

211 TECHNOLOGY FRAMEWORK- OVERVIEW

211 Technology Framework is a conceptual framework of technical components and business capabilities that enables an integrated model of 211 service delivery. Investments in transforming current processes and modernizing existing infrastructure ensure 211 is efficient and effective, and allow systems to evolve to meet the needs of citizens.

At the heart of the framework is an architecture that decouples proprietary solutions into a distributed and scalable platform that helps to eliminate duplication of data and promotes collaborative approaches to information collection and management. The four components of the framework are:

- **Open Data:** a single data repository that enables collection and sharing information and referral records;
- **Integrated Phone:** a cloud-based contact management platform that enables load balancing and skills based routing of callers;
- **Knowledge Mobilization:** a content management and business intelligence system that enables cross-sector collaboration and reporting on unmet needs and service gaps; and,
- **211 Online:** a web platform that enables easier access to online resources for the public and improved coordination of social media channels.

Combined, these four components of the 211 Technology Framework help to deliver higher quality data, improve caller experience, provide easy-to-navigate Internet channels, and ensure greater access to information.

Open Data is the foundation for 211 system components. In its final state, Open Data is an authoritative repository of AIRS-compliant resource data managed by Certified Resource Specialists and accessible over the Internet from any external third-party platform or application. The repository is designed to support data collection and exchange amongst AIRS-accredited agencies, licensed 211 service providers and other government-funded organizations that manage information and referral data in accordance with industry standards and best practices. The repository's data model is based on standards developed through collaboration and broad consultations, such as Open Referral (sponsored by Code for America) and Linked Data (sponsored by AIRS). The OpenData repository will be made available through creative commons licensing and will be governed by licensed members that contribute data.

A key barrier to 'opening data' for broader public use is proprietary application programming interfaces (API's) that restrict access – often unintentionally - to information using proprietary methods or platform-specific protocols that limit opportunity for inter-system interoperability. The 211 Technology Framework maximizes access to resource data and supports cross-sector interoperability by using system agnostic architecture styles such as Representational State Transfer (REST) and open web standards such as the oData protocol. Open web standards for authentication, protection and transmission of data maximizes access to data for all 211 stakeholders (funders, researchers, citizens, service providers) and ensures interoperability of 211 and non-211 systems.

Integrated Phone is a cloud-hosted automated call distribution (ACD) and interactive voice response (IVR) solution that integrates 211 call centres within a virtual pool using shared telephony and voice-over-internet-protocol (VOIP) technologies. Calls made to 211 will be load-balanced to minimize wait times, and routed to Certified Information and Referral Specialists (CIRS) with specialized skills to respond to callers with unique needs.

The Integrated Phone platform is 211's unified communications solution that provides multi-channel access (e.g. chat, texting) to CIRS, and new choices to callers such as call-back or self-service using online resources. The platform is designed to 'on-board' 10-digit toll free information and referral lines to simplify access to services for citizens through 211. It can also be used by non-211 service providers, providing access to 211's virtual pool of CIRS.

Information on the issues and needs of the caller are recorded in a call-tracking system, along with data on the referrals to services and supports referred by the CIRS. Caller data will be combined with system performance data such as number of answered and abandoned calls, wait time and length of call to generate a comprehensive data set for analysis and reporting.

Knowledge Mobilization is a content management and business intelligence platform that enables collaborative approaches to creating and delivering information to 211 funders and key stakeholders. The platform has three core capabilities: extract, transform and load data from multiple sources (e.g. call tracking system, phone system, resource database, web server logs) into a data mart; analysis and reporting tools to generate visual content (e.g. resource maps) and insights (e.g. unmet needs and service gaps reports); store and access content using industry-standard and public-facing classification systems.

Similar to how OpenData will provide new opportunities for service providers to work more closely together to share resource data and reduce duplication, Knowledge Mobilization will provide new opportunities for funders/stakeholders to work more closely with 211 to coordinate investments and strategically deliver service. For example, strongly constructed and accessible information can be delivered automatically to information consumers through alerts or subscriptions, helping to identify emerging trends or issues in real-time. Or, reports on key performance and strategic measures can be used to demonstrate the impact and value of services, and to expose valuable insights that assist with the allocation of limited public resources.

The platform will support open standards and architectural styles such as federated identity and claims-based authentication to enable interoperability between 211 and non-211 systems.

211 Online is a web portal of service directories that returns resources to the user in the context of their particular need, issue or location, and provides a central hub for integrating social media channels. Through relating several clinical and public service taxonomy systems to the AIRS classification system, users can use natural language or preferred terminology to locate resources. For example, a family physician may use clinical terminology to search for resources, which could be quite different from the natural language of a parent trying to locate the same resources. A broad range of terms (i.e. synonyms, folksonomy) and keywords will be used to support different lenses through which the resources are

searched. In addition, centralizing 'search traffic' through the portal will provide unique insights into public issues and needs, and help efficiently and effectively direct users to appropriate resources by leveraging data collected from previous searches (e.g. users who viewed these results also viewed these resources). Stated simply, the goal for 211 Online is to provide the public with a search experience that combines the best of Google and Amazon.

The purpose of a central hub for integrating social media channels is two-fold. One, coordination between 211 and non-211 channels maximizes the reach for delivering information to the public, which is particularly important during time of emergencies and disasters. Two, integrated channels extends 211's social listening capabilities across its network of service providers and stakeholders, allowing 211 to amplify, relay and target messages.

