THE POWER OF DATA: IS THE CHARITY SECTOR READY TO PLUG IN?

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Data: with the level of attention and coverage it receives you would think it was a new concept. What is it about data that is creating so much interest? What’s changed? How relevant is it to charities? And are we, as individual charities, and as a sector, managing to engage with it as we should? This paper aims to answer these questions, drawing on NPC’s experience of working with charities and data, through projects such as:

- Data Labs: a programme which aims to provide access for charities to government-held data on their clients to enable them to better understand their impact;
- Inspiring Impact: a programme to put impact at the heart of the non-profit sector;
- Improving your evidence: a programme delivered with Clinks to support voluntary organisations working in criminal justice to help improve their capacity to undertake or commission high-quality research and evaluation;
- Project Oracle: a programme supporting providers of youth services that want to increase their evidence;
- Brain Tumour research: research to explore the funding flows to research into different cancers; and
- Who will love me, when I’m 64?: research to understand demographic trends and the implications for the relationships of older people.

What’s changed?

Much of the current debate centres on opening up data and datasets; that is, providing access to data that has previously not been accessible—in large part data held by government.

Formally, ‘open data’ is ‘data that can be freely used, reused and redistributed by anyone—subject only, at most, to the requirement to attribute and sharealike’. The UK government aims to lead the way in promoting transparency and open data, publishing the Open Data White Paper, co-chairing the international Open

1 See http://inspiringimpact.org/
2 See http://www.clinks.org/support/evaluation-and-effectiveness
3 See http://www.project-oracle.com/
5 Harries, E., de Las Casas L. (2013) Who will love me, when I’m 64? Relate.
6 This definition comes from http://opendatahandbook.org/en/what-is-open-data/. A full definition of open data provides further detail about availability, access, reuse and redistribution and universal participation, in order to enable interoperability, ie, the ability to intermix different datasets.
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Government Partnership in 2012/13, and commissioning the Shakespeare review. The website data.gov.uk brings together all the data released by government, and currently has over 10,000 datasets available from central government departments and some public sector bodies and local authorities.

One of the government’s aims is to encourage the use of open data to drive enterprise and growth. It is funding the Open Data Institute to support business to use public sector data, a scheme which has already yielded some interesting projects: for example, Locatable, a website which helps people decide where to live, using multiple datasets including those on transport, crime and services; and Mastodon C, which offers a ‘Chaos to Insight’ service providing advanced analytics to link private datasets from clients with open data and social media data.

This kind of use of open data by charities can be seen in tools such as Compare Futures, which allows users to compare young people’s life chances across England. Developed by the Centre for Crime and Justice with academics from Sheffield University, Brighton University and the Nominet Trust, the tool offers insight into young people’s different experiences. For example, it enables comparisons between young people in Bradford West and young people in Harrogate and Knaresborough, constituencies just twenty miles apart, which show that young people in Harrogate are seven times as likely to go to an elite university, and young people in Bradford West are three times as likely to be unemployed. At the UK’s first Data Dive, organised by DataKind UK, analysts used open data to generate a deeper understanding of unstable global food prices, and how to reduce their unpredictability. Funders are also engaging. Indigo Trust is encouraging UK foundations to publish data in an open format, and has set the aim that within five years, 80% of grants by value made by UK charities, foundations and other grant makers, and 50% by number, are reported as open data to agreed standards.

Other types of data are being made available to specific groups of users, even if not made formally into ‘open data’. This includes sensitive data, such as personally-identifiable data. NPC’s work with the Ministry of Justice to help charities understand the impact of their work with offenders resulted in the creation of the Justice Data Lab, which enables organisations that work with offenders to access re-offending data.

There is less consensus around the term ‘Big data’, but the most widely-accepted definition states that ‘Big data is high-volume, high-velocity and high-variety information assets that demand cost-effective, innovative forms of information processing for enhanced insight and decision-making’. In essence, it is analysis of big data sets that could not be done using a traditional spreadsheet or database—for example, social media activity or large numbers of transactions. There are not many examples of its use by charities at present, but Foundation Strategy Group highlight it as a potential ‘game-changing approach’ to evaluation due to the huge amounts of data available and the shorter feedback cycles.

Linked data involves publishing data so that it can be easily combined with other linked data, enabling the integration of disparate datasets using web technologies. This provides much greater scope for analysis and insight, particularly in understanding linkages or relationships between different factors. The Health and Social

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9 See http://www.opengovpartnership.org/
11 For more information about the ODI and these projects, see http://www.theodi.org/events/OpenDataChallengeSeries
12 See http://www.crimeandjustice.org.uk/project/compare-futures
14 See http://tech.transparency-initiative.org/indigo-trust-enabling-more-effective-giving-by-uk-foundations/
16 See http://www.justice.gov.uk/justice-data-lab
17 See http://www.gartner.com/it-glossary/big-data/
Care Information Centre, for instance, has a secure data-linking service, which provides researchers with access to linked, anonymised data from health and social care services.

The Economic and Social Research Council (ESRC) Big Data Network is pursuing three initiatives to improve data access: first, it is focussing on de-identified government administrative data; second, on business and local government data; and finally, on third sector and social media data. The development of the Administrative Data Research Network (ADRN) is currently underway—this partnership between government departments, research funders, national statistical authorities, and the research community aims to reach across the UK to facilitate research based upon linked, routinely-collected administrative data.

Alongside all this activity providing new access to data, and enabling analysis of data in new ways, is private data. Private data is the data we collect and hold within organisations and, in general, do not share externally. It is the data we have always had, or had the potential to have. At NPC, for instance, it includes the data we collect on our website use and report downloads, the data we hold on the well-being of young people through use of our Well-being Measure,19 or the data we collect for research purposes, such as that used in Making an impact,20 or Money for good UK.21

Organisations are becoming increasingly aware of what we could be doing with our private data. There is the potential for better collection, analysis, and use of findings, and more sharing. This awareness has been driven by several factors: by the rise of the impact measurement agenda, which requires charities to think more about what data they collect and what they do with it; by the need for increased efficiency; by changes in the environment charities operate in, such as more competition and changing needs; and by other organisations demonstrating the power of data.

**Why is data relevant to charities?**

Intelligent use of data can significantly increase the effectiveness of charities. This isn’t new: most—even all—charities use basic data in some way. But the potential of data is significantly greater as a result of the increased availability and burgeoning options for processing.

Broadly, charities can use data to increase their effectiveness in three ways:

**To understand needs or issues better**

Understanding need and the context in which a charity works is fundamental to effectiveness. Improved access to data is enabling this by providing a more detailed and, in many cases, up-to-date, understanding.

For instance, the CDEC Open Health Data Platform22 uses data from the Health and Social Care Information Centre (HSCIC) to map the prevalence of diabetes and spend on prescriptions for diabetes patients at Clinical Commissioning Group level. HSCIC has a large depository of health data for England, in which access to anonymous aggregate data is largely free.

Shelter’s Housing Databank23 gives free access to data on over 30 housing indicators, covering housing need, affordability, and supply and social welfare, at a local, regional and national level.

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19 See [http://www.well-beingmeasure.com/](http://www.well-beingmeasure.com/)
22 See [http://openhealthdata.cdehub.org/](http://openhealthdata.cdehub.org/)
23 See [http://england.shelter.org.uk/professional_resources/housing.databank](http://england.shelter.org.uk/professional_resources/housing.databank)
The Centre for Economic and Social Inclusion’s Child Poverty Toolkit\textsuperscript{24} pulls together open data on indicators of child poverty which can be used by local government and the third sector to understand needs within an area and to provide benchmarking across similar areas.

**To improve operational effectiveness (in service delivery or support functions such as fundraising)**

Data can inform operational improvements in various areas, such as fundraising, targeting volunteers, or working out appropriate levels or locations for service provision.

For instance, when Barnsley Hospice linked the postcodes from its fundraising database to the local council’s dataset of the socio-economic profile of neighbourhoods, it was able to more clearly see where its donations came from. In response, it could tailor its fundraising strategy for each area, for example, by marketing small pledges for lower-income areas and corporate giving in areas where businesses were located.\textsuperscript{25} This example demonstrates the power of combining public and private data.

Shelter also hosts Housing Insights for Communities,\textsuperscript{26} a free resource that uses the ACORN population classification to indicate the type and proportion of people in an area. This can be used by charities to understand local audiences and plan effective campaigns.

The Royal National Lifeboat Institution (RNLI) uses data on fatalities and participation as the basis for its new approach to coastal safety. This is a risk-based approach supplemented by bespoke audience profiling and behaviour change methods.

**To improve understanding of results and impact**

Data on results is essential for charities to understand the difference their work makes and how they can improve.

For organisations working with ex-offenders, NPC proposed, and the Ministry of Justice implemented, the Justice Data Lab, which provides the grouped reconviction rates of an organisation’s service users compared to a matched comparison group. For the first time, this enables a charity to know whether its intervention has reduced reconviction rates.

Time to Change, an anti-stigma campaign to end discrimination surrounding mental health, used the Department of Health’s national *Attitudes to Mental Illness* survey to understand changes in public attitudes towards people with mental health problems as part of its approach to measuring its impact (survey discontinued in 2011).\textsuperscript{27}

Data can also promote transparency, which is a good thing in its own right, but in this paper we focus on the practical benefits for charities.

**Missted opportunity?**

Are we, as individual charities, groups of charities, and as a sector, making the most of these opportunities?

We think the answer, in general, is no. This is not a question of incremental improvements; it’s about taking advantage of the potential resulting from the combination of the vast increase in data availability, improvements in tools to process data, and the enthusiasm, vision and support of those driving and leading these trends in data.

\textsuperscript{24} See http://www.cesi.org.uk/statistics/tools
\textsuperscript{25} Conrad, L. (2011) *Making data relevant: a case study*. NCVO.
\textsuperscript{26} See http://england.shelter.org.uk/professional_resources/housing_insights
\textsuperscript{27} See http://www.time-to-change.org.uk/about-us/our-impact
This isn’t to say that every charity has to engage—the potential will vary for charities depending on their size, focus area or activity. But for the many charities interested in knowing more about the need they address and the context in which they work, open data can be valuable. For charities working in areas such as employment, education or health the move to enable access to personal, anonymised data held by government offers new potential to understand how their services benefit those they work with.

There are many good examples of this use of data happening already, such as those described above, but the vast majority of charities are engaging with data much as they always have: in a limited fashion.

Why is this? Three reasons jump to mind: engaging with data can be disruptive, difficult and time-consuming.

If we step back and look at the big picture, in order for charities to get the most out of data we need data to be available—a supply—and to be wanted—a demand (Figure 1). One thing we have learnt is that charities saying they would like data available, plus making data available, does not equal use of that data. As part of the research that informed the set-up of the Justice Data Lab we surveyed charities working on re-offending to understand whether they would find such a service useful, and had an overwhelmingly positive response. In practice, the uptake during the first part of the pilot of the Justice Data Lab has been slower than this response might have suggested. There are multiple factors at play on the supply and demand side.

Figure 1: Demand and supply barriers to charities access data

<table>
<thead>
<tr>
<th>Supply</th>
<th>Demand</th>
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</thead>
<tbody>
<tr>
<td>Availability</td>
<td>Awareness</td>
</tr>
<tr>
<td>Datasets are not open, or there is no process for requesting data (e.g., for sensitive data).</td>
<td>Charities are unaware that data is available.</td>
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<tr>
<td>Access</td>
<td>Capacity</td>
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<tr>
<td>Charities cannot reliably get access to available data. Charities do not understand the datasets they access.</td>
<td>Charities do not have the time or money to invest in data.</td>
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<tr>
<td>Capability</td>
<td>Incentives</td>
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<tr>
<td>Charities do not recognise the potential of data, or have a vision of what could be achieved with it. Charities do not have the skills to analyse data or understand the results.</td>
<td>There are few incentives to overcome the barriers to accessing and using data.</td>
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<tr>
<td>Desire</td>
<td></td>
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<tr>
<td>Data can be disruptive: charities do not want to risk negative results.</td>
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Supply

Supply at its most basic is about making data available. A major source of new data is government, which, as discussed earlier, is both committed to, and making progress with, making data available, particularly as open data.
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More progress is needed on sensitive (ie, personally identifiable) data, but because of its innate sensitivity, progress here is more complicated. Barriers we have encountered through our work on Data Labs include legal (working with data protection laws), technical (relating to the structure of databases and location of data), attitudinal (resistance to sharing data with charities, or concerns about misuse of data), and resource-based (a lack of the time, skills and money needed to create the necessary systems and processes). However, there is a commitment to opening up access to more sensitive data in the Open Data White Paper, and initiatives like the Justice Data Lab and Administrative Data Research Network demonstrate things are moving in the right direction.

Given this progress, the more pertinent question when it comes to supply is ‘what does supply need to look like for the charity sector to find it useful?’ This is about access. For instance, we have found that whilst data from the National Pupil Database is available in theory, charities can find it hard to access it because their submissions are rejected and they are unsure how to improve them. Similarly, before the implementation of the Justice Data Lab, we found that charities looking to find out the re-offending rates of their service users found it difficult to identify a clear route to access the data: those we surveyed were using different public sector organisations to access data, with varied and inconsistent levels of success. This inconsistency can be due to two things: difficult or unclear processes, and complex data sets charities in general lack the resources and skills available to academic researchers to invest in accessing such data.

We would argue that, ideally, the supply of data for understanding outcomes should also offer some kind of analytical service, enabling those charities without the necessary skills to participate and understand the impact of their work. We believe that there should be more models for measuring impact, like the Justice Data Lab, across government departments. Our Data Lab project aims to open up datasets that can be used to measure impact for services linked to homelessness and its prevention.

Looking to the future, the next big step is to increase the sharing of private data. For example, charities could share aggregated, quality-assessed results data to build a central pool that would help understand the results of different interventions. Shared measurement frameworks and common measures would support this by enabling meaningful comparisons of different approaches. For instance CAADA (Coordinated Action Against Domestic Abuse) has developed a shared monitoring tool for specialist domestic abuse services. Called Insights, the tool enables organisations to collect consistent, comparable and reliable information on the people they work with. With this data CAADA can start to understand trends in services, looking at patterns in risk factors of clients and outcomes across approaches and sites. Aggregating data has allowed CAADA to spot trends in cases they see. For instance, the data showed that victims who are referred by hospitals have generally experienced abuse over a shorter length of time than victims who are referred by other services. This helps with decisions about where teams should be located and map what interventions lead to changes.

Although not perfect, good progress on the supply of data has been made, and continues to be made. Leaders of charity membership and umbrella bodies, and charities leading the way in use of data, need to speak up and ensure their requirements for data and how it is provided are represented in new government initiatives, such as the ESRC-funded data research centres and the What Works Centres. The field is progressing rapidly, and if we do not engage we are in danger of missing key opportunities.

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31 See https://www.gov.uk/what-works-network
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Demand

Which brings us to demand: a complicated issue because of the diversity of charities that might use data. Only a tiny minority of charities have research departments or skilled analysts on their staff; most do not. For these, the barriers that we see relate to:

Awareness: Charities and funders need to be aware of the datasets that are relevant to their work and publicly available, or that could be requested, and how to access them. Unless someone at the organisation is plugged into the right networks, charities are unlikely to know about these datasets. We have recently met charities working on health issues that were not aware of the Health and Social Care Information Centre (HSCIC), which collects, analyses and presents national health and social care data. Similarly, large-scale government surveys such as the British Attitudes Survey can provide campaigning charities with data on issues relevant to their work—but they are often unaware of the presence of relevant questions in such surveys.

Capability: Making the most of data is difficult. At the minimum it requires someone with an aptitude for, and interest in, analysis. For anything more advanced it requires specialist skills and knowledge. Most charities don’t have these, meaning, for instance, that:

- they do not naturally think about using data and what could be done with it, and they do not see the potential for using it to improve their work;
- they do not know how to go about looking for data, or understanding whether it is suitable;
- they lack the analytical capability to work with data and produce meaningful results; and
- understanding the results they find can be difficult, for instance, interpreting the meaning of statistical significance.

Capacity: Because making the most of data is difficult, it takes time. Frontline charities cannot easily free up time from frontline staff, or management or administrative time, to dedicate to analysis. Investment is unlikely, particularly at a time of increased pressure on services and reduced funding. Funders rarely provide support for working with data.

There is a missing ingredient in this data equation. Overcoming these barriers—recognising data’s potential, understanding its supply, and having the awareness, capability and capacity to deal with it—is not sufficient.

We know from our experience of encouraging impact measurement in the sector that, just because something makes sense and is possible, it doesn’t mean people will do it. This is where we hit a stumbling block: data gives charities answers, and these answers are not always what charities expect. It might show that your view of the most important needs, or how well your service works, is right. But it might show you that it’s only partially right, or even wrong, and that you need to change things. A well-used example is the ‘Scared Straight’ programme, where researchers found that young people at risk of involvement in crime who attended the programme were more likely to commit an offence than young people who received no intervention.32

Desire: Not many people seek out disruption like this. Combine that with the above-average effect (demonstrated by, for instance, studies showing that 80% of participants evaluate their driving skill as above average) and perhaps we begin to understand why data is being underused. Charities, or individuals in them, need a real desire to understand whether they are doing the best work possible and to identify how to improve this—however uncomfortable it might be.

Incentives: Another important factor is a lack of incentives. In most cases, funders and commissioners do not require charities to use data in an intelligent way. Requests for data, whether on need or results, are generally

satisfied with a token effort of inserting a few numbers that offer no genuine insight into the question at hand. Attitudes towards ‘failure’ in the sector act as a disincentive to real scrutiny of data, in case it highlights that something is wrong. Worse, the pervading narrative in the sector of high-performing charities working to tackle acute unmet needs means that any result less than superb, or analysis of need less than disastrous, can be seen as a weakness. The current environment—reduced funding, fierce competition for resources, more results-related payments, and a readiness to criticise charities—creates an even greater aversion to risk, which in turn is a disincentive to data use. Results-based funding mechanisms, such as payment by results and social impact bonds, provide an incentive to a few to engage with results data, but a much wider change across the sector is required.

Change requires a combination of action from leaders and incentives for others. A few organisations are needed to lead the way, sufficiently committed to ensuring they are doing the best they can, and sufficiently courageous to take the first steps—such as those charities which have submitted data to the Justice Data Lab. This will create some movement, but incentives are also required for the majority to change. These must come from funders, commissioners and regulators. For instance, NPC’s report on the charity sector’s response to impact measurement, *Making an impact*, found that 52% of charities that have increased their measurement efforts say they did so to meet funders’ requirements.

**Recommendations**

So what do we think needs to be done to ensure charities can make the most of the data revolution?

Producing a step-change in the way the sector uses data to improve effectiveness requires an approach that tackles barriers to supply and demand—and puts more emphasis on demand than we see currently. Tackling elements of the issue in isolation has, and will continue to, result in limited progress. We need an integrated effort.

**On the supply side:**

- Charities must engage with initiatives relating to opening data both within and outside the sector, to ensure that charities’ requirements are represented. This includes engaging with the ESRC’s work on data research centres, with government on the priority datasets to open, and with What Works Centres.

- Government needs to extend its attention beyond open data, to allowing access to its data while complying with confidentiality requirements. Government sits on a wealth of data on needs and outcomes. The Justice Data Lab has demonstrated that it is possible to provide access to this for use by selected providers. We need to both extend this approach to other departments and data sets, and build awareness and capability across the broader sector that others can do the same.

**On the demand side:**

- We need to build incentives to engage with data, and create a culture that supports and even encourages attempts to use data to better understand how charities operate:
  - The culture and attitudes that prevent charities seeking data to understand their results must be challenged. Charities, funders and commissioners alike should applaud those taking steps to understand impact and acting on the results, and openly challenge reluctance to do this because of fear of failure.
  - Funders and commissioners must take steps to incentivise intelligent use of data—for instance, encouraging and supporting charities to systematically record, analyse and share results to understand what works. They can also be clear that they will not automatically penalise poor results if steps are taken


to make improvements. Initiatives such as Inspiring Impact’s Funders’ principles and drivers of good impact practice are a good step in the right direction.35

- We need to raise awareness of the potential of open data:
  - Making charities aware of the potential for open data requires those who understand the benefits and risks to be open and vocal, using forums of all kinds—social media, meetings, blogs, conferences—to get the message across. Infrastructure bodies should be taking a lead role in promoting charity activity through raising awareness and encouraging case studies of work to inspire and encourage others. Examples include Nominet Trust’s open data days36 which provided charities with consultancy from an open data expert to identify opportunities to use or create open data, and NCVO’s work on open data.37

- Charities need to be helped to use what already exists:
  - Existing data needs to be clearly signposted, and combined with clear explanations. Umbrella and membership bodies need to raise awareness of relevant resources such as data.gov.uk, the HSCIS, Openly Local, London Datastore and UK Data Service, and how they can be used.

- The charity sector needs to develop and attract more analytical skills to enable charities to use the data available. Skills shortages can be overcome in a number of ways, though it can be difficult. For instance:
  - There are a number of free resources to help increase data skills, such as the Open Knowledge Foundation’s school of data and statistics,38 and data analysis courses taught by academics on Coursera.39
  - Charities can recruit volunteer data analysts or IT specialists. DataKind,40 a recent model introduced to the UK from the USA, matches charities with analysts and IT specialists initially over a weekend to work on a problem, a commitment which is then extended over a longer period.
  - There is an active community of data and IT specialists who recognise the skills shortage within the non-profit sector and who are keen to build tools to make it easier. For example, Data Unity is a group which in partnership with Nominet Trust is developing a tool to make data visualisation easy.41

Leading Social, a review of social sector skills and leadership, has also highlighted the need to build demand for, and use of, data by charities, including for instance recommending data champions at board level and data navigators to identify relevant datasets and facilitate their use.42

At NPC we will be working to encourage charities to realise the potential of data, focusing for the moment on:

- Encouraging a change in attitudes towards using data to understand impact, and supporting practice to achieve this, through our work for the Inspiring Impact programme.

- Helping charities to access and use data to understand their results, primarily in the form of our Data Labs project, working to open government data on outcomes, and build and support demand for this service from charities.

36 For more on these, see http://www.timdavies.org.uk/2012/01/10/exploring-open-charity-data-with-nominet-trust/
37 For more information see http://data.ncvo-vol.org.uk/datastore/about-the-datastore/
38 See http://schoolofdata.org/
39 For example, see https://www.coursera.org/course/pdstatistics
40 See http://www.datakind.org/
41 See http://dataunity.org/
42 See http://leadingsocial.org.uk/data-informed-social-change/#more-199
• Supporting the activities of other organisations aiming to improve data access and use, and ensuring that initiatives consider the needs of charities and are suitable for use by them (for example, the ESRC administrative data networks).

• Raising awareness of the potential of data use by charities. For instance, we will be highlighting exceptional work throughout our Data Labs and Improving your evidence programmes.

• Identifying gaps in the landscape of initiatives around data where action is needed to make progress.
NPC (New Philanthropy Capital) occupies a unique position at the nexus between charities and funders, helping them achieve the greatest impact. We are driven by the values and mission of the charity sector, to which we bring the rigour, clarity and analysis needed to better achieve the outcomes we all seek. We also share the motivations and passion of funders, to which we bring our expertise, experience and track record of success.

**Increasing the impact of charities:** NPC exists to make charities and social enterprises more successful in achieving their missions. Through rigorous analysis, practical advice and innovative thinking, we make charities’ money and energy go further, and help them to achieve the greatest impact.

**Increasing the impact of funders:** We share the passion funders have for helping charities and changing people’s lives. We understand their motivations and their objectives, and we know that giving is more rewarding if it achieves the greatest impact it can.

**Strengthening the partnership between charities and funders:** Our mission is also to bring the two sides of the funding equation together, improving understanding and enhancing their combined impact.