



Evolution or Revolution?

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Have you ever wondered how you could impact the bottomline with end-to-end visibility of assets, operations and financials, in real time? Take the instance of a refinery maintenance engineer wanting to predict when critical equipment components are likely to fail. This on time prediction can help the plant to transition away from traditional inefficient scheduled maintenance practices, enabling the maintenance team to focus only on the equipment

that truly requires attention. Early predictive warnings help the plant manage risk, optimize parts inventory and eliminate unnecessary work.

This is only accomplished by leveraging enterprise transactional data (work order history, past failures, inventory and parts availability) and operational data (process conditions, plant schedules, vibrations, pressures, temperatures) simultaneously.

Understanding IT/OT convergence

IT / OT Convergence is a driving industry trend that bridges IT and OT data and platforms in near real-time so that information can be harnessed as a virtual single system, enabling visibility and business process reinvention across the entire enterprise.

We are in a new world now. Over the past three decades the volumes of data flow between the OT and IT

worlds have increased dramatically. And, technologies that include in-memory databases, advanced integration methods, sensing techniques (Internet of Things (IoT)), machine learning and improved analytics are enabling this change. This compels companies to leverage these technologies as they face ever-increasing competitive and marketplace pressures.

Is IT and OT convergence the key to navigating the new world?

The problem is, for production-intensive industries such as oil and gas, mining and power generation, there has always been separation between Operational Technology (OT) systems and traditional IT Enterprise Resource Planning (ERP) systems (including Enterprise Asset Management (EAM)). The reasons? It is required for

operational integrity and security. Furthermore, differences in underlying system architectures or organizational support makes it impractical to deliver the combined functionality with a single system. Therefore, there will be a 'virtual convergence' for these businesses - IT and OT must continue to operate on separate physical platforms.

Most companies have invested in an Enterprise Data Platform (EDP) for finance, accounting, supply and human resource functions. Many have also adopted a standard suite of Enterprise Asset Management (EAM) solutions. The key stepping stone to

achieving IT / OT Convergence is the implementation of an enterprise-wide Operational Data Platform (ODP) for real-time production, equipment condition and other operating parameters as well.

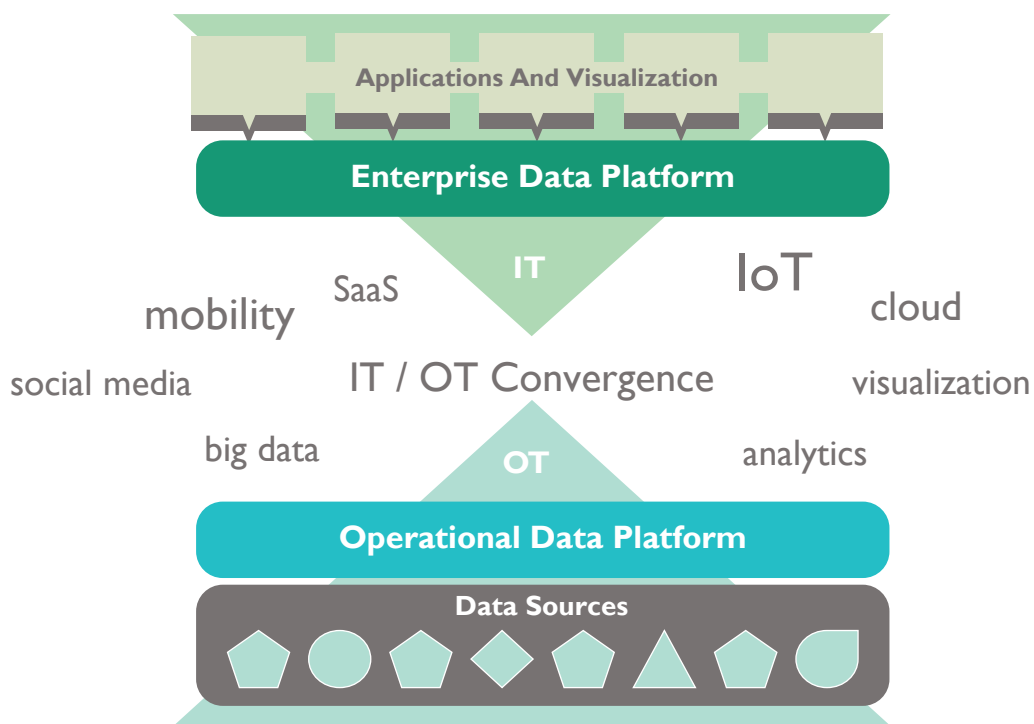


Figure 1: IT / OT Convergence

Why change?

You have to! Data is growing exponentially. In addition to the vast volumes of production and asset data from traditional sources that include process control systems and historians, new sensors and data types from IoT, and social media phenomena include video, market and customer activity and other event-driven content are adding to its volume. As Big Data grows, it is

bringing growing expectations - from customers, management, employees, and partners - that companies will access, make decisions and become smarter in the way they do business. Other industry drivers such as regulatory requirements, competitive pressures, market constraints and market prices build a compelling case that a comprehensive IT / OT strategy is critical.

World of options

An enterprise approach to an ODP brings a world of options, including the ability to rapidly understand and analyze alternatives in order to make proactive and effective business decisions. It enables customers, partners and suppliers to interact more effectively with your business. The OT platform should be extensible and scalable so that new assets or data will be immediately available to

the virtual integrated IT / OT platform. The standardized platform enables supportability and lifecycle costs to drop, as compared to numerous stand-alone projects. For innovations, the idea-to-action timeframe shortens as historical barriers to information access disappear. Support teams avoid a plethora of interfaces, protocols and customizations that a growing maintenance burden.

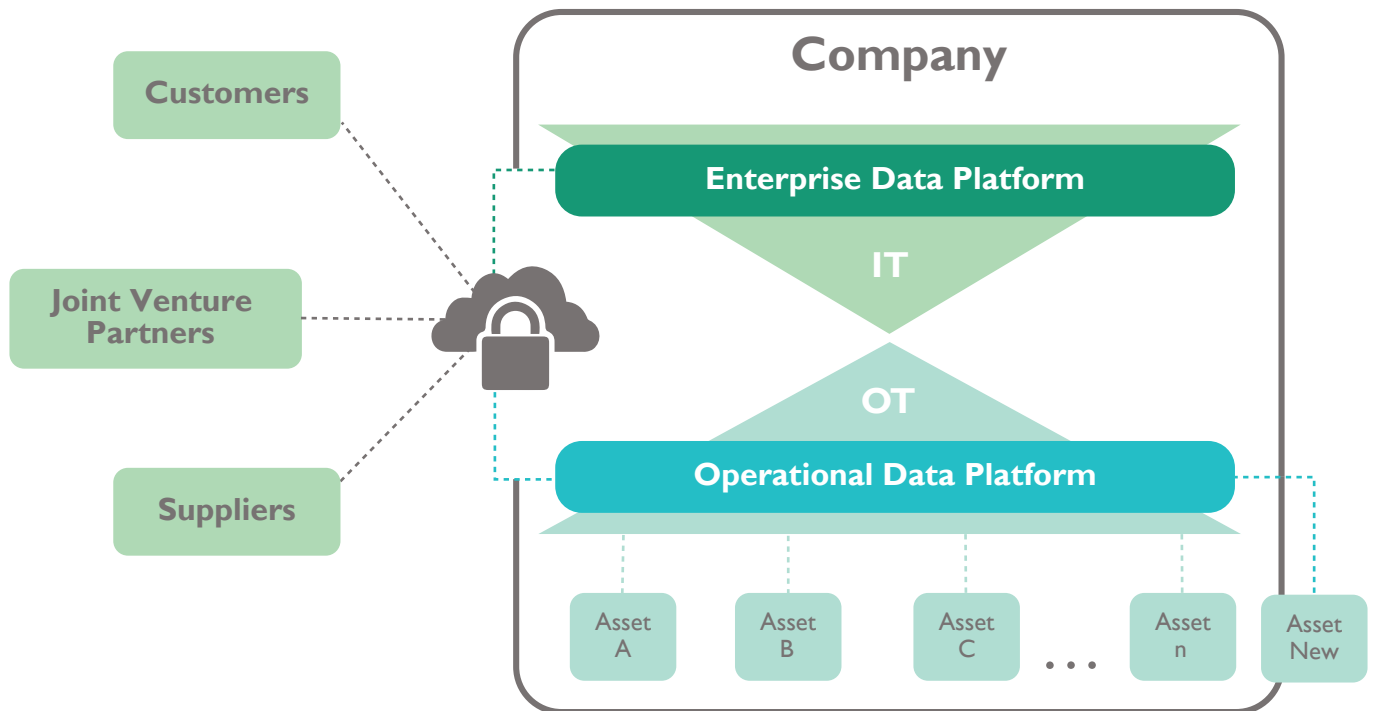


Figure 2: Ecosystem Enablement with IT / OT Convergence

Choose your approach

Here are the three approaches that can guide your path to an ODP and convergence strategy. While all three are effective, the Revolutionary approach offers a common sense method for moving forward.

▪ **Big Bang**

It does everything possible up front; defines and builds the most comprehensive operational data platform and integration facility, however, the challenge with this approach is that big programs bring big risk and cost, and may be out-of-date by the time they are finished. They may also present challenges with getting the design and stakeholder engagement "right".

▪ **Evolutionary**

It allows individual projects to add their own scope to an ODP and integration facility, with each project

standing on its own two feet, however, the issue with the Evolutionary approach is that organic efforts growing from isolated projects typically lack an integrated or comprehensive design that will serve the needs of the perfect world - scalability, extensibility, flexibility.

▪ **Revolutionary**

The recommended approach is the Revolutionary path. It is a hybrid approach that combines the foresight of the Big Bang model - with the ability to enable an Evolution of capabilities established at the pace of business need. In fact, it is considered to be the best of both worlds. Moreover, it presents a strategic vision for an ODP and integration facility, and is built in a phased approach.



Start a revolution

Begin by re-imagining the business and the decisions that can be fueled - and define a vision that is holistic and detailed. Prioritize the initial efforts that will be part of the original construct of the new ODP and integration facility, by evaluating the expected business value. Each additional capability added over time

then becomes part of the larger vision. By setting the groundwork for the enterprise while optimizing the initial investment, you are creating the model for longevity and the greatest return on investment over time. Once a platform is in place and growing with your business, the world is your oyster.

About the author

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Alan has over 30 years of experience delivering value-added solutions to major global clients in the energy, utilities and manufacturing industries. He has a strong record of leveraging IT, applications and engineering solutions to deliver business benefits to customers. Prior to Wipro, Alan held a variety of roles including strategic consulting, sales management, global account management, industry marketing and application development.

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