

Design in Context - Using the Digital Asset Across the Design-Construct Lifecycle

By Dick Slansky

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Design in Context, Digital Asset, Capital Project, Design Team, CAPEX to OPEX Lifecycle

Summary

AVEVA introduced the concept of the *Digital Asset* to the plant design world several years ago and this approach has had a significant impact on the de-

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sign/construct/operate/maintain lifecycle ever since. Both EPCs and owner-operators benefit substantially from an information platform that provides access to engineering, construction, and operational information that spans the CAPEX-to-OPEX lifecycle. Today, AVEVA is expanding the Digital Asset approach even further with the concept of "Design in Context;" where the customer can leverage the entirety of information that represents

the Digital Asset within the design and engineering tools themselves. This can enhance and speed up the overall design process.

Designing a plant or facility for the energy, process, and utilities industries can sometimes involve engineering design reuse as well as engineering best practices and knowledge-based design methods. The common denominator for this design process is information, and moreover, access to information that represents all aspects of the Digital Asset. Since AVEVA has already streamlined design tool integration (the design spiral), the company defines Design in Context as "Enhancing the design process by proactively serving up relevant content inside the design application to improve the speed and reliability of design decisions." When the engineer sets out to design a new LNG-fired power generation plant he or she needs not only existing engineering information, but also in-process information to design concurrently throughout the design/procure/construct/commission/operate lifecycle. The basic concept of Design in Context is to provide designers with access to



exactly the information they require, when and where they need it, shortcutting the often time-consuming search process.

Today's large complex capital projects clearly depend on information, requiring stakeholder access to all information in a timely and accurate manner. Conservative estimates indicate that more than 20 percent of an engineer's day typically is spent just searching and retrieving engineering information critical to the design phase. This is understandable, given that

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typically more than 40 percent of project information is generated outside the design applications.

Even at the earliest stages of a project, a substantial amount of relevant third-party information might already exist. For example, in greenfield projects there are often preferred supply chains for industries such as power and shipbuilding or other industries where certain key long-lead-time equipment information might be specified early on at the FEED stage. It is no surprise then that statistics also suggest that once the information is found in these multiple silos, 50-80 percent of the working time can be spent shuffling information back and forth between applications.

In essence, the sum total of the Digital Asset can represent the information output from all the associated and contributory systems. This can include engineering design models, procurement and materials management, construction implementation, project management, and operations and maintenance management. All this information is critical to the complete design team (including all engineering disciplines), to the stakeholders throughout the CAPEX-to-OPEX lifecycle, and to the overall success of the project.

Conclusion

AVEVA's Design in Context approach can provide significant value to the design engineering team by reducing the time spent on retrieving the right reference information and reducing the time spent outside of core engineering design activities, allowing engineers to focus on high-value design work. More importantly, it's also about ensuring that designers make the right decisions, the first time, through being better-informed with information of a known quality and maturity. Reducing engineering rework resulting from

design errors will be one of the most significant benefits for AVEVA customers. Combining Design in Context with the company's Digital Asset strategy leverages the underlying information management base in an innovative and more productive way. AVEVA refers to this using the term, "Unlock the Power of the Digital Asset."

Clearly, the success of any capital project begins with and depends upon both the best engineering design and the best engineering information to implement that design.

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