The Open Referral Initiative

Towards the Community Resource Data Commons

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Abstract

Directory information about the accessibility of health, human, and social services (which organizations provide what services, where they are located, how to access them, etc) is aggregated by distributed actors using a wide variety of data systems (from enterprise call-center systems, to modern web apps, to ad-hoc spreadsheets and text documents, etc) all operating in redundant, fragmented, non-interoperable silos.

As a result, this information is generally costly to maintain, difficult to find and to use which makes it hard for people in need to navigate the service sectors, hard for service providers to address complex needs among their clientele, and hard for researchers, policymakers and funders to evaluate pro gram effectiveness and community health.

Prompted by the 'civic services schema' submitted by Schema.org to the World Wide Web Consortium (W3C), the Open Referral Initiative has convened a network of diverse actors (including government officials, referral providers, academics, civic technologists, and more) to establish interoperability among a) systems that use the legacy data standards of the Alliance of Information and Referral Systems, b) an emerging class of web-based referral applications, and c) W3C web standards.

In 2014, Open Referral introduced the Human Service Data Specification (HSDS), a data format for exchanging machine-readable data about the accessibility of human services. This poster introduces the Open Referral framework and the HSDS. It also sketches Open Referral's next development objective: a federated publishing platform that can enable users of distributed information systems to cooperate in the validation and circulation of trustworthy resource data across an ecosystem of helpful tools and services.

Introduction

Its hard to see 'the safety net.' *Which agencies provide what services to whom? Where and how can people access them?* These details are always in flux. Nonprofit and government agencies are often under-resourced and overwhelmed, and it may not be a priority for them to push their information out to attract more customers.

So there are many referral services (such as call centers, resource directories, and web applications) that collect directory information about health, human, and social services. However, these directories are all locked in fragmented and redundant silos. As a result of this costly and ineffective status quo:

- People in need have difficulty discovering and accessing services that can help them live better lives.
- Service providers struggle to connect clients with other services that can help meet complex needs.
- Decision-makers are unable to gauge the effectiveness of programs at improving community health.
- Innovators are stymied by lack of access to data that they would need to make valuable tools for any of the above.

Many attempts to build centralized solutions have failed; new apps emerge all the time; with each, this wicked problem gets knottier. However, if the many different kinds of community resource databases could all recognize a common data format, then resource directory records could be published once and accessed in many ways by many tools and applications simultaneously.

In collaboration with **Code for America**, **Google.org**, **the Alliance of Information and Referral Systems** and others, Open Referral has just made this possible. Now we have to make it *easy*.

Open Referral's Primary Objectives

1. Design, promote adoption of an open data specification.
2. Develop, promote adoption of open, interoperable APIs.
3. Form communities of practice around mutual value propositions.
4. Demonstrate viability of open data business models.

Open Referral's Long-term Goals

We anticipate that success will yield a cascade of benefits for people in need and civil society at large, as it becomes:

1. Easier for people in need to find and access services;
2. Easier for providers to help refer people to services;
3. Easier for innovators to build and redeploy useful technology;
4. Easier for researchers and decision-makers to assess community needs, evaluate program effectiveness, and advocate for improved resource allocation;

We believe that all of the above will yield healthier, happier people and more resilient communities.

Methodologies

Open Referral is led by local pilot projects, in which diverse stakeholders collaborate around mutually beneficial value propositions that entail the open publication of resource directory data. Pilots commit to using Open Referrals data format to enable such exchange among existing and/or emerging systems. In return, stakeholders receive facilitation, technical support, and access to tools and their feedback is prioritized in shaping the ongoing iteration of the Open Referral data format and framework. Pilot project objectives include short-term demonstrations of the value of interoperability, and detailed plans for long-term sustainability.

Results

- iCarol, the world's leading vendor of 'information and referral' call-center software, is currently implementing the Open Referral via bulk export feature and API. (iCarol's clientele includes more than a third of all 2-1-1s and a half of other conventional help hotlines in English-speaking countries.) Canada's Ontario 211 was the first of iCarol's customers to declare their intention to publish HSDS-compliant data.
- Purple Binder, in Chicago, is also using HSDS to publish resource data via their own API (which is designed to be compatible with the Ohana API). As a result, Purple Binder's hometown of Chicago is already seeing the emergence of a nascent ecosystem of third-party applications (such as mRelief, and the Chicago Health Atlas) that repurpose Purple Binder's resource data for new uses.
- Boston Children's Hospital in Massachusetts, whose 'HelpSteps.org' project is funded by the Boston Public Health Commission and used by the Mayors Help Line, implemented the Ohana API and developed an open source mobile Helpsteps application. Their resource data API is now being used by other government officials and partners across the city.
- Switchboard of Miami in Florida has developed an Open211 API, deploying the Ohana Web Search as a demonstration front-end, and building capacity for an 'innovation laboratory' that will test the feasibility of various 'open data business models.'
- Social Impact LAB has developed Friendly, an open source conditional logic authoring tool that can enable the easy construction of Q+A-based tools. Friendly could enable the proliferation of screening mechanisms that can be tailored to particular types of users yet query a common source of standardized open resource data.
- LegalServer, the market-leading case management software in the field of civil legal services, has implemented Open Referral as a format for its clients to self-publish their data. Other civil legal institutions are developing plans to establish interoperability for their resource directory information via Open Referral.

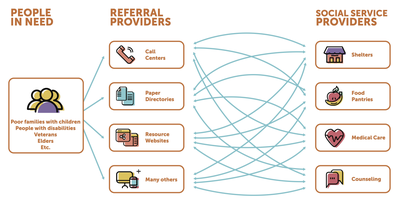

Figure 1: The status quo: a landscape of fragmented, redundant silos

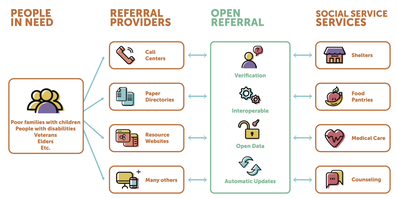

Figure 2: A vision for infrastructure: interoperability through federation

Forthcoming Activities

- **Specification upgrades:** Open Referral is in the process of upgrading the Human Service Data Specification from 1.0 to 1.1, by soliciting feedback from all stakeholders and evaluating proposals according to the needs and preferences of lead stakeholders in our pilot projects. In 2017, we will chart a course to v2.0.
- **Open Data Business Modeling:** Working with clients such as Switchboard of Miami, Open Referral is conducting 'social lab' experiments to test the viability of various business models to ensure the sustainable provision of open resource data. Possible models include 'Data as a Service'-Level Agreements, 'freemium' offerings, consulting services around implementation, and data analysis of API exhaust.
- **Infrastructure development:** For our next phase of evolution, we are proposing the development of an open source federated publishing platform, which would enable an open set of intermediary agents to publish to, and subscribe to, an open yet moderated registry of the domain of health, human, and social services.

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