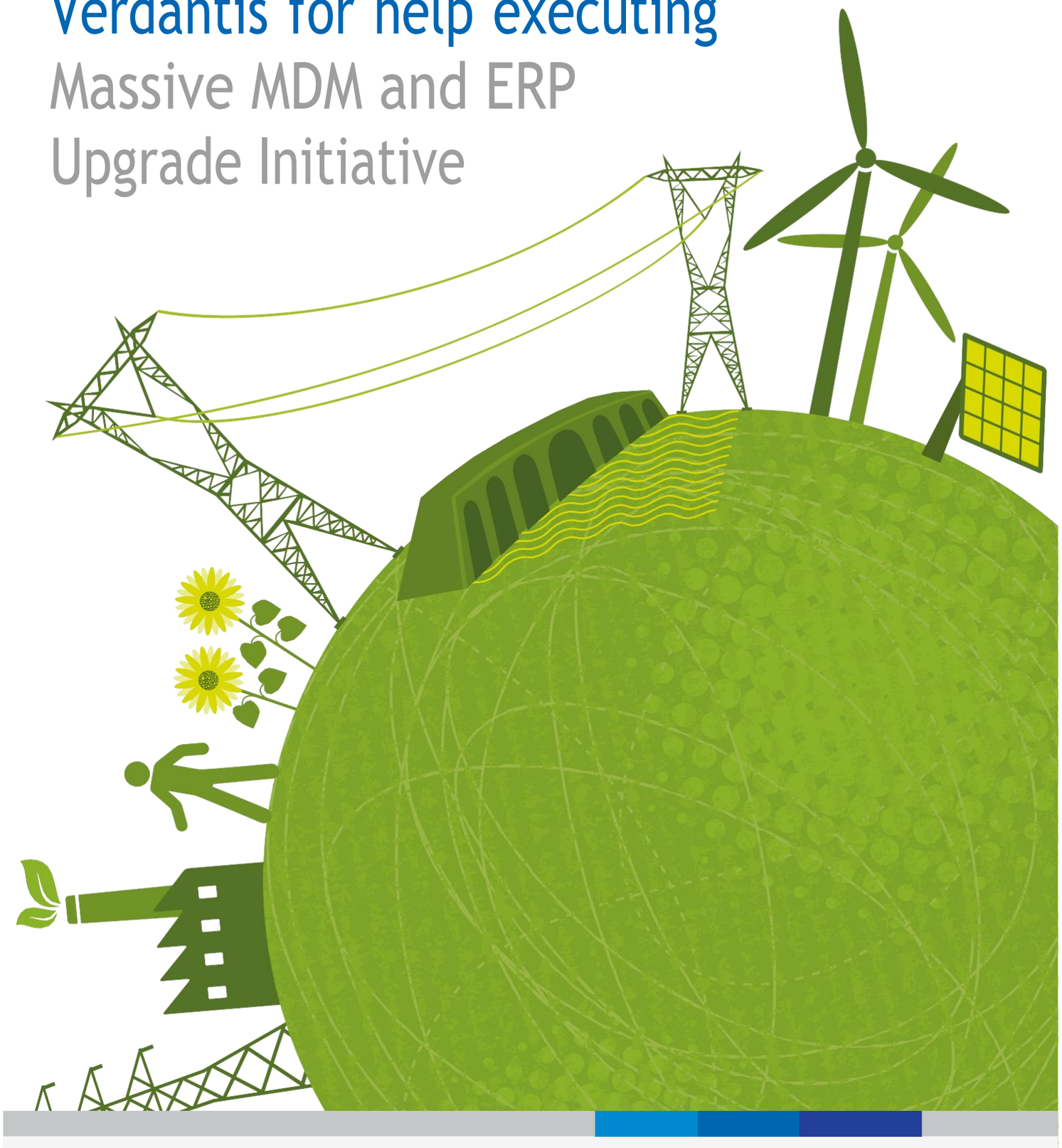
Verdantis
DATA DRIVEN PERFORMANCE

Leading electric utility taps Verdantis for help executing Massive MDM and ERP Upgrade Initiative



Executive Summary: Data Quality Improvement for Leading Electric Utility Company

Industry: Electric Utilities

Company Profile:
Industry: Publicly traded electric utility serving millions across 11 states
Location: Headquartered in Ohio, USA
Employees: ~17,250
Revenue: $19 billion

Project Requirements:

Use Case:
The company faced challenges with inconsistent and non-standardized descriptions that impacted operational efficiency, data accuracy, and item management across multiple locations. They needed efficient maintenance of legacy data with self-service cleansing.

Objective:
Cleanse and standardize data for over 300,000 items, including spares and OEM parts.

Challenges:
Address inconsistencies and lack of standardized descriptions.

Solution:
Chose Verdantis following a competitive RFP and PoC over their incumbent provider.

Implementation & Outcomes:
Phase 1:
Cleansed 100,000 MRO items and standardized descriptions.

Phase 2:
Enabled self-service cleansing for 100,000 legacy items.

Integration:
Single Sign-On (SSO) with Integrity and synchronized item master data maintenance for 4,000 users across 200 locations.

Key Takeaway:
Verdantis provided superior data cleansing and standardization, enhancing item management efficiency and integrating seamlessly with the company's EAM solution.

Over the weekend of July 4 – while most people in the U.S. were attending cookouts and pool parties – our client, a leading electric utility went live with Phase 2 of its massive ERP and Master Data Management (MDM) unification effort. The go-live event was the culmination of a three-year effort to accomplish three tasks:

- Unify the company's accounting structure,
- Upgrade all client businesses and affiliates (both regulated and non regulated) to a single version of SAP, and
- Upgrade all units in client's nuclear division to a single instance of client's Enterprise Asset Management (EAM) system for managing all supply chain, inventory, cataloging, and other engineering aspects of the business.

Underpinning the three simultaneously executed IT initiatives has been an enterprise Master Data Management (MDM) implementation, which, as of July 5, enabled any master data user in the company to search and see inventory items across the entire enterprise. The implications of this capability is huge, creating the potential for the client to,

- De-duplicate and optimize MRO and other materials inventory,
- Decrease maintenance cycle times,
- Increase first-time fix rates for plant equipment,
- Decrease plant downtime,
- Improve maintenance planning,
- Increase productivity among its engineering personnel by making item setup and search more efficient and effective, and
- Improve enterprise-level spend analytics.

The business-performance implications of these new capabilities are huge. For example, minimizing plant downtime, increasing labor productivity and equipment yields all feed directly into corporate profitability. Meanwhile, gaining enterprise visibility into inventory enables a whole host of strategies that can be used to free up cash, reduce costs associated with purchasing, receiving, handling, storing, financing and accounting for inventory. And combining MRO inventory visibility with enterprise spend analytics empowers the client's procurement organization to pursue a wide variety of other cost savings measures, including (but not limited to) inventory simplification and supply-base rationalization, shifting of inventory burdens to suppliers, and strategic sourcing and negotiation of difficult-to-manage MRO spend and other catalog materials categories.

The IT initiatives have been underway for some three years and, given the sheer audacity of what the client set out to accomplish, it is no surprise that there have been a few challenges along the way. Among the most significant of those challenges has been preparation of the utility company's legacy master data – some 600,000 item records formerly distributed among hundreds of legacy source systems – for migration to the new SAP MDM solution.

And while the client's various business divisions already had robust approval workflows in place for creating new material item masters – consolidating the work with knowledgeable procurement engineers or similar – it still had no common standards for classifying items, assigning item attributes, or generating item descriptions, and corrupt master data

INTERESTING FACTS ABOUT the client

- The client's service reliability (measured in minutes without power) beats the industry average by 46%.
- The client's Co2 emissions rate is 35% below the national average.
- The client continues to focus on adding clean/green power generation capacity; two new solar generation sites and another now in the pipeline will prevent the release of nearly 3.5 million tons of greenhouse gases over their lifetimes, which is the equivalent of removing 25,000 cars from the road per year, according to the EPA.

history was diminishing ROI from the client's robust workflow for creating new item masters.

It quickly became apparent that a sub initiative would be needed for master data classification, harmonization, normalization and enrichment. A team of stakeholders representing each of the client's business division convened, drew up specifications, and conducted a competitive bid, presentation and negotiation process among several potential solution providers.Verdantis – a world leader in Artificial Intelligence based master data management solutions – emerged as the team's provider of choice.

Right about the time the client team was conducting its due diligence, Project Manager, joined the team that would manage the data migration internally. "We chose Verdantis," the Project Manager says, "because they had cutting-edge automation solutions and – having already completed several large-scale projects in the utility industry – had deep knowledge of the materials and parts attributes we would be addressing."

The client was also attracted to the future potential that Verdantis offered in terms of both data enrichment and ongoing master data management services. "Our selection team," the Project Manager says, "was attracted to the skill sets Verdantis had. We liked the idea that they could crawl manufacturers' web sites to find and fill item-attribute information that might be missing from our legacy descriptions. We were also interested in the possibility of outsourcing our burden of managing master data altogether."

While the client has not yet decided to go ahead with Verdantis enrichment or ongoing master data maintenance services, he says the utility company "may do so in the future as we move beyond our go-live stage and into the enhancement phases of our initiatives."

A phased approach

In managing its massive back-end IT upgrade, the client decided on a phased (versus Big Bang) approach that would bring its many sites online with the upgraded systems on a staggered, yet aggressive, schedule. On the nuclear power side of its business, this meant migrating five sites across four states. On the nonnuclear power-generation side, it involved migrating 12 plants, and on the nonregulated side of its business, it involved migrating multiple company holdings across some 29 states.

For each successive go live event in the past three years, the client has tasked Verdantis with several things:

- Interrogate existing item catalogues and classify each item master correctly to the appropriate UNSPSC global coding standard,
- Interrogate existing item descriptions, extract, normalize and structure existing item attribute data, and
- Generate standard item descriptions from normalized, structured attribute fields.

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>
> –Project Manager

"Prior to this initiative," the Project Manager says, "there was no unified classification standard in our master data."

"The purpose of going to the UNSPSC coding methodology is to drive better spend analytics and similar sorts of things," adds the Sr. IT Manager, who is the business leader representing integrated supply chain management in the transition initiative.

But, for a data set containing 600K records, getting the classification work correct has been challenging as well, according to the Project Manager." Some business units, for example, our Transmission & Distribution group, had already adopted UNSPSC for a majority of their records, but they deal with mostly standard commercial items like poles, wires, transformers, and so forth. One of the struggles we had – and are still experiencing across the enterprise to some extent – is determining the level of granularity and detail to which we should classify our data.

"Verdantis, which has a great deal of expertise in this area, has been invaluable in providing guidance to us," the Project Manager continues. "However, much of our decision making has been dependent on the depth of content in our existing catalog descriptions. Sometimes, if the information is not available in our item descriptions, we have had to come up a few levels in the coding schema." In all, Verdantis has helped the client to classify some 600K items down to 1,189 UNSPSC codes. Future enhancements, the Project Manager suggests, may involve drilling down to deeper levels of classification.

De-duplication

Scope was added, the Project Manager notes, to have Verdantis evaluate the total master data set for potential duplicated items in support of inventory optimization objectives. the Project Manager estimates de-duplication potential at roughly 5%, although he says that may be skewed as – due to missing attribute information – some items appearing to be duplicates may still be unique and vice versa. "Many of our catalogs – especially on the nuclear side of the house – include engineered products and OEM equipment. At higher levels of classification, these may look like duplicates but, when you get into the details, they are not the same. We have not yet completed our de-duplication process. One of the outstanding activities we have with Verdantis is for them to provide us with a final duplicate-potential file of our inventory, but we expect to have that soon."

And, while the client was attracted initially to the enrichment capabilities offered by Verdantis, the Project Manager says acceptance of enriched values for item descriptions has proven to be a complex undertaking. The reason is the regulated nature of the client's business and the extreme care it must take in managing spare parts and other item inventory for its nuclear and other power generating, transmission and distribution facilities.

"The Verdantis team provided a recommendation for data enrichment, but this is going to require additional labor on our end. It is not that the enrichment work is lacking; rather, it is that – given the nature of our facilities – we cannot just accept enrichment values on blind faith or make arbitrary changes to our catalog descriptions. We have business policies and procedures that require our engineers to vet each change to ensure

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>
> –Sr. IT Manager

we are getting the superior products we expect to install in our nuclear and other facilities. This is an approach that carries across our entire enterprise."

Lessons learned

Thinking back to the beginnings of the client's phased IT infrastructure transition, the Project Manager suggests the original vision and schedule may have been overly ambitious. "Knowing what we now know, we may have done things differently. We were very aggressive on our timelines in the initial phases of our project so we did not tackle all the pieces as well as we could have."

The client also encountered technical challenges after its first go live that forced the company to essentially redesign its MDM front end. "We learned the hard way that a significant challenge in MDM is a forced segregation of text and numeric field values. We could not load into numeric fields any values the system would interpret as text – such as hyphens, slashes or quote marks – that our internal customers wanted to use. We had to work through those issues with customers, review and rework our catalog descriptions accordingly. The Verdantis team helped guide us through that redesign and also took on the additional normalization and translation work the redesign generated."

Harvesting ROI

Now that the client has completed its ERP transition, the Project Manager and the Sr.IT Manager are already thinking about how future enhancements might coalesce into big business benefits and ROI from the client's massive migration and enterprise MDM effort.

Initially, they note, a search through the MDM portal will tell a user if an item exists and in which division. From a workflow perspective, a user will also have an ability to clone existing items rather than starting each new item setup from ground zero. "Keep in mind," the Project Manager says, "that our catalog descriptions contain significant amounts of content – engineering, specification and other – that is used not only by our procurement people but also by our plant people in determining how and where items will be used. There is a great deal of text description and it benefits us to have it all within our MDM application so it can be leveraged for creating new items."

The Sr. IT Manager notes that, "A challenge we have had over the years – specifically on the generation side our business (both nuclear and fossil) – has been an inability for one facility to look into the inventory of another facility for a part, say a valve, it may need for a maintenance job. At the conclusion of our final go live, every business sector of the client acquired an ability to go into our MDM portal, perform material searches, and comprehend whether or not inventory is on hand. If we can find materials internally, we can avoid pulling the trigger on new purchases and will have opportunities to optimize inventory and reduce maintenance downtime."

While the infrastructure is not yet in place to enable physical location and transfer of inventory items among the business units, the Sr. IT Manager says that will come later as the company moves on to its enhancement

A key component to having master data management across the enterprise is an ability to conduct material searches in a more robust environment than we had previously. The individuals doing our planning work – whether it be preventative, corrective, or elective – will be at the top of their games, executing fast, accurate material searches and applying existing inventory to future work.

–Sr. IT Manager

work. "When you consider that the total value of our inventory stretches into hundreds of millions of dollars and there are significant costs associated with plant downtime in our industry, the potential benefits from this capability are enormous. If one of our plants is offline and not putting electricity onto the grid, the needed power must be either purchased or diverted from another source. There is expense associated with both options, so the objective is to keep our plants online as scheduled and, when they are offline for maintenance or refueling, to get them back online as quickly as possible while adhering, of course, to all the correct operational and regulatory procedures."

"Any benefit from this master data work," the Sr. IT Manager adds, "will come hand-in-glove with the way planning and work management gets executed. A key component to having master data management across the enterprise is an ability to conduct material searches in a more robust environment than we had previously. The individuals doing our planning work – whether it be preventative, corrective, or elective – will be at the top of their games, executing fast, accurate material searches and applying existing inventory to future work."

Other expected enhancements, according to the Project Manager, include the ability for the MDM application to preclude future item duplication by automatically interrogating the existing master database and letting MDM users know if there are potential duplicates for an item they may be creating. "The original system was designed with the idea of bringing potential duplicates to light as items are being created. We have had to defer that functionality due to the sparseness of certain information in our legacy data, but now that we are through our go-live and have time to think about next steps, we will be looking at both the de-duplication work and ways to work in prompts and safeguards that make it easy for our projected 3,000 or so MDM users to avoid creating duplicates.

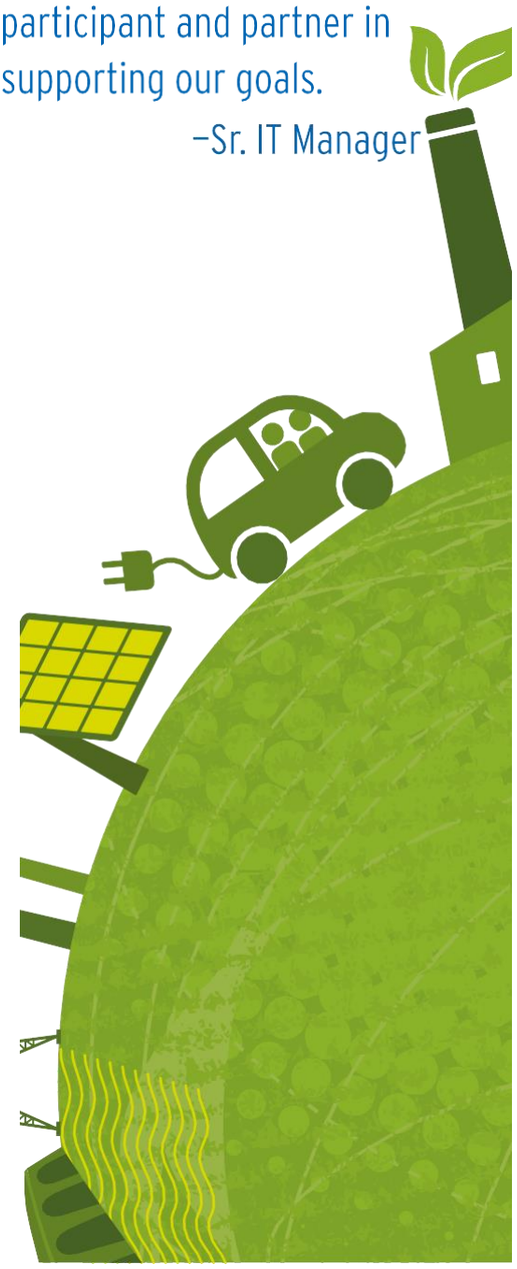
Expectations exceeded

In evaluating the role Verdantis has played in executing the client's massive IT transition, the Project Manager says, "The value of the guidance and expertise Verdantis provided to us was immeasurable. They brought us to an understanding of what the UNSPSC coding system was all about and how it could be applied to our catalog descriptions. We didn't necessarily listen all the time, but that was due to internal preferences. Verdantis even created a few customized UNSPSC codes for us that did not exist in the current code structure."

"Each time we had a schedule change," the Sr. IT Manager adds, "it meant we had 'delta records' of additional items that were still being created in our legacy systems, which then had to be processed, classified, analyzed and normalized by the Verdantis team. Through the entire process, with all its starts, stops, challenges and changes, the Verdantis team has been right alongside of us doing anything they can to get us over the goal line. It has been a true partnership."

In our opinion, responsiveness is the Verdantis team's most significant strength. The Verdantis team has been open minded about data changes, recommendations, and shifting timelines. Throughout our relationship the Verdantis team has been a willing participant and partner in supporting our goals.

–Sr. IT Manager



HOW THE CLIENT's MASSIVE MDM PROJECT WILL DELIVER ROI

Financial Benefits

- Reduce working capital requirements and financing costs
  - De-duplicate/reduce inventory on hand
  - Rationalize/simplify inventory
  - Discover obsolescence in inventory more easily
    - Reduce carrying, storage, handling, accounting, labor and financing costs associated with inventory
  - Minimize safety stockpiling

Business Benefits

- Increase plant and equipment uptime
  - Increase capacity/equipment yield
  - Accelerate/increase returns on capital investments
  - Avoid need to purchase power to meet grid demand requirements if/when capacity is down
    - Increase productivity/job satisfaction of plant engineers and other maintenance workers

Technical Benefits

- Optimize use of Enterprise Resource Planning (ERP) (use as intended)
- Facilitating cross-functional data synergies across applications systems
- Drastic reduction in data creation and manipulation cycles, and compliance with IT's norms for data quality

Procurement/ Supply Chain Benefits

- Deliver costs savings by
  - Gaining enterprise visibility into MRO spend/inventory
  - Rationalizing to fewer part numbers and suppliers
  - Improving demand forecasting
  - Leveraging enterprise volume in sourcing and negotiation with suppliers
  - Avoiding unnecessary parts purchases

Verdantis is the leader in AI Powered Master Data Management solutions that bring real ROI and Business Value by focusing on the business use and application of organizational Master data. Verdantis uniquely offers end-to-end automated ERP MDM solutions driven by our suite of Artificial Intelligence (AI) based solutions and business roles and rules. Our easy-to- use solutions are easily configured to fit enterprise requirements for classification, enrichment, screens, fields, security, attachments, workflow approvals, languages and more.

Verdantis Harmonize® is a high-speed automated material /item data quality improvement tool that uses internal knowledge assets to master legacy data. Harmonize assures a globally unified, standardized, de-duplicated and enriched material master for uploading into a customer's ERP, EAM as well as Verdantis Integrity.

Verdantis Integrity® is a data governance tool that manages the quality of the material/item/product master data on an ongoing basis. Powered by a strong workflow engine and a guided item creation process, it keeps a cleansed and harmonized material master permanently pristine. It prevents data duplication and enhances organization-wide parts discovery, visibility and compliance.

Leading global companies have chosen Verdantis solutions for the following reasons:

- In-depth industry and data-specific domain expertise with a robust project methodology
- End-to-end automated processes to harmonize & enrich historical master data
- Ability to ensure semantic and structural data integrity and quality
- Ability to handle large volumes of cryptic and complex data in multiple languages
- Delivery of higher quality and volume than manual/database-centric approaches
- Flexible engagement models with a single focus on customer success

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