



Data Conversions: One Woman's Experience with Bumps in the Road

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Quick Review

- Data Conversion – Process used to translate data elements (information) from one location and/or application (the **source**) to another (the **target**).
- Convert/Map Data When:
 - Changing from one system to another
 - Combining data from 2 (or more) systems into one (merger/acquisition)
 - Connecting 2 or more systems together so that data can flow from one to another
 - Automating a process



Quick Review, continued

Who does what?

- Project Manager (PM)
- Database Administrator (DBA)
- Developer
- Business Analyst/Records Manager
- Consultant(s)
- Data Owners/Stakeholders
- System Users



Data Types/Field Characteristics

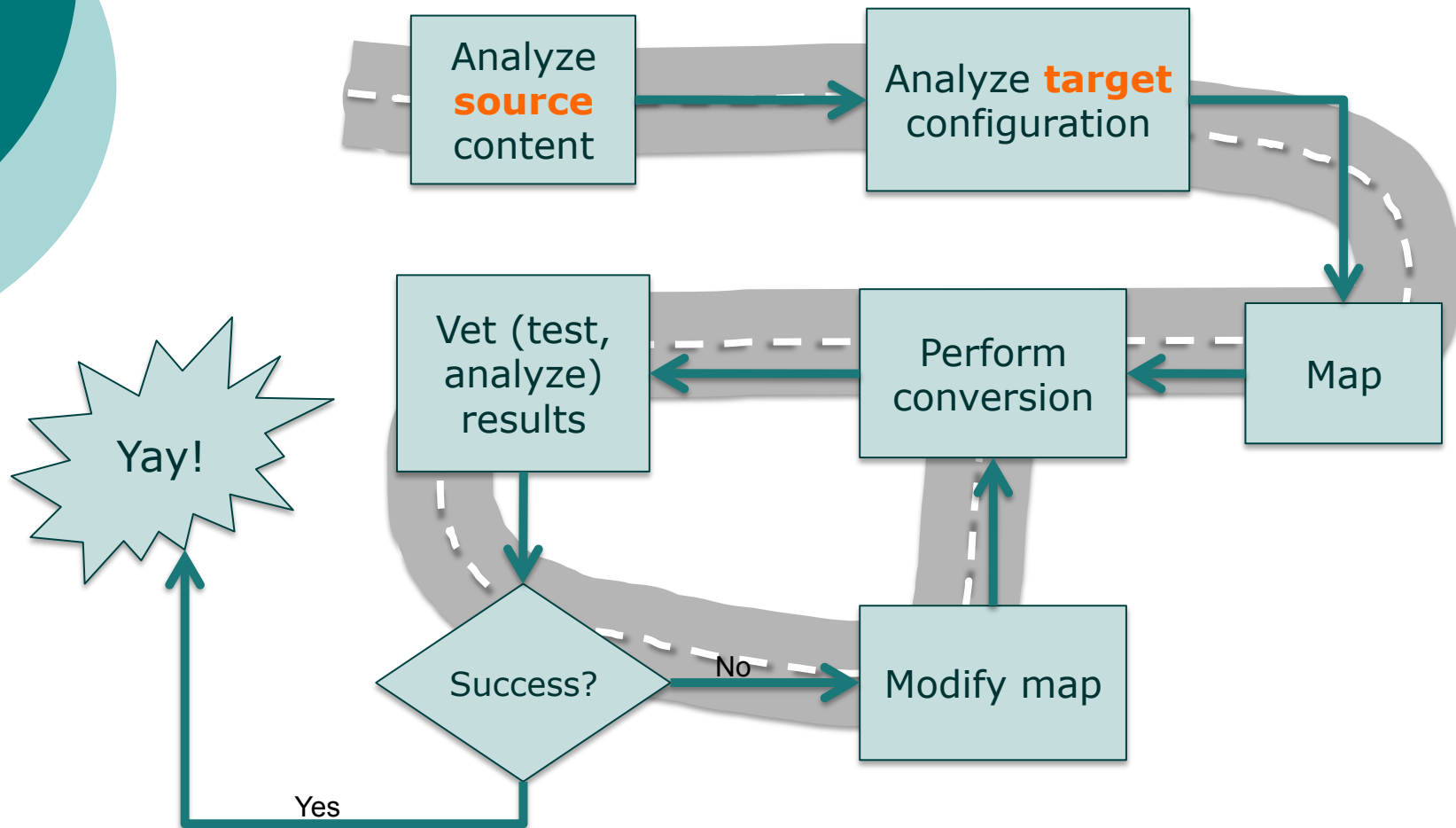
- Common Data Types:
 - Variable character (varchar): alphanumeric
 - Integer (int): numeric
 - Date/time (datetime)
 - Character (char): flag (e.g. yes/no, on/off)
- Typical Field Characteristics:
 - Required (nullable/mandatory)
 - System-generated (e.g., today's date)
 - Field length
 - Normalized (look-up/discrete values)
 - Default value



Converting data

- May introduce logic to perform conversion
- Should you convert everything?
 - Too old
 - No place for it in **target**
 - Available elsewhere
- Validate mapping and logic with team
- Explain the logic to developers:
 - They will write the program (script) to move the data per the rules

High-Level Conversion Roadmap



Bumps in the Road ...

... and potential road hazards





Date required in **target**, blank in **source**

Bump

- We saw 01/01/1900 in various date fields

Why it happened

- Date field was optional in the **source**
- Rarely, if ever entered
- Mandatory in **target**
- **Source** used 01/01/1900 as a default for all date fields until something else was entered
- 01/01/1900 entries not visible in user interface

Resolution

- Modify logic in map to duplicate the best existing date and paste into mandatory fields



User IDs missing in **target**

Bump

- Most – but not all – user IDs appeared in the **target**
- Found when doing random testing
- Had to locate and document multiple instances

Why it happened

- Developer discovered that there was a size limit when importing lists
- Our list of user IDs exceeded the limit by approx. 50 items
- List had been truncated

Resolution

- Import user ID table in two segments



Deployment conversion didn't work

Bump

- On conversion weekend, vetting showed significant missing data
- Deployment cancelled
- Continued to use old system for another 3 months

Why it happened

- We're still not sure

Resolution

- Ran additional test conversions
- Broke conversion scripts into smaller segments, and tested each segment
- Rescheduled conversion weekend and were successful



Employee IDs: some history lost

Bump

- **Source** database had 2 employee ID fields: old and new
- **Target** database had only 1 employee ID field
- Old employee ID data could not be converted

Why it happened

- Company had recently merged
- Former company used 5-position alphanumeric employee IDs
- Acquiring company used 7-position numeric IDs
- No other field in **target** was available

Resolution

- A copy was made of the old-to-new ID cross reference
- Old employee IDs no longer viewable; questions directed to those with cross reference



Test conversion VERY slow

Bump

- First test conversion took 4 weeks

Why it happened

- Internal IT used default settings, which limited rate of data flow
- Didn't question/review settings in advance
- Only when asked, "Why is it so slow?", did IT explain.

Resolution

- Increased data flow rate
- Second test conversion took 8 days



New version slowed conversion

Bump

- We upgraded to new version; vendor assured us data schema was the same
- Conversion took 3 times longer than expected: process would stop, then developer had to analyze and correct, then re-start conversion

Why it happened

- Formats were unchanged, but some characteristics were different
- A few previously optional fields were made mandatory

Resolution

- Modify map to add mandatory data from **source** and map to **target**



Custom fields missing from new version

Bump

- Custom fields had been added in earlier version
- Fields didn't appear in new version

Why it happened

- Data map was correct
- User interface hadn't been updated for new version
- Developers often don't look at user interface

Resolution

- Add steps to conversion task list



New version response time very slow

Bump

- System response time slowed to unacceptable level
- Taking 45 to 60 seconds for a single search

Why it happened

- Vendor found a “bug”
- Involved the indexing feature

Resolution

- It's fixed now (searches work immediately), but ...
- It took 3 weeks



Be prepared

- Never, ever, ever, ever assume that conversion will be successful the first time
- Test, retest, and test again
- Use a variety of scenarios
- Plan for multiple conversion passes
- Expect more passes than you plan for
- Be a good detective
- Be patient



Questions?



Questions?

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