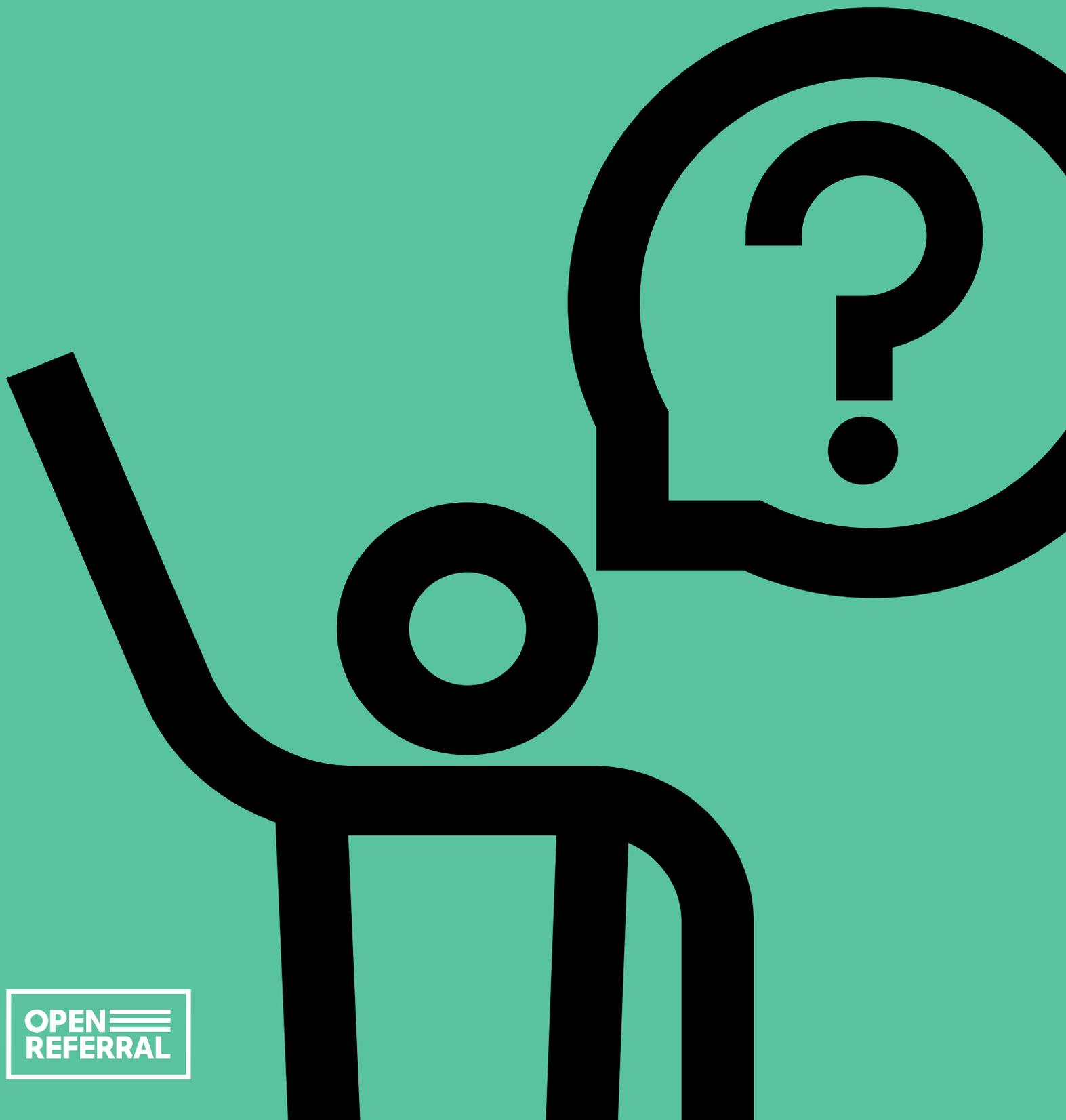


Producing resource directory information as a public good



1. Introduction

Resource directory data is information about the health, human, and social services that are available to those in need.

Resource data is public information - as such resources are provided by governments, government-funded contractors, or tax-exempt charitable organizations - so it should be freely available for anyone to access and use, by right.

Resource data requires a significant investment of resources to collect and maintain. These services aren't typically paid for by their clients, and organizations aren't typically compensated per-client by funders (or, not enough to cover costs) - so they don't have strong incentives to list themselves in a directory. Maintenance of an accurate directory requires a lot of time and effort (research, phone calls, etc) and isn't reliably automatable.

There are many 'referral providers' - such as call centers, resource guides, and web apps - that maintain resource directories. However, they typically do so in redundant silos. Many attempts to build centralized 'one stop shop' solutions have failed - and such well-intentioned failures can make the problem worse.

The Open Referral Initiative formed to seek new solutions to this old problem. Instead of trying to build the one 'central' system that we'd try to get everyone to use, we are fostering healthy information ecosystems - in which reliable resource data can be shared among many systems simultaneously. Our first objective was to develop the **Human Service Data Specifications** - which are now **industry standards for resource data exchange**.

Our next objective is to design new institutional models that can sustainably provision resource data as an open, public good. To do this, we must answer an open question:

If resource data is to be openly available, yet it takes resources to maintain, who should be responsible for maintaining it? And how can this labor of maintenance be sustained?

The 'right' answer will likely vary among communities. That said, through Open Referral's research and development with communities around the U.S. and beyond, we have observed a set of promising patterns that can inform strategies to design sustainable institutional solutions for this enduring problem.

This document presents these patterns with a visual vocabulary to show them in action.

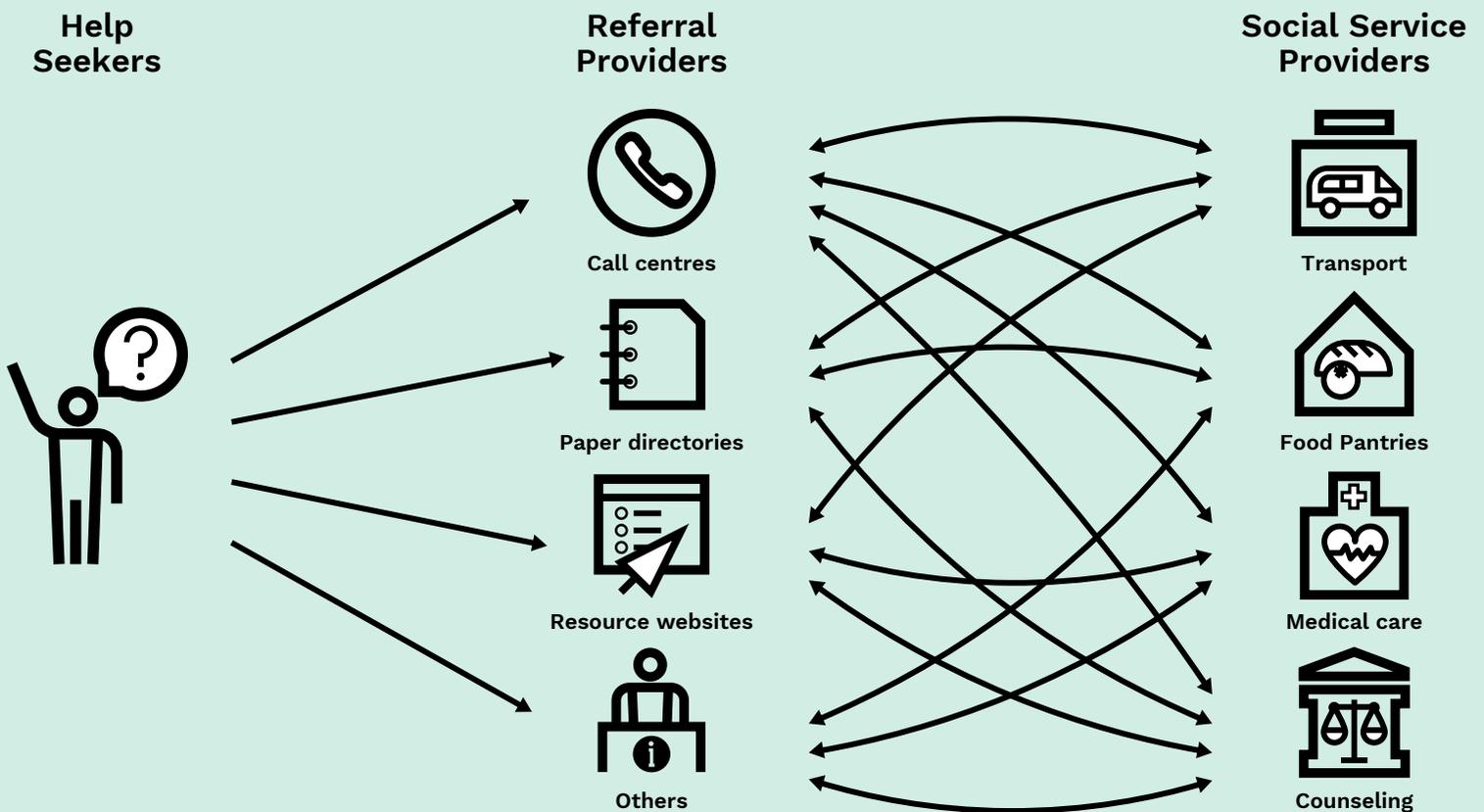
Want to learn more about these strategies and how you might adapt these patterns for your community?

Reach out to info@openreferral.org

2. The Status Quo

There are many 'referral services' that collect directory information about health, human, and social services.

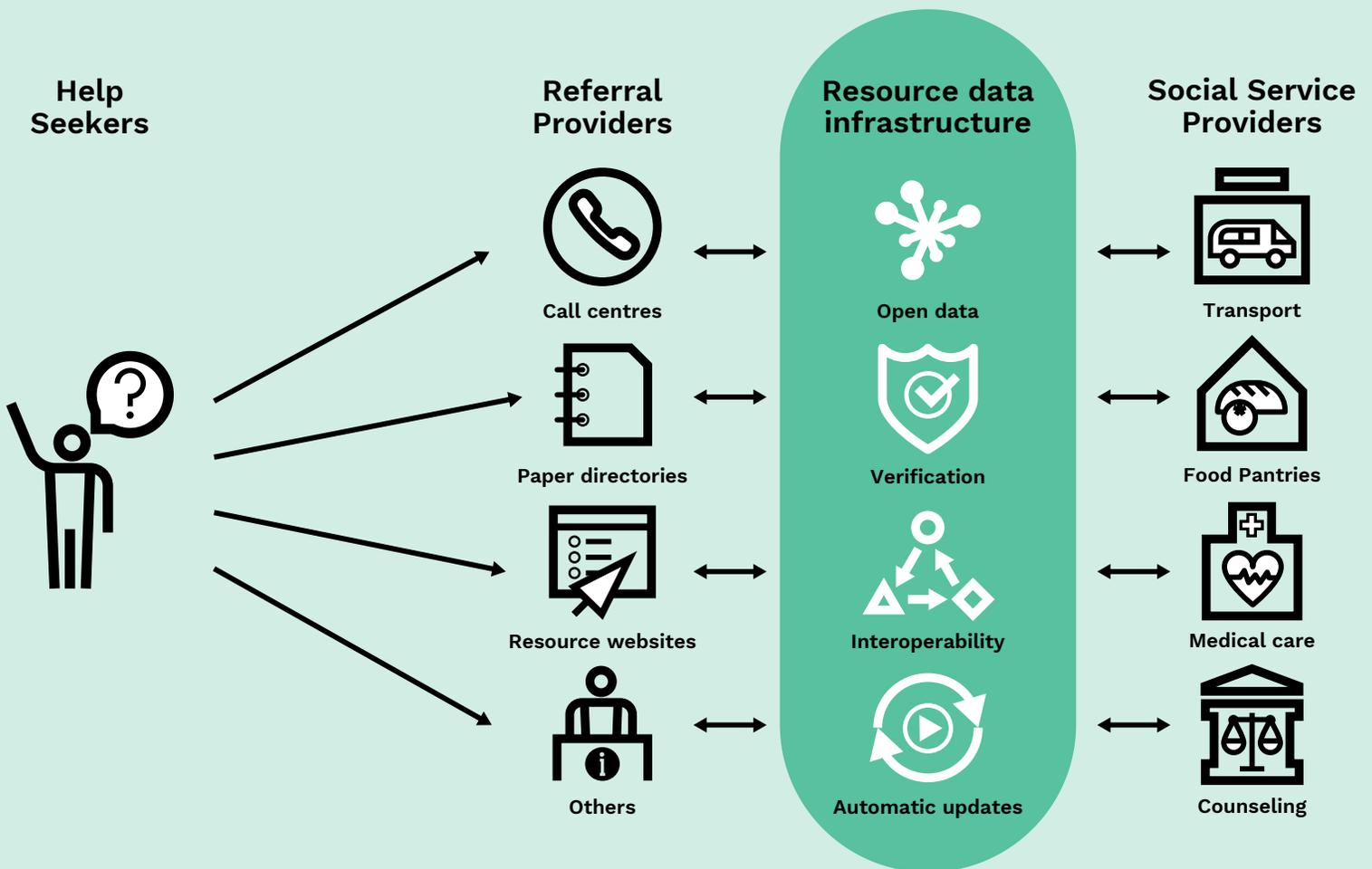
However, these directories are all locked in fragmented, redundant, competitive silos.



3. The Opportunity for Interoperability

Open Referral promotes the development of interoperable resource directory infrastructure.

We do not sell a product; rather, we help communities find solutions that meet their particular needs.

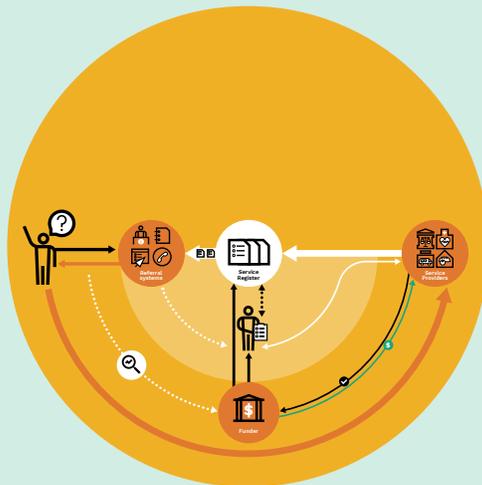


4. Known models for sustainable resource data production

The following models describe common patterns for information provision that we have observed in this field and others. These are not mutually exclusive patterns – indeed, they can and often should be combined in complementary ways – but it helps to understand each on its own terms. The “right” arrangement will depend on each community’s unique landscape and needs.

Service Registries

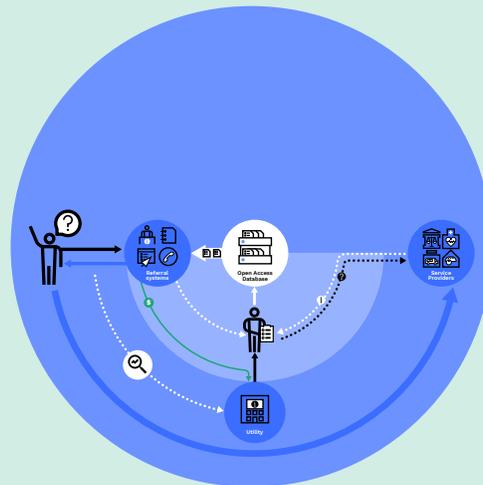
Self-updated list
Authority requires it
Monitored for trust



Service Registries can be created by funders who mandate their grantees and contractors to update their own resource information as a condition of funding.

Data Utility

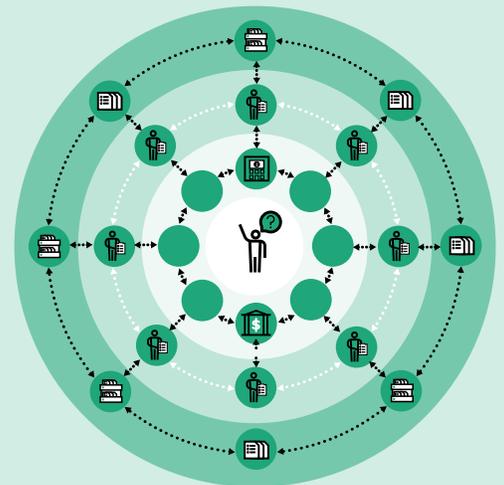
One steward maintains
Open access database
Pay for premium



A **Data Utility** can publish comprehensive resource data for a community and sustain its maintenance by monetizing value-adding services and features.

Data Collaborative

A federation
Shared responsibility
Mutual benefit



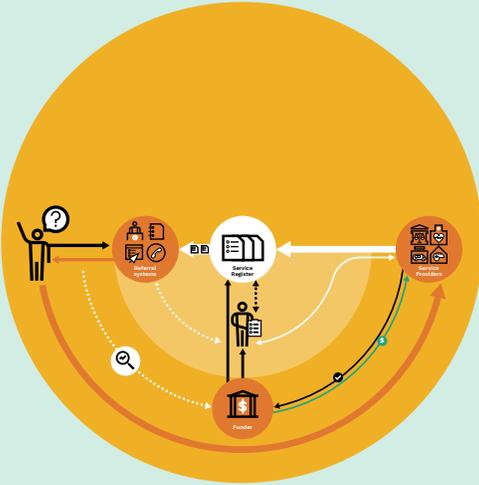
A **Data Collaborative** can enable multiple referral providers to cooperate in the maintenance of resource data, decreasing costs and improving quality.

Opportunity #1: Service Registers

Registers are official, trustworthy lists.

[See the Open Data Institute's report on Registers \(click\)](#)

A Service Register is an official list of services within a specific domain. A Service Register can be made available as 'canonical' open data for use by third-party systems: infrastructure that enables many systems to access the same official information.



Funders and contracting agencies are uniquely positioned to ensure the availability of accurate directory data about services that they support – by **establishing an official 'Service Register' and requiring grantees and contractors to be accurately listed on it.**

Typically, governments and funders collect ad hoc data about the operations of the programs that they fund – the activities and outputs – yet they often don't collect data about how people can actually access those services. This can and should change.

Funders have the opportunity to mandate the provision of open resource data directly from their own grantees and contractors – by requiring them to keep their own information up-to-date in a canonical open data register.

Open Referral has tested this model in the [Florida Legal Aid Referral Hub project](#). Every legal aid provider that receives funding from the Florida Bar Foundation and/or the Legal

Services Corporation now has a form – deployed within their own case management software – through which they enter their service directory information, which is subsequently published as open data in the Open Referral format, and shared for use among their peers and by other legal aid referral tools. We also produced an open source prototype of this form, so this model can be replicated in other states and eventually across other sectors. [View final report of the Florida Legal Aid Referral Hub project.](#)

For a register to be viable, it must be reliably updated through established processes – likely including monitoring, feedback loops, and other mechanisms to ensure compliance. If the Register is accessible via API, it can become the 'single source of truth' for all third-party systems that use resource data to refer people to services, conduct analysis, etc.

Benefits

Canonical data directly from the source, with accountability established by funders or relevant network bodies (such as a Food Bank). Potential benefit of analytics for the funder / contracting agency, as data traffic to the register can be monitored.

Challenges

A Register requires both technical infrastructure and institutional processes. In order to remain accurate – even given a contractual mandate – compliance needs to be monitored and enforced. This includes accessible mechanisms for conflict resolution.

Diagram #1: Service Registers

*Self-updated list
Authority requires it
Monitored for trust*

- 1 Help seekers seek help from all kinds of intermediaries – hotlines, websites, social workers, etc. When resource directory information is made available as standardized open data, any intermediary can access the same information, and deliver it in whichever way is most appropriate for their context.
- 2 Open resource data can be published through a Service Register, which is an official list of services.
- 3 A funder (or any authority institution) can establish a Service Register by requiring the service providers within its remit to be accurately listed in the Register as a condition of funding (or licensing, etc).
- 4 For a Service Register to become and remain trustworthy, there should be a designated Data Custodian who will monitor the accuracy of the Register's records and ensure compliance.
- 5 Analytics – about search terms, referral patterns, resource gaps, etc – can be aggregated from multiple intermediaries when all information systems use the same resource data. This expanded set of data about the usage of resource data can support decision-making by funding institutions, policy-makers, etc.

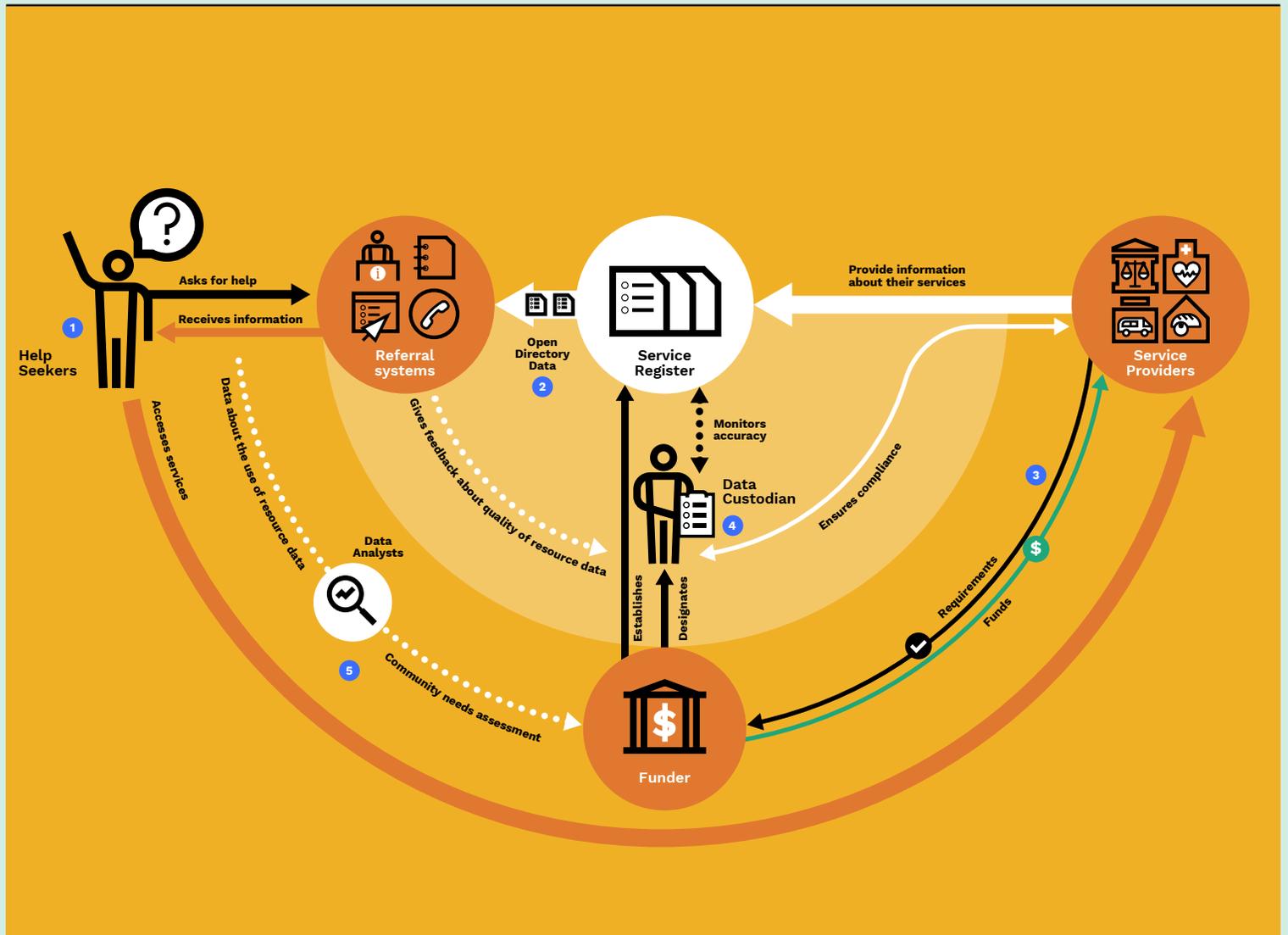


Diagram #2: Data Utility

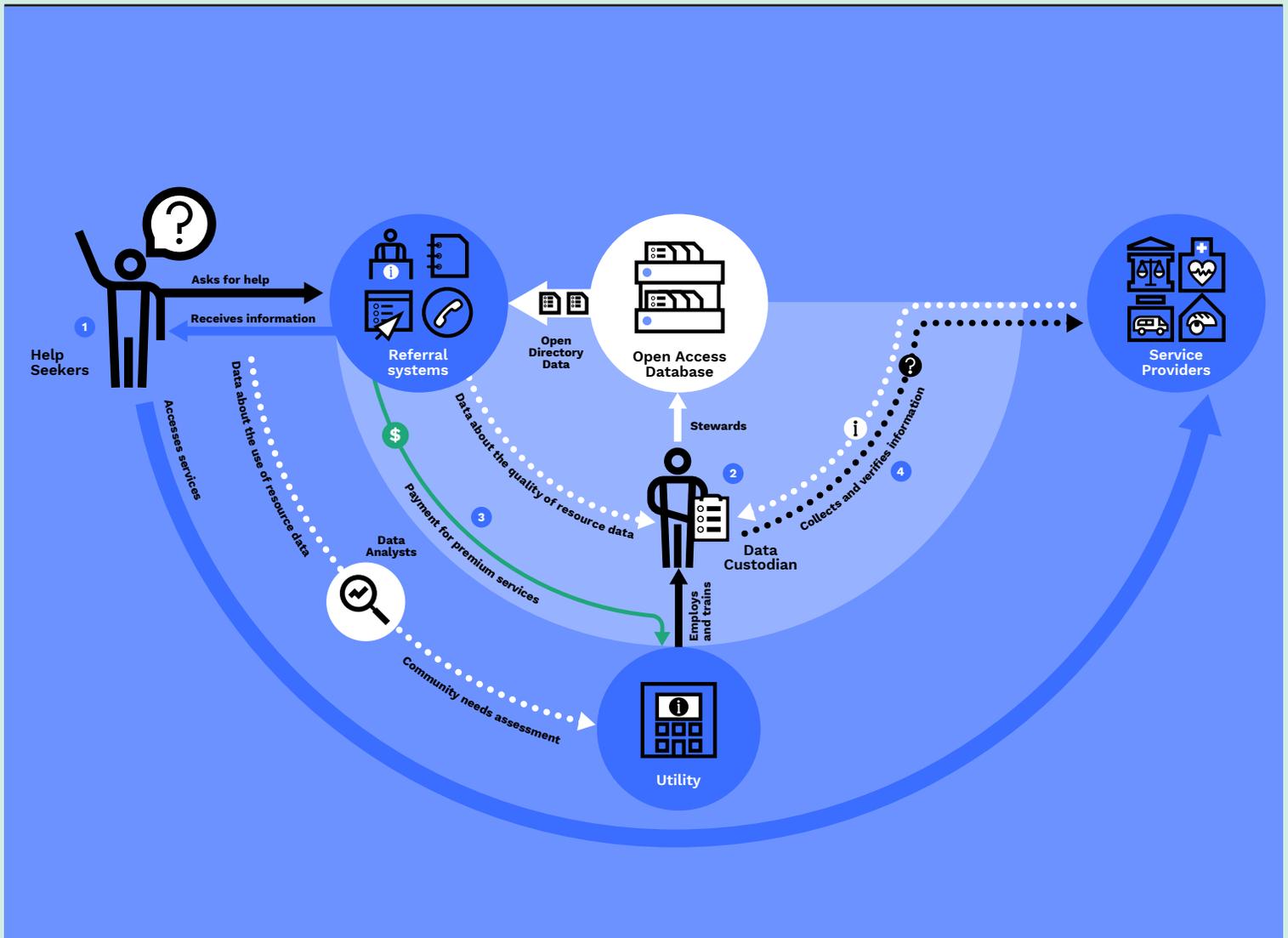
*One steward maintains
Open access database
Pay for premium*

1 Help seekers seek help from all kinds of intermediaries – hotlines, websites, social workers, etc. When resource directory information is made available as standardized open data, any intermediary can access the same information, and deliver it in whichever way is most appropriate for their context.

2 A Data Utility can employ Data Custodians to maintain a comprehensive resource database through the ongoing labor of collecting and verifying directory information from service providers.

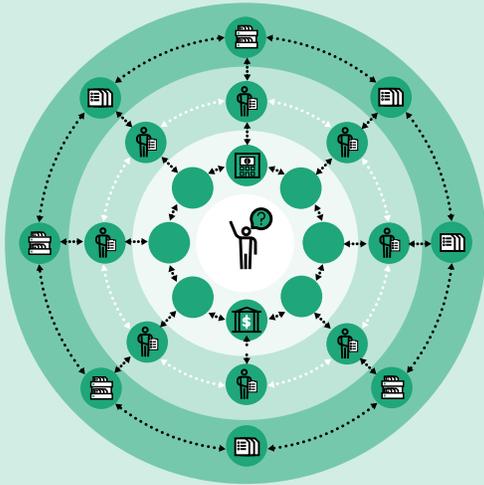
3 A Data Utility can make its resource data openly available as a public service while offering value-adding features to some intermediaries who will contribute sustaining revenue for guaranteed levels of premium service

4 A Data Utility might also generate revenue by deploying and monitoring Service Registers – as described in the Registry model – as a service for funders and other authority institutions..



Opportunity #3: Data Collaboratives

A ‘Data Collaborative’ is a group of organizations that cooperate in the maintenance of resource data. Data Collaboratives distribute the labor of maintenance among members for mutual benefit, yielding higher-quality resource data at lower cost.



A **Data Collaborative** can even benefit organizations that compete with each other for resources — as the kind of ‘pre-competitive’ infrastructure that bolsters many other kinds of markets. Through cooperation (by dividing responsibilities according to geography, service domain, etc) organizations can reallocate limited resources away from redundant maintenance and toward activities at which they are uniquely suited to succeed.

Development of a Data Collaborative requires technical and institutional design processes. To succeed, Collaborative members need to establish agreements and engage in ongoing coordination. They also need technical infrastructure to facilitate data exchange, such as a ‘federated publishing platform’ to facilitate the flow of updates, corrections, verifications, etc, among contributors.

There are at least two precedents in which collaborative resource data maintenance has been established

on a ‘federated publishing platform’ — such as the **Community Information Online Consortium in Ontario Canada**, and Benetech’s **Service Net, currently being piloted in the San Francisco Bay Area**. Both platforms are open source.

To pursue this opportunity, we ask questions such as: how should responsibilities for data maintenance be most effectively and efficiently allocated among Collaborative members? How will maintenance be monitored? How might it be incentivized? How will conflicts be identified and resolved? Who will be responsible for administering the Collaborative?

Benefits

Efficient distribution of labor that leverages diverse assets in a community. Resilient model that can persist even if individual members underperform or leave. Ensuring data reliability through multiple redundant inputs and feedback loops.

Challenges

Cooperation might require resources to sustain. Stylistic differences must be negotiated to balance consistency with specialization.

Diagram #3: Data Collaboratives

A federation

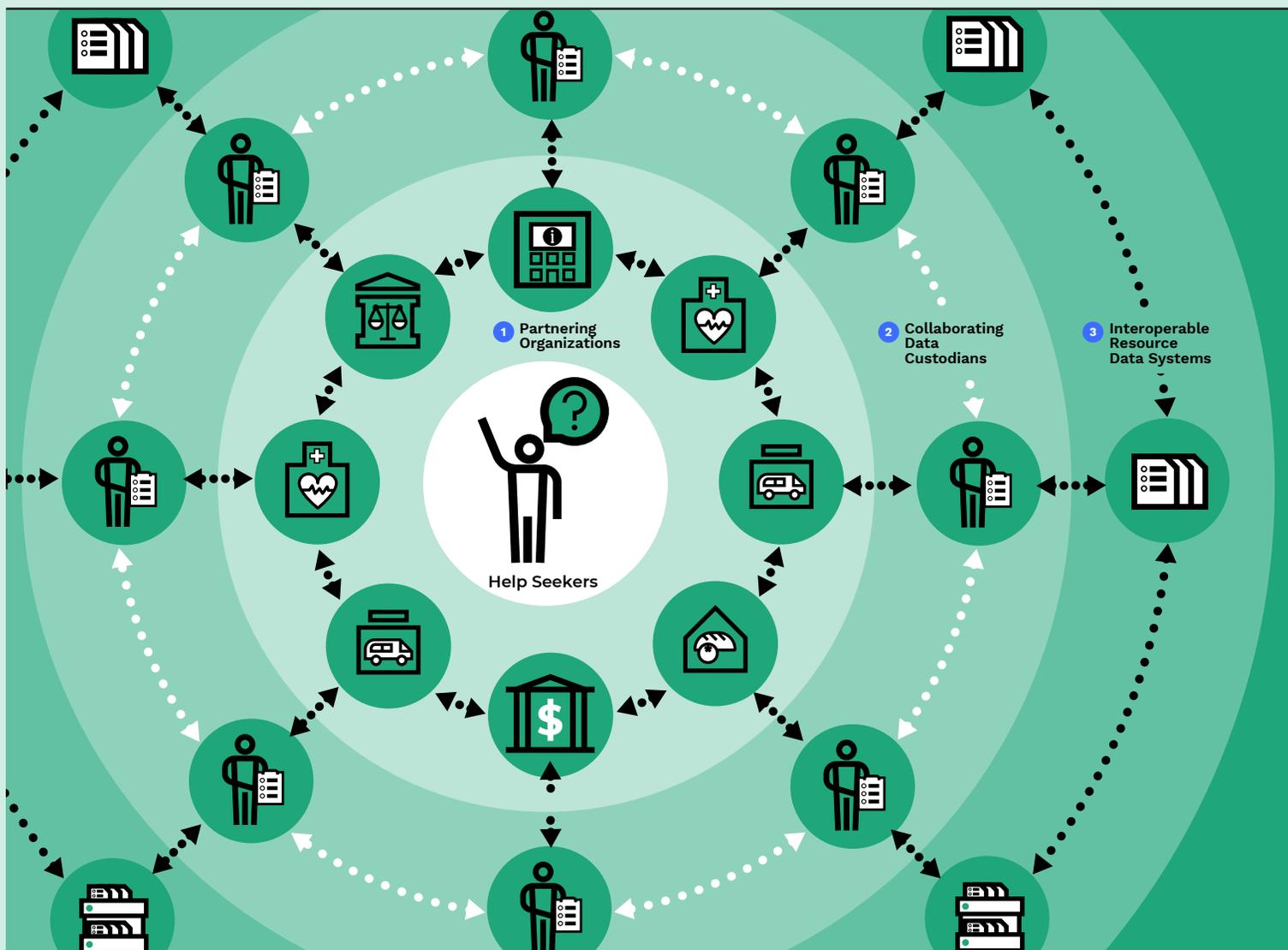
Shared responsibility

Mutual benefit

1 A resource data collaborative enables maintenance responsibilities to be shared across a network of organizations that help help-seekers find help. This collaborative approach can yield higher quality data than siloed, competing systems – at lower collective costs.

2 A collaborative works best with clear agreements that appropriately distribute specific responsibilities among partners – with established methods of monitoring, feedback, conflict resolution, and decision-making through which all partners can participate.

3 Collaboratives can include Service Registries and/or Data Utilities – in fact, they will likely benefit from them. A Data Utility may serve as the anchor of a Data Collaborative, holding bottom-line responsibility for data stewardship; this can be made more sustainable when funders and other authority institutions establish Service Registers as a common practice.



5. Conclusion

The resource directory data problem presents various dilemmas to communities that wish to meet the needs of their most vulnerable residents: this is public information, but it is costly to maintain.

The Open Referral Initiative helps communities around the world develop strategies for the provision of resource directory information as a reliable, sustainable, freely accessible public good.

In this whitepaper, we have introduced a set of design patterns for organizational strategies that can reliably and sustainably provide resource directory data as a public good, accessible wherever and however anyone might need it.

Credits

Greg Bloom
Open Referral Initiative

Ian Dutnall
Icographic

Ostrom Workshop at
Indiana University

This document is open source, like our data standards and other materials. If you have any questions or suggestions, please join our Community Forum.

To learn more about how these strategies can help your community, reach out to us directly at info@openreferral.org

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