

Asset Information Management with Informatica



A new architecture provides a single trusted source of asset data from which to report, analyze and predict, resulting in better-informed decisions and reduced costs.

Certain industries – such as the energy, utility, telecommunication and transportation sectors – have to manage large volumes of information about physical assets, including: machinery, transport equipment and infrastructure hardware. Data is collected about every asset as it passes through the many stages of its lifecycle, from planning through to design, operation, maintenance and decommissioning. At each stage, one or more application systems collect asset data, resulting in large pools of information.

What organizations usually lack, however, is a consolidated view of all core asset data across the lifecycle. Achieving this consolidated view can bring substantial benefits. For example:

- It becomes possible to move from a planned maintenance schedule to a predictive maintenance model, which can generate significant savings – millions of dollars' worth in the case of rail companies, where track assets are spread across thousands of miles of territory.
- Renewal decisions can be based on condition and whole-life cost rather than time-based specifications, again potentially saving millions of dollars. For example, an airport can replace air bridges based on condition, usage, and whole-life cost analytics, rather than just time.

- Documents and specifications can be linked to the correct assets, making them easier to locate and removing the need to generate new specifications when fixes and maintenance are carried out – an activity that can cost millions of dollars each year and lengthen the time taken for repairs and maintenance.
- Operational expenditure (OPEX) and capital expenditure (CAPEX) budgets are more accurate.
- The organization can avoid the penalties that are imposed in some industries when regulators find that schedules are not met or that stoppages negatively affect customers. For example, in the rail industry, regulators monitor train time tables and if trains run late by more than an agreed margin they are penalized. In the airport industry, if planes are delayed by more than a certain time margin to get into or out of a bay, they are penalized. In both cases, customers using these services are negatively impacted.

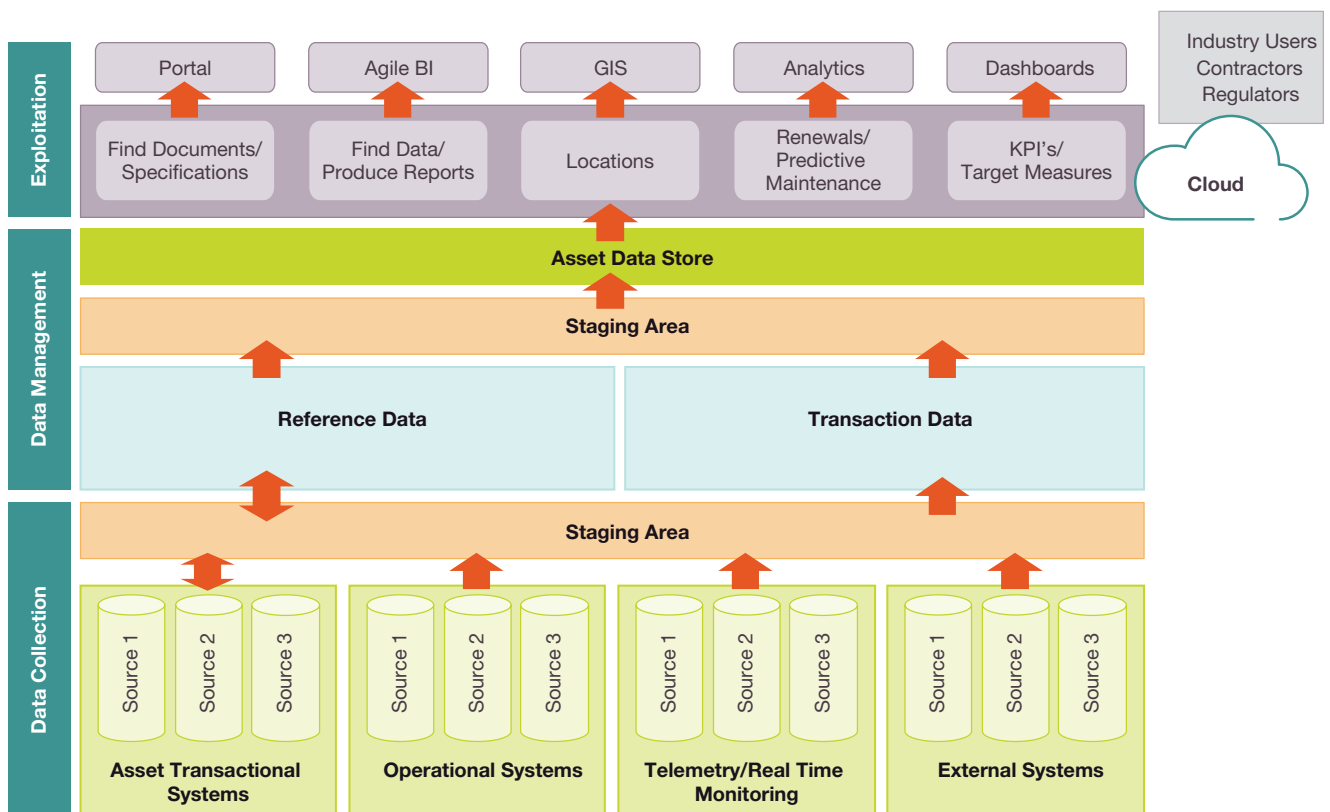
This paper outlines our recommended approach to creating the necessary consolidated view.

Solution architecture

The diagram below illustrates a Reference Architecture that can help asset-rich organizations to improve data management across the asset lifecycle. It does so by transforming data captured in various application systems into a single, trusted view of each asset on which to base business decisions.

The Informatica product suite is one of just a few offerings on the market that provides all the capabilities shown in the Reference Architecture. It has been used successfully by Capgemini with a number of clients.

Figure 1: Asset Information Hub – Reference Architecture



The Reference Architecture has three logical layers (shown as vertical rectangles on the left hand side of the diagram):

- **Data Collection** – gathers data from source application systems.
- **Data Management** – cleans and consolidates the data.
- **Exploitation** – provides business users with access to the data to help with decision-making.

The **Data Collection** layer extracts data from various sources shown in the gray area at the bottom of the diagram. The **Data Management** layer then processes the source data, using predetermined rules to make sense of it in the following ways:

- Match and merge data to create the most accurate version possible.
- Eliminate conflicting data by choosing the version with the highest probability of accuracy.
- Highlight anomalies to allow data quality to be assessed and improved.
- Link assets into logical groups that a user might need, e.g. put a pump in the context of a larger heating system.
- Create a pool of data that business users can exploit.

In processing the source data, the Data Management layer uses **Reference Data** and **Transaction Data**. Reference Data can be thought of as the core attributes that an organization needs in order to carry out its mandate: for example, geospatial coordinates defining the location of an asset, or cost elements such as acquisition cost. These attributes must be identified in collaboration with business users to ensure the data aligns with business objectives. Transaction Data consists of key transactions that must be linked to assets: for example, financial transactions to assist in calculating whole-life cost of an asset, or condition readings for use in predictive maintenance decisions.

The result of this processing is clean, joined-up data that describes the assets' attributes using the most accurate information available from the source applications. The cleaned data is loaded into the **Asset Data Store**, where it is ready to be used by end-users with the tools available in the **Exploitation** layer.

A sustainable, non-intrusive approach to improving data quality

When asset-rich organizations need to reduce costs, improving the quality of asset data should be made the top priority so organizations can make better-informed decisions. The first step in tackling this challenge is to engage with the asset management community to understand the business questions that asset data should help to answer. This is also an opportunity to assess the organization's current asset data management practices and maturity. Experience shows that many good local data management practices may be discovered – **but usually all in silos**.

Whatever outcomes emerge from these consultations with the business, in technology terms there are three options for improving asset data quality:

1. Clean up the data in the various asset sources through surveys and tighter data capture rules.
2. Replace the disparate source systems with one overarching asset management system that covers the full lifecycle of assets.
3. Use the Reference Architecture above to provide a single, trusted source of data, drawn from existing source systems, which then can be exploited by all business users.

As opposed to Options 1 and 2, Option 3 is less disruptive, compliments existing systems and ensures for a repeatable process for organizations because it:

- Reduces expenditure
- Meets customer expectations better
- Improves operational resilience
- Delivers a master plan for asset renewal
- Complies more easily with regulations

With option 3 organizations have the opportunity to establish a governance process to ensure that asset data is maintained and improved in the long term.

Find out more

Contact us to find out how our Reference Architecture can help improving data management and data quality for your organization.



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About Informatica

Informatica Corporation (Nasdaq:INFA) is the world's number one independent provider of data integration software. Organizations around the world rely on Informatica to realize their information potential and drive top business imperatives. Informatica Vibe, the industry's first and only embeddable virtual data machine (VDM), powers the unique "Map Once. Deploy Anywhere." capabilities of the Informatica Platform. Worldwide, over 5,000 enterprises depend on Informatica to fully leverage their information assets from devices to mobile to social to big data residing on premise, in the Cloud and across social networks.

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