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What Helps? | Understanding Needs and the Ecosystem for Support

An Ecosystem Study of Alternative Data Governance

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Executive Summary

Technologists exist at a crucial moment of change in our global society. Collective action and renewed commitments to human rights dominate our social movements. But big tech still wields a huge influence on the lives of internet users because a handful of powerful companies dominate the landscape of **how peoples' data is governed** and exercise unilateral control over access to data and its applications.

In the first phase of the Mozilla Insights team's research on alternative data governance, we explained how the rise of new strategies for data governance could create alternatives to the ways that dominant tech platforms extract disproportionate value from peoples' data. In this research, **we explore how technologists and their allies make up an ecosystem that generates alternative futures to big tech companies' massive accumulation of data and unilateral control** using principles of collective governance and commitments to data rights. And we explore what this ecosystem might need from its supporters to thrive into a better future.

This research will inform decisions about the activities of Mozilla's new **Data Futures Lab.** We use insights from the field to show that builders (those creating new technologies) and supporting entities (their allies) need stronger language to define their own work, connections with others who share their principles and goals, and help navigating the commercial and social challenges ahead. We find that the field around alternative data governance could above all use parameters of safe experimentation with explicit commitments to rebalancing power towards individual agency, collective benefit, and data rights.

Looking toward the future, we find that there are significant opportunities for builders to apply alternative data governance models in contexts where communities have collective, rights-based social or political goals and seek to use data and technology as tools. Supporting entities including the Data Futures Lab **will have to establish what responsible experimentation with alternative data governance looks like** alongside those who are building and benefiting from it. The Lab can help us have the conversations we need about what we want for the future and how we'll work together to achieve it.

Introduction

How do builders and their allies define themselves and the field around alternative data governance? How will we determine what alternative data governance projects should look like to effectively rebalance power to people? Answering these questions requires first understanding where builders and their allies currently situate themselves as agents for change in the field around alternative data governance.

This report is a continuation of research published in September 2020 to inform the launch of Mozilla's new Data Futures Lab. The Lab will resource projects and foster networks across the ecosystem of actors seeking to realize data governance alternatives which **redirect agency, value, and power back to the people** from whom these elements are commonly extracted. By drawing a robust picture of the current ecosystem, and the people in it, we hope to expose opportunities for the Lab to provide support.

Common language and framing matter. In the first iteration of our research on data futures, we defined *alternative data governance* as governance structures that seek to empower people, individually or collectively, by doing at least one of the following:

- Shift agency from data collectors to data subjects and beneficiaries in a meaningful way.
- Share the benefits of data between various parties rather than concentrating most or all of the value within a single organization.
- Manage data in ways that represent multiple interests (the data collectors, data subjects, or other beneficiaries of the initiatives).

We identified seven approaches to governance that seek to challenge the way dominant platforms solely benefit from and maintain full control of data as a commodified, extractive resource. We also created a glossary to help readers understand how we define terms that will appear throughout this report and across Mozilla's workstreams.

The first phase of the research covered what empowerment through data might look like ("What does it mean?"), who is building projects that attempt to rebalance power ("Who is innovating?"), and what harms might emerge if projects fail ("What could go wrong?").

While our previous research was based on desk research about projects and builders, this research centers around conversations with the allies of these builders, who we call

supporting entities. We examine how existing supporting entities operate, and where builders and their allies note gaps in the field and opportunities for further support. This report describes the **current ecosystem** ("Who is building the field?"), **what people need** from data governance ("Who needs this and why?"), and **recommendations** for the Data Futures Lab to support the field ("How can the Data Futures Lab help?").

Our previous research identified that supporting entities play a role in defining and refining the field around innovation in data governance. In this deeper dive, we found that supporting entities give shape to the field by convening collaborators, generating policy insights and best practices, sharing open technical infrastructure, distributing funds, and creating data standards or principles. Builders find allies and support in communities of practice that engage in similar activities. The way that they apply alternative data governance, the goals they work toward, and how they work with their beneficiaries varies based on the unique context of their wider communities of practice.

Supporting entities like the Data Futures Lab can use the frameworks laid out in this report to guide further dialogue about how projects are being implemented around alternative data governance. Ultimately this high level view should inform the values that the Data Futures Lab chooses to uphold in the process of ensuring that alternative data governance projects rebalance power and protect people's rights against harmful data extraction.

In the process of conducting this research, we updated our database of builders and compiled a new database of supporting entities who make up the field. We provide an overview of the technologists and their allies we found making up the ecosystem of innovation around alternative data governance.

Key takeaways

- Supporting entities **shape builders' abilities to experiment with alternative data governance** including by influencing geographic focus, issue focus, and language defining builders' work.
- Most entities shape the field by **conducting research** or policy analysis that refines definitions and understanding around alternative data governance. Others **share open tech infrastructure** to enable open source collaboration; **host learning communities** for builders to learn and discuss trends; **create data standards** and proliferate data principles to use across the field; or **fund projects** that focus on alternative data governance. A few supporting entities **provide legal guidance** to help builders formalize alternative data governance models in practice.
- Builders' work under the umbrella of alternative data governance must balance **social governance**, **tech implementation**, and **business strategy.**
- Many builders and supporting entities work on alternative data governance while belonging to disparate **communities of practice** that inform how they use data governance, how they seek funding, and the stakeholders they serve. We examine communities of practice like *open data*, *decentralized tech*, *social justice*, and *medical research*, based on the experiences of our interviewees.
- Public messaging about specific data governance strategies to rebalance power might not resonate with the general public. **Data rights can be a broader entry for people to understand what they are entitled to** and the viable ways to exercise control over access to their data.
- User communities where people **already have social governance structures in place** and need technology to achieve their goals might be good spaces to generate demand. Promising user communities might include credit unions, trade unions, or other collectives.
- Builders can use alternative data governance to **help people and the institutions that govern them to rebuild trust**. Technology using alternative data governance could enhance social efforts to organize people, for example through environmental monitoring, to leverage individual agency enabled by these technologies into collective benefit.

- The Data Futures Lab can act as a **guiding force to ensure safe experimentation** around new technologies for alternative data governance that remains oriented around data rights and societal good.

Our approach

In this report, we explore supporting entities' activities in the field, the regions where they are based, and the regions where their work focuses. This research was generated through interviews, transcribed for analysis, with 20 organizations, including a mix of supporting entities and builders who work on alternative data governance technologies. We conducted short follow-up surveys on issues of public perception and demand and supplemented our findings with desk research and insights from subject matter experts.

The database of supporting entities that we created features categories to help supporting entities and builders identify themselves and their peers in the field. Further detail on how we categorize entities is included in the database itself.

Our goal in speaking to a limited number of interviewees was to go deep with each one and spend time synthesizing insights about a diversity of ideologies and experiences. The process involved three months of interviews and synthesis from November 2020 through January 2021.

We selected interviewees by looking for organizations that supported builders identified in the first phase of research; we also explored the field of allies working alongside the Mozilla Foundation on issues around trustworthy AI and internet health. We also used the work of regional researchers who went deep on alternative data governance projects in their global regions in the first phase of our research to identify additional supporting entities.

We sought to select a balanced group of interviewees from across global regions and domains, but were limited due to the time and scope of this research. The Data Futures Lab's initial interest spanned domains of health, platform workers' rights, and consumer rights, and so a number of our interviews were conversations with builders and allies focused on these areas.

Throughout this report, we highlight the stories of builders and supporting entities who we feel represent the definitions of alternative data governance that resonate across the field. The rest of the information in this report compiles anonymous quotes and

insights from our interviews. Overall, the report is just our snapshot of the current state of the field. We hope to lay out overarching frameworks for understanding the field that can be applied and iterated upon for more comprehensive and inclusive research in the future.

Research participants

Organization	Domain/Issue	Region (based)	Entity type
Consumer Reports	Consumer Rights	North America	Supporting Entity
Open Referral	Health/Open Science	North America	Hybrid
Streamr	Consumer Rights	Europe	Hybrid
Fair Data Society	Consumer Rights	Europe	Supporting Entity
WeClock	Labor	North America	Hybrid
LunaDNA	Health/Open Science	North America	Builder
BrightHive	Urban & Community Development	North America	Hybrid
Drivers' Seat Cooperative	Labor	North America	Builder
Open Environmental Data	Environmental Justice	North America	Hybrid
Microsoft	General	North America	Supporting Entity
Animikii	Indigenous Rights	North America	Hybrid
Abalobi	Labor	Sub-Saharan Africa	Builder
MyData Global	General	Global	Supporting Entity
RadicalxChange Foundation	General	Global	Supporting Entity
Safecast	Environmental Justice	North America	Hybrid
Glimpse Protocol	Consumer Rights	Europe	Builder
Swarm	Consumer Rights	Europe	Hybrid
Aapti Institute	General	South Asia	Supporting Entity
Kathmandu Living Labs	Urban & Community Development	South Asia	Hybrid
CitizenMe	Consumer Rights	Europe	Builder
Start.coop	General	North America	Supporting Entity

Limitations

Our interview process was time-bound and restricted to a short list of builders and supporting entities. While we attempted to go deep with these participants and identify key motivations and insights about the field, our research may be limited in its ability to comprehensively map the field.

Further research should focus on collecting insights from a more diverse group of participants. Our research found organizations working on consumer rights and data governance in regions around the world, but an overwhelming bias of funding and research on organizations in North America and Europe who spearhead efforts to define and apply the language of alternative data governance. In other words, there may be others doing relevant work who have not yet been included in the discourse around alternative data governance.

Because of the breadth of our research, we only spoke with a few builders or supporting entities within each domain included in our report. Further research could include feedback from more people working on similar issues areas to ensure a diversity of perspectives on the applications of alternative data governance strategies toward specific causes or social outcomes.

Our investigation into public views of alternative data governance and demand for these technologies was based primarily on insights from builders themselves. These insights, therefore, may be skewed by secondhand understanding and further research on public perceptions and demand for alternative data governance should prioritize first-hand insights from a diverse range of beneficiaries outside of our communities of practice.

This research is not a policy review of the legislation around alternative data governance approaches. Although some builders and supporting entities identified that regulation and government support will be necessary for alternative data governance technologies to thrive, deep investigations of these issues were outside of the scope of this work.

The purpose of this research was to inform the strategy of the Data Futures Lab and help position the Mozilla Foundation's efforts to support the field of builders using alternative data governance models, which likely influenced our guiding questions. Additional research may identify different gaps or opportunities in the field.

Who is building the field?

While ideas about collective governance, personal data rights, and responsible data use are not new, technologists and researchers tasked with understanding and applying alternative data governance are still developing new principles through practice.

Supporting entities help builders put data governance technologies into the world and help refine definitions of what alternative data governance is and is not. But definitions are always shifting, and it can be difficult for builders to understand where they fit in in the bigger picture.

By taking a bird's eye view of the actors creating the field, we hope that builders will be able to leverage connections between themselves and their peers — an effort that the Data Futures Lab will continue by resourcing new projects and fostering networks.

Because the technology space around alternative data governance is still growing, many builders come to alternative data governance from wider communities of practice. Studying and understanding these communities of practice and the current patterns of support can help supporters like the Data Futures Lab to bridge silos and identify common principles that unite this young field.

Key topics in this section include:

- An overview of the supporting entities database
    - Where is support going?
    - What does support look like?
- How are builders effecting change?
- What do communities of practice look like?
- What are the field's open questions?

An overview of the supporting entities database

Supporting entities play a role in defining and refining the field around innovation in data governance. In this deeper dive, we found that supporting entities give shape to the field by convening stakeholders, generating policy insights and best practices, sharing open technical infrastructure, distributing funds, and creating data standards or principles.

We've created a library of 114 supporting entities lifting up the ecosystem of alternative data governance.[1] Some supporting entities are also builders at the same time, implementing technologies for alternative data governance as they create resources to feed back into the field.

Supporting entities can carry out one or more of the following activities:

- *conducting research*, policy analysis, or compiling other best practices that refine definitions and understanding of alternative data governance
- *sharing open tech infrastructure* through which builders and open source communities can collaborate
- *creating data standards or principles* for builders to implement
- *hosting learning communities* where supporting entities can convene builders to discuss emerging trends
- *funding* to enable implementation of alternative data governance models
- *providing legal guidance* or insights to help builders establish legal structures for data collection and governance

Where is support going?

Sometimes, supporting entities focus their work on specific domains. Other times, supporting entities work broadly on data trusts, cooperatives, or other data governance approaches. In our database of supporting entities, we attempted to track where support for alternative data governance is going, analyzing these flows by domain and by geography.

[1] In some cases, builders are both building technologies and supporting the ecosystem. We call these "Hybrids" in our supporting entities database.

General issues of data governance and use is the most common category for supporting entities to support, but entities that focus on consumer rights or urban and community development (including smart cities and local participatory governance efforts) were also fairly common. For example, Forbrukerradet, the Norweigan Consumer Council and a member of Consumers International, publishes research on emerging trends related to alternative data governance in the consumer space, pointing to the connections between consumer protections and alternative data governance. The following figure reflects the supporting entities' domain-specific priorities (not necessarily the projects they support) broken out by the region where these entities are based.[2]

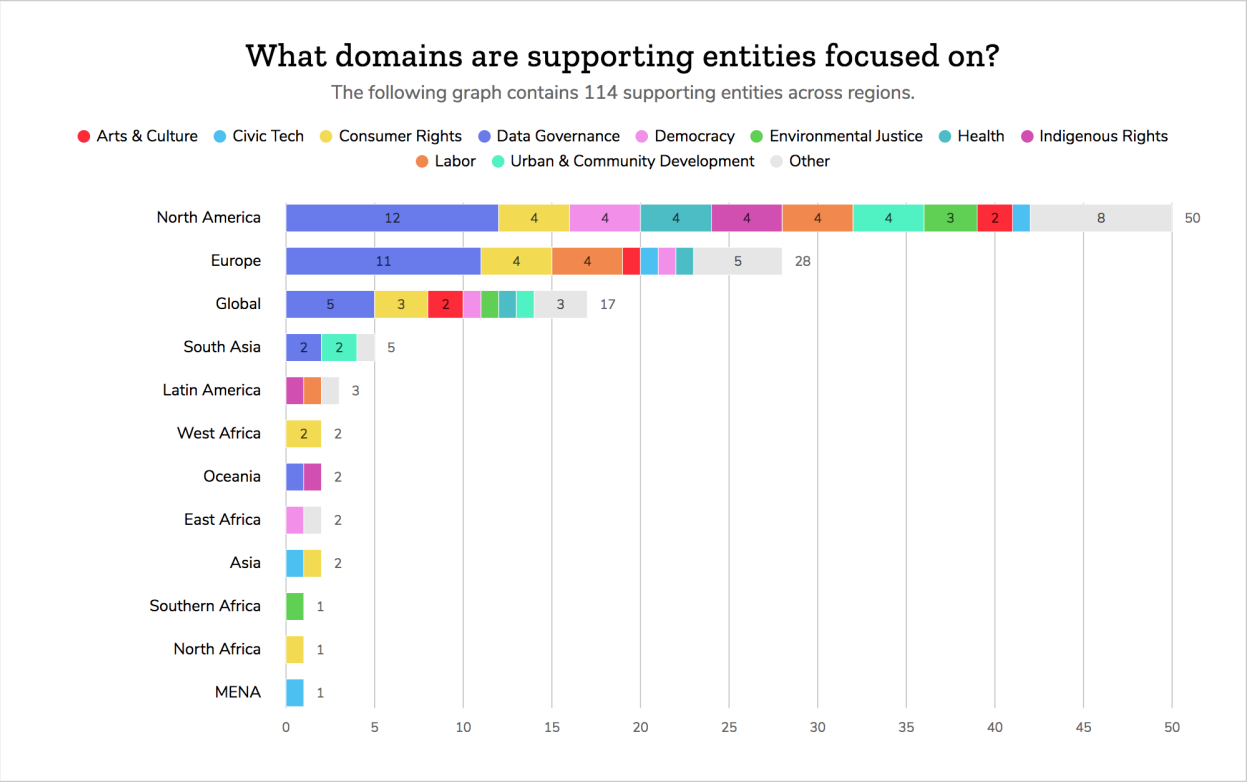

Figure A: What domains are supporting entities focused on? (By Region, Based)

Consumer rights is the most common domain supported by entities based outside of North America and Europe, like Jonction, a Senegalese consumer rights organization that publishes research and hosts commentary on personal data legislation. A few other domains stand out with broader global appeal including Labor, Urban & Community Development, Indigenous Rights, and Civic Technology. These domains may indicate where allies like the Data Futures Lab can help local organizations outside of North America and Europe enter conversations about alternative data governance.

[2] For more information on builders' domains or sectors, see the projects database compiled in our previous work.

Later in this report, we discuss recommendations for the Data Futures Lab to fund, amplify, and empower these entities.

In our supporting entities database, we log the region where entities are *based* and where their work is *focused* to call attention to how many supporting entities do work outside of their home regions. Many supporting entities we found are based in North America and Europe. We found some supporting entities like Fujitsu in Japan funding and launching new projects in their regions and beginning to gain international attention. But in most regions outside of North America and Europe, builders tend not to gain the same international attention, possibly because their support mostly comes from local supporting entities rather than international bodies.

Supporting entities that get to speak to global audiences would gain wider access and influence to shape the field. While this research did not go in depth into the funding and influence behind ideas and trends on the global stage, the following graphic (Figure B) illustrates where supporting entities themselves are based, where their support focuses, and what kind of support they provide.

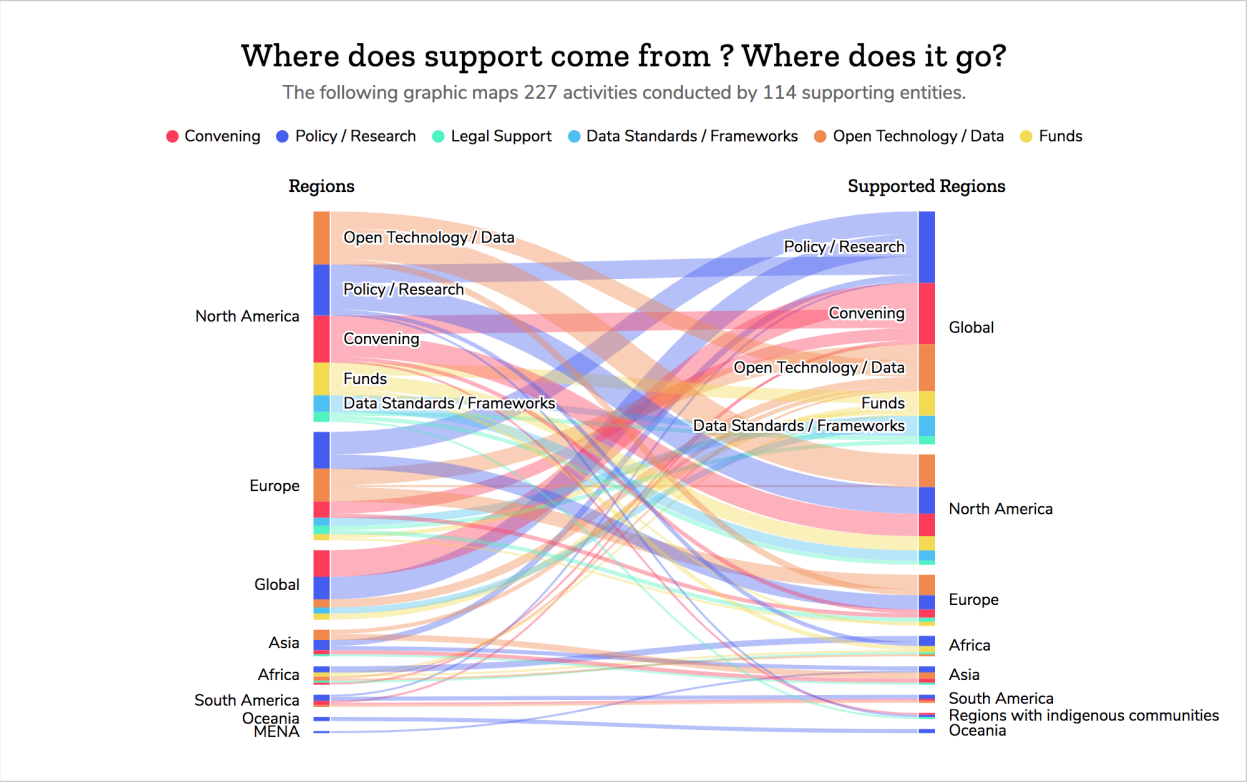

Figure B: Where does support come from? Where does it go?

[View the interactive data visualization in your browser]

What does support look like?

The most common activity of supporting entities that we cataloged is to conduct research or produce policy recommendations, which can include spreading best practices and other knowledge-sharing efforts (see Figure C). The second most common activity is a tie between producing open technology or open data and convening learning communities of builders and their allies.

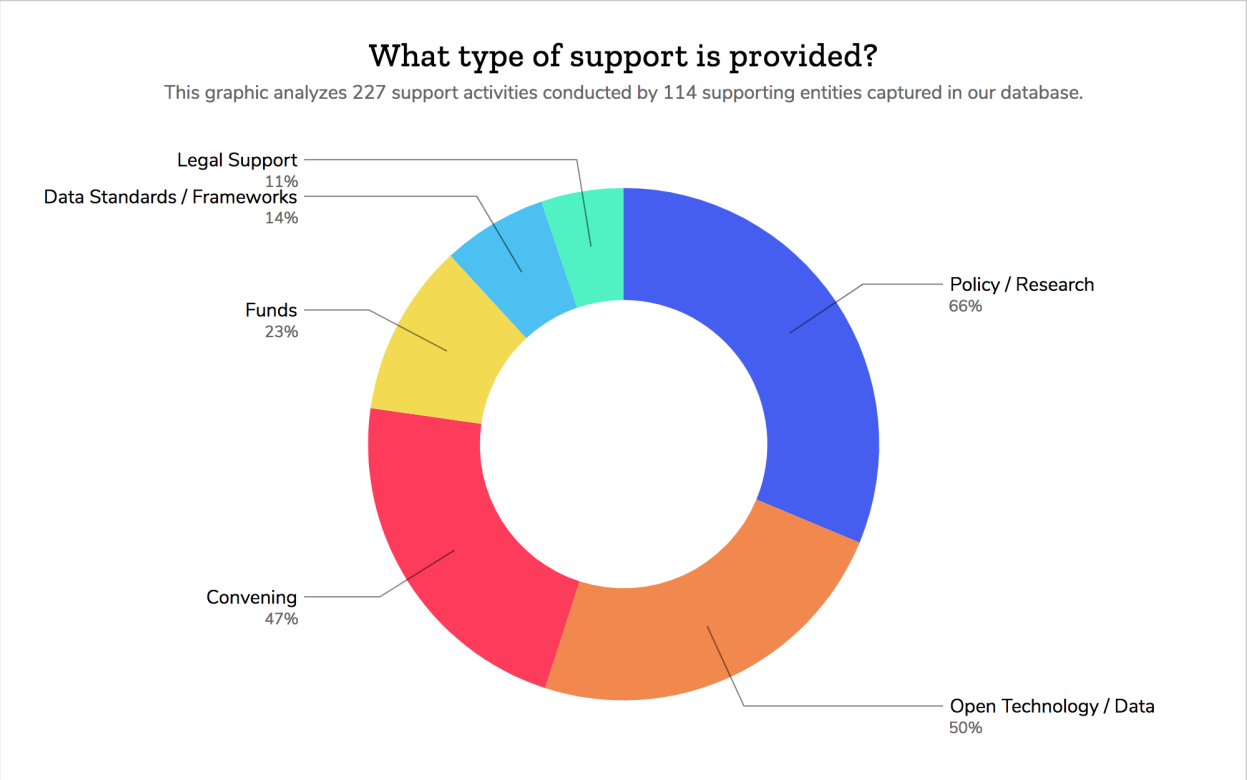

Figure C: What type of support is provided?

Entities that publish open source technology and open data allow builders and allies to collaborate on data and technology in the public interest, like the Foundation for Public Code which helps governments leverage the support of code stewards to share control over government technology and data systems. Those that convene learning communities enable the proliferation of shared practices and lessons to inform the future of builders' work, like the MyData community, through which builders can get together to publish findings from their work.

Supporting entities that publish data standards or data principles and frameworks are the next most common, followed by funders and organizations that specialize in providing legal support. While supporting entities can conduct multiple activities at

once, we found it helpful to categorize them to better understand the primary roles that these entities play in the field.

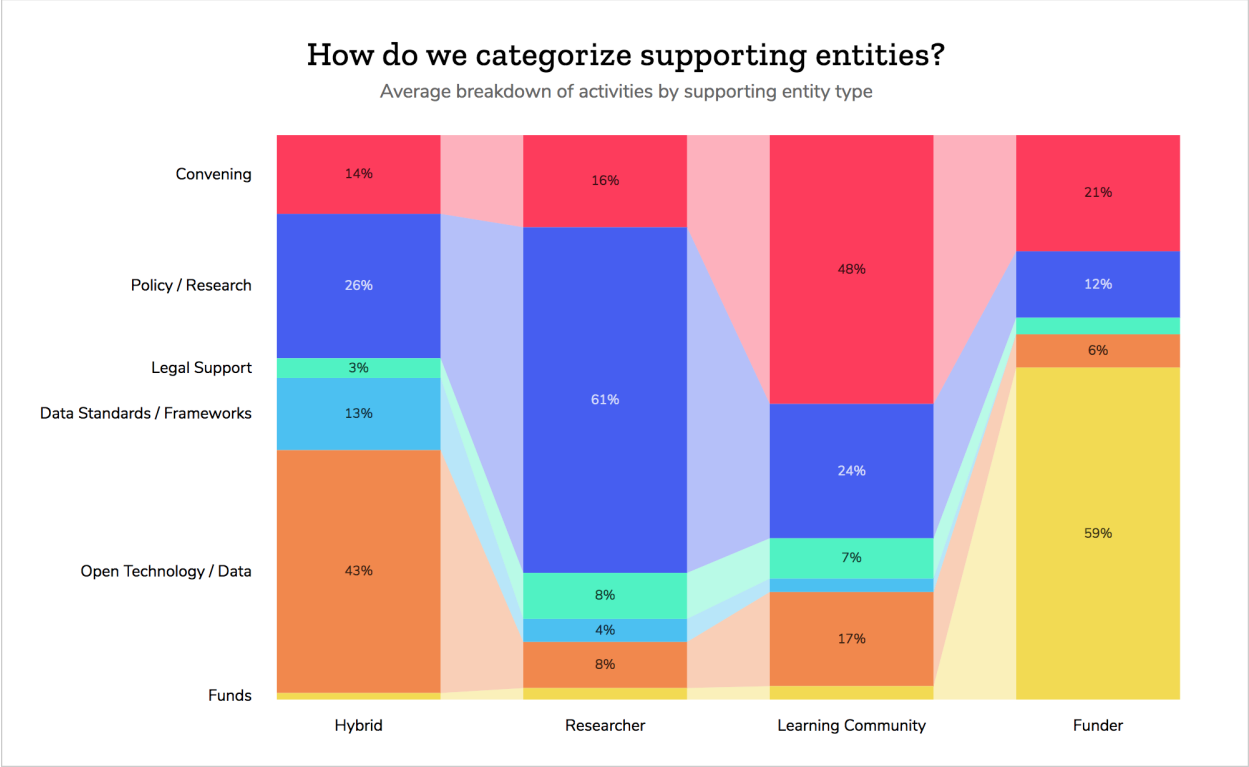

Figure D: How do we categorize supporting entities?

Hybrid organizations are organizations that are both builders and supporters to the rest of the field. Hybrid organizations often seek to lift up peers in the ecosystem, find market-based solutions that counter exploitative technologies, and incentivize the open exchange of technology and information. For example, builders like PrivacyTools, Textile, and Ocean Protocol share toolkits for developers to build their own privacy-enabled or decentralized apps using open technologies.

When first getting started, builders benefit from real-life examples, replicable technologies, and concrete case studies from their peers in order to make strategic decisions. That's why hybrid organizations are important resources as supporting entities across the field. Many hybrids, like the GoFair Initiative or BrightHive, are also leaders in developing actionable data standards and principles for data use or writing about practice-based insights.

Researchers conduct practice-based or academic research, compile recommendations, and spread resources across the field. They produce information to help builders

effectively communicate data governance projects to stakeholders on the ground and remain in step with the field's recent innovations.

Policy research and open standards documentation can serve builders and practitioners to create more informed alternative data governance projects. As champions of a growing field, many researchers expressed a desire to keep up with experimentation by synthesizing lessons and publishing open documentation as builders try things and learn. This work is important, as it helps to create a sandbox for experimentation that helps to insulate vulnerable communities from failures of emerging technologies and allows builders to push the boundaries of technological solutions for alternative data governance.

Specialized researchers can provide necessary culture-informed guidance about how technology can be used to address social justice and community empowerment. Groups like Local Contexts, based in New Zealand, specialize in supporting Indigenous communities and ensuring that data sovereignty efforts remain grounded in Indigenous governance frameworks. The Aapti Institute, a public research institute based in India, is building the Data Economy Lab and beginning to surface global insights about the effects of data stewardship on platform workers and other at-risk communities, across sectors. Data for Black Lives, based in the United States, works to end the use of big data to oppress Black people and people of color.

Most builders rely on personal relationships or individual legal experts to advise on the step-by-step processes of managing data. Some researchers pointed out that legal and regulatory definitions for alternative data governance are not always clear or actionable, but groups like the Ada Lovelace Institute, Data Trust Initiative, and the GLIA Foundation are participating in research exploring legal definitions of governance mechanisms like data trusts.

Funders provide financial resources, knowledge resources, and in-kind support directly to builders who are experimenting in the data stewardship space. Funders' primary activities involve distributing funds and convening their networks. Some also produce policy research or insights to shape the field.

We spoke to builders benefiting from a number of different funding or business models. Builders can rely on a mix of income from selling technology services or data insights, venture capital funding, or philanthropic funding. Some builders rely on contracts with governments or nonprofit organizations. As in other areas of their work, builders that work on alternative data governance are working against many of the mainstream expectations that also dominate the funding space. As a result many builders juggle

multiple funding streams like bootstrapping with grant funding and commercial data or technology revenues.

Traditional venture capital funds usually aim for projects with plans to scale and a high rate of equity-based returns, hoping for an increase in stock price and a liquidity event. Builders we spoke to using cooperative business ownership models noted that they need structurally different investment because their work is designed to build long-term ownership (rather than exits) and is predicated on supporting a sustainable structure for a wider range of stakeholders like their co-op members. Organizations like Start.coop who work with builders like Driver's Seat Cooperative are experimenting with revenue-based funding and equity funds customized to the needs of cooperatives.

A few funders are taking the leap to support projects on the cutting edge of experimental technologies. Microsoft is partnering with the research institution ODI to fund and incubate six data collaborations, bringing together their respective assets to put a spotlight on data stewardship work. Venture capital funds like Consensus Advisors and Placeholder VC have supported builders working toward a new "data economy".

Many funders instead support specific domains outside of data and technology, though some may recognize alternative data governance models as effective tools toward their goals. The Shuttleworth Foundation, for example, has funded environmental justice projects like Safecast and Open Environmental Data which are built on open data commons and volunteer networks. Understanding how to leverage issue-specific funding for alternative data governance may be important to scale and sustainability of this work.

Later in this section, we will discuss how builders connect to different types of funders depending on the communities of practice through which they connect to alternative data governance.

Learning Communities are the home base for many builders where issues of sovereignty, governance, digital rights, design justice, and other subjects important to the field of data stewardship are discussed. Across industries, learning communities share experience about specific strategies of alternative data governance across their memberships, and their primary activities involve providing convening spaces for discourse and producing policy opinions or practice-based learning from the field.

Some learning communities focus on distributing open source technology that peers can build on. For example, learning communities like the RadicalxChange Foundation

also provide fellowships or small funding opportunities to build and share experimental projects. Ethereum Swarm is a system of peer-to-peer networked nodes that create open source decentralised storage, and provide small grants for builders who use their technology and share fair data principles. Some communities are open to individuals and others primarily convene organizations.

Multiple builders shared learning communities that they participate in that don't have a focus on alternative data governance, but are helpful spaces to share new ideas with their peers. For example, the Conscious Advertising Network convenes companies "to ensure that industry ethics catches up with the technology of modern advertising." The Design Justice Network convenes designers of all stripes who are "committed to rethinking design processes so that they center people who are too often marginalized by design." Whether gathering people who work on alternative data governance or introducing it to those working within a specific domain, these spaces serve as a testing ground for new ideas and for builders to collaborate.

How are builders effecting change?

Many builders arrive at using alternative models of data governance as a means to other social, political, or scientific ends. By examining the following examples of areas where builders are changing the status quo, we can begin to analyze what they might need to navigate the challenges in their domains.[3]

- ➔ **Labor & Platform Work**
  Organizing platform workers to reclaim access to data on outputs and wages; leveraging trade union infrastructures and cooperatives to modernize governance of collective assets and information.

- ➔ **Environmental Justice**
  Improving communities' abilities to monitor air quality, water quality, and other environmental factors; building collectively governed data commons that maximize transparency and accountability of governments and industries that impact the environment.

- ➔ **Indigenous Rights**
  Ending control or discrimination through dominant technology or data systems by introducing digital sovereignty for Indigenous peoples; shifting from oppression through data and technology to empowerment.

- ➔ **Health**
  Giving research subjects and individuals control over access to their biodata; giving individuals control over mobile health data and personal records; maximizing privacy-preserving interoperability across providers.

- ➔ **Consumer Rights**
  Giving individuals the ability to leverage their own browsing and consumption data and participate in the data economy through collective bargaining (e.g. via data unions); crowdsourcing insights on consumer or social behavior.

Builders tend to be aware of the power players, or industry leaders, affecting their domain, but are unsure what it will mean for the future of their products. Because alternative data governance by definition is in competition with mainstream data practices, builders have to account for the likelihood that their products will break

[3] For more information on builders' domains, see the projects database developed in our previous research.

through to users. Power players can affect a builder's ability to roll out products that can actually shift the paradigm around data governance.

Because we included mostly tech-forward builders in this research, our interviewees anticipated engaging with power players in big tech. We heard about a perceived balance of power heavily skewed toward these companies in the wider consumer market, and in regulatory or legislative spaces.

Many builders' theories of change involve entering the commercial market and adopting users who can help shift demand away from harmful technologies and toward more just alternatives to data governance. Power players in the space can either uplift or threaten builders' abilities to gain the market share needed to achieve this shift.

As the most publicly visible hoarders of users' data in the sociopolitical domain, the most commonly noted power players across builders and supporting entities were **big tech corporations** who dominate the market and continually fail to meet evolving standards of personal privacy and data rights.

> *"The big players who have centralized solutions for scaling data storage lead the way... It would take a lot of hubris to think we're competing in this stage."*

Tech companies that collect massive amounts of data and set cultural norms for people's expectations around data pose a real challenge for alternative data governance builders and their supporters. These companies sometimes openly attempt to minimize competition from those who challenge the dominance of their products.

"We're pessimistic about the possibility for collective control of data and bargaining on the scale we imagine without changes to the broader legal or regulatory background."

Because so many tech companies with far-reaching influence, like data brokers and intermediaries, work "behind-the-scenes", builders notice that they don't often enter the general public's consciousness unless there is a scandal. In the advertising space, big tech companies and their allies use harmful data governance practices that regularly put individuals at risk of privacy erosion and data leaks. Builders working on products for cloud storage or decentralized infrastructure noted the commercial control of big tech companies as the most challenging roadblock to their growth.

Depending on local context, governments could be allies for passing regulation to protect citizens' data and open up space for innovation in tech markets. Some people we spoke to expressed optimism about the effects of regulations stemming from the EU's GDPR that have begun to provide basic protections of personal data. The EU and particularly Germany have passed data strategies intent on piloting models for more responsible data sharing through approaches like data fiduciaries or trusts. While definitions of "alternative data governance" may vary in the discourse around these strategic plans, they point in the general direction of governmental pushback against the power currently held by big tech monopolies in influencing how data is collected and used. Mozilla has previously written in support of tech competition policy and interoperability standards to open space for innovation.

While researchers and advocates share high hopes about governments' roles, builders noted that their users often articulate skepticism over how governments themselves use data. Data partnerships between big tech companies and governments raise questions about the benefit of these collaborations to the public. With governments putting increasing effort into innovating around data-driven intelligence and data-sharing, civil society groups are raising alarms that governments may also be risking future data rights issues.

Researchers we spoke to noted that until the tech market is less dominated by a

"The current status quo is

handful of companies, builders and their allies will need to deal directly with resistance from these power players or spend time building out separate ecosystems around issues like alternative data governance. They felt that builders needed help to develop comprehensive alternative visions for the role of technology in the world, which they would need in order to avoid "becoming the next Facebook." Some learning communities have already begun offering new sets of principles for design justice and personal data use that provide alternative visions for the futures of our data and technology systems.

so bad that I can't see how we could create something worse. From the consumer's point of view, I can't think of any situation where they'd be worse off."

Ultimately, alternatives to data governance may fall into the same systems of data extraction and commercial use that exist now, pushing some experts to ask how alternative the alternatives really are. In order to effectively push back on big tech companies upholding the status quo, builders of technologies using alternative data governance will have to understand how their work might be co-opted to support the sizeable infrastructure that these companies have built — not just when they're clients of products like Amazon Web Services, but also as they might build products that integrate into big tech companies' systems for social media, advertising, or surveillance.

Builders will need help from their allies to navigate this difficult space. The Lab could further explore what it will look like for builders to take on big tech as many of them attempt to make their way in commercial markets.

What do communities of practice look like?

Alternative data governance projects can be hard to spot in the wild, which can make it difficult for supporting entities to know who to help. While one builder can use alternative data governance to produce open data related to health and human services, another might use it to build personal data vaults for use by rideshare drivers. This may be because builders and supporting entities tend to arrive at using alternative models of data governance as a means to other social, political, or scientific ends. They learn about alternative data governance through communities of practice which may have informed how they engage users, how they seek funding, and which audiences or stakeholders their work tends to target.

We examined how the people we interviewed came to work on alternative data governance technologies after emerging from *open data*, *decentralized tech*, *social justice*, or *medical research* communities of practice. These insights can form a shorthand for the types of language, goals, and technologies that various builders bring to alternative data governance.

The following communities of practice are ones that we heard about in interviews with builders and their allies. Understanding them may help the Data Futures Lab and other allies to identify the bridges that need building to create shared language and knowledge across the field of alternative data governance. Some communities of practice include:

Open data. Builders and supporting entities coming from the open data community of practice are fighting the privatization of public data and helping individuals reclaim access to (mostly non-sensitive) open information. People in this community of practice often produce open datasets, advise on open data policies, or build public data infrastructure through data collaboratives or commons, sometimes on behalf of governments. Supporting entities in the open data community of practice like the GovLab or Open Data Institute investigate and publish research on issues of alternative data governance.

Builders from these communities tend to work with administrative data or anonymized personal data and build technologies or processes to maximize public access to information through governments or civil society organizations. For example, Open Environmental Data is a project "rethinking the way we collect, store, verify, share, and use environmental data." The project uses alternative data governance to publicize data about environmental issues and engage researchers and the general public to take

collective action toward protecting the environment. *#accesstoinformation #transparency #innovation*

Decentralized tech. Expertise with decentralized technologies like distributed ledgers or AI-enabled privacy tends to orient builders and funders toward reclaiming access to personal data that has been controlled or hidden by big tech companies. They need consumer-facing business models to compete with big tech companies, often pursue funds from venture capitalists, and tend to build solutions that enable individual control over personal data or data rights. Some builders in this community of practice use Web3 language to describe themselves and their work.

Glimpse Protocol is a "compliant advertising platform with privacy at its core" that works with companies to build personal data vaults where users can exercise control over how advertisers use their data. They use alternative data governance to empower individuals who engage with web platforms using advanced cryptographic technology. Due to the centrality of decentralized, encrypted personal control over access to data in this community of practice, these builders are often highly technical and sometimes support others building on their open infrastructure, like Eth Swarm's small grants program, which supports builders across domains. *#dataeconomy #cryptography #selfsovereignty*

Social justice. Builders and supporting entities with experience in social justice seek to make data and technology more equitable as part of their broader mission toward seeking justice and organizing collective action toward dominant or oppressive structures. They tend to be oriented toward governance-driven solutions that are technology agnostic. This can apply to Indigenous organizations or builders whose technologies require developing governance structures to organize workers.

Te Mana Raraunga developed Principles of Maori Data Sovereignty, which inspired groups like the US Indigenous Data Sovereignty Network to share lessons across Indigenous communities. They use alternative data governance to empower communities to reclaim access to Indigenous data and infrastructure, applying hard-earned lessons about building social governance and maintaining trust within communities. Builders in this community of practice often combine community-building strategies with technological development. *#indigenousdatasovereignty #datarights*

Medical research. Supporting entities and builders from the health, medical, or open science communities seek to counter histories of exploitative scientific research practices (which most deeply affect people with marginalized identities), connect researchers to patients, and empower individuals to manage and benefit from their own

biodata. Some countries have professional accreditation practices in medical research which provide public control over personal data use and enable strong trust in health data professionals. Builders from this field tend to bring robust consent frameworks into practice or technical infrastructures for individual control over access to personal data.

Organizations in this community of practice have pioneered frameworks for ethics and informed consent in data stewardship. LunaDNA is “the first and largest health and DNA research platform owned by its community. The project uses alternative data governance to create equity and transparency across a community of data subjects who receive dividends for their personal data. *#informedconsent #dataportability*

In a field that can appear fragmented by shifting language and shifting understanding of emerging technologies, some projects stand out as strong examples balancing governance, technology, and business strategy. They demonstrate how builders across communities of practice are able to leverage alternative data governance toward collective benefit.

Figure E illustrates how builders choose to roll out alternative data governance technologies. Builders can vary who they serve, how they serve them, and what financing they use to get there. Some communities of practice might equip builders to seek venture capital funding, while other communities might operate primarily off of grant funding.

Understanding how builders work in different communities of practice can help supporting entities the diversity of projects that exist in the field. Further research would help to identify the most successful strategies among these for sustainable and equitable alternative data governance ventures.

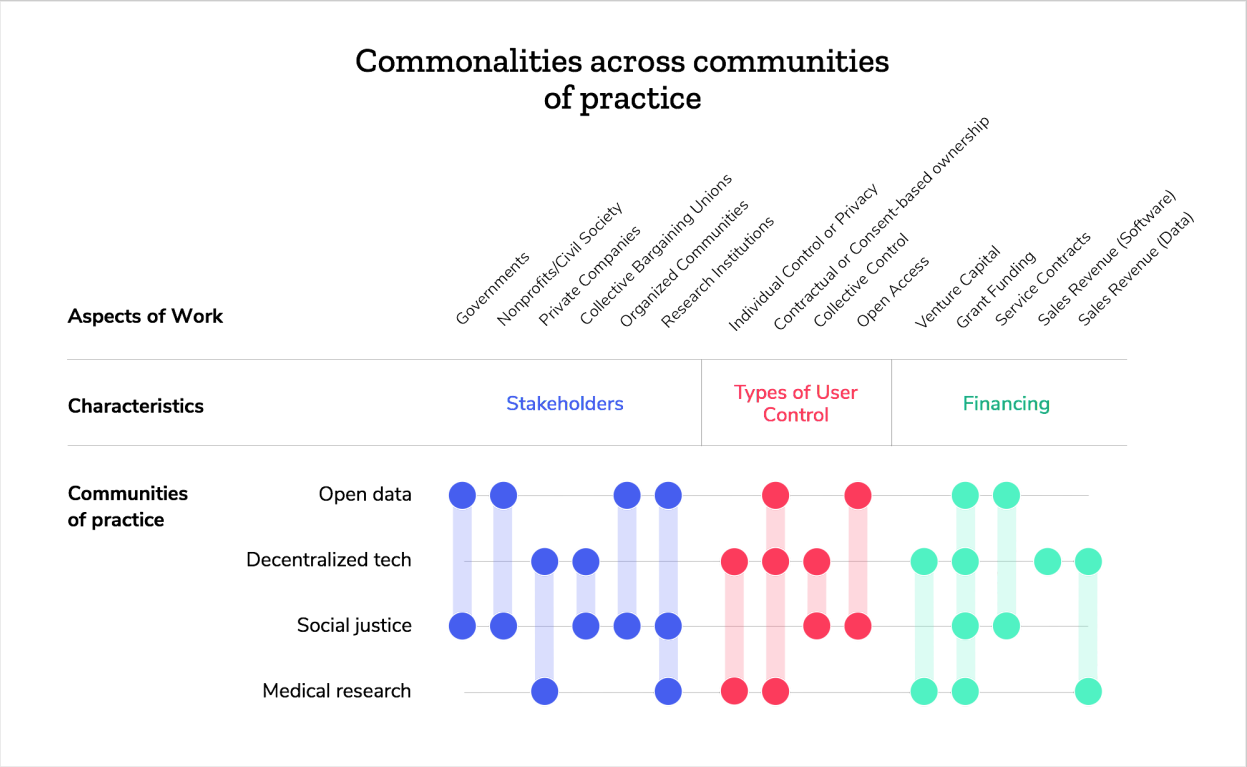

Figure E: Commonalities across communities of practice

Notably, the greatest overlap across communities is that almost all types of builders benefit from grant funding, either as their seed funding for initial start-up costs, or in the form of small experimental grants that allow them to do research alongside their revenue-generating operations.

Research institutions are the most common stakeholders or partners working alongside builders. But builders who sell to or work with private companies might tend to emerge from the decentralized tech community of practice.

Builders from the open data and social justice pathways share many similarities except that in social justice contexts, builders might prioritize strategies for collective governance over more technical solutions to decentralize ownership of data.

Similarly, the decentralized tech and medical research pathways share common orientations toward technology-enabled solutions for individual control over personal data. While medical research builders leverage these technologies for better research and medical progress, decentralized tech builders are using them to create collective bargaining entities that leverage self-sovereignty toward collective social outcomes.

Overall, our goal is to show that builders and their allies, despite using different language or specific approaches to data governance, also overlap in ways that bind them together as peers. They sometimes connect with organizations outside of their communities of practice.

What are the field's open questions?

The following open questions shaped our conversations with supporting entities and builders, and might provide a roadmap for further investigations into the ideas that shape "alternative data governance".

Personal data and collective data governance are sometimes framed in opposition to one another, but are deeply intertwined. Builders we spoke to who are often exploring how to balance personal data protections and organizing collectives of data subjects, expressed that they go to specific pains to articulate the interconnectedness of these subjects. Personal data is relational, so as individuals decide what they want to do with their data, they inherently deal with the sovereignty of other individuals and may choose to cooperate with others to put their data toward population-level insights.

Supporting entities who we spoke to affirmed that the true power of alternative data governance lies in leveraging individual agency for collective benefit. When conversations about alternative data governance only adopt the lens of personal data protections, they risk internalizing deeply Western worldviews that orient data stewardship goals around outcomes for individuals. The Lab can help builders explore how to leverage the power that individuals have by controlling access to create societal benefit out of combined data. Ultimately the question is: how can we harness the power of having agency over data about us *and* gather with others to use it for collective benefit.

> *"There's a challenge in challenging the status quo. It happens either through regulation or through a bottom up people's movement and stewardship is neither here nor there at the moment."*

Navigating the commodification of data may be difficult given the emerging prevalence of data dividends as the promising ideal for equity. Currently, organizations like the Electronic Frontier Foundation and Consumers International have led the way in pushing back on the commodification of data, but there is room for additional research

on how builders might avoid these issues. Some builders, like LunaDNA pair data dividends with consent models that empower data subjects and allow them control over access to their personal data. But how might builders know when commodification of personal data will create harmful incentives that erase data rights?

By equating data with money, we run the risk of reinforcing the commodification of people's data. This worldview is problematic because it encourages individuals to seek monetary benefit through their personal data, rather than to participate in collective efforts to bargain by pooling data together. Builders will need support to understand how to navigate these issues when they are confronted with these issues in their work.

Building on existing collective organizing as a precursor to tech implementation could help builders who are attempting to affect social change through alternative data governance. Many builders and supporting entities identified an awareness that building technologies using alternative models of data governance is easier in communities or organizations where a social governance framework is already in place.

> *"[Our beneficiaries] have never been organized into community groups. There has been a drive, in fact, to keep them isolated because keeping them as individuals can keep them from having public pressure or sway."*

When social governance expectations are not in place among users, builders must develop technologies that enable responsible data governance *while* teaching the basics of social governance, which puts a heavy burden on technologists. Builders like Abalobi work with university and community partners to build social governance among users while the company focuses on the technical implementation. Social governance is a core piece of building alternative data governance models, and builders can build it themselves or with community partners, or build on top of governance that already exists.

For example, labor and platform work issues emerged as areas of interest for multiple builders and supporting entities. In these spaces, trade unions could be sympathetic to the core principles of alternative data governance because they are already working within social governance structures that prioritize rights, individual agency, and collective benefits. In our brief scan, we found that trade unions often haven't adopted up-to-date data and technology practices. Builders and allies working with Indigenous governments noted that many Indigenous communities already prioritize distributed governance methods and may prefer alternative data governance methods to more

hierarchical or extractive data solutions, even if they're unsure how to get there. Across groups already using collective governance, like credit unions or membership-based community organizations, education and capacity-building could be a big part of introducing alternative data governance practices.

"Stakeholders are often struggling to demystify technology for themselves and their partners. One of the challenges is a need for re-education about what technology is and what it is not."

Differing uses of new language complicate the question of what is or isn't "alternative data governance" which can lead to confusion for users and co-option by companies and products that do not actually rebalance power in data governance. Misrepresentations of the language of data governance can damage trust between builders and their users and even alienate beneficiaries when promised solutions don't deliver results. Interviewees mentioned that words like "data trusts," which are used to describe various types of collective data projects that do not always align with the legal definitions, can disenchant people who are counting on these projects to create meaningful change.

As an example, the EU recently added infamous digital tech company Palantir Technologies to its GAIA-X project for European "data sovereignty," as well as Amazon Web Services (AWS). Companies like Palantir have consistently come under fire for harmful uses of AI and surveillance, data uses that governments should actively work to prevent. Any buzzword can be co-opted by powerful entities if guiding discourses fail to attach definitions to specific technical, legal, or otherwise concrete mechanisms that separate new methods from the status quo. The term "data sovereignty" itself, which is akin to ideals of complete individual control over personal data, implies that individuals should be digitally literate enough to take advantage of the benefits of such technologies. Instead, we could use language that centers the inherent data rights of individuals to shift conversations away from abstract concepts that are too easily adopted in the mainstream without delivering results.

Business ownership models vary across builders depending on their goals for data governance and their clientele. Cooperatives and collective business ownership models appear to be common solutions for ensuring that not only is data collectively owned, but that major decisions are collectively taken about how to use data.

This creates an important distinction between many builders that control data on behalf of individuals through consent and contract frameworks and those that build in collective control over data. Collective control over data requires legal infrastructure for collective decisions about how data is used, while promising contractual or consent-based control still leaves open the variable of organizational governance which could affect how well consent models and ethics frameworks are enforced.

But ultimately, cooperative models are not the right business solution for every company, or necessarily the best solution for individuals. This leaves an open question for builders who are committed to implementing alternative data governance models but are confined to traditional business ownership models and the incentives they create.

Who needs alternative data governance and why?

In our interviews, we asked builders about a hypothetical scenario: If you didn't exist, would your users seek out another solution to their data governance problems? Across the board, the answer was "*probably not*". Not because users and communities aren't aware of their data challenges, but because many may not know where to begin.

This leaves a challenging environment for builders. Most are offering products to clients who are familiar with the issues that alternative data governance addresses — broadly, that institutions exercise control over their access to data and at the same time, fail to benefit their communities. But the technologies they may be familiar with often don't introduce the language of redistributing power through alternative data governance.

Still, builders are testing out varying methods of communicating their work, and are attempting to make their technologies usable and understandable enough to generate appeal.

We've compiled the following perspectives on public demand for alternative data governance from analysis by builders and their allies on how they understand the demand for their work. While it was out of scope of this research to run a direct public survey with sufficient geographic and demographic diversity, many builders have done their own outreach to communities they serve which informed our proxy insights. This is a limitation that should be addressed through deeper research.

Key topics in this section include:

- What models are builders creating?
- How do they communicate their work?
- How do they benefit communities?

What models are builders creating?

The Mozilla Insights Team's previous research uncovered seven approaches to data governance in use throughout the field. Our research in this phase confirmed that builders rarely self-identify as using just one of these models. As we pointed out in the research, they are indeed meant to be mixed and matched. In investigating this issue further, we found that builders' alternative data governance approaches often fall into one of the following categories to create individual and collective benefit (Figure F).

"People are ready for our work but they're scared. When people are scared, they're ready to have a conversation. The tech community has to learn how to make people comfortable who are new to these models."

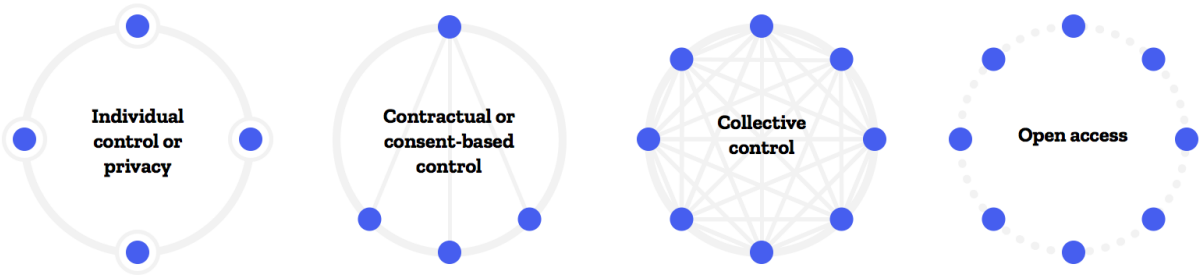

Figure F: Types of user control in alternative data governance

Individual control or privacy prioritizes an individual's complete control over access to their data. Builders and supporting entities in the *decentralized tech* community of practice tend to gravitate toward this strategy. These technologies are sometimes enabled by blockchain or other decentralization and encryption technologies. Generally, technologies in this category can allow users to view and delete their data at any time, eliminating the need for intermediaries or complicated processes giving users the right to be forgotten. In practice, technologies that give users complete control over access to their personal data are combined with broader strategies to collate insights across people. For example, personal data vaults do give people complete control over their data but builders can go the extra step to encourage users to voluntarily submit or combine their data with others to generate population-level insights. Data unions take

advantage of this strategy getting people together to leverage their individual agency for collective benefit.

Relevant approach: Data marketplace

Contractual or consent-based control exists in spaces where a diverse range of constituents can be affected by decisions made by one entity contractually permitted to control the data. In these scenarios, the individual's consent to share data with an intermediary is the key to giving a person agency over access to their data, but they still technically need to go through the intermediary to delete their data. Often the intermediary is trusted with decision-making about the data's use. This might apply to participants in research studies, constituents of data trusts, or beneficiaries of institutional fiduciaries. Consent models, many of which were pioneered in the *medical research* community of practice, rely on designers and trusted intermediaries to craft agreements which accurately communicate benefits and risks and provide opt-out mechanisms for constituents. In the most advanced and effective of these models, constituents can either consent or opt out of participation, or fully remove themselves and delete their data at will through the intermediary's centralized tech infrastructure. Broadly, contractual or consent-based control is the most common strategy we see among alternative data governance projects.

Relevant approaches: Data collaboratives, data trusts, data fiduciaries

"We have a lot of faith in ourselves but we needed to bake [collective ownership] in. We were trying to decide what kind of organizational forms give members a direct voice and lock in the economic side of it."

Collective control requires stakeholders and data constituents to share control of the data, decisions, and benefits emerging from data use. Data unions are an example of how individual control over data can be extended into formalized collective models through which constituents may receive dividends and have input into decisions about how data is used or sold. There are few existing projects that enable true collective control over data because of the complex nature of formalizing collective social governance frameworks. Many builders who prioritize collective control over data must also consider how their business ownership structures distribute benefit, as cooperatives do. Practitioners in *social justice* communities of practice tend to seek out these solutions. Trade unions,

credit unions, and, to some extent, Indigenous governments can manage the distribution of value and collective governance over decision-making about data. Builders like WeClock who partner with collective governing bodies benefit from their infrastructures of social governance.

Relevant approaches: Data cooperatives, *Indigenous data sovereignty*, *data commons*

Open access is based on core ideals of transparency through open licensing and public participation. Many existing open databases are built on extensive or dedicated volunteer networks that openly contribute to and govern data assets that are managed as public goods. Many data commons prioritize public access to information, but some remain closed when governing bodies choose to protect the data for any reason (exemplary of collective control). Open access to information is most often provided in situations where data is non-sensitive and the use of data provides a clear civic good. The *open data* community of practice is built on many of these principles. Consent is given by intentional participation in explicitly open and collective processes.

Relevant approach: Data commons

How do they communicate their work?

"If we weren't doing it, I'm not sure who would."

Many alternative data governance technologies will remain untested at scale until they crack commercial markets dominated by big tech companies. Research about public perceptions of personal data management in general shows that people still have mixed understanding and mixed feelings about how their data is used. In many of our conversations, people said that they feel as if they are the only ones doing what they do. Builders worried that **without their alternative data governance technologies, people would resort to dominant commercial solutions** that use harmful data governance practices.

A report published as part of the Living with Data project based on a survey of UK residents in 2019 found that people "dislike the status quo, in which commercial organisations control personal data in return for the digital services they provide." Researchers found that respondents with more knowledge of data issues rated options for control over personal data as more preferable, whereas people with less knowledge were less critical of the status quo.

Builders we spoke to as part of our research noted that their primary constituents, or people who use their technologies directly, tend to be above average in tech or data literacy, even if not necessarily experts in *their* specific technology. In recent unpublished market research, Streamr and Swash found that "Early Adopters" of their Data Unions Framework often have high technical skills before using their product, and "don't require slick UX or product design to use a product or service." In our research, builders said that their beneficiaries, or those downstream of technology users who might indirectly benefit from more just and equitable data governance overall, tend not to be tech or data literate at all. Altogether, this implies that builders who serve niche communities may find tech-literate users who use their products towards impactful ends. But those who want to pursue widespread adoption or who want to reach less tech literate populations will need to find ways to communicate and market their products that don't rely on thorough understanding of alternative data governance mechanics.

Researchers have also identified that people's trust in data and technology overall can be eroded by seemingly "creepy" technologies, including ambient social apps, social listening technologies, personalized analytics, data-driven marketing, and new (unknown) products entering the market. Although these issues are not all related to data governance, builders and their allies recognize that they must reckon with these broader perceptions as they try to step into the roles currently occupied by harmful data-collecting entities.

In our interviews, we also encountered significant discourse among civil society experts about the language that we use to "sell" alternative data governance. As we discuss in our earlier section on open questions, the issue of the commodification of data is hotly discussed across the field. While CoinDesk hosts dialogues about the potential of data dividends to deliver equity to people whose data is currently extracted without reciprocal benefit, groups like Privacy International have noted that data dividends are not replacements for data rights. The Electronic Frontier Foundation notes frankly that data dividends are a bad deal: "The data dividend scheme hurts consumers, benefits companies, and frames privacy as a commodity rather than a right."

Perceptions about the best alternatives to exploitative data practices could vary due to cultural context. A survey by the Insights Network published in 2018 showed that 79 percent of Americans say they want compensation when their data is shared. But more research must be conducted to understand if these attitudes hold across cultures — for example, if countries outside of the US reject data dividends out of preference for

reforms to the status quo that deliver clearer collective benefit or ensure personal data rights.

Because of the amorphous nature of the data governance happening behind-the-scenes of the technologies with which people in the general public are familiar, builders like Consumer Reports which engage with a broad range of stakeholders noted that **"rights"-based language is more inclusive and accessible for helping onboard people without tech expertise to alternative data governance solutions.** Even though builders we surveyed described their primary users as curious and excited to use their technologies, they also said most people they serve are broadly unaware of other alternative data governance efforts. We found that people who builders serve are more likely to respond to terms like "data rights" or "privacy rights" than more specific terms about approaches to data governance like "data collaboratives" or "data unions," which are known to experts.

"For demand to increase, we have to have really killer apps, something I want to do and share with my friends and family so that they do it... Talking about the philosophy of why it's better is not going to cut it."

Some of the builders and allies who we spoke to believe that **storytelling and education from trusted organizations** about personal data rights could open a path to wider adoption of alternative data governance technologies. In practice, builders noted that a lot of the work they do with primary users of their technologies or wider communities they work with is to help them understand the harms of the status quo and how their technologies begin to solve the problem. Where opinions diverge is whether this education needs to happen *before* experimental technologies hit the market. Some builders felt that technologies need to demonstrate applicability, effectiveness, and usability in order to build trust. Others felt that more education on data rights needed to take place in the broader public sphere before we can be sure that users of alternative data governance technologies know the potential risks of using our new models.

Across our research, those communicating out about alternative data governance initiatives were extremely clear that the words they use matter. Because so much of the general public is unaware of niche alternative data governance technologies, supporting entities like the Data Futures Lab will need to help builders describe what they do and, in some cases, find wider markets for their technologies.

How do they benefit communities?

“ We’re working under a broken social contract that requires communities to do their own work.”

One of the strongest insights we found across geographies and domains was that **data governance often appears in contexts where a social contract has been broken.** A social contract is an implicit agreement between an individual and the collective they choose to submit to for social benefit. In many cases, this speaks to a broken trust between people and their governments.

In a survey we conducted, builders ranked the trust their users demonstrated in government entities, their peers, or in themselves to make decisions about data use. Almost all respondents suggested that users would trust a collective of their peers more than they would trust themselves or their governments to appropriately use personal data (although individuals’ trust in government can vary based on the political context or the entity). Builders like Driver’s Seat Cooperative use these collective principles to give rideshare drivers a voice and a monetary stake in deciding how their data is used.

Kathmandu Living Labs, a company managing volunteer networks to compile crowdsourced mapping data in the wake of natural disasters, has used OpenStreetMap to develop more robust local data on roads and infrastructure than the national government or multinational companies like Google are able to provide. Animikii, an Indigenous-owned software company based in Canada, has been working with Indigenous governments for over a decade to build open, collectivized infrastructure

“There’s work to do on how data ownership actually leads to a power shift both on the individual and a collective level. We’re setting out to prove some of those things in a nuts and bolts way.”

that reflects local cultures of governance where non-Indigenous Canadian tech companies and governments have failed.

When people find water contamination in their backyards, they purchase sensors and join networks like the Public Lab or track environmental risks through projects like Open Environmental Data. When people don't know where to go for social services because governments have failed to make benefits available or accessible, they go to groups like Open Referral to organize coordinated care.

SPOTLIGHT: ABALOBI

Abalobi is a public benefit corporation based in South Africa with global reach. Their mission is to "contribute towards thriving, equitable and sustainable small-scale fishing communities in Africa and beyond, through the joint development of Technology For Good." They develop a suite of mobile apps that help small-scale fisheries to document and trace supply chains for their product and develop stronger cohesion with fisherfolk in their communities.

Using Abalobi's mobile apps, fisherfolk can access and understand their own data, helping them track where their fish are sold further along the supply chain. A new feature even generates business relationships between fisherfolk and local restaurants who buy their supply and allows them to connect directly to patrons. As data subjects, people using Abalobi are integrated into the decision-making around how their data is shared or used.

For many small-scale fishing operations, this is the first opportunity they've had to view and leverage their own data. Commercial fisheries are supported with this type of infrastructure by the Department of Agriculture, Forestry, and Fisheries, but small-scale fisheries are often left behind.

Abalobi, started at the University of Cape Town, handles governance by partnering with community organizations to host co-design sessions and

community meetings for the nearly 100 fisherfolk involved with the organization. They emphasize that fisher communities are integral stakeholders driving the direction of their work, in some cases organizing into labor cooperatives that can make collaborative decisions about use of the platform. The Abalobi team is still working toward charting a business path toward sustainability with a strong community of users.

Alternative data governance is at its best when it is used as a tool for collective outcomes, or to right societal wrongs. Users benefit from having access to technologies that give them these tools to participate in shifting the status quo.

How can the Data Futures Lab help?

Although the Data Futures Lab is a new effort, Mozilla is already well-positioned to fill some of the major gaps in the field around alternative data governance. Throughout this report, we identified that the language and definitions around alternative data governance continue to shift. This is in part because so many examples of alternative data governance are hidden from obvious view.

In a majority of interviews with both builders, supporting entities, and experts, respondents agreed that they'd like to see more examples of alternative data governance in the real world. People want to know what this thing actually looks like. **The Data Futures Lab can become a sandbox for experimentation** that prioritizes open learning, equity across geographic regions, networked connections, and a commitment to collective benefit and data rights.

Because of the wide social implications of subverting hegemonic practices of exploitation through data and technology, alternative data futures can emerge in any domain and in any form. This requires the **creation of fundamental field-building infrastructure** that helps alternative data governance projects to grow and learn from one another.

Significant open questions remain as to which models or tools of alternative data governance offer the most promise for rebalancing power in the current climate of exploitative data practices. Because of the nature and breadth of unsolved mysteries in this space, we have included a set of next steps that warrant deeper investigation.

Key topics in this section include:

- An overview of key recommendations
- What can we do for builders now?
- What's next?

An overview of key recommendations

Although there are numerous experimental projects using models of alternative data governance, many of which are cataloged in the Mozilla Insights Team's previous research, there are few supporting entities explicitly supporting the field to use alternative data governance for empowerment. The following recommendations are intended to help the Data Futures Lab position itself as an ally to builders in the space.

The Data Futures Lab has an opportunity to spotlight projects that specify theories of change that bridge individual agency with collective benefit. The Lab can make a clear commitment to data rights as an accessible and inclusive strategy for engaging communities who may benefit from alternative data governance models. The Lab can also act as a nexus between sometimes disparate communities of practice, and support discourse that standardizes vocabulary and guidelines across applications of alternative data governance.

The major gaps we found center around shared language, shared space, and shared infrastructure. We recommend that the Lab use the frameworks in this report to first help builders self-describe which data governance approaches, communications strategies, and outcomes they're pursuing; then, to enable prototyping and experimentation that fit within the parameters of these definitions, including all of the social commitments agreed upon by the community of builders and supporters. The Lab's work should include expanding the capacity and resources of existing projects that build foundational tools that allow us to shift away from extractive data and technology infrastructure.

1. **Enable open learning infrastructure around builders' projects.** Provide builders with resources to track and document their organizational strategies to help allies synthesize and share learning over time.
2. **Fund, amplify, and empower Indigenous-owned and local organizations in more regions around the world.** Use the Data Futures Lab to build out alternative data governance in support of Indigenous communities or outside of North America and Europe.
3. **Connect builders and allies around the world.** Create channels for builders to communicate with others who share their values or methods, specifically around the social and legal governance strategies to supplement tech products.

4. **Build the rules of a sandbox for responsible experimentation.** Engage allies to develop guidelines on how to follow through on promises to deliver agency and empowerment through alternative data governance technologies without harming vulnerable populations.

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1. Enable open learning around builders' projects.

We propose that the Data Futures Lab work with researchers and other allies to create models for builders to track and share lessons from their work. Often, builders don't have the capacity to both develop their projects and share insights at the same time. The Lab could help by providing capacity to builders to document case studies and share what's working on the ground.

For example, our research found that builders need to balance **social governance**, **technical implementation**, and **business strategies** in order to succeed at alternative data governance. These components look different across communities of practice. For example, builders experienced with social justice or community organizing may have lessons to share around social governance strategies. Alternatively, builders coming from the decentralized tech community can bring significant technical expertise to the table and help other builders navigate infrastructural design and development questions. Creating open resources for builders to evaluate their use of these components, and to help people learn using this framework would create stronger infrastructure for the field around alternative data governance.

Also, builders might benefit from open tools for power mapping to understand their path to adoption and sustainability. In social movement contexts, power mapping helps activists understand who their allies are and what political forces they face. Our analysis in this report falls short of a true power mapping, but we found important insights when asking interviewees to describe the power players who affect the future of their projects. Because alternative data governance seeks to upend dominant systems of data extraction, the Lab can create resources for power mapping that can inform builders' choices around organizational strategy.

> *"Researchers will be useful once we do start testing and learning to ensure that these projects are learning from each other."*

Evaluation models based on Elinor Ostrom's principles for governing the commons could also be applied across data governance approaches as many of these projects

involve pooling data for collective benefit. Builders may find knowledge about commons governance helpful for their organizations.

In short, publicly available documentation about builders' projects and the effects they have on the world can help inform how alternative data governance efforts grow and learn. The Data Futures Lab can help builders to use tools that help them strategize over time and simultaneously help researchers and supporters generate insights about our data futures.

2. Fund, amplify, and empower Indigenous-owned and local organizations in more regions around the world.

An important lens applied throughout this research is that organizations based in the Global North may claim but not always enact a truly "global" scope of work. The momentum around European and North American organizations in alternative data governance is drowning out opportunities to lift up or learn from the perspectives of local and Indigenous-owned organizations in the rest of the world. This research was heavily influenced by European and North American organizations because a majority of funders for alternative data governance initiatives are based in Europe and North America.

Builders who participated in our research and are based outside of North America and Europe noted that their priorities are necessarily influenced by their funding sources. Many local organizations outside of Europe and North America are influenced by the priorities of the international aid community, and may have to deal with complicated geopolitical power dynamics to get funding for tech and innovation work.

The Lab may help to ensure that local initiatives are being seeded and supported when possible to generate deeper knowledge about a diversity of perspectives on alternative data governance. The Lab should partner with or fund supporting entities that support local organizations and bring ideas from outside North America and Europe to a global audience. This may require further work on anti-colonial principles to guide the Lab's investments.

3. Connect builders and allies across regions.

Many builders in our interviews felt disconnected or unaware of other builders who share their goals or principles. Because alternative data governance projects look so

different, it can be hard for builders to see who is doing similar work without knowing the inner workings of their technologies or governance processes.

Builders are bringing expertise in open data, decentralized tech, justice efforts, and medical research communities to alternative data governance projects. They have to balance social and legal issues to establish and formalize governance, and technical challenges to build data systems and technologies themselves. And very few projects have each of those components perfectly in place. As part of a matchmaking or community-building effort, the Lab may highlight builders who may be working in different domains but address social, legal, or technical problems in similar ways. Supporting entities outside of the Lab may also specialize in providing support or uniting communities across these components of successful alternative data governance work.

The Lab might create these connections by establishing mentorship programs, hosting convenings around specific strategic questions, or enabling open communication channels across builders, depending on the needs of those in its networks.

4. Build the rules of a sandbox for responsible experimentation.

Builders and their allies are actively engaged in the work of imagining how the future could look if alternative data governance technologies become the norm. In order to get there, the Data Futures Lab and its allies can help builders test their technologies without creating unintentional harm. Because alternative data governance is sometimes used to rebalance power in fragile environments, builders must ensure that vulnerable communities are not being harmed. Additionally, as discussed in the section on language and definitions of data governance in this report, co-opting language or failing to deliver on promises of alternative data governance can lead to loss of trust or buy-in in these technologies. For these reasons, we recommend that the Lab intentionally explore what protections might help data governance models grow equitably and by centering the needs of the most vulnerable.

"To create more scope for technical innovation and make more models for data stewardship possible, we need new rules of the road."

A "sandbox" for responsible testing might provide guidelines for how to build technologies using inclusive methods, how to mitigate risk when working on sensitive issues, or how to appropriately scale or geographically focus new technologies. Rules should be generated through careful research and conversation with people directly affected or disempowered by exploitative practices.

The Lab can look to examples of other existing data ethics and policy sandboxes, like the Norweigan Data Protection Authority's sandbox for responsible AI. In this research we have outlined preliminary open questions and sets of next steps that might launch the discourse around defining the parameters of "good data governance," centered around data rights and responsible development toward collective empowerment.

Further development of the sandbox for responsible experimentation should take place in the open and alongside practitioners, funders, researchers, communities, and builders in the field. The Data Futures Lab might lead the effort to convene stakeholders to define a "sandbox" and frontline the needs of vulnerable populations.

What can we do for builders now?

In addition to the broad recommendations articulated above, we heard suggestions to support builders' more tactical needs to enhance the quality of work around alternative data governance**.** The following are suggestions for near-term interventions that the Lab may support for builders' benefit:

- Multiple builders noted that representatives from big tech companies are given the spotlight in regulatory or policy-making convenings and roundtables, and that they lack the platform to bring alternative data governance ideas to the forefront. The Lab may consider establishing an **alternative data governance speaker's bureau** for policy-makers and other institutions to draw from so that builders who represent the Lab's values are able to participate in public discourse.
- While emerging research from the Ada Lovelace Institute has gone deep on legal infrastructures for data stewardship, many builders still need hands-on guidance on building legal structures to support alternative data governance models. The Data Futures Lab could create or support the creation of **legal resources,**

templates, or workshops for builders to stay up-to-date on strategies relevant to their work.

- Support **open dialogue around defining the space** around alternative data governance to ensure that language is not being misused and builders are able to communicate using shared language. Based on our conversations it is clear that builders and allies alike are concerned about language discrepancies that may undermine efforts to build trust and generate public buy-in for alternative data governance technologies.
- Begin by funding builders who are providing **fundamental infrastructure to support the field of alternative data governance**. Help builders who are building data schemas, open tech infrastructure, open privacy tools, and other fundamental infrastructure for alternative data governance to spread and sustain their projects.
- Begin by working with initial grantees of the Data Futures Lab to **co-create proposed rules for responsible experimentation** and work with researchers and allies to determine the guardrails for these inaugural efforts. Over time, this foundational work may help the Lab shift to a strategy of onboarding new builders to proven, effective, and clearly defined alternative data governance approaches.

What's next?

We uncovered a number of research questions in the process of generating this report that were out of our limited scope but warrant further investigation. The following questions were identified as priorities by interviewees to continue developing research-based foundations around alternative data governance efforts:

- **What do specific funding priorities look like?** We did not have an opportunity to deeply explore funding streams either for supporting entities or for builders in this report. Closer examination may help to identify a) how funding informs supporting entities' priorities, b) how funding informs builders' priorities, c) how funding streams could be adapted to improve builders' ability to work. This may also involve a deep dive into business ownership models (which are deeply affected by funding availability) and which models are most supportive of effective alternative data governance projects.
- **How do we ensure that consent is technically reversible? And how do we navigate governance when it isn't?** Many of the builders in our research use

contractual or consent-based data governance models like data collaboratives, trusts, and fiduciaries. In these models, builders are still ultimately responsible for designing consent frameworks and privacy standards to protect users' rights. Projects like the Consentful Tech Project that provide model frameworks could be the foundation of further work into processes to help builders ensure that their alternative data governance models are foolproof, and set up governance safety nets for when they are not.

- **What social governance structure can we build on? Where can we find existing demand?** Identify specific user communities where people already have social governance structures in place and who need technology in order to achieve their goals. This may be a way to generate demand among communities who understand data governance ideas but need support with technology or data. Based on our initial insights, promising user communities might include credit unions, trade unions, or other collectives. Further work can be done to sit down with user communities not currently engaged in alternative data governance work and examine how builders can adapt to work with them.

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