

CS500091

Digital Transformation into action:Saipem Platform for AWP

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Learning Objectives

- Identify the importance of bringing data at the center to realize the new possible
- Envision improvements for your daily activities, with a session intended to give you “food for thoughts”
- Integrate legacy systems into a single platform
- Implement Advanced Work Packaging into your business

Description

Learn more about how Saipem has created integrations that support Advanced Work Packaging implementations at any scale, realizing the “new possible”. Advanced Work Packaging methodology supports the work on an EPC project, from initial planning throughout detailed design to construction execution. Such methodology encompasses the overall process flow of all the detailed work packages (construction, engineering and installation). Saipem will give practical examples of their AWP implementation and how they have used Autodesk Forge development platform to solve their challenges. This session will show how a data-centric solution can integrate data coming from a variety of legacy systems, creating opportunities never experienced before to the users. With this new solution, they have access to a large variety of data from a single source of truth and are able to gather information from different point of views.

Speaker(s)

Stefano is Application and Data Management, Manager at Saipem.

Starts working as 3d/2d designer in small engineering company and follows all steps since he employed at Saipem s.p.a. in 2005 as 3D Administrator. From 2013 he moves to the IT Dpt as Business Application Architect and Innovation Agent. Since 2015 he works as an organizational reference for Project Collaboration software and Visualization System recently involved in BIM implementation for Oil and Gas Industry and organizational reference for IT department in Saipem E&C Offshore Division.

Luca is Principal Solution Architect and Consulting Services Manager at Autodesk.

A Principal Solution Architect within the EMEA consulting group in Autodesk’s Customer Success Organization. He received his Computer Science bachelor’s degree from University of Genova, Italy. He has worked in IT as a consultant for the past 20 years, in EMEA and in North America countries, covering different roles and moving from pure software development to solution design

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and implementation, from gathering requirements to final delivery. Luca joined Autodesk in 2008 based in Italy, he is now working in Europe, where he has been designing and implementing solutions for several Autodesk customers in the AEC and MFG industries. During the last few years, Luca has focused his activities mainly on BIM, Collaboration and Data Management domains, working closely to customers to define and implement the technology platform that supports their needs. Luca also started to work with Forge in the early days, and he has been working with the platform for the past 5 years. For the past two years he is also managing a team of EMEA Solution Architects.

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Saipem

Headquartered in Milan, Italy, Saipem is a global leader in drilling services, as well as in the engineering, procurement, construction, and installation (EPCI) of onshore and offshore pipelines and complex projects for the oil and gas market. The company is particularly competent at operating in harsh environments, remote areas, and deep water. Providing a full range of services with EPC and/or EPCI contracts on a “turn-key” basis, Saipem also has distinctive capabilities and unique assets with highly technological content.

This class focuses on one aspect of the digital transformation journey of Engineering & Construction (E&C) Offshore division, that consists in the adoption of Advanced Work Packaging (AWP) methodology as part of the “EPC Integration Model” cluster initiative. Such journey started in the last few months of 2020 when it became clear that the need of integrating and simplifying existing EPC digital tools and methods could no longer wait.

In collaboration with Autodesk Consulting and other partners, Saipem has developed the AWP Dashboard Solution to implement a data-centered dashboard. The solution is able to handle multiple models, authored by Saipem and Contractors, and to aggregate data coming from different data sources (e.g. Material Management tools, Scheduling tools, No-SQL databases, Microsoft PowerBI and many others). These data sources are integrated into a unique environment, orchestrated by Forge, which is the Autodesk cloud-based development platform. The development of this solution started in September 2020 with a simple Proof of Concept and a feasibility study. It was influenced by another project that the E&C Onshore Division was continuing developing and enhancing since 2017: the so called “Data-Driven Construction” Solution.

If interested, you can refer to the following two AU Classes to see the solution evolution:

- [Reducing Decision-Making Time with a Forge-Based BIM Dashboard: The Saipem Experience](#) (Industry, Talk, Autodesk University 2018)
- [Construction future – Aggregating and analysing data using Forge and BI platforms](#) (Industry Talk, Autodesk University 2019)
- [Empowering Forge with Power BI](#) (Industry Talk, Autodesk University 2020)

As you will see in the class, the main benefit of the adoption of the AWP Dashboard allows Saipem to increase consistency in work-packages definitions, to reduce misalignment in EPC planning, decrease risk of disruptions and save time and efforts required in root-cause analysis, among many other.

The first release of the Solution is now live in production and his adoption helped the team to identify new enhancements that will be developed in the next months.

Session Details

This session is delivered in the form of an Industry Talk of about 35 minutes, during which the speakers will describe their experience in defining a solution that supports different stakeholders to easily review and understand the current status of projects, relying on a data-centric dashboard, accessible to everyone and from any device.

The session aims to describe the reasons behind Saipem’s decision to implement the solution as well as the role played by Autodesk Customer Success Organization Team.

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After an overview of business drivers and goals, the speakers will present the Solution itself, focusing on its main functionalities and on the role played by the [Autodesk Forge Platform](#) in linking the models with the data coming from Microsoft Power BI reports, in support to the Advanced Work Packaging (AWP) methodology.

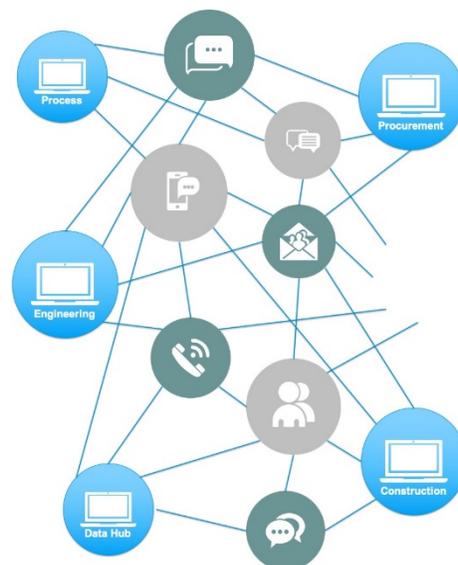
The last part of the class will be a live Question and Answers session where the speakers will be happy to clarify any doubts, share more technical details and support your experience at AU. Following is a deeper overview of the Learning Objectives of this class.

Identify the importance of bringing data at the center to realize the new possible

One of the challenges Saipem faced in the past, and is still facing to some extent, is the traditional approach to manage documents, rather than data.

There are many problems with a document-centric approach; the most common ones are the use of documents as databases, which ends up in the creation of data silos, the increased number of entry points for individual portions of data, and an almost not quantifiable amount of wasted effort and redundant processes.

In few words, with the old document-centric approach all departments involved in a project had to rely on redundant emails, calls, folders, hundreds of different storage locations, siloed and inconsistent document databases, which prevented a good and smooth collaboration.

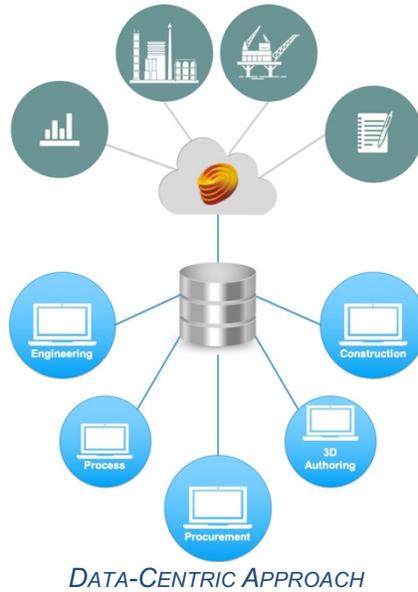


DOCUMENT-CENTRIC APPROACH

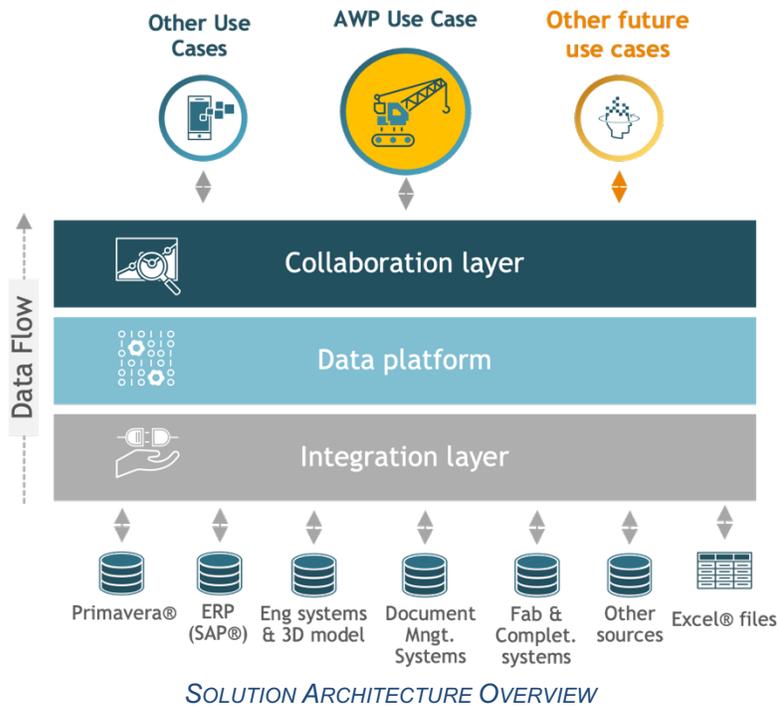
Moving to a data-centric approach, gives the possibility of accessing data instead of documents in a seamless way, while being sure to always have access to the latest and most significant data and information. The transformation of internal processes from a document-centric model to a data-centric one has not been an easy task though; it required a huge commitment from different stakeholders, as well as changes in processes and workflows which, for many years, were accepted and fully adopted by all users.

By leveraging Saipem internal initiatives, and thanks to the deep know-how and expertise of Saipem experienced engineers, data has been made available and usable in a central repository, which has been conceived with the active support of Autodesk Consulting.

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To summarize, being based on one single version of the truth, a data-centric approach enables an optimized data flows between people and highly efficient processes. The following figure shows an high level architecture with the three main building blockpillars of the the Solution, where Data Platform layer is the core of the Solution itself.



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Once data has been made available, the next step has been to try linking it to model geometry. Thanks to the Autodesk Forge Platform and a web solution accessing the platform APIs, this happens in the Collaboration layer.

Envision improvements for your daily activities, with a session intended to give you “food for thoughts”

The target users for this solution are mainly Project, BIM or Discipline managers who not necessarily have deep technical skills. Historically, the use of authoring tools, or even 2D or 3D desktop viewers, was a kind of showstopper for users. Moreover, understanding geometry and related information coming from other systems, both in a digital and paper-based format, was a very time-consuming task, that, most of the time, was the primary cause of headaches, mistakes and inaccurate analysis.

With this class, the presenters aim to give you “food for thoughts” and new idea to rethink your current processes and methods.

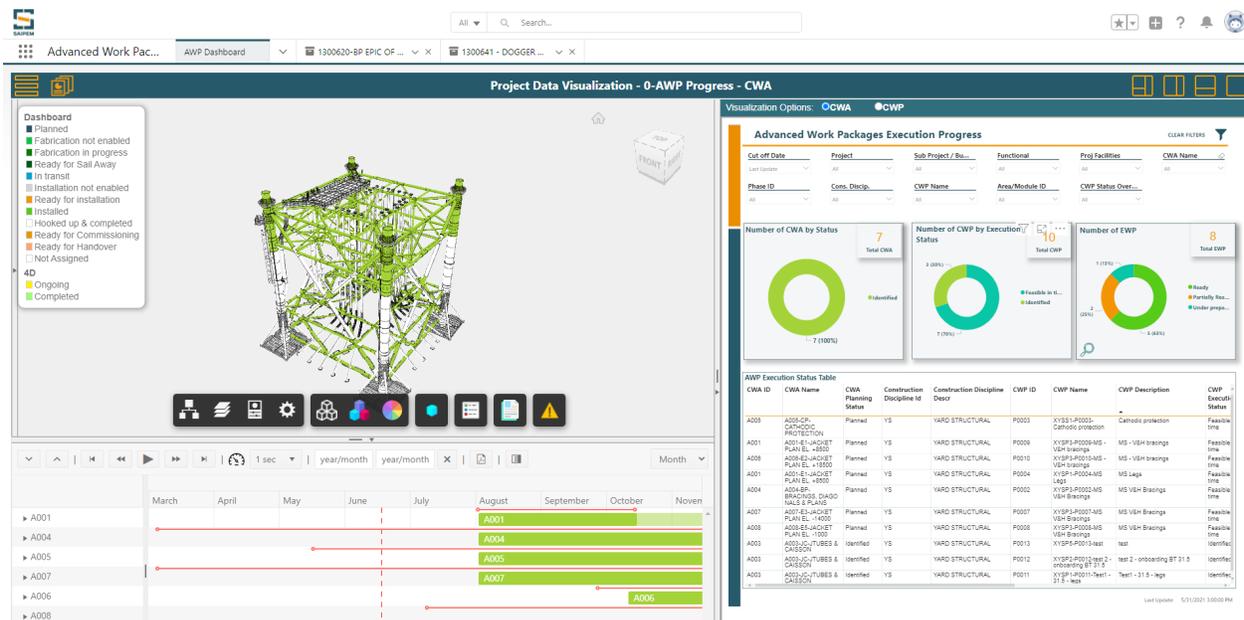
Integrate legacy systems into a single platform

As seen in the previous paragraphs, one key functionality of the AWP Dashboard is its capability to integrate many legacy systems in a single place.

Integrating Microsoft Power BI reports into Forge allows users to move from a legacy system to a smart solution, having the possibility of managing standard reporting and dashboards in a simple way and with the possibility to customize and share them worldwide, using any kind of hardware/device.

Microsoft Power BI is widely used in Saipem and fully integrated with the existing Forge solution, allowing to enhance analytics and reporting capabilities

The possibility of accessing up-to-date construction schedule gives the possibility of performing 4D simulation on the model and immediately identifying/anticipating issues.

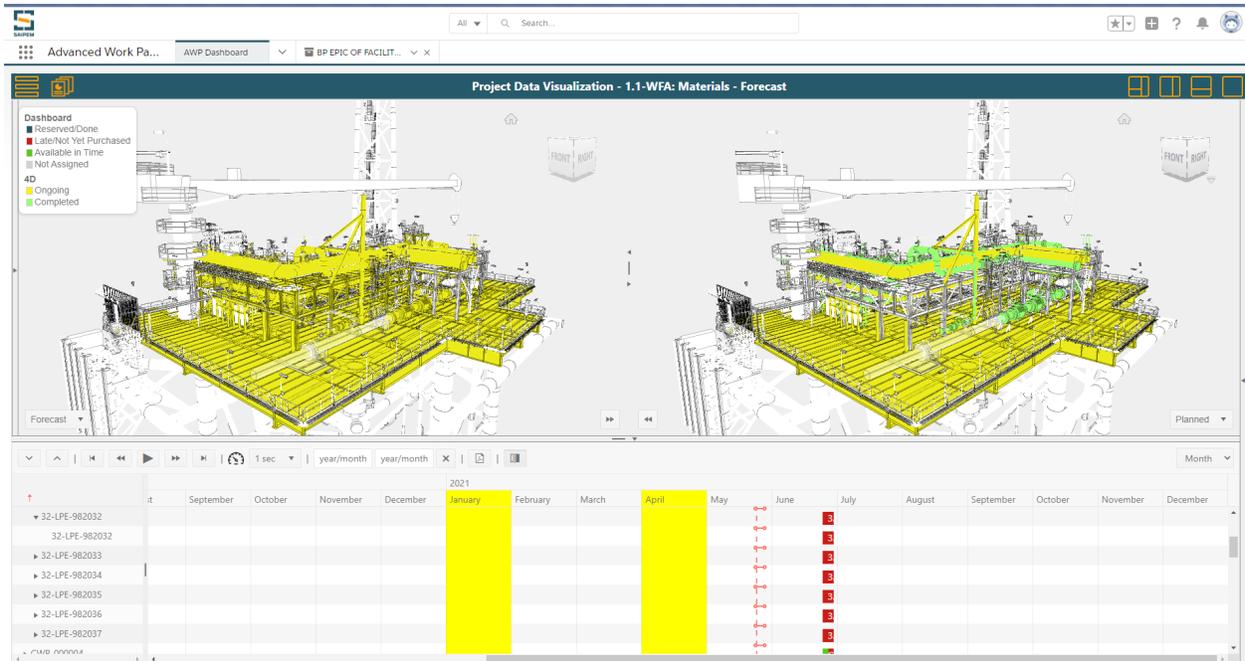


AWP DASHBOARD OVERVIEW

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In the figure above, it is possible to see an embedded Ms PowerBI dashboard on the right, which controls the theming of the elements matching criteria set in the third bar, and displays element status accordingly in the Forge Viewer. Below the Viewer, the scheduling is shown with each element properly themed according to the selection.

Having the ability to access different plans also supports users to run side by side simulation and work on “different “what-if” scenarios.



SIDE BY SIDE 4D SIMULATION

Implement Advanced Work Packaging into your business

AWP is a planned, executable process that encompasses the work on an EPC project, beginning with initial planning and continuing through detailed design and construction execution. AWP provides the framework for productive and progressive construction, and presumes the existence of a construction execution plan.¹

For many of you, as per Saipem, the adoption of a new methodology and way of working means a huge cultural change. With the right tools and processes this can be addressed and such transformation accelerated.

We will show how Saipem is adopting AWP, tailoring some of the concepts to better fit their needs, for example by introducing new level of details, such as Smart Objects (SMO), which represent all the tagged elements and have specific materials associated.

¹ [CII Knowledge Base](#): Advanced Work Packaging Best Practice Definition