

DATA GOVERNANCE: UNLOCKING THE POTENTIAL OF YOUR ORGANIZATION'S DATA ASSETS

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April 17, 2024



Putting Data to Work: Igniting Collective Potential



OUTLINE

Solving a practical data quality problem

How good does your data need to be?

Stewards are the glue

Interactive facilitated discussion

PRE-WORKSHOP SURVEY RESULTS



SOLVING A PRACTICAL DATA QUALITY PROBLEM



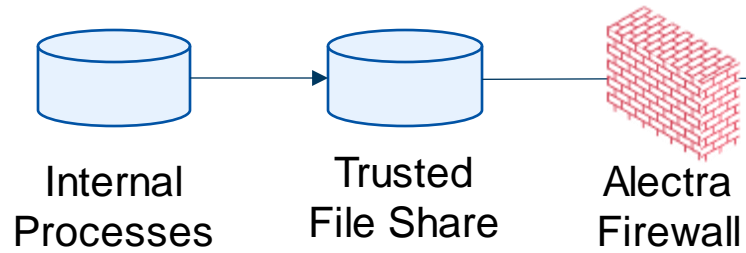
REAL THREATS OF POOR DATA QUALITY



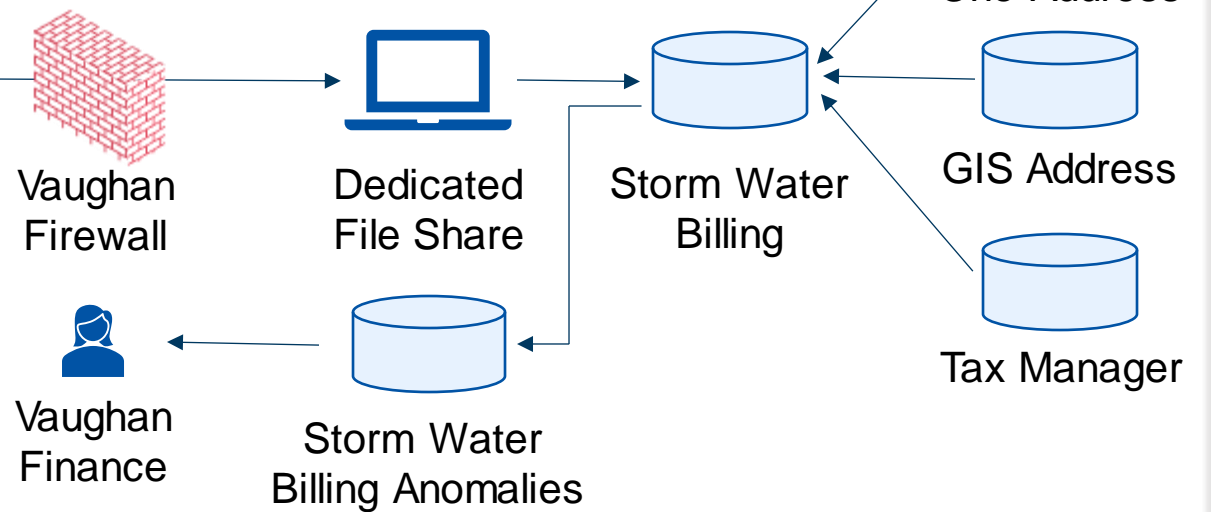
1. Interruption of building permits revenue
2. Reduced stormwater revenues and additional costs managing complaints
3. Surrender of development applications revenue

STORM WATER BILLING DATA ARCHITECTURE

Alectra Environment



City of Vaughan Environment



STORM WATER BILLING DATA ARCHITECTURE

ROLL_NO	STREET_NUMBER	STREET_NAME	STREET_TYPE	ADDRESS_NOT_FOUND	STREET_NUM_NOT_CORRECT	STREET_TYPE_NOT_FOUND	SWB_RATE_TYPE
1928002890000000000	0	CNR RIGHT OF	WAY	0	0	0	SW-V-3
1928000200735000000	300	GO TRANSIT	ROW	0	0	1	SW-V-3
1928000361381680000	0	EAST S CORNER	BLVD	0	0	0	SW-V-0
1928000341410100000	10418	ISLINGTON	AVE	1	0	0	null
1928000361379360000	283	EAST S CORNER	BLVD	0	0	0	SW-V-5
1928000329060070000	0	HIGHWAY	427	0	0	1	SW-V-0
1928000431886020000	1	MEMORIAL	DR	0	0	0	SW-V-5

ANOMALY MANAGEMENT

- Establish data quality rules with the business
- Build rules into your processes
- Register master data and aliases
- Report and alert business to anomalies
- Business resolves/mitigates anomalies
- Apply corrections and process again

KEY LESSONS IN DATA QUALITY



1. Build in data quality management from the beginning
2. Consider the “middle space”
3. Data quality is an evolving process

**HOW GOOD DOES YOUR
DATA NEED TO BE?**





Data Cleaning

A 'quick' fix, removing errors from the existing dataset:

- Inevitably leads to more cleaning in future
- Unclear how much cleaning is required
- Doesn't fix downstream implications from past mistakes



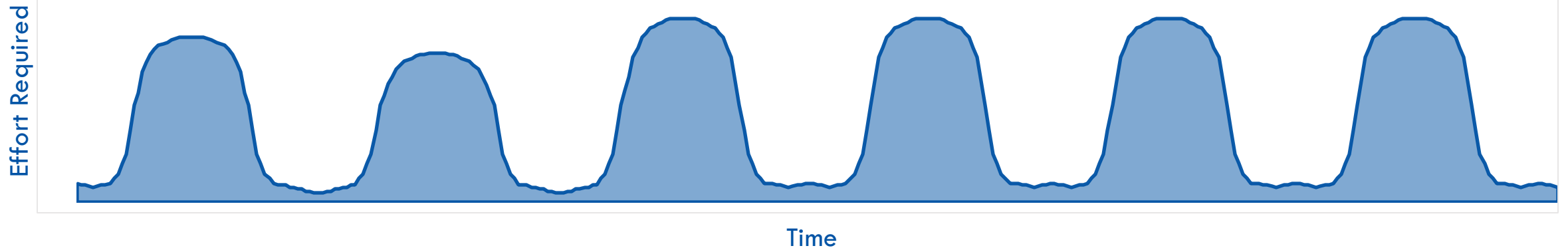
Data Quality

A comprehensive program to make sure the data meets consumer's needs:

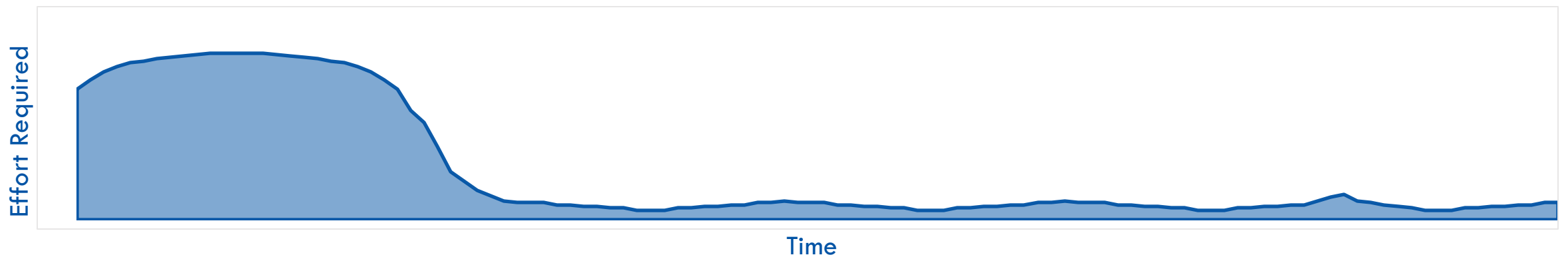
- Sustainable solution that should limit interventions in future
- Understanding data and its users to create quality targets
- Requires ongoing monitoring and stewardship

EFFORT REQUIREMENTS FOR DATA QUALITY

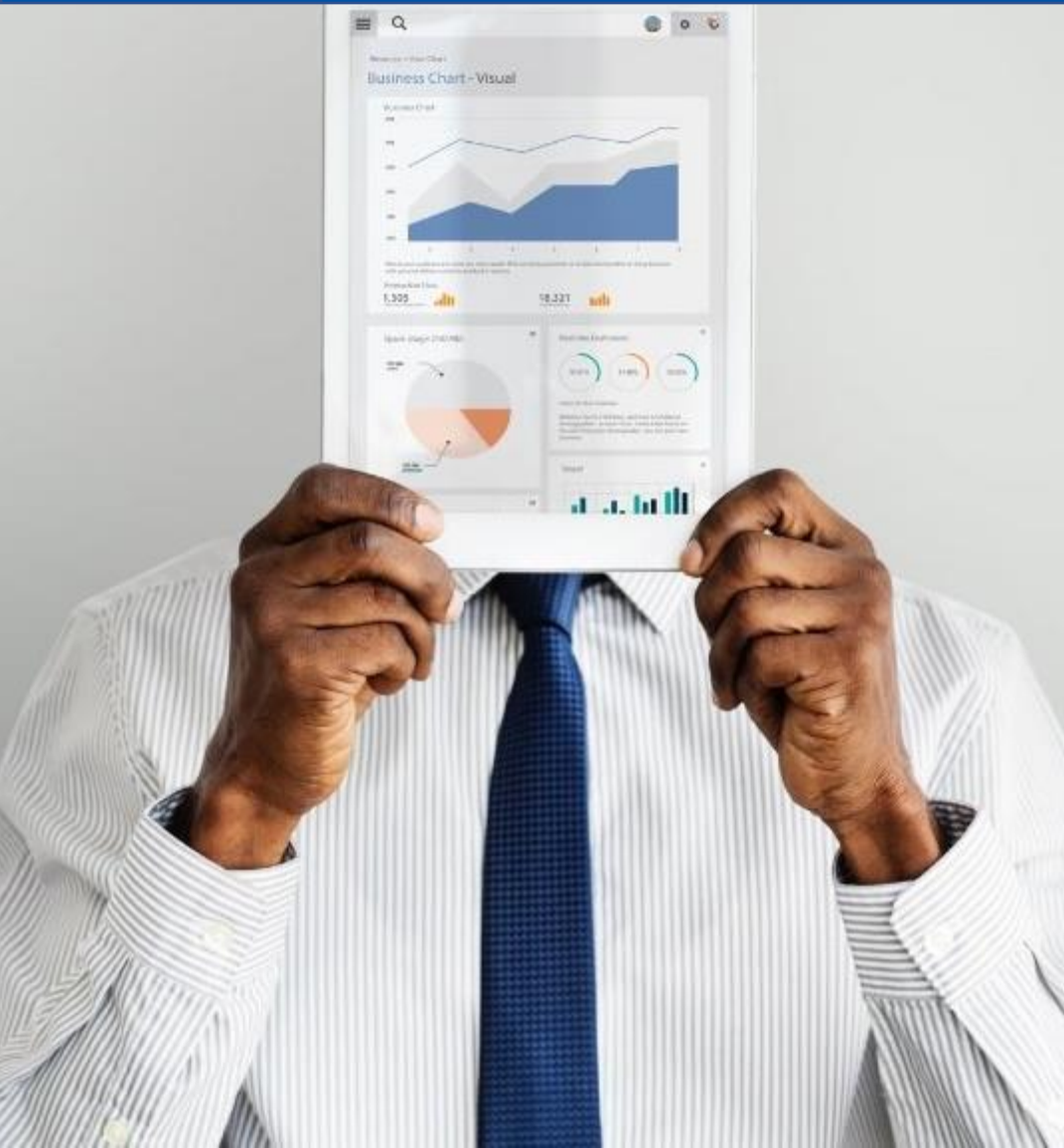
Data Cleaning



Data Quality



DATA QUALITY SHOULD BE FIT FOR IT'S PURPOSE



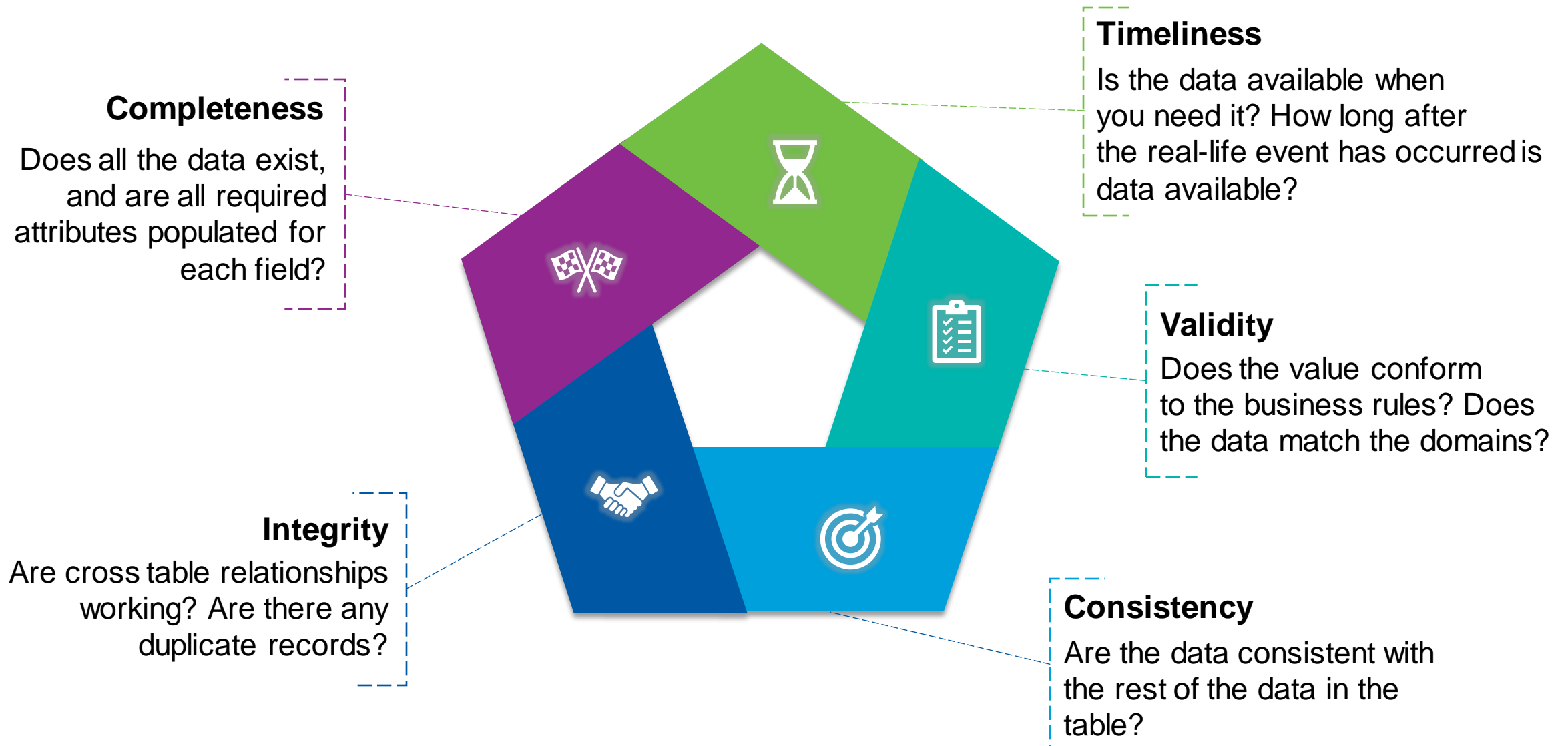
- **Data Consumers, not Data Creators** should determine the data quality level required!
- Data Quality is defined at the point the data is used
- Keep in mind:
 - Who are the data users?
 - What are their use cases?
 - Are there reports, dashboards, products or systems relying on this data?
 - What are the consequences of poor-quality data?



CASE STUDY: WINTER ROAD MAINTENANCE

- YR Public Works maintains a layer indicating salted roads, with details on timing and salt quantity
- Legal and Risk also utilize this data as evidence of the Region's compliance with safety requirements
- Who should determine the quality of this data?
 - **Both groups!**

FIVE DIMENSIONS OF DATA QUALITY



DATA QUALITY TARGET SETTING

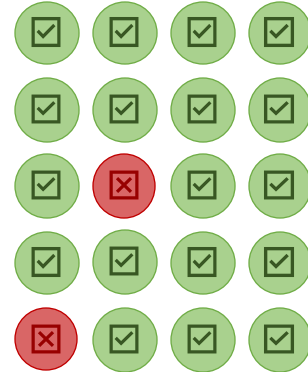
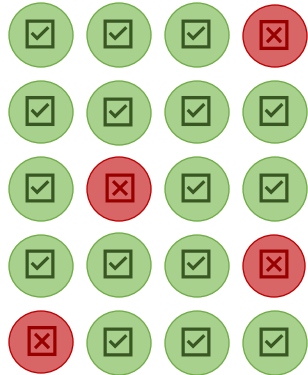
A target with concentric rings of teal and beige. A red bullseye is in the center. A green pen with a black cap is pointing at the bullseye. The pen has a textured green grip and a black barrel.

- Often the closer the target is to 100%, the more expensive the requirements
- Targets can be unique per dimension or field
- Collaborate with data consumers to identify meaningful targets to guarantee data is fit for purpose

Check with data steward to confirm targets are possible!

WHY NOT 100%?

90% Data Quality

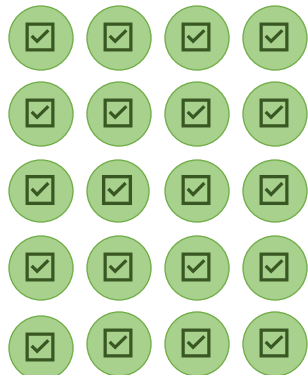
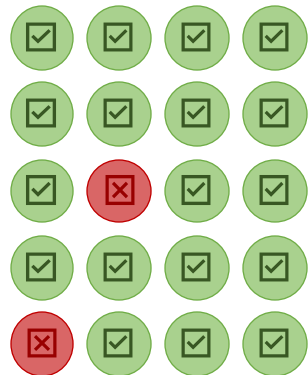


Original Dataset

After Cleaning

Missed Deadline

95% Data Quality



STEWARDS ARE THE GLUE



WHAT IS DATA GOVERNANCE?

Data Governance is a practical framework of people, processes, resources and tools for coordinating and managing data that's trusted and increasingly used to inform decisions and improve business outcomes. This trust grows as data is managed to:



**Increase Data
Access**



**Enable Data
Understanding**



**Improve
Data Quality**



**Identify Data
Lineage**



**Ensure Data
Protection**

WHAT DOES TRUST IN DATA LOOK LIKE?



Data Analyst

I understand my dashboard data's source and meaning and trust it to remain accessible.



Decision Maker

I trust the report for accurate, reliable and up-to-date decisions.



Data Manager

I trust our sensitive business data will stay protected and private.



Downstream Consumers

I trust I can easily find authoritative data and assess its suitability for my needs.



This is Data Stewardship

ROLES AND RESPONSIBILITY IN THE DATA STEWARDSHIP ECOSYSTEM



Data Producer

Responsible for creating, collecting or generating data



Data Steward

Responsible for monitoring and managing business controls of data.



Subject Matter Expert

Responsible for describing data and its business rules.



Data Consumer

Responsible for providing insight about how the data is used



Data Manager

Responsible for ensuring stewardship roles are resourced and supported.



Data Custodian

Responsible for maintaining data access, security and storage.

ROLE OF THE DATA STEWARD



Data Steward

Who: The person ensuring data's suitability for organizational needs.

Responsible for:

- Understanding data sources
- Data consumer communications
- Creating and updating metadata
- Defining data terms
- Maintaining data quality
- Resolving data issues



THE DATA STEWARD'S ROLE IN ENSURING DATA QUALITY



- 1 Engage data consumers
- 2 Lead quality assessment
 - Identify critical data fields
 - Define business rules
 - Set quality targets
- 3 Create data quality improvement strategies
- 4 Monitor data quality targets
 - Ensure data quality issues are resolved

IDENTIFYING YOUR DATA STEWARD

Organizational position

- Within business team
- Staff-level or program manager

Knowledge and skills

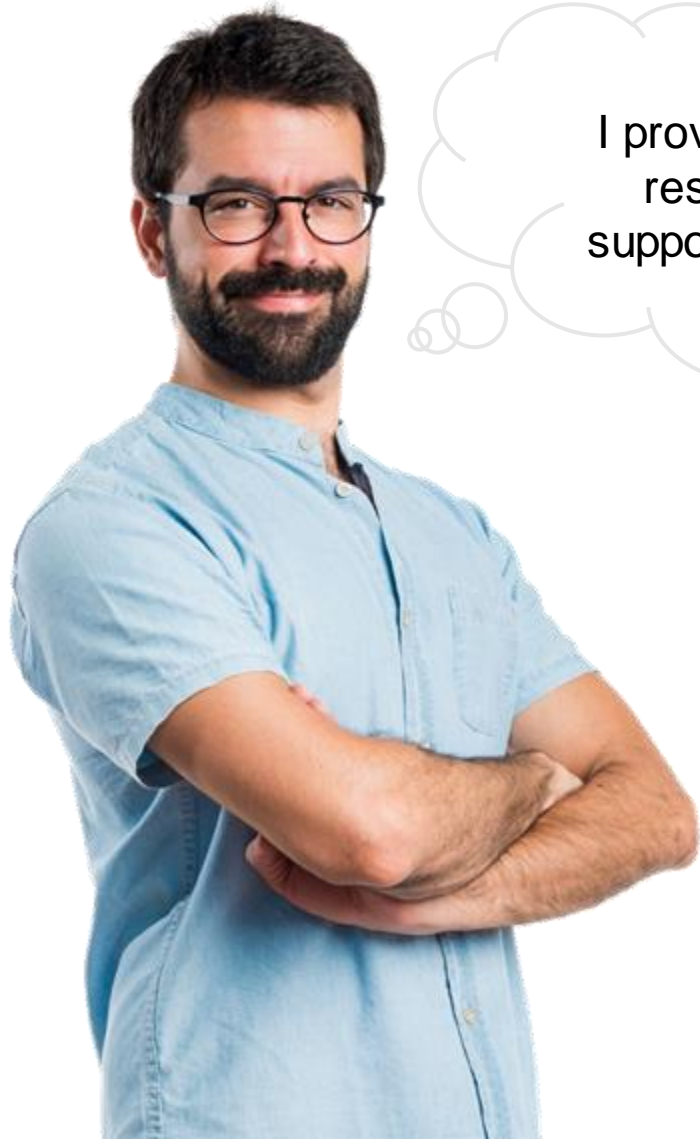
- Understands business processes, data flows and consumers
- Data management and data governance practices

Personal characteristics

- Collaborative
- Excellent communicator
- Passionate



DATA MANAGER ROLE: ACCOUNTABLE FOR SUCCESS



I provide Betty with resources and support to succeed.

Organizational Position

- Within business team
- Management level

Knowledge and Skills

- Expertise in business processes
- Value of data to the business
- Regulatory, compliance and operational requirements

Personal Characteristics

- Influential
- Strong interpersonal skills
- Communicates to mixed audiences

TRAINING A DATA STEWARD

Defining data and
writing metadata



Data quality concepts
and assessment



Data security
and privacy



Hands-on
tools



Data governance
framework



Role of the
data steward



INTERACTIVE FACILITATED DISCUSSION



QUESTION FOR PARTICIPANTS



When has data quality or informal stewardship been an issue for you?

SETTING APPROPRIATE DATA QUALITY TARGETS



- You have a role at a health clinic providing vaccinations as either an: intake data entry, nurse, vaccine supply technician, health promotion analyst or data steward
- From your perspective:
 1. What do you think the completeness target should be: 80%, 95%, 99% or 99.9%
 2. What impact on your role would there be to meet each possible completeness target?
 3. What would the consequences of low completeness be for your role?
 4. Does it matter if the value is complete but incorrect from the perspective of your role?

ROLE OF STEWARDS



1. How do stewards help bridge different interests?
2. Who are producers and consumers of data?

OUTCOMES (PLACEHOLDER)



1. Insert Outcomes that are discussed
2. Based on discussions during facilitated session



THANK YOU

Questions? Contact andrew.satterthwaite@york.ca



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