

# EXALEAD PLM ANALYTICS

FOR A COMPREHENSIVE,  
PERFORMANCE-DRIVEN APPROACH

White Paper



## EXECUTIVE SUMMARY

Engineering, design and manufacturing is a constantly evolving universe, with ideas and concepts emerging, maturing and influencing the real world. IT is vital in supporting and shaping decision-making in these areas because delivering innovative products faster, while maintaining quality and cost, is critical to success. Going a step further to obtain a first-mover competitive advantage or faster time-to-market requires a new wave in analytics.

While enterprise management and support systems for design, manufacturing, testing and product support are becoming ever more advanced, users are facing a significant challenge in disseminating and navigating all the underlying information vital for accurate and timely decision-making.

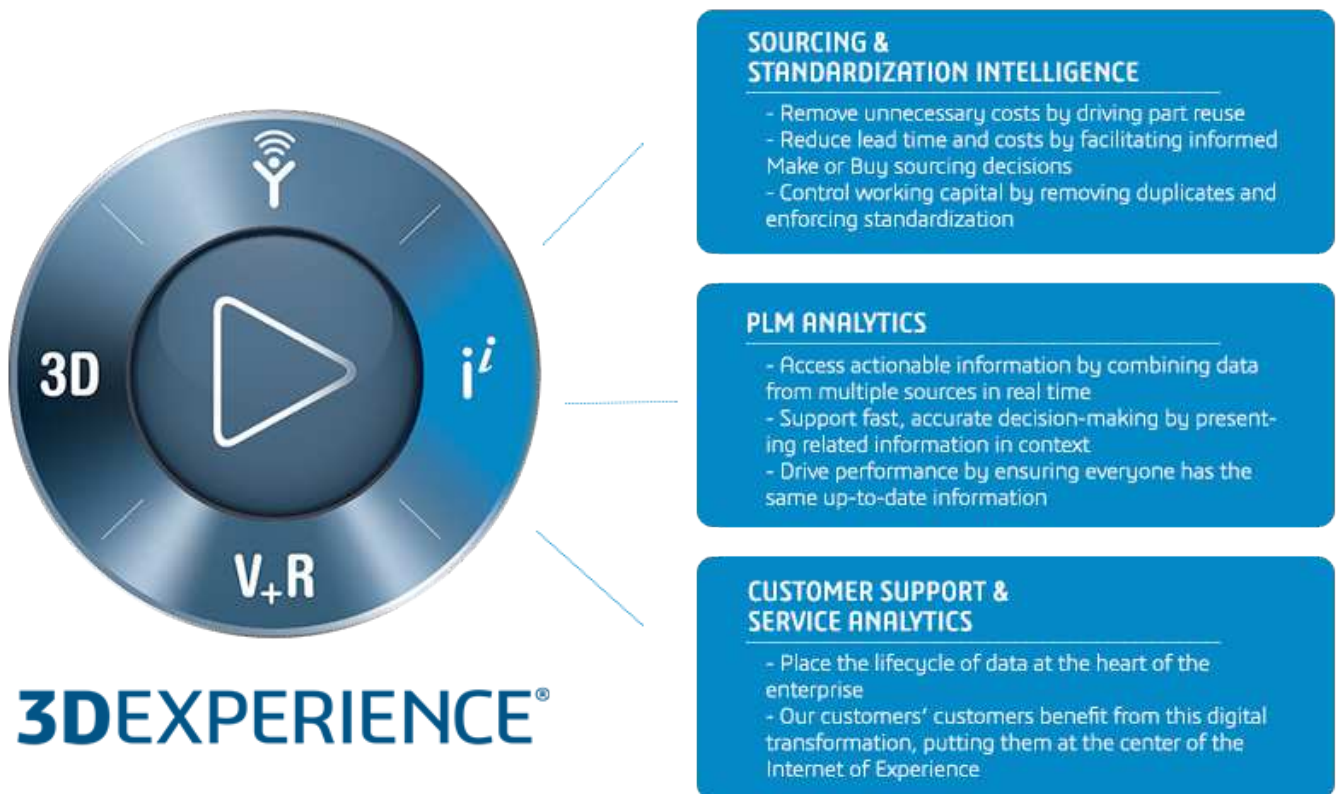
- In-silo reporting doesn't provide the big picture
- Business Intelligence (BI) tools fail to provide rich information in context
- Businesses are left exposed during ever-present system upgrades and migrations

Dassault Systèmes remains a leading innovator in Product Lifecycle Management (PLM) and 3D design technologies. In support of this, it has invested heavily in analytical technologies to further drive business benefits for its customers in the related areas of planning, simulation, insight and optimization.

PLM Analytics is a major part of this investment and Dassault Systèmes has dedicated its powerful EXALEAD technology to fulfilling this need. This paper examines the challenges peculiar to PLM and why EXALEAD offers the most appropriate solution. It also aims to clearly position EXALEAD PLM Analytics alongside related technologies like BI, data-warehousing and Big Data solutions.

## EXALEAD Analytics Strategy

Currently, Dassault Systèmes' EXALEAD solutions address 3 major sets of use cases:



While Sourcing & Standardization Intelligence and Customer Support & Service Analytics are important related areas, this white paper focuses on PLM Analytics.

## 1. THE MARKET SITUATION FOR PLM ANALYTICS

Today's global marketplace is challenging enterprises to become more innovative and efficient in all domains in order to enhance or maintain their competitiveness. Equally, products are becoming more technologically advanced, featuring increasingly sophisticated materials, electronics and software; in parallel, the supporting IT landscape grows ever more complex. All-in-all, a perfect storm!

### 1.1. Increasing Complexity

The need for PLM Analytics and the insight it offers has grown with the complexity of designing and manufacturing modern products. While this has been enabled through advances in science and technology, it is being driven relentlessly by: the need to compete, consumer demand, increased regulation and part reuse, new manufacturing techniques, new markets, improved quality, new materials, new technology, and new sales and support models with connected products (Internet of Things, or IoT), creating new experiences.

For example, what was considered Sci-Fi in the 1970's (mobile phones, flat screens, microprocessors, verbal communication with technology, planes that fly and land themselves, cars that park themselves, the Internet, etc.) is commonplace today. Specifically, with embedded electronic and software management systems, PLM project complexity has grown exponentially, requiring multi-domain collaboration and management. This applies widely across manufacturing sectors, from automobiles to household appliances. In addition, increased consideration for efficiency, safety and the environment has added a further, but not unwelcome, layer of complexity.

Complexity also forces greater cross-industry collaboration. For instance, building autonomous cars requires collaboration between automotive manufacturers, their electronics OEM suppliers and regional legislators. So the challenge is how to have a single point of product, program, and process information access across multiple: domains, projects, partners, suppliers and systems.

PLM technology has evolved as a direct result of modern product complexity, demanding rigorous control over processes, quality, and governance. With this has come the need for powerful analytics to manage changes, track progress and issues, provide insight and enable users to discover all related information. EXALEAD PLM Analytics is uniquely placed to meet these demands.

### 1.2. Design Challenges

With increasing complexity, design and engineering decisions become more sophisticated. Take, for example, the inclusion of a heated seat within a vehicle. This is a simple enough add-on feature that on the surface appears to be a somewhat prosaic engineering challenge. However, given such a challenge, any automotive or aerospace engineer will quickly point out that there are many considerations and questions that must be addressed prior to any design decisions being finalized. Here is a small subset of some initial considerations and questions that an engineer would need to ask during this project:

- *How much electric current will this device require?*
- *Will it have multiple temperature settings?*
- *Can the fuse box handle the additional current?*
- *How will thermal protection be achieved?*
- *What safety certification is required?*
- *Where can the required parts be sourced from?*
- *What effect will this feature have on overall weight?*

- *Where can the wiring be routed?*
- *Where will the power controller devices be located?*
- *Will this require additional infotainment programming and connectivity?*
- *Is there a flammability risk?*
- *What effect will it have on vehicle fuel consumption?*
- *What effect will the additional cabling have on existing wiring looms?*
- *What effect will this feature have on overall vehicle reliability?*

- *How will the seat(s) be activated?*
- *Will this require another fuse in the fuse box?*
- *How many seats within the vehicle will potentially be heated?*
- *What failure modes are there?*
- *Will we need to specify a different generator/alternator?*
- *What is the cost target for this feature?*
- *What effect will this feature have on recyclability?*



Even with this short list, we can quickly see the knock-on effect of complexity through interaction with other subsystems, disciplines and design parameters. Clearly, this activity requires qualitative insights beyond those available from mere statistics; which are static by definition.

### 1.3. Engineering Management Challenges

There is a similar story for engineering and senior management too, based on the simple question, "What do we do next?"

Key performance indicators (KPIs) and reporting are absolutely vital within PLM processes. With so much going on, it is important to be able to visualize progress and summarize the health of the business, programs and projects in a number of ways, for which classic BI techniques are largely adequate. However, once a KPI flashes red or a graph takes a nosedive, hindsight can't help.

Take the real example of a typical aerospace engine manufacturer. It no longer sells engines outright but is paid on an hours-in-service basis.

What happens when a KPI tells the manufacturer that a particular engine model is starting to generate less revenue and that operators are experiencing greater Aircraft On the Ground time due to maintenance?

While the KPI can tell you how you are doing, it can't tell you what to do next.

What is required is insight. The next action involves getting answers to questions, generating further related questions and including directions/stakeholders to drive the search for answers. EXALEAD effectively provides a single point of access to all constituents, which will include multiple disciplines, probably across multiple regions involving teams with different priorities and agendas (likely extending to aircraft operators and maintenance companies).



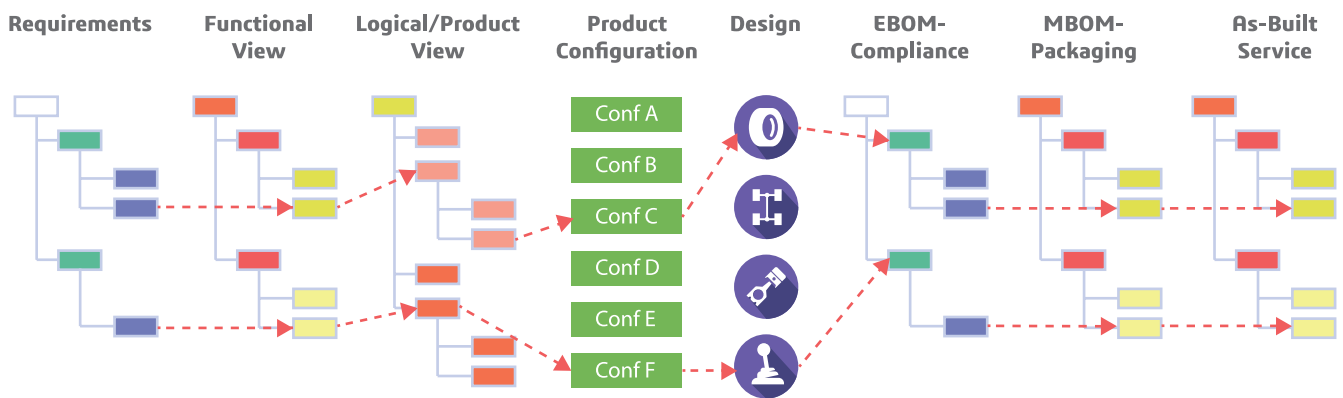
### 1.4. The Information Dissemination Challenge

Historically, IT systems have broken down complex information processing challenges into data structures and procedures. Reporting has, therefore, been statistical and generally retrospective. However, many of the information assets required to gain insight into managing a product’s lifecycle are unstructured and not accessible via a traditional BI approach.

Using the aerospace engine example again: To gain insight into the nature of the problem, the following types of intelligence are needed, not just the reported statistical data and KPIs.

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• <i>Email correspondence</i></li> <li>• <i>Service engineer reports</i></li> <li>• <i>Technical service reports</i></li> <li>• <i>3D assembly assets</i></li> <li>• <i>Bills of Materials</i></li> <li>• <i>Maintenance procedures</i></li> <li>• <i>Service center locations</i></li> <li>• <i>Training certification</i></li> <li>• <i>Financial analysis</i></li> </ul> | <ul style="list-style-type: none"> <li>• <i>Contracts</i></li> <li>• <i>Performance history</i></li> <li>• <i>Parts manufacturers’ specifications</i></li> <li>• <i>Test models</i></li> <li>• <i>Statistical analysis</i></li> <li>• <i>Failure mode analysis</i></li> <li>• <i>Alternative parts</i></li> <li>• <i>Operator reports</i></li> </ul> |
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The relationships between these types of information form complex networks called graphs, and PLM is overrun with them. Most of these relationships are inherent in the data sources themselves. For example, a PLM system already has a part number associated with a CAD model. In addition, these graphs are dynamic, constantly evolving. So completely new relationships might arise at any time, such as those between unstructured texts in an email and records within a complex PLM data structure.



The ability to traverse continuously changing graphs, especially those inherent within the data sources themselves, while maintaining meaningful context for reports and dashboards, becomes critical when selecting a technology capable of delivering true PLM insight.

A simple mantra that sums this up well is: If you want to make intelligent decisions, start with all the intelligence (not just the numbers). To achieve this, unstructured and non-quantitative information needs to be processed differently and in addition to the structured content, requiring powerful semantic analysis and the extraction and linking of concepts. Only by providing structured and unstructured information side-by-side and in context is it possible to gain the insight required for timely and accurate decision-making.

## 2. BENEFITS AND IMPACT OF ANALYTICS IN PLM

Doesn't PLM (and PDM) technology like ENOVIA already provide the level of rigorous control and reporting to assist with the types of engineering and managerial questions described?

The answer is yes, but only to an extent. PLM Analytics is required because it can sit on top of individual systems, remaining flexible while drawing content from many other silos, not just core PLM data. This becomes much more important in larger and more established engineering and manufacturing companies when considering the reality of complex, real-world IT landscapes and the fact that PLM Analytics can and should be used by more than just PLM and PLM-savvy users.

### 2.1. The Reality of an IT Landscape

Gathering all the required and related information together also has its challenges. Within the automotive and aerospace sectors, it is quite common to see multiple content management, CAD, PDM, PLM, ERP, CRM and collaboration systems within the same organization. Far from being a problem, this is generally a sign of a healthy company facing new challenges and growing. After all, IT is there to serve the business rather than to constrain it, and often a new silo outside of a standard IT policy will be introduced because it just makes good business sense.

The automotive sector has seen a great deal of joint ventures and M&A activity over the last 20 years. With the need for businesses to drive a return on investment from previous IT investments, and the relative cost and delay associated with implementing major new enterprise software solutions, maintaining inherited business-critical legacy and duplicate systems will continue.

#### 2.1.1. Migrations and Upgrades

Over time, the IT landscape of any major design and manufacturing concern will be subject to continuous improvement as the company strives to upgrade or migrate from legacy systems. IT must then manage the transition and provide business information to executives based on data coming from both legacy and new systems. This transition period is often challenging and can easily affect business performance, as major ERP and PLM projects are often measured in years rather than months.

EXALEAD provides real-time analytics on top of the multiple information systems, enabling rapid introduction and manipulation of new information sources. This approach effectively decouples the insight and analytics required for timely and accurate decision-making from backend authoring and management systems. It also makes it feasible to implement PLM Analytics before and during major enterprise software implementations and upgrades rather than as a follow-on activity. The ability to remain agile while supporting rapid implementation in a changing environment directly reduces risk and maintains insight and control throughout.

#### 2.1.2. The Cloud Challenge

Across all industry sectors, we are seeing more and more demand for cloud-based solutions. In principle, this removes the burden of service provision (along with upgrades, on-boarding, help-desk, performance, infrastructure etc.) and capital expenditure from customers to the software author or service provider.

While the advantages of implementing enterprise software solutions as a cloud service are of great interest, it can also introduce a set of new challenges if the old problem of data islands or silos is to be avoided.

Cloud solution connectivity becomes a vital part of any cloud integration strategy going forward and for reporting and insight; the emphasis will always be on balancing cost against latency and network data volumes. Additionally, many enterprise software environments aren't optimized for reporting, so for many BI solutions, the introduction of yet more data warehousing would be required.

#### 2.1.3. The Data Challenge

All this does, however, present some challenges for data integration and reporting. Creating data-warehousing and cleansing/aligning all the legacy data systems is difficult, time-consuming, and costly. As a result, it is not practical to integrate all silos with a data-warehouse (or messaging backbone). EXALEAD has certain advantages in this area, too, because while it can consume content from data-warehouses, it isn't dependent upon them. It can quickly attach directly to information sources and tolerate less than perfect data, which means it can be implemented quickly.

In addition, the introduction of EXALEAD indexing technology means that the data latency issues associated with data sources not being optimized for reporting and distributed or cloud-based solutions is alleviated.

### 2.1.4. Governance

Data integration issues directly affect reporting, which in turn generates governance and decision-making concerns. One of the key guidelines of the Sarbanes Oxley Act is that organizations should always seek to utilize real data in decision-making. Many individuals building their own spreadsheets and reports is often a sign of a larger issue. In such an environment, simple calculation mistakes and data omissions can quickly multiply.

After all, how many complex spreadsheets or reports get fully tested against all possible data inputs and signed-off by IT? Direct access to multiple, trusted information sources, therefore, becomes a priority.

## 2.2. Information in Context

For the most comprehensive analytics possible, dashboarding should be implemented for hindsight as well as for all the supporting multi-format information for insight. But how can such a rich set of information be provided in context? How can we quickly make sense of it all and be led to related information rather than having to trawl through everything?

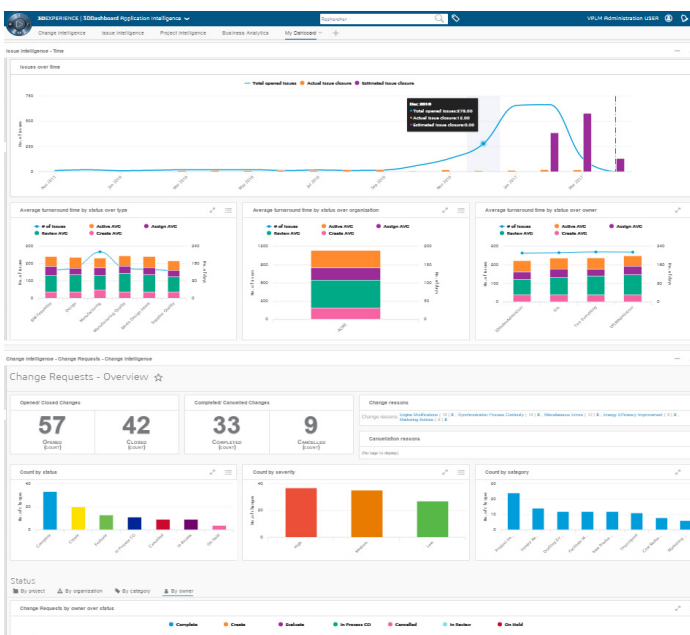
EXALEAD PLM Analytics brings together basic BI dashboarding and multi-format content by finding links between information types. This capability then leads users to related content (either automatically or by design).

As an example, consider what you may wish to see while reviewing a project, such as:

- What are the project gates?
- How does the current project output compare with the product specification?
- How is the project progressing against plan?
- Let's see the Lessons Learned log
- Focus on specific tasks to assess resource allocation
- What issues are emerging and what are the root causes?
- How does the project compare with similar projects?
- Check project review notes

To achieve this type of flexibility, you need to understand how information can be linked and how users may wish to consume this information within a workflow. While it is more obvious how this can be achieved with structured data, structured content must also be linked with the unstructured content automatically, which can only be done using the type of semantic techniques EXALEAD provides.

EXALEAD brings a number of concepts together into a single environment:




- Multi-sourced unstructured content
- Multi-sourced structured data
- BI dashboarding and UI design
- Explicit relationships across multiple sources
- Horizontal, vertical, hierarchical and graph
- Implicit relationships (structured to unstructured and unstructured to unstructured)
- Business workflows/use cases
- Searching
- Selection form lists
- Visualization (graphs, timelines, pie charts, viewers, etc.)
- Faceting (explicit or implied relationships extracted from data/content)

Exalead | Product In Life For any question, please contact Jean-Marc FINSTERWALD (J4D) or Kenrick JORUS (KJU) EXPORT CONTROL CLASSIFICATION: No Technical Data Non production data is shown for presentation purposes only

"Katana Fleet" X Search

Business information Technical information Financial information Documents

**Customer Highlights**

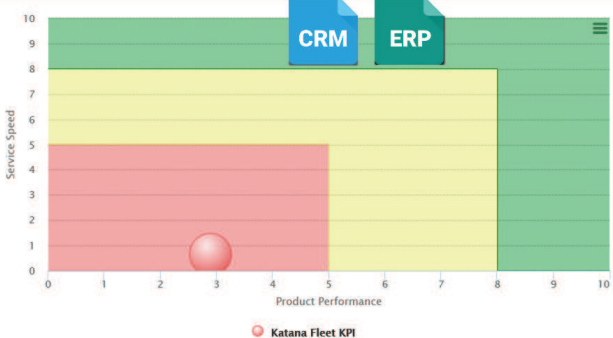


**Katana** Company CRM ERP

213 Garratt Boulevard  
Richmond, H4T 1G6, BC  
US

**AOG Indicator**  
29%

**Service Performance Healthcheck**




Compare Katana Fleet to other customers

**Customer Contacts**

Visitor Name	Job Title	Phone	Email	Location
Jeremy BERNABEU	Director	+1 (206) 465-6267	Jeremy.BERNABEU@3ds.com	Uruguay Airforce Head quarter-Uruguay (HO)
Kenrick JORUS	Director	+1 206 240-9263	Kenrick.JORUS@3ds.com	Amman+Jordan (HO)
Jean Marc FINSTERWALD	Director	+33 1 5535 2079	JeanMarc.FINSTERWALD@3ds.com	Tyumen+Tyumen+Russian Federation
Juan Canada	Director	1284203290	Jeff.Dowidar@DeCuir.com	Oxford+Oxfordshire+United

Showing 1 to 56 of 56 entries

**Locations**



**Account Owners**

Owner Name	Role	Phone	Email
Aldo Sevcsenko	CM	8-(747)003-9191	Fernando.curti@Holm.com
Arthur CEPEDA	SALES	1-(589)223-4457	Rick.Chaalan@Giraldo.net
Bridgett Olafson	SALES	1-(627)387-9694	Marco.Holberg@Lumry.pro
Cheryl Vincent	FSR	3-(888)297-2187	Charles.Allison@ghatur.ca
Curtis Jory	SALES	3-(624)805-0872	Simon.Cervantes@Saragih.com

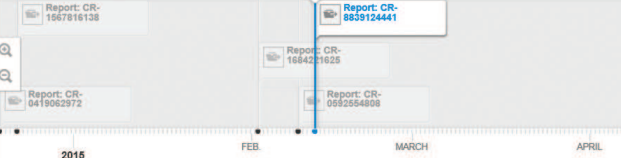
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**Events**

12:00 AM February 12, 2015  
**Report: CR-8839124441**

Engine Model: ECV159  
Engine SN: BJ1116

Description: Meeting - Face to Face : At customer location



**Appointments**

Visitor Name	Reason	Start Date	Visit Location
Bernard Moreels	Planned	11/18/2014 14:00:00	Ohio
Brian Hunziker	Planned	10/08/2014 17:00:00	Maryland
Bridgett Olafson	Planned	08/06/2014 05:30:00	Aichi
Carey Kvanbek	Planned	03/04/2014 11:30:00	Kentucky

Overlay of indexed systems

### 2.3. EXALEAD PLM Analytics Application Strategy

To accelerate adoption of PLM Analytics within our customer base, an application strategy has been adopted. In addition to offering an analytics development environment, we now offer a set of pre-packaged templates that can be rapidly adapted to specific customer needs. In addition, PLM Analytics roles are now native to the 3DEXPERIENCE platform.

#### 2.3.1. Working With the 3DEXPERIENCE Platform

The 3DEXPERIENCE platform is Dassault Systèmes' strategic, unifying framework for all its solutions, providing an innovation acceleration environment and a vital component in bringing new industry solutions to market. As part of this strategy, all relevant EXALEAD solutions will also be made platform-ready. Thus, PLM Analytics applications appear as roles on the 3DS Compass and make use of the standard platform license control, security and 6W tagger.



### 3. WHY EXALEAD PLM ANALYTICS?

EXALEAD technology is the most suitable for addressing the challenges associated with PLM Analytics. The following section explains why in more technical detail.

#### 3.1. Single Source of Information

It is clear that enterprise software systems need to communicate with each other in today's complex engineering and manufacturing environments. If a company is to function efficiently, ERP data should not exist in isolation from CRM, PLM and other data.

Equally, functions like financial management, service and support, sales and design and engineering are so fundamental to what individual companies and departments do that they are compelled to either acquire best-of-breed solutions or stick with highly-customized in-house systems. The imperative is to fulfill business needs, no matter the vendor, rather than opt for the convenience of a single vendor with inherent interconnectivity. No single vendor can offer the best solution to absolutely all business needs and so, as previously stated, it is not uncommon to see CAD, PLM/PDM, ERP, ECM, CCM, HR and CRM systems all from completely different vendors (sometimes for historical reasons).

There are a range of technologies that can be used to facilitate data connectivity. However, in reality, we never see either a single data access point or a comprehensive data-warehouse featuring fully cleansed and interrelated data. What we actually see, without exception, is distributed silos, data errors, omissions, mismatches, multiple formats, multiple versions and duplications.

This situation often forces end users to work with sub-optimal data due to uncontrolled manual and Excel manipulation. In such an environment, reporting will always be slow and unreliable. The only way to ensure the tractability and integrity of business information is to: minimize the use of Excel, confirm that information comes from sanctioned sources, use approved automatic processing, and provide access from a single, trusted system.

To address this, EXALEAD technology has four major advantages over traditional data-warehousing and BI methods of data extraction and presentation:

- EXALEAD is not data-warehousing technology. It does not attempt to move data and it is not a primary storage technology. Instead, it simply reaches out and indexes content in a non-invasive way. This is advantageous because it makes PLM Analytics implementation **quick and simple**. In addition, it can be positioned as complementary to data-warehousing, using it when available but not a hindrance when not available.
- Data quality remains an issue for all forms of reporting and data-warehousing. However, search-based technology is much better at coping with fuzziness. Clearly, Extract Transform and Load (ETL) methods are irreplaceable because they can convert data formats, check data validity, take remedial action and provide activity logs. For these reasons, EXALEAD includes these capabilities but extends them to **Extract, Enrich, Transform and Load (EETL)**, a vital step in extracting the full value from unstructured content. In addition, EXALEAD is also capable of finding **relationships** even when there are misspellings and typos or word synonyms, inflections and derivatives. This capability ensures that EXALEAD can continue to find information in context and helps to identify issues and errors.
- The sheer quantity of data and content can also be a challenge, especially when taking into account the size, age and diversity of some of the larger engineering and manufacturing businesses. There is no doubt that the major database and enterprise software vendors have vastly improved their scalability and performance, but this comes at a high price. With the Big Data challenge, we are also seeing the rise of more so-called non-SQL solutions, but these cannot provide a PLM Analytics solution either. EXALEAD search technology was specifically designed to cope with and index Big Data. From inception, it has been an Internet-scale solution complementary to **SQL and non-SQL sources** alike as well as all other corporate information assets.
- Lastly, it makes sense to use EXALEAD for analytics because it is so **flexible** and fast to configure and provides high-response performance. For example, standard ENOVIA KPI dashboarding is being offered as a packaged product using EXALEAD because it can provide KPI aggregations and comparisons in seconds that would have taken hours to process using traditional database manipulation and BI.

To support good decision-making, it is vital to expose and exploit context. This requires links to be established across all the available content. To genuinely include all content, advanced semantic analysis is required to extract the full value from unstructured content and to enable information to be joined.

Organizations need to build trustworthy reporting systems on top of legacy and new information systems, while removing manual processing and the inevitable introduction of errors and adjustment, in order to arrive at a single source of information for all. Search-based analytics technology with EXALEAD for the PLM world provides the needed contextual information in a single source to address these challenges.

### **3.2. Prime for Big Data**

There has been a lot of interest in Big Data recently and it is starting to become better defined. Consultants tend to describe it in terms of volume, variety, velocity and veracity. But what it really comes down to is the ability to manage and exploit all the data being generated by IT systems, office software, related external constituents, user behavior and machine (IoT) data.

Since EXALEAD is an excellent technology for extracting meaning from very high-volume, multi-source and -format content, it is and always has been in the Big Data space. Dassault Systèmes will continue to position its EXALEAD technology as a key component within this market and complementary to many of the new Big Data specialist vendors.

### **3.3. Unlimited Connectivity**

In the real world, data is not all served from a single, fully-integrated and sanitized data-warehouse. It is sourced from multiple silos and in multiple formats. In addition, particularly with PLM data, enterprise software data structures can be complex, requiring expert system knowledge.

EXALEAD is uniquely up to the task because it connects to almost any source. It achieves this with its wide range of APIs and connectors, developed internally and through its partners. As an example, it offers connectivity with ENOVIA, Siemens and PTC PLM/PDM systems as well as ERP and other major enterprise software solutions.

EXALEAD also provides connectivity to unstructured information sources: ECM, file and CAD systems, websites, etc. using its filtering and semantic processing technology.

### **3.4. IT Transformation**

In the PLM world, enterprise IT transformation is common. This routinely requires the identification and adoption of new technologies and systems, leading to data migration, dual running and eventual end-of-life decommissioning.

EXALEAD is particularly useful during these IT transformation processes because it is capable of consuming and relating information from both old and new systems. This makes for a smooth transition phase during which every user still receives up-to-date information while IT moves data to new systems.

In sum, EXALEAD provides stability, insight, consistency and clarity through real-time PLM Analytics that sits above multiple information sources while decoupling and cushioning vital analytics and decision-making from an ever changing IT landscape.

### **3.5. Proven Customer Successes**

Our customers have chosen an EXALEAD solution over other methods for a variety of reasons. When working with our customers' IT, BI and data scientists, they highlight the following advantages:

- Provide a unified point of reference
- Ensure the tractability and integrity of business information
- Embrace diverse domains with analytics capabilities
- Decouple analytics from backend system change to simplify IT transformation
- Foster collaboration by enabling information access and sharing
- Ease and speed of access to information
- Ability to answer complex requests that can't be done with traditional BI solutions
- Semantic search capabilities that join structured and unstructured information assets in context

- Simple access to both internal and external content
- Ability to work with or without a data-warehouse
- Relatively small hardware investment enabling economic exploitation of Big Data assets
- Highly agile technology enabling the simple addition of new information sources
- Completeness of the EXALEAD product, with:
  - administrative interfaces
  - unlimited connectors and APIs
  - point-and-click application configuration
  - point-and-click UI implementation
  - out-of-the-box connectors, content processing, indexing and mash-up environment for creating user interfaces
  - agility to provide solutions quickly and iteratively
- EXALEAD's Content Intelligence technology indexes information and provides results quickly and often far faster than the source systems can (thanks to indexing)

In addition, customers often emphasize that working with a data-warehousing and BI solution together can be quite time-consuming when changes or new features are required. As an example, providing a new report or an additional piece of data can require modifications to both systems and, if the data wasn't collected or a calculated field not stored, it sometimes isn't possible.

The EXALEAD approach of indexing and accessing billions of records of any type makes it much more agile for data aggregation and transaction dashboarding.

#### **4. CONCLUSION**

Making smarter decisions faster is critical to the ability of a company to quickly get innovative, differentiated products to market and achieve a first-mover advantage. Employees at all levels need concise, timely information tailored to their task needs, regardless of whether they are a designer, a project manager or a senior executive. To address the torrent of data created by multiple business systems, companies need business intelligence and analytics solutions that provide users with the right information, in context, for their needs. This is especially important for product development and PLM.

EXALEAD PLM Analytics reveals, measures and analyzes PLM related information, promoting deeper understanding and improving product development processes. This can include: project tracking, quality, change management, issue management, gap to target analysis, capacity insight, 3D part comparison, machine telemetry, etc. It uses business logic analysis of complex product structures and data models, aided by strong semantic capabilities.

PLM Analytics offers users a simple, trustworthy and reliable point of access to PLM related information, making the single source of reliable truth a reality. Capturing and analyzing any content in PLM or other legacy systems means transparent delivery of only the most relevant data, thereby facilitating the elimination of legacy tools and systems in a controlled and low-risk manner.



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