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# Forge - Enabling Manufacturing business from Anywhere, Anytime for Anybody

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## Learning Objectives

- Learn where Forge can help you in your Design, documentation and decision process
- Understand what parts of your Design process can be automated on the cloud
- Learn how sales automation could be enabled by providing interface on any device for anyone
- Learn how crisis situations were avoided by collaborating on the cloud

## Description

The learning from the recent pandemic that struck businesses hard, was to enable business to function uninterrupted remotely. For engineering or manufacturing businesses, design forms the core element, which had to be quickly ported from cubicles to homes without compromising the performance. This required that not only design and drawings, but calculations, analysis, simulation and decision making that happen across the table, have now to be moved to the cloud to enable a collaborative, device or location independent functioning.

Autodesk Forge, not only solved the cloud enablement of collaborative design, but also provided a platform to automate many of the calculation, analysis, configuration and documentation of products and processes.

In this industry talk, I would like to touch upon a few case studies and customer examples, where Forge has enabled an elevator manufacturer, a process integrator and an Engineering conglomerate overcome their remote working maladies over the cloud

## Speaker(s)

Kirubakaran Candasamy  
Chief Technology Officer, KKMSOFT (P) LTD.

He is the technology and innovation head of KKMSOFT, which is a leading gold partner to Autodesk in India. He plays the role of a Technology integrator for Digital transformation for their customers in solving their business challenges through implementation of Emerging technologies.

His team of consulting professionals enables Digital Business transformation solutions integrating IoT, AI, Virtual and Mixed Reality, cloud, Mobility and Automation tools from Autodesk, Microsoft, AWS etc. for Government, Smart Cities, Defence, Large Enterprises, Medical, Manufacturing, Engineering, Education and related Industries.

His expertise includes:

- IoT for Industrial processes, Smart cities, Manufacturing and business processes
- Maintenance, Asset and Facility management solutions for Railways, Smart cities, Buildings and Industries
- Multi-platform / Any device solutions around Autodesk Forge platform APIs
- Implementation of PLM/PDM/QLM/SLM along with Cloud and Mobility enabling of Business Processes
- Industrial and Professional class Virtual Reality, Augmented Reality and Mixed Reality
- ETO Design Automation and Product Configurators and Sales process automation
- BIM and Process Plant Specialties.
- CAD / CAM / CAE software design and development.

## **Introduction**

Digital Transformation and cloud enabled business automation has been the focus of CIOs and CXOs around the world as a means to streamline and accelerate business processes around the world from 2010.

Many organizations were skeptical about cloud and SaaS for various reasons including security, speed and costs. While the advancements in technology helped in reducing this resistance to change, the calamitous deal breaker was the onset of the pandemic.

The pandemic caught almost all businesses off guard and disrupted the way business was done conventionally. The challenges of the pandemic gave us new ideas and insight into how businesses could be transformed for the better and weather future disruptions with the help of Cloud platforms.

One technology vertical that was always a laggard with adoption of cloud was the design / manufacturing based processes due to higher technologically demanding needs of the users and the industry in general.

## **Lessons from the Pandemic that give a greater impetus to cloud**

- The business must go on, wherever people may be:
  - Remote working and Work from home have become the new reality. Office / cubicles / meeting rooms have all been replaced with Remote platforms, Meeting apps and cloud Collaboration tools.
- Different people have different needs, but the resources are limited:
  - Best in class resources accessible in one location – Office; that's not an option over a remote environment. Alternate cloud based solutions that can be shared, yet no compromise on the outcome or quality, on your phone or tablet: How?
- Collaboration, Sharing, Real-time, Secure and Transparent = Key to Remote working:
  - A collaborative environment with an Agile execution and real-time monitoring of progress was not possible without having to wait for reports / meetings with the Cloud
- Single source of truth – Common platform Integrating everyone with everything:
  - Collaboration leads to integration of all data from different sources. This was a challenge for IT managers to integrate, automate and update on a common Role based platform.

## Why Autodesk Forge?

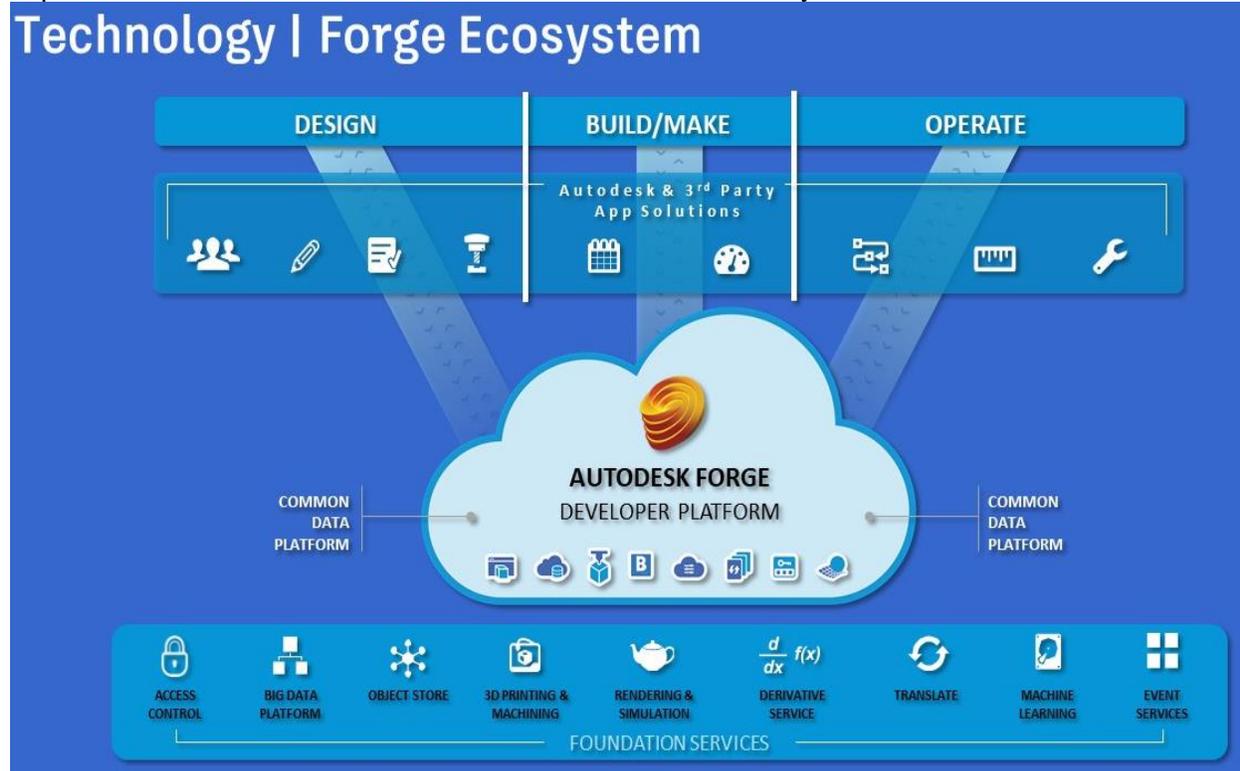
- Forge is an Ecosystem; not a product: Forge is the answer to solving many of the challenges listed above.
- What is Forge: Forge is Autodesk's cloud development platform - a set of web service APIs you can use to build innovative, cloud-powered applications.
- Forge is a platform of web service APIs that allow you to integrate and/or to embed some of the components used in Autodesk products such as Fusion 360, BIM 360, Inventor, AutoCAD, Revit, 3DSMax etc. into your workflows built in your own web or mobile 2D / 3D applications.

## Where is Forge used?

Whether you want to build solutions that automate processes, connect teams and workflows, or visualize your data, the Forge platform can help you do that, and much more. Today, companies are using Forge in all kinds of ways, including:

- Building digital twins
- Visualizing and analyzing data
- Rendering photos to 3D
- Integrating AR and VR
- Creating product catalogs and configurators
- Automating design processes
- Integrating SaaS products

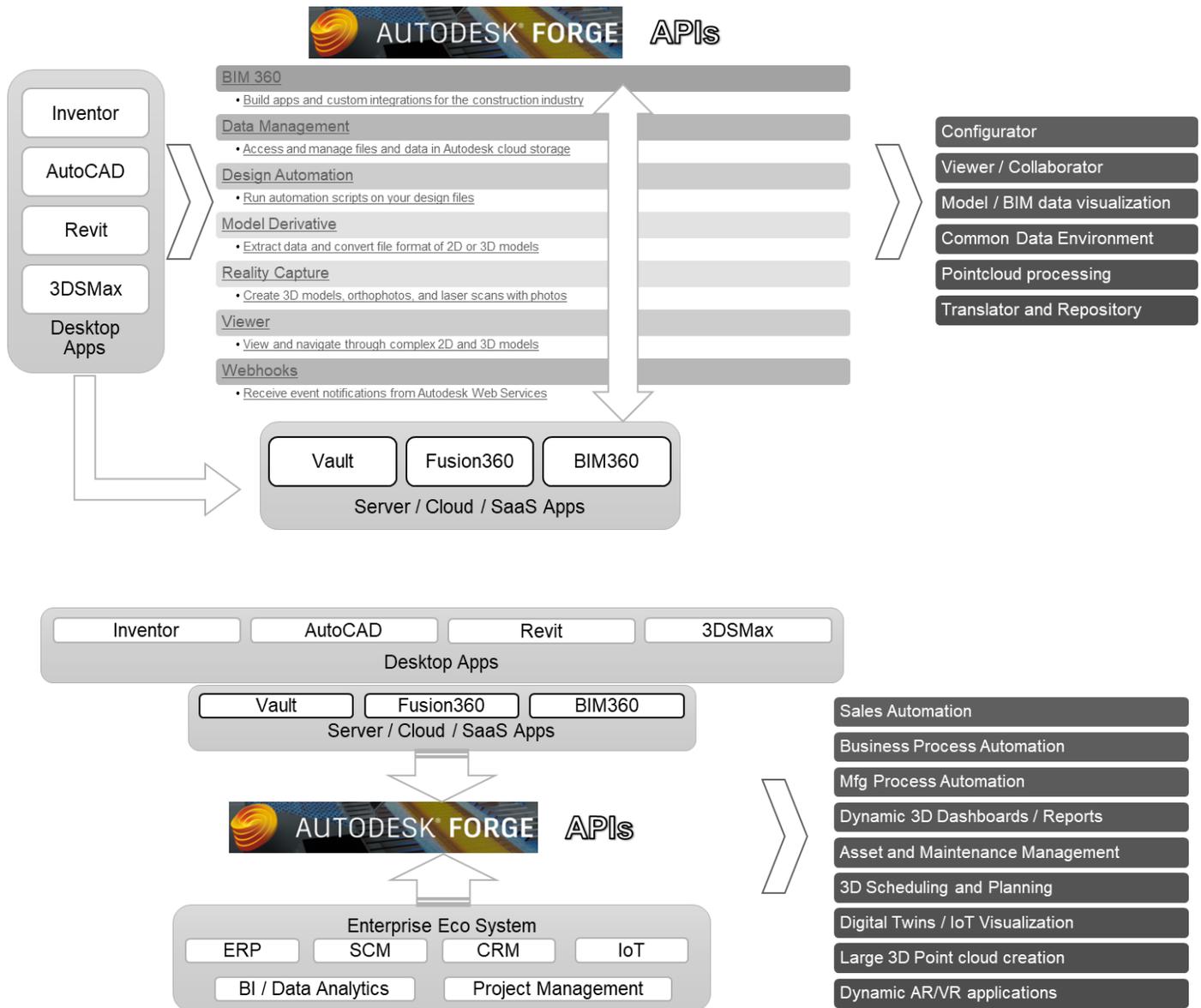
Companies of all sizes rely on Forge to unlock their design and engineering data so they can improve collaboration and build new services to address today's connected customer.



Extended possibilities of using Forge for Enterprise Businesses:

- Integration with Enterprise systems like ERP, CRM, SCM and CDE
- Building digital twins
- Integrating Enterprise Data and Analytics
- Integrating AR and VR
- Rendering photos to 3D

### Architecture of Forge APIs



### Possibilities with Forge for Business Process Integration / Automation

In the Class session, I would be discussing some use cases of the above technologies and how our customers overcame the challenges of a remotely connected business environment.

We would be seeing examples of:

- Shop floor Data Access for an Industrial Seals Manufacturer
- Sales Automation of a global Elevator manufacturer
- Common Data 3D Integration for an Engineering + Construction Giant
- IoT based Asset Management integration - Oil and Gas Equipment Maintenance
- IoT integrated Mixed Reality for Equipment Maintenance and Training

## **Business Benefits**

### **Time:**

Automation APIs of Forge for Autodesk Inventor, Revit, AutoCAD and 3DS Max can greatly accelerate the Design automation / Sales automation needs

### **Cost:**

Reduces dependence of desktop applications and automation tools, while you pay only for the usage of the cloud resources.

### **Quality:**

Real-time collaborative common data environment of Forge ensures that you get only the latest and correct versions of the single source of truth

### **Security:**

The same security features of BIM360 / Fusion 360 or any other Autodesk cloud app, backed by multifactor authentication ensures your data is in safe hands

## **How can you Leverage Forge for your business**

Resources / technologies

- Development knowledge in Node.js
- Knowledge of Web services / REST API / Postman etc.
- Additional knowledge in any other web development tools for rich content creation
- Most applications can be hosted on Autodesk Forge platform
- Addition Web hosting space from AWS / Azure or similar Node.js + DB + Web service

What to buy / get

- Just sign up and get 100 free cloud credits as trial
- Subscribe at a very attractive price for developing apps
- Add cloud credits and pay as you go for annual validity

Also get assistance from Autodesk partners like KKMSOFT

- Service provider with solution expertise on Forge;
- Contact [Solutions@kkmssoft.com](mailto:Solutions@kkmssoft.com) or via [www.kkmssoft.com](http://www.kkmssoft.com)