HEXAGON
PPM

WHITE PAPER

UNDERSTANDING INFORMATION CHALLENGES FOR BROWNFIELD ASSETS

UNSTRUCTURED INFORMATION EXPOSES OPERATIONS TO UNNECESSARY COSTS, RISKS, DELAYS, AND HAZARDS

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1. INTRODUCTION

Owner operators must find information needed to maintain, inspect, repair, and operate their facilities within huge volumes of unstructured asset lifecycle information on a daily basis, and the older the asset, the more information there is. In addition to unstructured information, there could be structured but siloed information in various programs, spreadsheets, and databases that is not centrally managed and therefore not universally accessible.

Centrally available, structured, and intelligent information streamlines work processes and enables efficiencies by providing ready access to as-is data. This offers a competitive edge in an increasingly challenging market and supports two core objectives:

- Safe, efficient, and legally compliant operations
- Optimum productivity and profitability

However, unstructured and siloed information can have the opposite effect. A 2010 ARC Advisory Group study[1] reported that incorrect information management leads to an annual loss of 1.5 percent of an asset's total sales. How much would a 1.5 percent loss cost *your* facility?

2. AN INDUSTRY-WIDE ISSUE

In a recent survey conducted by Hexagon PPM, respondents from various industries provided some interesting insights into just how widespread the challenge of managing unstructured information is. "Unstructured information" was characterized as being:

- Document-centric
- In unintelligent formats
- Poorly managed
- Heavily duplicated
- Undisciplined distribution and version control
- Outdated information

Using this definition, respondents admitted to a high percentage of unstructured information existing in their organizations.

In the survey, more than half of respondents admitted to spending 20 percent or more of their time searching for and validating facility information; 7 percent even acknowledged spending more than 60 percent of their time looking for information!

The inability to locate information isn't just a matter of wasted time; it directly impacts a company's ability to operate safely and reliably. In the same survey, 61 percent of respondents expressed a lack of complete confidence in their ability to find all information required to support an emergency response.

[1] Source: Asset Information Management, Part I – the Case for Developing an AIM Strategy; ARC Advisory Group, July 2010

3. THE INFORMATION DEFICIT

Engineering data and documentation are essential to provide on-schedule, on-budget projects and efficient, safe, and predictable operations. Every person involved in designing, constructing, operating, and maintaining a facility needs ready access to trustworthy information to perform the job effectively. Accessible, structured information is well-organized in form and format and in accordance with your company's data governance policy. In other words, it's a place for everything and everything in its place. As such, you can continuously use and reuse that information knowing that it is controlled, managed, and reliable. Hexagon PPM achieves this with data-centric asset lifecycle information management (ALIM) solutions that provide simple, secure access to trustworthy information by managing and leveraging vast amounts of data to transform inefficient document-based work processes into data centric, cross-application work processes.

However, the vast majority of existing facility information is unstructured or inaccessible, resulting in significant challenges to find the data needed to support important day-to-day decisions.

3.1. CAUSE AND EFFECT

Disorganized information is the result of many factors:

Documents and drawings may be held in multiple locations - both on-site and off-site - where assets have changed owners.

Multiple versions with duplicates, inconsistencies, and no clear masters create confusion and require time-consuming review to identify as-is information.

Electronic versions may come from incompatible or different source systems. Paper documentation may remain boxed up and overlooked in offices.

Undocumented asset knowledge may depart with your retiring workforce, as aging assets are typically staffed by many engineers who have remained at the site throughout their professional career.

Lack of accessible, accurate information compromises plant productivity and operational integrity:

Preparation and execution of tasks is time and cost-intensive. Delays in locating and verifying data further add to operating costs.

Out-of-date information can result in unexpected and undocumented issues when on-site work is executed. This may lead to extended downtime, reduced productivity, and increased costs.

Failure to locate documentation to demonstrate ongoing regulatory compliance may lead to the loss of your operating license.

In the event of a serious incident, delayed responses can impact your reputation and share price. In worst case scenarios, lack of access to critical information could result in injury or death.

4. THE COST OF DOING NOTHING – TOO HIGH A PRICE TO PAY

If a facility has been operating for years with no issues, it's tempting to continue the status quo. Why increase expenditure and overturn established, accepted ways of working, especially against such a challenging economic climate? An investment in an asset lifecycle information management strategy is an investment in the long-term health of your facility, your personnel, and your bank balance.

Two critical examples of how unorganized information can affect owner operators and the bottom-line of the business include projects and turnarounds as well as time-critical access to plant information.

4.1. PROJECTS AND TURNAROUNDS

A brownfield asset is coming back online after a turnaround. During this often frantic period, documents, drawings, and electronic files are distributed in boxes throughout the temporary construction offices and taken onto the site by craft workers. Whether this information returns to where it came from is questionable. There is also a risk that recorded changes to the as-built status of the facility may be lost or not incorporated into new as-built revisions. As mentioned previously, the information is scattered around the plant on network drives, personal computers, or technicians' folders and desks; or it may be non-existent.

This presents significant challenges to knowledge-capture and an accurate information record of the plant's as-built state to any regulating authority or insurance company. But this is not only specific to turnarounds. Having the right information prepared is necessary in order to execute projects such as revamps, de-bottlenecking, or extensions. Managing the information in this process is important from two angles. Firstly, once the project execution is planned, it is then important to gather all the required information to send to contractors. Secondly, when the project is in the handover stage and the project information is being handed over from the contractor, the owner operator needs to capture the information, review on completeness, and validate if the information is fulfilling all requirements defined.

4.2. TIME-CRITICAL ACCESS TO FACILITY INFORMATION

A facility shift manager has to deal with the facility alarm tripping at 2:00 a.m. It is critical to find the cause of the alarm quickly and determine a potential remedy. However, if information is scattered among multiple locations, there could be insufficient facility personnel on site to quickly gather all the information necessary to diagnose the problem and develop a plan of action. The facility manager could shut down the facility and wait for resources to arrive, find, and then fix the root cause of the problem before bringing the facility back online in a controlled manner. The negative impact on production will result in significant costs; in the long term this can potentially make the facility uncompetitive. Alternatively, the facility manager could keep the facility running, but this decision risks the safety of the facility and its personnel. Having quick access to information that is easy to navigate during problem evaluation is essential. It enables owner operators to support the daily decisions required for facility operations and maintenance. There are usually multiple systems on a facility, with multiple locations for documents and drawings. It is critical to provide owner operators with a single point of access to the engineering information – a portal to well-organized and cross-referenced information.

5. THE PATH FORWARD – BRIDGING THE INFORMATION GAP

Hexagon PPM solutions create intelligent information from both unstructured, duplicated, and non-integrated data and documentation as well as structured spread sheets (Microsoft® Excel) and databases and consolidates the two. Furthermore, quality assurance and quality control activities managed by Hexagon PPM, your local engineering partner, or your Microsoft Excel certified consultant occur prior to loading any data into the system. Additionally, Hexagon PPM's service partner program empowers users to start digitalization faster with significantly reduced internal efforts. This ensures that integrated, accurate asset information is readily available to support your business objectives:

- Optimized planning and execution of scheduled tasks, with no on-site surprises which may pose a safety risk or extend downtime
- Rapid and robust incident response, even in worst case scenarios

Actions		Outcome
Searching systems	ALIM searches file systems for documents, drawings, images, structured databases and spreadsheets (Microsoft® Excel), 3D models, and 3D laser scans. It repeatedly crawls these locations searching for new or updated files.	AVAILABLE information
Identifying masters	ALIM provides tools for side-by-side or overlay document comparison.	ACCURATE information
Capturing content	File readers with optical character recognition and pre-defined discovery patterns examine and interpret content. Documents are then extracted into pre-defined folder structures.	INTELLIGENT information
Linking information	ALIM uses document content to create tag-document relationships, hot-spots, links, and cross-references for navigation.	INTEGRATED information
Viewing results	ALIM allows navigation by name or tag/equipment number through an intuitive info map.	ACCESSIBLE information

For more information on how Hexagon PPM can support your asset lifecycle information management objectives or to become a certified service partner, please visit: https://hexagonppm.com/products/asset-lifecycle-information-management.

For more information about Hexagon PPM, visit our website at hexagonppm.com

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