

Live webinar

Hoe beheer je asset informatie met Machine Learning?



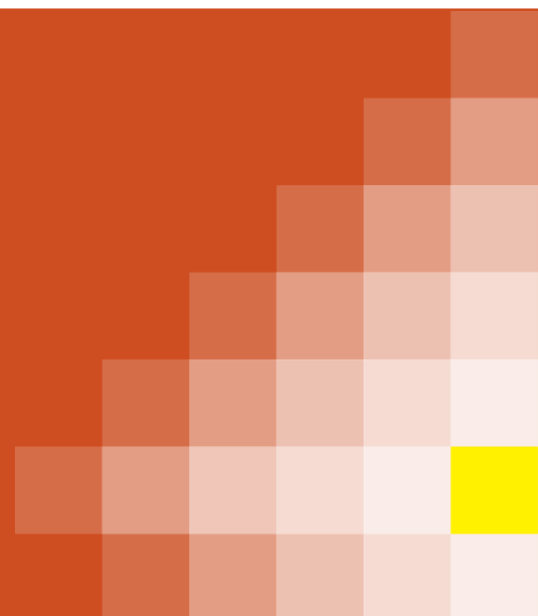
Predictive Maintenance

online kennisdagen | 22 & 23 juni 2021



Marcel Kelder Sales Director Digital Enterprise Solutions

Challenges: How to do asset information management?



Information Management Challenges

Why are organizations struggling to manage their information?

■ Information Silos

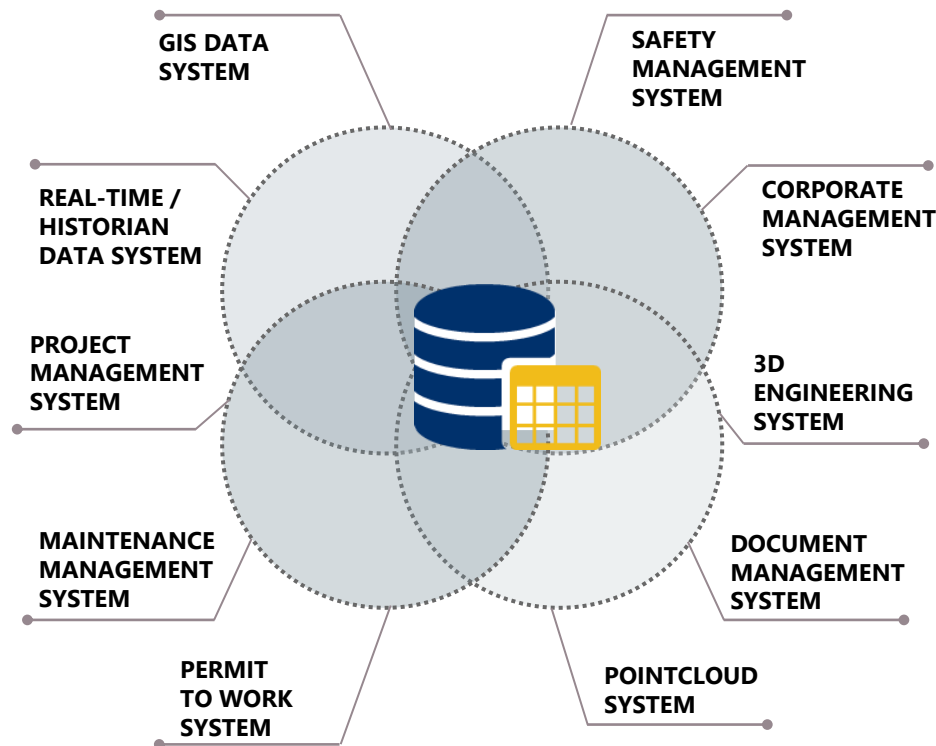
- ◆ How to maintain data integrity?
- ◆ How to prevent data duplication?

■ Access issues

- ◆ Do users have access to the systems they need?
- ◆ Can users find the information?

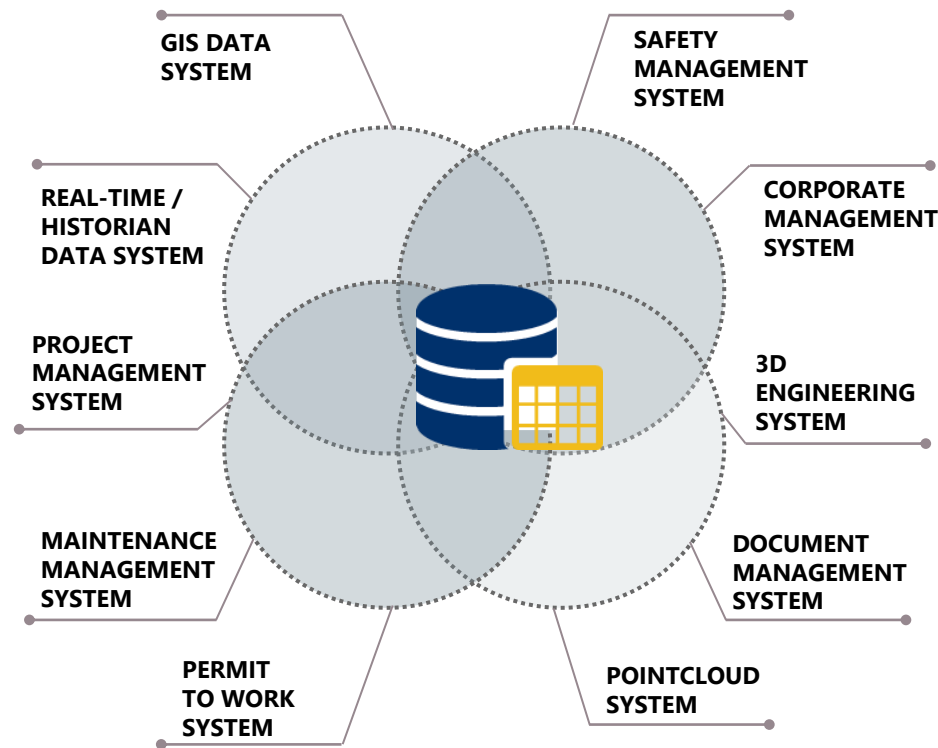
■ Publication issues

- ◆ Can users access data on their (mobile) device?
- ◆ Are apps/viewers for various formats available?

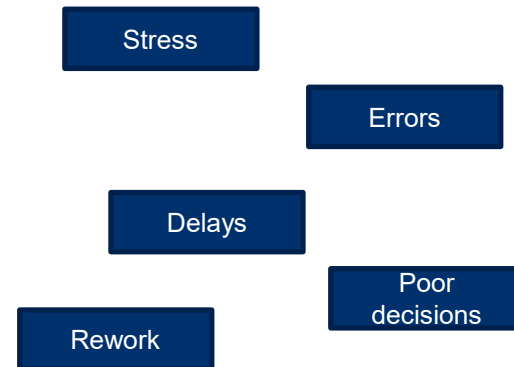
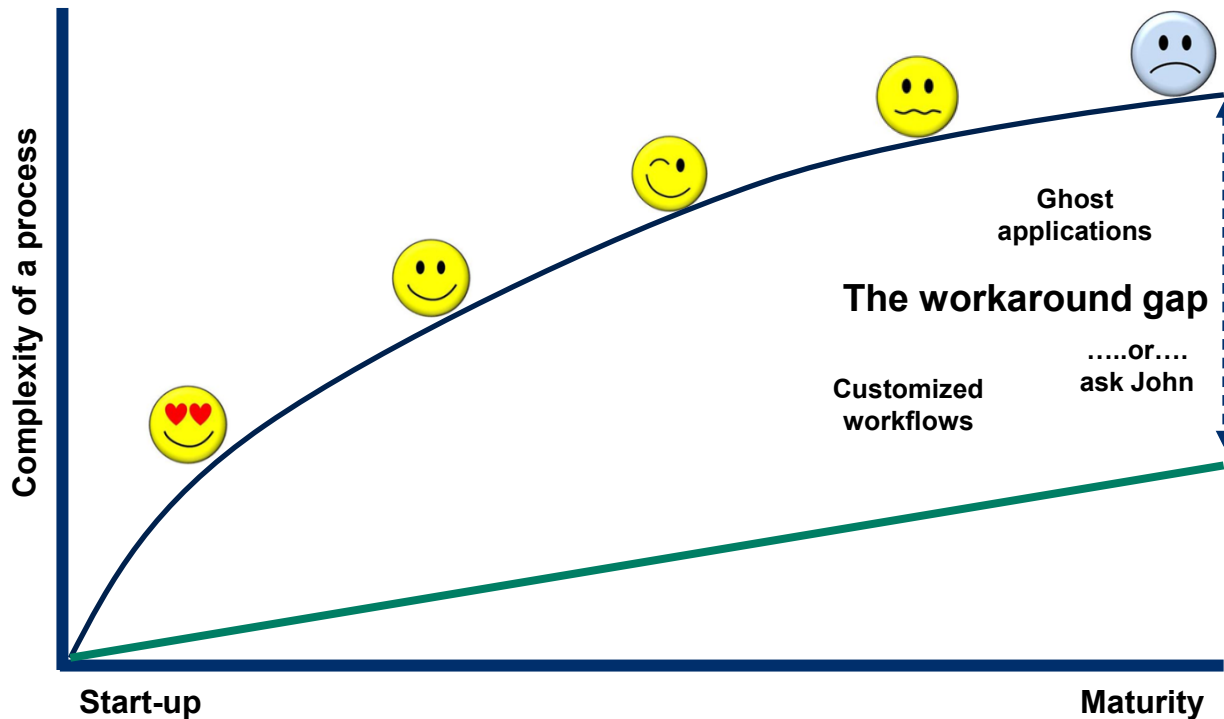


Asset Master Data Management

- How do you know the asset information is correct?
- What system is responsible for the master data and classifications
- Master Data Management requires integration (can be complex and expensive)



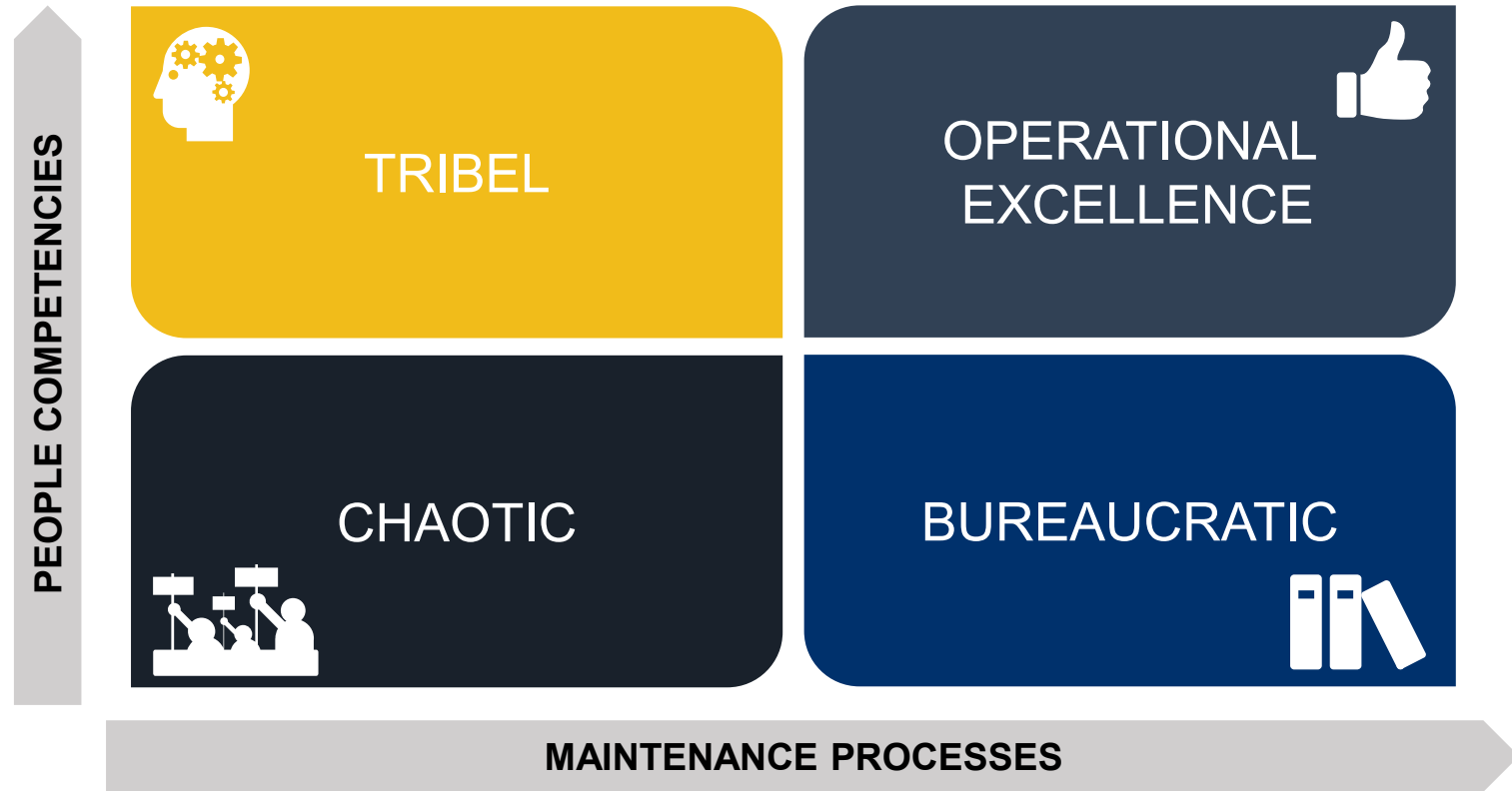
Human behavior



How to close the workaround gap

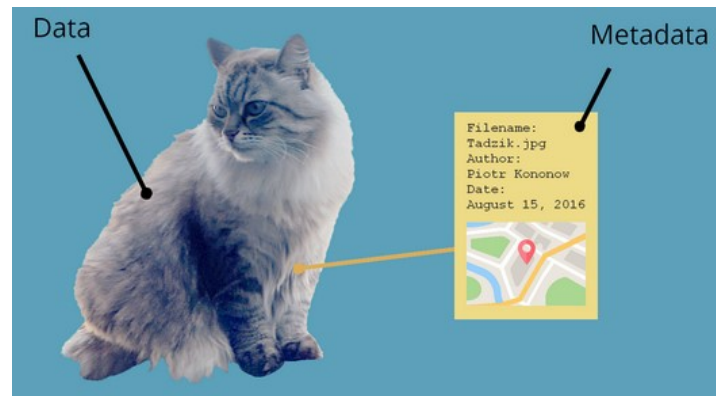
- Step 1 : Acknowledge you have a problem
- Step 2 : Ask lot of "Why?" questions
- Step 3 : Map your current process
- Step 4 : Categorize your pain points
- Step 5 : Fix, analyze, learn & repeat

Organizational Culture Model

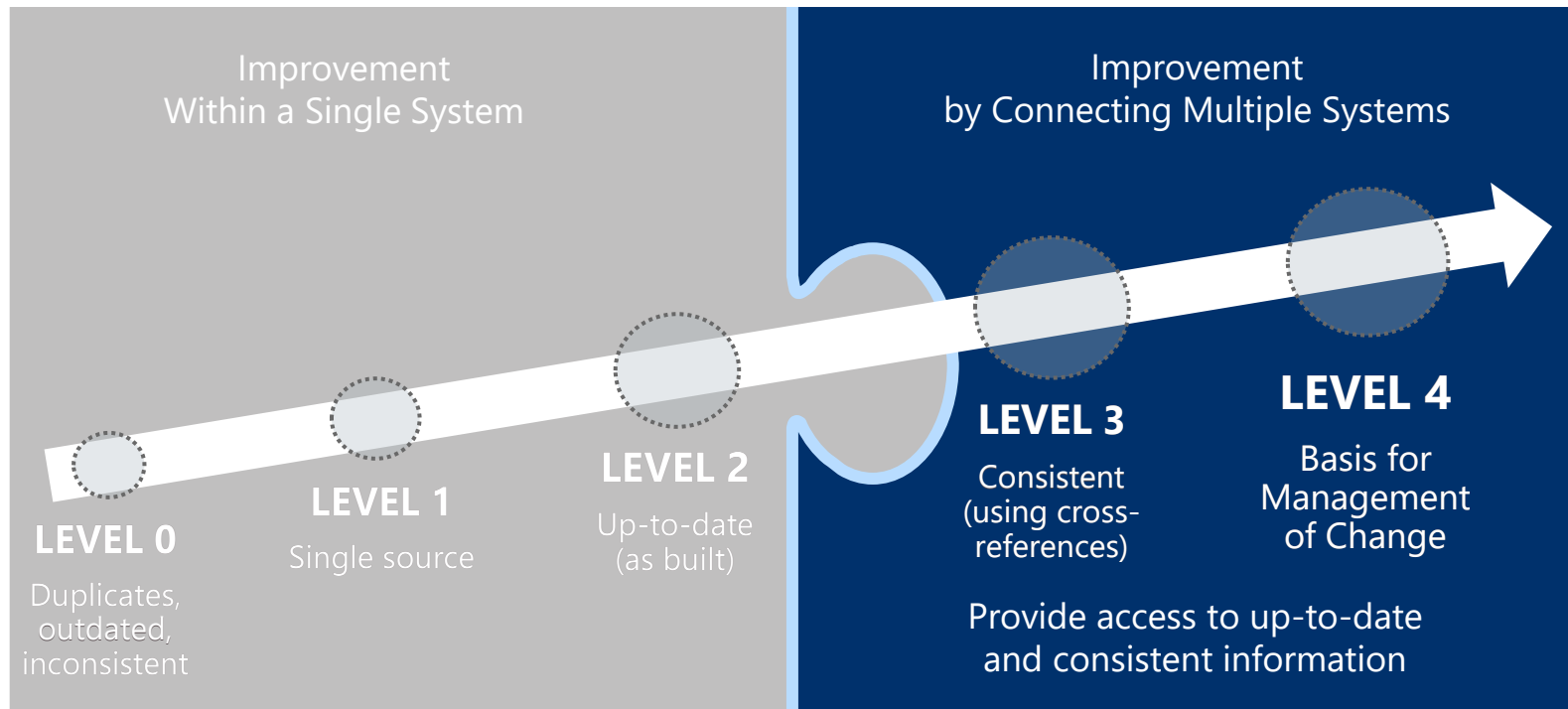


But... we have a document management system

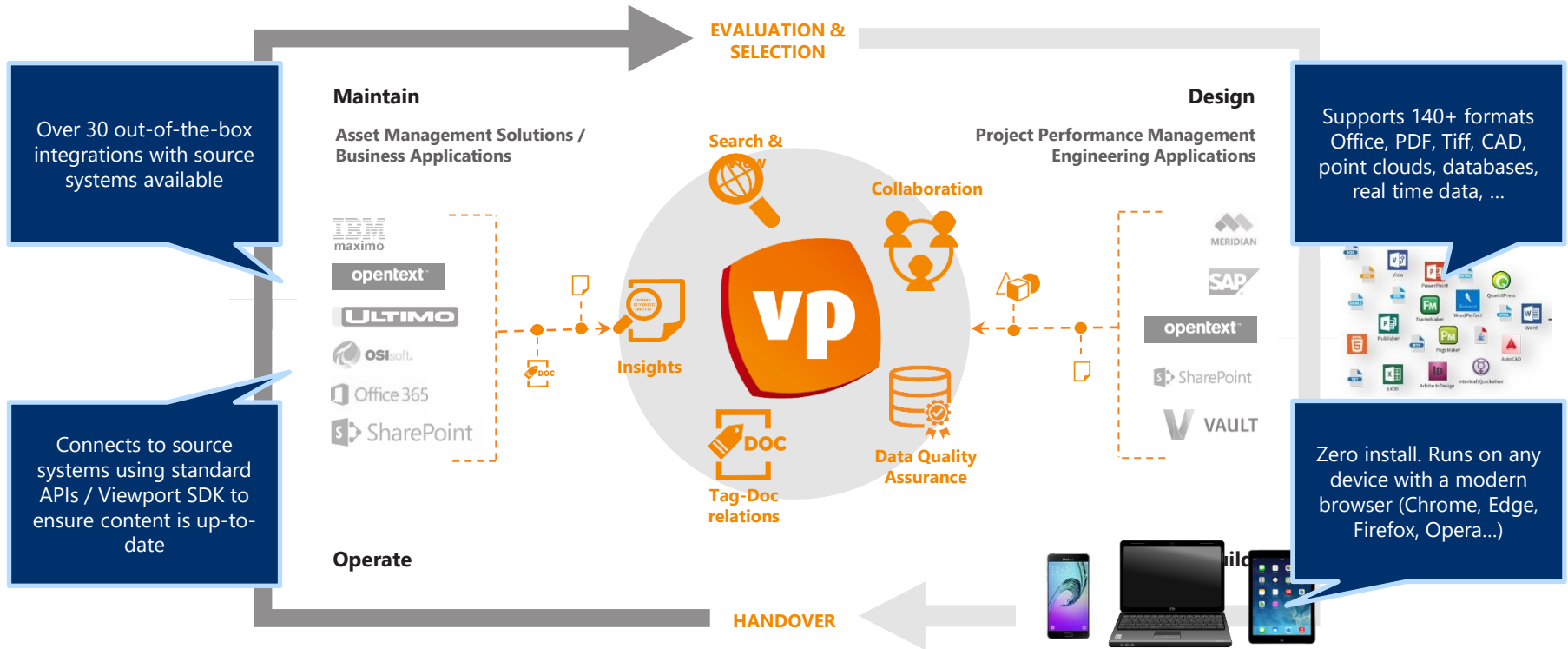
- Designed to create, store and organize content files not information
- Designed to manage metadata (the data about data) such as source, version, owner, statistical data etc.
- Does not typically offered extensive content (information) search
- Often the IT director / manager is the business owner for information management



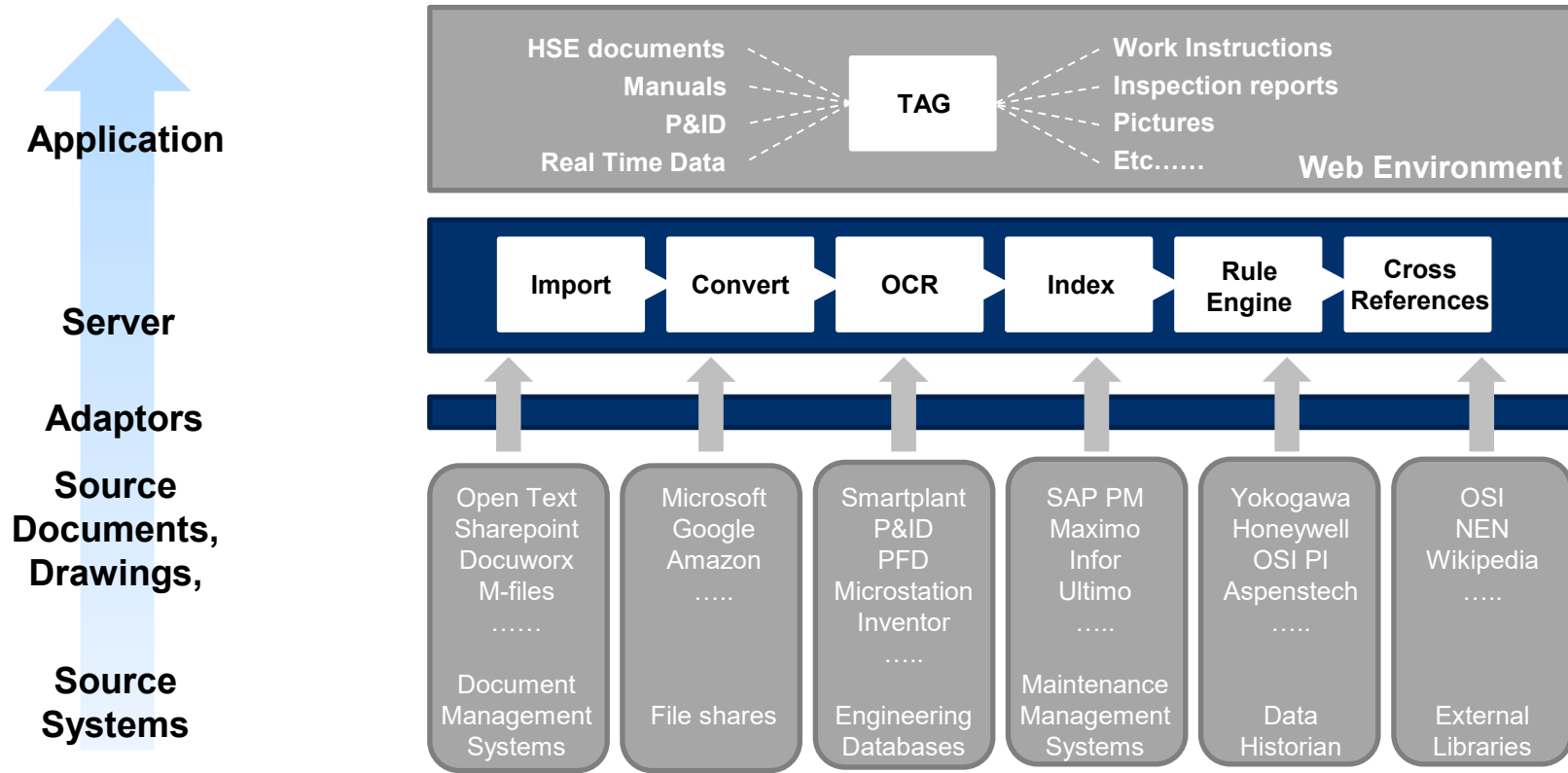
Data Quality Model



Contextual Asset Information across the Asset Lifecycle



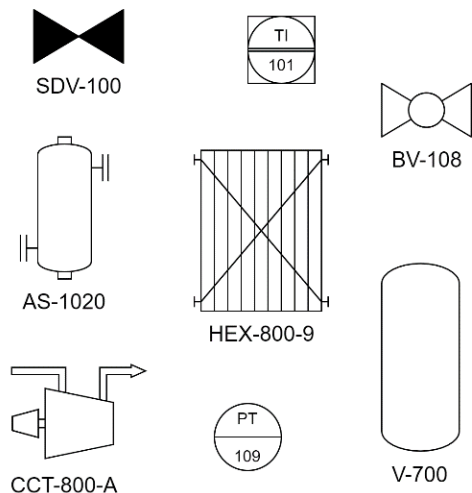
Asset Information Warehouse



Machine learning vs references

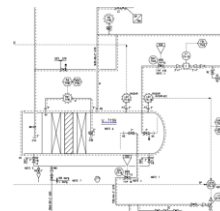
Examples of references

Equipment identified by the tag number



V700
V-700 V-700
V.700
V-600/700

Documents identified by a document number

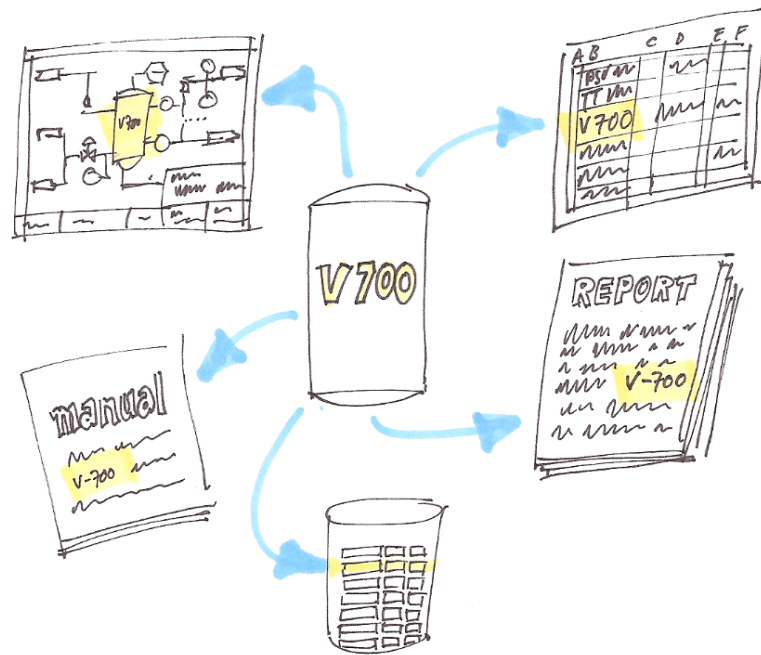


Location	Name	Certifying Body	Protected Equipment
R40	PSV-1001A	Stormwezen	V-700A
R40	PSV-1001B	Stormwezen	V-700B
R40	PSV-1001	none	PRS-1001
R40	PSV-1004	none	PRS-1001
R40	PSV-1005	none	PRS-1002
R40	PSV-1006	none	PRS-1003
R40	PSV-1007	none	PRS-1004
R40	PSV-1008	Stormwezen	V-700
R40	PSV-1010	Stormwezen	V-700
R40	PSV-1012	none	PRS-1009
R40	PSV-1002	None	VAT/CHL UNIT
R40	PSV-1009	none	COLDSTOR VESSEL
R40	PSV-18-001	Stormwezen	spare
R40	PSV-18-001	Stormwezen	spare V-700-B
R40	PSV-638-1	Stormwezen	COMP-VENT
R40	PSV-638-2	Stormwezen	COMP-VENT
R40	PSV-710A	none	E-710A
R40	PSV-710B	none	E-710B
R40	PSV-720-1	none	E-720
R40	PSV-720-2	none	E-720
R40	PSV-740-1	none	E-740
n.t.	PSV-740-2	none	E-740
n.t.	PSV-750-1	Stormwezen	DS-750
n.t.	PSV-750-2	Stormwezen	DS-750
R40	PSV-750-1	Stormwezen	E-750A
R40	PSV-750-2	Stormwezen	E-750B
R40	PSV-770	none	E-770

Cross-References

Find e.g. V-700 in:

- Drawings
- Excel Sheets
- Manuals
- Reports
- Scans
- Database records
- etc.



Viewport alarms if a tagname has no cross references (e.g. to the ERP/CMMS master database)

User portal

Files

- HSE
- Operating Manual
- Procedures
- Drawings
- Layouts
- P&IDs
 - P&ID HIGH PRESSURE COA
 - P&ID HIGH PRESSURE SE**
 - P&ID LOW PRESSURE COA
 - P&ID LOW PRESSURE SERA
 - P&ID Pump 2
 - P&ID Pump 3
 - P&ID Pump 4
 - P&ID Pump 5
 - P&ID Pump 6
- PFDs
- Red-Blue Markups
- Lists
- Reports
- Pictures
- Vendor
- 3D Models
- RATS List
- Safety Datasheets
- Work Orders
- Movies

PT-18005 Pressure Transmitter Riser-8

Properties	References (1)	Trend	Ultimo Workorders
ABC Indicator	C		Ultimo
Certificate Date	11-29-2016		Ultimo
Description	Pressure Transmitter Riser-8		Ultimo
Externalid	123776		Ultimo
Inventory Number	31000416047		Ultimo
Manufacturer	SCHORCH ELEKTRISCHE MASCHINEN		Ultimo
Manufacturer Serial Number	004713-00120		Ultimo
Model	KA 1 132M-89032		Ultimo
Name	PT-18005		Ultimo
Supplier	Valtek		Ultimo
Tag	PT-18005		Ultimo

Go to 'PT-18005'

- ## Tagname hotspot
- Asset information
 - From CMMS or ERP
 - References
 - All available sources
 - Trend information
 - From data historian
 - Work instruction
 - From CMMS or ERP

Customer case

Customer case

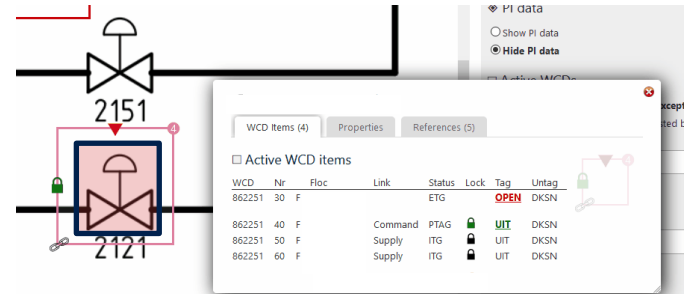
- Customer: European **energy company** responsible for mission-critical, nuclear power operations.
- **Complex interplay** of work activities at various stages
- Challenge **assessing ongoing work** activities in a timely manner
- Total process is **time consuming**
- Engineers need **immediate access** to the real-time status of equipment and actual work
- **Difficult to identify possible conflicts** between actual and planned work

Implementation

- **Prototype to show concurrent activities**
- **Multiple fast iterations to finalize visualization**
- **Install and configure test environment at client.**
 - ◆ Connect to SAP for work orders / asset data
 - ◆ P&IDs show current and planned work activities.
 - ◆ Visualization was added to PDF content (download & Print)
- **Connected OSIsoft PI Asset Framework**
 - ◆ Real-time color-coding of all valves, pumps, and instruments
- **Standard functionality of Viewport completed requirements**
 - ◆ Search and navigate P&IDs, tags, work orders
 - ◆ Identify missing tags / documents, continuous improvement cycle

Results

- A streamlined interface showing current and planned work activities on P&IDs, highlighting possible conflicts in real-time
- Identification of tags, symbols and digital prints
- A real-time connection to OSIsoft PI enabling visual consistency-checks in CAD and PDF files
- Access real-time plant status through existing P&IDs.



Note: tagnames are hidden

Next step: Integration Viewport and Permit to Work

The screenshot displays the Viewport Operations software interface. The main window shows a P&ID diagram titled "P&ID HIGH PRESSURE SEPARATION V-700B NL34-B2-31-007-002". A sidebar on the left lists various files and folders, including "P&IDs", "P&ID HIGH PRESSURE COA", "P&ID LOW PRESSURE COA", "P&ID LOW PRESSURE SERA", "P&ID Pump 2", "P&ID Pump 3", "P&ID Pump 4", "P&ID Pump 5", "P&ID Pump 6", "P&IDs", "Red-Blue Markups", "Lists", "Reports", "Pictures", "Vendor", "3D Models", "RATS List", "Safety Datasheets", "Work Orders", and "Movies". A pop-up window titled "PT-18005 Pressure Transmitter Riser-8" is open, showing properties such as "ABC Indicator", "Certificate Date", "Description", "Externalid", "Inventory Number", "Manufacturer", "Manufacturer Serial Number", "Model", "Name", "Supplier", and "Tag". The background shows a 3D model of a facility with various equipment and piping.

The screenshot shows a Permit to Work (PTW) form overlaid on a 3D model of a facility. The form contains the following information:

- PERMIT NO: 96.1
- COMPANY: RAP International Ltd
- LOCATION: SysRoot (Ground Floor)
- NAME: Inspection activity, confined space working.
- EQUIPMENT: A-A-1
- ICONS: [Icons for inspection, confined space, and equipment]
- ISSUED AT: 18/06/2020 10:46
- EXPIRY DATE: 18/06/2020 17:00
- STATUS: Live

A "Navigate to Permit" button is visible at the bottom of the form. The background shows a 3D model of a facility with various equipment and piping, with red markers indicating the location of the permit area.

With the integration, the P&ID shows which instruments are part of a Permit to Work job including isolation.

4 TAKEAWAYS

1

Acknowledge
you have a
problem with
asset
information
integrity

2

Workaround is
not a solution

3

Select a
sustainable
solution what
fits your needs
and budget

4

Viewport is a
practical and
affordable
solution
to address
asset
information
integrity

Thank you for your attention

More information?

Contact Marcel.Kelder@nl.yokogawa.com
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