

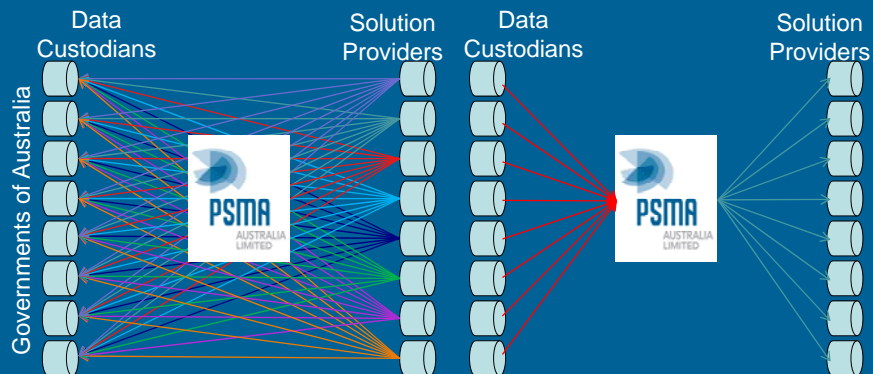
The Evolution of Data Automation, And its Importance to the ASDI

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PSMA Australia Limited

PSMA Australia Limited is an unlisted public company, established under Australia's Corporations Act, wholly owned by the State, Territory and Australian Governments. The organisation provides an important bridge between data custodians and solution providers.



Reference Datasets

Transport & Topography

Over 2,000,000 kms of named road centrelines in a structured hierarchy maintained quarterly.

National rail network including tram lines.

Airports and Landing Grounds.

National Drainage network consisting of Major and Minor water layers and polygon water bodies.

CadLite

Over 10.8 million polygons representing the registered land parcels in Australia updated quarterly with incremental updates available.

Every parcel contains the legal parcel identifier that acts as a key to access richly attributed jurisdictional Digital Cadastral Data Bases (DCDB).

Also contains links to key administrative data layers including Local Government Area and Locality.

A property version of the dataset is also available.

G-NAF

G-NAF contains over 12 million physical addresses and approximately 2.5 million aliases updated quarterly

Data is sourced from AEC, Australia Post and Government Mapping Agencies and Land Registries

Every address contains a Geocode (Latitude & Longitude) and metadata to assist in decision making

Sophisticated data modelling to enhance application accuracy

Reference Datasets

Points of Interest

Over 180,000 Points of Interest including:

- Police Stations
- Hospitals
- Post Offices
- Museums
- Churches
- Airports
- Banks
- Swimming pools
- Libraries
- Theatres
- Shopping Centres

Postcode Boundaries

This definitive dataset has been developed by Australia Post and PSMA Australia and is updated quarterly

Includes two layers:

- Boundaries – polygon data
- Centroid – point data

Administrative Boundaries

This dataset contains all of Australia's major administrative boundaries including:

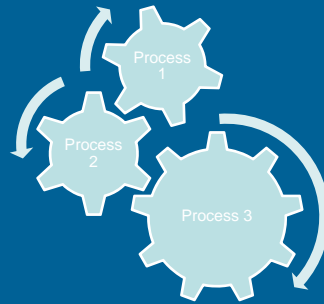
- Key ABS Statistical Geography
 - Mesh Blocks*
 - Collector districts*
 - Statistical local areas*
 - Urban centre localities*
- State Boundaries
- Electoral Boundaries
 - Commonwealth; and*
 - State and Territory*
- Local Government Areas
- Suburbs/localities
- Town points

What is Automation?

- It means different things to different levels of any organisation.
- It DOES NOT mean instantaneous.

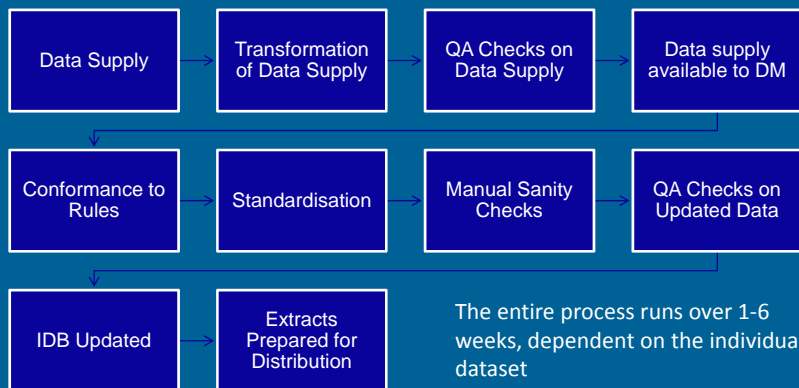
Working Definition: “an endpoint for a managed set of processes that has required less human intervention over subsequent iterations” (unknown source)

- Automation is **not** “press a button” and expect outputs to magically appear.
- Extremely difficult when inputs are not fixed.
- Requirement for standards, reporting and issue management capability for advancement.



The Data Management Cycle

The PSMA Australia data management cycle can be represented as a series of processing steps completed by a number of different actors. Including PSMA Australia, a Data Manager and the LYNX Manager.



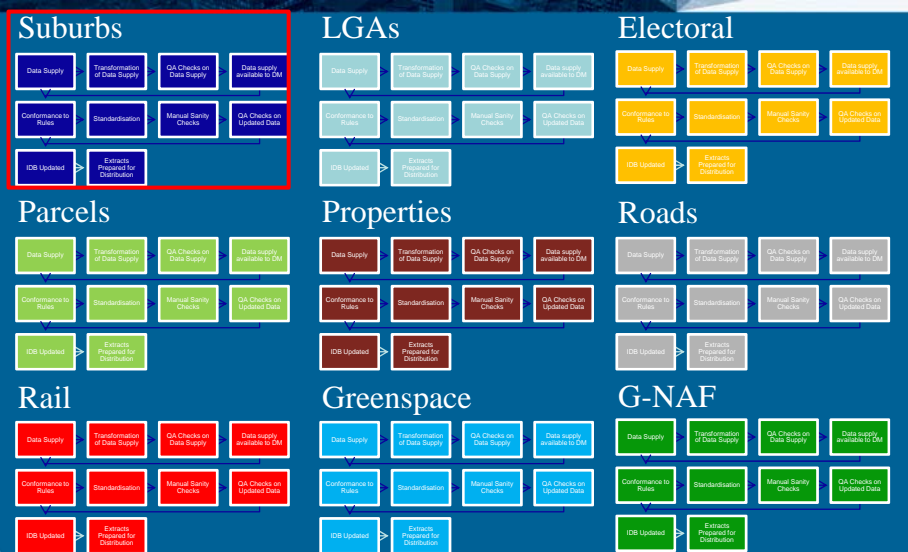
The entire process runs over 1-6 weeks, dependent on the individual dataset

Why Automate?

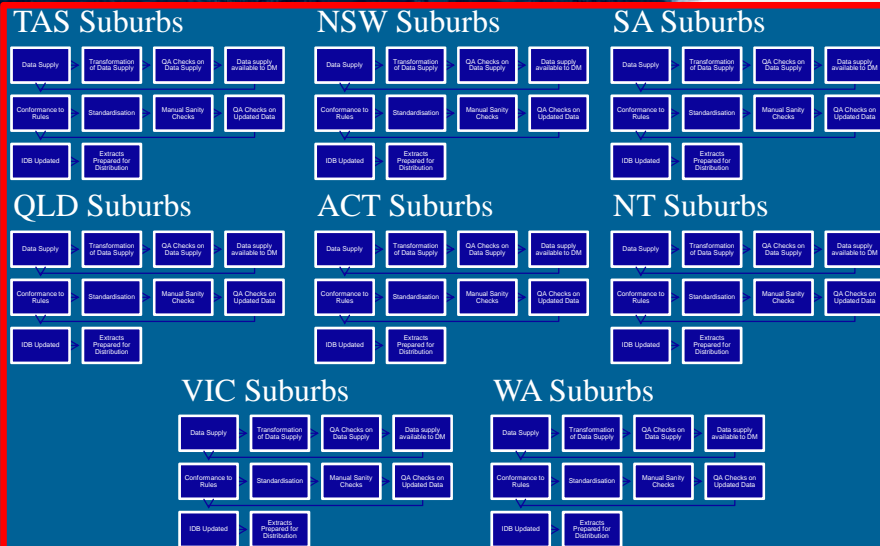
- Do more with less
- More effective use resources (particularly human)
- Increase efficiency
 - Reduce time to market
 - Multiple uses for the same processes.
- Have more involvement in data cycle (may seem counter intuitive)
- Increase transparency of processing to stakeholders including end users.
- Consistency
- Foster innovation

Business benefits easy to see for repeatable processes...

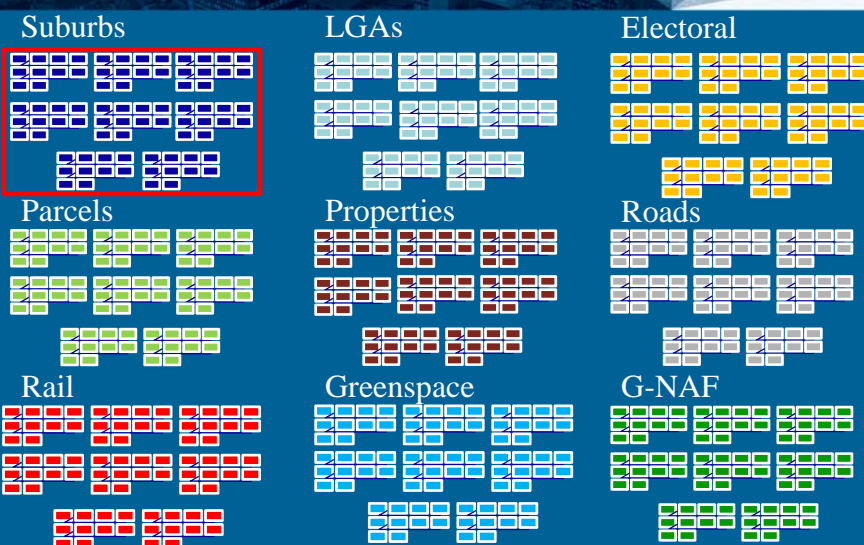
The Data Management Cycle



The Data Management Cycle

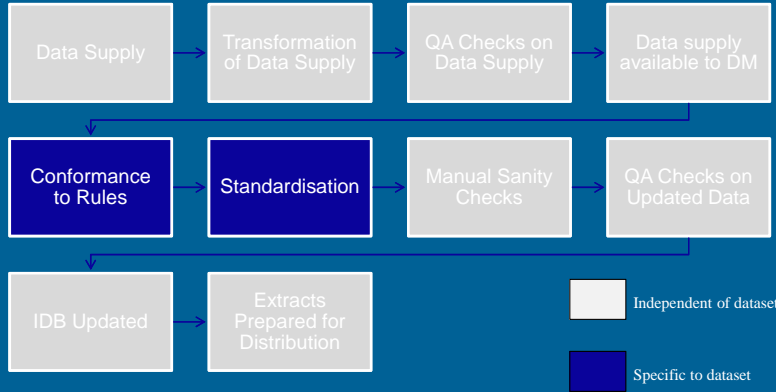


The Data Management Cycle



The Data Management Cycle

Many SMA's in Australia have a data management cycle that is independent of the specific project being completed. The processes can be broken down into the following steps:

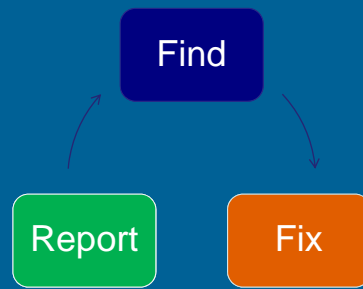


The Data Management Cycle



How to Automate?

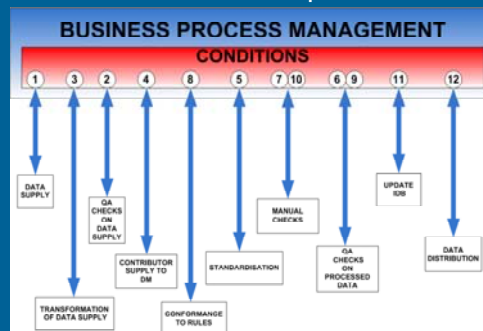
- No one single “magic” solution
- May require a paradigm shift for the organisation
- Revolves around 3 key concepts....



How to Automate?

- Requires standards to be defined
- Accompanying tests to be developed
- Standards should be simple and make logical sense
- Results in a series of conditions which must be met for any process to continue to the next step.

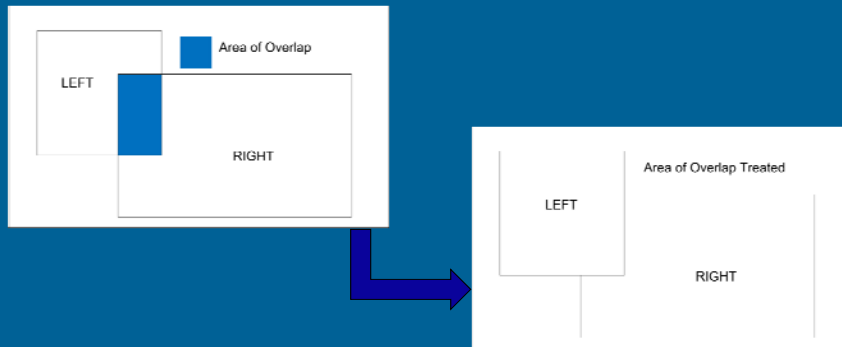
Find



How to Automate?

- Often a paradigm shift for organisations
- Again relies on standards
- May initially lead to a “different” data quality
- Still wise to manually inspect data

Fix



How to Automate?

- Provides transparency & confidence in processes
 - Applies to data managers & end users
- Occurs at two levels
 - What was routinely updated
 - What had to be amended (fixed) before it could be updated
- Feature level metadata
- Provides for a supply chain that contains a two way data flow

Report



Business Process Management

- The glue that ties all processes together
- Constructed in Business Process Execution Language (BPEL)
- Involves the orchestration of individual processes such as;
 - Web services
 - Database tasks
 - COTS functions
 - Human Tasks (very important)
- New skill sets for traditional GIS professionals
 - Understanding processes
 - Understanding business logic

Achievements to Date

- Business rule development complete
- Administrative Boundaries datasets delivered since mid 2009
- First CadLite processing complete awaiting release next month
- Transport processes in testing

Points

Point in Polygon

Point on Line

Name Attribute Check

Lines

Length>0

Edge Matching

Connectivity

Line in Polygon

Name Attribute Check

Remove Duplicate Vertices

Polygons

Area>0

Name Attribute Check

Remove Gaps

Remove Overlaps

Polygon in Polygon

Remove Duplicate Vertices



Questions	Answers
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	Or visit our web resources at: www.pdma.com.au