



PREVENTING THE DARK DATA CREEP

How do companies end up with so much unused and obsolete data and how does the industry adopt a more effective way of preventing this and optimising a better way of managing asset data within Industry 4.0?



Linear thinking is a thought process where logic, rules, reasoning and more rules are used to solve a problem. This way of thinking tends to form a straight line where one thought leads to the next one and so on and so forth. Technical people are often thought to be the largest group of linear thinkers in the process industry. These technical people work with and oversee asset data. However, the question is, how effective is linear thinking in managing asset data within the growing structure of Industry 4.0? Not very, there is still room to do this more effectively. It is important to note the risks that linear thinking has on an organisation such as creating silos.

DARK DATA IN INDUSTRY 4.0: WHERE IS IT FROM?

Within Industry 4.0, there comes a wave of new innovations that create a mass number of new asset data. Artificial intelligence, high-precision scanners and cloud computing are just some of numerous new innovations that are in production in the market today. It is important to have new asset data created but priority must also be placed on managing it. If the new asset data is unmanaged, it will eventually form a large data lake that is not controlled, analysed, or even acknowledged. The more asset data is created and unmanaged, the larger this data lake becomes and the more blurred and at-risk the data will become. What you find in this data lake is dark data, which is outdated, non-standardised and unreliable asset data. This dark data will then only increase with linear thinking. This is because linear thinkers often focus too much on their own activities. They keep their asset data to themselves. Eventually silos will then start forming in the organisation and asset data becomes isolated.

Silos created from linear thinking will create a constant increase in the amount of dark data that cannot be read or even used. The data kept within these silos will inevitably age and become unreliable when they are not maintained or updated with validating sources from other departments. Now, if every silo adds their own alterations and they do not share this information, there will be too many variations on the same dataset. Every silos' asset data will never be up to date, the as-built model will never resemble the current state of physical assets at its truest form. The asset managers will then be making decisions based on scattered, unvalidated and inconsistent information. This will create greater consequences in the long run.

One of the ways to manage and update asset data is in improving internal collaboration and promoting the sharing of data. Focus on not only the creation of asset data and a single line of work but also in managing it with others within the organisation. Remove that data lake and optimise the way asset data is created and maintained throughout its life cycle. The management of dark data is only effective when there is collaboration and transparency throughout the organisation. With more and more innovations creating data in Industry 4.0, focus on investing some time and money on an innovation that manages the asset data.

There is already a long history of software solutions trying to manage

asset data. However, the designs of these software products often follow similar patterns of linear thinking. Each step triggers the next one, making it difficult for the software to handle a diversity of activities affecting the same asset dataset simultaneously.

DATA-CENTRIC ASSET MANAGEMENT SOFTWARE SOLUTION

So, what is the best way to ride this wave of Industry 4.0 and manage asset data more effectively? Move from a linear way of thinking into a circular one. Instead of working only within a silo, gather and welcome everyone that is working working and is affected by the same as-built model. Do this by implementing a data-centric asset data management solution that facilitates a more circular way of thinking. Interactively share information between all departments within the organisation and unify all silos into one. With Industry 4.0 pulling in more data, it is important to utilise a circular way of thinking to pull in only the correct and reliable asset data. A data-centric software solution will provide a circular way of thinking that an organisation will need to stay afloat the wave of Industry 4.0.

Using a data-centric asset management software solution will effectively decrease and even remove dark data and further optimise all asset data. A data-centric software solution can correct and manage all asset data conveniently in one platform. This will make it easier to enrich and create up to date as-built asset models.

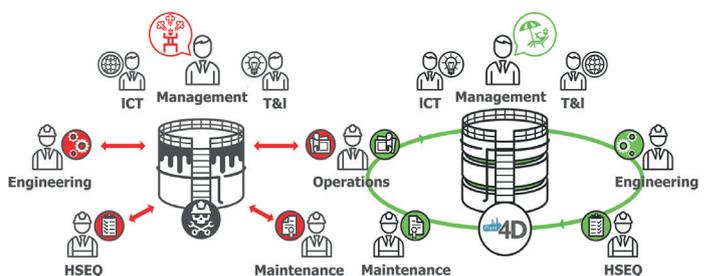
Optimise the management of asset data by finding the best data-centric software solution which complies to Industry 4.0 principles. These principles include, but are not limited to:

Virtualisation – Connecting disparate source, cloning all these sources together into a data ecosystem.

Real-time capacity – Creating a smart data ecosystem. Displaying asset data as it is happening.

Modularity – The ability to adapt fast and smoothly to new changes and increasing market trends. Adapting the smart data ecosystem quickly and smoothly to changing market trends.

These principles mentioned are important points to look for within a good data-centric software solution to rid any dark data in a data lake. Asset-driven industries heavily rely on design drawings of processes,



asset layout drawings and automation schematics. But many companies struggle to keep them up to date, let alone set out a strategy for asset data management. A proper software solution to optimise asset data should include the following:

- 2D computer-aided design (CAD) such as process or layout drawings – acts as the originator and narrator of asset-related activities.
- An Asset Breakdown Structure (ABS) acts as an index of the assets and asset data.
- 3D CAD provides a realistic visualisation of the asset an enriched digital twin, a single view shared between all silos.
- Static asset data can enhance the digital twin turning into a dynamic 4D visualisation.

UTILISING THE SOFTWARE AND OPTIMISING ASSET DATA

The first step in effectively utilising a data-centric management software solution is to have one asset language. Create a unifying standard across all asset data, rules and guidelines into data management. Having one language will make it easier to organise the mass number of new data created. Asset data will be easier to read and future projects within a brownfield or a greenfield situation will be processed more efficiently. When updating legacy drawings, a naming convention and a component library need to be created that are future proof. When everything is standardised, it will make the expansion of a project more controllable. Organisations will also be able to manage the optimisation of all asset data as they continuously grow. Data needs to be structured and aligned consistently.

Secondly, making references to an asset location or functional location tag, it is possible to combine static asset data (activities, measurements and assessments) into a dynamic view over time – for example, visualising concurrent inspection results for asset degradation alongside the executed maintenance tasks over time. The initial asset data originates from the

design phase. Applying data management in this phase requires consensus on how to structure asset data.

From the unique asset tags, created in the drawings, organisations can then derive an ABS (Asset Breakdown Structure). Choosing a data-centric solution based on unique asset tags or functional location of assets means companies can create a 2D and 3D reference model for linking documents, activities and data sources together.

It is now time to focus on putting the available data to use instead of only generating it. The best way to do that is by combining data management solutions in an environment everyone understands and shares. This creates a more enriched digital twin and a future-proof data model strategy.

THE FUTURE OF A TERMINAL'S ASSET DATA

Asset management is about combining data from different sources to create a complete view, and deciding on how to utilise asset data optimally during its entire life cycle. Ensure a better transparency of all departments and all their unique asset data to further enrich an as-built asset model. This is the circular way of thinking that will move an organisation away from housing outdated and useless dark data.

Companies should focus on optimising asset data by using a data-centric software solution that facilitates a more circular way of thinking. Utilise this solution to remove all dark data, to improve communication and the collaboration of all departments within an organisation. Implement this software solution to pull in data from different sources all in one platform, all under one source of truth. It is time to focus on putting all available data to use and optimise it in the most effective way possible for an organisation in order to ride the wave of Industry 4.0.

FOR MORE INFORMATION

www.ceasystems.com



For each application the right Floating Roof Seal

- From primary to multiseal,
- for 'white' storage products or crude oil,
- for external or internal floating roofs, with floating roof seals supplied by IMHOF you always solve your sealing problems in the best possible way.
- Storage tanks for 'white' products (semi-finished and finished products) will not suffer from rainwater contamination.
- Storage tanks for crude oil will not get soiled by parafin wax deposits.
- Your emissions are drastically reduced, without the application of vapour balancing and vapour recovery systems.
- You will avoid additional emissions, utility costs and operational risks of plant.



Phone: 0049 6108 - 60999
 Fax: 0049 6108 - 78455
 E-Mail: info@imhof-tanktechnik.de
 Homepage: www.imhof-tanktechnik.de

Ing.-Büro Imhof GmbH
 Otto-Hahn-Str. 12
 63165 Mühlheim/M. Germany

- Floating Roof Seals
- Roof Drain Systems
- Internal Floating Covers
- Guide Pole Seals and Covers
- Gasholder Seals

