Research on Data Quality Control Strategies from the Perspective of Information Lifecycle Management

Liyu Deng
Jingdezhen Ceramic University,Jingdezhen Jiangxi, China

Abstract:The Data level is a fundamental material of assets in this age of information; the quality of decisions made and how business runs smoothly depends largely on its value according to ILM theory, we carefully study all kinds of possible risks and puzzles along the way while data forms for uses from storage archiving, storing until destruction: We explain why everything just gets worse inside even when there are outer things included as part of the full-fledged set up of entire end -to- end supervising processes about any single one system proposing most important answers mainly but not limited by standard acquisition methods which should always remain vigilant cleansing activities regarding the metadata save:

Keywords: Information Lifecycle Management; Data Quality Control; Strategy

1. Introduction

With the continuous deepening of Digital Transformation, data has infiltrated all aspects of the Government's administration, business enterprises' operation management, scientific research, and public service systems. It has become an important strategic resource for creating value, but with this massive increase in volume, it hasn't led to automatic improvements in quality instead, quality problems have become more widespread and profound:

2.Construction of a Data Quality Control Strategy System According to the Information Lifecycle

2.1 Source Quality Control Strategies about Making and Collecting Data

Source control is the subsystem with the best cost-effectiveness in the entire quality control strategy system. In the data collection scheme planning stage, a strict data need analysis should be carried out to clarify the business sense, value range, precision requirement, format standard and source path of every data point. This is a deep cooperation between business department and technical department to make sure that it is not only feasible from the perspective of business reality but also possible for technical implementation.

Data input part need set up kind of three quality inspecting systems; at front-end side we'll have some thing like preset rule engine that do real-time check as people enter information ensuring formats are right and boundaries within certain range logical consistency doesn't let any required field being left empty thus nothing absurd can get stored into database. For backend part it will include a form of comparing method using large scale records whereby every single piece of work would undergo thorough examination based on predetermined standards searching for systematic mismatch not visible in standalone item gathering related data via configured sense channels, developing their own standard even during process of collecting things separating strange ones with regular patterns such 0 numbers sign coming along

2.2 Data is Stored and Kept Stage of the Continuous Quality Management Methods

Storage&Maintenance part, mainly cares about how do we manage our things, so that even in all the course of time, there will be some data still remain good for using, not just when stuffs went bad. Setting regular quality check routine and active data care procedure:

Data quality needs continuous monitoring of it should be based on building scientific data quality evaluation index system.The evaluation indicators formed by the evaluation indicator system will cover some key aspects including correctness,integrity,consistency,accuracy,uniqueness and validity,different threshold values have been set for each type of data asset.Monitoring process is automated,generating corresponding measurement results after executing quality inspection rules regularly.When important data

quality indicators are approaching warning thresholds,set as alerts;display the results of measuring quality data assets to managers of the enterprise and business leaders in the shape of data quality dashboard,make them transparent.

And we use some ways like data cleansing and repairing as our main way to deal with how data gets worse over the storing process.A usual data cleanse has steps on how it finds and fixes same stuff twice or when things are missing and outlying, and making sure every change is alike everywhere, but following special business ideas rather than math only.It needs writing down exactly what happened in cleaning up all the time for looking at again later.

When dealing with the issue where there is always something that happens due to the immediacy of being outdated at the time that it's handled because data changes so much, and we should have a tier refresh method based on how often different kinds of information change prices. In fast markets like inventories they will require faster near real-time changes such as every 1 - month or 3 - months but slow moving clients and customers might not need as frequent checking maybe 6 -months would work well if this was for history files or some super early parameters. The changing is set up and tested prior to allowing any kind of change gives consent into other meterelevant stuff records.

3. Safeguard Mechanisms and Ways of Doing Things in Data Quality Control Strategies

3.1 Institutional Guaranties and Standard-Making

Data quality accountability in an institution has a system consisting of 3 layers: governance framework, standards and specification, assessment mechanism. As for the layer about the governance framework, there must be some kind of governance structure set up inside the organisation, where data quality is taken care of by people called "owners" who have overall responsibility over what they're in charge of; it also contains data guardians ("stewards") looking after everyday operations like checking if everything runs smoothly and fixing any problems when needed as well as those using the information known as "consumers", all these roles together make sure everyone knows whose job it is to keep track of the quality.

On this level for standards and specifications, the best standardize of quality standard systems should be put into effect at top-level data-quality policies outline complete organizational requirements regarding data quality in terms of managerial ideas. At middle administrative regulations about data quality specifies organizational composition and departments' division along with managerial approaches concerning assessing quality administration bottom operation guides provide certain instructions for different jobs on how to carry out like collect, enter, examine verify or check repair supervise and measure data quality systems should include standards coming form all businesses to avoid putting excessive burden over regular businesses operations without any force needed

And the layer in evaluation mechanism takes in consider that the organization treats data quality like it is part of their operation performance system by creating ties between data quality score given and the departments and individual worker associated with, establish both motivation and responsibilities at times as well as mix good things happenings together with bad ones while also have round trip process to move around starting from discovering data issue through analyzing its causes afterwards choosing ways follow result from fixing the related data problem all over again.

3.2 Tech. Platfrom& Tool Capabity Developmen

The data Profiling functionality lets auto scans & stats by sys to find dataset's quick fact distributon & possible anomaies; this is for good inpit towards making decsion w/bdata. The rule Management Fucntion is a graphical UI that enables biz peaple to create, maintain and use qualty detection rules without progs' skills and provides fast responses whenever busiensse changess occur. Quality Monitoring function let's you schedule & execute these rules in order to timely push results out so u can observe what exactly going on as of now per quality. Clean& Processing funtion offers any and al types of nrmalization tools for things such as remove duplcation fill missing values fix erros then supoprts orchestrting & batching visualisation workflows.

The metadata management platform is another core component of the technology architecture.High-quality metadata forms the informational foundation of data quality control,recording key information such as data's

business meaning,technical specifications,quality standards,lineage relationships,and lifecycle status.The metadata management platform should support the automated collection,unified storage,relational analysis,and change tracking of metadata,achieving the integrated management of technical metadata,business metadata,and management metadata.Through a metadata-driven approach,the efficiency and accuracy of quality rule management,impact analysis,and problem tracing can be substantially enhanced.

4. Conclusion

View all things as going by moving hand info across their lifespan: know exactly which parts and fashions come from any potential trouble over data being good with time -- creation&collect; store &keep ; put &divulge; keep archivings / get rid of. Leave old locals, actives limits behind; watch where will lead on these: start sorting what type first; include many checks even early ones, like verifying sources' truthfulness all through collecting to check it's ok for later keeping in long-time storage after storing. Keep using but track back paths among those sharing something later; finally breaking based on mixing destruction ways during ending stage – making whole life clear: institutional norms bind force + tech ability + org doing make up three supports letting that happen; co-ordinate tells if ideas really becomes results under Quality Admin; so each business gets a hold onto watching its own info better now

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