Privacy challenge for the 2024 open data discotech

Portland, OR. March 2nd, 2024

Disclosure

All the events, people, agencies, and scenarios are fictitious and intended only to represent a real case faced by some City of Portland agencies. This exercise is an attempt to explore privacy-enhancing techniques in real-life cases in local government. The techniques shared will be part of the ongoing open-source repository of the City of Portland open data program.

Description

The 2024 Open Data DiscoTech Privacy Challenge is an invitation to groups to explore privacy enhanced strategies for data management in multiple stakeholders involved in data sharing and operations environment.

Certain projects require the collection and sharing of sensitive information to provide social services and benefits to individuals. Layers of transparency and accountability and the responsibility of protecting personal and sensitive information makes sharing data a complex process. We want to invite the community to help us explore ideas, technologies and strategies that can improve information services.

The Smart City PDX team and academic collaborators from Portland State University and Oregon State University have prepared a simulated scenario that is based on cases that can appear in City projects.

We encourage teams to explore anonymization techniques, differential privacy, encryption algorithms, multi-party computing and other privacy enhancing technologies that demonstrate how information can be protected in real scenarios. A list of fields in this information system is shared below. We encourage teams to create their own demos using synthetic data.

These ideas will be profiled on the Smart City PDX website and be considered for future projects in the City.

Scenario

The Office of Social Services to Portlanders (OSSP, *not a real agency*) manages cases of individuals referred from community-based organizations from the coalition of human rights services (CHRS).

OSSP has built a network of City-approved contractors. These contractors are divided into three categories: two home and shelter (HS), three medical services (MS), and three economic opportunities (EO) organizations. These organizations can download, manage, analyze their information, or aggregate it with other data sources. For instance, medical services agencies could access some additional medical information.

OSSP will direct people to those three different services depending on the specific need and situation of the individual. Only certain staff from those agencies will only access data shared to the organization, but most of the staff can only access names and some contact information.

The full list of fields in this information system is described in the table below. **The information described in this table is not a representation of a real life case or data management system. It will be used only in the context of this exercise.**

Description	Privacy category	Shared to	Comments
Full name	Shareable	all	An individual's full name.
Email	Shareable	all	An individual personal email.
Phone number	Restricted	all	An individual personal phone number.
Contact address	Restricted	All	An individual's contact address.
Date of birth	Restricted	All	Date of birth.
Race and ethnicity	Shareable	All	Race and ethnicity of the individual.
gender	Restricted	All	Gender identity.
System's ID number	Restricted	All	This number is shared as part of the data management system.
Social Security Number	Confidential	None	This number is needed for fiscal compliance. It is kept in the City and not shared.
Home status	Sensitive	HS, EO	Home status can be: Owning, renting, shelter, tend, unhoused.
Immigrant status	Sensitive	HS, MS, EO	Citizen, resident, immigrant, refugee.
Gang associations	Sensitive	MS	Name of the reported gangs associated with this individual. Use None for empty.
Addiction history	Sensitive	MS	List of addictions reported by this individual.
Health provider ID	Sensitive	MS	Name of the health provider. UseNone for absence of health provider. Use Unknown for missing information.
Mental health history	Sensitive	MS	List of main mental health issues reported by this individual.
Job status	Sensitive	EO	Report of the current job situation for this individual: full job, part-time job, jobless-searching, jobless-not searching, incapacitated to work.
Benefits card number	Sensitive	HS, EO	Needs to report financial benefits in a fiscal year. EO organizations have access to individual card's remaining funds and receive overdraft warnings. They make sure individuals use these benefits properly.

Challenges

1) The City needs to access the number of people who overdraft their benefits card without accessing names. Information about how clients are using their cards is only accessible to an EO via the vendor of the card. The EO has access to warning messages and card balance. The City does not have access and may request information about funds used, remaining and misused of funds from individuals or groups of individuals.
2) In each organization, including the City, only authorized staff can access sensitive information. Direct service staff can access shareable information. Other organization staff cannot access any information.
3) A laptop with this information gets stolen. How is this information protected against unauthorized access or information re-engineering?
4) Can the information be destroyed in secure ways?

Note: *If a challenge is not well defined, we invite teams to propose scenarios that help explore privacy-enhancing techniques of data management in this type of data sharing environment.*