

# Construction future

## Aggregating and analyzing data using Forge and BI platforms

Alex Gioso

Saipem  
Management System and Quantity Manager

Luca Bazzocchi

Autodesk  
Senior Solution Architect



# Agenda

01

## Introduction

Learning Objectives  
Speakers's Bio

02

## Saipem

Overview

03

## Challenges

Challenges &  
Objectives

04

## The Solution

Journey  
Overview

05

## Future

What is coming

06

## Q & A

Question & Answer  
Demo Video

# Learning Objectives

## Data integration

Understand how to integrate data coming from different sources and couple them to the model geometry

## Forge Platform

Understand how Forge brings data to the center

## Reach a wider audience

Learn the importance of providing BIM data on the web in an easy-to-consume format to a wider audience

## Business Intelligence

Integrate external BI data into Forge





# About the Speaker

Luca Bazzocchi



An explorer and proud Autodesk since 2008, looking always towards the future for new challenges and learnings!

As Senior Solution Architect in Autodesk GCD, works close to Customers and Partners on projects worldwide, covering different industries.

Has been adopting and evangelizing Forge Development Platform since the very beginning.



# About the Speaker

## Alex Gioso

Sportaholic, aspiring filmmaker, out of the box thinker.

Since 2010 in Oil & Gas industry, for Saipem.

Ensuring the implementation and contributing to the growth of the enterprise software platform turning complexity into simplicity.





# Saipem: Extraordinary Is Our Choice

We are a world leader in engineering and drilling activities and in the development of major projects, in the energy and infrastructures sectors.

# Who we are



Saipem is a leading company in engineering, drilling and construction of major projects in the energy and infrastructure sectors. It is "One-Company" organized in five business divisions (XSIGHT, dedicated to conceptual design, Offshore E&C, Onshore E&C, Offshore Drilling and Onshore Drilling). Saipem is a global solution provider with distinctive skills and competences and high-tech assets, which it uses to identify solutions aimed at satisfying customer requirements. Listed on the Milan Stock Exchange, it is present in over 70 countries worldwide and has 32,000 employees of 120 different nationalities.

## MAIN NUMBERS

€8.5 bln

REVENUES 2018

€8.8 bln

NEW CONTRACTS 2018

€485 mln

INVESTMENTS 2018

32,000

EMPLOYEES

72

COUNTRIES IN WHICH WE OPERATE

9

FABRICATION YARDS

## VISION

To be the benchmark company for clients looking for extraordinary and sustainable solutions.

## MISSION

To complete extraordinary projects by continuously pushing beyond the frontiers of innovation, guiding our clients towards the future of energy. To face and overcome the challenges posed by the evolution of scenarios and their interconnections, seizing the opportunities to continue to create economic and social value for our stakeholders.

## VALUES

- Unleash creative intelligence
- Care for people and planet
- Strive for trust
- Enhance cultural singularities

# Divisions



**A global forward thinker**  
We anticipate market challenges, we seize opportunity. We drive change, setting new standards.

- Adding value to our clients from early phases of project definition: bankable feasibility studies (Conceive), basic design (Architect), pre/feed (Develop) and services for life cycle extension (Enhance)
- Offering a wide range of premium services, including financial advisory and engagement with funding institutions, to provide tailor-made solutions to our clients, leveraging on our international network
- Covering all products of the energy industry: Oil&Gas upstream, mid and downstream in an integrated way with green and renewable technologies
- Deploying innovative solutions that fully exploit the advantages offered by digitalization, cloud computing and data analytics

**E&C OFFSHORE**

**Masters of the sea**  
We are a leading offshore global solution provider. Water for us has no limits, from early engagement to end of asset life, through technology, innovation and management of distinctive assets.

*Strategic Markets:*

- Subsea Field Development (Deepwater, Tie-Backs, Life of Field)
- Conventional Field Development (Fixed Platforms and Facilities)
- Pipelines/Trunklines

*Diversification:*

- Marine Renewables (Offshore Windfarms)
- Decommissioning
- Maintenance Modifications Operations (MMO)

*Technology and Innovation:*

- Capex Efficiency Technologies (All Electric, SPRINGS, Subsea Separations, Long Tie-Backs)
- Execution Efficiency Technologies (Plasma Welding, Laser Welding)
- Opex Efficiency Technologies (Robotics, Hydrone, Emergency Intervention)



**E&C ONSHORE**

**Enabling the world energy transition**  
Become the partner of choice for clients committed to a sustainable low-carbon energy transition.

- Design & Construction of hydrocarbon production, treatment and transport facilities
- Oil&Gas upstream projects
- Liquefaction and regasification of natural gas (LNG)
- Downstream plants: oil refining, chemicals and petrochemistry, gas monetization, single/combined cycle power plants
- Renewable energies: biofuels, solar and thermal power plants, waste to power
- Infrastructures

**DRILLING OFFSHORE**

**Raising the standard of drilling operations**  
Operational excellence, peerless reliability and unique adaptive ability built in a more than 60-years track record.

- A leading international provider of any type of drilling services in all offshore sectors ranging from ultra deep water to shallow water, harsh environment and remote areas
- A competitive player delivering efficiency and operational excellence
- Operator of an advanced drilling fleet of 14 units including drillships, semisubmersible rigs, jack-ups and a tender assisted unit, which can boast up to 10 years LTI free

**DRILLING ONSHORE**

**Raising the standard of drilling operations**  
More than 60 years drilling specialists in the most challenging environments, in any geographical and political context.

- Services for the drilling of Oil&Gas exploration, appraisal and production wells as well as geothermal projects
- More than 80 drilling and workover rigs
- Strong presence in the Middle East, Latin America and CIS
- Mostly for deep, ultra deep and deviated wells
- Development of a new rig with walking system for unconventional fields (Striker 800)



“The world’s most  
valuable resources is no  
longer oil, but ....”

The  
Economist

“The world’s most  
valuable resources is no  
longer oil, but data”

The  
Economist

# Challenges & Objectives





# Saipem's objectives

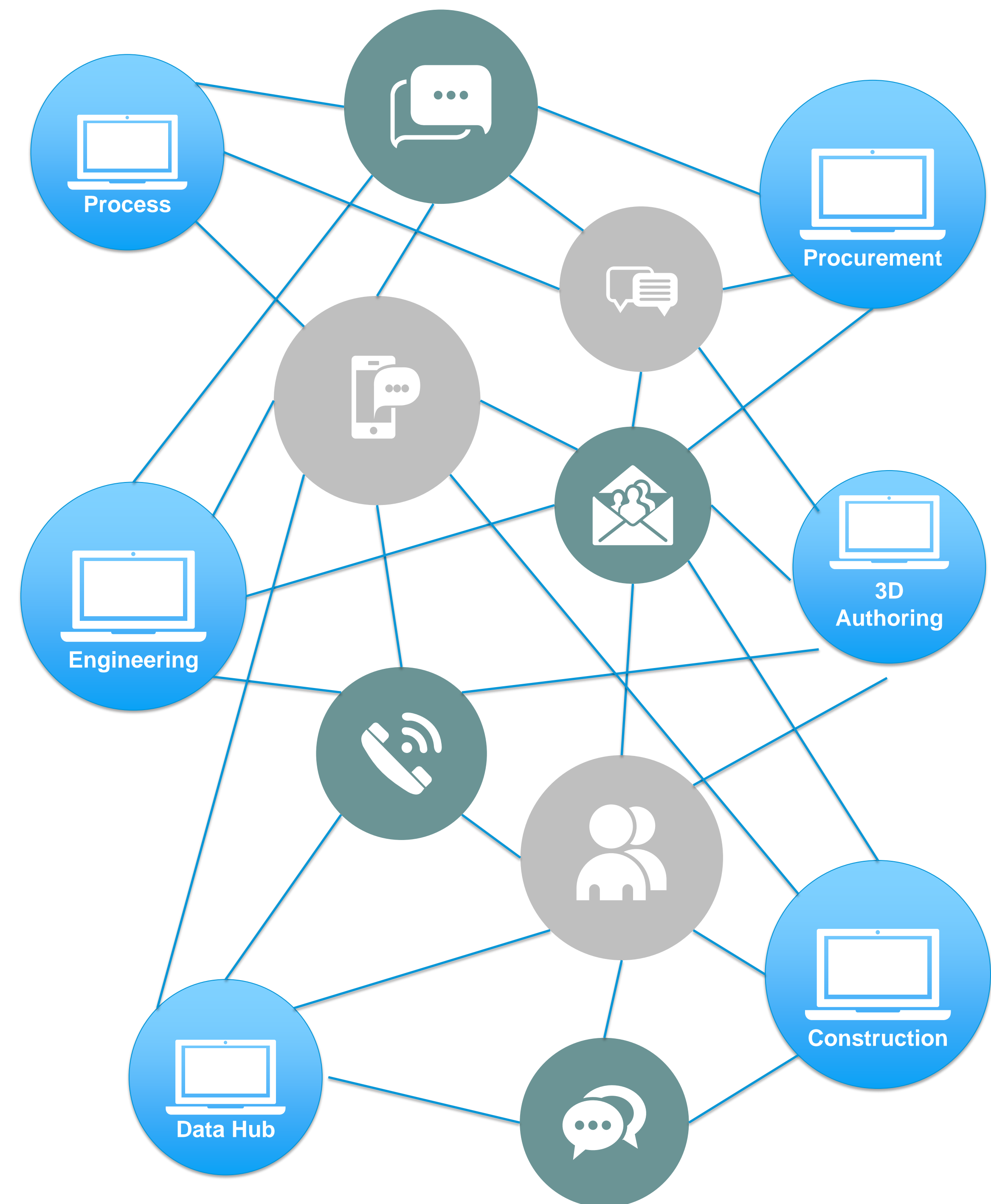
Saipem would like a solution that

- **Accelerates** the **decision-making** process
- Increases project **quality and effectiveness**
- Is **accessible** from any device



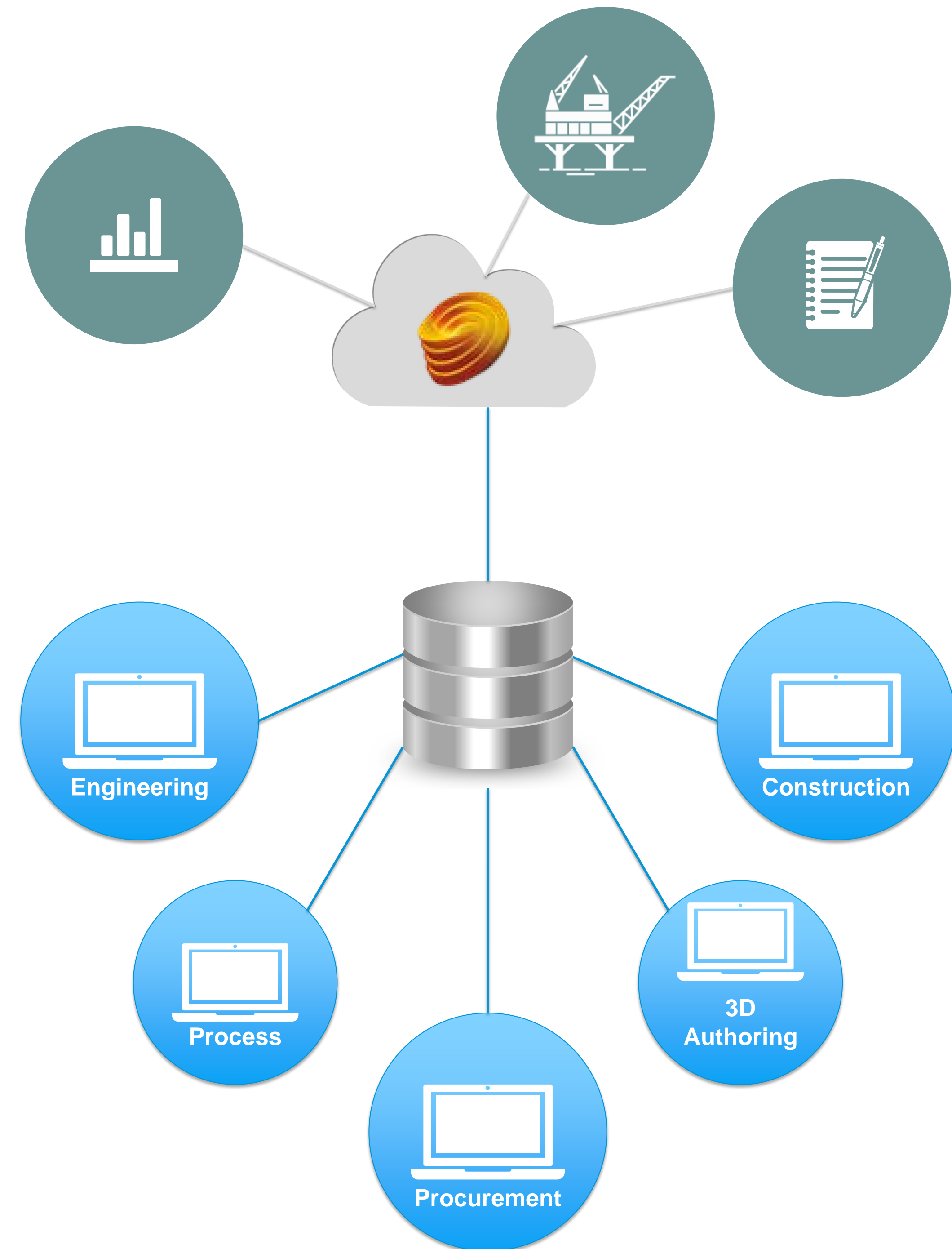
# Where our journey began...

...a methodology relying on emails, calls, folders, storage locations, **siloed** and **inconsistent document databases**, resulting in **dispersed/duplicate** information and **limited collaboration**



# Data-centric Solution

- Definition of a Central Repository becoming the **Single Source of truth**
- **Optimized** data flows between people and process
- Integration with **models** and **geometry**
- Data available **anytime & anywhere**

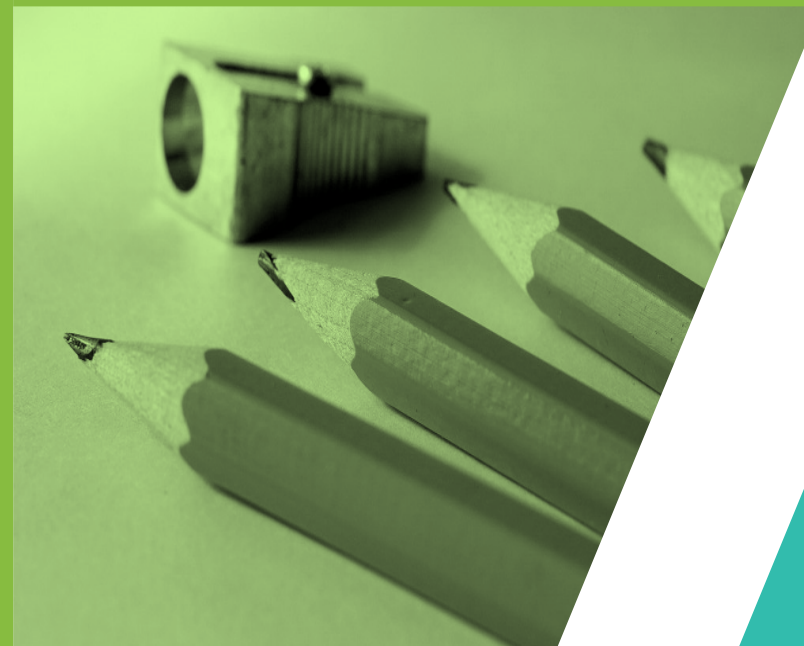




# Autodesk Consulting

Business Solutions = People + Process + Technology

Innovate more  
quickly



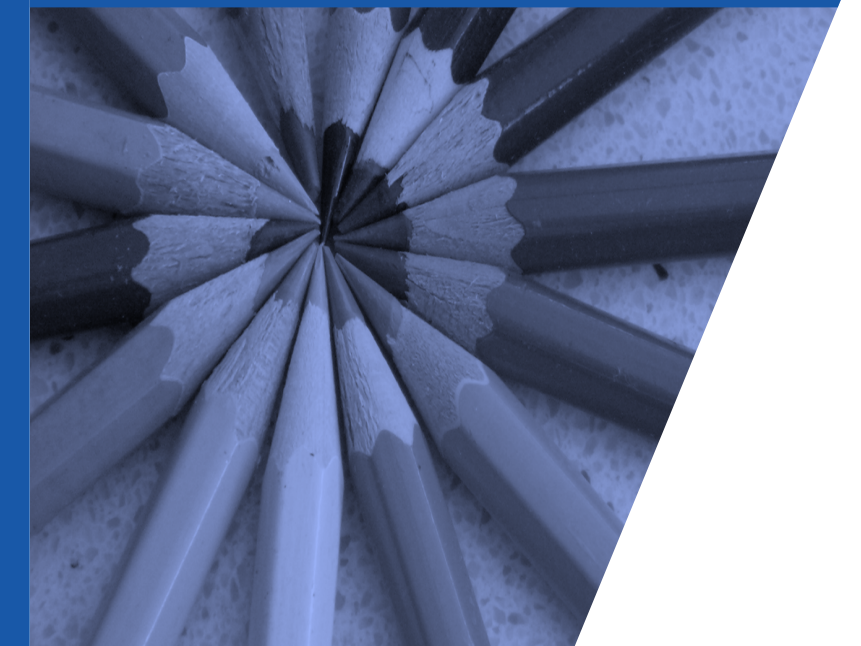
Accelerate  
adoption



Manage change  
with minimal risk



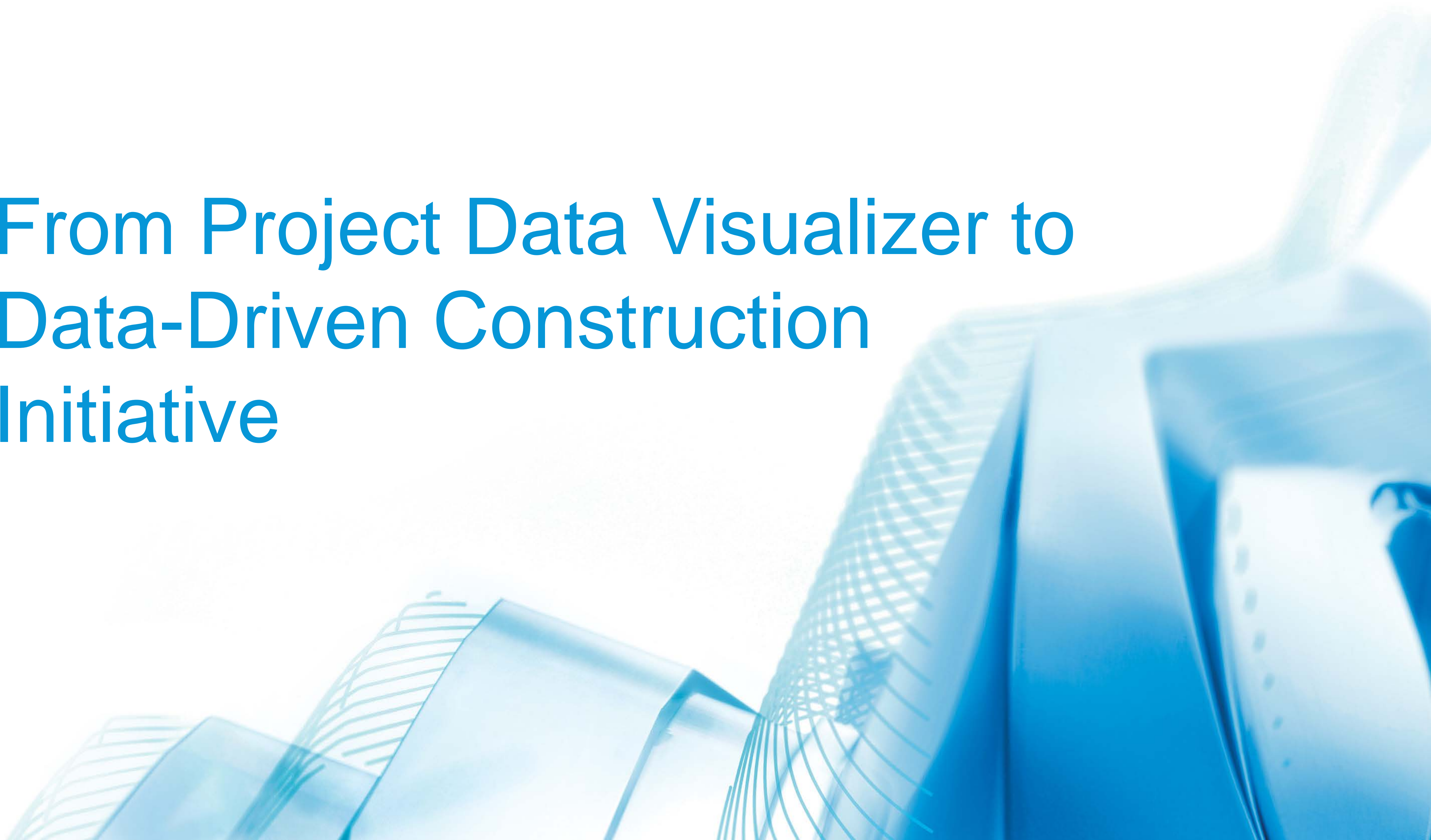
Realize strategic  
goals



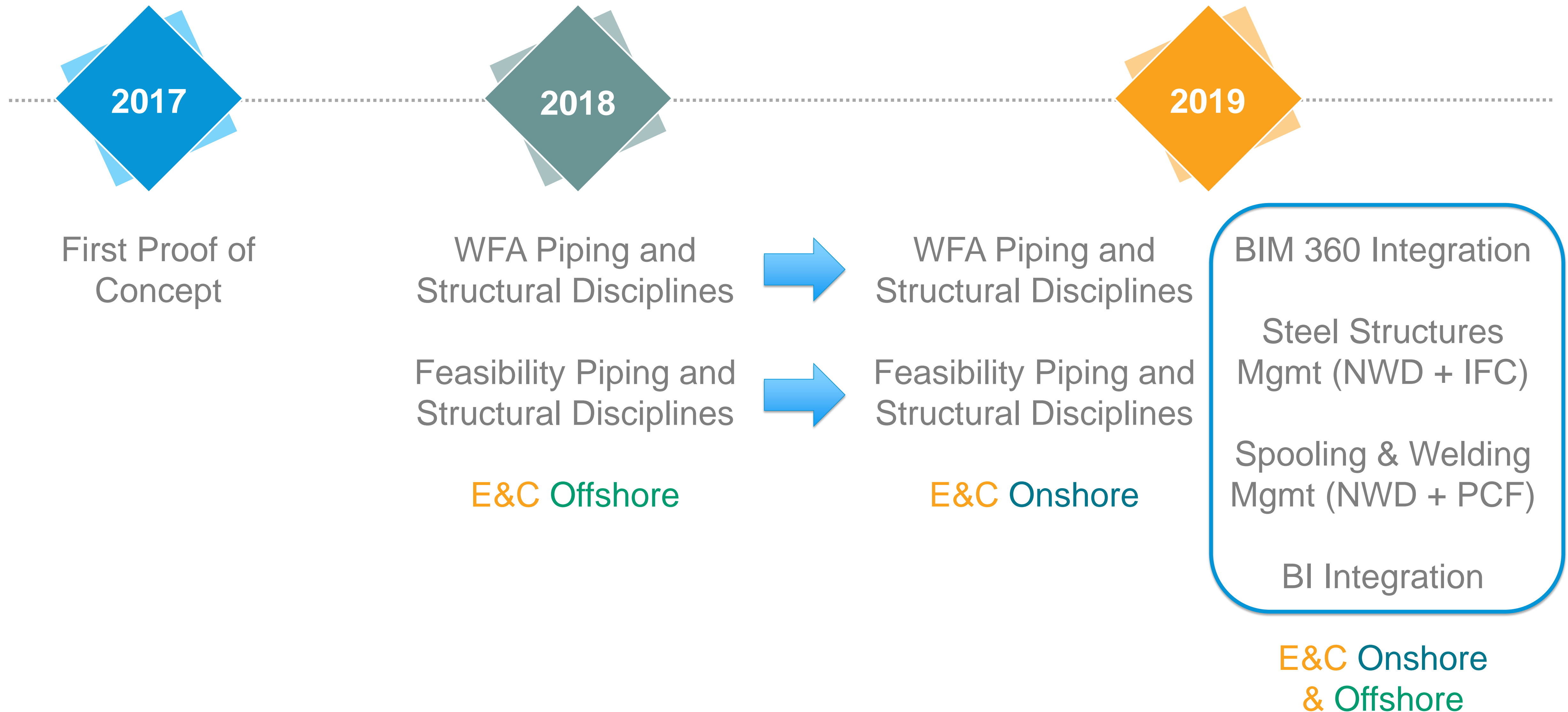
Our experts provide business solutions to help you achieve  
strategic goals and gain a competitive advantage from technology



# From Project Data Visualizer to Data-Driven Construction Initiative



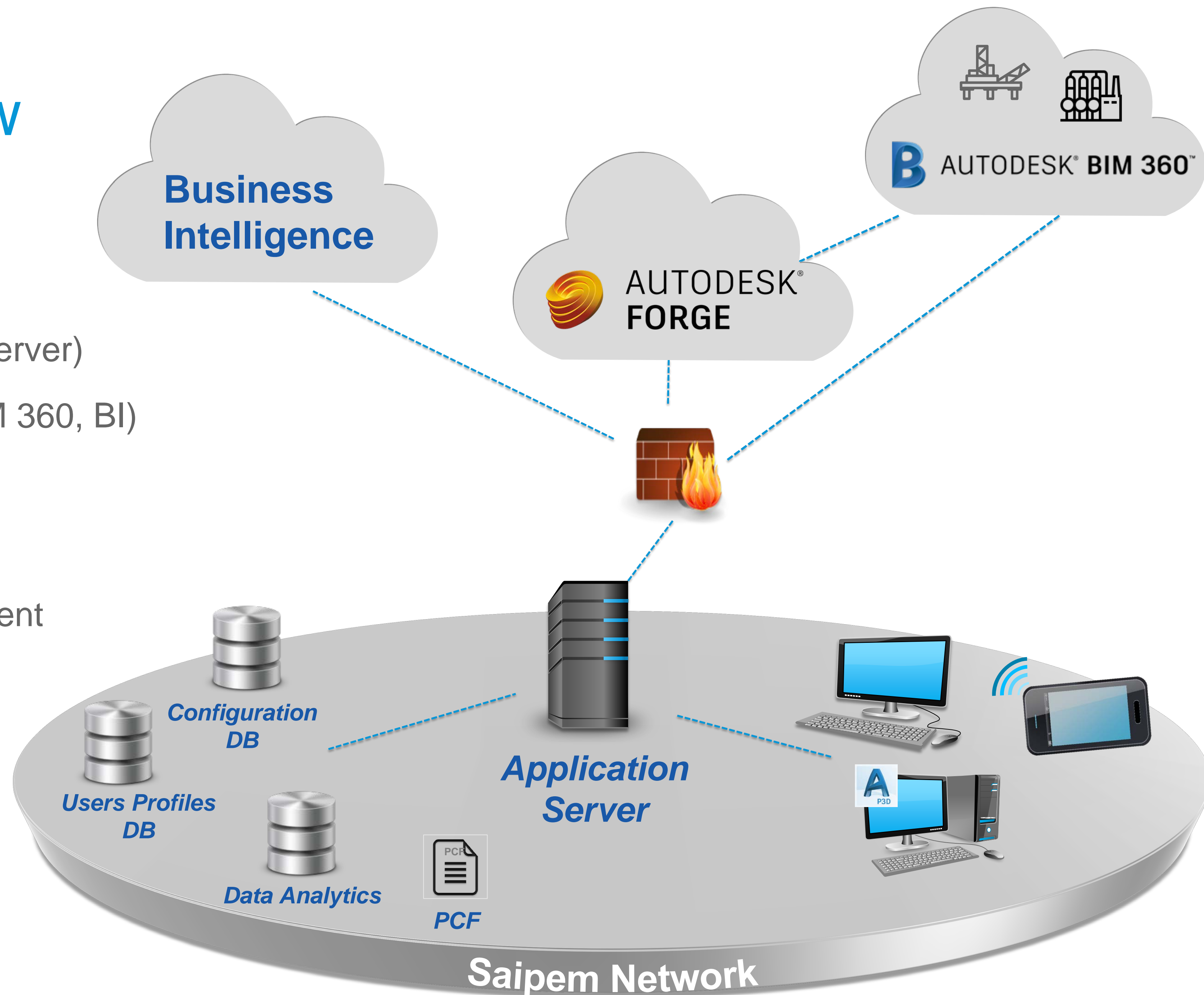
# Initiative Progress



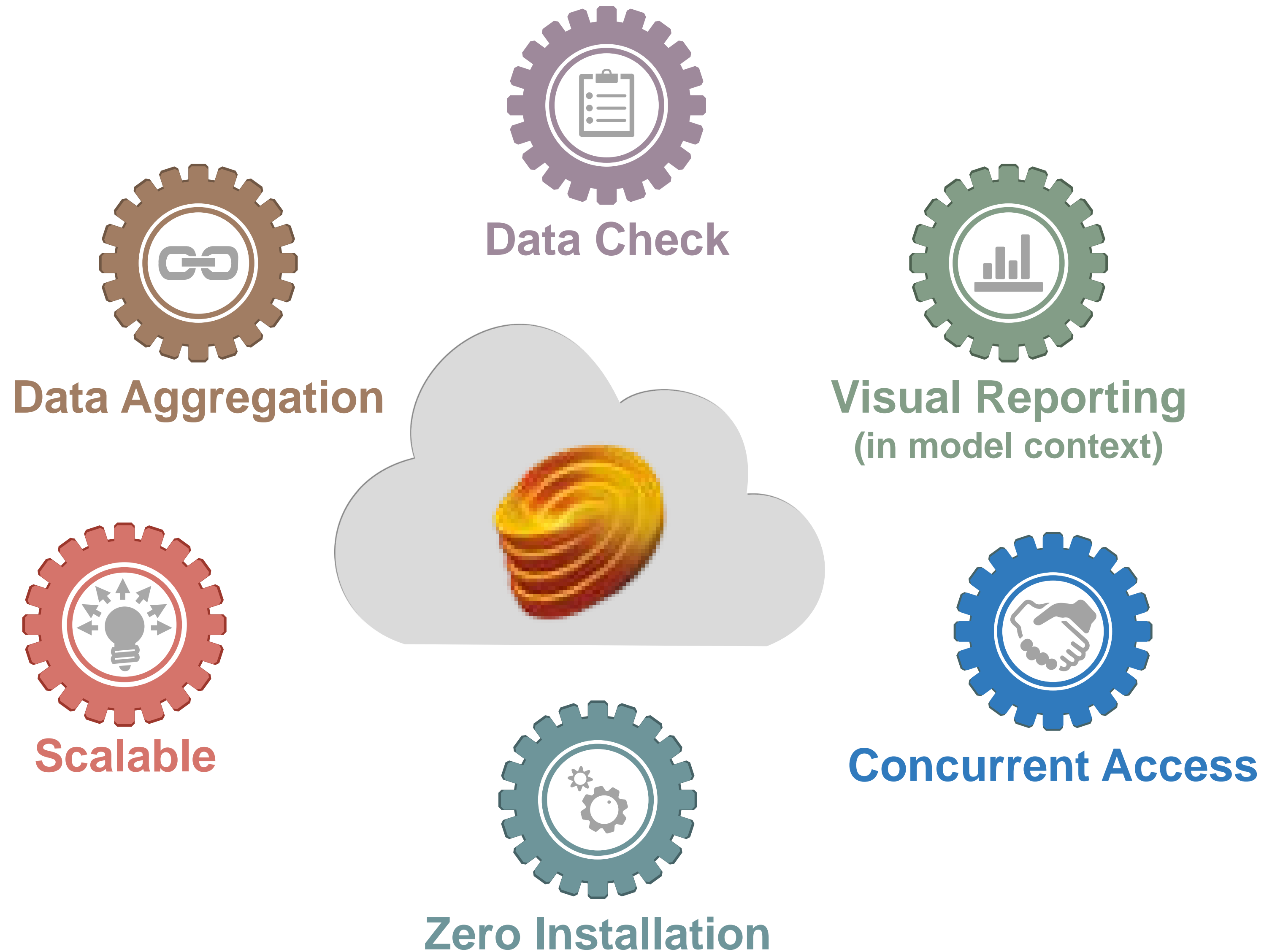


# Initiative Overview

- **Hybrid Architecture:**
  - On-Premise (Application Server)
  - Cloud (Forge Platform, BIM 360, BI)
- Enhanced **User Profiling**
- **BI** Integration
- **Spool** & **Welding** Management



# Benefits of Using Forge Platform



19/02/2025

Unit

Structure

Model







AU Demo Project

My AU Demo Project Description

Las Vegas (United States)


Onshore


AU Demo Project 2

Unit

Structure

Model







# AU Demo Project

## Description

My AU Demo Project Description

## Project Type

Onshore



UnitUnit-AU  
StructureStructure-AU  
ModelModel-AU.nwd

Disciplines

Properties Map

Analysis Grid

Properties Charts

Discipline	Node	
OTHERS	*	  
STRUCTURAL	Struct	 

Document Management

FOLDERS

REVIEWS

TRANSMITTALS

ISSUES

View by

Folders

Sets

Upload Files

Showing 1 item

Search for documents

- Plans
- Project Files
- Unit-AU
- Structure-AU

<input type="checkbox"/>	Name ^	Description	Version	Size	Last updated	Updated by	Markup	Issue	RFI	S
<input type="checkbox"/>	 Model-AU.nwd		V1	845.2 KB	Nov 11, 2019 2:52 PM	Luca Bazzocchi				





Discipline

☒ Apply ☒ Select All ☐ Unselect All

☒ OTHERS

☒ STRUCTURAL

☒ ELECTRICAL

Object Properties

3d Model

Reporting

Properties Chart

Feasibility

Erectability

Weight

Not arrived

Arrived

Booked

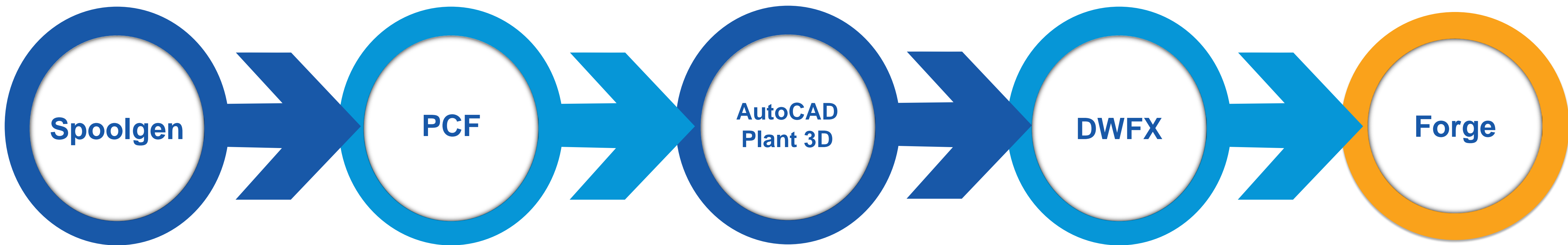
Analysis data

☒ Apply ☒ Global Report ☒ Select All ☐ Unselect All ☒ Remove Highlighted ☒ Export to CSV Page size: 5 Selected row(s): 0

	Struct Code	Struct Desc	Struct Code Mod	Struct Desc Mod	Category Code	Category Desc	Unit Code	Unit Desc	Assembly	Assembly Desc	Arrival Status	Arrived Qty	Arrived On	Booking Qty	Booking Date	Withdrawal Qty	W



# Spool & Welding Process



## Discipline

☒ Apply ☒ Select All ☐ Unselect All

- ☒ OTHERS
- ☒ STRUCTURAL
- ☒ ELECTRICAL

## Object Properties

## 3d Model

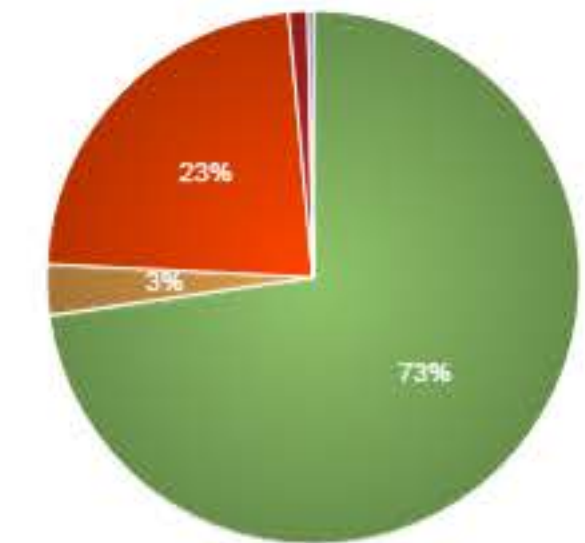


## Reporting

[Properties Chart](#)

[Feasibility](#)

### Spools per Area



- Shop
- Erection
- Non-Destructive Test
- Laydown
- Painting

## Analysis data

☒ Apply ☒ Global Report ☒ Select All ☐ Unselect All ☒ Remove Highlighted ☒ Export to CSV Page size: 5 Selected row(s): 0

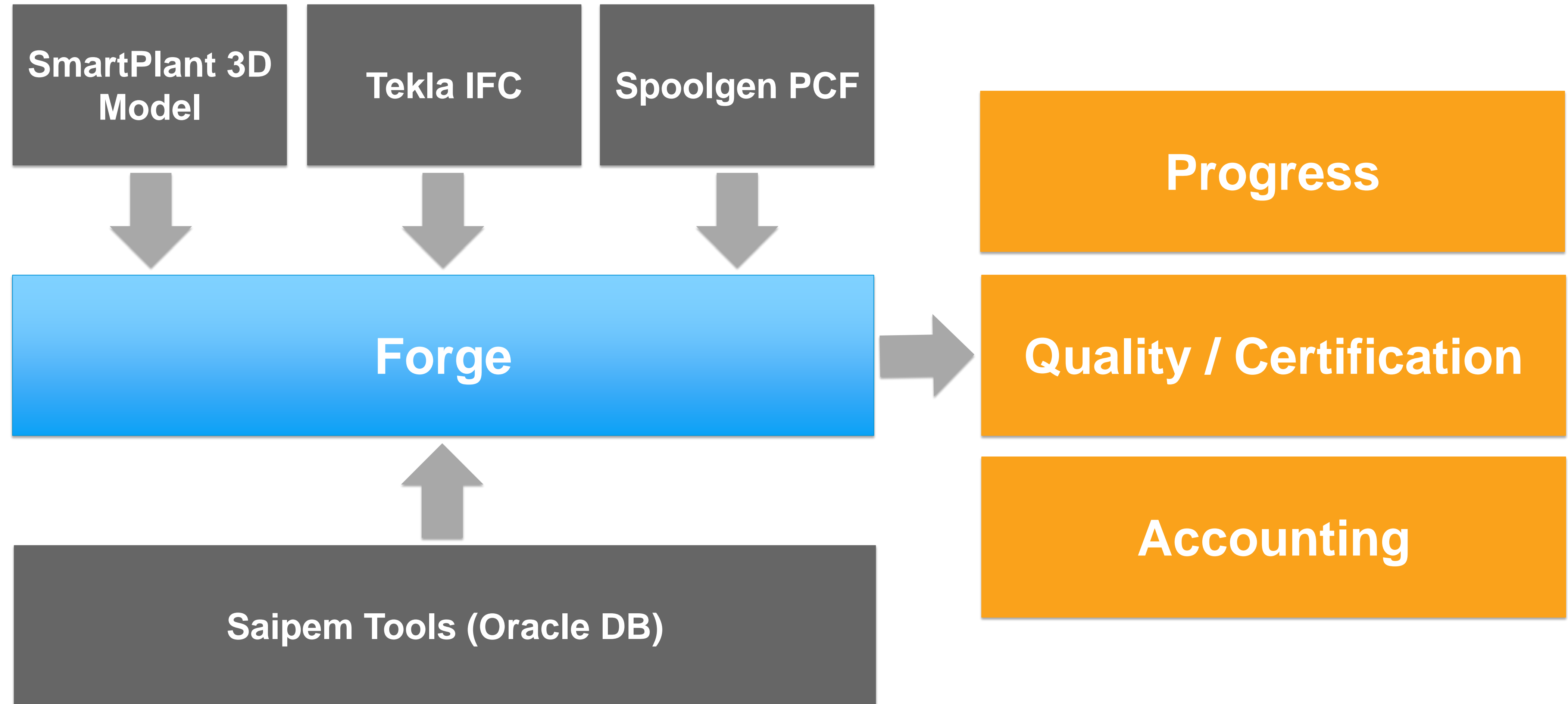
Item	Material	Quantity	Unit	Location	Status	Notes
1	Steel	100	kg	Shop	Completed	
2	Concrete	500	m³	Site	In Progress	
3	Brick	2000	m²	Foundation	Completed	
4	Rebar	150	m	Foundation	In Progress	
5	Gravel	300	m³	Site	Completed	
6	Wood	50	m³	Shop	Completed	
7	Paint	10	kg	Shop	In Progress	
8	Welding	20	kg	Shop	In Progress	
9	Electrical	50	m	Shop	In Progress	
10	Plumbing	30	m	Shop	In Progress	
11	Roofing	100	m²	Site	In Progress	
12	Insulation	200	m³	Site	In Progress	
13	Foundation	100	m³	Site	In Progress	
14	Structural	50	m³	Site	In Progress	
15	Roofing	100	m²	Site	In Progress	
16	Insulation	200	m³	Site	In Progress	
17	Foundation	100	m³	Site	In Progress	
18	Structural	50	m³	Site	In Progress	
19	Roofing	100	m²	Site	In Progress	
20	Insulation	200	m³	Site	In Progress	

# Achieved Goals

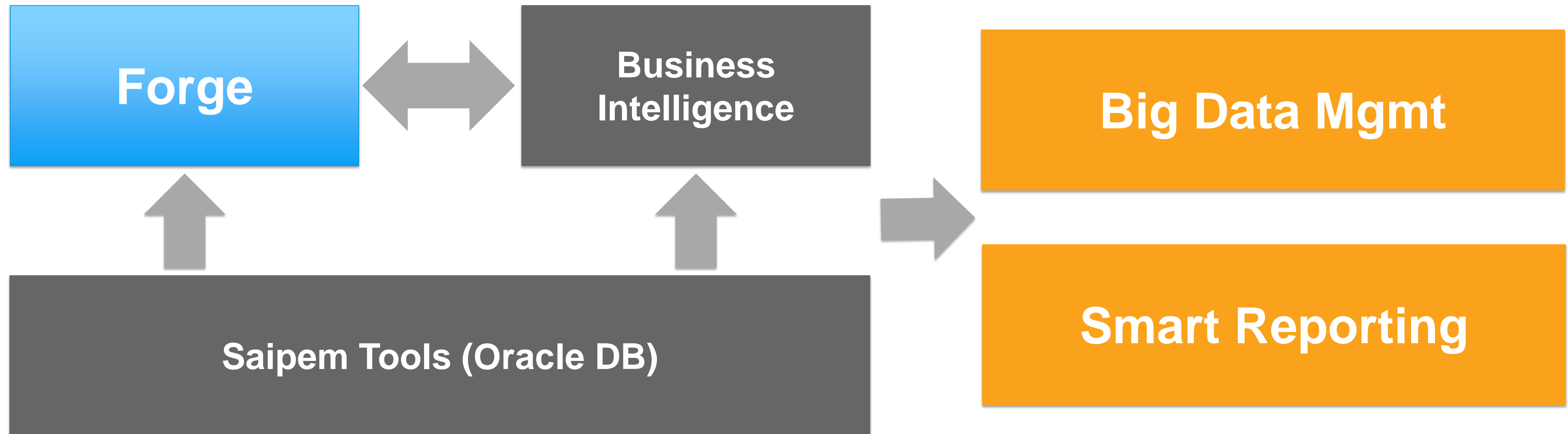




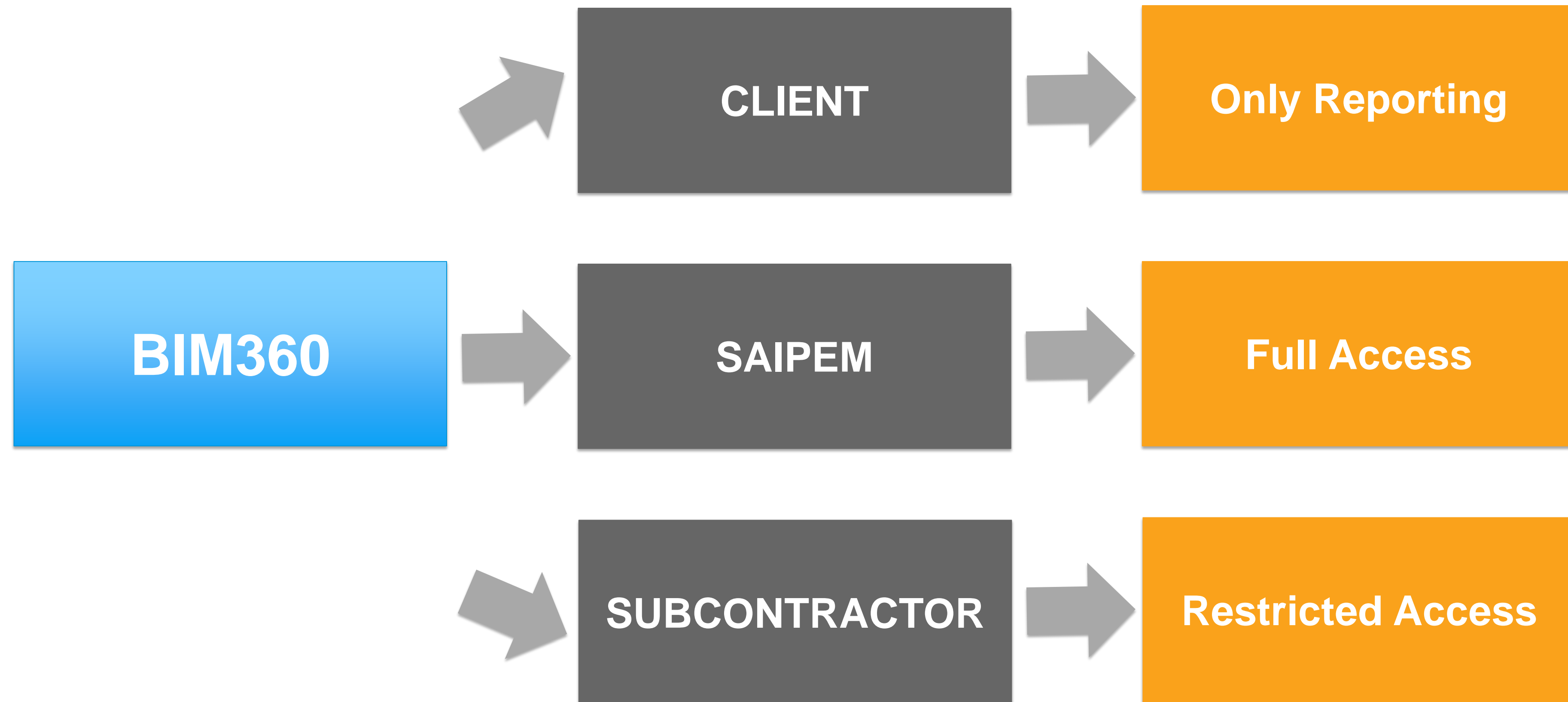
# Steel Structure and Piping Deeper Analysis



# BI Integration






# Connected Data





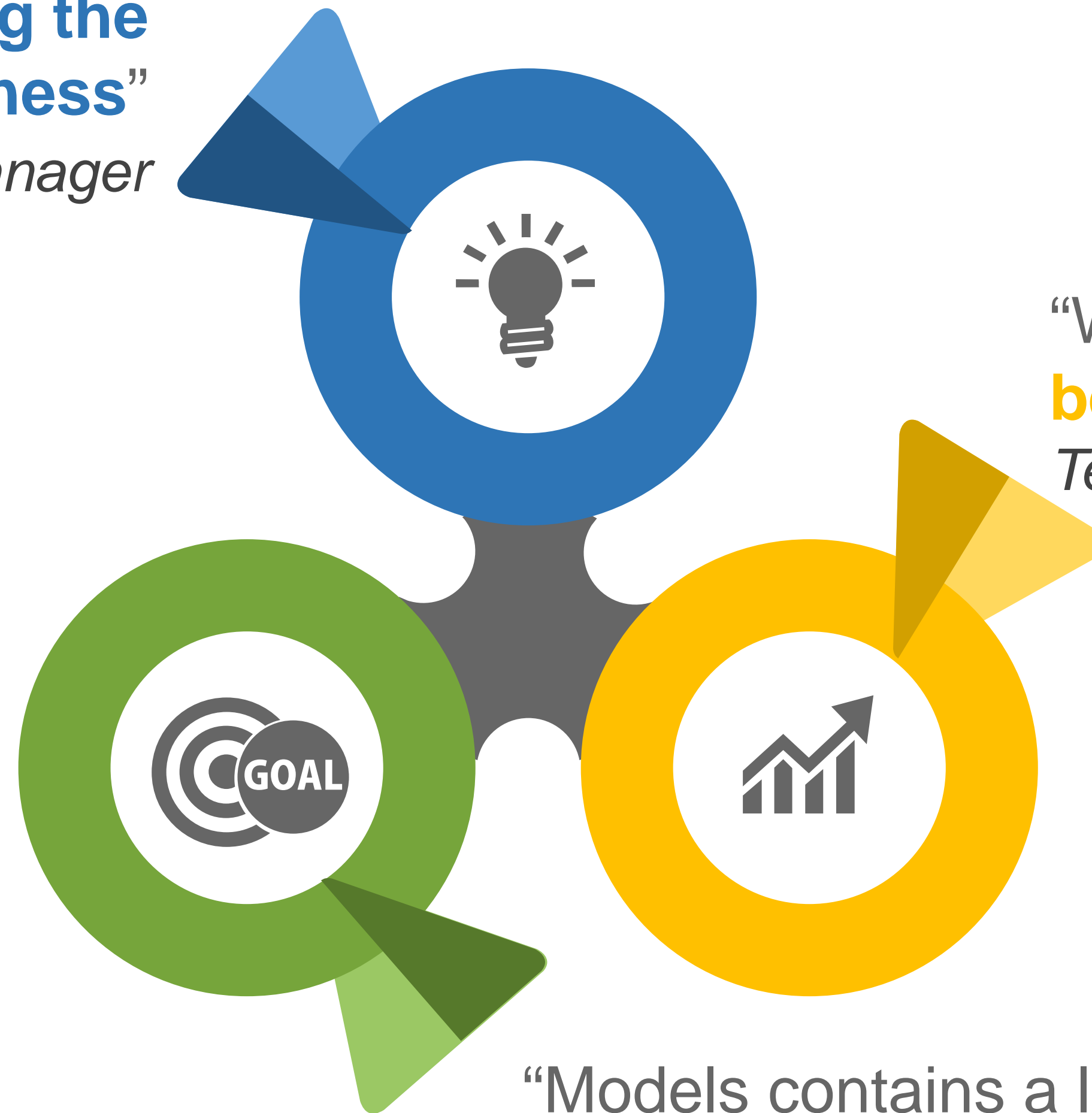
# Value to Stakeholders

Profile	Business value
<b>C-Level</b> 	<ul style="list-style-type: none"><li>• Ensure healthy projects and increase profitability</li><li>• Reduce risk to company</li><li>• Increase profitable margins</li></ul>
<b>Project Manager</b> 	<ul style="list-style-type: none"><li>• Deliver projects on time and on budget</li><li>• Be able to address problems on projects that delay schedule or impact profitability</li><li>• Monitor progress on construction site</li><li>• Manage risks</li></ul>
<b>Technical Manager</b> 	<ul style="list-style-type: none"><li>• Proactively address project and model issues before they impact schedule or performance</li><li>• Ensure data quality</li><li>• Ensure standards are being properly utilized on projects</li></ul>

# User Feedback

“Now **data** is truly **driving the Business**”

*Business Unit Manager*



“With the new reporting I can take **better choices** in **less time**”

*Technical Manager*

“Models contains a lot of **useful information** that is always **up to date**”

*Project Manager*



Future plans/next steps



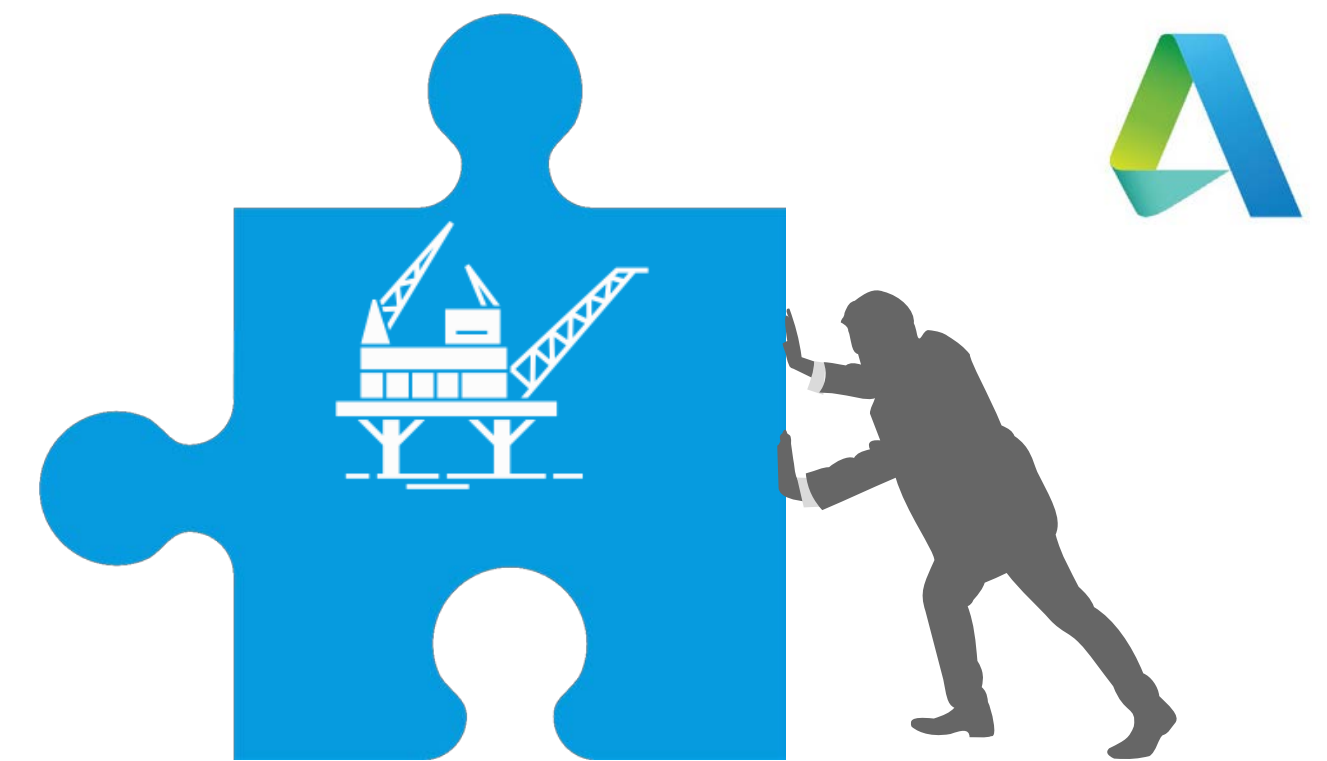
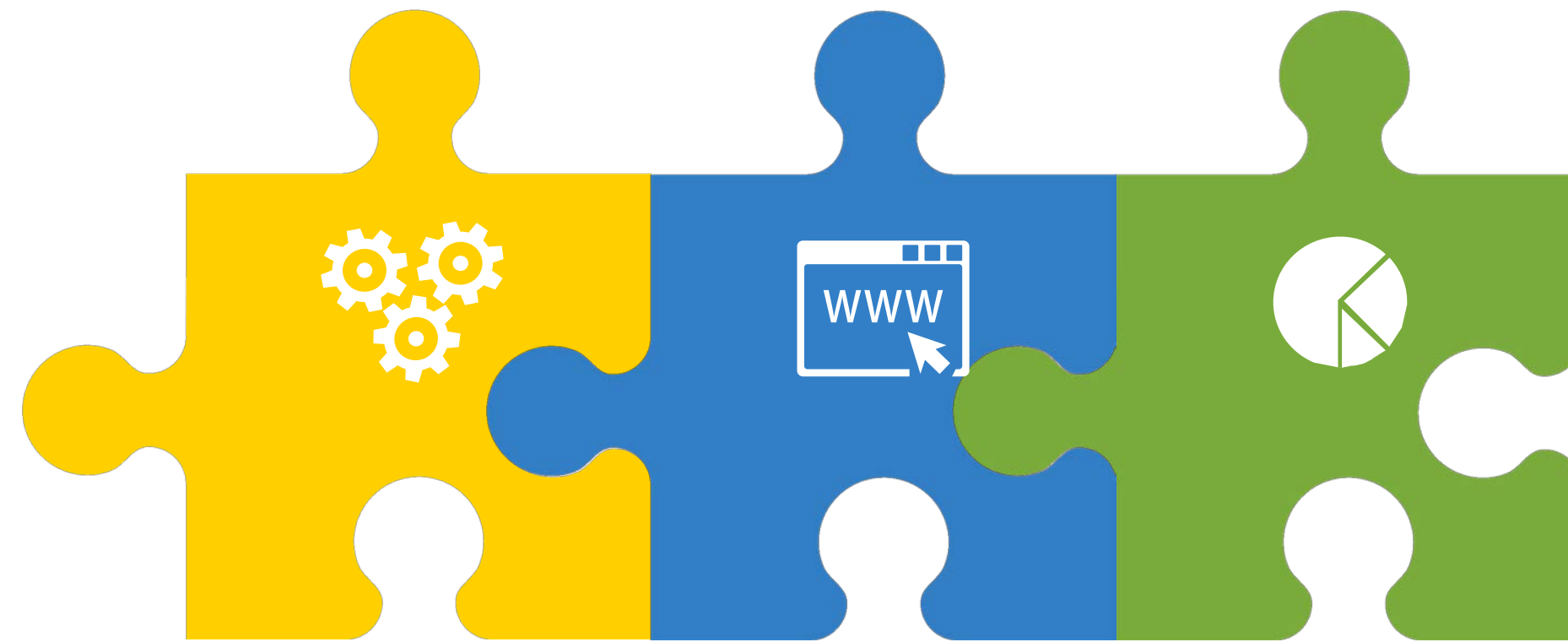
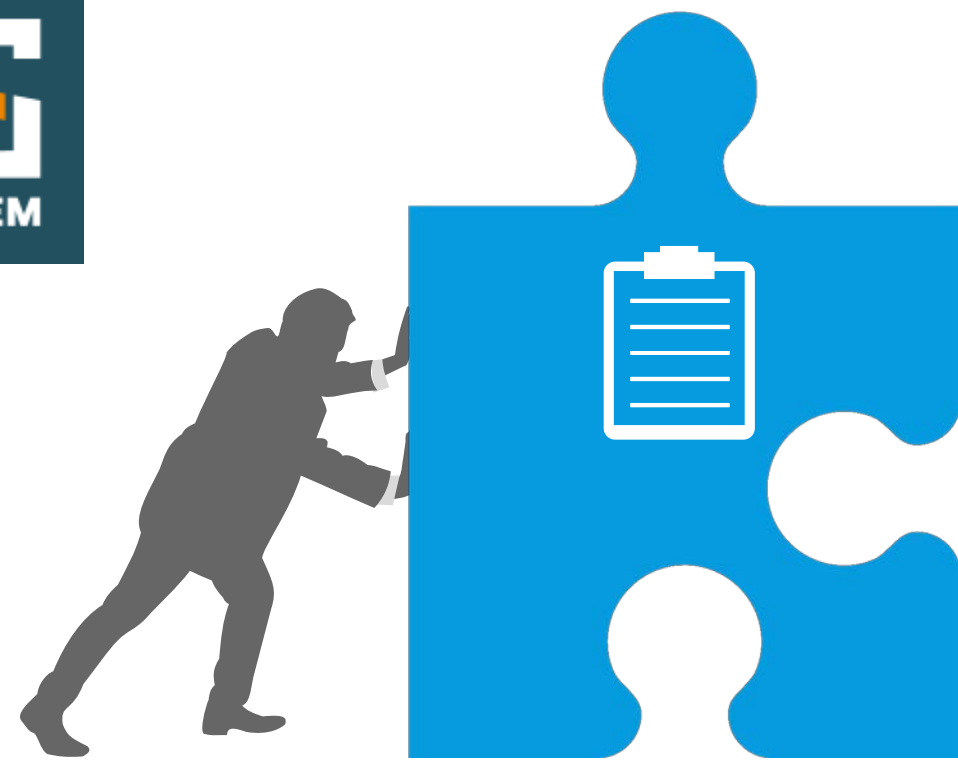
# Future of Data-Driven Construction

- Add **new Analysis reports** (Punch List, Test Pack and others)
- Integrate with **Planning** tools
- Keep **adopting latest Forge features**
- **IoT devices** can also be integrated
- **Technology Agnostic Approach**: future engineering technology choices will not disrupt the platform

# Summary

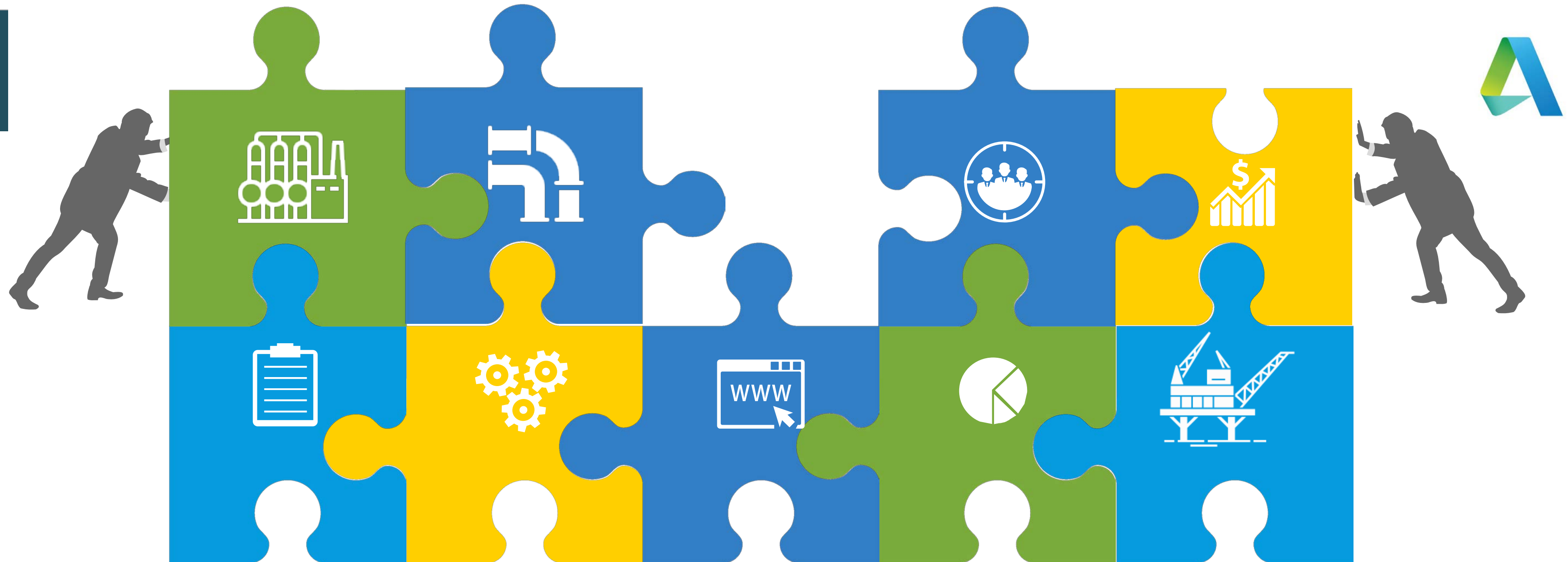


# Recap





# Recap



# Questions & Answers



# Construction future

## Aggregating and analysing data using Forge and BI platforms





# AUTODESK®

## Make anything™

Autodesk and the Autodesk logo are registered trademarks or trademarks of Autodesk, Inc., and/or its subsidiaries and/or affiliates in the USA and/or other countries. All other brand names, product names, or trademarks belong to their respective holders. Autodesk reserves the right to alter product and services offerings, and specifications and pricing at any time without notice, and is not responsible for typographical or graphical errors that may appear in this document.

© 2019 Autodesk. All rights reserved.

