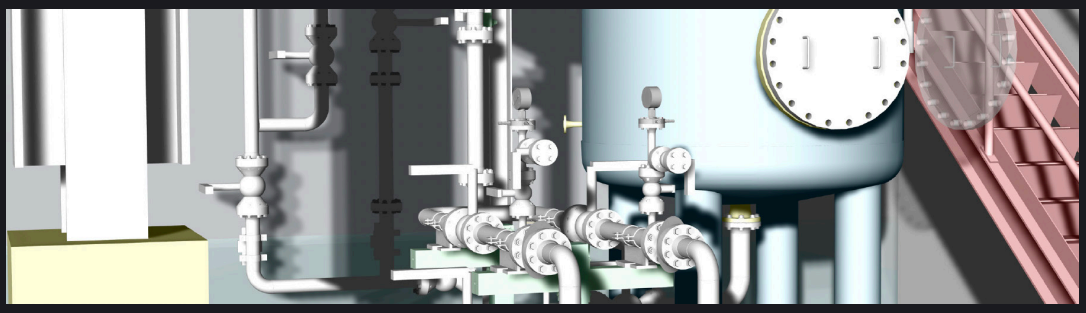
CASE STUDY

KEYNES transitions from PDS to Octave Forte 3DWorx to gain greater design flexibility and satisfy interoperability requirements



Key facts:

Company: KEYNES Planungsgesellschaft mbH

Website: keynes.de

Employees: 100+

Industry: Chemicals & Petrochemicals, Oil & Gas, Life Sciences & Pharma, Power & Utilities

Country: Germany

Octave products used: Forte 3DWorx *(CADWorx Plant Professional),* Orthogen for Forte 3DWorx

Identifying goals

KEYNES Planungsgesellschaft mbH is a German engineering and construction services company operating since the 1960s, focusing on all phases of plant planning. These range from maintenance projects covering the replacement or repair of small numbers of pipelines to larger projects involving upgrades and equipment retrofits and associated piping to even more complex, large-scale projects involving 500 to 3,000 pipelines.

This case study focuses on the transition and KEYNES's experience of moving from PDS® to Forte 3DWorx.

The company had been using using Octave's legacy design solution, PDS, for more than 20 years. KEYNES felt it was time to switch to a more modern design solution that would help enhance its overall project execution while meeting the high standards and digital data handover requirements of its clients. KEYNES needed a solution that would not only provide a multi-discipline design capability for the various brownfield and greenfield project scopes it undertakes, like it had with PDS, but also:

- Enable its designers to work efficiently with point cloud data in the CAD environment
- Work with material data and specifications produced by its existing reference data system
- Allow 3D models in other vendor formats to be easily integrated into its designs
- Provide interoperability and interconnectivity with its client's systems

After evaluating Forte 3DWorx and other industry alternatives, KEYNES found Octave's modern design tools offered greater flexibility, better integration capabilities and provided users with a modern design environment to work in.

Key benefits:

- Fast implementation, requiring low-level administration
- Quick adoption by users
- Supports execution of brownfield projects of varying scope, size and complexity
- 3D models in other vendor formats easily integrated
- Efficient handover of digital data during construction, operations and maintenance

"Transitioning from PDS to Forte 3DWorx is providing KEYNES with greater design flexibility and interoperability, satisfying our clients and our own engineering teams."

Christian Hennisge
CIE Lead Administrator
KEYNES

Overcoming challenges

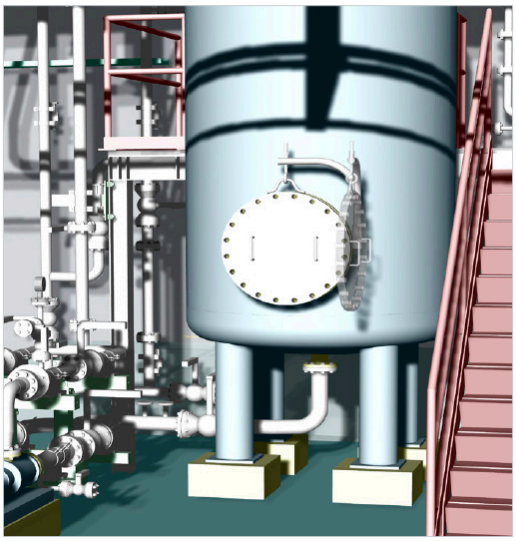
As Industry 4.0 and digitalization are critical to KEYNES and its clients, leveraging industry-leading solutions is key in ensuring data consistency throughout all project phases.

This is fundamental to the project's success because it underpins all project phases using high-quality reference data. Several of KEYNES' clients work with intelligent and database-driven piping specs. By working closely with its supplier, KEYNES developed different ways to transfer material data and piping specifications managed in the customers system to Forte 3DWorx. This integration enables KEYNES to use the same reference data during design as its clients do during pre-fabrication. This ensures that not only material coding and descriptions on deliverables produced are familiar to its clients, but also accurate bills of materials for procurement are produced.

Like PDS, Forte 3DWorx also includes Octave Forte Isogen (formerly Isogen), the industry standard for automatic piping isometric drawing production from 3D models.

Whereas PDS produced the Intermediate Data File (IDF), Forte 3DWorx produces the Piping Component File (PCF) output simultaneously when isometric drawings are produced. Like the IDF did before, the PCF provides KEYNES with the ability to hand over piping designs digitally to its clients, who subsequently use the PCFs in support of piping pre-fabrication and installation.

Several of KEYNES' clients use Octave Forte Isometrics (formerly Smart Isometrics) in combination with other Octave solutions to support pre-fabrication and construction. Forte Isometrics can import IDFs or PCFs and offers powerful piping data manipulation tools which are used to incorporate additional information essential for the pre-fabrication and erection of piping spools. Octave solutions are also used to ensure piping is classified according to the Pressure Equipment Directive (PED) 2014/68/EU (formerly 97/23/EC).



A typical pump station of a sample tank.

Octave solutions are also leveraged to control and manage all aspects of piping manufacture in the fabrication workshop, and later, piping erection, including capturing information for welds made at the construction site.

Forte Isometrics, in combination with other Octave solutions, provides full traceability and QA for all materials, spools, and welds, and also produces all documentation needed in support of completions and commissioning. Final certification and documentation produced enable KEYNES clients to not only demonstrate compliance with engineering standards and directives, but also satisfy and meet the regulatory obligations for their plants.

"Making the switch to Forte 3DWorx makes our project set up easier, more efficient and accurate than previously when using PDS, saving us time and resources."

Christian Hennisge

Realizing results

Configuration of the software is underway. Further work and piloting of the implementation will be conducted, but initial gains already realized include:

- Project setup is easier and faster than it was previously in PDS, saving time and resources.
- Setting-up isometric style templates is simpler due to Forte 3DWorx including I-Configure, which provides a graphical way to configure isometric output.
- Designers are finding that Forte 3DWorx modern GUI makes it easier and quicker to route piping and place inline components.
- Whereas PDS required ORACLE or MS SQL as its database, for Forte 3DWorx, KEYNES is able to employ an Access database to capture equipment, piping and structural design information. Via a simple reporting tool provided inside the Access database template, all the necessary reports required for procurement and to support project management activities can be produced easily.
- Forte 3DWorx is able to re-use the PDS Isogen configuration, meaning the exact same deliverables that have always been possible are produced from Forte 3DWorx.
- Forte 3DWorx exports piping in PCF format, enabling consistent, high-quality information to be provided via a seamless digital chain with its clients' systems.

Training took only two days and three days, respectively, for administration staff and users. KEYNES has found the support for Forte 3DWorx to be fast and friendly to use.

Moving forward

Octave solutions were chosen due to their ability to integrate with KEYNES' own and its clients' systems, allowing for greater future collaboration. Forte 3DWorx's ability to integrate with other Octave and third-party solutions enables KEYNES to optimize its work processes to save time and resources. The automatic creation of deliverables and greater design flexibility provided by the software will also allow future projects to be executed more quickly and cost-effectively.

Once KEYNES is fully satisfied that Forte 3DWorx delivers more value than PDS did, it intends to begin using Forte 3DWorx fully for smaller projects of approximability five to 10 pipelines. Over time and with further experience, KEYNES will take on bigger piping projects that range from 50 to 500 pipelines.

Ensuring cost-effective and on-time delivery of all projects KEYNES undertake is the long-term goal of adopting Octave's Forte 3DWorx solution. KEYNES believe they are well on the way to achieving this goal.

About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property and assets – for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.

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