Data Exchange

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Implementation Planning Guide

New Zealand Government

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Contents

Introduction

This document is a guide.

It is intended for use by Agencies and NGO's and outlines the key items to consider for inclusion in the Implementation Plan for connecting to the Social Investment Agency (SIA's) Data Exchange. This is not offered as an exhaustive list of activities or an implementation template, rather it is proposed as a reference guide.

Background

Social Investment

Social investment is about improving the lives of New Zealanders by applying rigorous and evidence-based investment practices to social services. Social investment answers questions such as 'what works, for whom, where and at what costs'. It's called social *investment*, not spending, because it's about investing resources upfront to enable people in need to thrive over the longer-term. Four elements of social investment:

- Use data smarter to better understand people's current and future needs
- Systematically measure the effectiveness of services in meeting people's needs
- Measure long-term outcomes for people over their lifetime and feeding back into decision-making
- Understand the fiscal implications of better outcomes and help to manage the long-term costs to government.

Social Investment Agency

The SIA will use data and analytics to provide evidence-based information, tools, guidance and products to social agencies to help inform their investment and decision-making and create improved outcomes for vulnerable New Zealanders.

An essential infrastructural requirement is the safe and secure sharing of data between social agencies, which is where the Data Exchange comes in.

Connecting to the Data Exchange

The Data Exchange is SIA's branding of a product provided by EightWire Limited. It is a data transfer platform hosted in the cloud, between two data centre providers.

A small piece of software named the "Agent" is downloaded from the EightWire web site and installed on a Windows machine at the Agency/NGO wanting to exchange data with another Agency/NGO. This Agent "hosting environment" connects to a data staging area ("landing zone") where the data will be transferred to and from.

Each organisation connecting to the Data Exchange has complete control of the Agent hosting environment, data staging location, the schedule of the data being transferred, and the actual data being transferred.

As a result each organisation develops its own implementation plan in conjunction with the SIA (the Data Exchange Operator) and the relevant other exchange partner(s) to implement its connection and data transfer.

Implementation Planning Guide

Connecting to the Data Exchange should ideally be undertaken as a formal project in the organisation receiving adequate priority and visibility for Information Technology (IT) and business resource allocation. The project is similar in nature to setting up a new system for business reporting, requiring IT and the business to work together. However, the IT component should be substantially less complex and "business as usual" for any reasonably capable IT team.

High level themes that should be considered when developing the Implementation Plan for connecting to the Data Exchange, along with the capability to send and receive data, are:

Theme	Key aspects to consider
Business	The "use case" for a secure data transfer channel, the exchange partner(s), relationships already forged/to be forged and approach to achieve success.
Governance	Roles, accountabilities and responsibilities of involved parties – typically new and to be established for the connecting organisation(s).
Legal	Data sharing legal provisions/obligations and agreements in place, to be amended or to be developed for the planned data transfer.
Privacy	Obligations under the Privacy Act 1993 and its implication for the planned sharing of data via the Data Exchange.
Process	Data management and handling, IT support, and business practices and processes in place/to be amended/to be developed for the planned transfer and consumption of data.
Data	Definitions, standards, formats and structures, etc. to utilise if existing, change, or to develop, for the treatment of the planned data transfer.

Security	Information security and business risk assessment for the planned data exchange along with changes to existing controls and developing new risk controls and management mechanisms. (Information security certification and accreditation processes).
Systems and Infrastructure	Infrastructure, network configuration, and technical support to accommodate the Agent hosting and data staging.
Delivery	The logistics of connecting the organisation to the Data Exchange and completing the first data transfer – resourcing, procurement, project management and IT system implementation governance and stakeholder management.

The SIA's 'Readiness Assessment Guide', which is distributed as part of the Data Exchange onboarding pack, provides further detail on each of the themes and is an excellent primer for developing the Implementation Plan. The onboarding pack also includes process flow diagrams which outline the end-to-end business process for connecting to the Data Exchange, and add to the background for developing the Implementation Plan.

We also recommend that you consider the following five main stages of implementation when developing the Implementation Plan:

Preparation

- **Appoint** a single point of contact (ideally a Project Manager) to coordinate the implementation of the connection to the Data Exchange.

- **Review** all the SIA on-boarding collateral provided as it provides all the foundation knowledge necessary to develop the Implementation Plan.

- **Assess** the organisation's readiness to connect to the Data Exchange to determine the gap between the existing and the desired environment and what needs to be catered for to ensure a successful implementation. *(Refer to the Readiness Assessment Guide which also includes a number of checklists as tools for the assessment)*

- **Confirm**/determine the business need and use case(s) for transferring data via the Data Exchange and if there are multiple use cases assess and select the most appropriate. *(Refer to the Use Case Guide)*

- **Review** the organisational process to deploy IT systems into production, including meeting all the requirements of the IT release/change management process as well as all applicable new project/initiative governance requirements.

- **Develop** and agree a high level implementation and data transfer approach with the Data Exchange Operator (the SIA) and the relevant other exchange partner(s) who will be involved.

- **Develop** cost and timing estimates from internal and external resources/vendors, e.g. for information security risk work, IT infrastructure build for the Agent hosting environment and data staging area, treatment of data to send/receive, etc.

- **Develop** and have a business case approved if that is an organisational requirement for a project of this nature. *(Refer to the Light Business Case Guide for information to help with defining the value proposition for connecting to the Data Exchange)*

- **Secure** a position in the organisation's formal work programme/priority list and obtain the required resource commitment and engagement for the planned implementation.

- **Identify** and plan for potential risks to successfully connect and exchange data via the Data Exchange.

- **Draft** the Implementation Plan and other supporting documents that may be required by the organisation's project/system delivery methodology and other parties involved in the project.

- **Launch** the necessary engagements, meetings and other communication to kick off the project for connecting to the Data Exchange. The key aim being to brief key stakeholders, gain agreement and commitment to deliver what is required, define and clarify roles and responsibilities, and share the Implementation Plan.

Connecting to the Data Exchange

The connecting stage includes the following key items that should be considered in the process of developing the Implementation Plan:

- **Capable, informed and committed IT specialists** - to implement a connection to the Data Exchange typically requires involvement from a Windows administrator, a network engineer, and a security engineer. Maintaining subsequent changes usually requires a Windows administrator (who may co-opt other IT specialists as required), along with the person (if it's another) responsible for the Data Exchange 'Account Administrator' role to manage Data Exchange logins, roles, and Agent configuration and maintenance. *(Refer to the Solution Design Primer for more information on the Data Exchange roles)*

- The development and sign-off by all relevant parties of the Data Exchange connection solution design which includes the organisation's Agent hosting environment, its associated data staging area, network connectivity, security and operational support. (*Refer to the Solution Design Primer*)

- Data Exchange specific training (arranged with SIA and EightWire) for the 'Data Exchange Account Administrator' so the person is able to perform Agent installation, configuration and account setup for connecting to the Exchange.

- Deployment of the organisation's test/pre-production and production host environments for installing the Agent that will communicate with the Data Exchange. The environments are likely to exist already and may just require provisioning of additional IT system resource such additional virtual CPUs, memory, disk space and network connectivity to the Data Exchange cloud (Internet) service. The environments should be fully set up to at least operating system (Windows) level with access to the required network resources such as database, file and proxy servers, as well as Internet connectivity to enable installation and functioning of the Agent software.

- Installation of the Data Exchange Agent software in the hosting environments which includes:
  o Pre-requisite software (database drivers, etc.) that the Agent requires for accessing data from its designated data source(s) in the staging area *(Refer minimum recommended system requirements in the User Guide or Solution Design Primer)*
  o Service account set up for the Agent with all necessary permissions on its host server and Internet access *(Refer to the agent security section in the User Guide)*
  o Configuration of network security controls such as firewalls and proxies to allow the Agent and the Data Exchange to communicate with each other.
  o User accounts on the host server for the roles related to managing, supporting and using the Agent.

- Deployment of the organisation's data test/pre-production and production staging areas that the Agent will utilise as the landing/departing zone for data exchange. Again, the environments are likely to exist already and may just require provisioning of additional IT system resource and assigning it and providing access for use by the Agent. The environments should be set up to a fully operational database/file handling state with suitable file directory/database structures.

- Agent configuration, i.e. user profiles/roles, data stores, etc. *(Refer to the Data Exchange User Guide)*

- Test plan for and execution of Agent to Data Exchange connection and ability to transfer testing in the test environments.

Data Transfer

The data transfer stage includes the following key items that should be considered in the process of developing the Implementation Plan:

- The formal agreement between the parties planning to exchange data such as a Memorandum of Understanding:
    - o The existing agreement(s) may need changes or a new agreement may be required to cover what data is exchanged, the format of the data, using the Data Exchange as channel, etc.

- Capable, informed and committed consumers and data custodians:
    - o To implement effective data transfer via the Data Exchange typically requires involvement from a business data consumer(s) and any one of, or possibly both the analyst(s) who support the business team and the IT database specialist(s) responsible for that organisational data. It also requires the person assigned to the Data Exchange 'Data Manager' who configures data stores and processes in the Agent software to enable the data transfer via the Exchange.

- Data Exchange specific training (arranged with SIA and EightWire) for the 'Data Exchange Data Manager' mentioned above.

- The specification for the data to be transferred, i.e. structure, format, frequency, etc.

- Preparation/processing and management of the data that will be sent/received:
    - o To process data arriving in the Agent's staging area, i.e. read and insert the data into some analytical/reporting data store, or to prepare data to be sent by the Agent, i.e. extracted from some operational, data warehouse or reporting data store and manage data removal from the staging area after successful transfer.
    - o To present the data that was received and ended up in the organisation's analytical/reporting data store to business consumers of reports.

- Test plan for and execution of data transfer testing end-to-end with the other party(ies) in the test environments, i.e. data (and associated metadata) sent is the data received in all aspects. It also includes involvement of the end-consumers and their acceptance sign-off.

Information Security Certification and Accreditation

In production version 1 (Prod-1) the Data Exchange was certified by the Ministry of Social Development to transfer data classified up to and including IN CONFIDENCE. In practice this means that data about people was only able to be transferred if it was de-identified.

In Prod-2, certification was raised to SENSITIVE in November 2017. This allows for the transfer of identifiable client level data.

Every organisation connecting to the Data Exchange will typically have its own information security risk management practices. The information security certification and accreditation (C&A) stage includes the following key items that should be considered in the process of developing the Implementation Plan:

- Initial (high level) information security assessment: Typically conducted as part of the connection readiness assessment in the Preparation stage. It is one of the most important aspects of the readiness assessment and should confirm that the connecting organisation is satisfied with the security robustness of the:
    o Data Exchange for the type of data planned to be exchanged. *(Refer to the Data Exchange security certificate available on request)*
    o The organisation's own planned connectivity to the Exchange. *(Refer to the information security C&A primer for agencies and NGOs connecting to the Data Exchange)*

- Engage information security resources and possibly an external service provider to perform the security risk analysis (including penetration testing), as well as produce all the collateral required to achieve certification and accreditation of the Agent hosting environment. A potentially time consuming step for organisations with tight procurement policies requiring a formal tendering process is the engagement of external security services providers. A way to reduce the risk of not achieving connection to the Data Exchange within the desired timeframe is to start the process as early as possible.

- Security risk identification, analysis, assessment and controls identification for the Agent hosting environment and connecting to the cloud-based Data Exchange service. Another potentially time consuming process for organisations which have a prescribed methodology with defined deliverables and decision checkpoints and require co-ordination of multiple parties. Again, the earlier this process starts the greater likelihood of achieving connection to the Data Exchange within the desired timeframe.

- Risk management controls validation including execution of penetration testing of the Agent hosting environment.

- Risk management plan for managing residual risk: Plan development and achieving agreement with relevant key stakeholders.

- Certification and accreditation sign-offs: Collating all collateral and outcomes from the above-mentioned key items into a 'C&A pack' for certification by the organisation's security officer(s) and accreditation (acceptance of residual risks) by the relevant senior executive(s).

Deployment to Production

Every organisation connecting to the Data Exchange will typically have its own information system deployment practices. The key items that should be considered in the process of developing the Implementation Plan are:

- Executing the relevant steps (and passing decision gates) in the organisation's IT release/change management process to achieve sign-off to deploy the Agent hosting and data staging environments to production.

- Co-ordinating all the required parties and executing the deployment.

- Handover to IT Operations to commence the monitoring and system maintenance and support for the Agent hosting environment and data staging area.

- Data Exchange user support set-up for the different types of user queries in conjunction with the SIA and EightWire. This will include the organisation specific helpdesk/service desk component, the staff holding the two new Data Exchange roles and EightWire. *(Refer to the support section in the Solution Design Primer)*