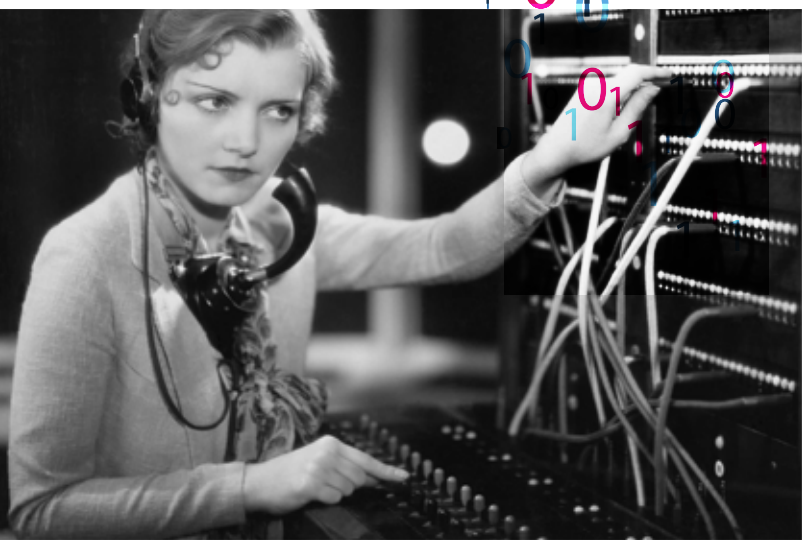
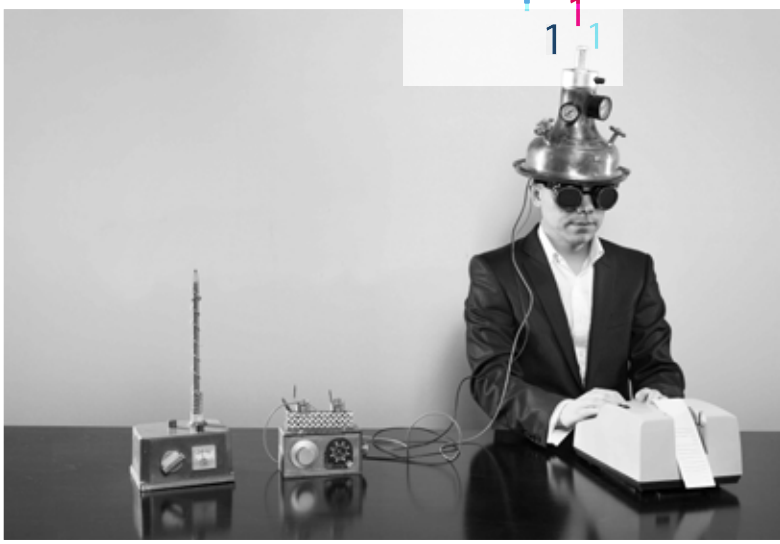
DATA EVOLUTION PROJECT REPORT





WRITTEN BY SIAN BASKER
DATA ORCHARD. JANUARY 2017

DataKind UK

DATAORCHARD

Acknowledgements

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Finally, an enormous thanks to our Data Maturity Experts, the Data Evolution Project Board and to our Project Team who advised, supported and delivered so brilliantly. In all, there were 18 people who contributed a huge amount of volunteer time to this project. See Appendix 1 for a who's who.

Key Definitions

DATA - When we say 'data' we have a broad definition. We include all the types of information an organisation might collect, store, analyse and use.

SOCIAL SECTOR – In the context of this project we're defining the social sector as being charities and social enterprises (businesses trading for social and environmental purposes).

DATA MATURITY – The journey towards improvement and increased capability in using data.

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Executive Summary

The Data Evolution project was about exploring both the theory and real life practice of how organisations improve and increase their capability in using data.

The research was conducted between March and November 2016 and engaged hundreds of charities and social enterprises in England and Wales. We're delighted to be able to share the framework we created to explain the combination of factors and the stages on the journey.

The research included: A review of existing data maturity models in different sectors; two workshops attended by 56 leaders and people working with data; a national survey with 200 respondents; and interviews with 47 people from the 12 organisations where we trialled the assessments.

DATA IS IMPORTANT

We found data is an integral part of life in charities and social enterprises. For 69% of the respondents in our survey, data is a priority either organisation-wide or at least in some departments. It's critical to their survival; they collect and use lots of it, but its power remains largely untapped.

The majority of those we spoke to were not aware of the possibilities of data and analytics for advancing their organisation and its goals. Few were geared up in terms of leadership and culture to take advantage of its potential. We suspect data is a rather niche-interest subject and whilst people thought it was important it was still difficult to engage them. Amongst those most advanced, where there is commitment and investment, data is delivering rich and transformational rewards at an organisational level.

WHICH FACTORS ARE MOST INFLUENTIAL IN ENABLING DATA MATURITY?

This research has confirmed our theory that the crucial factor in data maturity is people. Tools and techniques are of course important and the raw material (i.e. the data itself) is essential. But the leadership's vision, the collective cultural drive towards greater impact, and the investment in peoples' continued learning and skills ultimately drive data maturity.

We identified seven key themes and a number of sub-themes as the main factors determining data maturity:

- **USES:** Range and extent of reasons for collecting and analysing data, and the benefits and rewards they reap.
- **ANALYSIS:** Type of data analysed, techniques used, quality of analysis and reporting, means of presentation and communication.
- **LEADERSHIP:** Attitude, investment, plans for data development, alignment to business plans, capability.
- **CULTURE:** Team approach, self-questioning, openness and sharing, governance.
- **SKILLS:** Internal capacity, roles and skill levels, access to external expertise.
- **DATA:** Collection, sources, quality, data assets.
- **TOOLS:** Type of tools, quality, infrastructure, support.

USES OF DATA

Just about every organisation records data about their activities with clients/ beneficiaries. Equally data is used extensively to meet legal, contract, and funder requirements. This was true across the survey respondents and organisations we assessed. However for the other areas we explored, the patterns of use differed considerably depending on how much of an organisational priority data was.

Those in the early stages of data maturity don't prioritise data and use it to a lesser extent and for a more limited range of purposes. Mostly operational, requisite purposes, fundraising, and income generation. This suggests a tendency to be funder-led in the design and development of their data and analysis capabilities. However, those that had progressed in their data maturity journey demonstrated a wider range and depth of data use.

Outcomes and impact measurement was less common among those less mature but a key feature of the more advanced. Where data is a major organisational priority (31% in our survey) measuring outcomes and impact was their top area of use. All of them used data for this purpose, most extensively so. These respondents also use data a lot for learning and evaluating what they do, and strategic planning and decision making. This group were also the ones most using forward looking predictions around client needs and service options.

In our in depth assessments we had an opportunity to explore in more detail what data was enabling organisations to achieve. The most advanced were seeing some very significant benefits in the following areas:

- Improved outcomes and impact
- Saved money through efficiencies
- Increased credibility and influence
- Strengthened partnerships

Even at earlier stages of data maturity many reported benefits such as:

- Improved products and services
- Increased knowledge and learning
- Improved planning and decision making
- Increased income

LOOKING UNDER THE BONNET

Data maturity is complex and varies from one organisation to the next. We selected a diverse range of 12 organisations and tried out our assessment with groups of at least three people from each (crucially including someone in a leadership position). We designed a detailed assessment based around the key themes to capture their different perspectives. Next, we created a prototype scoring tool to measure their organisation's strengths and weaknesses and benchmarked these against the rest of the trial group.

Based on what we saw we developed the data maturity framework which sets out five stages of the journey: 'unaware', 'nascent', 'learning', 'developing' and 'mastering'. It's based on a range of indicators and attributes grouped and scored across the key themes and subthemes.

Of the organisations we assessed in detail we were encouraged to find most have set off on their journey. However it's worth noting that in our survey 1 in 20 organisations said there was 'little awareness and data was neither an interest nor a priority'.

Our research suggest most are at the 'nascent' and 'learning' stages. These are still grappling with what data to collect and how to analyse it. Others have progressed to the 'developing' stage and are doing considerably more sophisticated, skilled, joined up, and powerful analysis with data. They are more likely to invest and have the necessary skills and expertise. We didn't see any at the 'mastering' stage though there were indications that some are heading that way.

WHAT BARRIERS PREVENT ORGANISATIONS FROM BECOMING DATA MATURE?

Organisations at different levels of data maturity face different barriers. For those least mature, it tends to be a combination of low awareness, lack of skills, difficulty collecting data and poor tools. Sometimes it's about the attitude and willingness of leaders; and sometimes it's about not having the capacity and resources to move beyond the data requirements being externally dictated by funders and commissioners.

We found data maturity is substantially entwined, not just with more sophisticated impact assessment, but also with digital technology maturity. We're referring here to the full range of digital tools and systems an organisation has at its disposal. Our research suggests good tools and infrastructure are not just essential but may be a pre-requisite for data maturity. Arguably it's the data these systems collect and deliver, and the purpose for which it is used, that's most important.

Whilst there's been a notable drive around digital transformation and in some cases digital leadership, there is very little happening around 'leadership in data' or 'data in leadership'. We were encouraged that many leaders we met during this research were open and enthusiastic about data, however a significant number are not and some find it a deeply uncomfortable subject.

WHAT ARE ORGANISATIONS' NEEDS?

It seems that needs are different at different stages of maturity. Since most are currently at the 'nascent'/'learning' stages, much of their need is about being able to better define what data they require, how to collect it and find the right tools for managing and analysing it. For those 'learning' organisations, the challenges are around connecting and aligning their different data, and bringing it all together as part of an organisational strategy. For those at a more advanced 'developing' stage, they need help accessing and developing advanced skills and embedding good data practice across the whole organisation.

Of course there is a big difference between what organisations might need and what they seek out. Awareness is a big issue. Those we spoke to in this research said they don't know what good looks like when it comes to data in the social sector. They were really keen to hear real-life examples and to learn from others breaking new ground in this area.

From this research it appears the data market in the social sector is under-developed both in demand and supply. There aren't many services available for the social sector. Much of what we found is short-term project based consultancy/ pro-bono/ academic support. We found little, if anything, that aims to develop data maturity at a leadership level and as this is one of the key factors to data maturity, it is essential that it exists.

Like all organisational change, the journey to becoming more data mature is a difficult and continuous one. Some social sector organisations have embraced data under the impetus of enlightened leaders who recognize and exploit the new potential. Some social sector organisations are stumbling at the starting gate. While we don't claim to definitively know how to create this change, we do know that we've only just started to see the benefits that the smart use of data will reap for the social sector.

When we say 'data' we have a broad definition. We include all the types of information an organisation might collect, store, analyse and use.

1. Introduction

The Data Evolution project came about because two organisations, Data Orchard and DataKind UK, share a goal:

'To help organisations working for good in the world, to use data to achieve greater impact.'

Having worked with many charities and social enterprises we noticed there were certain stages in their data development. Of course, no two organisations were the same, and there were multiple factors affecting their internal awareness and practices surrounding data. Yet, we suspected there was a pattern, a journey?

We also observed that despite the emergence of powerful and transformational uses of data to address social, economic and environmental problems, it seemed very few had seized the opportunity. Indeed the majority seem to be grappling with more basic challenges.

So, the Data Evolution project came about so we could better understand what the journey towards data maturity looked like and where social sector organisations are along the way.

1.1 CONTEXT

Recent advances in the technology underlying the world's data have made capturing, analysing, visualizing and leveraging data to make better decisions easier than ever before.

In the private sector, big data is currently a $16 billion sector growing at 40% per year, making it one of the most dynamic industries in the world. As a recent McKinsey Global report[1] states: "data is now everywhere—in every sector, in every economy, in every organisation and user of digital technology". While this topic might once have concerned only a few data geeks, data is now relevant for leaders across every sector.

Like personal computing in the 1980s or the Internet in the 1990s, today's data revolution presents a new opportunity to radically transform virtually every field for the better. New data sources and statistical tools can help identify trends, recognise inefficiencies, and discover information that leads to greater impact.

Some of the problems around data in the social sector have been highlighted in recent years. In 2013 'Data Informed Social Change' was identified in a government commissioned review as one of eight major gaps in leadership and skills in the social sector. The difficulties with data permeate the discourse of many professional networks in the sector (e.g. fundraising, digital communications and marketing, research and evaluation, ICT and finance). See Appendix 6 for some of the evidence supporting this.

Against a backdrop of public sector cuts and austerity, many social sector organisations are learning to do more with less. Making the most of their resources has become even more important. Whilst a few are beginning to seize the opportunity, it seems the power of data remains largely untapped.

1.2 ABOUT DATA ORCHARD AND DATAKIND UK

Data Orchard CIC is a social enterprise, operating nationally and based on the English/Welsh borders. DataKind UK is a national charity, based in London. It is part of the international DataKind network. Both came into being in 2013. The two organisations offer different services and approaches. DataKind brings the wonder of data science to the social sector by bringing together teams of pro bono data scientists from the private sector to work with charities on data science projects. Data Orchard specialises in research, statistics and data for social, economic and environmental good. It delivers consultancy and training to enable organisations to collect, share, analyse and present data.

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[1] Big data: The next frontier for innovation, competition, and productivity, McKinsey Global Institute, May 2011

2. About The Project

The Data Evolution project was conducted between March and November 2016. It aimed to explore whether we could create a framework and tool for measuring data maturity in the social sector. We wanted to define, test and share a methodology that would:

- Enable organisations to measure their progress and plan next steps in their evolution to data maturity.
- Offer more straightforward diagnosis of needs, priorities, and capacities of social sector organisations (especially for providers of support around data like ours).
- Increase awareness about how to use data for good and a shared theory and language to talk about it.

2.1 QUESTIONS, QUESTIONS, QUESTIONS

Of course, being researchers and data people we were full of curiosity and had lots of questions. At a basic level we wanted to know:

- How important is data?
- What do charities and social enterprises use data for?
- Which factors are most influential and effective in enabling them to become more data driven and what barriers prevent them from doing so?
- How well are they doing?
- What data skills capacity do they have?
- What are their needs?

At a deeper level we wanted to test some of our theories:

- Are fundraising and performance management/impact assessment functions more developed in using data than other parts of the organisation?
- Is data maturity more advanced in organisations that do more sophisticated impact assessment?
- Are smaller organisations doing less well with data than medium/large?
- Are rural organisations doing less well than urban?
- Are rural organisations less aware/connected to support services than urban?
- Are charities/social enterprises funder-led in their development of data and analysis capabilities?
- Is good practice around data entwined with good practice in general i.e. are well led and managed organisations doing better with data than those that aren't?
- Are younger organisations/younger leaders more data savvy than older ones?
- Is data maturity entwined with digital technology maturity?
- Are there differences around data for social enterprises and charities?

2.2 KEY CHALLENGES

Some of the key challenges we experienced were:

- Many people don't understand what we mean by 'data'
  (We wrote a blog post to explain what we mean when we talk about data).
- Data is very widely used for a wide range of purposes and means different things to different people, i.e. it's a huge subject.
- Not many people are interested in data (even if they all produce it and depend on it).
- How people think and what they say about data in their organisation depends on who they are and what they do… and they usually don't all think or say the same thing!
- Many of the most interesting and exciting developments in data are relatively new, complex, geeky and poorly understood (e.g. predictive analytics, data sharing, open data). The concepts and language are not familiar to most non-data people.
- Charities and social enterprises are a hugely diverse range of organisations. They differ enormously in what they do, where they operate, who they serve, and the size and scale of their operations.

3. Our Approach

THE KEY COMPONENTS OF THE RESEARCH WERE:

- A review of existing Data Maturity models in different sectors.
- **2 WORKSHOPS** attended by **56 SOCIAL SECTOR LEADERS** and people in data-related roles.
- A national survey, with **200 RESPONDENTS**, to get an indicative picture of the current state of data maturity in the sector.
- In depth data and analytics assessments involving interviews with **47 PEOPLE FROM 12 ORGANISATIONS** to dig deeper into the contours of data maturity and test out how to measure it.
- Creation of a prototype tool for assessing, scoring, and generating basic data maturity diagnostic/benchmarking reports.
- Design of a theoretical model and framework for describing the journey towards data maturity.

In addition, in collaboration with NPC, we held a round table event with a range of service providers and suppliers providing data related services and support. We compiled their information into a freely available listing on the project website www.dataevolution.org.uk and invited other suppliers to add their details. At the time of writing there were just 19 suppliers listed.

3.1 REVIEW OF DATA MATURITY MODELS

During March and April, we spoke to half a dozen experts and conducted desk research to explore existing models of data maturity. We discovered hundreds of these models exist in the private sector – mainly aimed at large or very large corporate environments. A few exist for the public sector in the UK. We found a couple of public/social sector tools in the US though neither were suitable for use or adaption for the UK social sector. Hence we concluded we would have to create our own. This research proved very useful in shaping our thinking around themes and some of the key questions we would need to ask. A copy of the review can be found at:

http://dataevolution.org.uk/data-maturity-in-the-social-sector-2016-report/.

See also Appendices 2 and 3 for useful sources and example data maturity models.

3.2 WORKSHOPS

In May we held two workshops in London and Hereford with 56 people from charities and social enterprises from across England and Wales. The events were targeted at leaders and decision makers and also attracted a range of people working with data in the social sector. The workshops enabled us: to understand practices, attitudes and motivations around improving data use; listen to people's issues and views around emerging themes; and explore the concept of data maturity. Our three main takeaways from the workshops were:

- How eager everyone was to hear examples of social sector organisations that have progressed along the data maturity path and how they did it.
- Most existing data maturity models we'd found in the private sector are limited and were not seen as very useful for the social sector.
- People found it useful to think of data maturity as a journey… and one they were not alone on.

3.3. THE NATIONAL SURVEY

In June-July 2016 we conducted a national survey about data in the social sector. From a total of 359 respondents, we had 200 valid complete responses after cleaning and eligibility checking. The respondents were from 185 social sector organisations (150 charities and 35 social enterprises) in England and Wales. Using the registered charity and company numbers provided we were able to pull in additional data about location, numbers of employees, organisations' ages, turnover, and type of activity. This enabled us to profile and check how representative our sample was, and test some theories. The map below shows the geographic spread of organisations participating in the research from across England and Wales. See Appendix 4 for analysis on representativeness and biases.

The national survey enabled us to:

- Explore a small number of key questions in a 'light touch' way with a larger number of organisations;
- Select a suitable range of willing organisations to do in-depth assessments with (almost half of all respondents said they were interested in a free assessment);
- Get an indication of the level of interest and types of people and organisations engaged in data and whether there were any particular patterns to this.

Map of where the charities and social enterprises taking part in our survey are located in England and Wales. (Orange markers indicate locations of those we assessed in depth.)

3.4 IN-DEPTH ASSESSMENTS

Between July and October we conducted in-depth data and analytics assessments with 47 people from 12 social sector organisations. These were carried out on the basis of complete confidentiality and anonymity.

3.4.1 ASSESSMENT DESIGN

For this research it was really important to get a rich and deep picture of how social sector organisations used data. We knew at the outset of the project that what people in charities and social enterprises thought about data in their organisation varied considerably depending on what their job was and their level of seniority. Engaging with leaders and decision makers was crucial. We asked interested organisations to get at least three different people (including someone in a leadership position and the person who worked most with data) to participate.

We designed a set of around 35 questions based around the key themes we'd identified as being important in data maturity:

USES | **ANALYSIS** | **LEADERSHIP** | **CULTURE** | **SKILLS** | **DATA** | **TOOLS**

3.4.2 ASSESSMENT METHODS

Part of the research was to test the process of how to conduct a data and analytics assessment and indeed whether it was possible to automate this as an online process. We used two different approaches:

- 9 assessments were completed face to face with groups of staff and trustees. People's different responses were manually recorded (capturing differing views) and later input to a unique online assessment for their organisation.
- 3 assessments were completed online by 3-4 members of the organisation. We then generated reports from our scoring tool and met with them to present and discuss the findings to see how closely these reflected their reality.

The original plan was to conduct all the assessments online with follow up visits to some, but the take-up was limited with only three organisations completing it that way, so we switched to conducting the assessments in person. The process itself was iteratively improved. We changed some of the phrasing and ordering of questions; and we used our experience and participant feedback to improve preparation, delivery and follow up

Map of locations of the twelve charities and social enterprises taking part in the in-depth assessments.

3.4.3. PROFILE OF ORGANISATIONS ASSESSED

Almost half of the respondents to our national survey indicated interest in having a free confidential assessment of data and analytics in their organisation (96 of the 200 respondents). During July and August we approached 35 organisations to take part. Of these, 12 took part in the in-depth assessments as a whole-organisation.

The broad profile of the cohort is: 4 social enterprises and 8 charities; income ranged from £10K to £26M; organisation age 1-54 years; 4-300 employees; based in 6 different regions; operating locally, regionally, nationally and internationally. Areas of work: health, education, housing, media, advocacy, transport, research, volunteering. Beneficiary types: people with physical disabilities, people in poverty, homeless people, people with learning disabilities, children and young people, women and LGBT, other charities and social enterprises.

3.5 PROTOTYPE TOOL FOR SCORING ASSESSMENTS

Our assessment tool was designed in two parts. Firstly data was collected from multiple people from the same organisation – either directly by them through an online survey, or manually input by our research team following face to face collection. Secondly, this data was exported and scored in our prototype tool created in Excel. The tool was designed to score groups of questions (most automated but some manually assessed) to calculate these for each theme based on the number and range of responses from each organisation.

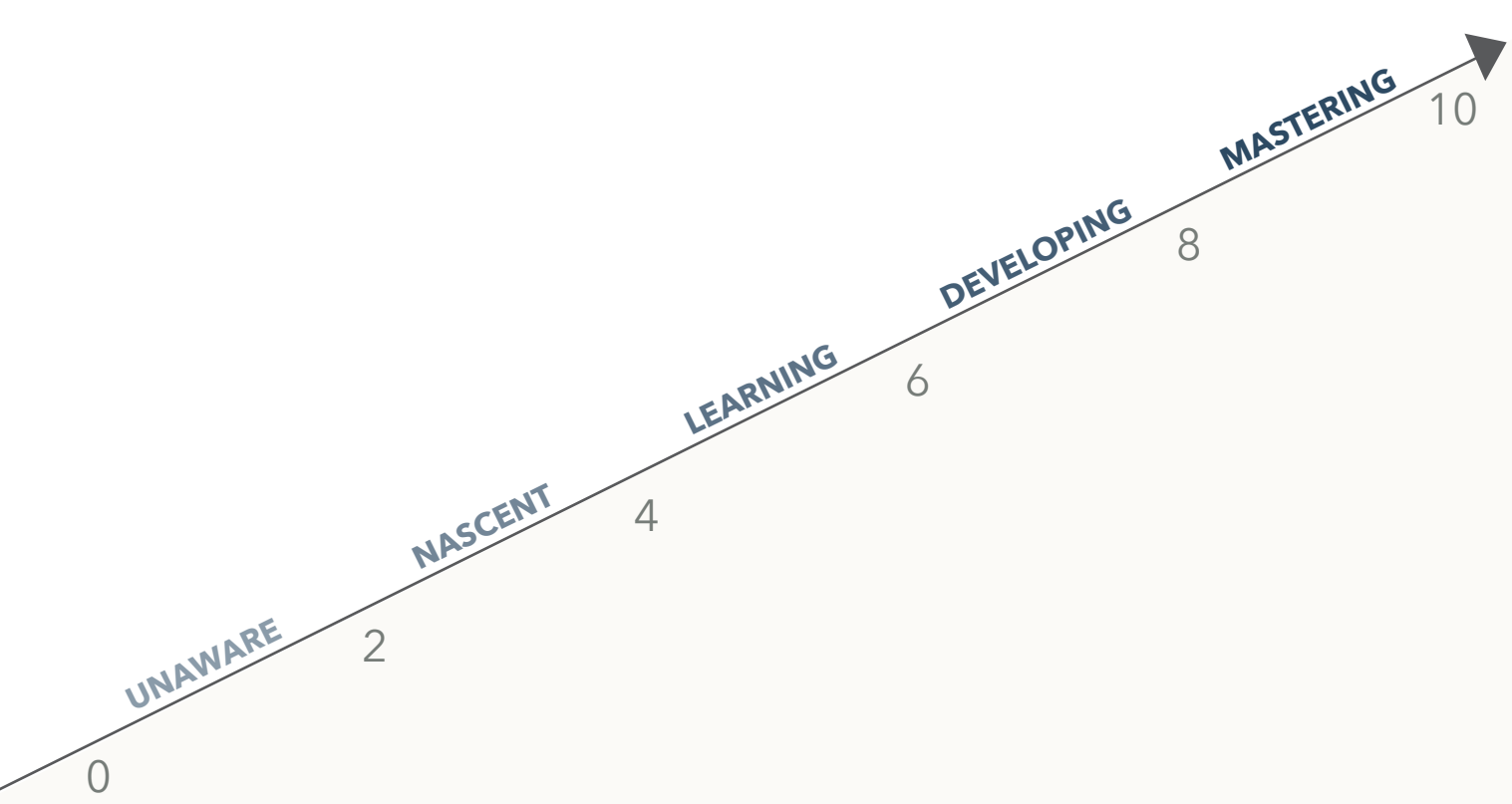
Weightings were then applied to some of the questions identified as being the most important and concrete indicators of data maturity (and least subject to misinterpretation).

3.6 SOCIAL SECTOR DATA MATURITY MODEL

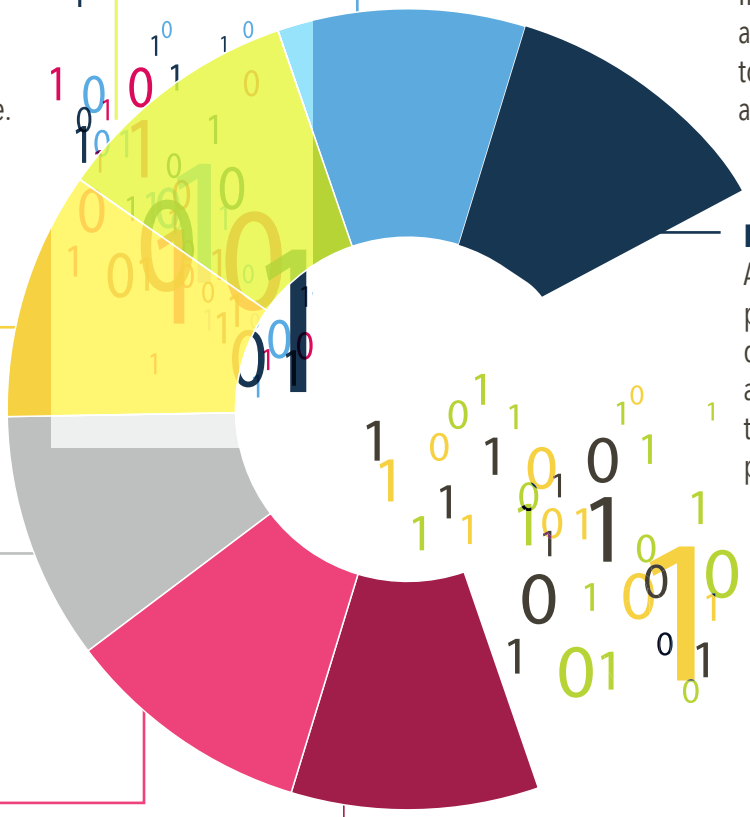
Following the assessments we drafted a data maturity framework, setting out five stages of the journey. For each theme and subtheme we identified, we set out the indicators and attributes for each stage based on our findings. Since we found no organisations operating at 'mastering' level (though there were a few edging into it), we needed to do further work on fleshing out what this looks like.

The five key stages of the journey we used were:

- **UNAWARE**
- **NASCENT**
- **LEARNING**
- **DEVELOPING**
- **MASTERING**



4. Key Factors in Enabling Data Maturity



CULTURE
Team approach, self-questioning, openness and sharing, governance.

SKILLS
Internal capacity, roles and skill levels, access to external knowledge and expertise.

LEADERSHIP
Attitude, investment, plans for data development, alignment to business plans, capability.

DATA
Assets, Collection, sources, quality.

TOOLS
Storage, type and quality of tools and infrastructure.

USES
Range and extent of reasons for collecting and analysing data, and benefits and rewards reaped.

ANALYSIS
Type of data analysed, techniques, presenting and communicating.

4.1 KEY THEMES OF DATA MATURITY

We scored 12 organisations against each theme on a scale of 0 to 10 which corresponded to their stage on the journey as follows:

0-2 UNAWARE

2-4 NASCENT

4-6 LEARNING

6-8 DEVELOPING

8-10 MASTERING

Scores were based on the combined scores of the individuals for that organisation (from the 47 participants). Overall, the results for all twelve organisations ranged fairly widely within each theme. None were particularly strong though 'Tools' was slightly weaker. A summary of the overall results is provided in Appendix 7.

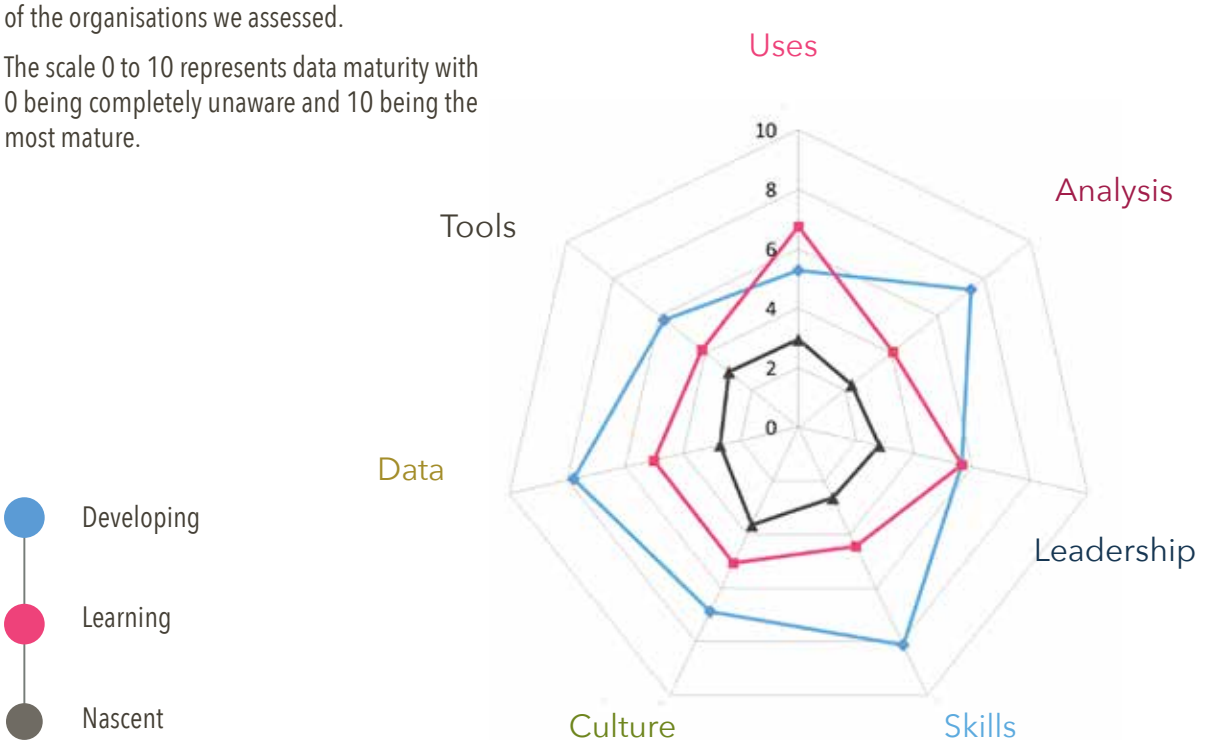
We found looking at individual examples was a much more revealing and useful way of exploring the results. These showed the messier but more realistic view of data maturity. We picked three organisations at different stages to illustrate this:

EXAMPLES OF ORGANISATIONS AT DIFFERENT STAGES OF MATURITY.

Whilst the three organisations broadly fall into the Nascent (score 2-4), Learning (score 4-6) and Developing (score 6-8) stages, each clearly has its own strengths and weaknesses.

The chart shows the key themes scores for three of the organisations we assessed.

The scale 0 to 10 represents data maturity with 0 being completely unaware and 10 being the most mature.

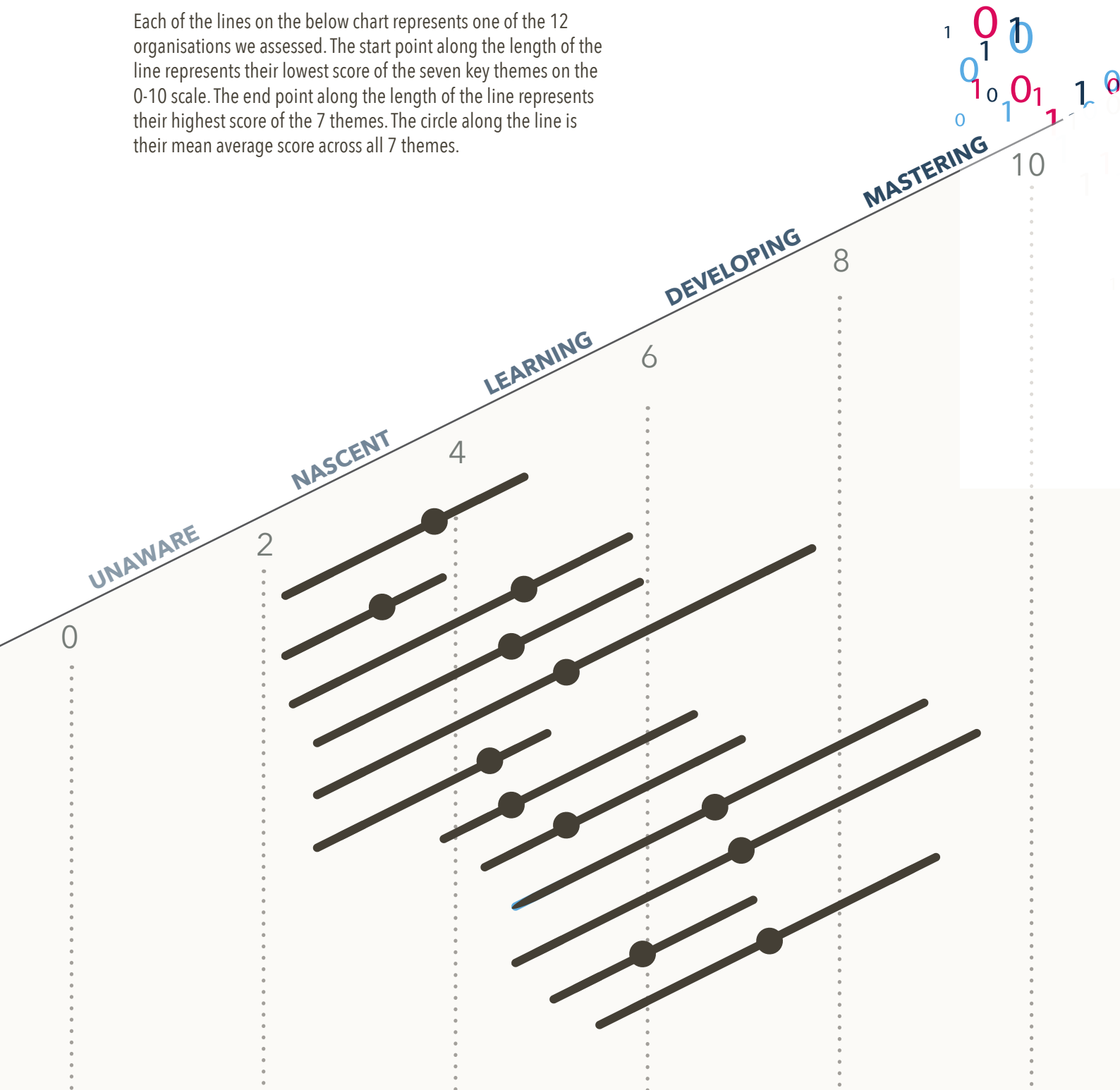


4.2 STAGES OF THE JOURNEY

We didn't find any organisations that hadn't yet set off on their journey. Likewise we didn't find any that looked like they were arriving at the final stage of mastery. However, at the more detailed level we did find organisations that displayed some of the attributes of both of these.

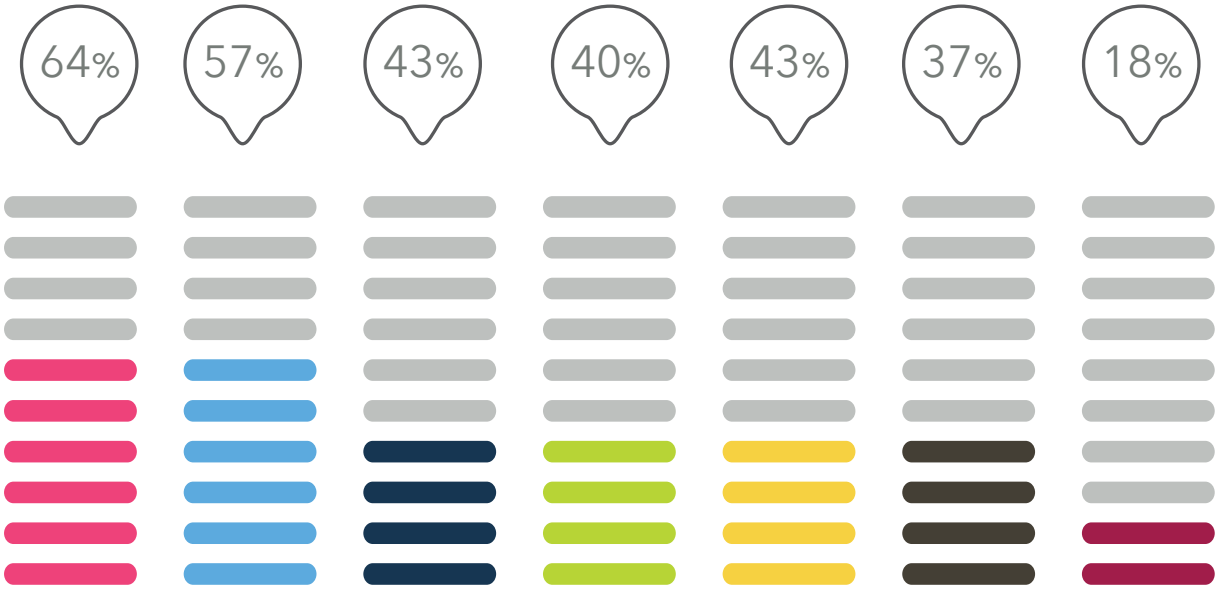
As the chart illustrates, in terms of the journey, few organisations fitted neatly into one stage. Their range of scores tended to bleed across two or even three stages. Taking their mean average score across all seven themes, we found the majority were at the 'Learning stage'. A few were at the more advanced 'Developing' stage and a couple were at the less advanced 'Nascent' stage. The definitions for each of the stages are set out in the data maturity framework in Appendix 9.

Each of the lines on the below chart represents one of the 12 organisations we assessed. The start point along the length of the line represents their lowest score of the seven key themes on the 0-10 scale. The end point along the length of the line represents their highest score of the 7 themes. The circle along the line is their mean average score across all 7 themes.



5. Findings

We found data is an integral part of life in charities and social enterprises. For 69% of the respondents in our survey, data is a priority either organisation-wide or at least in some departments. It's critical to their survival; they collect and use lots of it, but its power remains largely untapped. The survey showed:



Have confidence and trust in the quality of their data	Collect the right data	Have the right skills to analyse data in useful and meaningful ways	Have good tools and systems for collecting, managing and analysing data	Have robust data governance i.e. ownership, management, policies, access and control	Say data is accessible to everyone in the organisation that needs it	Invest enough in data related resources i.e. people, skills, learning, tools

The following section focuses on each of the seven themes bringing together our headline findings and analysis from the survey and our in-depth assessments. It also sets out the model for the theme and indicates where we estimate the twelve assessed organisations were on the journey. Some of the exploration and analysis of the survey data is available in Appendix 8.

5.1 Leadership

HEADLINES FROM OUR SURVEY

- 31% said data was a major organisational priority.
- 38% said data was a major priority in some teams/departments but not across the whole organisation.
- 24% said it was an interest of the organisation but not a priority
- 5% (1 in 20) said there was no awareness about data and it was therefore neither an interest nor a priority.
- Only 18% said their organisation invests enough in data related resources i.e. people, skills, learning, tools.

More in-depth analysis showed the extent to which organisations prioritise and invest were key determinants of data maturity. Responsibility for both of these lie with leadership.

FINDINGS FROM ASSESSMENTS

ATTITUDE

Leadership attitudes towards data varied considerably and were one of the most interesting and telling indicators of data maturity. This was particularly in relation to how much of a priority data is at a whole organisational level. At one end of the spectrum there were comments like:

"Data is a vital commercial resource central to entire operation."

At the other the end attitudes towards data included:

"Reticence, contempt, a necessary evil, avoidance"

There were a number of reasons why data was not a priority in some organisations. Many pointed to the time and cost implications of collecting data. Often it was seen as an externally driven activity (reporting to funders/commissioners on specific projects) with difficulties around measuring across different projects. Sometimes it was cultural:

"Let's do the real work not the paper work".

Many of the comments reflected resourcing issues:

"Data is important but resourcing it and in-house skills are a challenge."

INVESTMENT AND PLANS

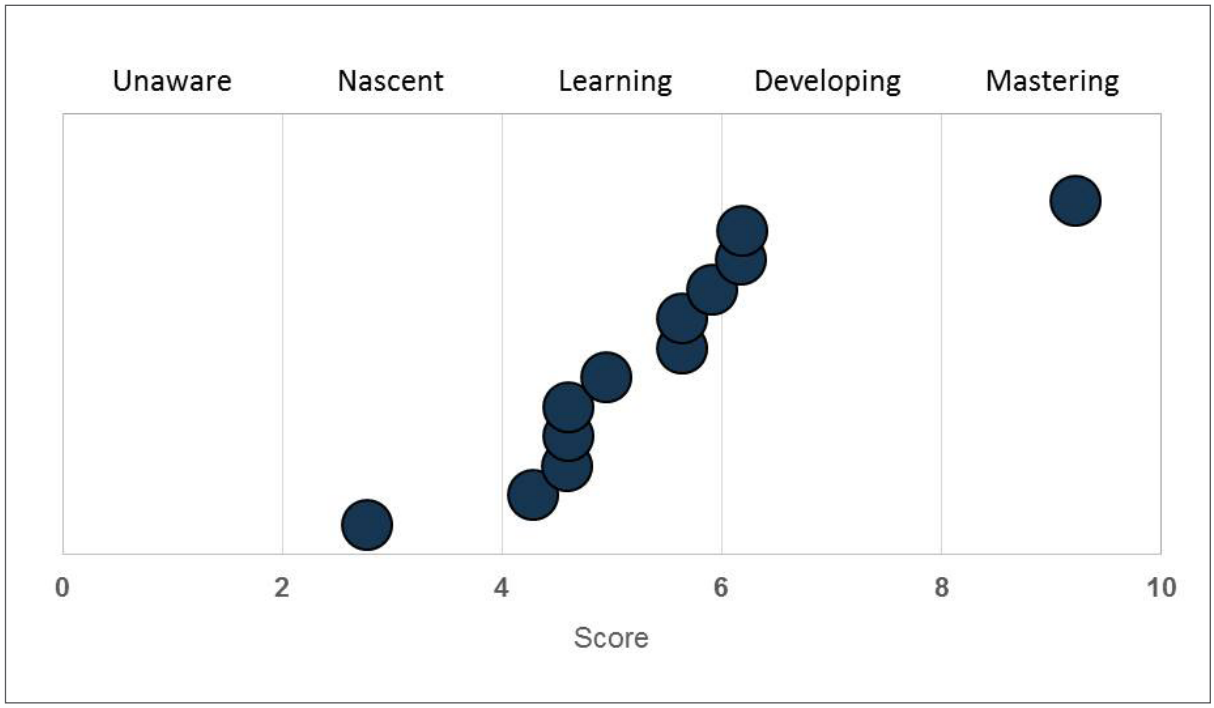
More than three quarters of the organisations we spoke to said leaders recognise data as a valuable asset. Encouragingly over half had business plans with defined and measurable targets, though data wasn't always available or aligned.

Almost all those we assessed said there wasn't enough investment in data and analytics. The few that did invest were the ones that were reaping the most rewards in uses and benefits. However, over three quarters were planning to make some investment in data and analytics in the next two years. Half were expecting to invest at a major level (most with plans and priorities in place). The other half knew it was important but either had no specific plans or didn't know how to go about it.

CAPABILITY

Only one in three organisations had people with data and analytics expertise within their leadership and usually this tended to be someone with finance expertise (particularly so in the case of trustees and board members'). Less than half said leaders understand how to use data and analytics to improve what they do.

LEADERSHIP THEME SCORES FOR TRIAL GROUP



This is how we estimate the data maturity of the 12 organisations (represented by a dot) in terms of Leadership based on their scores in our assessments.

Leadership:
Data Maturity Framework

UNAWARE

Not interested and do not invest in data and analytics.

Don't use data for decision making, instead use experience and gut feeling,

No data or analytics expertise or understanding.

NASCENT

Some awareness, don't see the value. Little investment.

Typically use data about what happened in the past and verbal accounts of what's happening for decision-making.

Limited data and analytics experience and expertise.

LEARNING

Know data is important, but not entirely convinced. Invest small amounts.

Business plan with some defined and measurable targets though data collection/analysis may not align.

Might use past and current data for decision making with some simple trends analysis.

Learning through experience, building adequate skills.

DEVELOPING

Becoming engaged and supportive as a whole and beginning to plan and commit significant investment.

Ask the right questions of their data, aligned to overarching business plan and desired impact.

Monitor what's happening in the present as well as past trends. Some exploratory forward-looking research and predictions.

Data champion within senior management. Addressing skills gap in leadership as a whole.

MASTERING

Value, plan and prioritise data as a vital organisational resource.

Invest substantially in continuously improving data collection and analysis aligned.

Fully understand how to use data to improve what the organisation does. Drive questions and influenced by what data tells them.

Use past, present and forward looking data for business planning and decision making.

Range of people with data analytics expertise in leadership including at Board level.

5.2 Skills

HEADLINES FROM OUR SURVEY

- One in five (21%) had no dedicated person for data management, analysis and reporting. 32% had less than one full time equivalent post. i.e. part time or part of another role.
- 31% had between 1 and 6 data people.
- 12% had 8 or more dedicated data roles.

Approximately 1 in 8 of the survey respondents were in specific data roles.

There was some correlation between the size of organisations and the number of dedicated data staff (the more employees you have, the more likely you are to employ dedicated data people). That said, there were outliers where big organisations had few data people, and small organisations had teams of analysts.

Having the skills to analyse data in meaningful and useful ways was highly correlated to collecting the right data.

FINDINGS FROM ASSESSMENTS

INTERNAL CAPACITY

Amongst the organisations we assessed in detail, dedicated data roles represented between 0 and 16% of the workforce.

We found working with data is an integral part of people's work in the social sector. Whether they were delivering services on the frontlines, working in the back office, whether they were in a management, leadership or governance role, data is part of the job. Yet very few people's jobs are formally described as being about 'data'. In our assessments, only 3 of the 47 respondents had the word 'data' in their job title. Yet, when we asked how much of people's jobs were about working with data, the average was 45%.

Assessment of skills, knowledge and expertise was the most challenging to score. It depended considerably on the size of the organisation. It was difficult to capture the internal 'data capacity' when data is so entwined in so many roles, and where in small organisations particularly, it would be unrealistic to expect there to be dedicated data roles.

Only three out of the twelve organisations in our assessments agreed they had appropriate numbers of staff managing and developing their data and analytics capabilities.

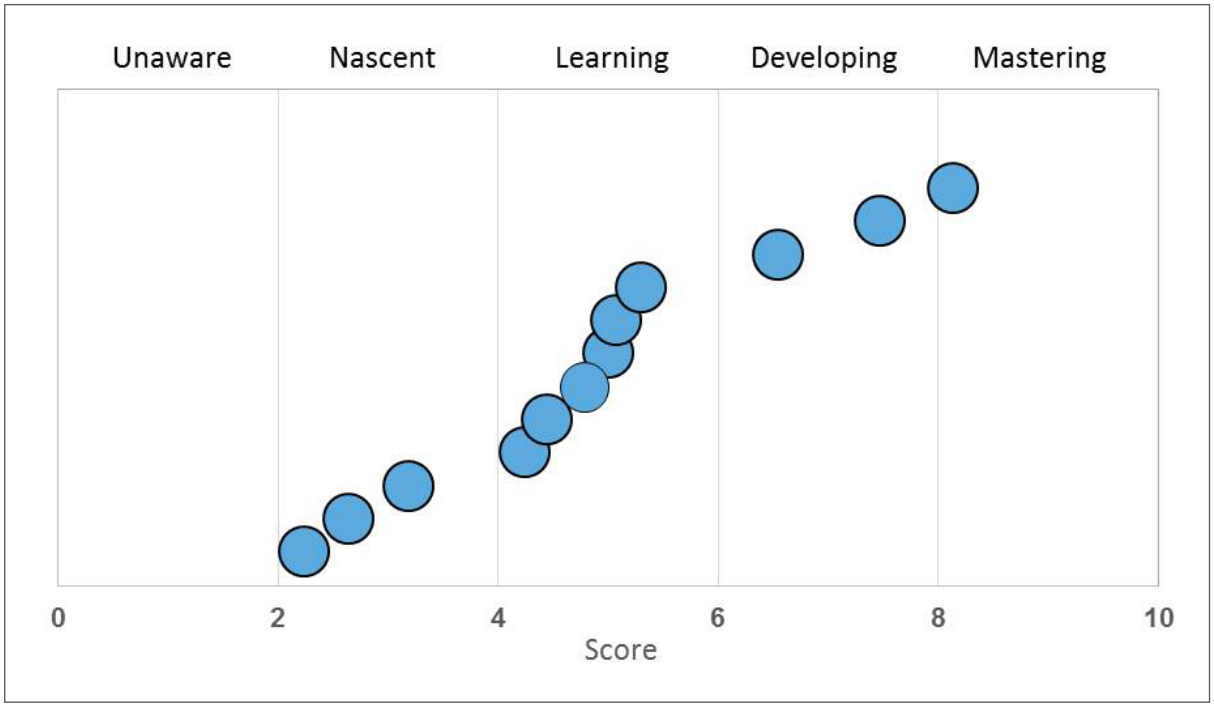
ROLES AND SKILLS LEVELS

Allied to the point above, we found a wide range of people working in data roles embedded within digital communications and marketing, in fundraising, in research or service management jobs. However, there were also some with business and data analyst roles and a couple edging into data science roles. The level of skills of internal people in data and analytics was very mixed, ranging from none at all through to advanced and sophisticated. Overall only one in three organisations said they had the right skills and capabilities to maximise use of their data.

ACCESS TO KNOWLEDGE AND EXPERTISE

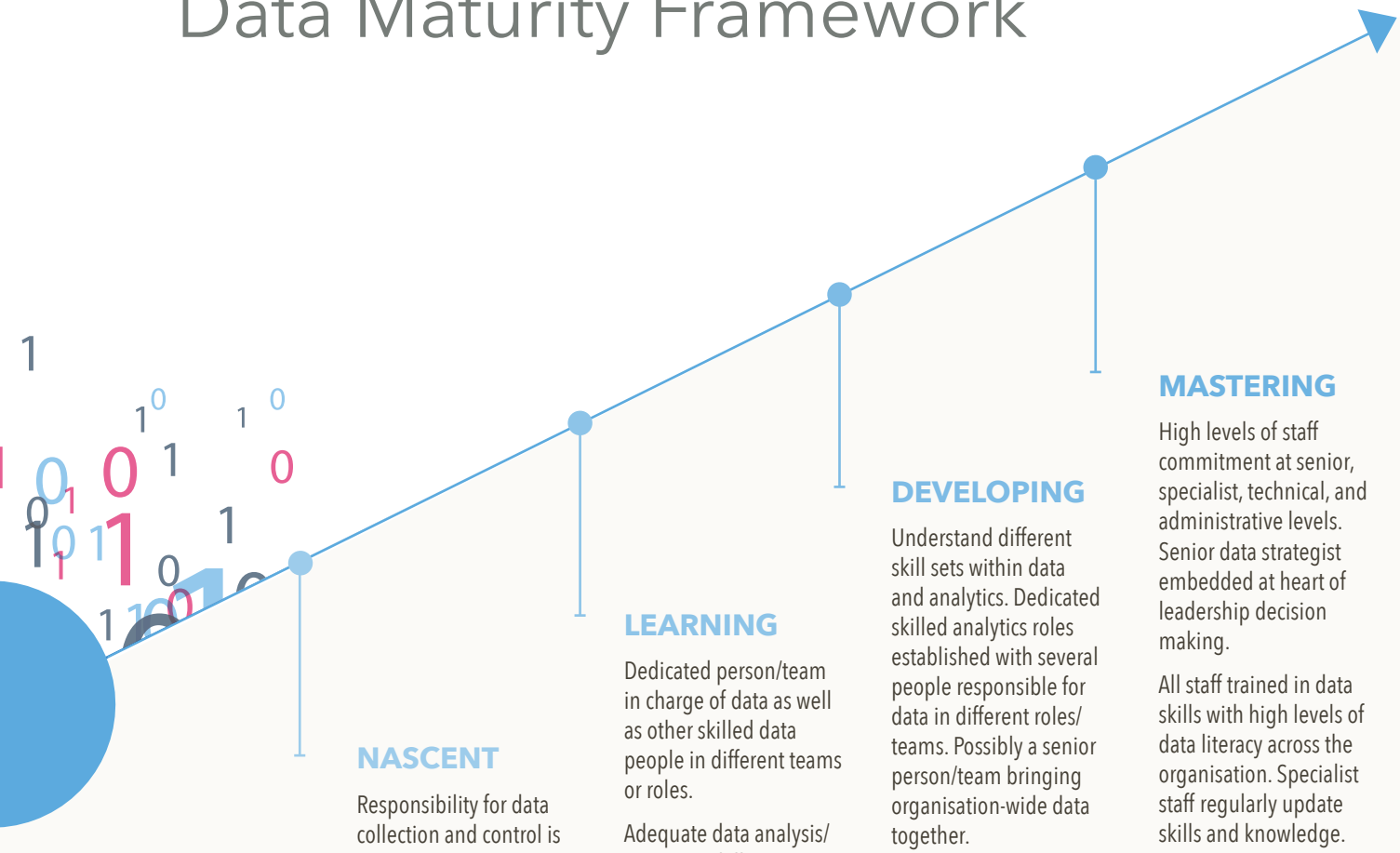
We found a mixed picture around access to knowledge and expertise. Around half had help from trustees, volunteers, external consultants, academics and technology suppliers. More than half said they didn't know where to get impartial advice and support. Only a quarter said they keep abreast of innovative uses, data sources and evolving tools to support their data capabilities.

SKILLS THEME SCORES FOR TRIAL GROUP



This is how we estimate the data maturity of the 12 organisations (represented by a dot) in terms of Skills based on their scores in our assessments.

Skills:
Data Maturity Framework



UNAWARE

No staff commitment beyond basic administrative level and finance roles.

Mostly count up what they do, minimal data recording.

Little or no internal skills, training or expertise.

NASCENT

Responsibility for data collection and control is at administrator level.

Most analysis done by admin, finance and/or multiple staff using own systems aligned to their role/projects. Basic/adequate skills and training.

Occasional support from trustee/ volunteers relating to database/ finance or reporting.

Data literacy is patchy, mostly low, amongst staff.

LEARNING

Dedicated person/team in charge of data as well as other skilled data people in different teams or roles.

Adequate data analysis/ reporting skills as part of their jobs with some investment in more advanced skills development.

Fairly regular use of external support and advice, mostly around specific tools, systems or projects with some skills development.

DEVELOPING

Understand different skill sets within data and analytics. Dedicated skilled analytics roles established with several people responsible for data in different roles/ teams. Possibly a senior person/team bringing organisation-wide data together.

Increased data literacy/ responsibility across the organisation.

Ongoing use of advanced external expertise. Regular engagement in learning.

MASTERING

High levels of staff commitment at senior, specialist, technical, and administrative levels. Senior data strategist embedded at heart of leadership decision making.

All staff trained in data skills with high levels of data literacy across the organisation. Specialist staff regularly update skills and knowledge.

Able to independently manage/drive and maximise data analytics to an advanced level. Use range of suppliers providing advanced expertise e.g. data scientists.

Becoming the experts that others use as a resource.

5.3 Culture

HEADLINES FROM OUR SURVEY

- 37% say data is accessible to everyone who needs it
- 43% have robust data governance i.e. ownership, management, policies, access and control.

Larger organisations were more likely to say data was a major priority in some teams and departments but not across the whole organisation.

FINDINGS FROM ASSESSMENTS

TEAM APPROACH

Our research showed a mixed picture on the extent to which data is seen as a team effort. In smaller organisations very often responsibility was with one person, in larger ones the roles were often siloed in different teams or projects. These were, in order of prevalence: digital communications, fundraising, research, finance or service delivery. Collaborative, cross –team approaches were rare in larger organisations, and existed only in the most data mature.

SELF QUESTIONING

Just over half the people in the assessments said their organisation was comfortable using data to ask difficult questions and challenge practices. Notably only a handful of participants strongly agreed that this was the case.

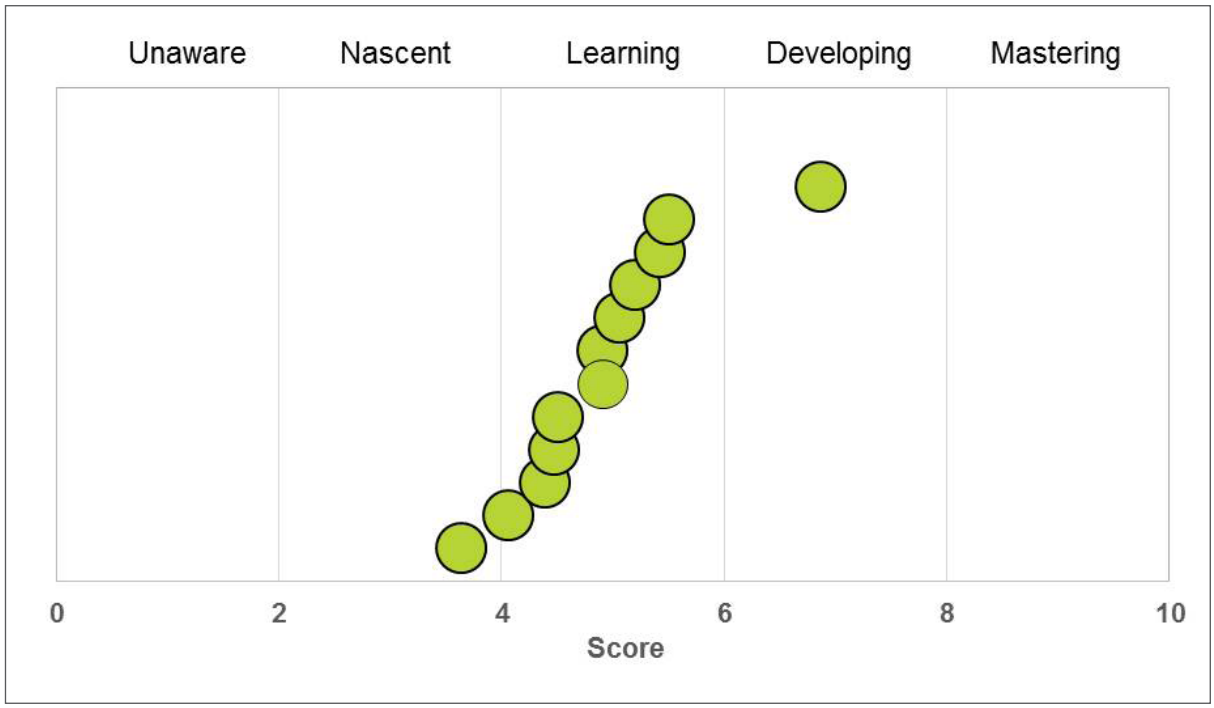
OPENNESS AND SHARING

Whilst most agreed that their organisation's culture encourages data sharing, the actual practice of doing so was less evident. Generally the willingness to share was there. Most said they shared data internally and externally – around half did so always or often, usually either verbally or via written reports. Hardly any were doing this at a technical level, sharing raw data. Around a quarter shared data online, mostly as published data insights rather than anonymised raw data. Some shared data with beneficiaries in a similar way. See also the data sources in section 5.4 regarding open data.

GOVERNANCE

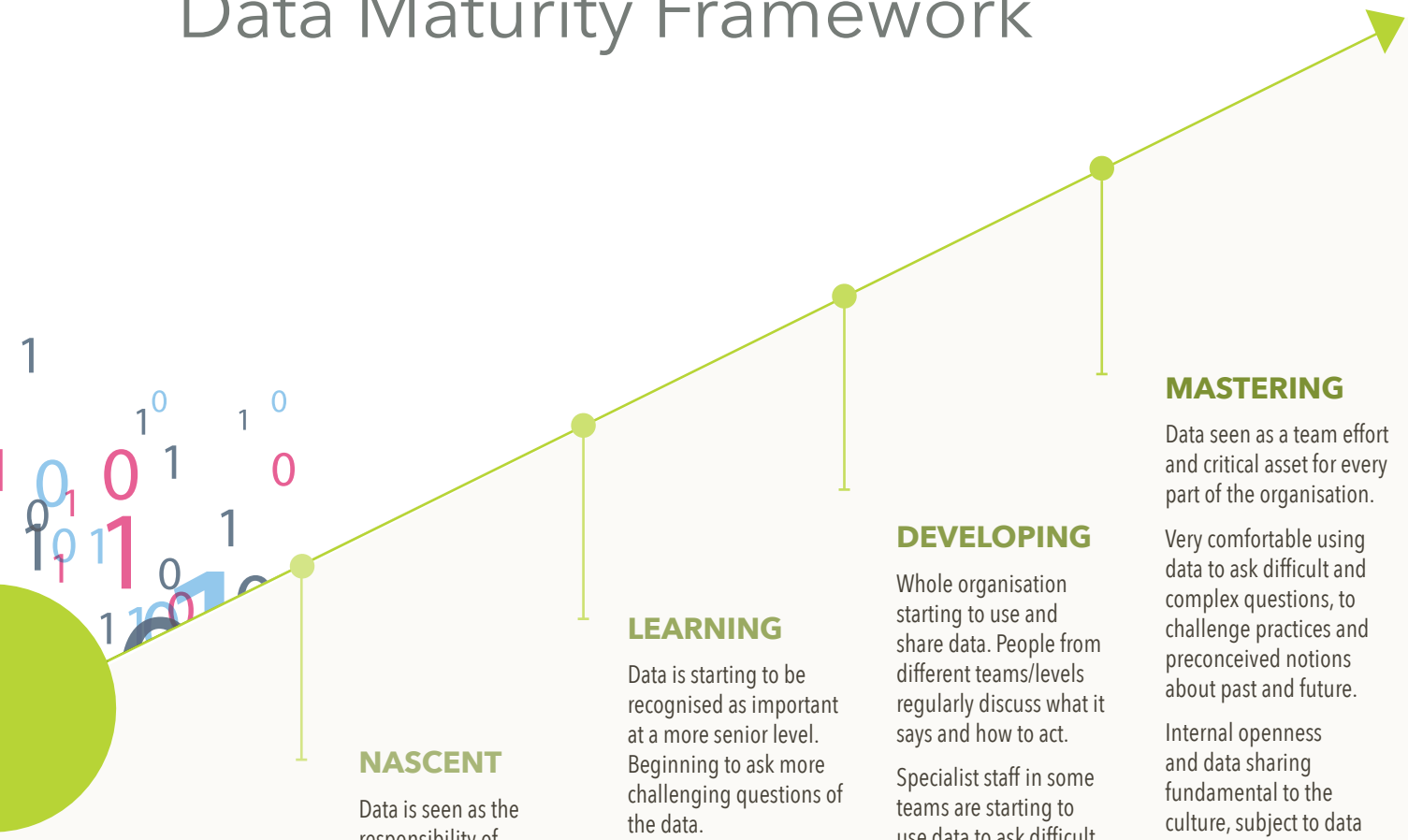
Our assessments suggested the survey findings around governance may be optimistic. Only one in five people expressed confidence in this area. The sense of responsibility, often as custodians of personal data on vulnerable people, was evident. Around half of the assessment group felt their information security policies and practices were robust to ensure their data is safeguarded. These organisations tended to have policies specifying rights and privileges regarding access to organisational and beneficiary data. They also felt they had the right knowledge and skills in data management, security and protection. Only one in five said their organisation invests enough in monitoring and improving their data management and governance practices.

CULTURE THEME SCORES FOR TRIAL GROUP



This is how we estimate the data maturity of the 12 organisations (represented by a dot) in terms of Culture based on their scores in our assessments.

Culture:
Data Maturity Framework



UNAWARE

Nobody is interested in data. Data only accessible to a single person or team, usually junior staff.

Opinion, observation, passion and belief are used for decision making.

Data requirements are seen as a chore and data rarely shared internally or externally.

Don't have any policies related to data.

NASCENT

Data is seen as the responsibility of 'someone else'. Recognition that data should be collected but it is not seen as a whole team activity.

Data mostly sought out and used to support and evidence what the organisation already believes or knows.

Organisation's culture doesn't encourage data sharing across teams, though this may occur occasionally verbally or via reports.

Basic policies for data protection and security may be in place but not monitored or enforced. Little/ no staff/volunteer training.

LEARNING

Data is starting to be recognised as important at a more senior level. Beginning to ask more challenging questions of the data.

People would like to share more but are constricted by access/ permissions/barriers.

Some data insights are shared with partners and in the public domain.

Data protection and security policies in place. Access to data limited by default (rather than design). Staff and volunteers have basic training. Senior management have a limited understanding of legislation and best practice.

DEVELOPING

Whole organisation starting to use and share data. People from different teams/levels regularly discuss what it says and how to act.

Specialist staff in some teams are starting to use data to ask difficult questions.

Use forecasts to challenge views of future performance.

External data sharing is done on an aggregated basis and insights are shared including shared measures and benchmarks.

Data protection and security policies and practices are well established. Individuals responsible have advanced training and skills. Trustees and senior management keep abreast of current legislation and best practice.

MASTERING

Data seen as a team effort and critical asset for every part of the organisation.

Very comfortable using data to ask difficult and complex questions, to challenge practices and preconceived notions about past and future.

Internal openness and data sharing fundamental to the culture, subject to data protection/security.

Data insights and evidence are publicly available. Extensive data sharing, with protocols in place with partners, networks, stakeholders to address shared problems and solutions. Data may be shared with beneficiaries as part of service/support.

Data governance policies and practices are robust. Widespread knowledge and skills. Trustees and senior management keep abreast of future changes in legislation and best practice.

5.4 Data

HEADLINES FROM OUR SURVEY

- 57% of survey respondents said their organisation collects the right data
- 64% said there was confidence and trust in their organisation's data.

These answers were consistent regardless of the size of the organisation, its income, its location, or the number of data people employed. Organisations where data was a priority tended to agree more with the statements and those that didn't prioritise it tended to disagree. There were correlations between the extent to which organisations agreed they collect the right data and the extent to which they i) had the right skills to analyse data in meaningful and useful ways and ii) had good tools for collecting, managing and analysing data.

FINDINGS FROM ASSESSMENTS

COLLECTION

In the in-depth assessments the views were much less optimistic about whether the organisation collects the right data (only around a third agreed). This may have been because people were being more open and honest in confidential discussion, or because more people were thinking and discussing data quality on a whole organisation basis.

QUALITY

Those we interviewed also expressed much lower levels of confidence and trust in their organisation's data (again around only a third were positive about confidence and trust). Indeed, one of the most powerful questions in the assessments was whether organisations KNOW the quality of their data. Around one in three didn't. Just over half said they had the right skills to ensure good quality data. Only a third said they invest enough in cleaning and maintaining their data.

SOURCES

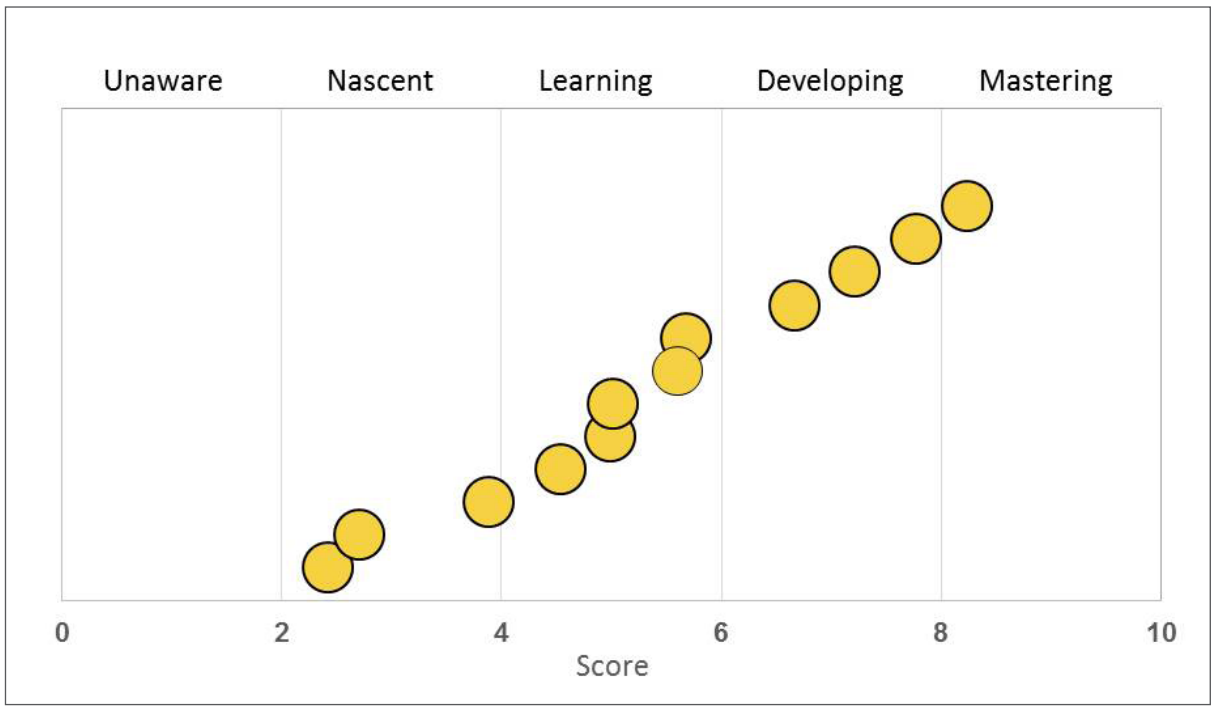
Around half the organisations we met collect their own data for specific purposes and projects. Those where they said they had good skills to ensure data quality tended to agree they had 'rich' versatile data that can be used flexibly and as required for various internal and external stakeholders. The other half had much more mixed and multiple systems with duplicate information and complex, time-consuming re-working of their data in order to analyse and report.

Just under half said they make use of valuable external sources of data relating to their field of work (e.g. open/public data sets of research repositories). More often organisations used published reports and data insights rather than actual data sets.

ASSETS

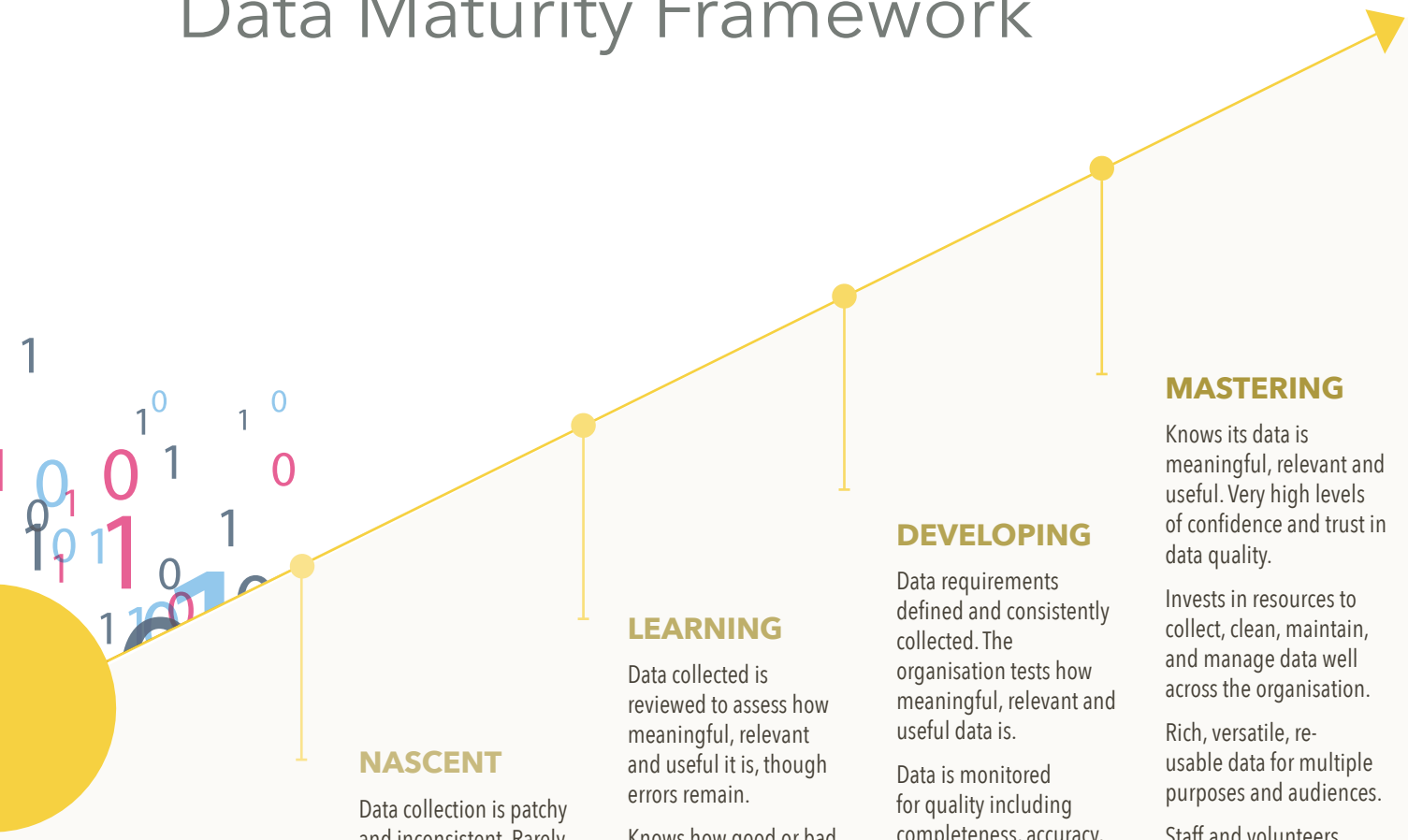
In almost all the assessed organisations data assets were not recorded. By data assets we mean organised and managed data sets that might be held in a spreadsheet, database, CRM system, files/documents or other system. In some, especially the larger ones where data was more fragmented, people acknowledged they didn't know where all their data was or who was responsible for it. Only two of the organisations we assessed said they maintained an inventory of data sets. Half said they knew where all their data was but don't formally record it. Some said they knew where most of their data was but thought there was more and a quarter didn't have a clear picture of the data they collect.

DATA THEME SCORES FOR TRIAL GROUP



This is how we estimate the data maturity of the 12 organisations (represented by a dot) in terms of Data based on their scores in our assessments.

Data:
Data Maturity Framework



UNAWARE

Limited data (if any) collected. Not checked for validity or accuracy

Infrequently, if ever, updated.

Collected manually for specific purpose.

No external data s ources used.

Nobody is aware or interested in the data assets in the organisation.

NASCENT

Data collection is patchy and inconsistent. Rarely updated and cleaned.

Occasional use of external information sources relating to the wider context of the organisation's work.

Data isn't regarded as meaningful or useful beyond meeting legal/funder/contract requirements.

Mixed levels of confidence and trust in data.

Know where most data is, but there may be more.

LEARNING

Data collected is reviewed to assess how meaningful, relevant and useful it is, though errors remain.

Knows how good or bad it's different data sets are, and therefore which data sources can/can't be trusted.

Data becoming richer, more relational and therefore versatile.

Internal data usually in siloes.

Additional internal and external data is sourced.

Data assets known but not formally recorded.

DEVELOPING

Data requirements defined and consistently collected. The organisation tests how meaningful, relevant and useful data is.

Data is monitored for quality including completeness, accuracy, and validity. Tools and systems exist for cleaning and maintenance.

Richer data collection with more integration/ alignment between systems reduces duplication, inefficiency and error.

Open data is occasionally used.

Recorded lists of all data assets.

MASTERING

Knows its data is meaningful, relevant and useful. Very high levels of confidence and trust in data quality.

Invests in resources to collect, clean, maintain, and manage data well across the organisation.

Rich, versatile, re-usable data for multiple purposes and audiences.

Staff and volunteers are trained in data collection and collection is automated where possible.

Compares its data with other organisations through shared measures and benchmarks.

Regular use of valuable open/public data sets.

Maintain full inventory of data assets with data dictionary, clear ownership, review periods, development plans for each.

5.5 Tools

HEADLINES FROM OUR SURVEY

- 40% said they had good tools and systems for collecting, managing and analysing data.
- 42% said they were able to join, relate and share data across the organisation.

Organisations saying data was a priority were most likely to agree they had good tools. Having good tools and systems was strongly correlated with collecting the right data.

FINDINGS FROM ASSESSMENTS

TYPE AND QUALITY

Tools was generally a weak area for most and the assessment findings corroborate the survey findings. Of the seven themes, Tools was the weakest. Most of the less mature organisations were making extensive use of spreadsheets though often weren't using their analytics capabilities beyond counts or basic graphs. Some had progressed to databases and CRM systems. Others had moved to integrate multiple databases and were developing to integrate finance, web and survey functionality along with communications and document management. In some of the larger organisations data was being exported into specialist analytics packages or bespoke systems to do more advanced analytics.

STORAGE

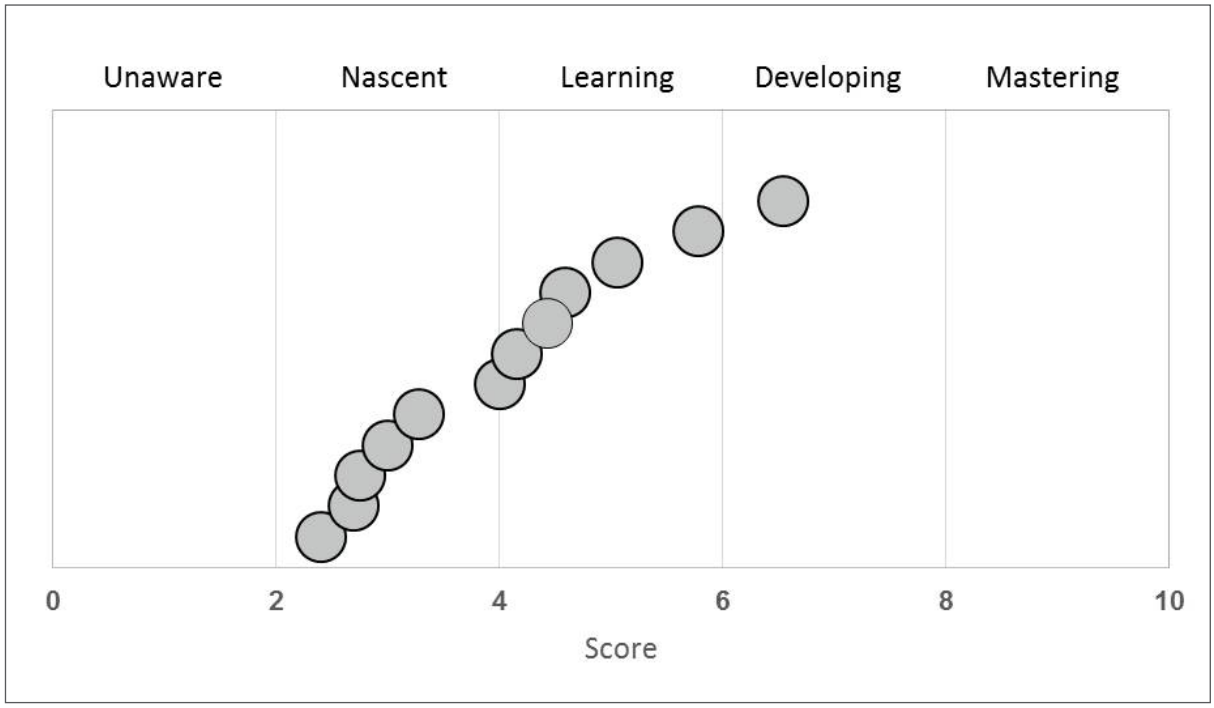
Many of the organisations had fragmented, multiple/duplicate systems. Others had worked hard to at least integrate the bulk of their data to reduce multiple/duplicate sources. Over half felt they'd got enough capacity to store, manage and analyse increasingly large volumes of data (with a note that many of the more advanced were using cloud based systems).

INFRASTRUCTURE

The problem of not being able to join, relate and share data across teams in the organisation was a major issue. Among the twelve organisations we found this type of capability was only (partially) evident in a couple of cases e.g. some were using business intelligence tools and had introduced dashboards bringing data from more than one source e.g. to enable sophisticated outcomes analysis.

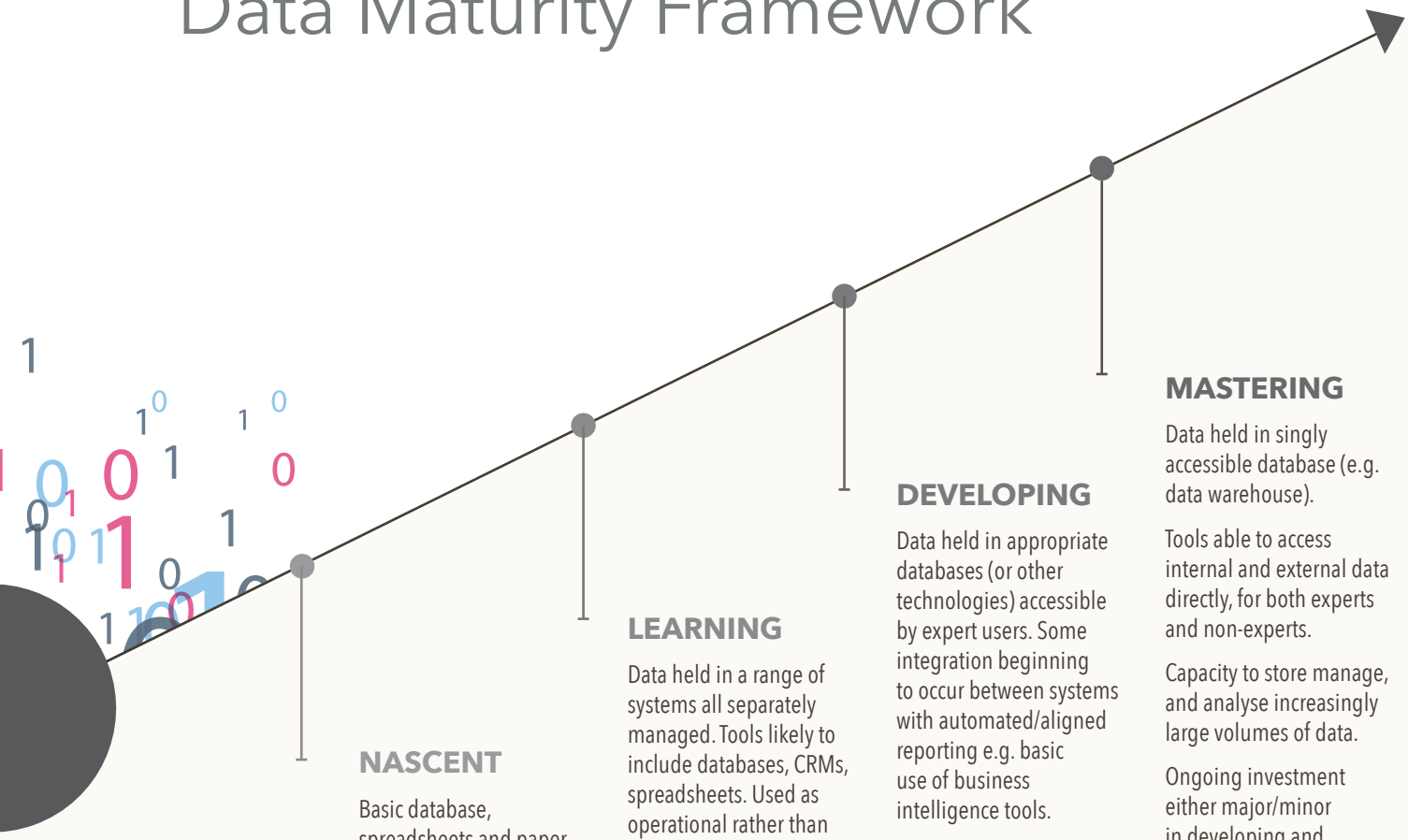
Availability of support was also an issue. Many mentioned that their hardware, networks and office software is supported but they had no specialist support on data and analytics. Most said there had been investment in tools and infrastructure for data and analytics over the past two years (half said major investment, a third minor investment).

TOOLS THEME SCORES FOR TRIAL GROUP



This is how we estimate the data maturity of the 12 organisations (represented by a dot) in terms of Tools based on their scores in our assessments.

Tools:
Data Maturity Framework



UNAWARE

Data is stored inconsistently, if at all. Data mostly held on paper or in spreadsheets.

Spreadsheets not used analytically.

Tools not available or not fit for purpose.

No planned investment in any tools, systems or infrastructure.

NASCENT

Basic database, spreadsheets and paper used for recording data.

Spreadsheets and reports in databases may be used for basic analytical tasks.

Tools are limited. May not be up-to-date, don't meet current needs, and may not be documented or supported.

LEARNING

Data held in a range of systems all separately managed. Tools likely to include databases, CRMs, spreadsheets. Used as operational rather than analytical stores. Likely to be one off purchases/ builds with limited flexibility for growth, change or improvement.

Tools may allow some inbuilt analysis and reporting but most often data has to be extracted for analysis. Possible advanced analytical tool e.g. SPSS, R or SAS, used for basic data processing or descriptive statistical analysis.

Joining data or analysis across teams requires manual exporting and re-stitching.

DEVELOPING

Data held in appropriate databases (or other technologies) accessible by expert users. Some integration beginning to occur between systems with automated/aligned reporting e.g. basic use of business intelligence tools.

Most tools up to date with support available. Work-arounds understood and replacements planned for poorer tools.

Occasional major investment in new tools/integrations.

Advanced tools being used for sophisticated analytics in some depts. e.g. SPSS, R, SAS, Python etc.

Models using batch analytics being used to understand and create efficiencies in processes.

MASTERING

Data held in singly accessible database (e.g. data warehouse).

Tools able to access internal and external data directly, for both experts and non-experts.

Capacity to store manage, and analyse increasingly large volumes of data.

Ongoing investment either major/minor in developing and improving tools, systems and infrastructure. Analytical infrastructure is a priority.

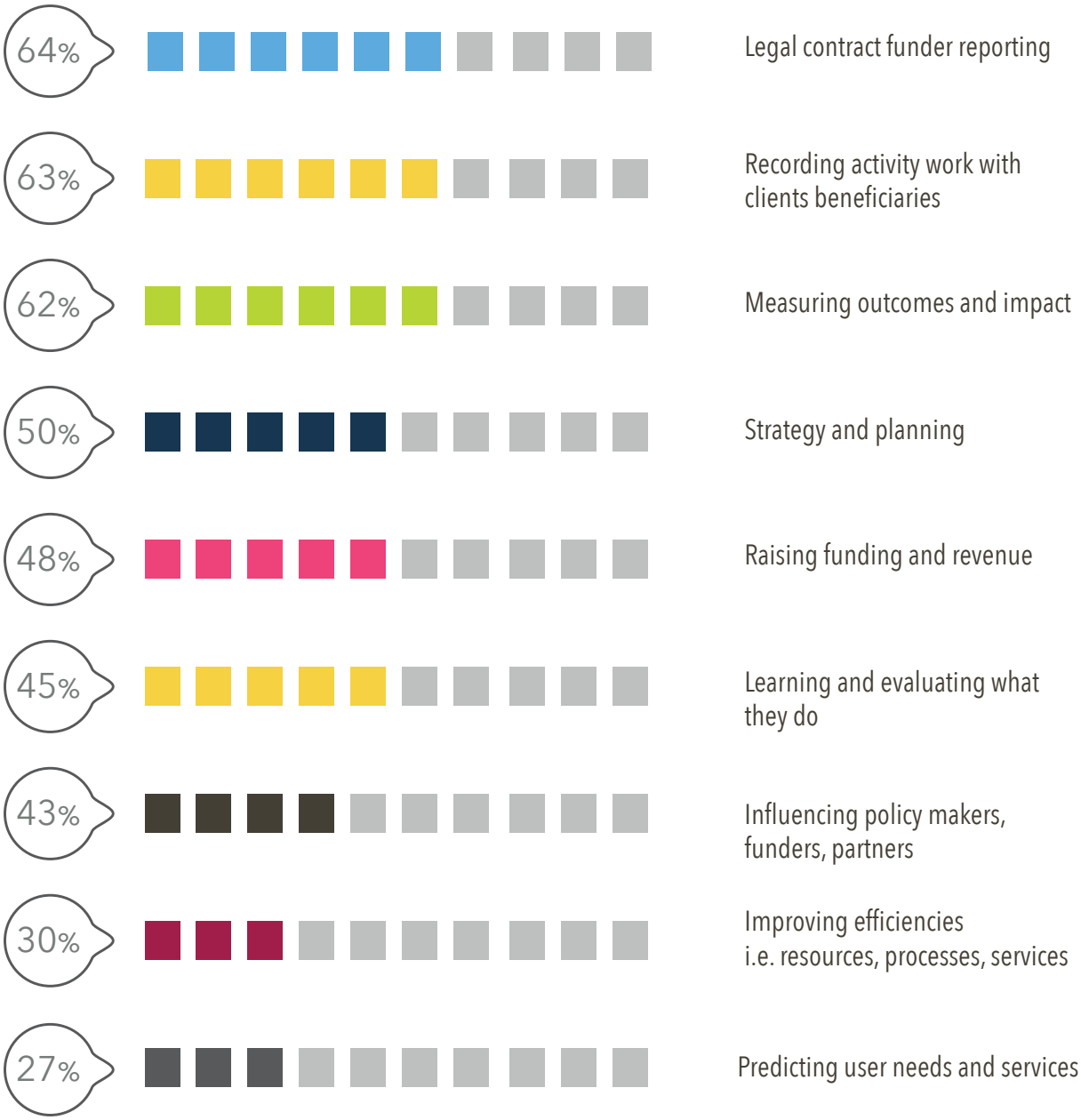
Advanced analytics and data science tools present throughout the organisation. Analytical models may be deployed in websites and other interfaces.

Automated reporting e.g. through dashboards. Self-service analytics available both inside the organisation and in partner organisations.

5.6 Uses

HEADLINES FROM OUR SURVEY

98% of survey respondents use at least some data for decision making.



The chart above shows where organisations said they are using data a lot. We wanted to focus on the range and extent of data use.

Just about every organisation records data about their activities with clients/ beneficiaries. Equally data is used extensively to meet legal, contract, and funder requirements. This was true across the survey respondents and organisations we assessed. However for the other areas we explored, the patterns of use differed considerably depending on how much of an organisational priority data was. This one question 'how much of a priority is data?' proved to be a good indicator or an organisation's data maturity. See Appendix 8 for some of the more in-depth analysis.

Those that don't prioritise data use it to a lesser extent and for a more limited range of purposes - mostly operational, requisite purposes, fundraising and income generation. This suggests a tendency to be funder-led in their design/development of data and analysis capabilities. However, those that prioritised it demonstrated a wider range and depth of data use.

Outcomes and impact measurement was less common among those that didn't prioritise but a key feature of the more advanced. Where data is a major organisational priority (31% in our survey) measuring outcomes and impact was their top area of use. All of them used data for this purpose, most extensively so. Other areas where these organisations led the field were in using data for learning and evaluating what they do, and strategic planning and decision making. This group were also the ones using forward looking predictions around client needs and service options. Internally they use data to maximise their resources through increased income generation (fundraising, sales) and reduced costs (savings/efficiencies). Externally they build credibility and influence, and strengthen partnerships and networks.

FINDINGS FROM ASSESSMENTS

The assessments confirmed the widespread practice of using data for operational purposes and for reporting to funders/commissioners/legal bodies. The picture was much more mixed around outcomes and impact measurement. A few were collecting, analysing and sharing outcomes data in consistent, routine and sophisticated ways. In a couple of cases they were using this to lead discussions with partners and other stakeholders around shared measurement. Around a third had collected some outcomes data but this was infrequent. Others tended to collect some outcomes data for specific projects but weren't able to do so organisation wide.

BENEFITS AND REWARDS

In our in-depth assessments we had an opportunity to explore in more detail how social sector organisations were translating the use of data to achieve benefits and rewards. In all cases there were slight, moderate or very significant benefits for at least two-thirds of the assessed organisations. The biggest areas of benefit that most organisations said they experienced either 'moderately' or 'very significantly' were:

IMPROVED PRODUCTS AND SERVICES.

INCREASED KNOWLEDGE AND LEARNING.

IMPROVED PLANNING AND DECISION MAKING.

INCREASED INCOME.

The most advanced organisations said they benefited 'very significantly' from:

IMPROVED OUTCOMES AND IMPACT.

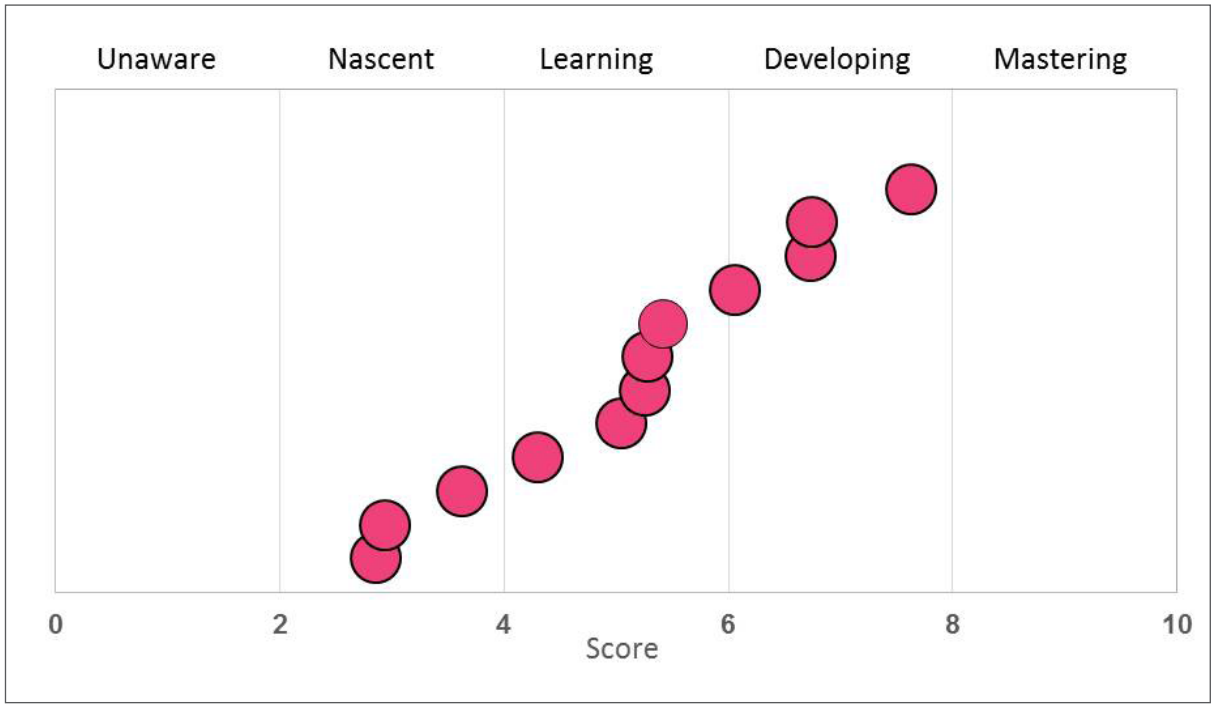
SAVED MONEY.

INCREASED CREDIBILITY AND INFLUENCE.

STRENGTHENED PARTNERSHIPS.

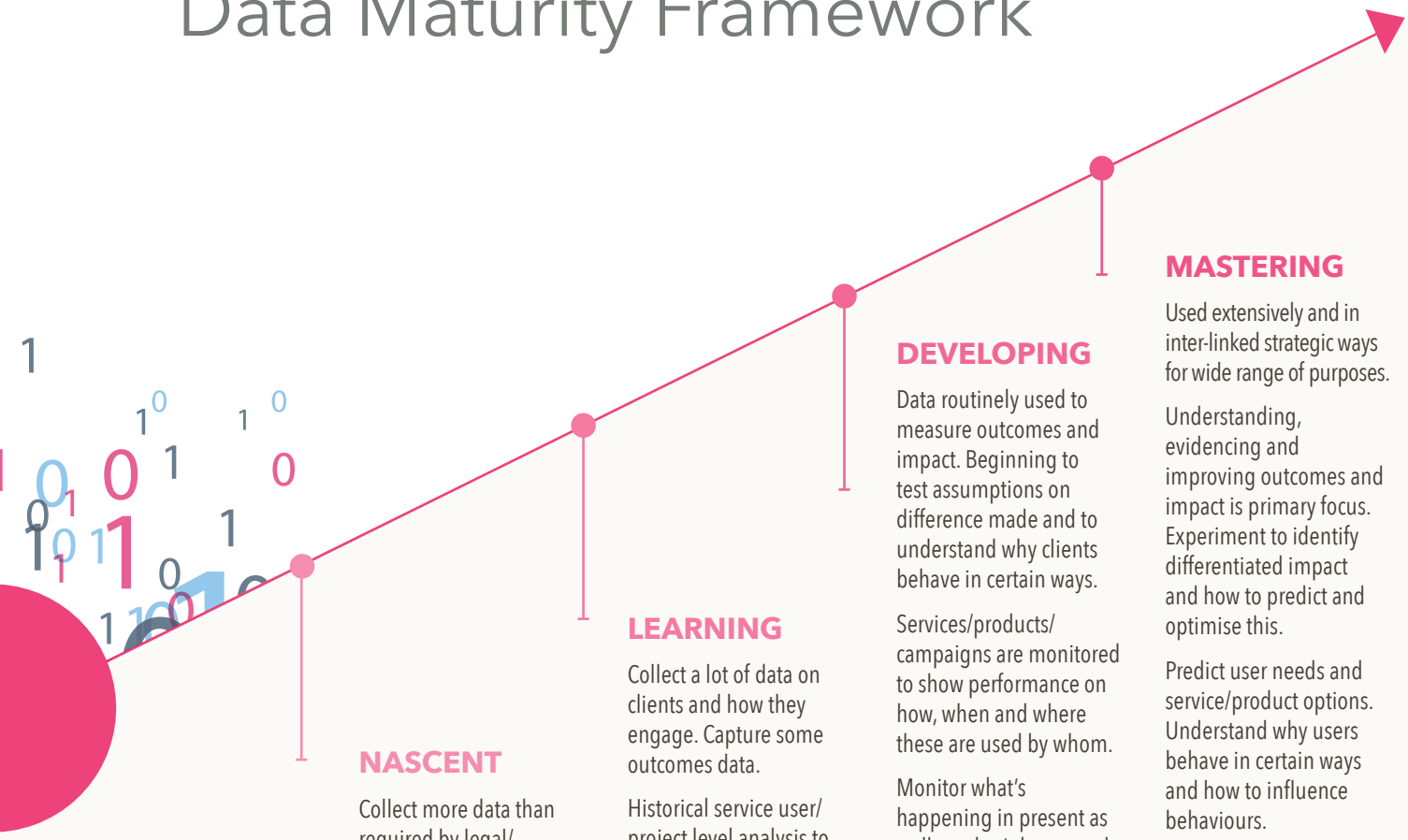
Where we saw evidence of this, they had well established and consistent systems for measuring outcomes across all service/product areas.

USES THEME SCORES FOR TRIAL GROUP



This is how we estimate the data maturity of the 12 organisations (represented by a dot) in terms of Uses based on their scores in our assessments.

Uses:
Data Maturity Framework



UNAWARE

Collect and use data only for requisite purposes e.g. legal/ financial/ funder compliance.

Record clients and activities in order to operate and to fulfil external reporting requirements.

Little or no benefits or rewards.

Continued funding may be seen as the only reason for collecting some data.

NASCENT

Collect more data than required by legal/ funders/contracts.

Most data is based around activities and outputs and basic financial analysis and forecasts.

Raising income likely to be key focus for additional data collection e.g. fundraising events, donors, sales to understand performance.

Rewards mostly around improved understanding of beneficiaries and income generation.

Able to feedback information to funders around specific projects.

LEARNING

Collect a lot of data on clients and how they engage. Capture some outcomes data.

Historical service user/ project level analysis to evaluate performance within depts.

Use data for income generation and some forecasting of sales and donations leading to more effective fundraising and commercial income.

Better able to adapt to changes in external environment.

Able to demonstrate work being done for specific user groups in specific projects.

Can start leading conversations with funders, partners, clients using data.

Use own data as well external sources to evidence need and some outcomes and impact.

DEVELOPING

Data routinely used to measure outcomes and impact. Beginning to test assumptions on difference made and to understand why clients behave in certain ways.

Services/products/ campaigns are monitored to show performance on how, when and where these are used by whom.

Monitor what's happening in present as well as what's happened in the past. Some forward looking analysis.

Operations and services are more effective and efficient. Staff/volunteer performance is managed and improved.

Starting to differentiate between approaches, and understand what's working and what's not.

User group segmentation allows better understanding of needs, enabling development of services/ products /campaigns.

Can coherently make the case to funders/investors/ clients for existing and new services/products/ campaigns.

Services/ products/ campaigns targeted and optimised at project/ dept level.

MASTERING

Used extensively and in inter-linked strategic ways for wide range of purposes.

Understanding, evidencing and improving outcomes and impact is primary focus. Experiment to identify differentiated impact and how to predict and optimise this.

Predict user needs and service/product options. Understand why users behave in certain ways and how to influence behaviours.

Learn, evaluate, and build knowledge.

Influence policy makers, funders and partners to create positive change.

Improve efficiencies (resources, processes, services/product delivery).

Products, services and campaigns are continuously improved.

Robust evidence builds credibility and influence.

Partnerships and networks are strengthened.

Effective planning and decision making.

Design and delivery of services/products campaigns is optimised at an individual/ personal level.

5.7 Analysis

HEADLINES FROM OUR SURVEY

- 43% have the right skills to analyse data in useful and meaningful ways.

These were the responses about the use of data for decision making:

- 31% use data about what happened in the past (e.g. from the last quarterly/ annual reporting periods).
- 11% look at current data but not at past or future trends.
- 36% monitor what's happening in the present as well as past trends.
- 16% do the full monty and use forward looking research and predictions, as well as past and present data to make decisions.
- 2% don't use data at all.
- 4% don't know.

Analysis of data was the biggest category of need in the survey comments.

FINDINGS FROM ASSESSMENTS

TYPES OF DATA ANALYSED

The assessments corroborated the survey findings. Most organisations were using past data, some were able to monitor present data (many interpreted this as being the latest monthly figures). Few were looking forward. On the whole data was largely descriptive rather than diagnostic or predictive.

Just over half said they use data to explore and test assumptions about the difference their organisation makes. Only a few had run experiments to explore and learn how best to act in future or used predictive models to prepare for the future needs of beneficiaries. We suspect some of the findings in the survey may be overstated since there were issues around interpretation of questions about optimisation and prediction. We saw evidence of this type of analysis occurring in only two of the organisations we assessed.

TECHNIQUES

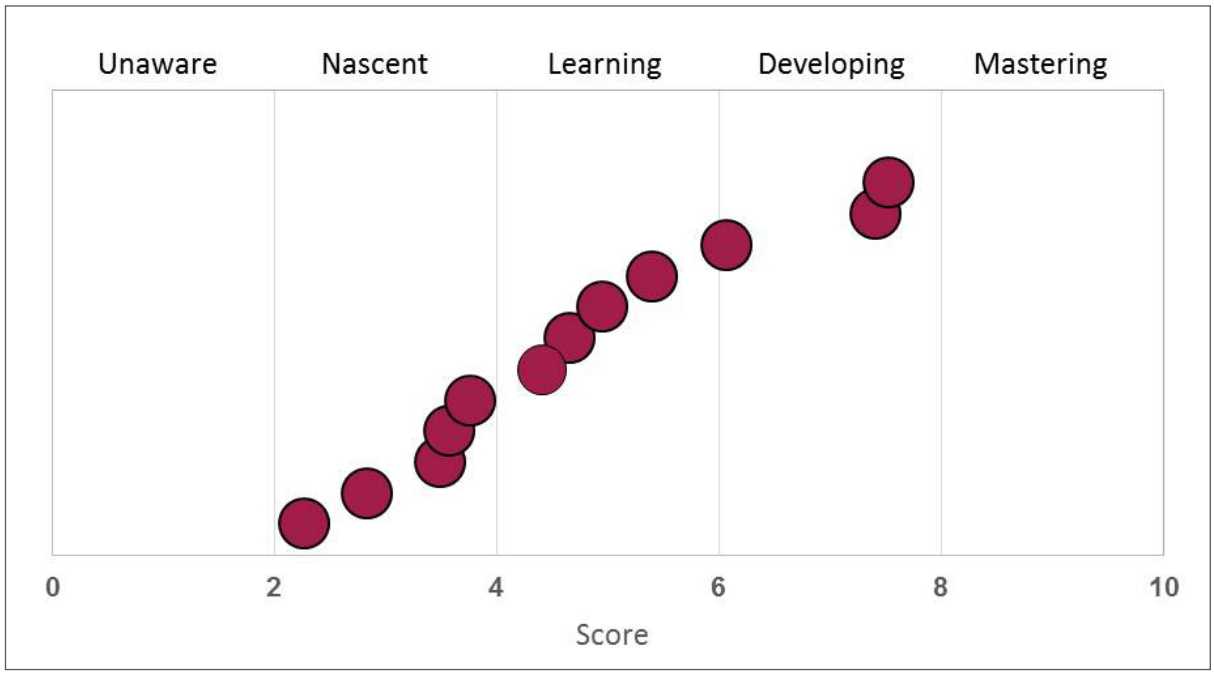
Again, the survey findings around skills and techniques were confirmed amongst the assessment group. Overall confidence and skills around analytics was fairly low. Several organisations referred to the issue of having lots of data but no skills or resources to analyse it properly. Only 3 of the 47 people we interviewed had specialist roles relating to data analytics. Just under a third were satisfied with the quality of analysis and reporting. We did find evidence of organisations doing A/B testing, some doing complex querying, some using data science techniques as well as mapping using their own and open data sets.

In addition to poor analytics capabilities, most organisations found joining data and accessing data were difficult and time-consuming. Two thirds of the organisations collate reports manually using data from different sources across the organisation. Some report data separately within teams/ departments/ projects and don't share or only share verbally. Only a couple had instances where data reporting is an automated function using dashboards and business intelligence systems that pull data together from different tools and systems to provide real-time dynamic reporting (though notably in some but not all of their systems).

PRESENTING AND COMMUNICATING

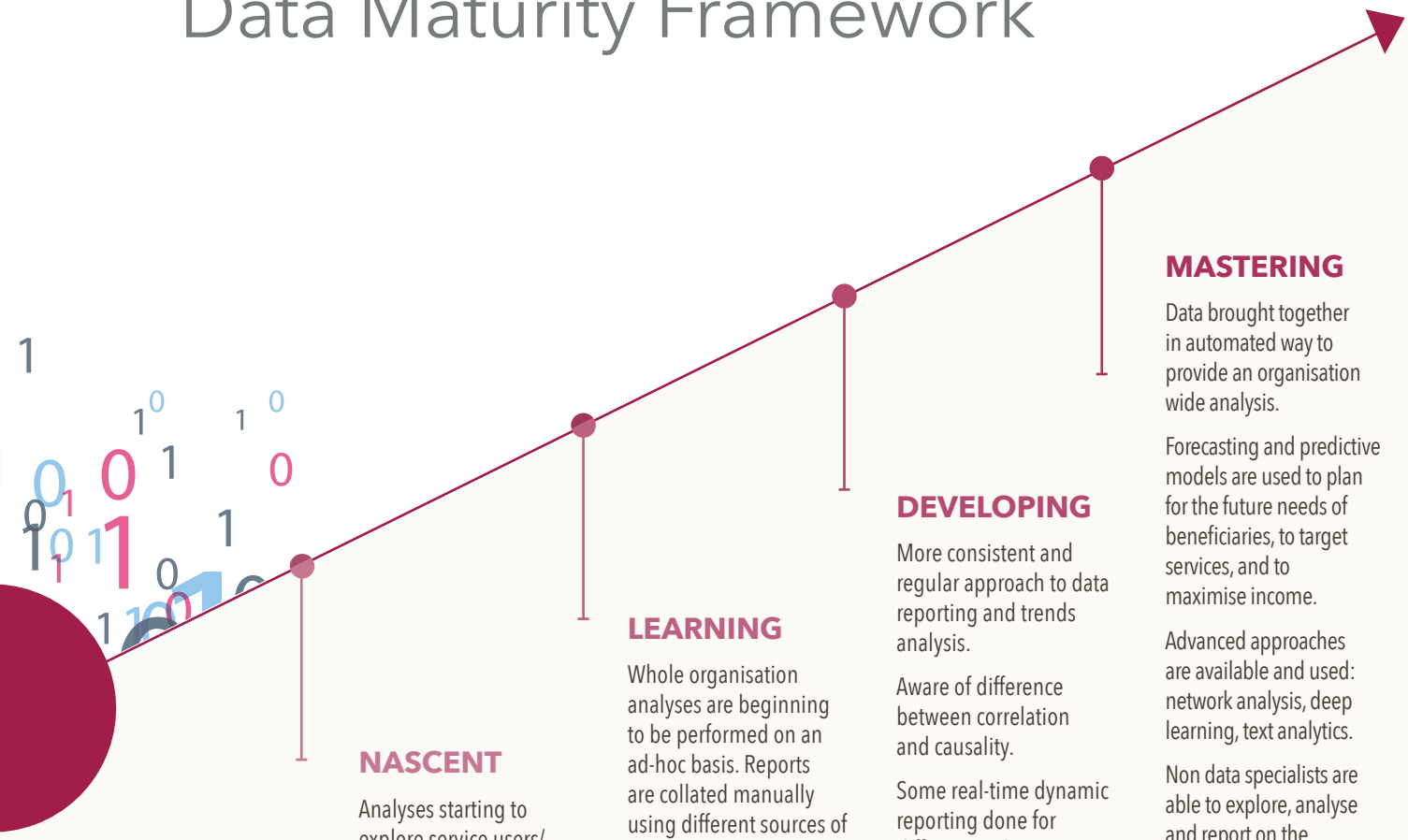
Just over half of those assessed said they present and communicate data in accessible ways to different audiences. In many of the less advanced organisations data was presented in basic charts and graphs in static reports. Others had standardised reporting set up in Databases/CRMS/web/social media analytics. In one case there was online interactive data visualisation using their own as well as public data sets to enable exploration of the context of their work and beneficiary needs.

ANALYSIS THEME SCORES FOR TRIAL GROUP



This is how we estimate the data maturity of the 12 organisations (represented by a dot) in terms of Analytics based on their scores in our assessments.

Analysis:
Data Maturity Framework



UNAWARE

Limited analysis of financial and contracted data. Mainly counts.

Data is not used in reports – anecdotes are preferred.

NASCENT

Analyses starting to explore service users/ customers and target audiences.

Analyses may include external data e.g. to evidence scale of need/ problems.

Basic analysis, using counts and spreadsheets.

Use of basic charts.

Analysis and report creation skills variable.

LEARNING

Whole organisation analyses are beginning to be performed on an ad-hoc basis. Reports are collated manually using different sources of descriptive data.

Comparative trend analysis conducted over time (perhaps on an annual basis).

Some routine automated analysis and reporting.

Data is arduously reworked for presentation in static reports for different internal/external audiences.

Variable quality of analysis and presentation.

DEVELOPING

More consistent and regular approach to data reporting and trends analysis.

Aware of difference between correlation and causality.

Some real-time dynamic reporting done for different audiences.

Some use of more advanced analytics to understand where/ why things happen e.g. clustering and root cause analysis. Some attempts at A/B testing. Occasional use of predictive analytics in some areas.

Complex, analysis and querying done by some specialists in the organisation.

MASTERING

Data brought together in automated way to provide an organisation wide analysis.

Forecasting and predictive models are used to plan for the future needs of beneficiaries, to target services, and to maximise income.

Advanced approaches are available and used: network analysis, deep learning, text analytics.

Non data specialists are able to explore, analyse and report on the organisation's data.

Data visualisation delivers meaningful analysis to different internal and external audiences.

Analysis extends beyond the organisation to its wider context with cooperative analyses performed with partners/ other agencies.

6. Reflections and Conclusions

This research felt important and ground breaking. It was a first attempt to take a really in-depth look at both the practice and theoretical concept of data maturity in the social sector. We successfully produced a model framework that explains the complex range of factors and the stages of progress on the journey.

We were also pleased to have created a prototype tool for measuring data maturity. Crucially to have come up with the key questions you need to ask, in the right way and to the right people. Having tested this out with small groups of staff and trustees from 12 charities and social enterprises we think it does a fairly good job of assessing their strengths and weaknesses, diagnosing the stage they're at, and benchmarking. However in the light of our learning, and the development of our more fine-tuned framework, it would need some changes, improvements and investment before being put out in the public domain.

As researchers, it was a privilege to be able to explore challenging territory and hear the honest perspectives of so many people from different social sector organisations. The feedback we got from those participating in the assessments suggests it also had benefits for them too.

> "I particularly found interesting when they asked us about how we analyse our data. I think there may be a trend in the sector to focus on summarising monitoring data and not really thinking about everything that this data could actually tell us… I feel like I have got a much better sense of what our strengths and weaknesses (and opportunities!) are as an organisation."

6.1 HOW IMPORTANT IS DATA?

We found data is an integral part of life in charities and social enterprises. For 69% of the respondents in our survey, data is a priority either organisation-wide or at least in some departments. It's critical to their survival; they collect and use lots of it, but its power remains largely untapped.

The majority of those we spoke to were not aware of the possibilities of data and analytics for advancing their organisation and its goals. Few were geared up in terms of leadership and culture to take advantage of its potential. We suspect data is a rather niche-interest subject and whilst people thought it was important it was still difficult to engage them. Amongst those most advanced, where there is commitment and investment, data is delivering rich and transformational rewards at an organisational level. In some cases, this extends into sector and cross-sector wide benefits.

6.2 WHICH FACTORS ARE MOST INFLUENTIAL IN ENABLING ORGANISATIONS TO BECOME MORE DATA DRIVEN

Of the seven key factors we identified (uses, analysis, leadership, culture, skills, data and tools) this research has confirmed our theory that the crucial factors in data maturity are those relating to people: leadership, skills and culture. Tools and techniques are of course important and the raw material (i.e. the data itself) is essential. But the leadership's vision, the collective drive towards greater impact, and the investment in peoples' continued learning, and adaption toward that goal ultimately drive data maturity.

6.3 WHAT BARRIERS GET IN THE WAY?

Organisations at different levels of data maturity face different barriers. For those least mature, it tends to be a combination of low awareness, lack of skills, difficulty collecting data and poor tools. Sometimes it's about the attitude and willingness of leaders; and sometimes it's about not having the capacity/resources to move beyond the data requirements being externally dictated by funders and commissioners. Some particular barriers we identified were:

LOW/NO SKILLS CAPACITY

Data skills, knowledge and expertise are a big gap in the sector and support services are thin on the ground. This research highlights the need for greater provision of affordable data training for staff in the social sector. Much of the existing professional development associated with data is focused around specific and separate functions like fundraising, finance, marketing/communications, ICT, research and evaluation. This research showed a clear need both for charities to invest in skilling up their staff, but also for funders to consider how they can help that to happen.

DIFFICULTY COLLECTING DATA

In the private sector it's suggested that 80% of the effort in any data project, goes into collecting and cleaning data. Data collection is difficult, resource intensive and time consuming, especially for small organisations. This is especially so if they work with very marginalised, disadvantaged and hard to reach beneficiaries. Others delivering via networks, partnerships or intermediaries also experience challenges in defining and collecting consistent data where they are reliant on persuading others to provide it. Capturing who they serve, what they do and what difference it makes can be challenging and costly (especially since they have to do it repeatedly to measure outcomes and impact).

> "Each project collects data for a specific purpose. It's difficult to collect impact data across differing projects."

Those organisations that deliver some/all of their services online have the advantage of already digitised data. Of course many charities and social enterprises conduct their activities face-to-face out in the field, by phone, as well as (increasingly) online.

DIGITAL TECHNOLOGY MATURITY

We found data maturity is substantially entwined not just with more sophisticated impact assessment but also with digital technology maturity. We're not just referring here to online web/social digital maturity but the full range of digital tools and systems an organisation has at its disposal. Indeed our research suggests good tools and infrastructure are not just essential but may be a pre-requisite for data maturity. Arguably it's the data these systems collect and deliver and the purpose for which it is used that's most important. In our survey only 16% of those where data was an organisational priority said they didn't have good tools and systems. Amongst those with little data awareness it was 81%. Of the seven key themes we looked at in the assessments, 'tools' was the lowest scoring.

LEADERSHIP

Whilst there's been a notable drive around digital transformation and in some cases digital leadership, there is very little happening around 'leadership in data' or 'data in leadership'. Taking the overview of data, seeing the big picture at an organisation-wide level, requires leadership engagement. We were encouraged that many leaders we met during this research were open and enthusiastic about data, however a significant number were not and some found it a deeply uncomfortable subject.

Certainly data is a huge and constantly changing area. Weaknesses in an area like governance can leave organisations vulnerable and exposed. Our assessments probed into some challenging territory for leaders including the willingness to act differently where data doesn't support pre-conceived ideas.

> "Previously a battle to get recognition of the value of data. Leaders say "let's do the real work and not the paperwork". Not used for planning the future. Becoming more of a priority but need to demonstrate that it shows our approach works."

Investment is an interesting and difficult issue to assess in the broad sense (tools, training, staff etc). Only 18% said their organisation invested enough, yet we observed very high levels of time commitment amongst a wide range of staff being spent on data collection, management, analysis and reporting. In many cases data offers great opportunities to save time and hence costs.

6.4 HOW WELL ARE ORGANISATIONS DOING?

We were encouraged to find most organisations have set off on their journey and are aware of the importance of data. Most are at the nascent and learning stages - still grappling with what data is meaningful and useful, how to collect it and analyse it. Others have progressed to the 'developing' stage and are doing considerably more sophisticated, skilled, joined up, and powerful things with data. So far we haven't seen any at 'mastering' stage though there are clear indications that some are heading that way.

6.5 IS IT DIFFERENT FOR DIFFERENT KINDS OF ORGANISATIONS?

The social sector is hugely diverse and organisations differ enormously in what they do, where they operate, who they serve, and the size and scale of their operations. We were curious to explore whether these factors made any difference to data maturity. Matching the registered charity and company numbers of those completing our survey to open data sets our data scientist volunteer was able to do some in-depth analysis to satisfy our curiosity. We found:

LARGER ORGANISATIONS
are not necessarily doing better with data. It's true the larger the organisation, the more likely they are to have dedicated data staff. However we found many small ones commit a lot of people to data and some large ones don't.

HIGH INCOME ORGANISATIONS
(those with incomes over £500K) were more likely to say that data was a priority in some departments but not across the whole organisation compared to lower income organisations. This suggests they have greater challenges with silos – typically marketing and communications, research and evaluation, fundraising or finance.

YOUNGER ORGANISATIONS
(those less than 11 years old) seem to consider data more of a priority than older organisations. As to younger leaders, well we weren't THAT nosy!

URBAN ORGANISATIONS.
We didn't find any evidence to suggest rural organisations are doing less well with data than urban. However it's true that many of the support providers and services we found were London based.

CHARITIES V SOCIAL ENTERPRISES.
There were no discernible differences between the data maturity of social enterprises and charities.

6.6 WHAT ARE THE NEEDS?

Participants in our two workshops said they were interested in:

- Learning about good practice and the experiences of other more advanced organisations.
- Training, skills development, and learning.
- Joining a network and peer support group for people working with data.
- Finding out about data support and services for social sector organisations.

In our survey 64% of respondents wanted to find out about available support and services around data and analytics.

Of the 61 respondents that provided additional comments on the type of support and services they would find useful, the main areas were:

- Data analysis
- How to collect data
- Identifying what and how to measure (including specific reference to impact measurement)
- Tools and systems

It seems that needs are different at different stages of maturity. Since most are currently at the 'nascent'/'learning' stages, much of their need is about being able to better define what data they require, work out how to collect it and find the right tools for managing and analysing it. For those 'learning' organisations, the challenges are more around connecting and aligning their different data sets, their systems, and bringing it all together as part of an organisational strategy. For those at a more advanced 'developing' stage, their needs are more about accessing and developing high level advanced skills and applying/embedding good data practice across the whole organisation.

Of course there is a big difference between what organisations might need and where there is demand i.e. what they're motivated to seek out. Awareness is a big issue. Those we spoke to in this research said they don't know what good/great looks like when it comes to data in the social sector. They were really keen to hear real-life examples and to learn from others breaking new ground in this area.

From this research it appears the data market in the social sector is under-developed both in demand and supply. There aren't many services available for the social sector. Much of what we found is short-term project based consultancy/pro-bono/academic support, linked to technology products, or fairly small scale. We found little, if anything, that aims to support or develop data maturity at a leadership level.

FINALLY....

Like all organisational change, the journey to becoming more data mature is a difficult and continuous one. Some social sector organisations have embraced data under the impetus of enlightened leaders who recognize and exploit the new potential. Some social sector organisations are stumbling at the starting gate. While we don't claim to definitively know how to create this change, we do know that we've only just started to see the benefits that the smart use of data will reap for the social sector.

LIMITATIONS OF THIS RESEARCH

We recognise the limitations of our own research. Heroic efforts were made to market and promote our survey around England and Wales yet we only achieved 200 complete responses. Of course many may have been put off by the request for charity/company numbers. But we chose to make that trade off in order to be able to explore some of our other questions and theories about the sector.

Our assessments were with a small group but we were able to capture some rich data around the emerging and evolving process of becoming data mature.

Not everyone understands what we mean by data. Generally awareness is low and people don't know what they don't know. Levels of awareness about the possibilities of data analytics and the changes and advances happening at the cutting edge of the field are sorely limited. This affected some respondents' understanding and interpretation of some of our questions.

We also suspect we may have surveyed and spoken to the more data-savvy or at least data-interested organisations out there, and perhaps missed swathes of the social sector who aren't interested in data at all.

7. Next Steps

Data Orchard CIC and DataKind UK will reflect on the findings to inform how they design and deliver future services. We will use the data maturity framework in several ways:

- To diagnose and support social sector organisations to improve their use of data
- To inform conversations with others who share all/part of this in their thinking/service offer;
- To promote awareness and increase understanding of the power and potential of data.

If you are interested in having a data and analytics assessment please contact Data Orchard. If your organisation is ready to move to the next level of data maturity and wants to get a taste of data science get in touch with DataKind UK. There are various possibilities for further development:

- Building the prototype tool into an online self assessment and benchmarking tool.
- Adapting the tool to a specific cluster of organisations working in the same sub-sector.
- Longer term research to look at if and how being more data mature leads to improved outcomes and impact. Our assessment hinted that this is the case but to better understand the relationship would require a new research project.

At a strategic level there are some bigger questions and opportunities about:

- THE COLLECTIVE DATA ASSETS OF THE SECTOR.
  The social sector collects rich data on some of our country's most vulnerable populations and address many challenging social, economic and environmental issues. Making the most of that data and combining it with other data sets can shed light on complex problems.
- THE DATA ABOUT THE SECTOR.
  While the Charity Commission and NCVO's UK Civil Society Almanac are useful resources of data about charities it's still difficult to see the big picture clearly. Another useful resource is 360 Giving providing data on social sector funding. There is much less data available about social enterprises.
- OPEN/AVAILABLE DATA FOR THE SECTOR.
  Yes, the government is increasingly opening up and publicly sharing data sets, but are charities making use of them? Probably not. More needs to be done to make charities aware of what open data is useful to them, and support them to use it. There are some great initiatives like NPC's Data Lab that enable charities to tap into government data to better understand their impact, but these are few and far between.

Glossary

BATCH ANALYTICS
Is the execution of a series of jobs in a program on a computer without manual intervention

CUSTOMER RELATIONSHIP MANAGEMENT (CRM)
Systems to manage and analyse beneficiary/supporter/contact interactions across different channels and ways of engaging with services and products throughout the lifecycle of that relationship.

DATA DICTIONARY
A set of information describing the contents, format, and structure of a data set and the relationship between its elements.

DATA WAREHOUSE
A system that aggregates structured data from one or more disparate sources so that it can be compared and analysed for greater business intelligence. Designed to give a long-range view of data over time.

DATABASE
A structured set of data held in a computer. It is the collection of schemas, tables, queries, reports and views organised for easy access.

MODEL
A representation of a system using general rules and concepts.

Appendix 1: Who was involved in Data Evolution?

THE DATA EVOLUTION PROJECT TEAM

SIAN BASKER
PROJECT LEAD
DATA ORCHARD

ROLE: Project manager and lead research consultant. Desk research, workshop planning and presentations, survey design and analysis, assessments design and analysis, data maturity framework design, report writing.

Sian is a social entrepreneur passionate about the power of data for making the world a better place. She has been a pioneer of digital technology in the non-profit sector since 1991 and played a key role in setting up the UK's first community Internet access and training programmes. She's worked in local, national and international contexts driving digital development, research, inclusion, and capacity building. She specialises in research, impact measurement, digital systems for new knowledge and positive change.

EMMA PREST
PROJECT LEAD
DATAKIND UK

ROLE: Lead partner, overseeing project contracts, managing relationships and reporting to funders, coordinating project board/governance, support with events/survey marketing and promotion, coordinating data science input.

Emma runs DataKind UK where she handles the day-to-day operations. That includes managing data-for-good projects, supporting the influx of volunteer data scientists and building understanding about what data science can do in the charitable sector. Emma has spent the past decade working for non-profits helping them to make sense of their data and communicate it in interesting ways.

MADELEINE SPINKS
SENIOR RESEARCH CONSULTANT
DATA ORCHARD

ROLE: Desk research, surveys design, analysis, intensive assessments, contributing to analysis and reporting.

Madeleine has been a researcher for over 20 years working in voluntary, community and public sectors and across a range of partnerships. Her specialism is analysis and interpretation of varied data sets and geographical mapping. Madeleine led a local authority research and intelligence team for many years, working in partnership with the voluntary and community sector. She is actively involved in her local community, gathering evidence to support and sustain community run facilities e.g. pub, preschool and school (where she is chair of trustees).

BEN PROCTOR
COMMUNICATIONS LEAD DATA ORCHARD

ROLE: Communications and marketing. Facilitated engaging workshops. Used data, mapping and social media to promote and target survey respondents.

Ben is a communications professional with a background in local authority and community communications. He specialises in supporting and encouraging the use of social media, open data and open source tools. He's worked with: The BBC, The Woodford Foundation (now SIGNAL), Shell UK, Shropshire Community Recycling Ltd, the NCS Trust and The Bulmer Foundation. He is a member of the core team of the Standby Task Force a global humanitarian organisation that relies on social media to fulfil its mission.

TONY CRAMP
RESEARCH CONSULTANT
DATA ORCHARD

ROLE: Built our prototype tool to score and benchmark data and analytics maturity for the charities and social enterprises in our test group.

Tony has a background in engineering, computing and local government research. He's used his statistical expertise and understanding in complex survey design and data quality analysis in public, private and non profit sectors.

STEFANIA GARASTO
DATA SCIENCE VOLUNTEER
PHD STUDENT AT IMPERIAL COLLEGE

ROLE: Using Charity Commission and Company Check data, Stef matched up the survey participants to other data about each organisation, such as size, income, sector and geographical location. Undertook in-depth exploration of the data to test theories, correlations, and see what it showed.

Stef has an academic background in Mathematical Engineering and is in her final year of a PhD in Neuroscience on computational models for the processing of visual inputs. She is considering a career as a data analyst in the social sector.

TIRZA ABB
GRAPHIC DESIGNER
THINK BLINK DESIGN

ROLE: Graphic Design

Tirza is the Managing Director of Think Blink Design, working in both the UK and Australia. Kick starting her career in 2004 with an RSA award for sustainable design, she has always chosen to work with companies that actively engage in projects that do good in the world. " *I woke up one day and wondered why someone didn't just do something to help and then I realised that I am someone."* Her clients include: Data Orchard, Edith Cowan University, The Bulmer Foundation, Travellers' Times, National Parks WA, Byron Shire Council, Fremantle Press and a wealth of small companies and trusts doing positive work.

CLEM ATTWOOD
RESEARCH CONSULTANT DATA ORCHARD

ROLE: Data cleaning and initial analysis of our survey data. Helped with the presentation of some of our results.

Clem is a Director at Data Orchard and also works in research and data analytics in Geneva including with the United Nations Development Programme and the International Institute for Sustainable Development. He has a range of research experience from local government, the non-profit sector and campaign groups.

DAISY BISHOP
RESEARCH ASSISTANT
DATA ORCHARD

ROLE: Research, admin and marketing support. Helped get us organised and tracked down all the networks and contacts for promoting the survey and workshop events.

Daisy has worked for a range of organisations in PR, marketing, research and administration roles. She's an active volunteer in her local community, editing the local community magazine, running a sports club, organising events, and fundraising.

THE DATA EVOLUTION PROJECT BOARD

DUNCAN ROSS
CHAIR DATAKIND UK
CHIEF DATA SCIENTIST AT TIMES EDUCATION SUPPLEMENT GLOBAL

As part of his role Duncan talks to customers and prospects across the world about the joys of data science - which is why he got involved in DataKind. If companies could do this, then why not charities? He set up DataKind UK with Fran, Kaitlin and Hannah. He is a serial volunteer, having been a City Councillor, chair of trustees of a national charity, founder of a farmers' market, press officer for a historic building on reality TV, and co-founder of the Society of Data Miners.

ALEXANDRA REHAK
PRACTICE HEAD OF INTERNET OF THINGS
OVUM

Alexandra is an independent strategy consultant and analyst with over 20 years of experience in the telecoms, media and technology sector, focusing on the Internet of Things, digital health and big data. She's currently an Associate Partner with STL Partners where she helps companies find the best ways to analyse and interpret data. After volunteering for DataKind UK in early 2015 to support a children's health charity, Auditory Verbal, she was hooked on the idea of data for good!

MADELEINE THORNTON
SOCIAL IMPACT ANALYST
BIG ISSUE INVEST

Madeleine works in the social investment arm of the Big Issue Magazine. She supports social enterprises to develop their capacity in evaluation and social impact practice, working across a variety of fields and sectors. Madeleine began her career working in housing and social security before moving into research and evaluation in the charity sector.

GAIA MARCUS
PROJECT MANAGER
YOUTH HOMELESSNESS DATA BANK, CENTREPOINT

Gaia manages a team bringing innovative approaches to the youth homelessness sector. Previously, as Senior Researcher at the RSA, she led research for the Connected Communities programme and the organisation's social network analysis. She launched the Social Mirror project- the first ever digital social prescribing project using tablets to automatically prescribe local activities to people suffering from isolation or low wellbeing.

ED ANDERTON
STRATEGY AND POLICY MANAGER
ACCESS SOCIAL INVESTMENT

Ed leads Access's Capacity Building programmes, alongside managing their work with data, systems and reporting. Previously Ed spent three years at Nominet Trust, the UK's leading #techforgood funder, where he led their involvement in the 360giving open data initiative, developed systems for their Triple Helix impact reporting process, and was principal researcher for the Nominet Trust 100. Prior to this he worked in performing arts education, which led circuitously into community development, education consultancy, conflict resolution, and a stint in Whitehall (BIS) on improving social sector regulation.

DATA MATURITY EXPERTS

JAKE PORWAY
FOUNDER & EXECUTIVE DIRECTOR
DATAKIND, NEW YORK

DUNCAN ROSS
DATA AND ANALYTICS DIRECTOR
TES GLOBAL
(FOUNDER/CHAIR DATAKIND UK)

JONATHAN SEDAR
CONSULTING DATA SCIENTIST
APPLIED AI LTD

SHYANN SEET
DATA & ANALYTICS ADVISOR
INDEPENDENT

HILARY MASON
DATA SCIENTIST
FAST FORWARD LABS

Appendix 2
Key Sources on Data Maturity

Accenture, Analytics Maturity Assessment, Netherlands 2015

Anderson C.,"Creating a Data-Driven organisation: practical advice from the trenches", 2015

Booz, Allan & Hamilton, "The Field Guide to Data Science", 2015 (2nd Edition). *(Lit. Review list & Data Science Maturity Model on page 35)*

Davenport T., Assessing your analytical and big data capabilities, Wall St Journal, July 2014

Eckerson W., The Data Warehousing Institute, Business Intelligence Maturity Model

Fisher D., "Data Analytics Maturity Model", 2014

Howard J., Review of the INFORMS analytical model, 2014

Howson C., TScore Overview for BI and Analytics, Gartner 2015

Marsh M., "Review of skills and leadership in the VCS sector" (section on data-informed social change), 2013

Mason H., video and e-mail comms, 2016.

McSweeney A., "Review of Data Management Maturity Models" 2013

Parenteau P., Sallam R., Howson C., Tapadinhas J., Schlegel C., Oestreich T., Magic Quadrant for Business Intelligence and Analytics Platforms, Feb 2016

Polynumeral Blog, the number one question CEOs ask about data 2016

Patil D.J., Mason H., "Data-driven - Creating a Data Culture", 2015

Sedar J., Data Science maturity model blog, March 2016

Soares S., "The IBM data governance Unified Process", Sept 2010

Yanosky R., Arroway P., The Analytics Landscape in Higher Education, Educause, Oct 2015

Appendix 3. Example Data Maturity Models and Frameworks

This is a small selection of existing data maturity models and frameworks we found. Please see our separate report on data maturity models on our website www.dataevolution.org.uk

Note: Due to copyright restrictions readers are directed to the online source rather than reproducing diagrams and images here.

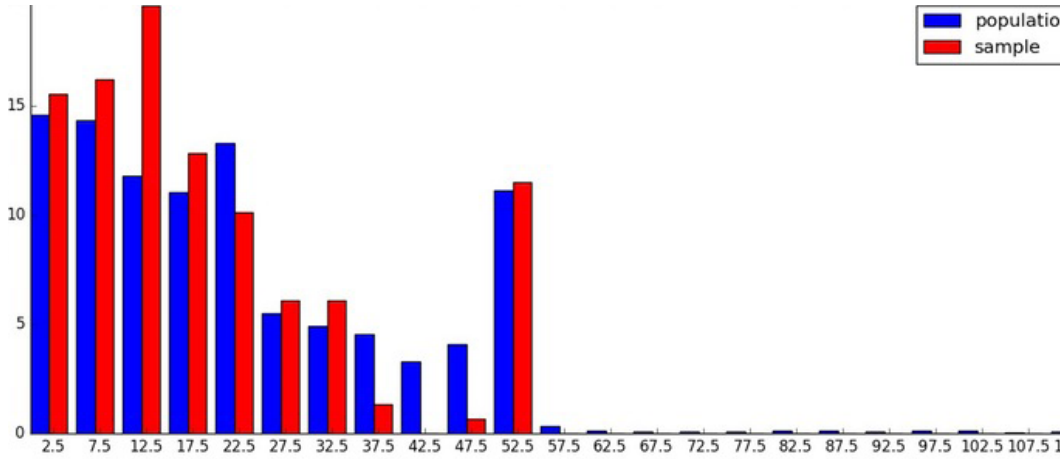
Applied AI Data Science Maturity Model, Jon Sedar, Applied AI, 2016
Gartner Master Data Management Maturity Model, Gartner, 2015 Gartner Business Intelligence and Analytics Model, Gartner, 2015
The Data Management Maturity (DMM), CMMI Institute
Data Science Maturity, Steven Mills, Chief Data Scientist, Booz Allen, 2014
ECAR Analytics Maturity Index for Higher Education, Educause, 2012
Gapbridge Analytics model
Infofarm Slideshare slide 26
Data Analytics Maturity Model, Dan Fisher, 2014
Data Management Maturity Model (DMM), Software Engineering Institute at Carnegie Mellon University as posted by Jay Zaidi, AlyData, 2015
The Data Warehouse Maturity Model Business Intelligence Maturity Model
Big Data Maturity Model (2012), comes from an IT perspective. Advanced version has more detailed emphasis on value creation, risk management, compliance, competency, architecture, policy, security, organization, audit.
Comparative view by A McSweeney. McSweeney A., "Review of Data Management Maturity Models" 2013
Open Data Maturity Model, Open Data Institute, 2015 on publishing and consuming open data. See also 'Map your pathway' App.
Social Impact Data Maturity Model, Centre for Data Science and Public Policy, University of Chicago, 2016

Appendix 4: Sample representativeness and biases

We explored whether the sample of organisations that responded to the survey was representative by age, income, staff size and geography. The following charts show how our sample compared to the population based on charity data available from NCVO. Note we were not able to access comparable data on social enterprises.

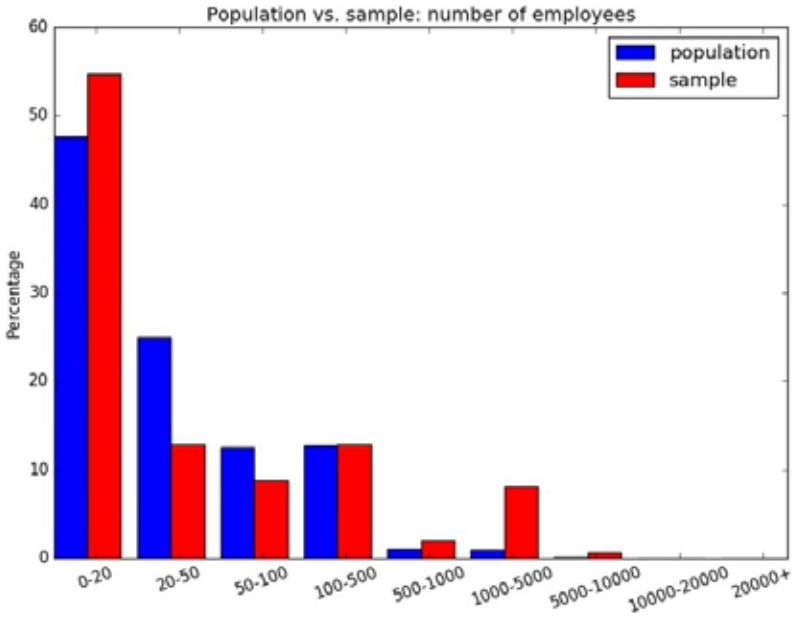
ORGANISATION AGE

This was closest to representative though with a slight over representation of younger organisations and under 12.5 years and under representation of those between 37.5 and 52.5 years.



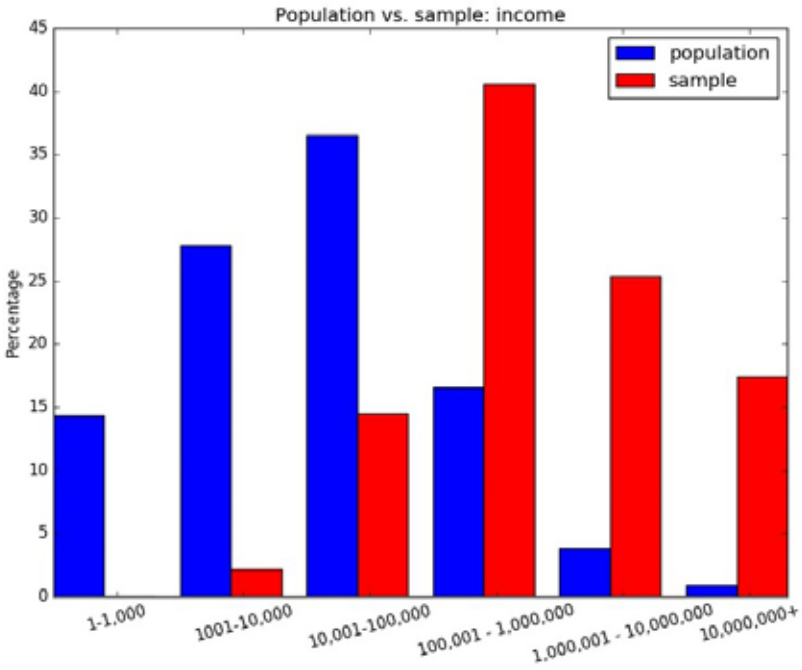
EMPLOYEES

While not representative, we did get a good range of responses from organisations



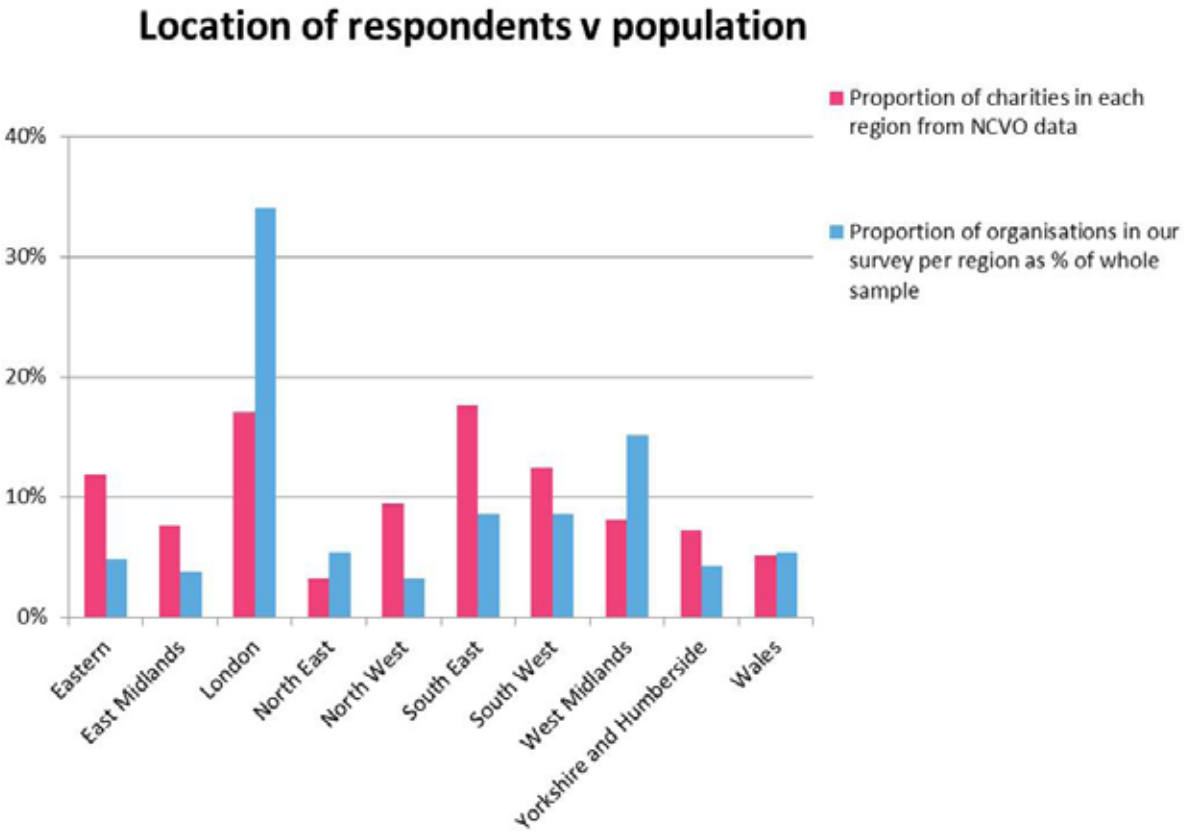
INCOME

Our sample had an over-representation of larger organisations and an under-representation of smaller ones.



GEOGRAPHY

London and West Midlands was slightly over represented and the north west, eastern and south east under represented.



Appendix 5: Why is data not a priority for some?

THESE WERE THE COMMENTS FROM PEOPLE IN THE ASSESSMENTS WHO SAID DATA WAS NOT A PRIORITY IN THEIR ORGANISATION.

Mostly project data is about monitoring against targets and reporting mostly donor driven to date.

Very donor and project driven.

We almost always only use data as an afterthought. When reports are due, we'll go to our platforms and see what we can figure out from what's been collected since the last time a report was due.

More of a doing organisation. Funders don't require it. Hard to quantify in data terms the difference we make to peoples' lives we just collect to monitor.

Data should be the servant not the master but funding requires it now more than it used to.

More of a 'doing' organisation. Very creative organisation. Don't have a lot of funding reliant on data or reporting. Perception of 'data' is not positive.

Becoming a priority - justifying that our approach works

Previously a battle to get recognition of the value of data "let's do the real work and not the paperwork". Not used for planning the future. Becoming more of a priority but need to demonstrate that it shows our approach works.

Each project collects data for a specific purpose. Difficult to collect impact data across differing projects.
Our funders and partners are more focused on other aspects of our work so most of the time we focus elsewhere. But we are determined to educate them and change our own practice

Each project collects data for a specific purpose. Difficult to collect impact data across differing projects.

We are very small and have other priorities. Can't really see how data analysis could help us.

We know we could do better, but we have little spare funding to make it happen.

Limited resources, cost intensive, distracts from the real work of service delivery and income generation.

Directors very different. Some frustration re different expectations v skills and resources.

Cost intensive.

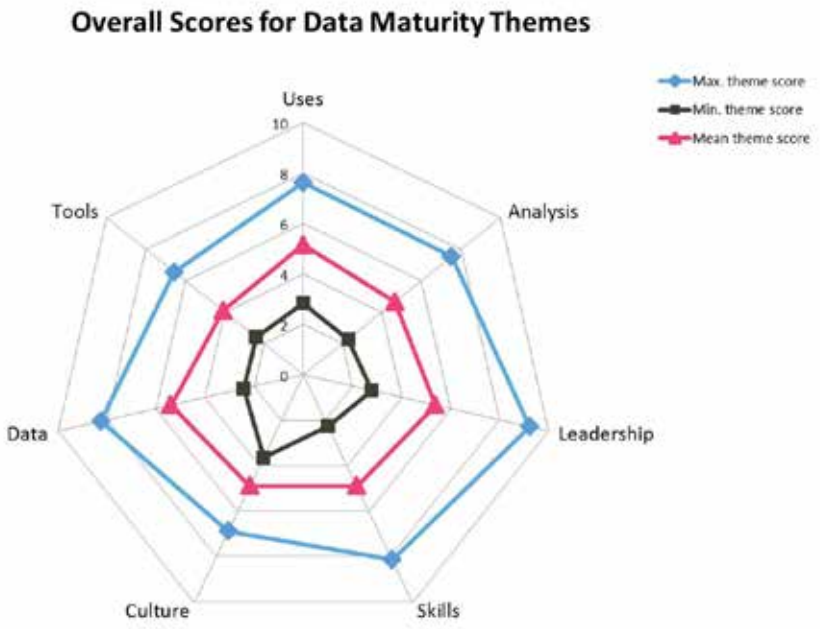
It is becoming more of a priority but the benefits have only started to be recognised throughout the charity in the past three years or less.

Appendix 6
Evidence of problems around Data in the Social Sector

- 'Data informed social change' was one of the eight major gaps identified in Dame Mary Marsh's review of skills and leadership in the voluntary, community and social enterprise sector commissioned by government in 2013.
- Giving Evidence has published a wealth of research on the poor quality and availability of evaluation and evidence in the social sector.
- The Institute of Fundraising's 2015 survey of how charities are using data found: 57% find it difficult to collect the data they need, 82% said when they have the right data they don't have the time or skills to analyse it. Only 24% were collecting, analysing, and implementing data a part of their strategic planning and decision making
- Charity Comms, November 2015 Pick n Mix Guide to Technology Choices, based on a survey of 74 digital leads in charities. Technologies, Data, and CRM systems were identified as their number 1 challenge.
- Information Commission Office report on the outcomes of visits to charities 2012-13 as part of its advisory service.

Appendix 7: Data Maturity Scores for the test group

The chart below shows the average (in pink) and the range of scores on a scale of 0-10 with the higher the better (from orange to blue) for each of the seven key themes. It's based on the responses from 47 people from 12 organisations in our assessment group.



As can be seen, scores ranged widely within each theme. With such a small number of organisations taking part it's difficult to draw any robust conclusions. However, the mean scores would suggest there are no particularly strong themes. Tools is a weaker area for all. Quality of the data seems high and remains questionable and we note a general tendency for over optimism here.

Appendix 8
Survey Data Exploration

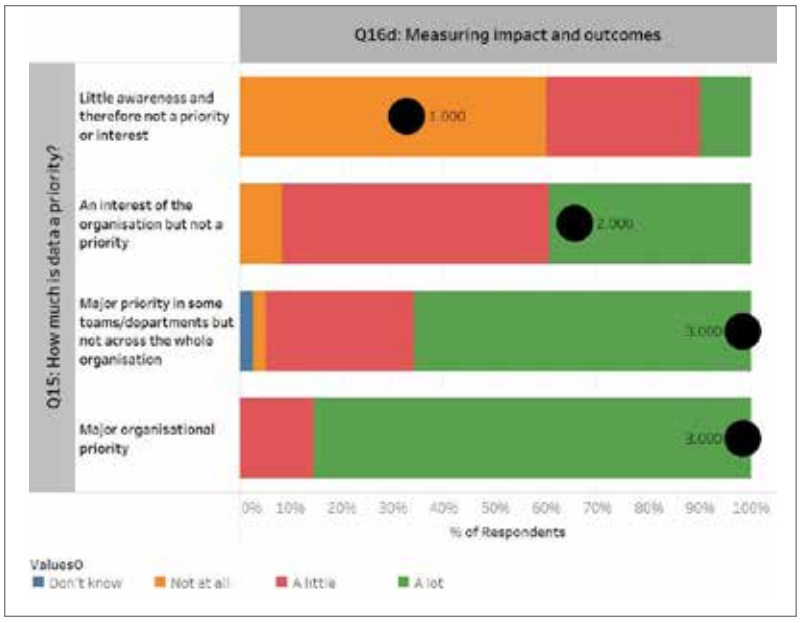
The charts in this appendix present some of the findings from our explorations into the data from our sample of 200 survey respondents. We matched pairs of questions to explore whether there were correlations. Those shown here present the results for those we found interesting. There are two sets of charts. The first explores questions around how organisations use data, the second explores skills, tools and data quality.

I) EXPLORING USES OF DATA

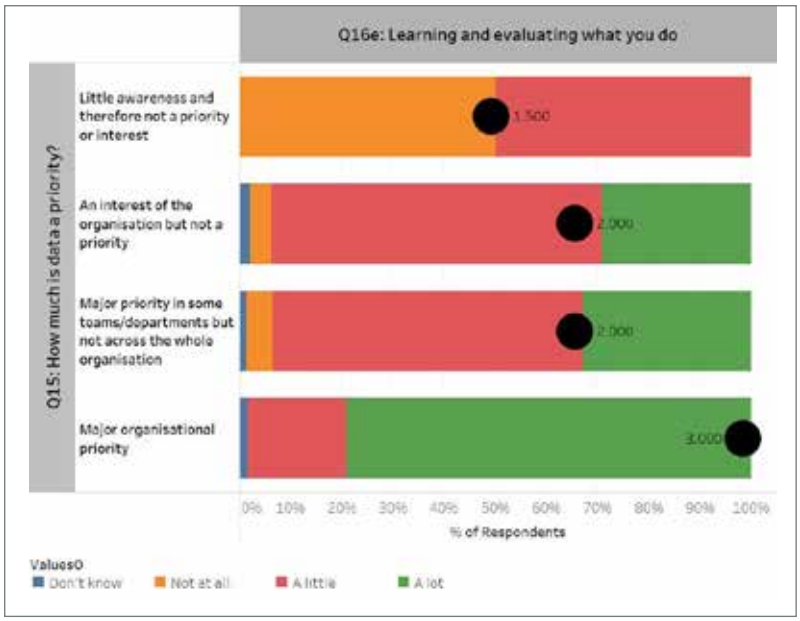
In the charts below we explore pairs of questions as shown in the grey boxes above and on the left. The black dots represent the median for the matched question pairs. The number next to the black dot refers to the value of the median as follows:

1= Not at all
2= A little
3= A lot

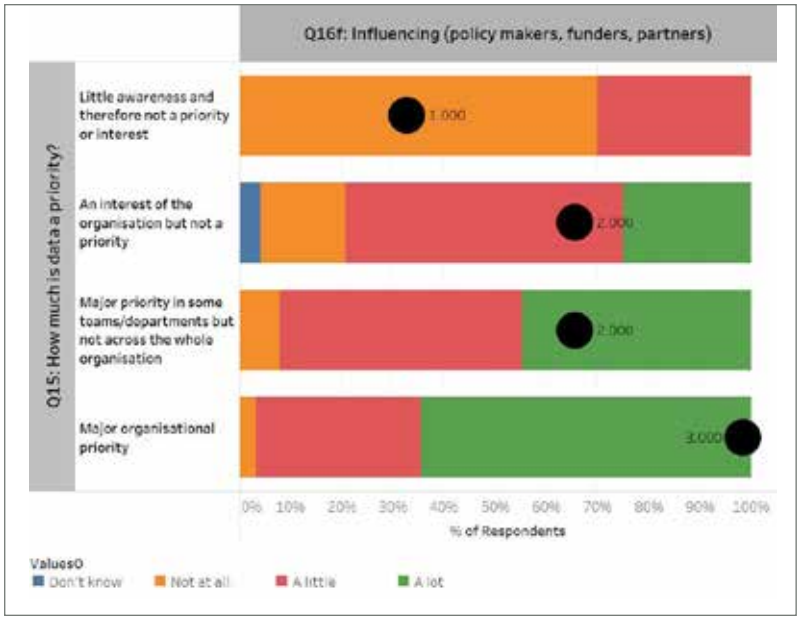
Any non integer number means the average falls between two categories. (e.g. 2.5, the median falls between category 2 and 3 according to legend above).



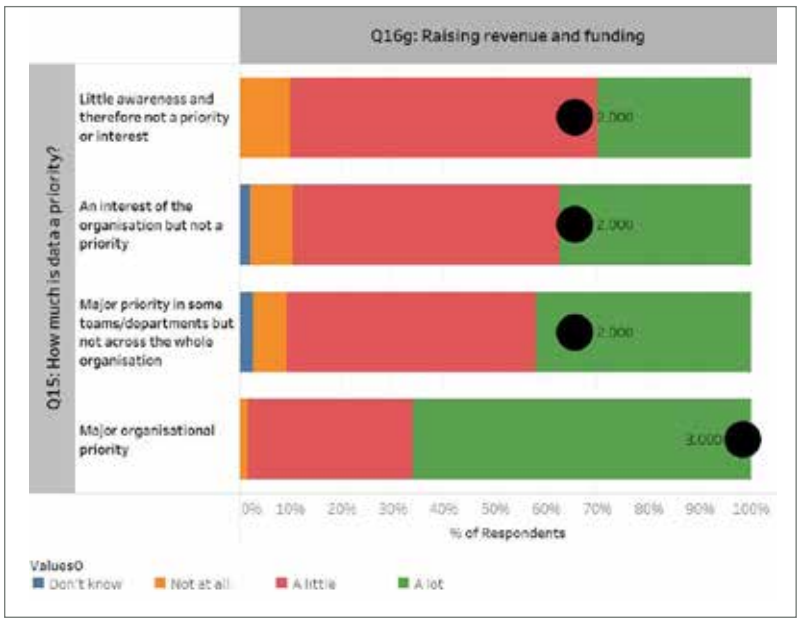
Those prioritising data either organisation wide or in some departments use it a lot more for measuring impact and outcomes.



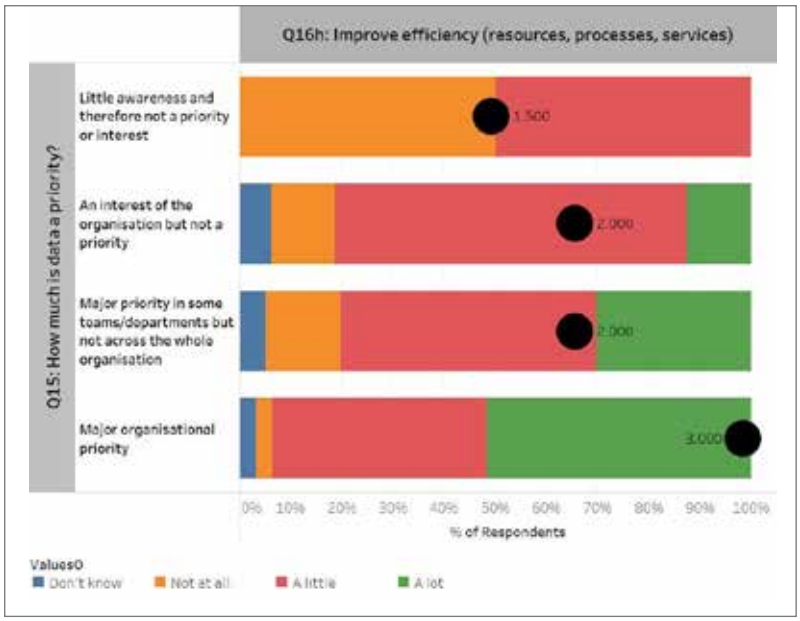
Those prioritising data organisation-wide use it a lot more for learning and evaluating what they do. Where it's an interest or a priority only in some departments they're more likely to only use it a little. Those where there's little data awareness, hardly at all.



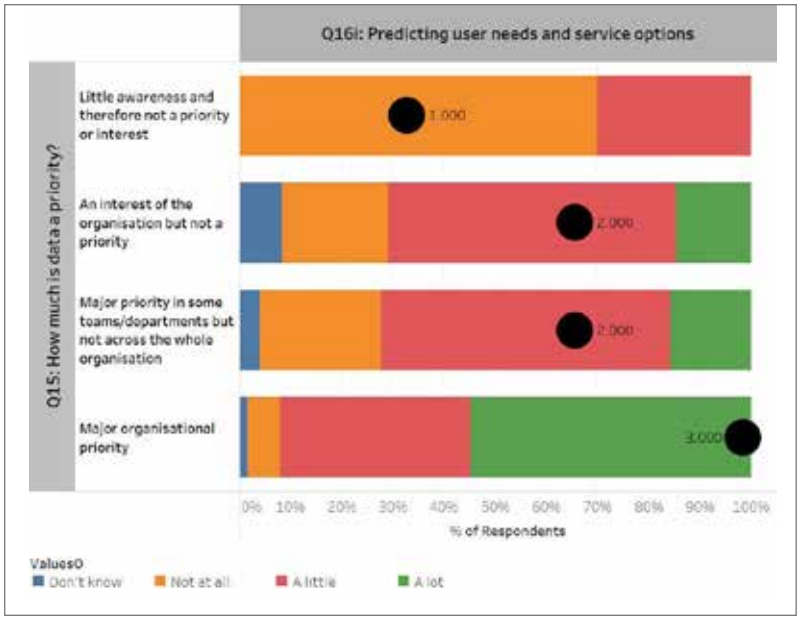
Those prioritising data organisation wide use it a lot more for influencing policy makers, funders and partners.



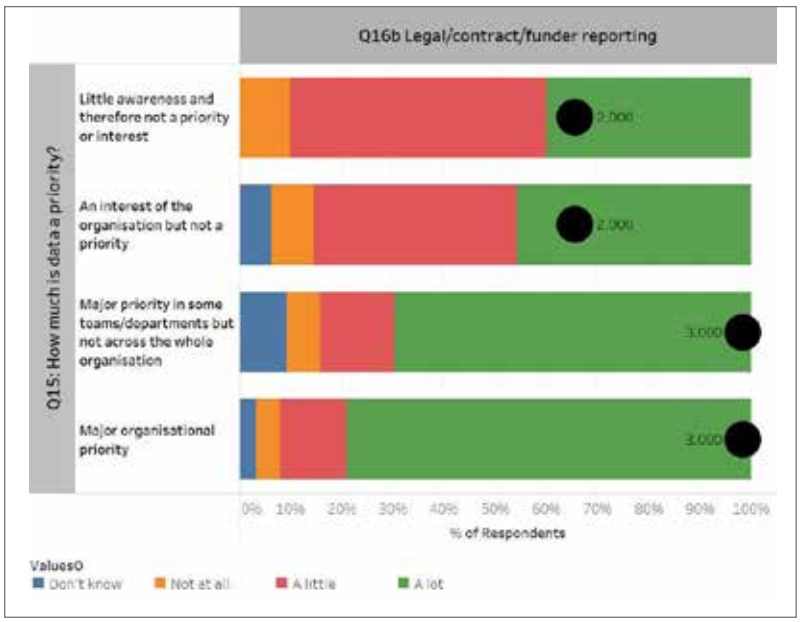
All organisations use data for raising revenue and funding. Those prioritising organisation wide use it more for this purpose.



Those prioritising data organisation wide use it more to improve efficiencies. Others use it a little and those where there's little awareness hardly at all.



Those prioritising data organisation wide are likely to use it a lot more for predicting user needs and service options. Others use it a little but those with little data awareness are unlikely to use it at all.



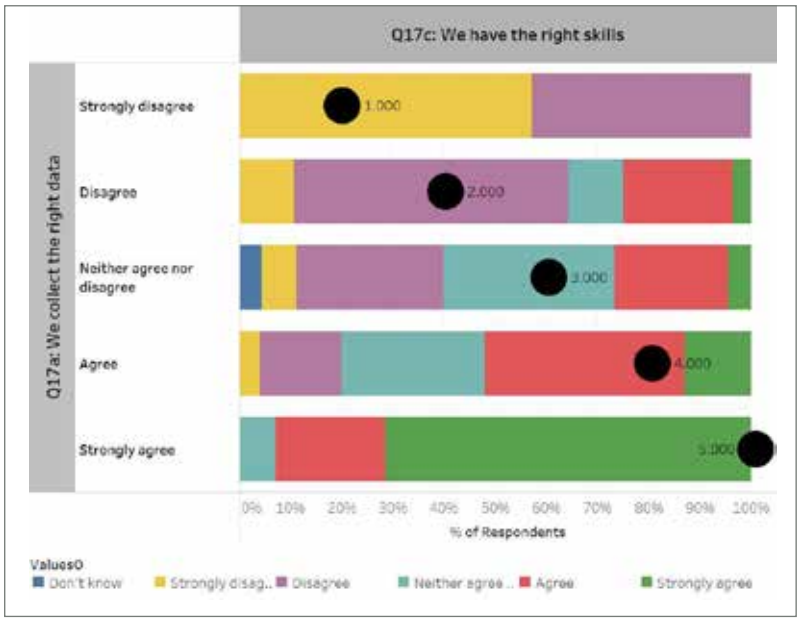
All organisations use data for legal/contract/funder reporting. Those that prioritise it either in some teams/departments or organisation wide are more likely to use it a lot for this purpose.

II) EXPLORING DATA QUALITY, SKILLS, TOOLS AND INVESTMENT

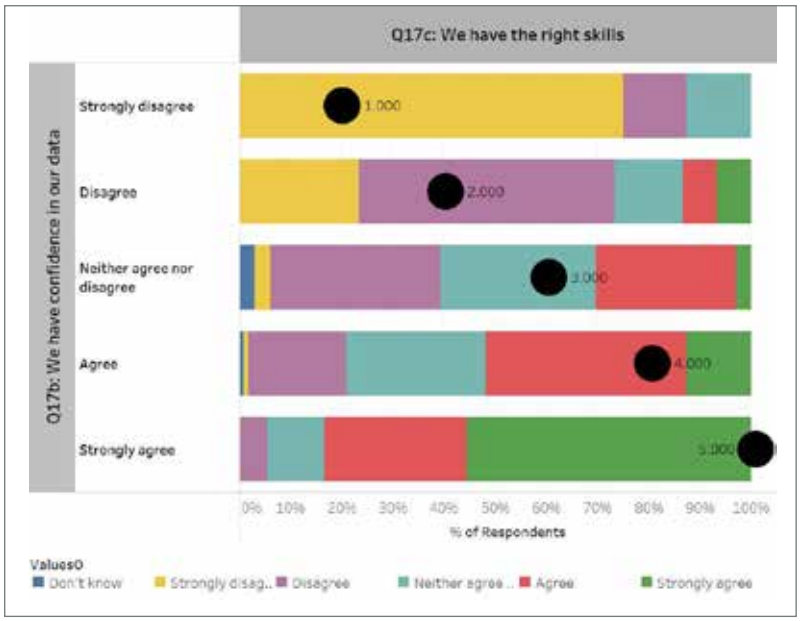
In the charts below we explore pairs of questions as shown in the grey boxes. The black dots represent the median for the matched question pairs. The number next to the black dot refers to the value of median for the two questions as follows:

1= Strongly disagree
2= Disagree
3= Neither agree nor disagree
4= Agree
5 = Strongly agree

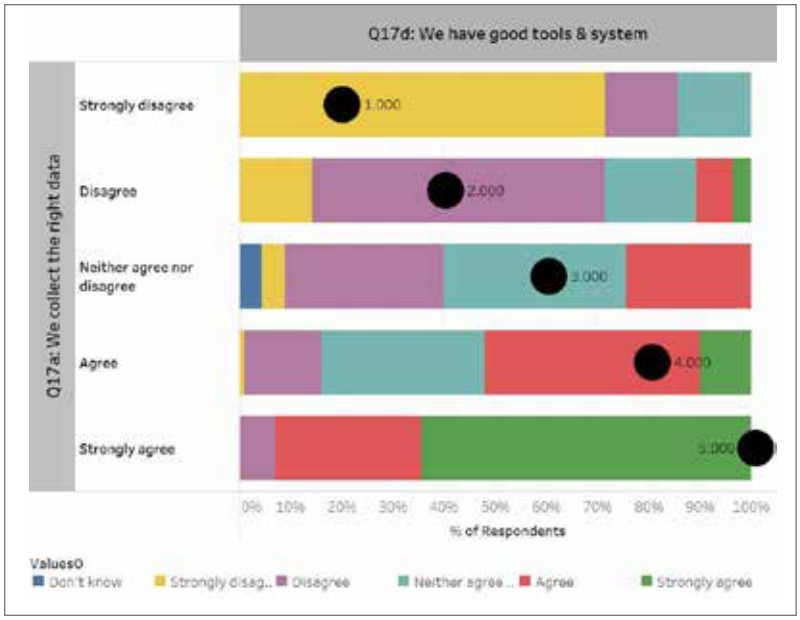
Any non integer number means the average falls between two categories. (e.g. 2.5, the median falls between category 2 and 3 according to legend above).



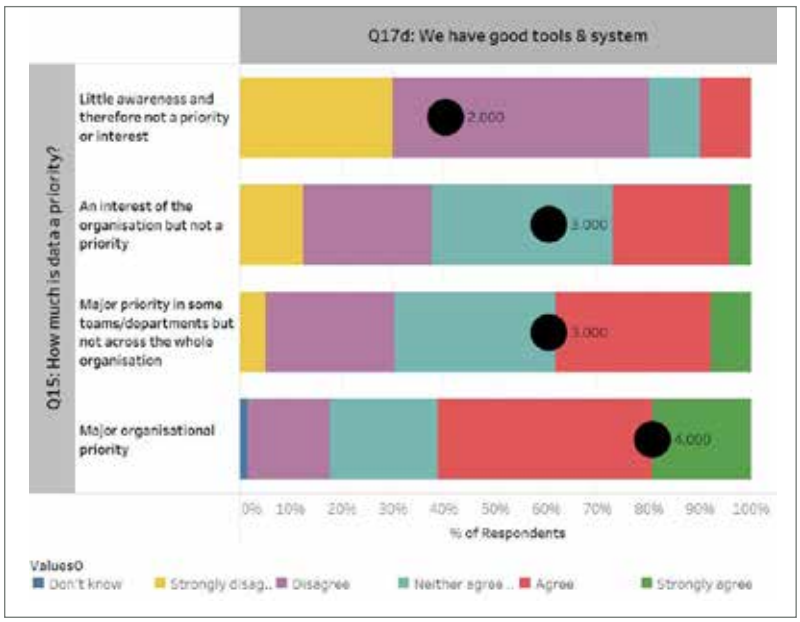
Having the right skills is highly correlated to collecting the right data.



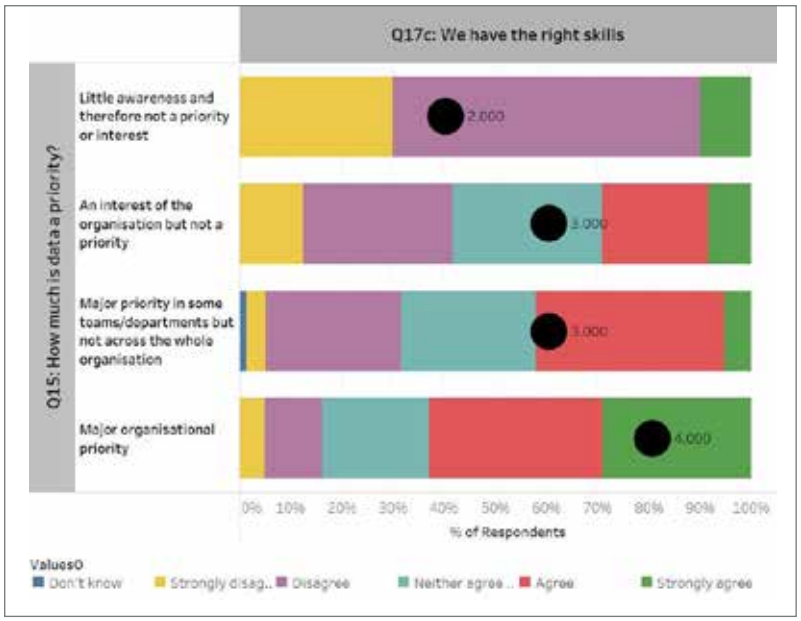
Having the right skills is highly correlated to having confidence in the data.



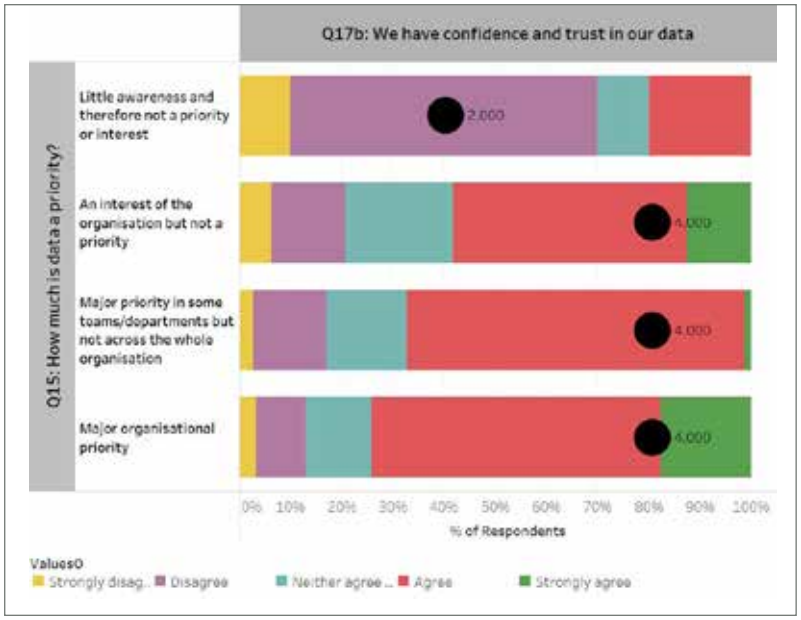
Having good tools and systems is highly correlated to collecting the right data.



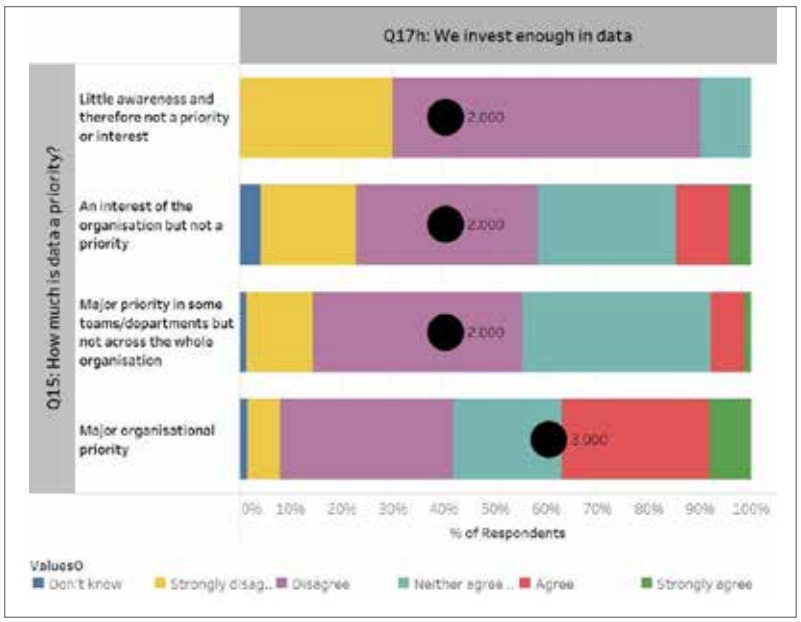
Those where data is a major organisational priority were likely to agree they have good tools and systems. Others where it's a priority in some teams/depts, or where it's an interest but not a priority were likely to be neutral. Those with little data awareness were likely to disagree.



Those where data is a major organisational priority were likely to agree they have the right skills. Others where it's a priority in some teams/depts, or where it's an interest but not a priority were likely to be neutral. Those with little data awareness were likely to disagree.



Most organisations that prioritise or are interested in data are likely to agree that there's confidence and trust in it. However where there's little awareness and it's neither a priority nor interest, they are likely to disagree that there's trust and confidence.



Those where data is a major organisational priority were more likely to be neutral about whether they invest enough (with a balance of those agreeing and disagreeing). All the others were more likely to disagree.

Appendix 9
Social Sector Data Maturity Framework Detailed version

This Data Maturity Framework has been developed specifically for the social sector. It was created in partnership by Data Orchard CIC and DataKind UK as part of the Data Evolution Project.
www.dataevolution.org.uk.

It presents the five stages of progress in data maturity for organisations: Unaware, Nascent, Learning, Developing and Mastering together with the seven key themes: Leadership, Skills, Culture, Data, Tools, Uses and Analysis. It can be read either vertically by stage, or horizontally by theme. The framework is set out over seven pages, one page per theme.

Stage → / Theme + subtheme ↓		Unaware	Nascent	Learning	Developing	Mastering
Data	**Collection**	• Limited data (if any) collected. • Usually collected only for quarterly/annual funders/contractors/legal or financial purposes. • Manual collection	• Data collection and recording is patchy and inconsistent.	• Data collected is reviewed to assess how meaningful, relevant and useful it is. • Data becoming richer, more relational and therefore versatile.	• Data requirements clearly defined and more consistently collected. • The organisation tests how relevant, meaningful and useful data is. • Richer data collection with more integration/alignment between systems reduces duplication, inefficiency and error.	• Rich, versatile, re-usable data for multiple purposes and audiences. • Staff and volunteers are trained in data collection. • Collection is automated where possible.
	Sources	• Internal ad hoc. • No external data sources.	• Internal systems. • Occasional use of external information sources and research relating to the wider context of the organisation's work.	• Additional internal and external data is sourced. • Internal data (usually in silos).	• Internal data is being sourced at a transactional level. • Open data is occasionally used in some teams/depts to gain insights, identify gaps.	• Internal sources rich, well established and versatile. • Compares its data with other organisations through shared measures and benchmarks. • Regular use of valuable open/public data sets.
	Quality	• Infrequently, if ever, updated. • Not checked for validity or accuracy.	• Rarely updated or cleaned. • Data isn't regarded as meaningful or useful beyond meeting legal/funder/contract requirements. • Little knowledge about what's meant by data quality. • Mixed levels of confidence and trust in data.	• Maintained and quality checked on an occasional basis for completeness, accuracy and validity. • Most data is usable but some errors remain and are not addressed. • The organisation knows how good or bad its different data sets are, and therefore which sources can or can't be trusted.	• Data is monitored for quality including completeness, accuracy, and validity. • Tools and systems exist for cleaning and maintenance. • Fairly confident and trusting of data quality.	• Knows its data is relevant, meaningful and useful. • Invests in resources to collect, clean, maintain, and manage data well across the organisation. • Very high levels of confidence and trust in data quality.
	Assets	• Nobody aware or interested in the organisation's data assets.	• Know where most data is but there's probably more.	• Data assets known but not formally recorded.	• Recorded lists all data assets (possibly only at dept level).	• Maintain full inventory of data assets with data dictionary, clear ownership, review periods, development plans for each.

Stage → / Theme + subtheme ↓		Unaware	Nascent	Learning	Developing	Mastering
Tools	**Storage**	• Data is stored inconsistently, if at all (much of it in filing cabinets).	• Basic database, spreadsheets and paper used for recording data.	• Data not consistently collected or organised and held in a range of systems all separately managed. • Limited ability to store, manage and analyse increasingly large volumes of data.	• Data held in appropriate databases (or other technologies) accessible by expert users.	• Data held in singly accessible database or in ways that allows for single access e.g. data warehouse. • There's capacity to store manage, and analyse increasingly large volumes of data.
	Quality of Tools	• Tools not available or not fit for purpose.	• Tools (possibly custom built by a volunteer or staff member) are limited. • May not be up-to-date, don't meet current needs, and may not be documented or supported.	• Tools may allow some inbuilt analysis and reporting but most often data has to be extracted for analysis. • Joining data or analysis across teams requires time-consuming manual exporting and re-stitching. • Hence offer limited development potential for future needs.	• Most tools up to date with support available. Limitations of poorer tools are understood, can be worked around, or have planned replacements. • Some integration beginning to occur between systems e.g. databases/CRM/website/survey/finance/file management. • Tools are starting to join and share data and analyses effectively across the organisation. • Some automated reporting, aligned data collection and analytics.	• Tools able to access data directly, for both experts and non-experts. • Powerful, high quality tools for collecting, managing and analysing data. • Can join, relate and share data across teams in the organisation, and with external data sources.
	Investment in Tools	• No planned investment in any tools, systems or infrastructure.	• Other tools may be used/ acquired as part of a project if required by funders/partners/contracts. • Invest when crisis occurs or about to occur with systems – usually for temporary fixes.	• Tool are usually one-off purchases within departments, may be previous generation and rarely if ever upgraded/updated.	• Occasional major investment in new tools/integrations across the organisation. • Upgrades are budgeted for when tools are purchased.	• Ongoing investment in developing and improving tools, systems and infrastructure. • Analytical infrastructure is a priority.
	Types of Tools and infrastructure	• Data mostly held on paper or in spreadsheets. • Spreadsheets not used analytically. • Basic finance software.	• Spreadsheets and reports in databases may be used for basic analytical tasks. • Possibly slightly more advanced finance software and website with no analytics.	• Tools likely to include databases, CRMs, spreadsheets, more sophisticated finance software and various other tools usually used as operational rather than analytical stores. • Possible advanced analytical tool e.g. SPSS, R or SAS, used for basic data processing or simple descriptive statistical analysis.	• Sophisticated databases used. • Advanced tools being used for analytics in some depts. e.g. R, SAS, SPSS, Python etc. • Models using batch analytics being used to understand and create efficiencies in processes. • Advantages/pitfalls of open source tools are understood. • Basic use of intelligence suites.	• Integrated accessible single database. • Advanced analytics and data science tools present throughout the organisation. • Analytical models may be deployed in websites and other interfaces. • Automated reporting e.g. through dashboards. • Self-service analytics available both inside the organisation and by partner organisations. • Open source systems are used where appropriate.

Stage → / Theme + subtheme ↓		Unaware	Nascent	Learning	Developing	Mastering
Leadership	**Attitude**	• Not interested in data at all.	• Some awareness, don't see the value.	• Know it's important, are interested and curious though not convinced.	• Becoming engaged, supportive and active.	• Value, plan and prioritise data as a vital organisational resource.
	Investment and Plans	• No plans for investment in data and analytics.	• Very little investment though some departments may do so 'below the radar'. • No plans yet.	• Invest at a minor level. • No plans yet but interested.	• Beginning to commit significant investment. • Starting to plan and prioritise organisation-wide.	• Invest substantially in continuously improving data collection and analysis aligned to business plan.
	Alignment to Business	• No business plan.	• Written business plan with no measurable or defined targets.	• Business plan with some defined and measurable targets. Data collection/ analysis may not align with plan.	• Overarching business plan with more refined measurable targets, including some impact measures with collection and analysis mostly aligning.	• Overarching business plan with clearly defined measurable targets based on outcomes and differentiated impact, forecasting, prediction of need.
	Capability	• Don't use data at all for decision making instead use gut feeling, experience and what seems to work. • No data or analytics expertise or understanding.	• Typically use data either about what happened in the past (but not trends) and verbal accounts of what's happening for decision-making. • Limited or very basic data and analytics experience and expertise.	• Occasionally question the data they are given. • Might use past and current data for decision making with some simple trends analysis. • Learning through experience, building adequate skills.	• Ask the right questions of their data. • Monitor what's happening in the present as well as past trends. Some exploratory forward-looking research and predictions. • Understand different skill sets within data and analytics. • Data champion within senior management. Addressing skills gap in leadership as a whole.	• Fully understand how to use data to improve what the organisation does. Drive the questions and what data tells them influences how they act. • Use past, present and forward looking data for decision making. • Range of people with data analytics expertise amongst the leadership including senior board member with a dedicated data role.

Stage → / Theme + subtheme ↓		Unaware	Nascent	Learning	Developing	Mastering
Skills	**Internal capacity**	• No staff commitment beyond basic administrative level and finance roles.	• Responsibility for data collection and control, tends to be at administrator level. • Different staff collect, manage and use data within other roles.	• Dedicated data people within different teams or roles though with limited capacity to fulfil the task.	• Several people responsible for data in different roles/teams and collectively engaged. • Senior person/team bringing organisation-wide data together.	• High levels of staff commitment at senior, specialist, technical, and administrative levels.
	Roles and Skills levels	• Mostly count up what they do, minimal data recording, mostly on paper. • Little or no internal skills, training or expertise. • Most staff lack basic data literacy skills.	• Most analysis done by admin, finance and/or multiple staff using own systems aligned to their role/projects. • Basic/adequate skills and training. • Data literacy is patchy, mostly low, amongst staff.	• Adequate data analysis/reporting skills as part of their jobs. Beginning to invest in advanced skills development. • Most staff have a basic level of data literacy.	• Dedicated skilled analytics roles established with several people responsible for data in different roles/teams. Adequate to advanced skills. • Possibly a senior person/team bringing organisation-wide data together. • Increased general data literacy/ responsibility across the organisation.	• Senior data strategist embedded at heart of leadership decision making. • All staff trained in data skills with high levels of data literacy across the organisation. • Staff are able to independently manage/drive and maximise data analytics to an advanced level.
	Access to knowledge and expertise	• Don't know (and are not interested in) where/how to find any external support or expertise.	• Unlikely to know how to access impartial advice and support. • Occasional support from trustee/pro-bono volunteers relating to database/finance or reporting. • Not involved in any networks relating to data and don't access information/ learning opportunities.	• Fairly regular use of external support and advice, mostly around specific tools, systems or projects e.g. CRM, fundraising, marketing or research. • Occasional engagement in learning via user support networks. • Maybe members of data groups but attend infrequently.	• Ongoing use of multiple sources of advanced external expertise. • Beginning to explore how to maximise data use. • Regular engagement in learning networks and innovation (usually allied to specific roles/functions).	• Access to established and growing range of suppliers/networks/partnership providing advanced expertise e.g. data scientists. • Staff develop specialist expertise and regularly update skills, knowledge and learning e.g. using MOOCs, Stackoverflow, RSS . • Becoming the experts that others use as a resource.

Stage → / Theme + subtheme ↓		Unaware	Nascent	Learning	Developing	Mastering
Culture	**Team Approach**	• Nobody is interested in data. Data coming in and out of the organisation is only accessible to a single person or team, usually junior staff. • Data requirements seen as a chore.	• Data is seen as the responsibility of 'someone else' (perhaps an individual or team/dept). • Recognition that data should be collected but it is not seen as a 'whole team' activity.	• A few people occasionally discuss data relating to specific depts/projects at operational level.	• Whole organisation use of data is beginning to emerge (with mixed reactions). • People from different teams and at different levels regularly discuss data and how to act on it.	• Seen as a team effort and critical asset for every part of the organisation. • Data is used to bring the organisation together around common goals, understandings, and outcomes.
	Self-Questioning	• Personal opinion, observation, passion and belief are used for decision making.	• Data mostly sought out and used to support and evidence what the organisation already believes or knows. • Reluctant to accept data that contradicts existing views or ideas.	• Data is starting to be recognised as important at a more senior level. • Beginning to ask more challenging questions of the data, though mostly about the past.	• Specialist staff within some depts/ projects/services are starting to use data to ask difficult questions and challenge. • Use forecasts to challenge views of future performance. Aware of difference between correlation and causality.	• Very comfortable using data to: ask difficult and complex questions; challenge practices, views and opinions, including forward looking stances. • Aware of the practical difference between correlation and causality. Willing to fully accept data that disagrees with preconceived notions
	Openness and Sharing	• Data is never shared internally or externally.	• Data sharing happens occasionally. • Organisation's culture doesn't encourage data sharing across teams. • People sometimes verbally report on data as part of discussions.	• People would like to share more but are constricted by access/permissions/barriers. (Mixture of culture, policy and technology). Thus access to information can be slow and frustrating. • Occasionally data insights are shared with partners and in the public domain.	• People/ depts/ services share data often, sometimes at detailed level. • External data sharing is done on an aggregated basis, insights are shared online • Perhaps some involvement in benchmarking/shared measurement in some areas e.g. outcomes frameworks.	• Internal openness and data sharing fundamental to the organisation's culture, subject to data protection. All relevant data is easily accessible to everyone who needs it. • Data insights and evidence are publicly available inc anonymised raw data (where appropriate). • Extensive data sharing with partners, networks, stakeholders to: explore shared problems and solutions; measure and improve quality and impact; and define future shared data collection. Data may be shared with beneficiaries as part of service/support.
	Governance	• Don't have any policies related to data. • Minimal, if any, security around data. • No knowledge or training on data protection, security or management.	• All data is controlled by and the responsibility of one person. • Basic policies for data protection and security may be in place but are not monitored or enforced. • Little or no staff/volunteer training.	• Data protection and security policies are in place and occasionally reviewed. • Access to data limited by default (rather than design). • Staff and volunteers have basic training. Senior management have a limited understanding of legislation and best practice	• Data protection and security policies and practices are well established and generally good. Some access rights defined. • Identified people have responsibility with more advanced training and skills. Back up plans have been tested. Potential risks identified though not all tested. • Trustees and senior management keep abreast of current legislation and best practice.	• Data governance policies and practices are robust to ensure data is safeguarded. • Policies specify rights and privileges regarding access to organisational and beneficiary data. • Widespread knowledge and skills. • Ongoing monitoring and improvement of practices and potential risks. Trustees and senior management keep abreast of future changes in legislation and best practice. • Robust external data sharing agreements and protocols in place with trusted partners.

Stage → / Theme + subtheme ↓		Unaware	Nascent	Learning	Developing	Mastering
Uses	**Reasons for collecting and analysing data**	• Collect and use data only for requisite purposes e.g. legal/ financial compliance/funder/ contract compliance. • Record clients and beneficiaries and activities in order to operate and to fulfil external reporting requirements.	• Collect more data than required by legal/funders/contracts. • Most data is based around activities and outputs, basic financial analysis and forecasts. • Raising income likely to be key focus for additional data collection to understand performance e.g. fundraising events, donors, shops, sales.	• Historical service user/customer/project level analyses are used within depts. • Collect considerable amounts of data on beneficiaries/customers and how they engage with services/products/campaigns to help manage delivery and drive engagement. • Beginning to capture data on outcomes and exploring how to measure these in consistent way. • Use data for income generation with some financial forecasting taking place.	• Used for a range of purposes, particularly to routinely measure outcomes and impact. • Services/products/campaigns measure and manage– monitoring performance on how, when and where these are used and by whom. • Starting to explore/test assumptions about the difference it makes in some projects and programmes. • Monitor what's happening in the present as well as what's happened in the past. • Manage and improve staff/volunteer performance • Forward looking analysis in some areas mostly around reach. • Understand why service users behave in certain ways	• Used extensively and in inter-linked strategic ways for a very wide range of purposes. • Evidencing and improving outcomes and impact is primary and so experiment to identify how to optimise impact. • Predict user needs and service/product options. • Learn, evaluate and build knowledge. • Monitor processes and service user/customer journeys. • Influence policy makers, funders and partners to create positive change. • Understand why users behave in certain ways and how to influence behaviours.
	Benefits and Rewards	• Little or no benefits or rewards. • Continued funding may be seen as the only reason for collecting some data.	• Rewards mostly around improved understanding of beneficiaries, income generation. • Able to feedback information to funders around specific projects.	• Evaluate performance of services/products/campaigns. • Can demonstrate work being done for specific user groups in specific projects. • Able to start leading conversations with funders and partners using data. • More effective fundraising. • Better able to adapt to changes in external environment. • Starting to use own data as well external sources to evidence need and some outcomes and impact.	• Operations and services are more effective and efficient. • Can demonstrate work done for users across the whole organisation. • Starting to differentiate between different approaches, and understand what's working and what's not. • User group segmentation allows better understanding of needs, enabling creative development of services/ products /campaigns. • Can coherently make the case to funders/investors/clients for existing and new services, products, or campaigns. • Services/ products/campaigns targeted and optimised at a project or department level.	• Outcomes and impact are understood and effectiveness can be predicted and optimised. • Improve efficiencies (resources, processes, services/product delivery). • Products, services and campaigns are continuously improved. • Robust evidence builds credibility and influence. • Partnerships and networks are strengthened. • Effective planning and decision making. • Internal and external stakeholders have direct access to appropriate analyses. • Design and delivery of services/products campaigns is optimised at an individual/personal level.

Stage → / Theme + subtheme ↓		Unaware	Nascent	Learning	Developing	Mastering
Analysis	**What is analysed**	• Limited analysis of financial and contracted data.	• Analyses start to explore service users/customers and target audiences. • Analyses may include external context e.g. use sources of data to evidence need/problems the organisation seeks to address.	• Whole organisation analyses are beginning to be performed (beyond financial analysis). • Reports are collated manually using different sources of descriptive data about what's happened in the past.	• Some use of more advanced analytics to understand where/why things happen.	• Data from across organisation is brought together in an automated way from different sources to provide an organisational analysis. • Analysis extends beyond the organisation to allow investigation of causes in the wider context.
	Techniques	• Mainly simple summation, counting up numbers.	• Basic analysis, using counts and spreadsheets. • Use of basic charts.	• Comparative trend analysis conducted over time (perhaps on an annual basis). • Some routine automated analysis and reporting. • Some strategic analysis done on an adhoc basis.	• More consistent and regular approach to data reporting and trends analysis. • Occasional use of predictive analytics in some areas. • Some attempts at A/B testing. • Clustering and root cause analysis. • Complex, analysis and querying done by some specialists in the organisation. • More real-time dynamic reporting. • Testing out data visualisation	• Cooperative analyses are performed with partners/other agencies. • Predictive models are used to plan for the future needs of beneficiaries, to target services and to maximise income to deliver these. • Advanced approaches are available and used: network analysis, deep learning, textual analytics.
	Presenting and Communicating	• Data is not used in reports – anecdotes are preferred.	• Analysis and report creation skills may be variable. • In some cases quality of analysis may be dubious and people reading reports/analysis may be difficult to interpret and understand.	• Data is arduously reworked for presentation in static reports to different stakeholders and audiences. • Variable quality of analysis and presentation.	• Static and dynamic reports, some accessible to managers to independently access or request. • Possible use of some dashboards. • Wider stakeholders are satisfied with the quality of analysis and reporting.	• Data visualisation delivers meaningful analysis in attractive, interactive, accessible ways to different audiences. • Non data specialists are able to interactively explore, analyse and report on the organisation's data.

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