DTMAD – Building your Data Capabilities in the Social Sector

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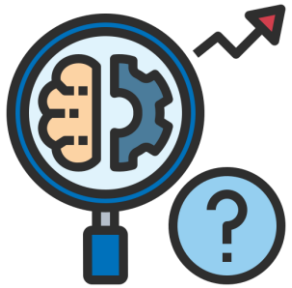
Calgary Homeless FOUNDATION 25

Building Data Analytics

Where we want our data capabilities

Deep Analysis



Predictive Models

Automated Reports

Building Data Analytics

How it usually goes

Building Data Analytics

How it usually goes

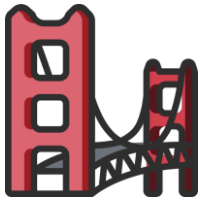
Incorrect Data

Pitfalls

Building Data Analytics

How it usually goes

Incorrect Data



Bridges to Nowhere

Pitfalls

Building Data Analytics

How it usually goes

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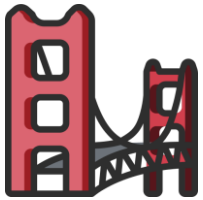

Bridges to Nowhere

Intensive Manual Processes

Pitfalls

Building Data Analytics

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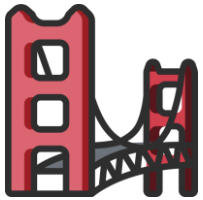


Bridges to Nowhere

Intensive Manual Processes

Other Priorities

Pitfalls

Goal of this Talk

To learn to approach building data capabilities that match your organization's needs, and why horizontal scaling is key

Disclaimer #1

This talk won’t be about individual tools

Disclaimer #2

You need to invest in data teams and tools to have data capabilities

Building Data Analytics

Calgary Homeless Foundation (CHF) Example

Coordinated Access & Assessment Triage (CAA) List

- Manually populated on weekly basis
- High resource-dedication, fragile process
- Limited understanding of historical context

Step 1: Know your current state

Know Your Current State

What do you have currently in place?

If you have an organization, you have data

- **What areas of data do you have?**
- **What tools and processes do you have in place?**
- **What areas do you not have tools, processes or data in place?**
- **Formal frameworks can identify the different areas to look**

Know Your Current State

Assessing what is currently in place

Once you understand the general state, you need to assess the quality and maturity of it

- **Simply ask about the characteristics of the data, processes, and tools in place**
- **Use formal maturity assessment frameworks**

Know Your Current State

What's the sandbox

Data is governed by rules, it is essential to know these rules.

- **What current policies are in place?**
- **What regulations may impact your work?**

Know Your Current State

Know how/where decisions are being made

Data is not for data's sake; it is for informing decisions.

- **How do people on your team/in your organization make decisions?**
- **Where can data & tools be added to help make those decisions?**

Step 1: Know your current state

Step 2: Define your solution state

Define your solution state

What is your problem statement?

You need to understand where data can add value

- **Use your assessment to identify the processes/tools/data for existing pain points & their impact**

- **Determine which pain point needs to be addressed first**

Define your solution state

Define why you need to address the problem statement

You need to know “why” the problem needs to be solved

- **What are the benefits to the problem being solved?**
- **Can similar pain points be grouped together?**
- **What is the conceptual approach for solving them?**

Define your solution state

CAA Triage List

Current State	**Conceptual Solution**
Manually populated on a weekly basis	Automatically produced
High resource-dedication, fragile process	Resilient, not dependent on key-resources
Limited understanding of historical context	Historical data easily available

Step 1: Know your current state

Step 2: Define your solution state

Step 3: Discover the must-haves

Discover the must-haves

Start to identify the required changes

To start improving

- **What change is required from your data/tools/processes to solve the problem?**
- **Does that match the conceptual vision?**

Discover the must-haves

Basic must-haves

Before proceeding you need to have the following in place

- **Data Storage *(i.e. Data Warehouse, Lakehouse, etc.)***
- **Data Transformation & Orchestration Tools *(i.e. ETL, Pipelines)***
- **Production & Development Environment**
- **High-Level Governance & Security**

Discover the must-haves

Find the other must haves

Beyond the basics, determine the technology/processes that is required

- **What are the gaps in your data tools/processes/data from your solution state?**
- **Begin to develop your plan to implement**

Discover the must-haves

CAA Triage List

Conceptual Solution

Automatically produced

Resilient, not dependent on key-resources

Historical data easily available

The Must-Haves

Basic must-haves (data transformation, development & production environment)

Dashboard to show current & historical data

Additional governance to manage PII Access

Step 1: Know your current state

Step 2: Define your solution state

Step 3: Discover the must-haves

Step 4: Ensure that the must-haves can scale

Ensure that the must-haves can scale

Why?

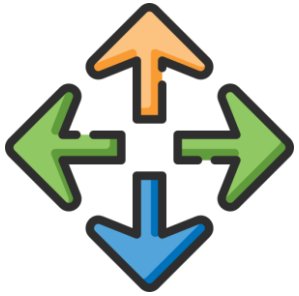
Scale, what are you talking about

- **Isn’t scaling only for growth businesses?**

Ensure that the must-haves can scale

Why?

Vertical Scaling



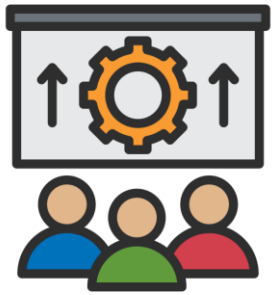
Horizontal Scaling

Ensure that the must-haves can scale

Building scale

To build scale, you need to answer the questions below

- **How can capacity be built in?**
- **What manual pain points can you live with?**



Discover the must-haves

CAA Triage List

The Must-Haves	**Making them Horizontally Scale**
Basic must-haves (data transformation, development & production environment)	Datamart architecture implemented, and development server established
Dashboard to show current & historical data	Implemented Qlik Sense for dashboards
Additional governance to manage PII Access	Implemented role-based security model
	Lived With: manual data validation

Step 1: Know your current state

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Step 5: Implement

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Step 5: Implement

Step 6: Repeat

Repeat

Carrying forward the new capabilities

The process repeats itself, with a key advantage

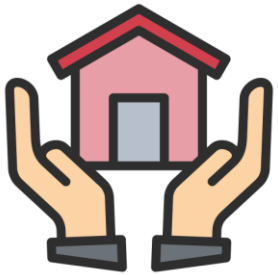
- **The data capabilities and maturity from the previous iteration carryforward**

Repeat

Calgary Homeless Foundation (CHF) Example #2

Supportive Housing Reporting

- Reports generated on quarterly basis
- Manual review of data quality
- Major time-lag on data



Repeat

Supportive Housing

Step 1: Know your current state

Current State

Reports generated on quarterly basis on KPIs

Manual review of data quality

Major time-lag on data

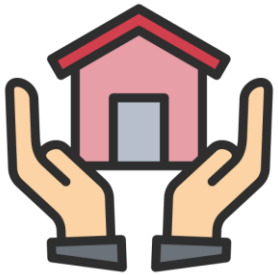
Step 2: Define your solution state

Conceptual Solution

Data accessible in real-time for agencies

Automatic data quality identification

Data beyond KPIs



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Supportive Housing

Step 2: Define your solution state

Conceptual Solution

Data accessible in real-time for agencies

Automatic data quality identification

Data beyond KPIs

Step 3: Discover the must-haves

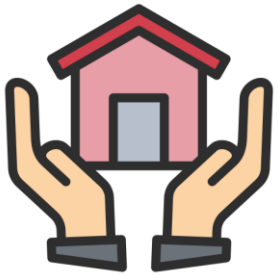
The Must-Haves

Expand dashboard access to agencies

Build security to allow agencies to access data

Alerts & dashboards for agencies when data quality issues are identified

Further governance over our data transformations to ensure reliability



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Making them Horizontally Scale

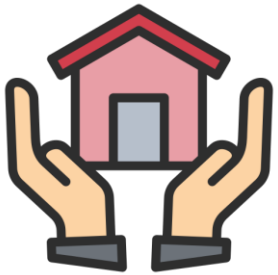
Singular dashboard for each program model

Expanded security model to another dimension of program/agency

Built a data quality dashboard + email alert, functioning regardless of program model

Built code review process & pipelines

Lived With: Manual Master Data Updates



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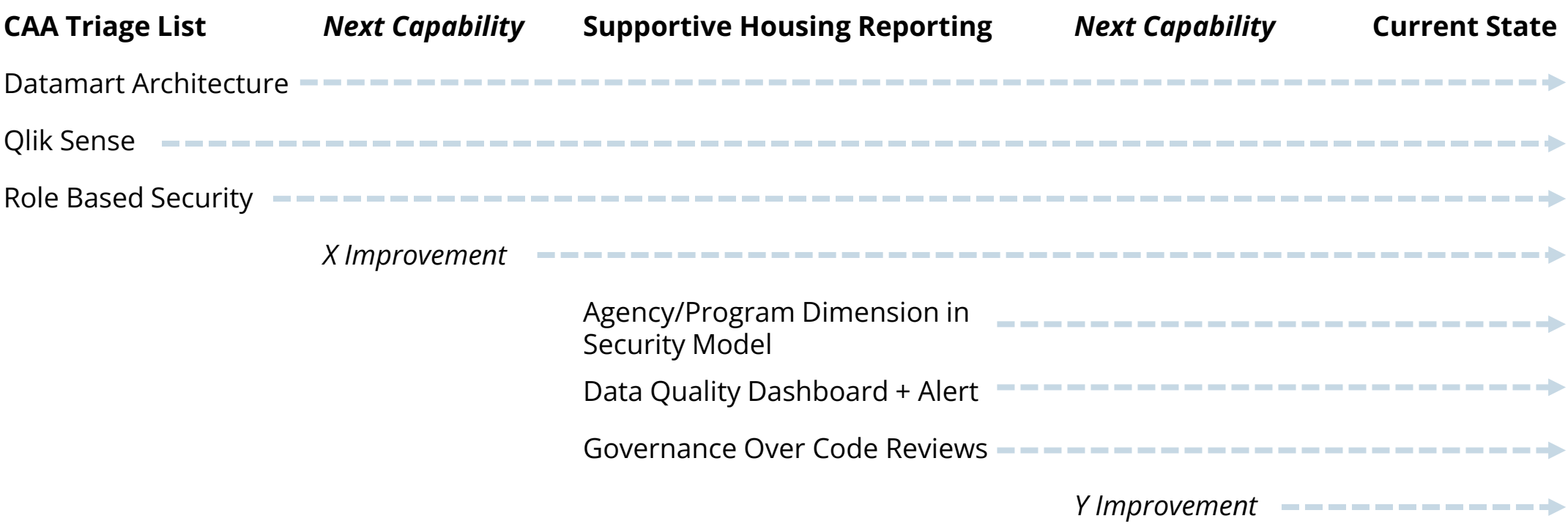
CHF Example



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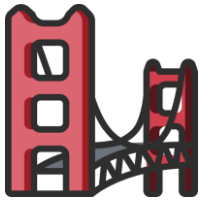

Bridges to Nowhere

Intensive Manual Processes

Other Priorities

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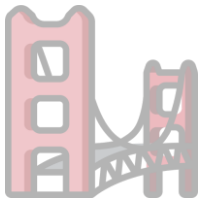

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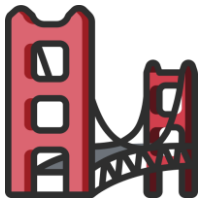

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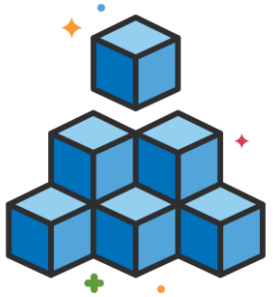
Key Idea

Build your data capabilities to horizontally scale through each improvement



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Resources & LinkedIn