to invest in either a re-design or a new system, they can bear the losses from APPF, but it is not fair that the issue remain unresolved and that end users continue to suffer losses emanating from it.

Conclusion
APPF may occur through the CHAPS scheme and through the BACS scheme, but the vast bulk occurs through the Faster Payments scheme. Concentrating on Faster Payments and implementing the proposed legal changes will eliminate for the end user a major portion of APPF, by simply making the payer's PSP legally liable to the payer for getting the basics right: for paying the payee that the payer named. Achieving this degree of end user protection was the purpose of the 2017 Payment Services Regulations but there is a loophole. Plugging that loophole establishes the correct baseline of responsibilities and risks when end users have their payments made through a system designed by their PSPs.

Appendix 5 – solution to Deductions-from-face-value on card transactions (Deductions)

Background

Merchants do not receive the full face value of the sales they make when payment is by card. They receive, through their merchant acquirer and some days later, an amount that is the sale value diminished by several lines of fees. The fees are not limited to the 'interchange fee', an element whose size is capped by the EU Interchange Fee Regulation 2015/751 of 29th April 2015 (the IFR). The IFR caps the interchange fee at 0.2% for debit card transactions and 0.3% for credit card transactions. The deductions experienced by merchants are normally in a range between 3-8% with a minimum deduction in a range of £0.35-0.70. The aim of the IFR was to avoid (i) the false subsidy enjoyed by card payment actors due to their fees not being transparent and negotiable; and (ii) the inflationary effect of the deductions whereby merchants increase the price of goods and services to all buyers in order to recoup the fees the merchants suffer when some of their buyers pay by card; and (iii) benefits being made available to cardholders by their card issuers that are paid for by merchants and higher prices for all.

Solution

The UK should re-issue the IFR in line with the intentions of the original, namely that the merchant's acquirer must receive – and must pay on to the merchant - 99.8% of the sale value when a debit card is accepted, and 99.7% when a credit card is accepted. No other fees or deductions will be routed through the merchant acquirer by any other market actors like card issuers or card schemes. The merchant acquirer will be allowed to charge service fees to the merchant, the costs of which will solely be a matter between the merchant and the acquirer and not involving the card schemes or card issuers. The deduction of 0.2/0.3% and these service fees will be the total cost for merchants of accepting payment by card.

The further benefits for merchants promised by the IFR need also to be realised: (i) granular presentation of fee levels on different categories and brands of card (Article 9); (ii) ability not accept particular cards at a granular level (Article 10); (iii) receipt of comprehensive information on each transaction in a timely manner so as to enable internal financial processes (Article 12).

The PSR must (i) undertake the annual process to ensure compliance with the interchange fee caps (Article 3.5); (ii) compel Mastercard and Visa to separate their scheme management from their infrastructure, in the way LINK, BACS and Faster Payments have had to (Article 7).

Outcome

The false subsidy enjoyed by card payments will cease. Card payments will have to compete on a level playing field with cash, cheques, direct debits and credit transfers. Merchants will be able to reduce prices for goods and services as they will no longer have to factor in the large deductions on card payments. Benefits made available by card issuers to holders of their cards will have to be funded by the card issuer itself and not by wider society.

Appendix 6 - Access to Cash – Quick-Fix Solution

Background

Access to Cash is threatened by banks' closure of branches and consequent closure of their ATMs. The Payment Systems Regulator has undertaken 'work' in this area, there has been an 'Access to Cash' report, and the solution has been deemed to be within so-called 'banking hubs', physical locations run by The Post Office in which customers can undertake cash transactions with any one of the ten main UK financials services groups. According to an article in The Daily Telegraph, too few of these hubs have been established, and there is a long lead-time and many obstacles.[131] One could add that there has been no benchmarking of a 'banking hub' to the service range and service level of a physical location that supports the usage of cash to a viable level, and to the transacting of other services – like cheques – that are not on the agenda at all. This is important, especially for merchants, in that cash and cheque are two payment means under which the merchant receives the full face value of the sales they make. Now LINK – the payment scheme for the withdrawal of cash through ATMs – and the chair of the PSR's Access to Cash work[132] are saying that more needs to be done, although it is only months since the Access to Cash work was completed.

There has been no recognition that the major banks have been allowed to have their cake and eat it: they are the major issuers of the cards that are used in ATMs, they have reduced their own numbers of ATMs, so they now are more in the position of seeing their customers use cards in the ATMs of others. This leads the bank to have to pay the LINK interchange fee, which remunerates the operator of the ATM from which the withdrawal was made. At the same time the same banks have used their dominance in the ownership of LINK to reduce that interchange fee. On 4th September The Daily Telegraph reported that the fee is 26.5p for ATMs in a location where there is another free-to-use ATM less than 1km away, and 29.3p where the ATM is 'protected', meaning there is no other free-to-use ATM within 1km. Only 6.3% of UK ATMS are 'protected'.

Solution

The current interchange fees need to be scrapped and a banding arrangement applied. The banding will result in a variation of the interchange fee – higher or lower – around a base of 30p per transaction based on the card issuer: the issuer will fall into one of nine bands, and the appropriate interchange fee will be charged to that issuer for all instances where a card issued by them has been used to make an ATM withdrawal at an ATM not operated by the card issuer. The Payment Systems Regulator, as an economic regulator, should be capable of working out the detail, and of imposing it, since LINK is one of the payment systems it regulates. Nevertheless, key factors that will go into the banding will be:

Number of ATM-eligible cards in issuance	Trend over 10 years	Number of LINK-connected ATMs operated	Trend over 10 years	Number of branches operated	Trend over 10 years

An example outcome would be:

Band	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Variation	-70%	-35%	-15%	-5%	0%	+5%	+15%	+35%	+70%
Fee	9.0p	19.5p	25.5p	28.5p	30.0p	31.5p	34.5p	40.5p	51.0p

Outcome

The major banks will pay more to take account of their dominant market share of cards in issuance. A particular surcharge will fall on those banks who have closed branches and ATMs over the last 10 years: they have had their cake and eaten it. The new arrangement will result in more interchange fees being paid into LINK than now, because the bigger banks have both more cards in issuance and will be subject to a surcharge. This money can be passed to independent ATM operators, and all ATMs can be free-to-use.

[131] 'How the botched banking hub rollout left people struggling for cash', published on 12th September 2022 by Patrick Mulholland

[132] Natalie Keeney CBE

Appendix 7 - Access to Cash – Long-Term Solution

Background

The Quick-Fix to Access to Cash – the change in the interchange fee to a banded one – should ensure the continuation of the UK's network of free-to-use ATMs for a reasonable period so as to enable a new blueprint for banking provision to be designed and implemented. The first step in that is not a piecemeal focus on just one payment means, but (i) on the series of payment means that used to be transacted in bank branches in the normal course of business; and (ii) other services that were offered in bank branches in the normal course of business. It will be necessary to draw up a specification of the scope of the service to be offered, the level of service to be offered, the timings and the price. The benchmark will be a full-service branch in 2012, before the major banks embarked on their campaign of reductions in service scope, service level and performance that has undermined the branch concept and enabled the banks to push customers onto their range of more lucrative services (lower costs, higher income, lower risk – all seen from the banks' point of view). The success of the banks' campaigns of undermining the in-branch offering is played back by the banks as the banks responding to customer demand. This is disingenuous and needs to be called out: customer behaviour has altered thanks to banks' policies, which are determined by considerations of returns, risks and costs. No survey was ever taken with open questions about customer desires and requirements.

Solution

The solutions proposed for Quick-Fix to Access to Cash, for Authorised Push Payment Fraud, and for Deductions-from-face-value on card transactions will, in sum, substantially alter the returns, risks and costs for banks in UK retail banking. Banks will take the 'payee name' risk that they ought to take as a matter of principle and did take when cheques were involved. Banks will suffer costs from branch and ATM closures where they continue to issue large numbers of cards but have reduced the estate of their ATMs out of which their customers can draw cash with their cards. Banks will give up the false subsidy they enjoy where, together with their allies the major card brands, they impose deductions on merchants which are passed on in the form of higher prices for goods and services and which are inflationary.

Those solutions will take some time to implement and to filter through. While that is occurring – and it could be 2-3 years – the solution to in-person banking can be worked out. It may include banking hubs, or it may not. But for sure it will be designed (i) with the needs of wider society at the forefront; and (ii) against a backdrop where banks' business cases for the one or other development are not distorted as they are now by their being able to palm off risk onto their customer, by the large income streams available from the cards business which are little more than an unfettered ability to draw money out of wider society, and/or by their ability to cut costs whatever the impact on wider society.

The Payment Systems Regulator (PSR)

It is worth noting that the PSR was established around 2014 to represent the wants and needs of wider society against entrenched vested interests in the payments industry. It is a measure of the PSR's failure that we have arrived where we are now, eight years on, with vested interests as much in control as ever. Indeed one might argue that the major liberalization of the payments business overseen by the PSR – easier access to payment systems – has resulted in a huge expansion of the number of actors in the Visa and Mastercard ecosystems and a consequent increase in the market power of the cards duopoly. The PSR recently, in its response to the report of the Digital Payments Initiative, declared that it viewed the adoption of digital payment means as part of its own remit. To that extent it appears to have become completely captured by the Visa and Mastercard agenda.

Appendix 8 - how LINK has become unviable

LINK is the payment scheme, regulated by the PSR, under which cardholders can draw cash from ATMs where the ATM operator is not their card issuer. Before LINK, NatWest cardholders could only draw cash from ATMs at NatWest branches, for example.

LINK, prior to the advent of the PSR, was a payment scheme that ran its own infrastructure, as Visa and Mastercard do. Now it contracts with Mastercard (through Vocalink) for its infrastructure. In 2019 LINK renewed its infrastructure contract with Mastercard until 2031, after a competitive tender process.[133]

On 28 August 2022, in an article by Patrick Mulholland for the Daily Telegraph, the CEO of LINK – John Howells – was reported as claiming that cash has as little as five years left, as 'the country's infrastructure experiences death by a thousand cuts'. Howells was quoted as saying that the 'cost of providing cash infrastructure, which includes the ATMs, security and bulk cash centres is huge at £5bn a year' and that 'Many of these costs are fixed and will not change as consumers move to digital payments'.[134]

The predicament of LINK has come about via several stages, and its becoming trapped between its infrastructure supplier and some of its own members has aggravated the difficulties of accessing physical cash.

LINK and Voca were separate until it was decided in 2007 that Voca and LINK would merge to form Vocalink.[135] The members of LINK were far more diverse than those of Voca, and included many building societies. Voca's members were the largest users of BACS, its main system at the time, Faster Payments not yet having been launched. The members of LINK who were not already members of Voca were encouraged to withdraw, such that the members of Vocalink were the same major UK banks who had been Voca's members and were at the same time the largest users of electronic payment systems and the largest issuers of payment cards.

A major issue identified by the PSR upon its establishment was that Vocalink and several payment schemes (BACS, Faster Payments, LINK, CHAPS) were all owned by substantially the same market actors, which was viewed as an inhibitor to competition between the schemes and to access to the schemes for other Payment Service providers. In response to this pressure from the PSR, Vocalink's owners sold it to Mastercard in 2016.[136]

A further issue for the PSR was to impose a harmonized market model for the relationship between a payment scheme and the physical infrastructure it used. This market model was supposedly the pre-existing one for payment cards business and the one adopted for the Single Euro Payments Area, which was based on the one for cards.[137] Some of the regulated payment systems already adhered to this model, like BACS and Faster Payments, but LINK did not. The PSR decreed the separation of the LINK scheme from its infrastructure. In consequence and also in 2016, LINK Scheme Holdings Ltd was established as the scheme management company separate from the scheme infrastructure.[138] The infrastructure provider from the outset was Mastercard (through Vocalink), and this arrangement was renewed for 12 years in 2019.

Ironically Mastercard and Visa in the UK did not adhere to the supposedly pre-existing one for payment cards business that the PSR was using as its roadmap. For unknown reasons they were exempted from the obligation to separate their scheme management from their infrastructure, even when it became embedded in Article 7 of the EU Interchange Fee Regulation of 2015.

CHAPS ducked such an outcome by dint of the Bank of England collapsing the CHAPS scheme management company and taking the operation of CHAPS in-house. The PSR no longer regulates CHAPS.

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[133] https://www.vocalink.com/newsroom/2019/vocalink-and-link-extend-partnership-until-2031/ accessed on 15 May 2022

[134] https://www.telegraph.co.uk/business/2022/08/28/cash-has-just-five-years-left-warns-atm-boss/ accessed on 2 September 2022

[135] https://www.link.co.uk/about/news/news-archive/voca-and-link-get-green-light-from-oft-to-merge/ accessed on 15 May 2022

[136] https://newsroom.mastercard.com/press-releases/mastercard-announces-acquisition-of-vocalink/ accessed on 15 May 2022

[137] See Appendix 9

[138] https://find-and-update.company-information.service.gov.uk/company/10535808 accessed on 15 May 2022

In 2018 the largest of LINK's members demanded that the LINK interchange fee be lowered.[139] This was the startpoint of the process that led to some ATMs being accorded 'protected' status and attracting a higher interchange fee than 'unprotected' ones, and eventually to the Access to Cash work.

In 2019 the arrangement with Mastercard was renewed, despite what must have been obvious: Mastercard had a vested interest in the elimination of cash and, in due course, in its replacement with CBDC and other digital payment means.

The senior management of LINK may indeed have put this point to the Board of Directors of LINK and the Board of Directors may have put this point to LINK's members.[140] A recommendation may have been put to either decision-making body or both that Mastercard should be excluded from the bidding; if it was, the recommendation was turned down. This matter is covered by the cloak of confidentiality, as is the fee scale that LINK pays to Mastercard. We do not therefore know what proportion of the supposed £5 billion per annum cost of the UK's cash infrastructure is paid to Mastercard by LINK and represents one of the fixed costs that do not reduce when payments are increasingly made by digital means.

LINK's situation is not helped by their members also being their source of revenue, and including the major banks whose interchange fee payments have risen as their own branch and ATM estates have fallen but their cards issued have not.[141]

There is a conflict at play in LINK's governance. The interests of the company and all of its members must be considered by the Board of Directors. The Board of Directors, listed as at 31st December 2021 in LINK's annual report to that date, consists of one full-time LINK executive and eight Non-Executive Directors, but not of member nominees. No LINK Non-Executive Director is also currently a Non-Executive Director of a LINK member. That separation represents good governance.

However, the interests of the company – to survive and prosper economically, to invest and to provide more and better services to its members – mismatch the interests of a good proportion of its members, which are to pay out less in interchange fees and to migrate customers off cash to more lucrative digital payment means. The interests of the company align with the interests of the residual portion of its members and of wider society: a larger network of free-to-use ATM.

The Board of Directors cannot be in the dark about this basic conflict between the interests of two groupings.

A Members' General Meeting (Annual or Extraordinary) would be the official forum for the members to express their views, and the members will be spilt – in both direction and degree - in a way that is not in the public domain. As customers of LINK, members would also be able to put their points of view in bilateral meetings which, while not off-the-record, do not give rise to official minutes or voting. The ones pressing for a reduction in the interchange fee will be the largest UK banks. While they may not form the size of majority needed to carry resolutions in General Meetings (and important resolutions generally require a super-majority such as 66% in a company limited by guarantee like LINK), they may be able to form a blocking minority. Such a situation would occur if this minority was one of 40% of members numerically, where major change required a vote of 66% of members in favour. At the same time this 40% might be paying a much higher proportion of LINK's total interchange fee revenue, giving the minority a degree of sway that the Board of Directors cannot ignore.

The customary result of such a situation is stagnation: the company cannot get support for major new projects or investments, whilst the minority cannot get dissenting resolutions passed. The company's governance mechanisms are unable to cut the Gordian Knot. The company itself begins to wither on the vine. This is what appears to be happening at LINK.

LINK is trapped between its own interests as a company and the views of a numerical majority of its members on the one side, and on the other side (a) Mastercard as a long-term supplier with pricing laid down for the next nine years and a vested interest in seeing physical cash disappear, and (b) a sizeable minority of its own members, who also happen to be the largest ones who want to see their organisations paying out less in interchange fees.

The bottom line is that LINK has become unviable. It is trapped within its governance and commercial construct. The construct guarantees that it has high fixed costs and dwindling income. It should not have re-contracted with Mastercard in 2019. It could have put out to tender for a new approach to connecting ATMs that bypassed Mastercard and achieved a strategic cost reduction. Instead it has become locked into a failing value chain. The danger is that LINK's predicament takes physical cash down with it.

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[139] https://cashessentials.org/link-revises-interchange-fee-decrease-as-consumer-groups-raise-voices/ accessed on 15 May 2022

[140] LINK Scheme Holdings Ltd, being a company limited by guarantee, has members, not shareholders

[141] https://www.link.co.uk/members/members/ accessed on 15 May 2022

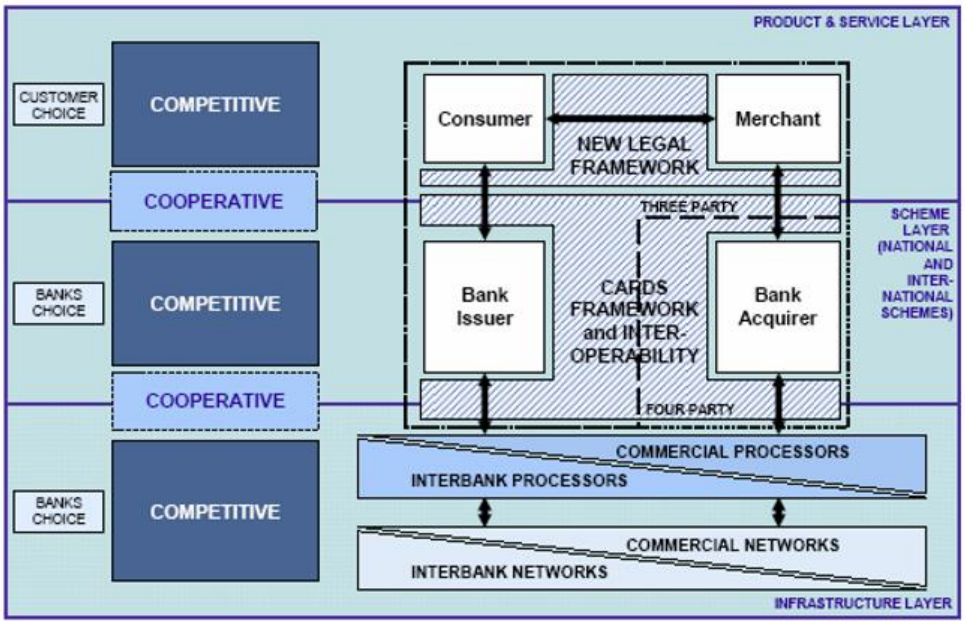
There is no reason why LINK has to be the sole ATM-connecting organisation under a Long-Term Solution to Access to Cash. Card issuers and ATM operators could decide to set up a new ATM-interconnecting infrastructure, to which card issuers would pay their (now lower) interchange fees and from which the ATM operators would receive their cut. LINK would then be left with a long-term contract to pay Mastercard and no income, and LINK's members could then decide whether to honour the contract from their own resources or put LINK into liquidation.

LINK of course sees itself as pivotal to the future of cash, and that concept has not been challenged in the Access to Cash work. It is very much to the taste of the big banks that LINK should be viewed as synonymous with Access to Cash since, if LINK can be throttled, so can physical cash.

Appendix 9 – Market models for cards and for credit transfers/direct debits

These are the European market models for cards and for electronic credit transfers and direct debits, expressed by the European Payments Council for the purposes of the Single Euro Payments Area. They are also the PSR's guide for the market model to be followed in the UK.

1. The pre-existing Market Model for Cards as depicted by the European Payments Council, and showing the separation between the 'Product & Service Layer', the 'Scheme Layer' and the 'Infrastructure Layer':



2. The targeted Market Model for the Single Euro Payments Area as laid out by the European Payments Council, mirroring the separation in the Cards Market Model between the 'Product & Service Layer', the 'Scheme Layer' and the 'Infrastructure Layer':