



# 4

## Activating for a Data-Capable Future

So far in this book, we have argued for non-profits building their capability for working with data. We have presented a range of small, practical data projects with non-profits undertaken through our research in 2017–2022. These supported participating non-profits to build aspects of their data capability by helping leaders and staff to consider the skills, technologies and management practices that would be needed to match their different missions and contexts. We used a *collaborative data action methodology* that draws on diverse skills and experiences within and across organisations, enabling people to learn in practical situations. Projects generated new insights about social challenges, communities and the value of internal organisational data. This made collaborating with data a journey of surprises and creativity as well as a journey of learning.

In this final chapter, we return to our initial idea of giving a rationale for data capability in the non-profit sector, suggesting benefits and stages. In the middle, we give some activities to ‘take to your manager’ to get started, and thereafter to move beyond an initial data project. We also suggest some strategic actions at organisation, sector and funder levels that would help to make data analytics part of a new ‘business as usual’. The latter part looks to the future and considers how emergent data initiatives could address current challenges, drawing on some illustrative

examples. We conclude by reflecting on our learnings from the research and suggest areas for further studies. The content seeks to stimulate but also to reassure. We think achieving high-quality data analytics work targeted at social good is a viable prospect for non-profits; but more than that, we propose it is an essential underpinning for a bright future.

## **Sectoral Benefits of Non-profits with Data Capability**

Throughout this book, we have made various claims for benefits at the *micro-* (individual organisation) through to the *macro-scale* (community, society and sectoral structures) for non-profits building data capability. In this chapter, though, one of our aims is to provide practical material to ‘take to your manager’ or board. As a first step, we summarise three reasons why non-profits should invest in building data capability: to up-skill for increased organisational competence; to build a more resilient, interconnected non-profit ‘field’; and to enable new forms of social justice activism.

### **Data Capability and Organisational Competence**

Let’s first check-in on the contention that data capability is a key building block for non-profit organisational competence and agility in the current global environment. Sian Baker, co-Chief Executive of Data Orchard, a UK-based social business, recently stated that many of her consultancy’s clients reported that having internal data capability was an essential enabler of their response during the COVID pandemic (Vaux, 2021). For example, UK-based housing service EMH Group was able to rapidly identify their tenants most in need of welfare checks, thanks to a recently enhanced internal database, and the Herefordshire Food Poverty Alliance (UK) used the findings of a 2019 food security risk audit to rapidly provide support to clients in 2020. More widely, there is increasing recognition that government and non-profits need to be able to effectively manage data in order to respond to ongoing social disruptions and

disasters caused by public health challenges, climate change and military conflict in our new age of permanent crisis (Social Ventures Australia and the Centre for Social Impact, 2021; Riboldi et al., 2022). In particular, non-profits need to know what data they have, what data they lack, and how their staff can work ethically and effectively with data.

## Data Capability and Field-Building

Acknowledging there are wider gains to be had, Riboldi et al.'s (2022) report, capturing post-pandemic Australian non-profit leaders' views, showed a clear consensus for a move away from charismatic and hierarchical leadership practices, towards community engaged, collaborative decision-making. Leaders reflected on the near impossibility of building new partnerships during the COVID-19 crisis, pointing to the significance of being able to leverage "pre-existing relationships, data and insights" when reaching out to government agencies for funding and support (Riboldi et al., 2022, p. 97). Collective working has long been urged for the non-profit sector (Austin and Seitanidi, 2012; Butcher, 2014). Working with data can be a driver and underpinning structure for non-profit collaborations. In our projects we have shown multiple ways and levels that data projects work to build collaborations (see Chaps. 2 and 3).

Working collaboratively to harness and activate data resources can help to build preparedness and resilience for crises by generating good quality data pools. It can draw stakeholders together to learn how to work with each other and to build social capital. Discussing the idea of *field-building*, McLeod Grant et al. (2020) note that non-profits need to collaborate so that bigger and stronger organisations can support smaller and niche non-profits. This will help to keep the sector diverse and able to meet nuanced needs of different groups and contexts. Resolving social challenges needs a range of organisations to work together as no single organisation can resolve complex social challenges. The field needs to join forces on infrastructure and capabilities so it can afford to do the formidable job it needs to achieve (McLeod Grant et al., 2020). Collaborating with data can be a catalyst and enabler for wider collaboration.

## Data Capability and Social Justice Activism

We also want to acknowledge and promote the potential of data analytics for social good as social justice activism. This takes non-profits' data work into a space beyond using it to resolve their own operational challenges. It seeks data work that positively spills over into activating social change in the community (Maddison & Scalmer, 2006). In this sense, non-profits could *apply* their data capability, access to multiple datasets and knowledge generated from analysing datasets. They could direct these resources to advocate for marginalised people within social policy processes and to enable citizens themselves to be active with data, through spreading digital and data skills. Here, we are saying that by engaging citizens to work with data, non-profits can empower them with data skills, and with access to new knowledge assets about their communities. Data for social good as activism aligns with Williams' (2020) depiction of social data projects as *data action*. She explains activism as being about inclusion of diverse participants, including citizens, tackling social challenges using different datasets and about ground-truthing with grassroots perspectives. Wells (2020) also highlights the credentials of data for good as social activism, saying "data for good means data for all, prioritizing equity, supporting local leaders, and questioning power dynamics, with ethics as a top priority" (para. 1).

Involving the wider community is crucial to avoid repeating past mistakes involving abuses of data that have led to risk aversion and fear. Making active steps to engage citizens is significant in shifting power dynamics. Here, we draw on distinctions made by community informatics researcher Michael Gurstein (2011), for example, who argued that making data openly available (as in open data initiatives) has tended to merely hand data assets to those already powerful through controlling and running systems. Gurstein pointed out that active steps to engage beyond managers and leaders are vital for empowering marginalised or disadvantaged groups. Similarly, Kitchin (2013) highlighted that money spent on generating accessible re-used data resources is money not spent directly on supporting marginalised citizens. Consequently, access to data must be democratised

and citizens actively empowered to engage with data and inform its application. If not, increased forays into data analytics by non-profits might be seen as representing a diversion of scarce resources to bolster power among those who already enjoy it.

### Three Stages of Non-profits' Data Capability

Building data capability, then, is significant to non-profits' business competency, field-building and supporting social change. At its most basic, participating in a data project using collaborative data action can be pitched to leaders as an *efficient learning programme* about working with data. It is significant that non-profits should be skilled and knowledgeable about working with data as the sector comes under increasing pressure from funders seeking accountability and from technology corporates and data social businesses seeking market share. Salesforce, for example, a US software company specialising in customer relationship management software, has a suite of products specially for the non-profit sector (Moltzau, 2019). Googling non-profit data analytics produces multiple pages of blogs and news ephemera generated by businesses aiming to persuade non-profits to engage with *their* data products and services. The non-profit sector needs data capability so it does not end up in thrall to Big Tech. Non-profits need know-how so they can be discerning about what is offered and able to ask questions to probe the 'black box' of commercial data products and systems. On the other hand, non-profits need data capability so they can collaborate as a field with government and philanthropic foundation procurers about sensible data generation and reporting.

Given that it could be difficult to convince non-profit leaders, board members or staff to divert resources to building internal data capability, we do not recommend every organisation to jump straight into complex arrangements, like participating in a data collaborative. Nor do we suggest that every non-profit should seek access to open or commercial datasets or undertake deep dives into sensitive data. Instead, building capability could take an incremental, staged approach:

**Stage One: Build Organisational Data Capability** The individual non-profit organisation builds off its existing data skills, practices and technologies and uses these resources as a launchpad to develop and improve.

**Stage Two: Build Sector Data Capability** Extending out from internal capability, the organisation engages in data collaborations with others in the non-profit sector. Leaders and staff seek out like-minded collaborators who are interested in similar topics and questions and who hold useful resources.

**Stage Three: Build Community Data Capability** Clients, consumers and citizens are engaged to work in equitable partnerships with data. Beyond the non-profit and achieving its operational work in better ways, this stage gives potential to actively extend data capability to the community.

## Data Analytics as Business as Usual

In Chaps. 2 and 3, we focused on data projects. However, that doesn't show how data analytics can become embedded as part of a new kind of 'business as usual' for non-profits. It doesn't consider *what happens before* and *leading up to* a data project—or what happens *after*. Here, we cover those phases. Looking first at preparing for a data project and then suggesting activities for proceeding after an initial data project has been undertaken.

### Getting Started

In our projects, it has sometimes taken multiple discussions before organisations commit to participating in a data project. Where organisations have been quicker to commit, this tends to be facilitated by interactions with one or more enthusiastic organisational *champions*. These participants also often help by pulling together other interested staff and leaders. Undertaking our data projects has given some pointers about what could help a staff member seeking to take this book to their manager to argue for their organisation

‘getting into data analytics’, perhaps by engaging in a data project. Below are some of those pointers.

**See Data Projects as a Way to Learn About (Your) Data** Doing a small data project gives non-profits’ staff and leaders the opportunity to experiment with data. It allows for dialogue and collaboration with colleagues within an organisation through a novel opportunity to test the creative potential of their own organisation’s datasets.

When undertaking practical data projects with non-profits, we tended to find similar concerns at the start. Many of our participants recognised that their organisations had lots of data and that they should or could be doing something with it. However, participants didn’t clearly understand what data they had, what data they lacked—and how they might ask questions and answer them with data. Doing a data project, using a collaborative data action methodology, can address these issues through engaging colleagues collaboratively with their data and their own organisation’s challenges.

The key benefits for organisations working on practical data projects (such as those in Chap. 2) were that participants learned new hands-on skills for *working with* specific software programmes, statistical models or modes of data visualisation. Much of that learning was about realising they didn’t need to become data scientists. Rather, they learned new languages and practices that enabled them to cooperate across silos and specialisms to understand the value of data in their own organisational contexts. This, in turn, allowed participants to assess what was required in their organisation to realise the kind of data capability they needed to build. By involving a range of staff including managers and frontline workers, there was scope for learning about interactions between data and the roles of different staff members, including understanding the benefits of collecting complete datasets and of being clear around consent to use and re-use data.

**Identify Internal Data Champions and Collaborators** Leadership is a key aspect of a data project. Those seeking to do a data project should make early moves to identify senior organisation champions who can drive it. These people will be the connectors with internal teams as well as working

with any external *data collaborators* (i.e., partners that you may have in other organisations). This champion role involves organising meetings and co-ordinating data protocols or brokering any necessary agreements with external data collaborators (including agreements to identify and share data, as discussed in Chap. 3). The role should not be delegated to junior staff unless they have sufficient authority (and time) to undertake these tasks across the duration of the project. While data champions have a lead role, it is significant to have a range of staff involved in data projects. Frontline workers, in particular, will have knowledge of clients and community needs and the ways in which it is feasible to collect and use data.

**Identify External Data Collaborators and Resources** These data collaborators may be brought together to form the kind of multi-skilled and multi-resourced data analytics teams described in our projects. In Chap. 3 and the appendix, we outlined various policy institutes, university data labs and other types of institutions with experience in *data for social good* projects, and perhaps with access to technology and skilled staff resources. These might act as skilled data collaborators, but a non-profit can also work with other non-profits or other organisations with aligned mission and access to useful skills, resources and perspectives.

**Identify Funding** Undertaking a data project takes time, commitment and material resources. Whether a non-profit is keen to build internal data capability or collaborate with data scientists and social scientists as in our projects, sufficient funding is essential to ensure that all parties have the time and resources to do the work. The amount of funding required will vary according to the scale and scope of activities. In the projects outlined in Chap. 2, co-funding was provided by our university, philanthropic organisations, national and state government research funding agencies and our non-profit and other organisation partners. The senior researchers provided their time as an ‘in-kind’ contribution, but this practice is not always supported by universities. Other ways to access expertise could be through volunteer data scientists, as in DataKind projects (see Appendix). Other resources are also required in data projects including computers and software. While this may seem obvious at first glance, we mention these resources because their costs are not always factored into project grant funding applications.

**Be Vigilant About Ethics and Inclusion** Advocates and researchers globally have been promoting data for social good for nearly a decade. But the leaders in this field (e.g., Williams, 2020) also caution us about the ethical issues associated with data analytics. In Chaps. 1 and 3, we highlighted the importance of having appropriate consent and clarity around what consent is in place before considering what can be done with data. However, there are other concerns embedded even within datasets that should be borne in mind. Expertise in thinking about hidden ethical issues in data should be built into collaborative teams. As Guyan (2022) observes, even the collection of apparently simple demographic data involves decisions around which kinds of data will be collected—for example, regarding gender, sexuality and trans experience. These choices have significant impacts on who is visible within data and thus how communities, organisations and other phenomena will appear when data is analysed. Decisions based on these data will affect how resources and services are allocated. Similarly, ethical questions should be asked regarding the potential unintended consequences of collecting, collating and communicating with data. As Williams puts it, “data are people” (2020, p. 220). Even well-intentioned data projects can cause harm when they are used to justify surveillance or control of those whose data is analysed within them.

Williams (2020) warns against what she terms ‘hubris’ in data projects asking: “Why do we often think the data analyst can find the right questions to ask without asking those who have in-depth knowledge of the topics we seek to understand?” (p. xvi). As discussed at other points in this book, the centrality of citizens *in* data does suggest that non-profits need to work to include service users in data projects. While there are useful frameworks and approaches to inform this work, including around Indigenous data sovereignty (Carroll et al., 2020) (discussed in Chap. 1), tested methods and approaches for non-profits engaging their clients and consumers with data are a work-in-progress, we suggest. While waiting for ethics and inclusion practices specifically in relation to this field to mature, we recommend taking the advice of Williams (2020). She suggests using the best ethics practices currently available and ‘interprets’ Zook et al.’s (2017) *ten simple rules for responsible big data research* to provide a list of ethical principles for data action projects (Williams, 2020, p. 93).

## Moving Beyond a Data Project: Next Steps

Once one or more experimental data projects have been completed, enthusiasm fired up and initial data capability is built—then what comes after? How might an organisation work to embed data analytics into business as usual?

Investing for ongoing working with data could involve a non-profit adding new specialist staff and technologies or it could involve collaborating with other non-profits and others to access specialists and technologies. Either way, this suggests different ways of future working need to be considered.

It is increasingly suggested that any organisation, whether building their own team of data specialists or collaborating with others, should designate a *data steward* (Verhulst et al., 2020). Data stewards have a lead role in data governance and hold knowledge about an organisation's datasets, how they were collected and how they can be used. Data stewards can work with other organisations' data stewards if data is to be shared or used in data collaboratives. They are significant to generating “a richer institutional environment around data” (Hardinges & Keller, 2022, para. 23). The Open Data Institute further promotes the idea of *data institutions* (Hardinges & Keller, 2022). These can help to support those organisations that don't or can't afford to invest in dedicated data teams. Data institutions are advocated to help to “steward data on behalf of others” and to support data analytics (Hardinges & Keller, 2022, para. 1). They could take a variety of forms including data collaboratives. Working with a data institution implies the idea of a non-profit contributing to and being part of a type of collective data capability resource.

Our *Data Co-op* platform, which we used to enable the data projects described in Chap. 2, can be understood as a data institution (for other examples, see Appendix). The platform represents an expensive collective resource of data science skills, technologies and data management practices (<https://datacoop.com.au/>). As such, a non-profit can collaborate with us to use the platform to drive their data projects and their routine data analytics work *and/or* non-profits can work together to share data in collaborative projects (as in Case Study 3). Our *Data Co-op* is a cloud-hosted platform developed by our Social Data Analytics (SoDA) Lab in

collaboration with four other Australian Universities and with funding from the Australian Research Council. The platform enables researchers and collaborating partners to use secure virtual environments to access, connect, geospatially map and explore correlations between variables in datasets. These secure data environments provide close integration with Microsoft PowerBI data analytics, enabling advanced visualisation of datasets. Much of the data used in our projects is open public data, such as that of the Australian Bureau of Statistics (ABS), but the platform also has a secure data layer that can hold de-identified and encrypted datasets from collaborating organisations.

While working with a data institution is a way for non-profits to extend their data capability, access to data institutions is not ubiquitous across the world, at present. Generating further access to data-institution-like environments, though, is an area where philanthropy could invest to nurture the data for social good movement (Hendey et al., 2020).

Throughout this book, we have argued that building data capability is important for the future of the non-profit sector and supporting social good. However, non-profits are cash-strapped and there are structural barriers to them pooling resources. In this environment, helping to build sectoral non-profit data capability is a prime space for philanthropic foundations seeking to secure the future of social purpose organisations and to promote social innovation. Philanthropy could support a range of small to larger-scale data initiatives that would be impossible for individual non-profits to pursue alone. There are already some examples of philanthropy supporting non-profits' data capability internationally. As an example, [data.org](https://data.org) is funded by the Rockefeller Foundation and the MasterCard Centre for Inclusive Growth in the US to “democratize and reimagine data science to tackle society’s greatest challenges and improve lives across the globe” (The Rockefeller Foundation, 2022). In Australia, where we work, this kind of philanthropic investment to build capability in the non-profit sector has tended to happen in small projects (e.g., see Case Study 2, funded by the Melbourne-based Lord Mayor’s Charitable Foundation). Part of the challenge is that foundations traditionally tend to target topics or themes rather than capability-building and infrastructure. However, perhaps the pandemic—by shining a spotlight on the value of online services—might spur more action on infrastructure

funding by philanthropy as more reports highlight non-profits' technology-related capability gaps (Riboldi et al., 2022; King et al., 2022). Philanthropy could support place-based initiatives among collaborating non-profits like our City of Greater Bendigo Data Collaborative (Case Study 3), and as in the US National Neighborhood Indicators Partnerships (2022), and theme-based initiatives that support organisations to collaborate to tackle social challenges. Non-profits could be supported to work in data collaborations with each other and/or to work with existing or new data institutions.

## Innovations to Solve Data Challenges

The previous chapters have raised technical challenges in progressing data analytics that go beyond simply persuading leaders to get involved. Data sharing, for example, has been raised as perhaps the biggest challenge (Verhulst, 2021). The tendency of small experimental projects in the field is also problematical because it raises questions about the scalability of data analytics within the sector. The good news is that there are rapid changes taking place that are relevant to data for social good. At the same time as generating excitement, the sheer amount of potentially relevant innovation means it is hard to keep up with change. It's also hard to judge what might 'stick'. Here, we share a few examples of emerging innovations to highlight the field's dynamism and to highlight the need for critical thinking about the many opportunities. It's hard to tell how quickly, if at all, some innovations could affect non-profits' work with data and in some cases, whether the innovations actually are 'for good'.

Addressing the problem of many small projects, DataKind (an international data science volunteering organisation) has recently established a *Centre of Excellence* to build non-profits' data capability. A key pillar of work is termed *Impact Practices* (Porway, 2019). The idea built from staff of DataKind identifying that many projects they undertake with social services and non-profits are grouped around similar topics or harness similar techniques. With Impact Practices, DataKind aims to compile, make available and form collaborations around data analytics solutions addressing like topics. In this way, rather than each project starting from scratch and

working with DataKind to build something new, work in topics can be translated across non-profits targeting the same social challenge. Porway (2019) writes that work is moving from a *project-based model* to a *practice-based model*—featuring portfolios of data science projects by theme. In a blog announcing the new initiative, an example is given of many projects targeting early detection of disease outbreaks. Rather than building multiple small projects, Impact Practices will unite participants to “understand what data is available, and test real prototypes in the field to understand what’s really possible” (Porway, 2019, p. 3).

DataKind’s work is dedicated to solving problems of the non-profit sector, and it works internationally, suggesting strong potential for Impact Practices to translate to different contexts and sizes of non-profits, potentially widely influencing non-profit data analytics into the near future.

This transferability may be less likely for our next example of innovation, which is targeted at enabling data sharing. As highlighted in Chap. 3, data sharing between organisations is a significant challenge due to each having different arrangements for consent and privacy. Internationally, there are different privacy regulations around secondary use of data varying by country jurisdictions, for example, the EU General Data Protection Regulation (European Parliament and the Council of the European Union, 2016). To address problems of data sharing across government institutions and borders, the UN Committee of Experts on Big Data and Data Science for Official Statistics is running a pilot programme using Privacy Enhancing Technologies (PETs) (The Economist Science & Technology, 2022). Current work is targeting international trade data sharing between five countries’ national data agencies. PETs help data providers and data users to safely share information by using encryption and privacy protocols that allow someone to produce useful output data without ‘seeing’ the input data. They also ensure that anonymity of data will be protected throughout its lifecycle and that outputs cannot be used to ‘reverse engineer’ the original data (UN PET Lab, 2022).

This technology is exciting, but only recently initiated and occurring between national statistical offices so innovations developed could take a long time to filter down to become a technology that is routinely accessible to non-profits.

Finally, a concern we raise in various places is citizen involvement. We have noted an imperative to have citizens engaged in data governance and data use, but their inclusion can be hindered by fear of discussing data use and lack of easily useable engagement methods. Elsewhere, we've mentioned citizen data sovereignty initiatives—for example, EU-funded project DECODE (<https://decodeproject.eu/what-decode.html>) that is experimenting with ways citizens can decide what happens with their data (Monge et al., 2022). And we've also mentioned good practice in Indigenous data sovereignty that can guide work with citizens (Carroll et al., 2020). In some countries internationally—in this case, in Australia, where we work—*consumer data rights* laws have been established, ostensibly to enable citizens to understand their data and to use it for their empowerment. The Australian Consumer Data Right (CDR) is suggested to give citizens choice and control over the data that businesses hold about them (Australian Government, 2020). It enables people to transfer their data to another business to find products and services better tailored to their needs (Australian Government, 2022). Unfortunately, though, as highlighted by Goggin et al. (2019), the driver for this Act is actually to generate new data businesses and the way the Act is explained and promoted is directed at business, with little attention to educating and activating consumers in data literacy. As Goggin et al. (2019) conclude: “In Australia, it is notable that efforts to respond to concern [about consumer data rights] have come, not in the context of an overhaul of privacy laws or digital rights generally, but via efforts, by market-oriented policy bodies ...” (p. 12).

This is an example of government enthusiasm for data initiatives resulting in the advancement of for-profit data markets in which public data becomes a product that is commercialised by private developers (Bates, 2012). However, it also potentially serves to highlight an opportunity of where non-profits could harness emergent legislation to empower and advocate for consumers. Non-profits need data capability so they can recognise and harness emergent initiatives like consumer data rights legislation and turn them into opportunities to help build citizen data and digital literacy.

The examples of innovations in this section are used to illustrate the ongoing emerging initiatives that are relevant to non-profits' data

analytics. They show that current data analytics challenges are likely to be resolved, but it will take time. They also raise the issue of how to keep up with the pace of change and the many disciplines and perspectives that influence it. This further supports the value of collaborating with others, if only simply to have a chance to keep up-to-date with a fast-changing field.

## Research Reflections and Next Steps

### Our Research Reflections

Taking a step back to reflect on the research you've done in a field over several projects and years is an indulgence in a pressurised funding environment. However, it is important to do as it reveals patterns and sometimes surprises. In this case, having promoted the benefits of cross-disciplinary and multi-perspective working throughout this book, the realisation dawned that this also makes the work quite challenging. One thing that has come to the fore in writing this book is the complexity that arises from trying to meld the positionality of diverse participants and researchers. Positionality considers how your identity influences, and potentially biases, your understanding of and outlook on the context and phenomena you are working with (Bourke, 2014). Having different perspectives in a data project often means that participants have varying expectations and over-layer their learning on pre-existing frameworks and knowledge bases. To illustrate how this works even within our writing team, one of us sees non-profits using data analytics as being a contemporary manifestation of community development. Others in our team are working closely with non-profits and supporting them to organise better for using data, giving a perspective very grounded in operational issues; while our data scientist views the non-profit field as one of intriguing new datasets to which a range of old and emergent analytical techniques can be applied. Acknowledging the positionality challenges even among our writing team has made us realise how difficult it must be to navigate data projects for our multi-disciplinary, multi-department and multi-organisation practice partners. It makes us think that those that enjoy and thrive in these data projects are likely those who

can deal with uncertainty, tolerate or be curious about different perspectives and who are prepared to be flexible with their expectations.

A further issue is inherent in this work *as research*. It is *very* practical, and it is highly participative. We have noted in places that it's more like a learning process than research. In terms of defining it as a research approach, it is perhaps most akin to participatory action research (McIntyre, 2007). The processes are fluid and while punctuated by consistent types of steps and activities, as highlighted in Chap. 3, this can make this work hard to write up as research. And these same issues of not being able to pin down the process nor constrain the timeline precisely can be off-putting for non-profits considering working on data projects. They tend to want a defined process, with stipulated timelines and agreed (beforehand) outputs and outcomes. All quite challenging to delineate at the start of the kinds of data projects we outlined in Chap. 2, when you don't know what datasets a non-profit holds or what the consents governing re-use of data might exist.

While these issues about the data projects can make them frustrating and can deter some non-profits from participating, at the same time the challenges are what make the research interesting and exciting. And the need to tolerate fluidity means our partner organisations tend to be a self-selecting group of innovative early adopters, which makes them fun to work with. This is a space of social innovation, after all.

Aligned with the idea of our partner non-profits as enthusiastic innovators, we have experienced a remarkable degree of buy-in to projects once organisations commit to starting. An example of this is participants regularly turning up to data workshops over project timescales lasting 6–18 months. The City of Greater Bendigo data collaborative, for example, continues to meet and discuss data two years after we started. In that project, there is remarkable buy-in—perhaps because the geospatial data visualisations help service providers and businesses to think about the places where they live and work. Participants are able, repeatedly, to bring suggestions as to why phenomena may be 'seen' in the data analyses, help to ground-truth analyses and give suggestions about datasets and topics that could be explored next. Perhaps there is some sense of wonder at the possibility of generating sleek new data products (in their case, a community resilience data dashboard, see <https://datacoop.com.au/bendigo/>) from previously

routine data produced as cross-sectional reports. There is some sense of excitement at unleashing a valuable resource from a previously apparently passive and dull set of spreadsheets.

## What Next in Research?

Turning to what next, some topics emerge as obvious targets for research. Bearing in mind this field is about the nexus between non-profits, their work and mission, and data analytics, and not about other data-related fields like computational techniques or data law. Those areas, no doubt, have many research opportunities of their own, but we won't talk about those here.

We think the most significant issue is around working with citizens, consumers, clients and the community. Feasible, easily applied methods for doing this—with and for non-profits—need to be developed and tested and to become industry standards. Non-profits need to build their data capability, so they are confident and skilled in data to engage with consumers and clients in conversations about data *without fear*. In Chap. 1, we talked about how initiatives like the National Neighborhood Indicators Partnership engage people with (largely) open data and how this is a way to build citizen data literacy and community capability (Murray et al., 2015). This suggests that learning and engagement are best done through topic-focused engagement, rather than teaching focused on data literacy skills. Another approach is to work with consumer representative groups that many non-profits already have and start to engage people in conversations about the data they are in, data governance and re-use of data in analyses.

A second area for exploration is the set of issues around the experience of working in non-profits that have data capability; for example, what difference to organisational functioning, client outcomes and staff motivation does having a positive data culture make? As we propose that working collaboratively with data can help to integrate the work of staff and organisations, can this be evidenced robustly, and what are the impacts of better integrated organisations? Ultimately, what we are saying here is that we do not know the impacts on organisational mission and

outcomes of having data capability, though we surmise there are benefits. To date, our research has focused on processes of building data capability, but what does that enable? Crudely, what is the difference between a non-profit that has data capability and one that does not? To date, there are data maturity frameworks, but how do differences in data maturity manifest as lived experiences for organisations, staff, clients and consumers? As more non-profits build their data capability, it will be exciting to see how this changes organisational structures and whether it brings together, and helps to build the strength of non-profits as a field—as we propose and hope for.

A final set of research questions sits around the potential for non-profits' using artificial intelligence (AI) and automated decision-making systems as these techniques become more accessible and more used. A recent blog post from Data Orchard, a UK-based data for social good consultancy, suggested that 15% of charities are now using AI (Vaux, 2021). AI demands large datasets, and so it has been suggested that, despite hype around the efficiencies it can enable, only large non-profits are likely to benefit (Bernholz, 2019; Moltzau, 2019). Cases can be found illustrating use of AI for large datasets, including by Greenpeace for donor segmentation, rainforest protection by analysing mobile phone data and case law analysis by human rights lawyers (Moltzau, 2019; Paver, 2021). Alongside this, there is interest in the potential of AI in place-based initiatives. The GovLab's *AI Localism* (<https://ailocalism.org/>) is a repository of AI case studies generated by cities, regions and global initiatives (Verhulst et al., 2021). Links between growing data capability of non-profits and entry to using AI is an important area to understand as it unfolds. Of interest is what AI might affect, in terms of the structure and nature of the future non-profit sector. Perhaps the efficiencies it enables for large non-profits will serve to drive further corporatisation and 'survival of the biggest'. But perhaps there will be imaginative place or theme-related AI initiatives based on data collaboratives or collective practices, serving to unite and enable AI and advanced data analytics as non-profit field-building. Participatory AI or how to include stakeholders and citizens in designing ethical AI is another area to watch for non-profits (Bondi et al., 2021).

## Key Takeaways from This Chapter and Conclusions

In this chapter we explored how non-profits having data capability could impact on the whole sector and society as well as giving some practical steps about what to do next within organisations. We looked at some future directions for data analytics and highlighted areas for future research. Key takeaways from this chapter are presented below.

### Key Takeaways

- Building data capability can benefit non-profits by helping to: (1) manage most effectively and show impact; (2) build a ‘field’ that collaborates with data to tackle social challenges; (3) generate new ways to address social inequity through community data capability and digital inclusion.
- To influence the manager of a non-profit to engage with data analytics: suggest involvement in a data project as efficient ‘learning by doing’; get internal champions and collaborators on board; explore external expert help and resources; identify funding; and include ethics from the start.
- To extend beyond a data project: identify an organisational *data steward* to oversee internal data resources; and identify *data institutions* that could help to access external support for advanced projects.
- While there are current technical and legal challenges, innovation is ongoing that may enable scaling-up from experimental to large-scale practices. Allying with a data institution could help to keep up with change.
- Key areas for future research are engaging clients and citizens in non-profits’ data work; examining impacts of data capability on organisational performance and impact; and use of AI by non-profits.

This chapter concludes this book in which we set out to propose that any non-profit can engage with data for social good and build their data capability. While there are many challenges in this space, we hope this book makes it seem entirely doable. We also hope that while this new capability will help with non-profits’ business competitiveness, it can also be experienced as a space where people work together to find creativity and enlightenment.

With its many initiatives, active and high-profile advocates (e.g., Sir Tim Berners-Lee as co-director of the Open Data Institute), data for social good could be described as almost an industry in itself now. Through collaboration and experimenting with data, we suggest that all non-profits should get inside this big tent. We end with a plea—we ask non-profits to beware getting picked off as individual organisations by commercial businesses selling their proprietary data systems. We urge staff and managers instead to get knowledgeable, get skilled, make collaborating ‘data friends’ of other non-profits and their staff, and to develop their organisation’s data capability. This will drive the non-profit sector’s data capability for good into the future. Most of all, we suggest people should just get started with working with data and experimental data projects. We urge non-profits to have fun with data in ways that simultaneously help to do (more) good with data.

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