The image features a complex industrial structure, possibly a refinery or chemical plant, with numerous pipes, walkways, and storage tanks. The entire scene is bathed in a cool blue light. In the foreground, a close-up of a computer keyboard is visible, with keys in shades of pink and red, creating a sharp contrast with the blue background. The text "How do you choose a 3D design solution?" is centered in the middle of the image.

How do you choose a 3D design solution?

INTRODUCTION: HOW DO YOU CHOOSE A 3D DESIGN SOLUTION?

REDUCING THE RISKS IN EXECUTING 3D PLANT DESIGN PROJECTS

Our industry is always visited by claims of 'new breakthrough technology'. These may claim to provide engineers with 'a significantly better way to design plant', promise unparalleled ease of use, shorter project schedules, global and concurrent engineering and preservation of the value of the plant information. They may even offer enterprise-wide integration and knowledge management. These are huge statements to make.

How do you separate promises from proven performance? Let's examine data-centric 3D design and deliverables. Data-centric technology has been around for some time, although new benefits are still being realised. If you are not familiar with this way of working and find yourself having to consider it, you will, in fact, be considering the future of your 3D project execution. What are the questions that reveal genuine business enhancement potential?

Interested?

Read on.

FUTURE-PROOFING SUCCESSFUL 3D PROJECTS

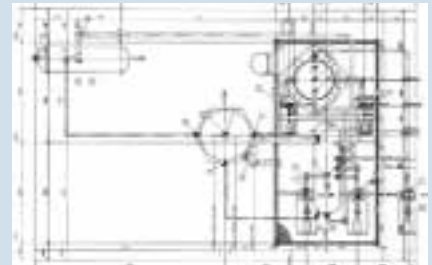
We can all point to past successes; engineering companies, Owner Operators and software vendors alike. Many successful projects executed, billion-dollar plants brought on line, on time and within budget. But past success alone is no guarantee when change and progress are what the future demands. **Flexibility, adaptability and reliability** are the keywords.

CRITICAL DISCUSSION 3D DESIGN CAPABILITY

How do you choose a 3D design and deliverable solution? To put it simply, the dominant factor is **confidence**. That means having confidence in the ability of the package to:

- perform quickly, efficiently and elegantly, minimising operator error
- produce information and construction deliverables to satisfy the project schedule
- be included in a credible, efficient execution of engineering project workflow
- use existing and third-party information to their full potential in collaborative projects, brown-field projects and revamps
- execute projects in a variety of fail-safe, globally distributed ways, without costly networking or disturbance
- be 'future-proof' in its architecture while showing a dependable track record of genuine project success.

If your confidence is rewarded, the solution will deliver **cost-effective** results that answer the demands of any project. Additionally, it will



support the very latest directions in engineering business improvement. Several qualities define the worthiness of the solution. They are **today's industry demands** from both technical and business standpoints.

HOW DO YOU CHOOSE A 3D DESIGN SOLUTION?

The industry wants to do more for less. Of course, producing deliverables efficiently remains critical but, in the end, we measure by productivity and profitability. That requires us to reduce cost and time, work globally and concurrently, provide valuable services, collaborate with global partners, react to competition, outsource, combat risk and increase reward. Then there are efficient and safe brown-field projects. The list goes on.

Interdisciplinary **collaboration** should be easy to set up and should manage and control simultaneous interaction on whole project models. That level of interaction should be sensitive to the progress of items in the project. **Sharing the project** across distributed sites should offer versatile configuration and the same safety and control as working in a single office. It should be fail-safe and not require cloning the project or expensive WAN or broadband connections.

Data should be used to its maximum value, including reuse of existing information, specifications and project archives. This means complete compatibility with third-party applications and effective, long-term development of old and new item libraries. Information should be available on demand and deliverables produced by **revision** and issue as dictated by the project, not by the application. That data should then be stored in an open and usable format that invests in its **future use**.

In operation, the solution should be part of a **complete, integrated project effort**. It should feed from a central, detailed source of item information and interact with **procurement** according to the project plan. Change management and highlighting should reflect useful, working information, controlled by revision and status. That information, be it physical layout data or detailed item information, should be transported strategically at the command of the project.

Finally, having satisfied these fundamental engineering demands, the solution should be a pleasure to use. It should execute its tasks with all the operability and **user-friendly** features that today's technology can afford, employing rules, procedures and a desktop that minimises effort and maximises the productivity of design man-hours.

DETAILED DESIGN AND DELIVERABLES, A TECHNICAL AND BUSINESS ISSUE

It has been proved that these requirements are best met by a **data-centric** approach: one that is based upon whole engineering items whose data and relationships are managed in a modern, open, **engineering** database instead of a drawing file. Several solution providers claim to provide one, fewer can actually deliver it. **Only one company** can claim to have been delivering it for several decades, to be behind the success of the most ambitious projects ever, and behind many that are now under way.

PDMS has provided a proven, data-centric foundation to its customers for over three decades and it continues to do so. Its foundations were right and its continuing evolution and consistent market-leading performance prove it. As its customers move into global **database sharing**, distributed project execution, Internet collaboration, integration with business systems and value-added **handover**, VANTAGE PDMS continues to be up to the task. Its compatibility with its own previous versions, as well as third-party models and data such as Intergraph's PDS, provide the level of legacy data protection that is so important to new and existing customers.

The **cost** of any 3D solution must be weighed against the commercial environment, the **cost** and reward of implementation and the effort of project mobilisation. **Cost** of training, **cost** of software and **cost** of engineering staff are all significant, but it is the ability to bid confidently and execute projects quickly and without risk that **costs** industry managers the most sleep.

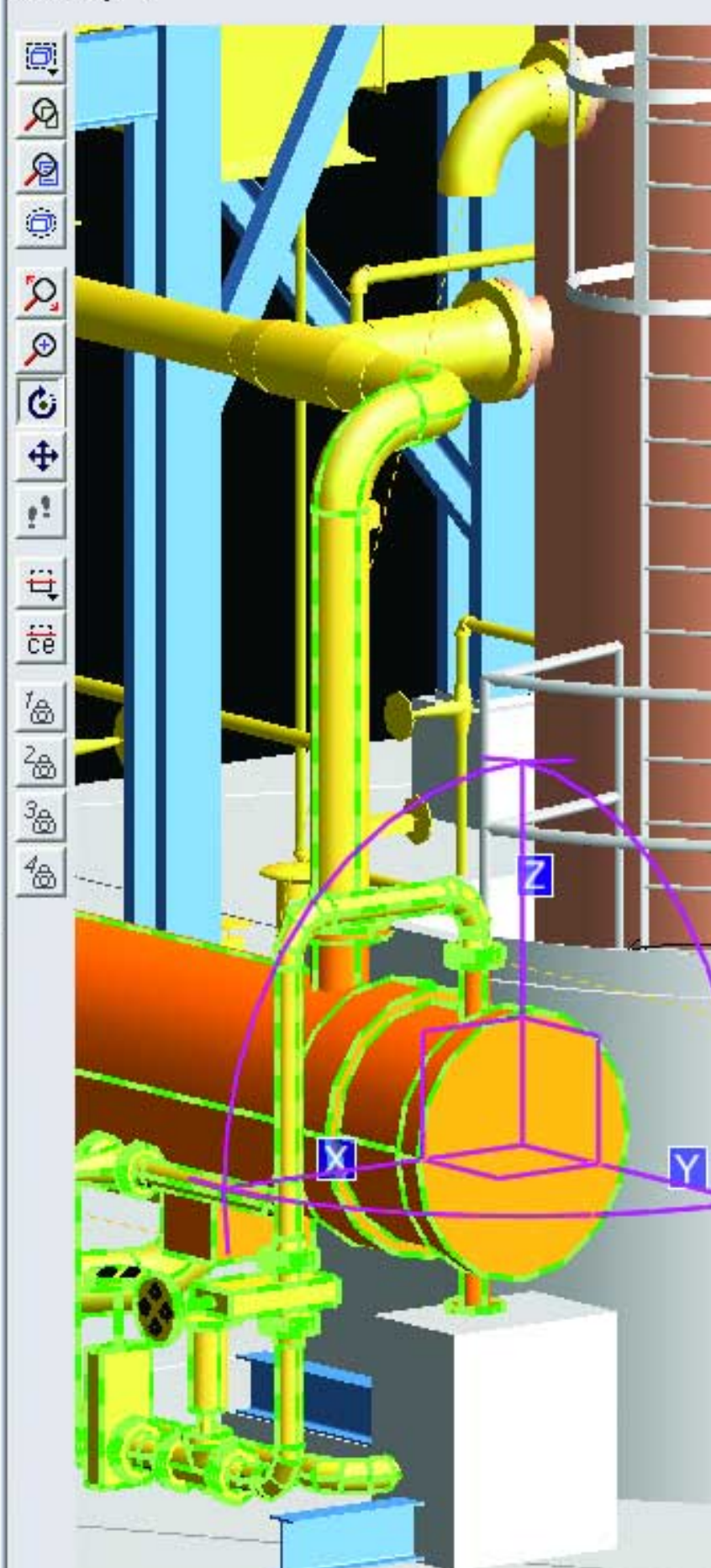
If you are faced with choosing a data-centric solution now, consider the big issues carefully.

- E1301
- + E1301
- + D1201
- + C1101
- + E1302A
- + E1302B
- + P1501A
- + P1501B
- + P1502A
- + P1502B
- + VENTILATION_UNIT1
- + PIPES
- + BUILDING
- STEEL
- + EQUIPRACK
- PIPERACK
 - PIPERACK-MAIN
 - + PIPERACK/MAIN/
 - PIPERACK/MAIN/
 - F1F2-1
 - + F2F4-1
 - F4F6-1
 - F1G1-1
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- Draw List
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| <input checked="" type="checkbox"/> 100-B-1-B2 |
| <input checked="" type="checkbox"/> 100-B-1-B3 |
- Show Visual Properties



Modify :



n37e11d Parallel Model ROTATE

World Coordinates: E 2850mm N 7200mm U 2470mm



VANTAGE PLANT DESIGN PRODUCTS UP TO DATE AND UP TO THE TASK

VANTAGE PDMS is a concurrent, data-centric, 3D design environment developed for best practices in 3D design and delivery. Its database is open and specific to the needs of engineering. It provides a comprehensive set of integrated, multi-discipline **engineering applications** that enables the whole design effort to work within a controlled, multi-user environment. Automated deliverables are generated directly – as is a high-quality, clash-free design.

Engineers should be allowed to engineer and not be hampered by complicated software operation. The user interface of **PDMS has been radically updated** to offer intelligent, intuitive operations using the most ergonomic devices possible. The desktop delivers excellent view and object control as well as a plant item explorer that obeys the project hierarchy. In short, there is a minimal training and operational burden on busy engineers who need to engineer.

AVEVA sees these as fundamental requirements of a 3D design and deliverables system, but several other features set PDMS apart.

Engineering globally is more than a network communication issue. **VANTAGE Plant Design 'Global'** provides **distributed, concurrent engineering**. It delivers automatic, incremental project synchronisation and sharing of work processes across worldwide offices while retaining central control. New offices can be added throughout the project while managed transmission offers fail-safe progress, even in the event of network failure – AVEVA believes that costly project recovery should be a last resort. VPD Global improves project manageability and eliminates the risks in getting the best from the global marketplace.

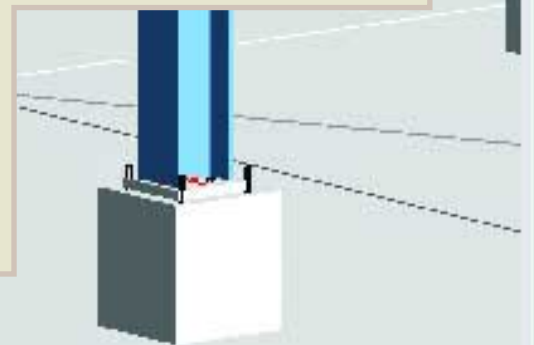
Model Management guarantees complete consistency of all plant items in the model. As the specifications and design of plant items evolve, it provides integration between PDMS and 2D source data, such as VANTAGE Plant Engineering (VPE). Model Management streamlines data preparation, controlling the development of all plant objects through 3D design and on to their deliverables. It answers many critical requirements such as:

- **managing status** and work allocation of plant items throughout the project lifecycle
- **maintaining consistency** between 2D and 3D plant models
- reconciling and mapping logical differences, coping with varying revision cycles and **highlighting change** and inconsistency
- providing full decision support for downstream drawing production and construction deliverables
- monitoring the approval cycle of **clash detection**, analysis and resolution
- effective management **reporting tool**.

XMPLant standardises CAD **interoperability** and data **migration**. It enables catalogues, specifications, models and data from legacy systems such as PDS to be imported with full intelligence into PDMS. PDMS data can also be delivered in neutral form for use by other systems. XMPLant is a gateway for moving existing third-party models and data into a full PDMS capability and the Integrated Project Execution that the whole VANTAGE suite offers.

An old, outdated system? No. A closed database? Definitely not. What we have shown here is that 3D design and deliverables is a huge issue for the industry. PDMS is up to the challenge and can meet it on every occasion. We have shown that its evolution has produced an **up-to-the-minute**, world-leading solution that has more potential and flexibility today than ever before. It represents the best investment in your legacy models and data that anyone can offer, regardless of platform. Above all, we have shown that it takes much more than a glamorous user interface, although we deliver that, too.

If you are considering your future in data-centric 3D design, you cannot afford to ignore the business improvements that VANTAGE Plant Design and the total VANTAGE suite have to offer. The benefits go beyond providing the best 3D solution available. AVEVA is offering a very attractive commercial package supported by first-class training and implementation services. We will remove the pain of migration, also taking into account any in-house systems that you may use. With migration centres throughout the world, AVEVA is ready to support your needs. We would like to welcome you on board. **Put us to the test.** You will not be disappointed.



A Proven Solution

Think for a minute. Although the wheel was invented thousands of years ago, you would not call today's vehicles old or outdated – the concept was simply brilliant from the start. PDMS is the world's most successful, 3D data-centric Plant Design and Management System. It is supported by four decades of evolutionary development of a concept that was right to begin with. That is why it still leads the market and sets the pace that others follow.

3D design is more than a matter of good-looking graphics and sophisticated manipulations on screen. It is more than just keeping all disciplines working together without the confines of drawing space. It is a huge issue and establishing the ability to satisfy it requires asking many questions.

- Do you rely on a huge network cable to work globally? What do you do when it breaks?
- How do you manage items between 2D and 3D? Are they smoothly managed or do you need a separate framework to make the process reliable?
- What do you do with legacy data? Does it keep its value when you collaborate with third-party systems?

If you find yourself looking towards a future of 3D data-centric design, relax – this is not an unexplored new territory. Join us, the inventors of data-centric design, as we discuss the real issues behind design and deliverables and show you how we continue to satisfy them all over the world. Let us invite you to make a confident step forward instead of a leap of faith – visit our website or phone your local AVEVA office for more details of Vantage PDMS.

VANTAGE Plant design solutions are fundamental to successful plant design in any company's integrated engineering IT environment. With ongoing development based on the philosophy of a single object-based data model, PDMS and all the VANTAGE Plant Design products have always led the market in 3D design. Utilised on over 3,000 major global engineering projects and used by over 800 customers worldwide, the business case has been proven repeatedly on plant valued in excess of US\$500 billion.

Users of the VANTAGE Plant Design family include: ABB, AMEC, Alstom Power, Aker Kvaerner, BASF, BNFL, DuPont, BP, Electricité de France, Exxon, Fluor Daniel, Foster Wheeler, Gulf Interstate, Hitachi, Hyundai Heavy Industries, JNFL, Jacobs Engineering, KBR, Uhde, Merck, Mitsubishi Heavy Industries, Mustang, Paragon Engineering, Shell, Saipem, Technip, Wood Group and many more.



Four essential issues
Four product families
One world-class name
VANTAGE

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