DATA MANAGEMENT USE CASES

Data Management is a general term for a variety of tasks ISD is frequently asked to assist with.

DATA MANAGEMENT — WHAT'S POSSIBLE?

- Consulting on implementing new workflows or improving current workflows to facilitate improved data collection.
- Identifying and correcting "unclean" data via SQL scripts and Stored Procedures. Most fields in a database have "rules" about what data formats can be entered in a field. Sometimes database programming starts out allowing "free text" and then a later version gets more restrictive. An example is a phone number field. The old version allowed alphanumeric data, so some fields got populated with letters in addition to numbers, but now a report is throwing errors because it is expecting only numbers in this field.
- Copying or moving data from one location to another in the database.
- Automating time-consuming manual processes.
- Data forensics — Sometimes clients will get unexpected or unexplainable results from a report and wonder why. ISD may be able to trace through the process and give an explanation of what happened with a recommendation for how to prevent it from happening again. Some solutions may involve retraining staff and some may involve additional programming.

POTENTIAL CHALLENGES

- When software is not structured to assure consistent data entry, it can be difficult or often impossible to produce meaningful reports.
- Data can be linked to other data, so care must be taken to assure any moves or clean-up will not "break" something else. Risks can be minimized by:
  - Careful investigation.
  - Testing.
  - Backups prior to changes.
- Data contamination
  - Frequently, there is only visibility into the last modification.
  - Staff may attempt to "fix" their mistake and end up making the situation worse.
  - Too much time between data entry and investigation. It's best to request assistance as soon as practical when you become aware of data issues.
- 3rd party vendor software design, structure and security may limit access and modification opportunities. These potential limitations need to be assessed prior to any project.

USE CASE 1 – MOVING DATA

BUSINESS NEED

A large group of data needs to be moved from one part of the database to another. Sometimes this can be done via the user interface, but it would be very time-consuming. Sometimes it can't be done via user interface and must be done using SQL. Sometimes it is needed as a prerequisite to implementing a new workflow

SOLUTION EXAMPLE – SCC APPOINTMENT MOVE

BACKGROUND

Scottsdale Cardiovascular Center had a new physician starting who would be taking over another physician's caseload. They needed to move all appointments after a specified date from the original physician to the new physician. This could be done manually via the user interface, but would have been extremely time-consuming and they needed it done quickly, so patients could be notified. Also there was a risk if done manually that some appointments could have been missed. Although, this is a rather simple example, it did involve several linked database tables, which illustrates often something appearing to be a simple change on the front end can be more complex on the back-end.

SOLUTION

- Researched which database tables and fields were involved.
- Developed a set of custom SQL scripts (update statements) to update the physician associated with the appointment
- Tested the custom scripts on a test database copy and SCC verified the appointments were moved as they expected.
- Ran scripts one time for their production database

This particular script only needed to be run once. Other times there is a need to run scripts on a regular schedule. In these cases, the script can be converted to a SQL Stored Procedure and scheduled to run as needed. For example, Tri-City Cardiology Consultants has a set of custom stored procedures run every day to look at the hospital charges entered on the previous day and insert a cardiac procedure history entry for certain hospital procedure codes.

USE CASE 2 – "DATA "CLEAN-UP"

BUSINESS NEED

- A change in process or an upgrade has revealed data that introduces unexpected results
- You discover you have duplicate or inconsistent data causing inaccurate reports
- Data formatting rules have evolved and some of the previously entered data does not meet the new formatting rules.

SOLUTION EXAMPLE – TCC REFERRING PROVIDER LETTERS

BACKGROUND

After an upgrade, Tri-City Cardiology Consultants discovered some of the addressing in their referring physician correspondence looked odd and unprofessional. For example:

- Dear Dr. Smith MD
- John Smith MD, MD
- Dear Colleague

They felt this undermined their credibility with their referring physicians. Investigation revealed:

- Some physicians had their degree included as part of the "last name" and nothing in the "degree" field.
- Some physicians had their degree only in the "degree" field.
- Some physicians had their degree in both the "last name" and the "degree" fields.
- Some of the degrees had periods imbedded, while others did not (e.g. M.D. vs. MD).
- There was a salutation field not being entered at all.
- This was further complicated by the large number of possible variations in provider credentials.

These irregularities were caused by different staff members entering the data differently over time. Additionally, the staff was unaware of the existence and purpose of the salutation field.

SOLUTION

- For each identified issue:
  - Identified the records to be updated.
  - Made a backup copy of the affected tables.
  - Wrote a custom update script.
  - Tested the script on a copy of the data.
  - Verified results were as expected.
  - Ran the script for the production database.
- Wrote a series of scripts to populate the proper salutation based on the existing data in the degree field. (e.g. an MD or DO would be addressed as Dr. Smith, but a PA or NP would not).
- Recommended a process for standardizing data entry to prevent future issues.

RESULT - PROPERLY FORMATTED CORRESPONDENCE

USE CASE 3 – WORKFLOW CHANGE CONSULTING

BUSINESS NEED

- You suspect you aren't using your application software's available features
- You need to find a way to use your software more efficiently
- You know what your problem areas are, but are unsure of a solution

SOLUTION EXAMPLE - ISD NEW SERVICE BOARD IMPLEMENTATION

At ISD we practice what we preach. We use software tools for running our business, just like our clients and like our clients, ISD needed help to better utilize their software tools.

BACKGROUND

- ISD uses Connectwise, a MSP Management software package, for:
  - Ticketing
  - Invoicing
  - Procurement
  - Documentation
  - Scheduling
  - …and much more
- We acknowledged much had changed since the software was originally implemented and many of our processes lacked consistency.
- The unstructured evolution of the processes (or in some cases lack of processes) created inefficiencies and we knew we could be better utilizing the software to provide the best possible client service.
- The inconsistencies also made meaningful reporting difficult.

SOLUTION

A team at ISD spent months planning and executing a major overhaul of how we use our software.

While difficult to briefly summarize here, the solution involved a combination of multiple data management skills.

- Cleaned up old data, for example:
    - Closing out of date tickets.
    - Inactivating out of date workflow rules.
    - Inactivating service boards no longer used.
- Investigated the database structure to understand where current data was located.
- Met regularly to formalize what we wanted the final product to look like.
- Designed a new set-up for consistency and efficiency.
- Moved tickets to new service boards.
- Trained the staff in the new workflows.

RESULTS

This project had a huge impact on ISD and our internal processes. Since implementation in January 2015,

- Technicians have become more efficient.
- No more misplaced tickets.
- More meaningful reports.
- Better communication both internally and externally.

QUESTIONS TO THINK ABOUT WHEN CONSIDERING A DATA MANAGEMENT PROJECT

- Are you getting unexpected or unexplainable results from a report?
- Has a recent upgrade or workflow change revealed "unclean data"?
- Are you looking to streamline current workflows to be more efficient?
- Could you improve staff efficiencies by automating time-consuming tasks?
- Could a well-thought out data management project pay for itself with improved efficiencies and cost savings?
- Are you getting the best ROI on your data investment?

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