ENR467739

Enabling Digital Transformation Through Forge

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Learning Objectives

- Learn how to capitalize on Forge to digitize traditional processes
- Learn how to improve application performances to maximize the user experience
- Discover the lessons learned by an EPC contractor in developing applications using Forge APIs
- Discover the productivity improvements gained using a Forge-based platform to manage large projects

Description

For Maire Tecnimont, going digital is all about capitalizing on technology to boost employees' productivity; streamline engineering, procurement, and construction (EPC) workflows; and deliver on-time projects of the highest possible quality. In this scenario, Forge is one of the most valuable enablers of the digital transformation process. In this class, you will discover how to exploit Forge technology for building analytical, strategic, and operational dashboards; integrating different data from different sources; and extending capabilities of the existing platform through dedicated customization. We will particularly focus on maximizing Forge application performances to enhance the user experience. With the OTG format, the multimodel feature, and other specific procedures, we can handle thousands of 3D objects and relevant data sets in the blink of an eye. In conclusion, we will discuss the benefits gained by adopting Forge technology, highlighting its disruptive impact on company traditional workflows.

Rodney Lawrence Dsilva

Rodney is a full-stack web application developer & software developer having more than 6 years of experience. Currently working as senior engineer at Tecnimont private limited. Graduated from the Visvesvaraya technological university, India with a bachelor's degree in Computer Science. Rodney is a certified professional .NET developer. He has experience in both front end and back-end developments. Rodney enjoy using his skills to contribute to the exciting technological advances that happen every day at Tecnimont such as adopting cloud platform, data digitalization etc. He is both driven and self-motivated, and he is constantly experimenting with new technologies and techniques.

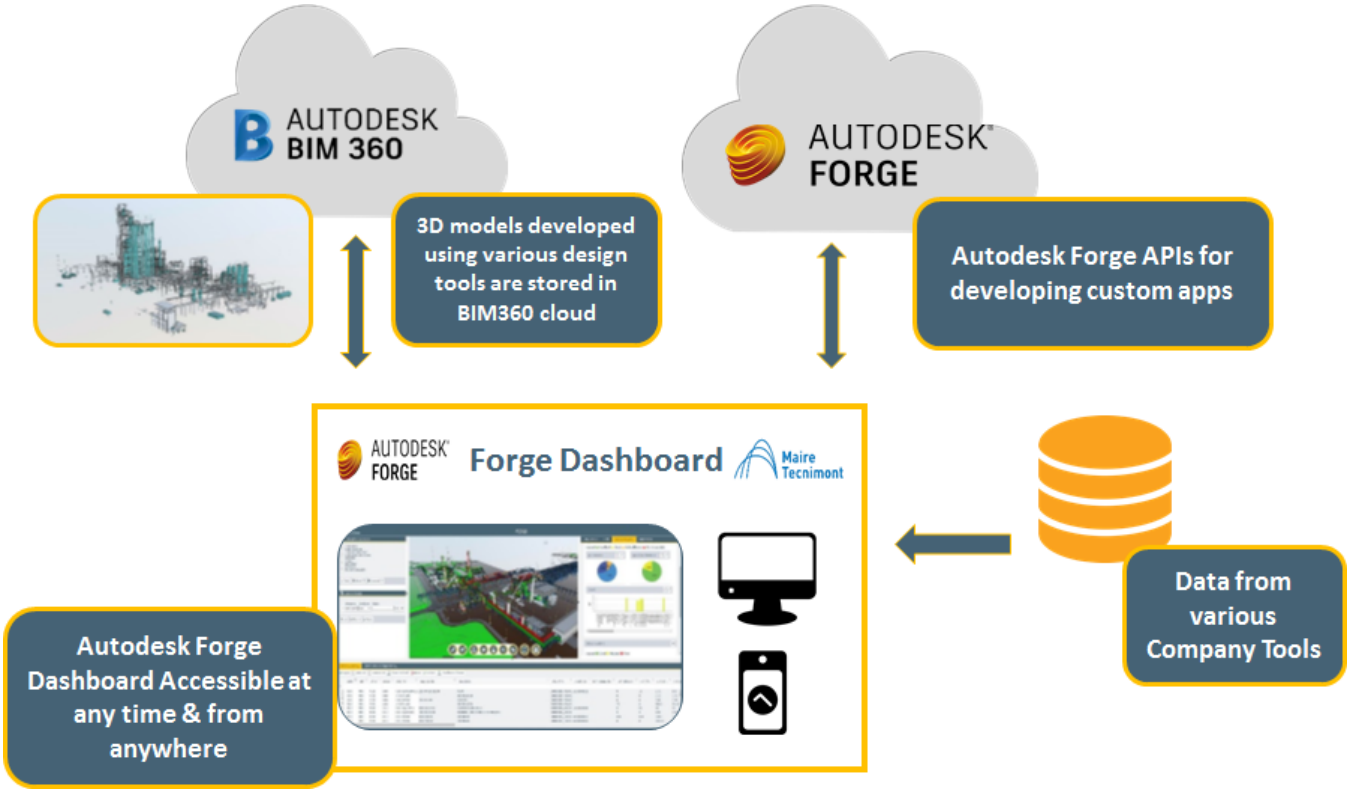
Luca Bazzocchi

Luca is a Principal Solution Architect with 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 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 close 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.

Learn how to capitalize on Forge to digitize traditional processes

In all industries, the dynamic competitive landscape, requires more innovative solutions as well as the digitalization of traditional processes to have every single information available everywhere when needed. These needs require all companies to stay on edge of all aspects of information technology, not only to adopt the latest methodologies, but, most of all, to support such adoption in all departments and having all stakeholders understanding and consuming them. From the point of view of the methodologies, Business Information Modeling (BIM) offers a holistic approach to construction management by integrating, visualizing, storing, updating, managing all necessary project data in a digital environment and their reuse by responsible parties any time during each project's life cycle.

To support BIM adoption, Autodesk Forge Platform plays a key role in particular integrating and visualizing the project data in a user-friendly way moving such data in the context of 3D models, and most of all creating a working environment for all stakeholders, from engineers to sub-contractors to managers and clients. During the session we will see how Maire developed several solutions based on the Forghe APIs (Viewer, Data Management, BIM 360 Admin) to achieve these goals.



Learn how to improve application performances to maximize the user experience

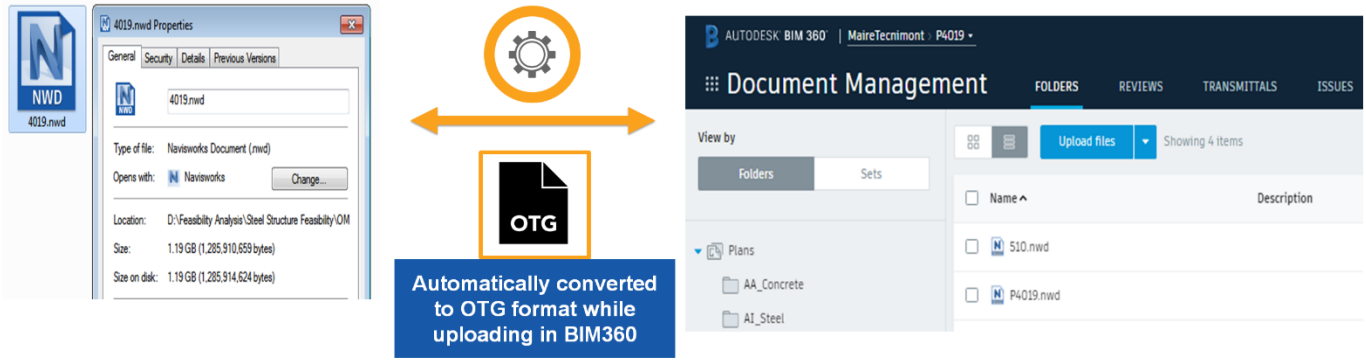
During the session, we will address what are the challenges we faced during the development of Autodesk Forge platform and how we enhanced the performance of an Autodesk Forge applications for better user experience.

Browsing 3D models on Web

Loading massive 3D project models on the Web and navigating them on Forge Viewer had a huge impact on the application 's performances. So, to improve application performance, we took advantage of the new visible format that is OTG.

Benefits of using OTG

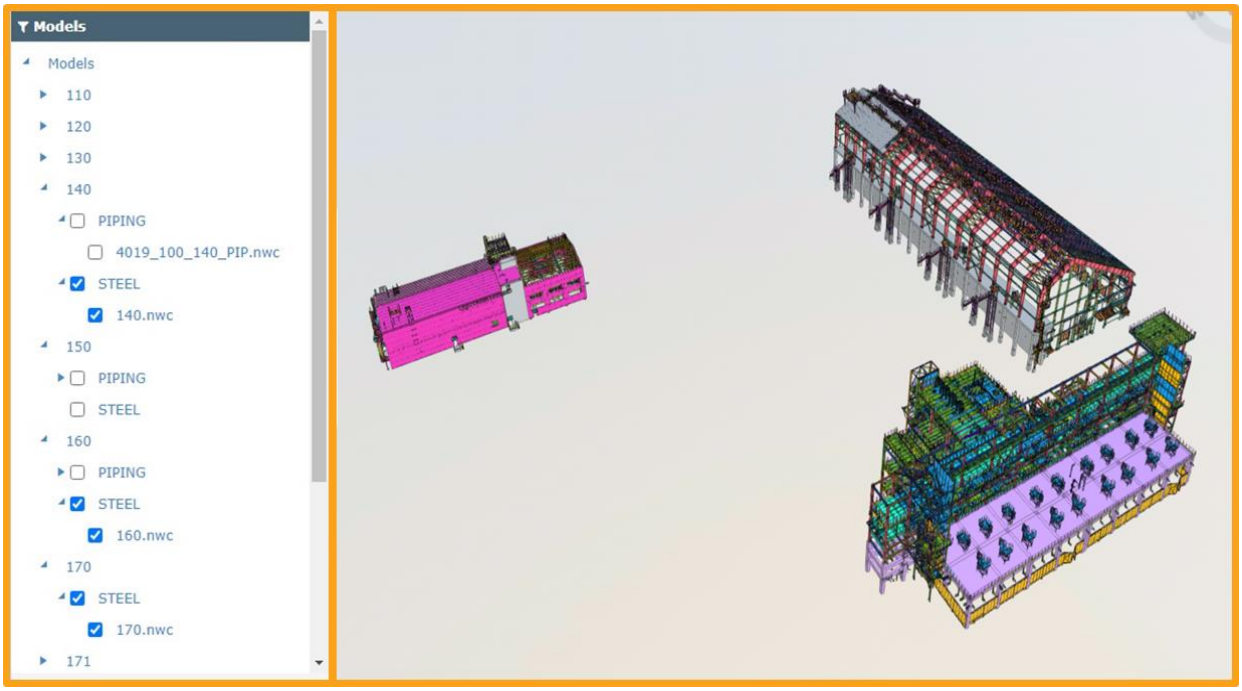
- More compact than SVF
- Automatically converted files to OTG format while uploading in BIM360 Docs
- 3D model navigation is smooth & model is light weight



Multi-Model

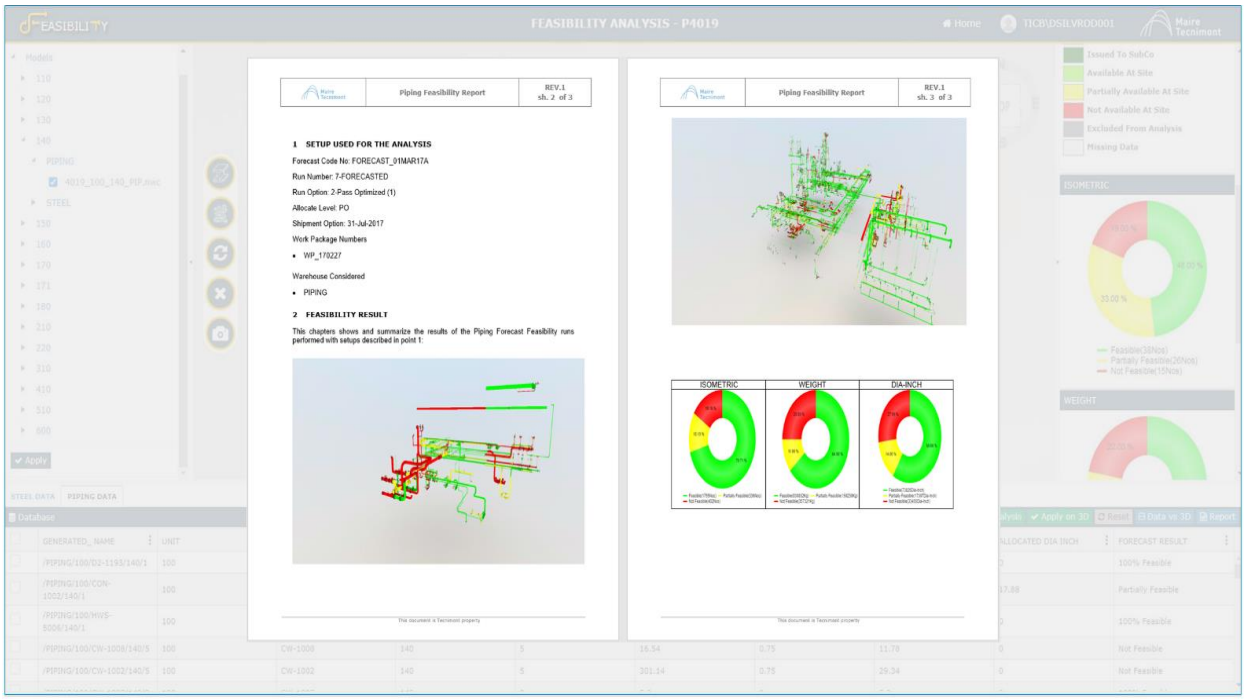
Forge Viewer & browser had been crashed every time when we tried to load 3D Model on Forge Viewer, because they were very huge in size. We had to use machines having high end configurations because browser was consuming lot of memory while loading on forge viewer Moreover, we had to wait for a long time to complete the loading 3D Model & extracting meta data from the model. These problems have led to decreased application performance and high system configuration requirements.

To enhance performance, we have developed multi-model features on our platforms. In our session we will demonstrate how we implemented Multi-Model feature.



Dynamic Reports

During the session, we will explore how to build dynamic, analytic reports & MS word report to be shared with different stakeholders from Forge Platform using data & 3D model. Dynamic reports helped our users in analyzing project status & performances. Moreover, to rectify project criticalities before they impact on progress.



Discover the lessons learned by an EPC contractor in developing applications using Forge APIs

It wasn't an easy place to go digital for Tecnimont. Tecnimont has identified Autodesk Forge Platform as a valuable technology for digital transformation. Autodesk Forge allows businesses to exploit data design and engineering to develop custom software applications. Developers can build and deploy apps and services in Tecnimont that fully optimize workflows and visual power engineering.

Tecnimont ‘s goal was to have

- A digital Platform that links 3D model and other systems data together.
- Dynamic Reports aiming at speeding up Decision Making Process
- An accessible Platform from any Device and at any Time with the latest information
- More Stakeholders accessing and understanding 3D models easily increasing Collaboration

Benefits gained by Tecnimont adopting Autodesk Forge

Visualization on 3D model: Data are valued and can really help in accurately planning and continuously monitoring the project

Dynamic Reports: Team can interact with multiple dynamic reports regarding project status, monthly work front, design quality, quantities issued and estimated

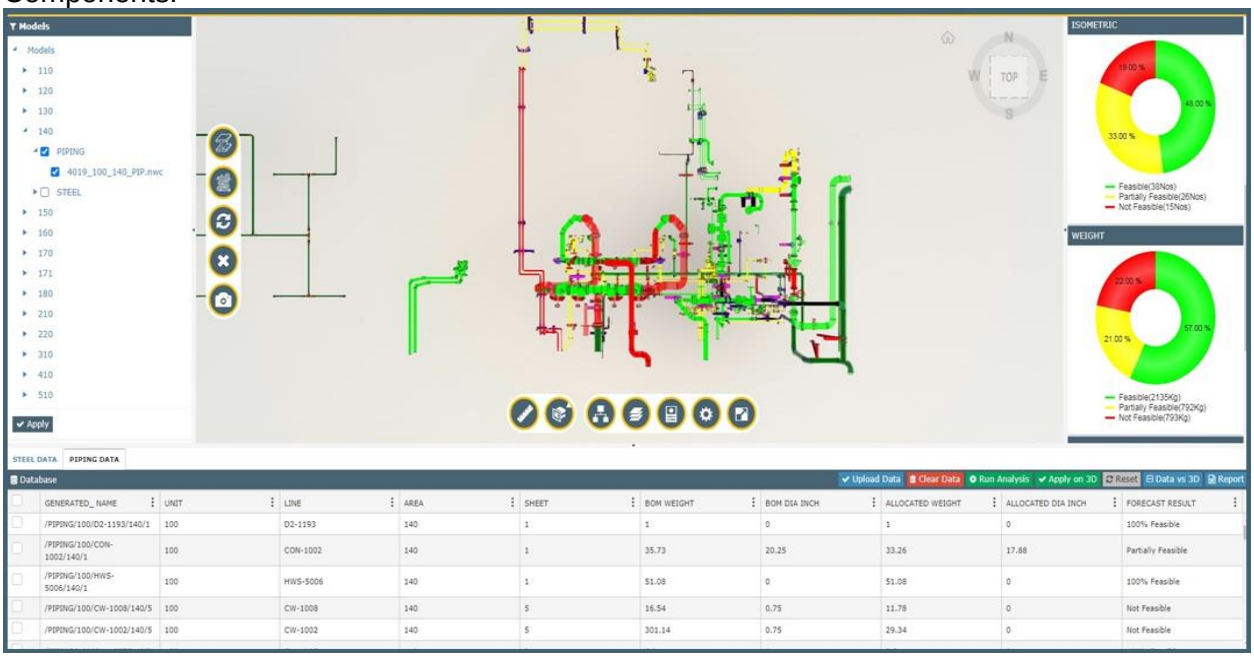
Data Aggregation: Data coming from multiple sources such as Oracle, BIM360, Navisworks are aggregated in a single environment

Productivity & Collaboration: Availability of 3D model & data in single platform improved collaboration & productivity of the project

During the session, we will present the application developed by Tecnimont using the Autodesk Forge technology.

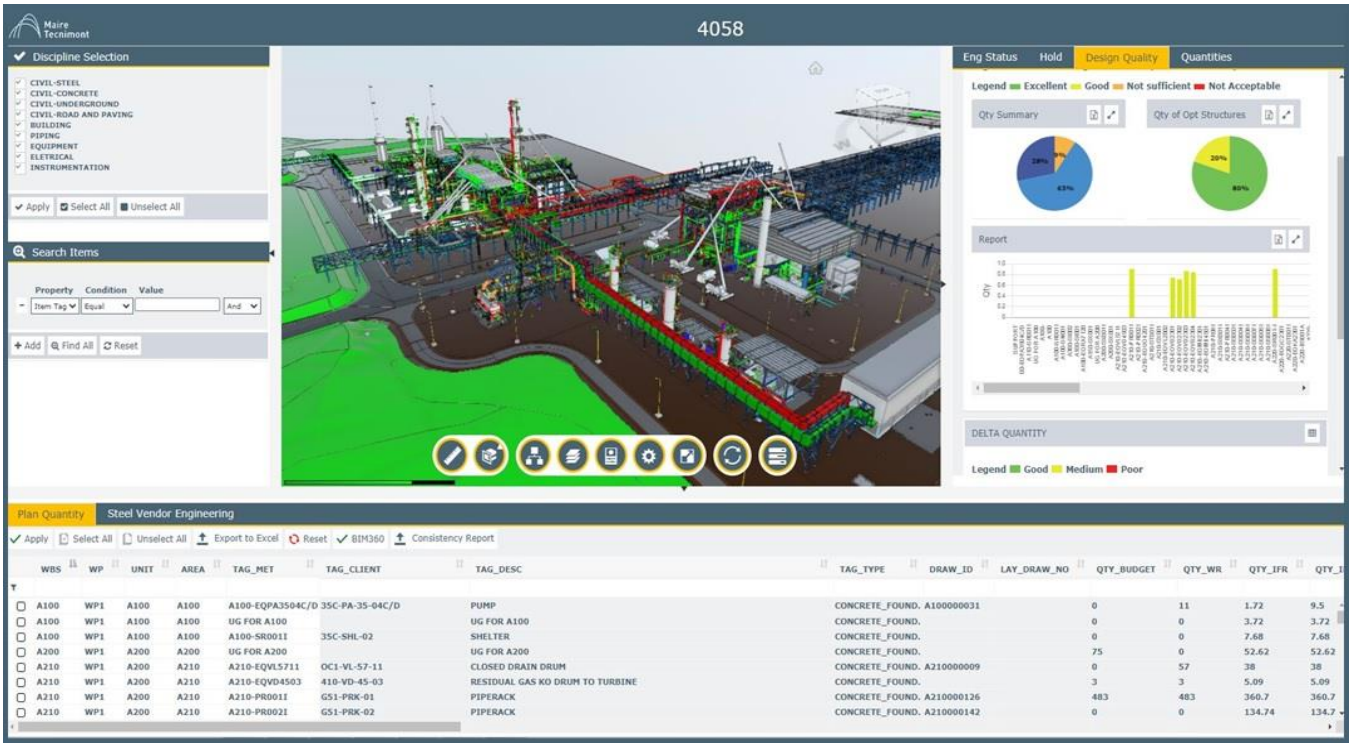
Feasibility Analysis

Project Dashboard to Run & Visualize feasibility Analysis on Steel Structures & Piping Components.



Civil Master data

Project Dashboard to Manage, Visualize & Simulate all civil engineering information for a specific project.



Discover the productivity improvements gained using a Forge-based platform to manage large projects

Solutions such as those described above, are leading to many advantages to companies such as Tecnimont. These gains can be summarized, but are not limited to the following:

- Involve more stakeholder in the project, and most of all, involve them better, providing a simple interface for non-technical users to review the information they are looking for
- Access information, both visual than data, from a single application
- Access information everywhere at any time, being sure that the data available are always the latest and greatest
- Create different dashboards for different personas. As just seen, there are dashboard for piping and civil departments are already available, more will come in the future
- Increase collaboration breaking silos, all departments involved have access to data reducing the decision-making time to move on
- Tackling project criticalities proactively before they affect schedule or results
- Enhanced Data Integration & Data Quality