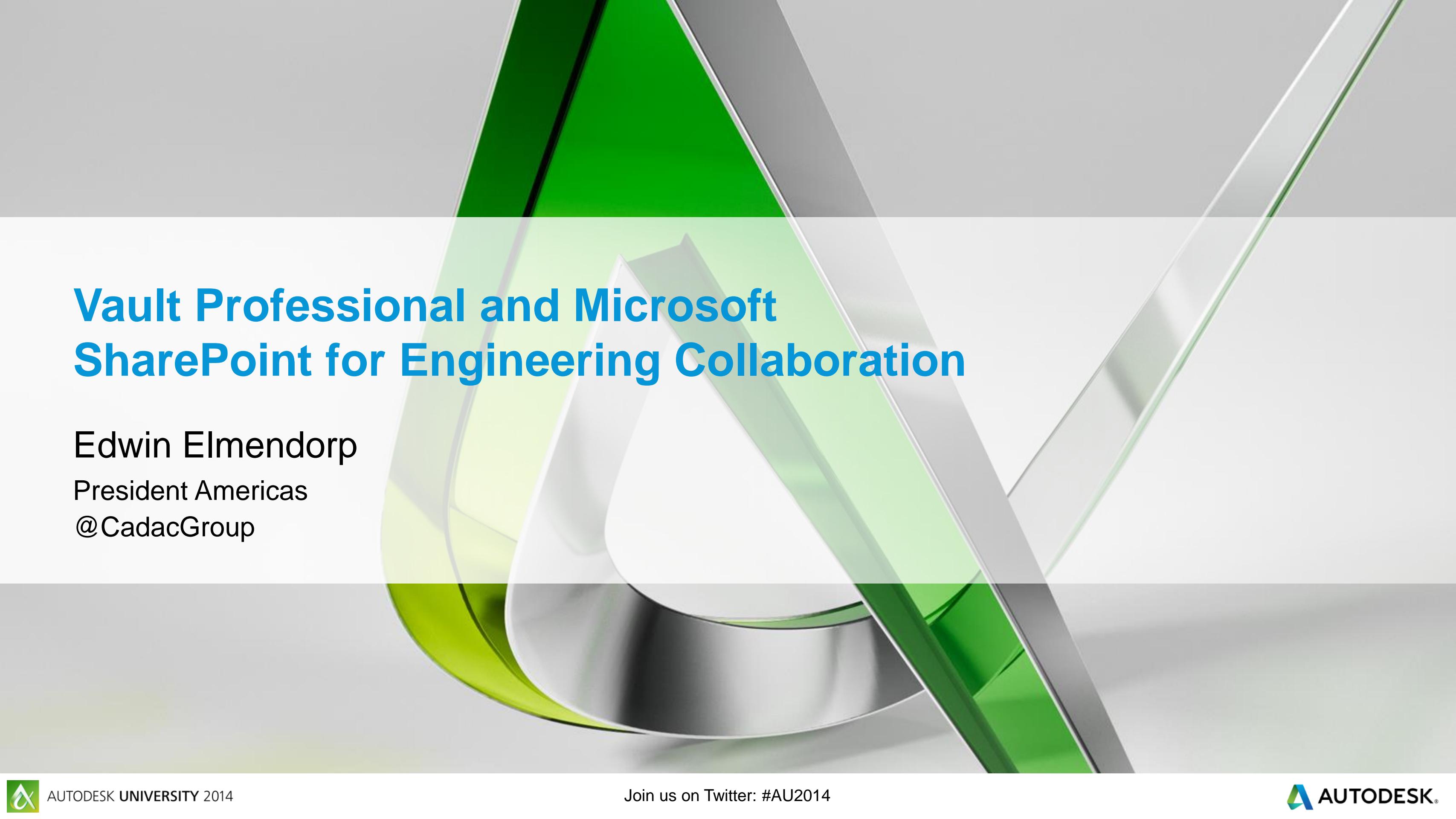


Walk-in Slide: AU 2014 Social Media Feed

1. Click on the link below, this will open your web browser

<http://aucache.autodesk.com/social/visualization.html>

2. Use “Extended Display” to project the website on screen if you plan to work on your computer. Use “Duplicate” to display same image on screen and computer.



Vault Professional and Microsoft SharePoint for Engineering Collaboration

Edwin Elmendorp

President Americas
@CadacGroup

Class summary

For Owner Operators / EPC firms working with EPC projects and struggling to bridge the gap between engineering collaboration with SharePoint and Autodesk (engineering) Data Management?

This class will examine options and capabilities for both platforms and provide guidance on how to best utilize these tools.

Key learning objectives

At the end of this class, you will be able to:

- Discover major development phases for assets
- Understand and effectively explain the major differences between document control and engineering data management
- Recognize the strengths and weaknesses of Microsoft SharePoint and Vault Professional software in large capital projects



Metadata
Database ASP.NET IIS
Site collection
Authentication Audit Trail
Content Type Webpage
Active Directory



CAD Revision
Sheet size XREF
Asset Tags Specification
Markup Plotting IFC
Plant Area
Handover Document
Title Block
Drawings
Tags DWF Markup
Asset AutoCAD
Correspondence
Building
Project
Piping
JSP& ID
Asset Tag
Technical object
Sheet size
Engineering
UAS - built
Document
Autonumber
Design XREF
Distribution matrix
Correspondence

SHAREPOINT MEETS ENGINEERING

A 3D architectural rendering of a city skyline. In the foreground, a bridge spans a wide river. The bridge has a modern design with a curved, multi-level structure. Several cars are visible on the bridge and on the roads leading to it. The riverbank is lined with green lawns and small trees. In the background, a dense cluster of skyscrapers and other buildings forms the city's skyline under a clear blue sky.

Discover Major Development Phases For Assets

What is Asset Management?

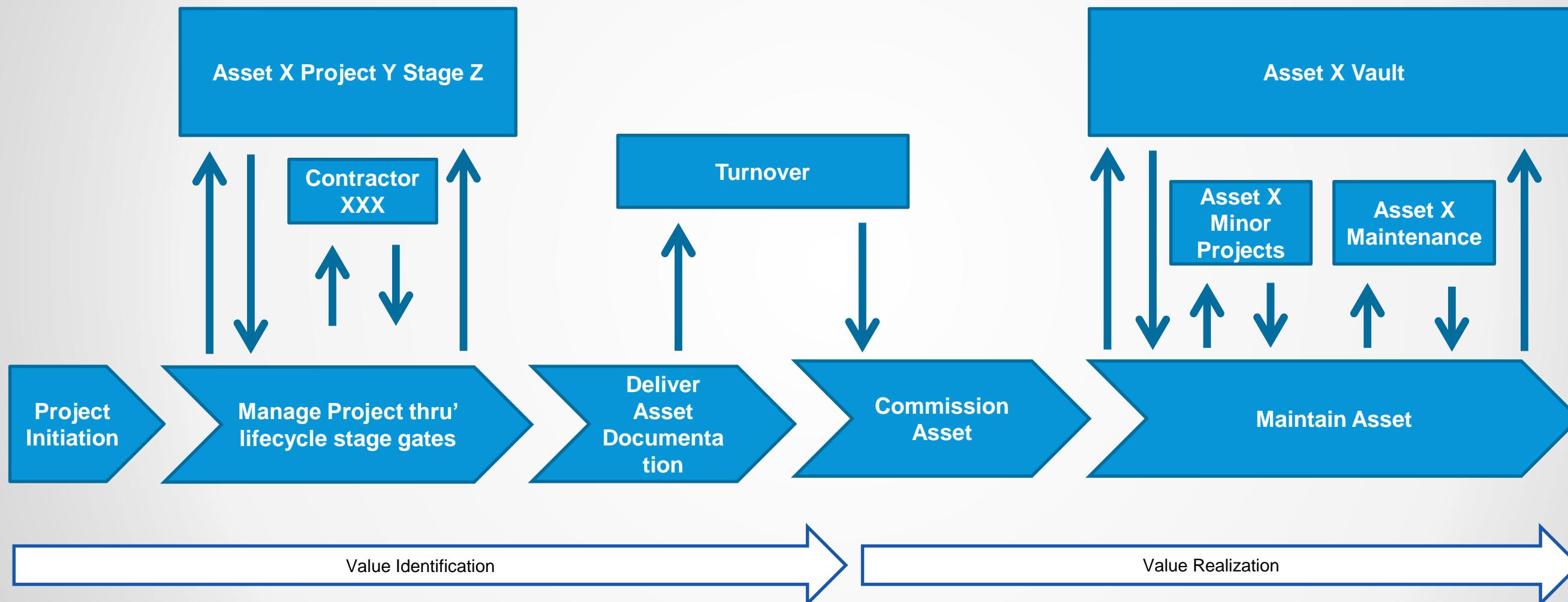
“Asset management is the combination of management, financial, economic, engineering, and other practices applied to physical assets with the objective of providing the required level of service in the most cost-effective manner. It includes the management of the entire lifecycle—including design, construction, commissioning, operating, maintaining, repairing, modifying, replacing and decommissioning/disposal—of physical and infrastructure assets.”

Sources:

[The Institute of Asset Management](http://www.theiam.org) (www.theiam.org)

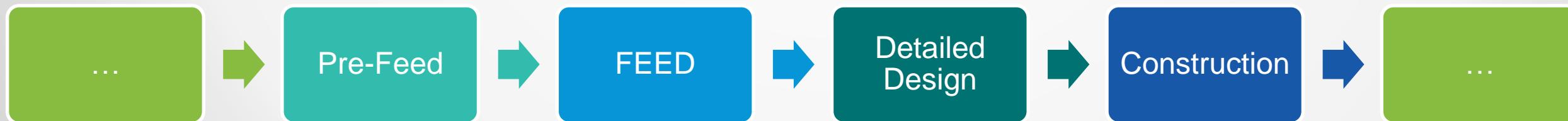
[FIATECH](http://www.fiatech.org): (www.fiatech.org)

An Asset Lifecycle



Stage Gate Process

- Gates are decision points for initiating funding or moving forward with a project. At each gate the following occurs:
 - A set of criteria is used to judge the progress of the project
 - A decision is made as to whether the project should go ahead, be delayed, or stopped
 - Approval of funding is made for the next stage
 - A path forward for the next stage is presented and approved



Requirements For Information Management

1. Owner

- How do I retain the information for the next 50+ years?
- How do I manage the influx of information during commissioning?
- How do I manage an accurate “As-Built” state?
- ..

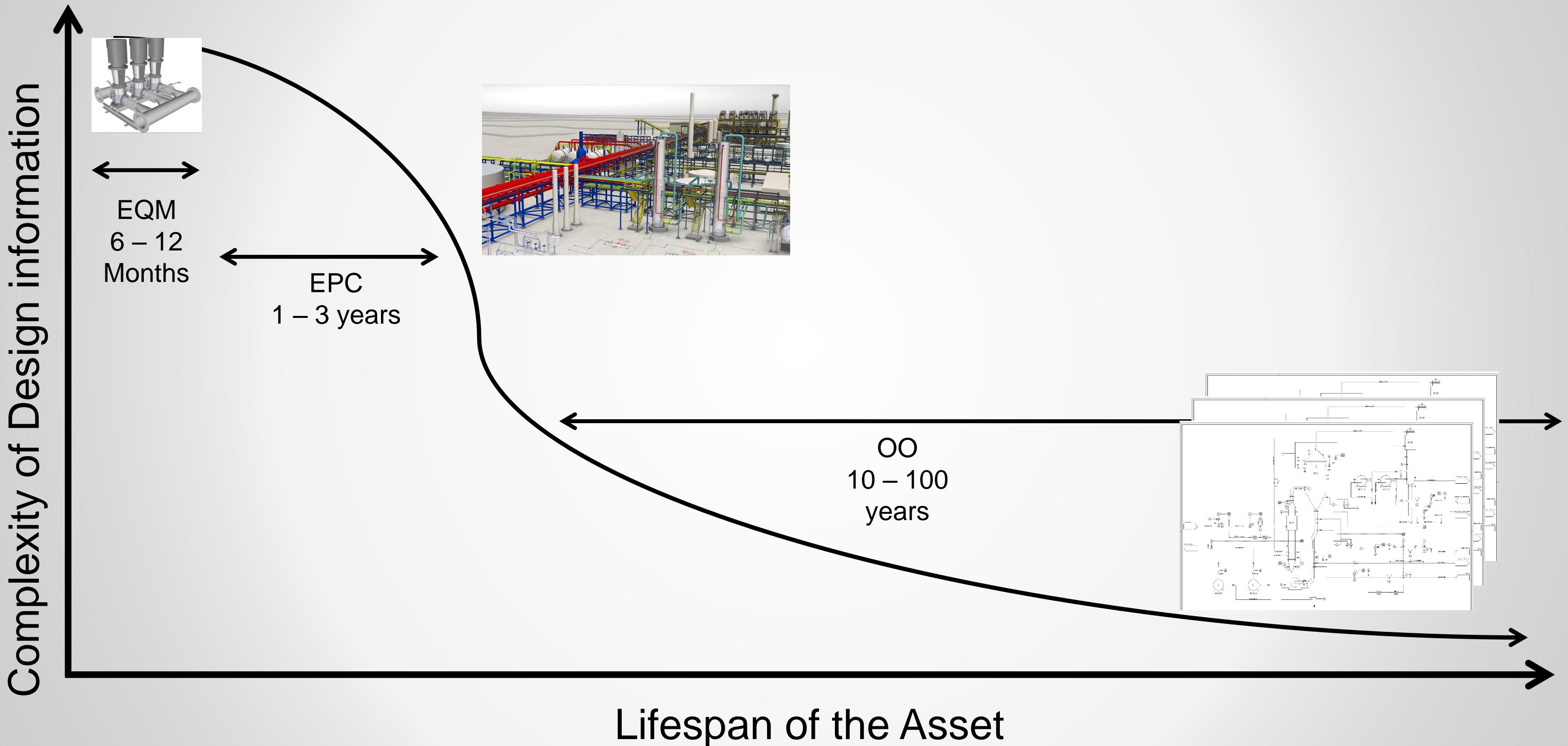
2. EPC

- How do I deliver within budget on time?
- Who has the ball for what type of information?
- How do I control a large amount of vendors?
- ..

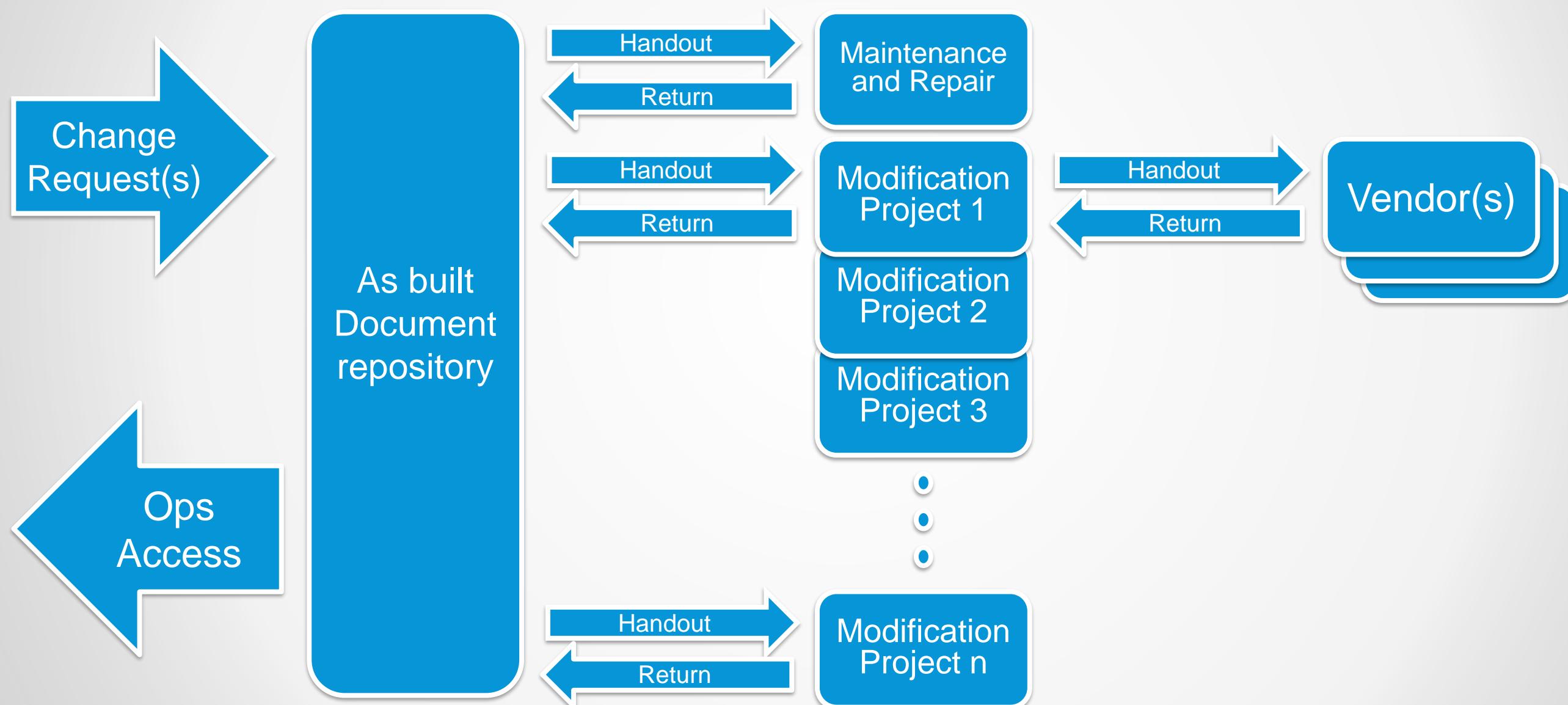
3. (large) Equipment Vendors

- How do I design better, more efficient and cheaper then the competition.
- How do I produce and deliver a similar (burner, generator, pump, etc) with less mistakes and less effort
- ..

Design Information Complexity



Operations and Maintenance



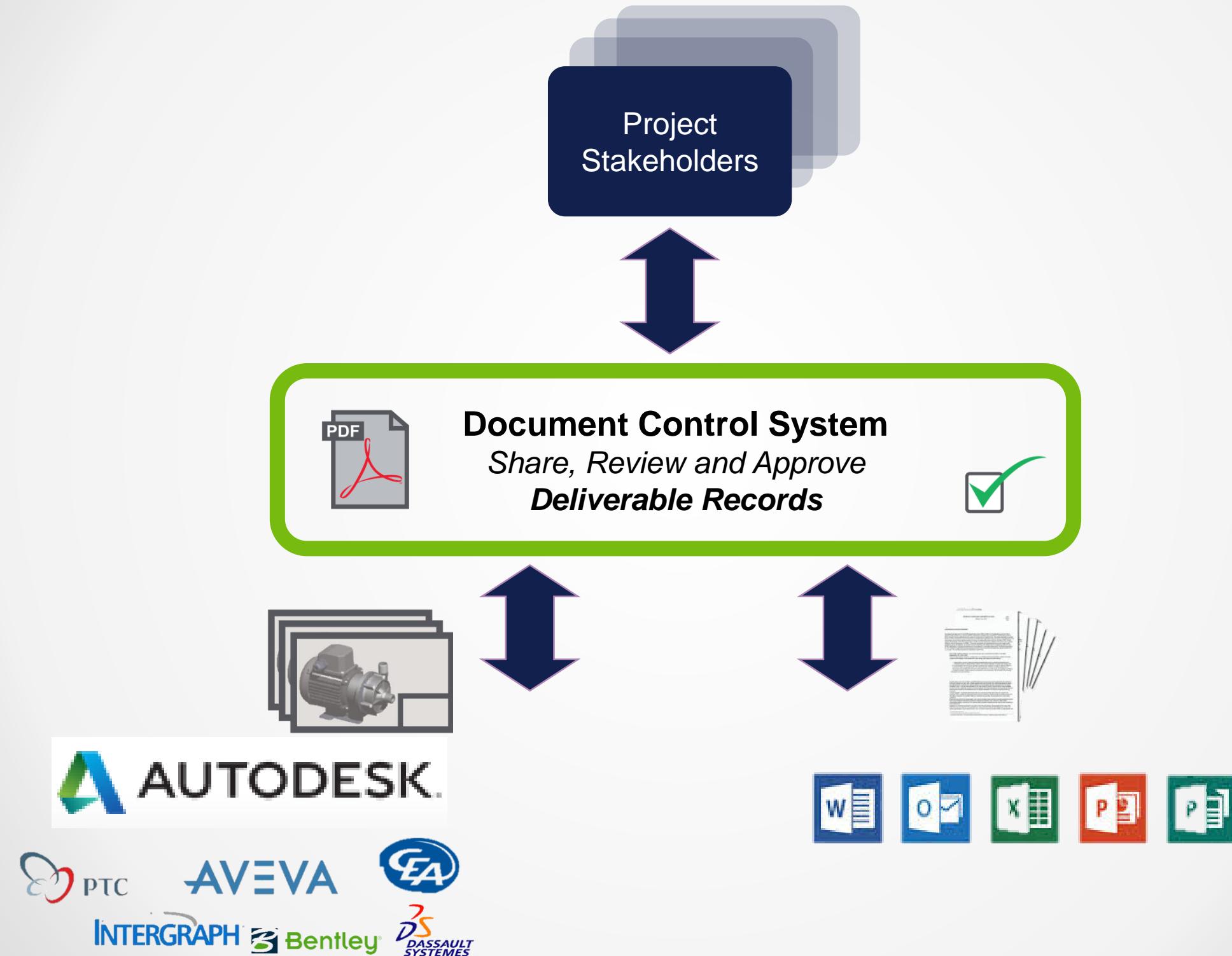
Why is BIM not fully adopted for these projects?

- History..
- Regulatory requirements mandate the use of long term portable open formats (PDF, TIFF)
- Contracts are designed around document driven delivery and not model driven delivery
- Certain types of assets are highly dynamic in configuration (chemical plants)

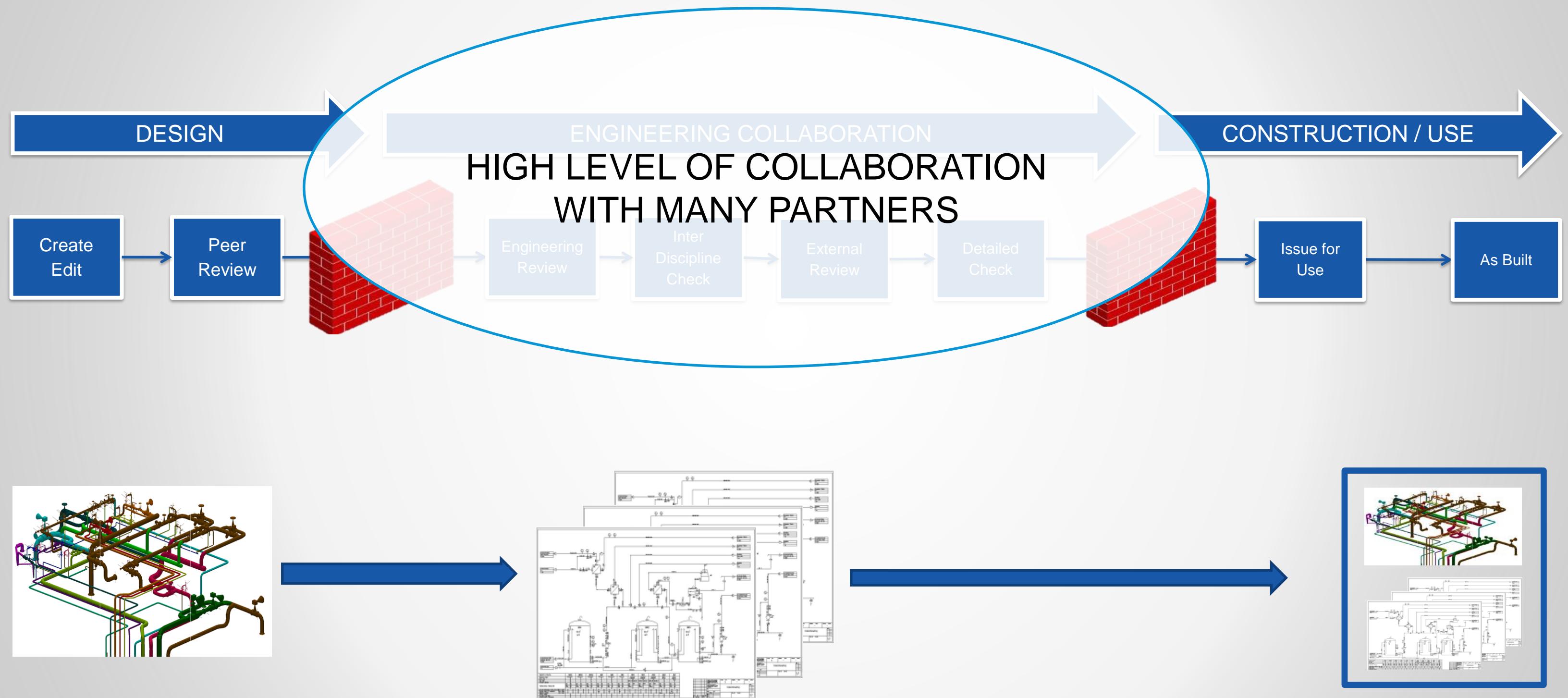
A 3D rendering of a modern city skyline with a bridge over a river in the foreground. The city features various skyscrapers and buildings of different heights. In the foreground, a bridge spans a river, with a road on top and a walkway below. There are some trees and greenery along the riverbank. The sky is clear and blue.

The Difference between Document Control and Engineering Data Management

Information Requirements For a Project



Sample Deliverable Lifecycle



Why Does Document Control Matter?

A DOT Design Build Contract (6 years)

- 25319 document transactions
- 12 months
- 2100 documents / month
- 1 Main contractor, 200+ Sub Contractors



Oil & Gas project in Dubai (3 years)

- 79389 document transactions
- 14 months
- 5600 documents / month
- 80+ Contractors



Mining project in Chile (5 years)

- 35896 document transactions
- 15 months
- 2400 documents / month
- 12 Major Contractors (hundreds of subs)



A Widely Adopted Solution...

The background of the slide is a high-angle photograph of a city. In the foreground, a bridge spans a river, with a highway running across it. The city skyline is visible in the distance, featuring numerous skyscrapers of varying heights and architectural styles. The sky is clear and blue.

Strengths and weaknesses of SharePoint and Vault in EPC

SharePoint By The Numbers

- + 65,000 enterprise customers globally
- 125 million deployed licenses
- ~ 20.000 new users daily for the last 5 years
- 80% of the fortune 500 use SharePoint
- 83% depends on it for document management
- Fastest software product ever to reach \$1 billion revenue
- 700,000 developers

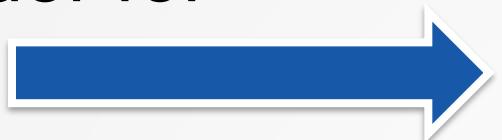
Many companies try to incorporate “Engineering” into the SharePoint ECM world.

Why not integrate SharePoint?

- Horizontal solution designed around **collaboration** of content
- Adaptable to many different business requirements
- Does not work for engineering content (BIM, references, Assemblies, Inventor, Civil, etc)
- The larger issue: Does not understand the concept of relational information

Why not integrate SharePoint?

Autodesk as a provider for design solutions



Some of the other vendors...

- Siemens team center
- Catia Dassault
- Solid works
- Bentley
- Cad worx
- PTC Pro Engineer
- Solid Edge
- Aviva
- ...
- *Dozens of others*

A	B - H	I - Q	R - Z
123D	Beast	Infrastructure Design Suite	RealDWG
123D Catch	BIM 360 Field	Infrastructure Map Server	ReCap
123D Circuits	BIM 360 Field iPad Mobile	InfraWorks	ReCap 360
123D Creature	BIM 360 Glue	InfraWorks 360 Mobile	ReCap Pro
123D Design	BIM 360 Glue iPad Mobile	Instructables	Photo on ReCap 360
123D Make	Bluestreak Mobile	Instructables Mobile	Real View on ReCap 360
123D Sculpt	Bridge Design for InfraWorks 360	Inventor Engineer-to-Order	Remote
3ds Max	Building Design Suite	Inventor Fusion	Rendering in Autodesk 360
3ds Max Design	Buzzsaw	Inventor HSM	Revit
Advance Concrete	Buzzsaw Mobile	Inventor LT	Revit LT
Advance Steel	CAM for Fusion 360	Inventor	Roadway Design for InfraWorks 360
AEC Feed	Character Generator	Inventor Professional	Robot Structural Analysis Professional
Alias Automotive (now Alias AutoStudio)	Charmr	Inventor Publisher	Scaleform
Alias AutoStudio	Configurator 360	Inventor Publisher Mobile Viewer	ScreenCast
Alias Design	Configurator 360 Mobile	Kynapse (now Gameware Navigation)	Seek
Alias Surface	Constructware	Lighting Analysis for Revit	Shapeshifter
AutoCAD	Creative Market	Lustre	Showcase
AutoCAD 360	Design Review	Maya	Simulation CFD
AutoCAD 360 Mobile	DWF Writer	Maya LT	Simulation Composite Analysis
AutoCAD Architecture	DWG TrueConvert (see DWG Viewers)	mental ray Standalone	Simulation Composite Design
AutoCAD Civil 3D	DWG TrueView	Meshmixer	Simulation DFM
AutoCAD Design Suite	Ecotect Analysis	MIMI	Simulation Mechanical
AutoCAD Electrical	Energy Analysis for Autodesk Revit	Mockup 360	Simulation Moldflow
AutoCAD Electrical Mobile	Entertainment Creation Suite	Motion FX	SketchBook Express
AutoCAD for Mac	Fabrication CADmap	MotionBuilder	SketchBook Ink
AutoCAD Inventor LT Suite	Fabrication CAMduct	Mudbox	SketchBook Mobile
AutoCAD LT	Fabrication ESTmep	Navisworks Freedom	SketchBook Pro 2015
AutoCAD LT for Mac	Factory Design Mobile	Navisworks Manage	SketchBook Pro 6
AutoCAD Map 3D	Factory Design Suite	Navisworks Simulate	SketchBook Pro for iPad
AutoCAD Mechanical	FBX	ObjectARX	Smoke
AutoCAD MEP	FBX Review	Optimization for Inventor	Socialcam
AutoCAD OEM	Flame	Pixlr Editor	Softimage
AutoCAD PBID	Flame Assist	Pixlr Express	Spark
AutoCAD Plant 3D	Flare	Pixlr Express for Mobile	Starforce Battlement
AutoCAD Raster Design	Flow Design	Pixlr Touch Up	Structural Analysis for Revit
AutoCAD Revit LT Suite	Fluid FX	Pixlr-o-matic	Structural Bridge Design
AutoCAD Structural Detailing	ForceEffect	Pixlr-o-matic Mobile	Time FX
AutoCAD Utility Design	ForceEffect Flow	Pixlr-o-matic Plus	TinkerBox
AutoCAD WS (now AutoCAD 360)	ForceEffect Motion	Plant Design Suite	TinkerBox HD
Autodesk 360	FormIt	Point Layout	Tinkercad
Autodesk 360 Mobile	Fusion 360	Process Analysis 360	Vault Basic
Autodesk Instant	Gameware Navigation	Product Design Suite	Vault Professional
Autodesk PLM 360	Green Building Studio	Quantity Takeoff	Vault Workgroup
AutoSketch	Homestyler		Vehicle Tracking
	Homestyler Interior Design Mobile		VRED
	HSMWorks		VRED Design
	HumanIK		VRED Presenter

Autodesk Vault

- Best in class integration with Autodesk design tools
- Handles global replication scenarios for design teams
- Manages complex relationships within the design tools
- Offers Workflow and rendering capability to audit and automate
- However:
 - Does not support records management (legal hold, retention, etc)
 - Needs help in a OO environment for concurrent engineering
 - Does not understand the concept of a deliverable record
 - ..

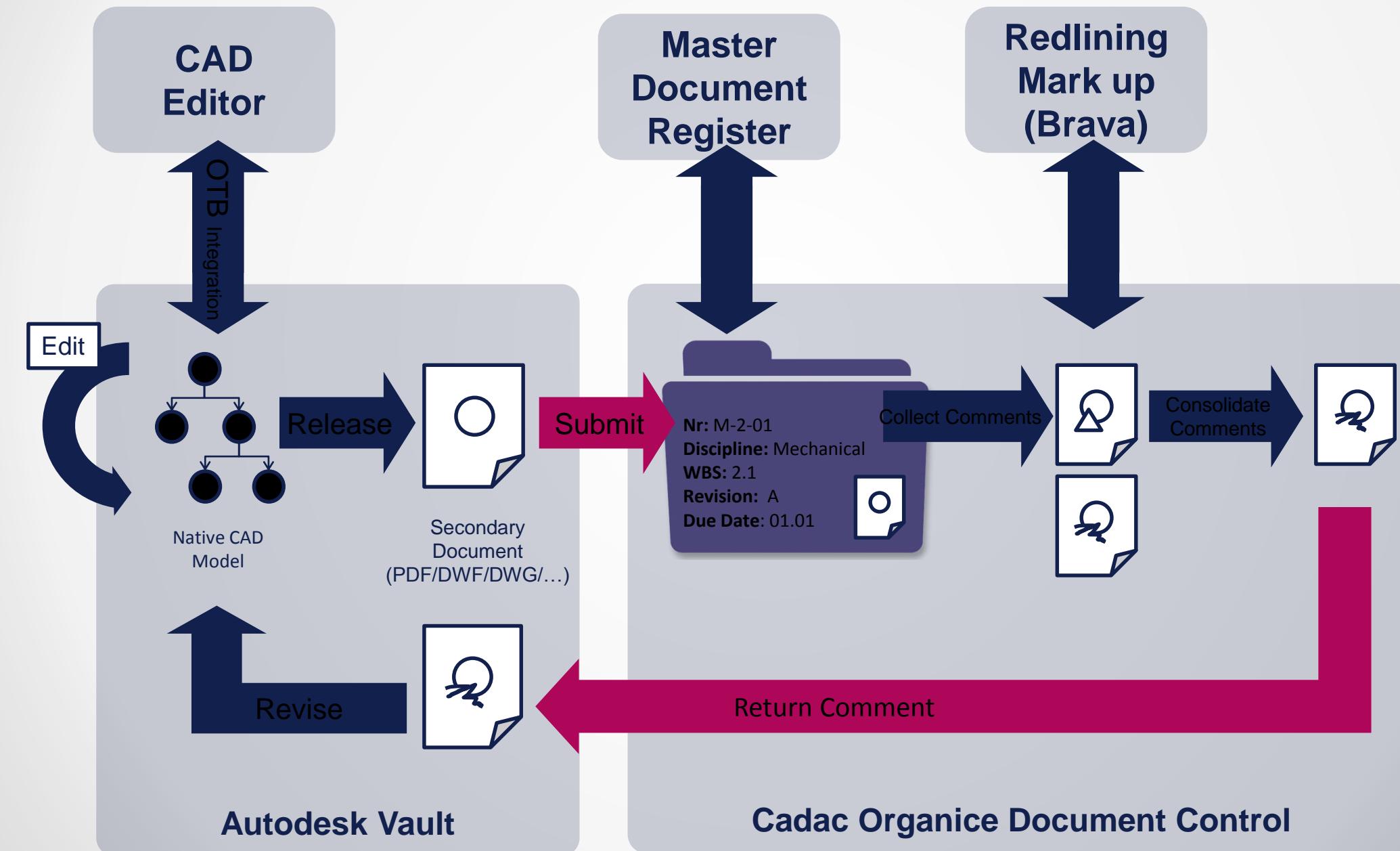
What if...

- We could use the best of both worlds
- The best design experience you can imagine with Autodesk Vault
- But also the best controlled collaboration scenario you can imagine with a known widely supported platform that understands EPC language

Vault and SharePoint integration

Vault Web Client (OTB Vault)	Vault SharePoint Integration (OTB Vault)
<ul style="list-style-type: none">▪ Enables (internal) users to search for documents in Vault▪ No mark up capability▪ No integrated viewer▪ No workflow capability▪ Only available for Vault professional users	<ul style="list-style-type: none">▪ Search for documents in Vault from SharePoint▪ No security trimming▪ No mark up capability▪ No integrated viewer▪ No workflow capability▪ Only available for Vault professional users
Vault Publish to SharePoint (OTB Vault)	Cadac Organice Vault Connector (Cadac Organice)
<ul style="list-style-type: none">▪ Manual publish action▪ Mono-directional integration (from Vault to SharePoint)▪ No integrated mark up capability▪ No integrated workflow capability▪ Very limited set of publishing formats (Autodesk formats to DWF and ZIP)▪ No mapping (library and meta-data) between Vault and SharePoint	<ul style="list-style-type: none">▪ Bi-directional integration between Vault and SharePoint Document Control▪ Fully automated Publishing process▪ Full mapping (library and meta-data) between Vault and SharePoint▪ Extensive set of publishing formats▪ 100% integrated workflow capability▪ Fully integrated security▪ Fully integrated mark up capability

Integrated solution



Quick Demo



Q&A

Session Feedback

- Via the Survey Stations, email or mobile device
- AU 2015 passes given out each day!
- Best to do it right after the session
- Instructors see results in real-time





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