USING GOV.UK VERIFY FOR LOCAL AUTHORITY MULTI SERVICE PORTALS (ALPHA PROJECT)

THE BUSINESS CASE

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EXECUTIVE SUMMARY

GOV.UK Verify could deliver significant benefits to local authorities, both financial savings and significant service improvements. Many of these benefits are only achievable by adopting a federated identity solution that delivers highly assured online identities to commonly accepted standards. GOV.UK Verify is currently the only viable solution.

Research conducted with local authorities shows that an example metropolitan council with 275,000 residents could, on conservative estimates, save **£16.78m** over a five-year period by transforming their services with GOV.UK Verify and attribute exchange. This figure is made up of:

- **£4.45m** identity assurance savings
- **£2.50m** eligibility checking savings
- **£9.83m** service delivery savings

Year on year savings after the 5-year implementation period for the example council could amount to **£4.435m**.

The example council could also avoid fraud losses of **£4.7m** over the 5-year implementation period by adopting GOV.UK Verify

A federated identity solution, adopted across a metropolitan area, would deliver additional inter-organisational benefits. If adopted in London, GOV.UK Verify could save between **£412k** and **£1.24m** per annum by avoiding the need to re-verify citizens every time they move. Similar benefits, albeit smaller in volume, are likely to accrue in any metropolitan area.

Access to a federated identity, especially when paired with a personal data store, is of particular value to especially vulnerable groups, such as the homeless and victims of domestic abuse, who are more likely to lose or be separated from their identity documents, or to have them stolen. While replacement documents are being sought, these vulnerable users are unable to access the vital services they need.

A common approach to federated identity across local authorities, based on GOV.UK Verify, could help to reduce the high existing costs associated with integrating identity solutions into existing back office systems, estimated to stand at £50m, even for lower levels of identity assurance.

By becoming active partners in the identity proofing and verification process, local authorities have the opportunity to bring the benefits of online service delivery to hitherto hard to verify, thin-file citizens. Members of this cohort are often the heaviest users of public services, so engaging them online is particularly important. By becoming

active partners, local authorities also have the opportunity to reduce the costs associated with identity proofing and verification by providing data into the identity proofing and verification process, with the citizen's permission.

For IDPs, there are benefits in being able to successfully offer highly assured identity services to a wider range of customers, including currently thin-file customers. We demonstrate how access to data collected by LAs would help IDPs register thin-file customers for Verify. Opening up the LA market in general to Verify has the potential to significantly extend the reach of Verify to many more customers, which would provide IDPs with a significant market opportunity.

An ecosystems approach, using GOV.UK Verify to underpin online, real time eligibility checks using attribute exchange, gives the greatest opportunity to fully transform online services, and to achieve maximum financial and service improvement benefit. Attribute exchange has the potential to save hundreds of millions of pounds a year across the local government sector.

Local authorities should give serious consideration to implementing GOV.UK Verify, particularly as the functionality and commercial options are likely to evolve as Verify is rolled out to the private sector. IDPs should give serious consideration to partnering with LAs in order to open up additional sources of identity attributes, and to significantly extend the reach of Verify to new sectors and customers.

INTRODUCTION

Local government faces an unprecedented challenge. Council budgets are being cut while demand for services, driven primarily by a growing, aging population, is going up. The Local Government Association (LGA) estimates a £5.8b funding gap by 2020[1]. At the same time, customers are demanding ever improving service provision.

The 2016 State of Local Government Finance survey found that despite 94% of councils planning to increase council tax, 40% of councils were also planning to make cuts in frontline services[2].

The need for service transformation has never been greater, and digital transformation is a key component of any council's response. It provides the opportunity to deliver higher quality services, with greater customer choice and convenience, while at the same time reducing front and back-office process costs.

Of course, this is not a new agenda. Local authorities started putting their transactional services online in earnest at the start of the e-Government era in 2000. They were given the target of having all services online by March 2006. Yet, more than 10 years later, many local authority services are still not fully e-enabled, end to end.

One reason for this is that local authorities still lack a reliable way of identifying who they are dealing with online, to a level of assurance that suitably mitigates the risk across all services. Putting higher risk, higher value services fully online depends on highly assured digital identity. As things stand, customers are still expected to provide offline proof of who they are. More onerous still, customers are often expected to provide offline proof that they are entitled to the services they are seeking. There are over 180 local government services where proof of identity is required, and 81 where proof of entitlement is required, and where local authorities are forced to rely on expensive paper processes and manual handling. Achieving full end to end transformation for more complex, eligibility-based services in turn depends on online, real-time eligibility checking through attribute exchange, which is underpinned by digital identity. Only with these two enablers in place can full digital delivery be achieved.

A solution to online identity and eligibility verification would provide scope for greater digital transformation in the hunt for further savings and service improvements. Critically, it would help councils deliver full end to end transformation, removing paper processes from even complex council services, and give citizens genuine channel choices.

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[1] https://www.local.gov.uk/parliament/briefings-and-responses/lga-briefing-local-government-finance-and-arrangements-beyond

[2] https://www.lgiu.org.uk/report/2017-state-of-local-government-finance-survey/

GOV.UK Verify has been introduced by the UK government as a way for citizens to prove who they are online in a secure, quick and easy way. Initially GOV.UK Verify was available only to central government services, but a series of #VerifyLocal pilots has been exploring how GOV.UK Verify could be applied to local government services too. In May 2018 GDS announced their intention to extend the use of Verify to the private sector, and in October 2018 they signed new contracts with 5 IDPs to enable this development to happen. GOV.UK Verify is currently the only federated identity solution that could achieve all of the benefits described in this document.

The focus of our Alpha project has been local government, and demonstrating how locally collected data, and existing face to face processes, could be used to help the hard to verify[3], thin-file customer achieve a GOV.UK Verify account. Only with a GOV.UK Verify account would this hard to verify cohort have equal access to all the benefits of online service delivery. Councils don't just have a moral duty to ensure that all citizens can benefit from online service delivery. We argue that it also makes sound business sense.

This business case looks at the wider benefits councils could derive from implementing GOV.UK Verify. It homes in on why highly assured online identity matters. What is in it for local authorities, their partners, and their customers? [4]

This business case supports, and should be read in conjunction with, the project White Paper[5].

ELEMENTS OF THE BUSINESS CASE

Building a single business case for platform services across a whole sector as complex as local government is impossible. What we have set out to do is to produce a set of indicative figures, a configurable Local Verify Benefits Calculator tool, and some case studies to demonstrate the potential for GOV.UK Verify and associated tools to deliver additional savings and additional service improvements to local authorities and their customers.

[3] By "hard to verify" we mean customers who currently fail to pass the GOV.UK Verify registration process because they do not have the necessary digital footprint. They may lack, for example, a passport, driving licence, or credit history.

[4] For research on the wider benefits of e-identity, see http://www.smf.co.uk/wp-content/uploads/2017/08/A-Verifable-Success-final-version.pdf and http://oixuk.org/blog/2018/04/19/cost-of-doing-nothing/

[5] https://oixuk.org/blog/2018/11/23/using-gov-uk-verify-for-local-authority-multi-service-portals-alpha-project/

This is not a full business case. Every local authority is different. They are at different stages on the journey to full digital transformation; they have different skill sets and technical resources available; they have different legacy systems on different contractual arrangements that affect how quickly they can adopt platform services, and at what cost. Comprehensive metrics for the cost of delivering the 180 or so local government services we estimate would benefit from assured online identity simply do not exist.

We have not attempted to calculate the costs associated with deeper digital transformation. The costs (and hence the overall gains to be reaped) will differ significantly from council to council, but we have included a section on the factors that would affect the costs of adopting GOV.UK Verify in a local authority.

We discuss the issue of fraud, and how the use of trusted digital identities could reduce this, but calculating savings from fraud prevention is notoriously difficult, particularly as the confidence levels in the size of the problem in local authorities is relatively low, given that the evidence base is limited.

Whilst the business case will need to be developed further, it is important to make a start, to get some figures into the public domain, to begin to map out the size of the prize, and to stimulate the debate about how to improve the information we have. This document is intended to do just that. Although we haven't set out to use a full Five Case Model[6], we do address the five key considerations from that model.

The configurable Local Verify Benefits Calculator we describe in full below has been developed from research with 12 local authorities who have been piloting how GOV.UK Verify could transform two services - age-related concessionary travel passes, and residential parking permits. The research was used to produce a set of generic metrics, described in appendix A, that could be applied to the 182 local government services that would benefit from the use of GOV.UK Verify and (in the case of 81 of those services) automated eligibility checking.

As part of the Alpha project we have also worked with two London Boroughs, Tower Hamlets and Hackney, and the Greater London Authority (GLA) to develop the business case.

We have looked in more detail at social housing transactions. These are significantly more complex than many other local government transactions, and demonstrate how the savings identified in the Local Verify Benefits Calculator are likely to be conservative rather than over-generous.

[6] See https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-governent

We have looked at the specific benefits of a federated approach to identity. These are particularly great where there is high population churn, and we have looked at the effect of this in London, where there is a particularly mobile population. We would expect these benefits to accrue in other metropolitan areas, albeit at a lower level. Homelessness poses particular challenges, and we look at how a federated, online approach to identity could help this cohort.

Through consultation events with stakeholders, including industry, we have started to understand the significant system integration costs that stem from a current lack of identity standards in the local government market. And we have begun to explore the potential for alternative commercial models for identity that arise when local authorities are active partners in establishing citizen identity, rather than passive recipients of identities established independently of the local authority.

We have looked at the types of data LAs could deliver into the identity ecosystem, with customer permission. Access to LA-collected data would help IDPs increase their registration rates for thin-file customers, and extend the reach of Verify. LAs are more likely to adopt Verify as their identity solution if it is able to serve a wider range of their customer base.

The final element of the business case relates to the benefits of personal data stores, such as the Etive Digital Log Book. User controlled personal data stores can provide a key aggregation space for identity evidence that can, with the user's permission, help the user create a GOV.UK Verify account to the required level of assurance. A personal data store (owned by the user rather than an LA or housing association (HA)) can also streamline onboarding processes when the user moves from one council area to another, or between HAs. It can help coordinate multi-agency working. It can help vulnerable groups manage information that is key to them accessing services in a timely way.

We will deal with each of these elements in turn. Before we do that, it is important to understand the relationship between the identity ecosystem and the ecosystem that underpins online, real-time eligibility checking - the attribute exchange ecosystem.

AN ECOSYSTEMS APPROACH

The full benefit of adopting GOV.UK Verify, or any federated identity system, depends on the adoption of a complementary attribute exchange ecosystem.

Attribute exchange allows a service provider to carry out online, real-time eligibility checks against authoritative data held by other organisations, with user consent, as part of an online transaction. It is described in more detail in appendix B, but it is fundamental to the end-to-end transformation of more complex, eligibility-based services.

The benefits that could accrue from attribute exchange are included in the Local Verify Benefits Calculator described in the next section, but separate research by the Department of Communities and Local Government in 2016[7] demonstrated that attribute exchange, if applied to just 6 local government services, could deliver year on year savings of £105m across the local government sector. There are 81 services that could benefit from attribute exchange, so the total savings figures could be considerably greater. The role to be played by attribute exchange has recently been emphasised by the Chief Digital Officer at MHCLG[8].

THE LOCAL VERIFY BENEFITS CALCULATOR & INDICATIVE BENEFITS

The Local Verify Benefits Calculator tool[9] is a configurable tool designed to help local authorities estimate the potential savings that could be derived by implementing GOV.UK Verify and attribute exchange to achieve end to end digital transformation. Local authorities can quickly configure the tool to reflect their own population figures and the services they deliver, in order to estimate the savings they could make.

To give an indication of the potential savings, the calculator tool has been configured to represent an example metropolitan authority with a population of 275,000, delivering the full range of local services. In this example, **£16.78m** could be saved over a five-year period, made up of:

- **£4.45m** identity assurance savings
- **£2.50m** eligibility checking savings
- **£9.83m** service delivery savings

Year-on-year savings from year five could amount to **£4.435m**.

These savings accrue by replacing costly manual processes with automated digital alternatives. The research with the 12 pilot local authorities identified a number of expensive touch points that can be reduced through digital service delivery, including:

- Collecting, scanning, and storing evidence of identity, with attendant information governance risks. Some local authorities collect evidence from their one stop shops in vans on a regular basis for central storage

[7] See https://www.localdigitalcoalition.uk/wp-content/uploads/2016/03/Local-Central-digital-data-checking-research.pdf

[8] See http://www.ukauthority.com/data4good/entry/8228/mhclg-digital-chief-points-to-attribute-exchange-potential

[9] https://oixuk.org/blog/2018/11/23/using-gov-uk-verify-for-local-authority-multi-service-portals-alpha-project/

- Collecting, scanning and storing evidence of eligibility, again with attendant information governance risks and transport costs
- Failure management, dealing with situations where incorrect or incomplete identity and eligibility information is presented by the customer during transactions. One local authority reported that up to 30% of paper applications for social housing are incorrectly completed. This can lead to expensive follow up phone calls and letters, as well as customer frustration
- Re-keying manually supplied information into back office systems
- Answering customer queries on transaction progress while identity and eligibility information is checked and processed - online alternatives give immediate feedback

Efficient systems that can deal with a customer's needs entirely online drive greater take-up, driving increased benefits for both the customer and the LA.

A number of assumptions, described in more detail in Appendix A, are built into the Local Verify Benefits Calculator:

- the services that would benefit from GOV.UK Verify;
- the services that would benefit from attribute exchange;
- the % of the local population likely to need access to each service;
- the number of times a citizen would access each service in a year;
- the average cost of accessing services by the different channels;
- the average cost of establishing citizen identity and eligibility using different methods.

We believe the assumptions made will yield a conservative rather than an over-optimistic estimate of benefits.

Local authorities can tailor the Local Verify Benefits Calculator to reflect the size of their population, and the services they deliver.

Analysis of Social Housing transactions in the next section demonstrates that some council services are significantly more complex and expensive to deliver than the averages we have used in our Local Verify Benefits Calculator, and would derive significantly more benefit from highly assured online identity and automated eligibility checking.

SOCIAL HOUSING - A CASE STUDY.

Social Housing is an expensive service to deliver. High value assets are involved, and after only three years a tenant is eligible for a right to buy discount. Over time this discount, in London, can amount to nearly £104k (nearly £78k in the rest of England). It is no surprise, then, that housing tenancy fraud is so high, estimated to run at £1.76b

annually[10]. It is therefore imperative that councils establish the identity and eligibility of potential tenants with a high degree of certainty. This is an expensive process, and time consuming for councils and potential tenants alike.

One council we have spoken to employs 45 people in their Homelessness and Housing Register teams. They dealt with 4397 new cases in 2016/17, as well as carrying out reviews of existing cases. 95% of the teams' time is spent on proving applicants' identity, and checking that they are eligible to be on the social housing register. The total cost of those teams is £1.8m per annum. Identity and eligibility checking therefore works out at about £350 per case. (This contrasts with an estimated cost of £10.87 per case for social housing transactions that the Local Verify Benefits Calculator yields, using the average cost per transaction metrics).

Local authorities do not all apply the same qualifying criteria for entry to their social housing registers, but once they have established the applicant's identity, there are some key common pieces of information, or attributes, that typically feed into the process:

Attribute	**Required for**	**Potential attribute provider(s)**
Income	Entry onto social housing register; affordability checks	HMRC; DWP (Universal Credit and Pension information); banks; private pensions providers
Right to reside	Entry onto social housing register	Home Office
Recourse to public funds	Entry onto social housing register	Home Office
Time applicant has lived in the LA area	Entry onto social housing register	No one definitive source.
Medical Need	Priority on social housing register	NHS

[10] See http://www.port.ac.uk/media/contacts-and-departments/icjs/ccfs/Annual-Fraud-Indicator-2016.pdf

A highly assured online identity system, linked to online, real-time eligibility checking, would allow social housing teams to work much more efficiently and effectively, moving transactions online, reducing manual effort, and delivering a better service to their customers. Scaled up nationwide, there are huge opportunities to make savings. Social Housing, like some other local authority services, requires eligibility information from private and public sector organisations, which underlines the need for a cross-sector, standards-based approach to both identity and attribute exchange. A widely federated identity system is a key component.

Social housing demonstrates that the cost of identity and eligibility checks is far higher for some services than the average transaction costs built into our Local Verify Benefits Calculator. Although this means the Local Verify Benefits Calculator is likely to be underestimating rather than overestimating potential savings, it does also point up the need for more targeted business case information to support the case for GOV.UK Verify and attribute exchange in the local authority context.

THE CASE FOR FEDERATED IDENTITY - POPULATION CHURN AND MULTI-AGENCY WORKING

So far we have considered the benefits of GOV.UK Verify within a local authority. But there are benefits from a federated approach to identity, to local authorities and their customers, when we look across organisational boundaries.

With federated identity, a citizen only ever has to prove their identity once, and they can take that identity with them if they move between local authorities or housing associations. Citizens moving to another authority or housing association with their online identity already established would be in a position to transact digitally from day one. It is on day one that the new resident has the greatest need to sign up for a whole range of council services, and on day one that being able to reuse an existing online account would deliver maximum benefit. This could add particular value to council portals that bundle services together to help residents deal with life events, such as moving house, and all that entails.

Citizens living in two-tier authorities, with some services delivered by their county council and other services delivered by their district or borough council, could also benefit from having a single set of federated online credentials.

With the help of the Greater London Authority (GLA), we have looked at the benefits of federated identity in the London context. The figures for London are particularly striking, but we would expect benefits of this kind to accrue in any metropolitan area, where populations tend to be more fluid.

In 2016 approximately 380,000 people moved from one London borough to another. Of these, over 317,000 were over the age of 18 and likely to need an online identity in order to transact digitally with their new local authority. 24 out of the 33 London

Boroughs individually had in excess of 10,000 people moving in from another London Borough during 2016.

If we factor in the costs for identity proofing and verification alone, derived from our 12 pilot councils (see appendix A), a federated approach to identity across London using GOV.UK Verify, could save between **£412k** and **£1.24m** a year, while providing a better customer experience, and a higher level of identity assurance in most cases. This is before we factor in the efficiency benefits associated with increased opportunities for online service delivery facilitated by digital identity.

In the case of social housing there is another sort of churn where reuse of identity would be particularly beneficial. In many local authorities social housing is provided by housing associations. The local authority often manages the housing register, but it is the housing associations that manage the housing stock and house tenants. Tenants may move between housing associations when they move from one house to another, even within the same local authority area. As things stand, each housing association is responsible for individually issuing online identities to their tenants, which is an expensive process. Being able to reuse the identity already established by the local authority or previous housing association would also yield savings and improve customer access to services.

When applied to particular cohorts of users, the argument for federated identity becomes even more compelling, particularly for services that require an LOA2 identity to be delivered online. The "hard to verify" are the particular focus of this project, and we define them as unable to pass the online registration process for a GOV.UK Verify account. The failure rate will be lower for LOA1 accounts, highest for LOA2 accounts, where there is a greater emphasis on activity history evidence as part of the registration process. Although there is not an exact one to one mapping, people in the lower socio-economic groups tend to be hard to verify. The fact that only 38% of Universal Credit claimants who attempt to use GOV.UK Verify manage to register successfully bears this out[11]. This comes at a cost too. The Department for Work and Pensions (DWP) estimates that the manual identity checks that will be necessary as a result of low registration rates will reduce their potential savings from the roll-out of GOV.UK Verify by £40m over 10 years.

The reason for the low registration rate for thin-file customers is partly down to the availability of the identity evidence used by the GOV.UK Verify identity providers. The

[11] See the NAO report on Rolling Out Universal Credit, section 3.21: https://www.nao.org.uk/wp-content/uploads/2018/06/Rolling-out-Universal-Credit.pdf. See also the November 2017 minutes of the Privacy and Consumer Advisory Group meeting, item 3. Even with support, only 1 in 5 people were able to verify their identity in a trial carried out in Croydon.

following table shows the incidence of key identity evidence among the general population, and those who are on Jobseeker's allowance:

ID evidence	Prevalence in general population	Prevalence for those on Jobseeker's Allowance
Passport	80%	64%
Photo Driving Licence	75%	52%
Credit Card	56%	31%

The cohort who are hard to verify are likely to be the heaviest users of public services, with most to benefit from transacting online. Given that this cohort is likely to require a more expensive and time-consuming face to face check to establish their identity, there is a greater premium to be had from a federated identity that can be used in other contexts, with other service providers.

In London in 2011 62,000 people in the lowest three socio-economic groups moved between London Boroughs. Although it is not possible to draw a direct comparison between socio-economic group and the chances of passing the GOV.UK Verify online registration process, use of federated identity is likely to deliver particular savings for LAs in relation to this cohort. Face to face identity checks for this 62,000 would cost around **£242k.**

Homeless people are another key cohort, particularly in the context of the Homelessness Reduction Act, which puts a responsibility on local authorities to prevent, and provide solutions for, homelessness. Homeless people tend to be particularly mobile. In London homeless people frequently move across borough boundaries in search of housing. But establishing the identity and eligibility of a homeless person can be particularly challenging, partly because homeless people have a higher propensity to lose identity and eligibility documents, or have them stolen. In this context, a federated, electronic identity has enormous value.

It often falls to the third sector to help homeless people recover their identity documents. We have limited anecdotal evidence of how often this occurs, but replacing documents can be very expensive. A replacement birth certificate, at one end of the scale, is £9.50, whereas a replacement EU passport/ID card can cost up to £104, and

confirmation from the Home Office of Indefinite Leave to Remain costs £237. One London homelessness charity deals with 15 clients a month who have no identity documents, and the charity help half of them buy replacement documents. To compound the problem, while replacement documents are being sought the homeless person is unable to progress their claims[12].

For homeless people, there would be a clear benefit in having a GOV.UK Verify account that is inherently more difficult to lose, that could be used in any local authority, and which could give quicker access to services. Establishing the identity of a homeless person is particularly expensive, so there is an added premium from making that identity secure and reusable.

Contrary to popular belief, online services are not necessarily inaccessible to homeless people. Many homeless people own a smartphone and use them to access services. Self-referral rates through the Street Link app in London are testament to this[13].

Federated identity, to a high level of assurance and common standards, also underpins attribute exchange, which, as described above and in more detail in Appendix B, enables full end to end service transformation.

Individual, council-specific, My Account solutions are unable to deliver the same benefits as a federated approach to identity that is built to the standards of GOV.UK Verify.

TACKLING FRAUD

Fraud against local authorities is estimated to stand at **£7.3bn** a year[14]. Housing tenancy fraud alone accounts for **£1.76b** of that total. Industry figures indicate that identity fraud accounts for 53% of all fraud committed.[15]

In the case of tenancy fraud, the Cabinet Office calculate that the costs stand at an average of £93k per property fraudulently obtained. This is based on an average four-year fraudulent tenancy including temporary accommodation costs for genuine

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[12] One of the many problems faced by the victims of the Grenfell Tower fire was the complete loss of proof of identity. There is a clear role for electronic proof of identity in mitigating the effects of disasters of this kind.

[13] See https://www.streetlink.org.uk for information on Street Link

[14] Experian, PKF Littlejohn and University of Portsmouth 2016: http://www2.port.ac.uk/media/contacts-and-departments/icjs/ccfs/Annual-Fraud-Indicator-2016.pdf

[15] Fraudscape 2017 https://www.cifas.org.uk/secure/contentPORT/uploads/documents/CIFAS%20Reports/External-Fraudscape%20report%202017.pdf

applicants, legal costs to recover the property, re-let cost and rent foregone during the void period between tenancies. The Cabinet Office calculate that a saving of £3.2k is made for every fraudulent housing application avoided. One midlands authority recovered 17 properties in 2017/18, yielding a saving of £1.58m, and prevented 4 fraudulent applications, yielding a saving of £12.8k[16]. Adopting GOV.UK Verify and automating eligibility checking with attribute exchange would make it quicker and easier to detect fraudulent applications, thus avoiding significant cost.

It is inherently difficult to measure fraud and fraud reduction across all council services. However, based on central government analysis, we estimate that strong identity assurance could prevent our example local authority (a metropolitan council with 275k residents) **£4.7m** worth of fraud losses over the 5-year implementation period.[17] This figure does not take into account the indirect costs of responding to and dealing with potential fraud. In one example given by pilot councils, team leaders were being asked to review suspicious applications because application processing staff were not confident to reject documents they thought could be fraudulent. By using GOV.UK Verify, the risk of this type of fraud, and the associated staff time, is reduced.

THE VALUE OF LOCAL DATA

In order to increase verification rates for hard to verify, who are typically the heaviest users of public services, it is essential to increase the pool of evidence available to the GOV.UK Verify identity providers to verify an individual. The data held by local authorities are rich sources of such evidence. Local authorities already have face to face identity proofing and verification procedures in place that could help the hard to verify, who would not pass the existing online GOV.UK Verify registration process, to achieve the required standard of evidence. It is essential that the mechanisms described in our White Paper are adopted to open up this additional source of data to the identity providers, with the customers' explicit consent.

Increasing the number of people with assured online identities has one obvious benefit; it will drive up the number of people who can transact online, and hence deliver all the benefits discussed in the previous sections. But when local authorities are active partners in establishing a citizen's identity, rather than passive recipients of identities established independently of the local authority, there is an opportunity to offset some of the normal costs of identity assurance.

The identity providers who deliver GOV.UK Verify understand the value of data, and it is in their interests to increase the pool of good quality data that is available to help them

[16] See http://eservices.solihull.gov.uk/mgInternet/documents/s60604/Appendix.pdf

[17] For the basis of the fraud calculations, see Appendix A

establish GOV.UK Verify identities for all citizens. Analysis indicates that access to LA data would significantly improve the ability of IDPs to register thin-file customers, particularly because LAs have access to, and are able to check, identity related documents that IDPs are unable to check electronically as part of the online Verify registration process.

Research carried out in Tower Hamlets in relation to their WorkPath service (a service that helps local residents find and stay in work), indicate that 98% of that cohort would have sufficiently strong ID evidence to achieve a Verify identity at LOA2. 89% of the cohort (including 19% from overseas) would have strong photo-id, allowing for strong ID verification. 63% of the cohort are likely to have sufficient activity history to achieve LOA2. The Etive Digital Log Book would provide the rest the opportunity to build up activity history over time. Opening up the LA market in general to Verify has the potential to significantly extend the reach of Verify to many more customers, which would provide IDPs with a significant market opportunity.

It is not the role of an OIX project to deliver commercial models, but it is quite clear that identity providers should be prepared to pay for LA data that helps them enroll new GOV.UK Verify users. This aspect of the business case will need further development as the roll out of GOV.UK Verify continues. We argue in the White Paper that the roll-out of GOV.UK Verify to the private sector should open up the opportunity for different commercial models in relation to Verify identities. These other models could be more advantageous to local authorities, and could recognise the value of locally collected data as well.

BENEFITS TO SUPPLIERS IN THE LOCAL AUTHORITY MARKET

Local authorities use and pay for a wide variety of back office systems to deliver a full range of services. These systems have their own online interfaces and assume that citizens will be issued with separate credentials in order to transact digitally. Issuing separate credentials for each back-office system is an expensive overhead for local authorities. They have to establish the online user's identity each time, generally to a lower level of assurance than that provided by GOV.UK Verify, and they have to manage those user credentials over time. It is frustrating and inconvenient for customers to remember multiple credentials to access systems from the same local authority.

One option is to implement a portal that delivers single sign on (SSO) to the local authority's back office systems. But without a single common standard for identity management, this is complicated and expensive. A top-5 technology supplier to UK local government has calculated that implementing SSO (at level of assurance 1) to connect to over 50 different back office systems in 18 local authorities over the past 5 years has cost in the region of £800,000. At a rough estimate, if this were extended across all of the English local authorities, even with economies of scale taken into account, this

supplier calculates the total cost could run to **£50m**. And this is only for LOA1 accounts. Implementing LOA2 identities would involve additional expense. Of course, costs to suppliers translate into higher costs and longer implementation times for local authorities. Cost and complexity may well lead local authorities to give up the attempt to provide their users with a single sign-in to the whole range of services they require.

GOV.UK Verify is currently the only contender for highly assured online identity that would be trusted across the public and private sectors, that could underpin attribute exchange, and that could provide the single identity standard around which local authority suppliers could cluster.

ADDITIONAL BENEFITS OF A PERSONAL DATA STORE

We describe in the White Paper how the Etive Digital Log Book, a personal data store, could be used to aggregate locally collected identity evidence for a user. The user could then consent to that information being made available to an identity provider as part of the GOV.UK Verify registration process. This would increase the success rate of GOV.UK Verify registrations and open up a wider range of service options for the user.

A personal data store, underpinned by highly assured identity, can also be used to store other sorts of data, data that could help a user interact with a range of different agencies. We have not quantified the benefits that could accrue, but potential use cases include:

- Providing proof of past tenancies and rental payments to streamline the move from one landlord to another
- Holding key documents for the homeless, where the propensity to lose documents or have them stolen is higher
- Holding key information for victims of domestic abuse who will need to interact with multiple agencies, and who will need to be placed out of borough if rehoused, in order to maintain their safety
- Acting as an electronic repository for information obtained through subject access requests under GDPR

Being able to present authorised, electronic evidence from a personal data store in different transactions could help speed up access to a whole range of services. The data is put under the user's control, without the need to constantly refer to 3rd parties. This can empower the individual and help them take control of their relationships with multiple agencies. It is of particular benefit to mobile populations who are frequently having to establish new relationships with different organisations in the private, public and third sectors. It can help address the inconvenience of the individual having to

repeatedly prove who they are and what services they are entitled to, a problem that tends to be greatest for the socially disadvantaged.

A personal data store also provides the potential to see identity proofing and verification as a process rather than a point in time pass/fail event. As more identity-related information is collected in a personal data store, the chances of the user reaching the required level of assurance increase. Transactions with the local authority can provide a rich source of activity history in the personal data store, a key component in the GOV.UK Verify identity proofing and verification process.

THE COSTS OF IMPLEMENTING GOV.UK VERIFY

We have not attempted to calculate the costs associated with implementing GOV.UK Verify to transform service delivery, as they will differ enormously from council to council. In addition, we would hope and expect that the private sector roll-out of GOV.UK Verify would lead to greater competition and different commercial arrangements, with the potential to bring down the cost of identity proofing and verification carried out by the IDPs. However, the cost of identity proofing and verification is only a small part of the overall implementation cost that local authorities would incur. The larger cost would be in building online services, and integrating GOV.UK Verify into those services.

Factors that would affect the overall cost of implementation include: internal capacity and skills; data matching capability; the nature and number of legacy systems or platforms; the extent of existing digital transformation; and population size and digital take-up rates.

INTERNAL CAPACITY AND SKILLS

Councils with internal development and operational systems resources are in a better position to keep implementation costs down. Key skills/knowledge for GOV.UK Verify and attribute exchange integration include:

- SAML
- JSON
- oAuth2
- Digital certificates

DATA MATCHING CAPABILITY[18]

When a user logs on using GOV.UK Verify, a matching data set (MDS) is transferred to the council, containing the user's name, address, date of birth and, optionally, gender. The MDS will also contain a persistent identifier (PID) that is unique for that user/identity provider combination. GDS provide councils with a JSON-based Matching Service Adapter (MSA) so that they can consume the MDS more straightforwardly.

Councils will be able to deliver far richer "My Account" functionality to their users if they can match the MDS against records in all the relevant internal systems. This relies on data matching capability to reliably bind the GOV.UK Verify identity to the relevant back office records.

Some councils already have data matching capability, and some of those data matching systems will be able to easily consume the JSON from the MSA. Integration costs will need to be factored in.

Councils without existing data matching capability who wish to deploy fully functional My Account features, will need to factor in the cost of data matching capability.

NATURE AND NUMBER OF LEGACY SYSTEMS/PLATFORMS

Legacy systems that have open standards interfaces (SAML and oAuth2 in particular) will be quicker and cheaper to integrate with GOV.UK Verify and attribute exchange. The number of legacy systems in use in a council will also affect total integration costs.

Legacy systems with open and freely available APIs are like to be easier and cheaper to integrate with data matching systems, but councils need to check what APIs are available and whether they provide the integration capability required.

Councils who use a single platform to deliver all, or most, of their internet facing services are in a better position to keep costs down, particularly if that platform is standards compliant. The main integration work will only need to be done once, rather than repeated across multiple platforms. However, there may still be integration points to back office systems that councils will need to factor in to their cost models.

Councils with existing My Account facilities may need to factor in migration costs to a fully federated identity system. On the plus side, councils with My Account facilities are more likely to have tackled the data matching issues associated with delivering a single view of customer.

[18] For a more in-depth discussion of the relationship between identity and data matching, see http://oixuk.org/wp-content/uploads/2016/11/Data-Matching-in-the-Identity-Ecosystem.pdf

EXTENT OF EXISTING DIGITAL TRANSFORMATION

The Local Verify Benefits Calculator identifies 182 services that could benefit from federated identity, of which 81 could also benefit from attribute exchange. A council's costs (and benefits) will vary depending on the progress they have already made in digitising those services. Services that are already digitised may incur some identity and attribute exchange integration costs, but services that have yet to be digitised will incur additional development costs on top of that. The extent of those costs will depend on the complexity of the service in question, the platform used to develop the digital service, and the extent to which the council is dependent on third-party development resources.

The Local Verify Benefits Calculator can be configured to indicate which services a council has digitised, or is intending to digitise. This can help a council prioritise the order in which they might digitise those services.

POPULATION SIZE AND DIGITAL TAKE UP

The size of the local population, and the take up of digital services, will affect the number of GOV.UK Verify accounts required. The current GOV.UK Verify model means that a local authority will be charged the first time a GOV.UK Verify identity is used with the council. The costs associated with identity proofing and verification will, therefore, vary depending on the number of citizens who transact online using GOV.UK Verify[19].

As GOV.UK Verify is rolled out into the private sector, alternative commercial models for identity proofing and verification are likely to emerge. A lower charge per authentication, for example, might replace the charge per registration.

The Local Verify Benefits Calculator assumes 60% take-up of GOV.UK Verify for each implemented service after 5 years, but individual councils may aim for different take-up rates, which will also affect their cost calculations.

COMMERCIAL ISSUES

In May 2018 GDS announced that the private sector would have access to digital identities built to the same standards as, and interoperable with, GOV.UK Verify identities. New contracts were signed with 5 of the existing GOV.UK Verify IDPs in October 2018. This should clear the way for alternative commercial models to emerge. There is scope for identity to become more commoditized, for different charging models (per authentication rather than per registration/first use) to emerge, and for the value of local data to be recognised as local authorities become active partners in identity proofing and verification rather than simply passive recipients of identities established

[19] Local authorities looking to deploy GOV.UK Verify can request the identity proofing and verification cost associated with the current scheme from GDS.

elsewhere. It is to be hoped that a GOV.UK Verify kitemark will be established to ensure the delivery of trusted brands for citizen identity.

There is significant learning that can be brought to bear on the commercial issues to be tackled: learning from GOV.UK Verify to date; and learning from international identity solutions.

We anticipate that, in future, local authorities will have a choice of commercial models when adopting a GOV.UK Verify identity solution.

MANAGEMENT ISSUES

The roll-out of GOV.UK Verify to the private sector will open up the debate about how to deliver trusted, federated online identity to all sectors of the economy, and to all users. Government has a key role to play in defining the standards that will underpin trusted solutions, and many of these standards are already in place. Private sector identity providers and hub providers are highly motivated to support a successful private sector implementation. The relationship between the Government Digital Service and private sector identity providers is already in place for GOV.UK Verify, and this is a relationship that can be built on to achieve the wider take up of GOV.UK Verify.

There are numerous examples of relying parties who would be able to fundamentally transform their online service delivery on the back of the solutions offered, Local Authorities among them.

The roll-out of GOV.UK Verify to the private sector provides the essential ingredients for a successful implementation of federated identity across the whole UK economy, and we look forward to seeing how that implementation proceeds. It is essential that the requirements of local authorities and their suppliers are included in these discussions, and that local authorities have access to the enhanced features we would expect to see when the GOV.UK Verify standard is adopted by the private sector.

APPENDIX A - ASSUMPTIONS BUILT INTO THE BENEFITS CALCULATOR

SOURCE OF BASE DATA

The base data for the Local Verify Benefits Calculator comes from research carried out with the 12 local authorities involved in the local GOV.UK Verify pilots. These 12 authorities include Counties, Districts, and Metropolitan Borough Councils. They were involved in transforming two services - Age Related Concessionary Travel Passes, and Residential Parking Permits, but the metrics developed for the Local Verify Benefits Calculator are more generic.

BASIC METRICS

3 principle metrics are built into the model: costs of service delivery by channel; costs of identity verification by channel; and cost of eligibility checking by method. The tables below set out the figures derived from the 12 councils and from Open Identity Exchange (OIX) white papers.

Service delivery costs by channel	
Method of transaction	**Value**
Face to face transaction	**£7.01**
Telephone transaction	**£3.26**
Online (email, web form or similar)	**£0.17**
Postal transactions	**£1.89**

Identity costs by channel	
Method of transaction	**Value**
Face to face transaction	**£3.90**
Telephone transaction	**£2.60**
Online (email, web form or similar)	**£1.30**
Postal transactions	**£1.70**

Eligibility checking costs by method	
Method of transaction	**Value**
Data sharing agreement with central government	**£0.26**
Telephony / email contact with central government	**£1.30**
Council checks documentation	**£2.60**
Council verifies attribute themselves[20]	**£7.80**

[20] This is where a council assesses eligibility independently, rather than relying on documentation from central government. E.g. blue badge eligibility checked by an occupational therapist.

Built into the model is an assessment, service by service, of which channels/methods are currently being used to deliver each service. Many services will use a combination of these channels/methods.

These metrics will clearly differ from council to council, and also from service to service. The case study on Social Housing above demonstrates how the costs associated with some services are much higher than those shown here.

BUILT IN ASSUMPTIONS

We have built a number of assumptions into the Local Verify Benefits Calculator to drive the model. These are set out in turn below.

WHICH SERVICES NEED IDENTITY ASSURANCE AND ATTRIBUTE EXCHANGE?

The 12 councils reviewed the Local Government Service List (LGSL)[21] to identify which services require identity assurance and attribute exchange. There are 182 services that could benefit from online identity, and 81 services that could benefit from online, real time eligibility checks. These services are built into the model, and benefits are only based on those services. Individual local authorities can configure the benefits calculator to exclude any services they are not intending to transform in the 5-year savings period.

SIZING EACH SERVICE

It is important to understand how many users and transactions each service on the LGSL will attract in any year in order to calculate potential savings. To do this we have classified each service as:

- **Micro**: ±0.04% of the population base. In the case of our example metropolitan council with would be 100 users
- **Small**: ±1.8% of the population base. In the case of our example metropolitan council with would be 5,000 users
- **Medium**: ±5.5% of the population base. In the case of our example metropolitan council with would be 15,000 users
- **Large**: ±18% of the population base. In the case of our example metropolitan council with would be 50,000 users

Based on evidence from our 12 pilot authorities, we have assumed that there will be one transaction per user per year for any one service.

[21] http://standards.esd.org.uk/?uri=list%2FenglishAndWelshServices&tab=details

DIGITAL UPTAKE

The savings assume a 60% take-up of GOV.UK Verify for all relevant services by year 5, starting from 0% in year one. We believe 60% to be a conservative target for well-designed digital services. Different councils will be starting from different baselines for different services.

FRAUD LOSSES

Fraud losses are estimated by calculating the number of frauds that would have otherwise succeeded, if it were not for GOV.UK Verify. The calculation was based on:

- the average cost of identity fraud & cyber enabled fraud obtained from the NFA 2013 paper[22];
- the number of reported frauds prevented by IdPs;
- the number of reported frauds likely to be actual instances of fraud;
- an assumption that GOV.UK Verify itself would prevent 30% of those frauds, others being prevented by counter-factual systems (30% is obtained from the "Take five to Stop Fraud" scheme[23]);
- assumed volumes for local government

APPENDIX B - ATTRIBUTE EXCHANGE

The following diagram demonstrates the basic concept of attribute exchange:

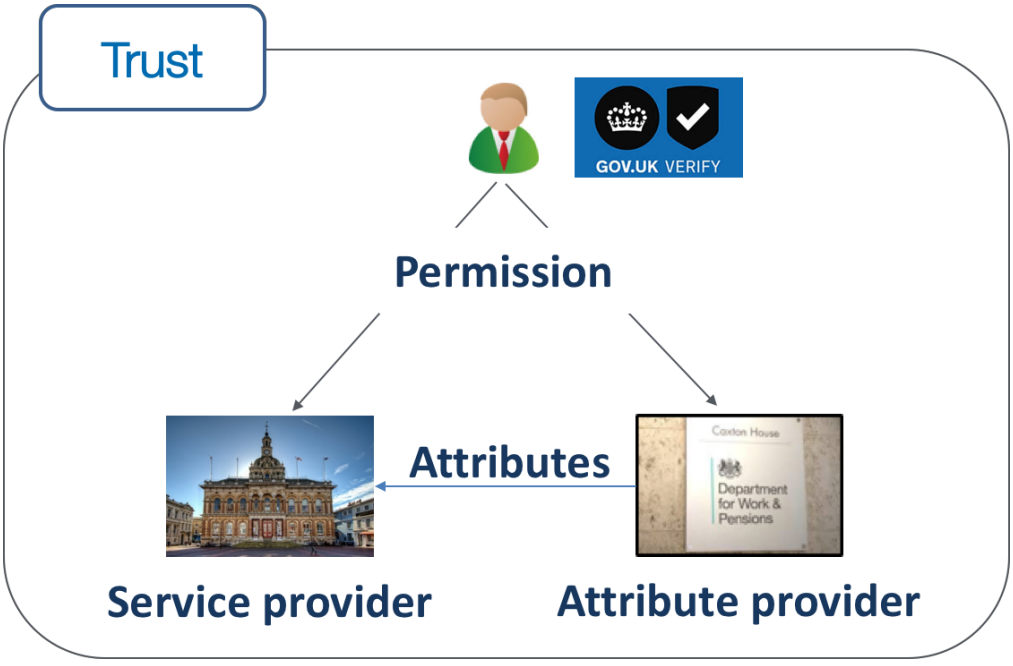

Diagram 4. Concept of attribute exchange

[22] See https://www.gov.uk/government/publications/annual-fraud-indicator--2

[23] See https://takefive-stopfraud.org.uk/about/take-five/

Attribute exchange puts the customer centre stage. The customer is an active participant in the online transaction and they request and sanction the release of eligibility information from the relevant third party - the attribute provider. That is why the customer has to hold a highly assured online identity. We need to be sure that the data subject (the person the data describes) is genuinely the person in the transaction, authorising the release of their data. All parties - the service provider, the attribute provider and the customer - need to trust that identity. This is why a federated identity system, such as GOV.UK Verify, based on commonly agreed standards, is essential to establish that high level of trust. The typical "my account" services adopted by some local authorities simply cannot establish a network of trust that spans organisational boundaries.

An attribute exchange infrastructure, at a high level, is shown in the following diagram:

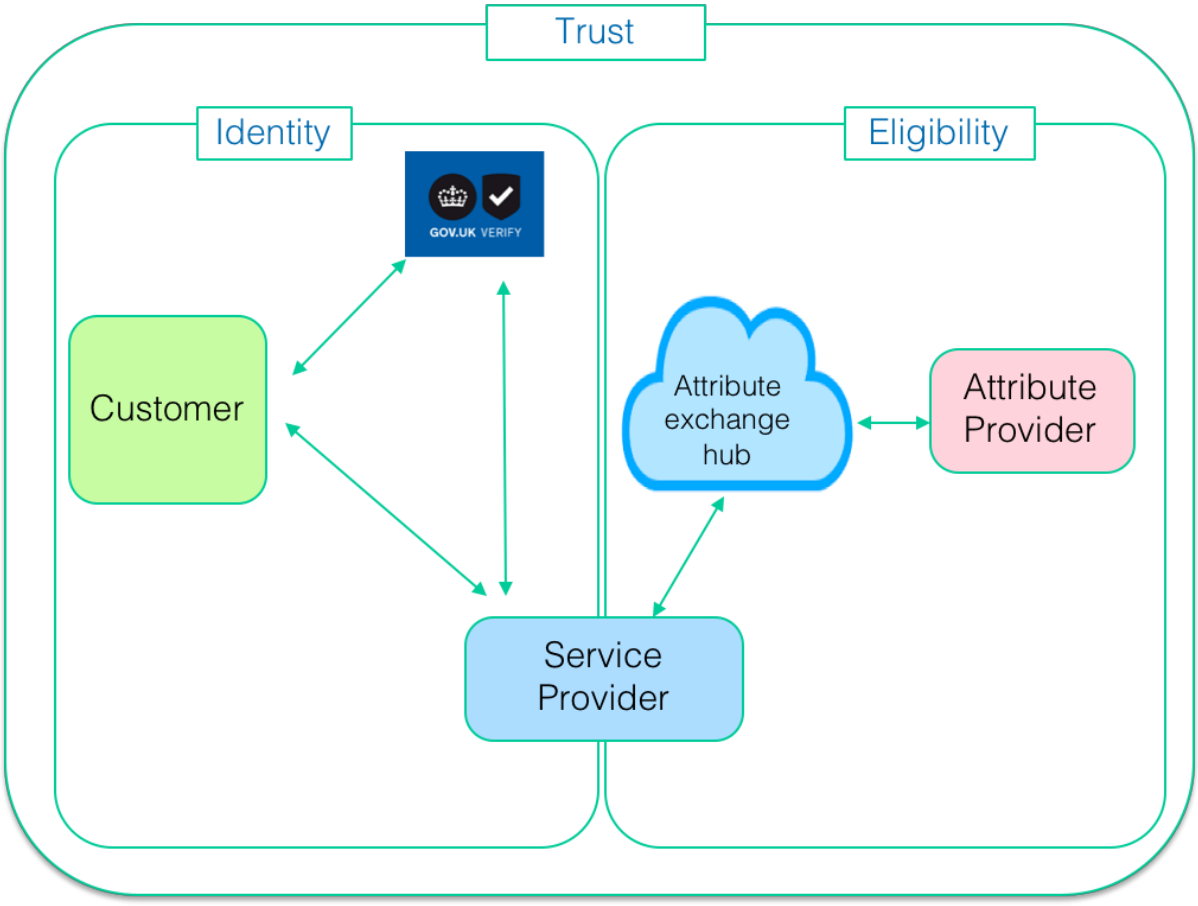

Diagram 5. High level attribute exchange architecture.

A standards-based attribute exchange hub would broker the request for attributes between the service provider and the attribute provider. Variations to this model, based on a specification called User Managed Access (UMA), allow a customer to record data sharing policies that can be used in "customer not present" transactions.

The benefits of attribute exchange in the context of local government, linked to the GOV.UK Verify federated identity system, have been extensively researched in the Warwickshire County Council Blue Badge Discovery and Alpha projects conducted through the Open Identity Exchange (OIX)[24]. A further Warwickshire County Council private beta project demonstrated how this would work in a real-world environment[25]. The potential financial benefits of this approach have been further researched by the Department for Communities and Local Government[26] (DCLG). DCLG's analysis of just six local authority services revealed potential year-on-year savings of over **£105m** from online, real-time eligibility checking, driven by attribute exchange. The benefits of attribute exchange are factored into the savings figures above.

The identity and the attribute exchange ecosystems are separate but support one another. Federated identity establishes trust; attribute exchange provides the compelling business case for federated identity and delivers the step-change in service delivery.

[24] See

Towards an architecture for a digital Blue Badge service

A technical design for a Blue Badge digital service

Can attribute provision, together with identity assurance, transform local government services?

Interoperability between central and local government identity assurance schemes

OIX IDAP Alpha Project - Technical Findings

[25] See https://dwpdigital.blog.gov.uk/2017/09/19/helping-citizens-choose-how-their-data-can-work-for-them/

[26] See https://www.localdigitalcoalition.uk/wp-content/uploads/2016/03/Local-Central-digital-data-checking-research.pdf

APPENDIX C - GLOSSARY OF TERMS

Attribute	A characteristic of a person or a thing
Attribute Exchange	A mechanism that allows a relying party to request information about a data subject from an attribute provider, online, and in real-time, with the data subject's explicit permission. The attribute exchange ecosystem is governed by a trust framework that covers technical, legal and commercial aspects of the ecosystem. Typically built using open standards protocols and specifications, such as oAuth2 and User Managed Access (UMA).
Attribute Provider	An organisation that can provide attributes about a person or a thing through the attribute exchange ecosystem
Federated Identity	A common set of policies, practices and protocols to manage identity and trust across organisations.
General Data Protection Regulation (GDPR)	A European regulation on data protection and privacy that replaced the 1995 Data Protection Directive (and the UK Data Protection Act 1998) on May 25th 2018.
Level of Assurance	The level of trust that can be put in a digital identity, based on the level of confidence that the person in possession of the digital identity is who they say they are. The UK government has defined the levels of assurance, and mapped them to

	international standards, in their Good Practice Guide 45[27]
Personal Data Store (PDS)	A secure data repository that is owned and managed by an individual user, even if it is initially issued to the individual by an organisation. The PDS provides the user with tools to control who they share their data with, in what circumstances, and for what purposes.
Relying Party	A service provider, organisation, or system that consumes and relies on the digital identities provided by an identity provider

[27] https://www.gov.uk/government/publications/identity-proofing-and-verification-of-an-individual