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Elevating Sales with Forge and Inventor iLogic

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Learning Objectives

1. Utilizing Forge platform as a sales accelerator on the web
2. Leveraging the powerful combination of Inventor iLogic with Forge Design Automation Platform.
3. Cross integration with on-premises business systems with Forge for sales automation
4. Extended capabilities of Forge beyond sales and into other Business / Enterprise systems.

Description

Here I would showcases an industry application case study from an Elevator manufacturer, who uses the power of Forge platform to automate their pre-Sales process along with iLogic driven Inventor model. Learn how, the already powerful iLogic driven 3D models in Inventor works as the business logic driver and leverages the multidevice capability of Forge platform. The class will explore how the Sales team can be empowered with an online configurator that they can use at customer site to design and arrive at pre-requisite drawings and estimates within few minutes. The core objective of this Forge platform integration not only reduces time to proposal, but also gives the customer a choice to visualize and modify their requirement onsite without having to wait for responses from design team. The presenter will explain how they could save close to 20% of their Sales proposal drawing generation cycle time which used to take over a day to respond with changes from their engineering team.

Speaker

I am an Automation Technology specialist and solution integration expert in providing solutions combining IoT, AI, Mixed Reality, Cloud and Mobility solutions along with Industry leading PLM/CAD/CAM/CAE tools to solve real-world problems in Enterprises, Government and Educational sector. Focused on business transformation consulting to Government, Defense, Railways, Manufacturing, Engineering, Construction, Education, and IT sector with above mentioned technology / products / partnership. Representing the technology face of the organization to its clients and leading the technology initiatives cutting across domains and departments in the company.

My job is to Simplify problems, identify and apply the right technologies and provide solutions that far exceed our customer's expectations.

Some areas of expertise include:

- IoT for Industrial processes, Smart cities, Manufacturing, and business processes
- Maintenance, Asset and Facility management solutions for Railways, Smart cities, Buildings, and Industries
- Implementation of PLM/PDM/QLM/SLM
- Cloud and Mobility enabling of Business Processes
- Industrial and Professional class Virtual Reality, Augmented Reality and Mixed Reality
- ETO Design Automation and Product Configurators.
- Sales process automation
- Enterprise Facilities Management and UIFM
- Mobile and cloud based Agile Asset Management
- BIM and Process Plant Specialties.
- Cloud and mobile solutions for Sales, distribution and Healthcare systems.
- CAD / CAM / CAE software design and development.

What was the customers' needs that made them consider automation?

- Responding to the customer the same day
  - The sales team was struggling to respond to overwhelming RFPs from clients that require drawings / estimates that need to be submitted along with their proposals
- Reducing the burden on the Design team
  - The R&D/Design team having to cope with their daily design, production, and engineering drawing requirements along with proposal drawing requests from sales.
- Providing a tool to the sales team to engage with their customer
  - They wanted a system that can be directly operated by the sales team, without a need to access the design team or design software, yet produce proposal drawings with shortest turnaround possible
- Anywhere, Anytime, Any System
  - The solution should be usable from anywhere on any device, ideally from a browser
- Automatically generate 3D rendered images / videos
  - As an extension, the automation should also produce the 3D models of the product, and give options to choose interiors and finishes, after which a rendered 3D image / video can be presented to the customer for approval
- Generate an accurate BOM that can be used for estimation
  - Once the key components of the Elevator are finalized with the customer, an accurate Engineering BOM can be generated, that can be linked to the Item codes and cost from the ERP to arrive at a precise pricing
- Generate Fabrication and Production drawings on finalizing Order
  - After finetuning the specifications to suit the customer's needs, all the production / fabrication drawings can be automatically generated and issued to the shopfloor via PLM/PDM
- Ultimately, provide a comprehensive user experience to the end customer

- For the more mature customer or dealer or a regular contractor, the advanced UI for arriving at the proposal, BOM and renderings can be hosted on the cloud to accelerate business closures and forecasting production.

Criteria for Automation with Forge / iLogic

- Configurable
- Multiple options, fewer outcomes
- Associated Parameters
- Standardised Output
- Sequential Manufacturing Process
- Similarity across regions

Merits and demerits of Inventor API development Vs iLogic on Forge

Using Inventor APIs on .net to develop applications / add-ins

- The Configurator works on Inventor. This requires the user to have Inventor on his PC/Laptop
- The design logic, business logic and models are all available with the user. This raises security concerns
- End customer cannot participate in the process
- Change management, updates and version control are a concern
- Enterprise integration is difficult

Using iLogic and porting it to Forge for a web based Automation

- The configurator is web-based running on the local server. Business logic and design calculations are hidden and are localized
- Parameters are passed to Forge for model update and download of files
- Customer can be part of the configuration process via browser on any device
- Revisions, versions, and updates are centralized
- Enterprise system integration can happen from the server

The Solution

- Based on the need to generate accurate drawings taking user selection and logical calculations, Autodesk Inventor with iLogic automation was the chosen base solution
- To overcome the need to design online anywhere, Autodesk Forge Design Automation was selected as the choice for their Sales Design automation solution
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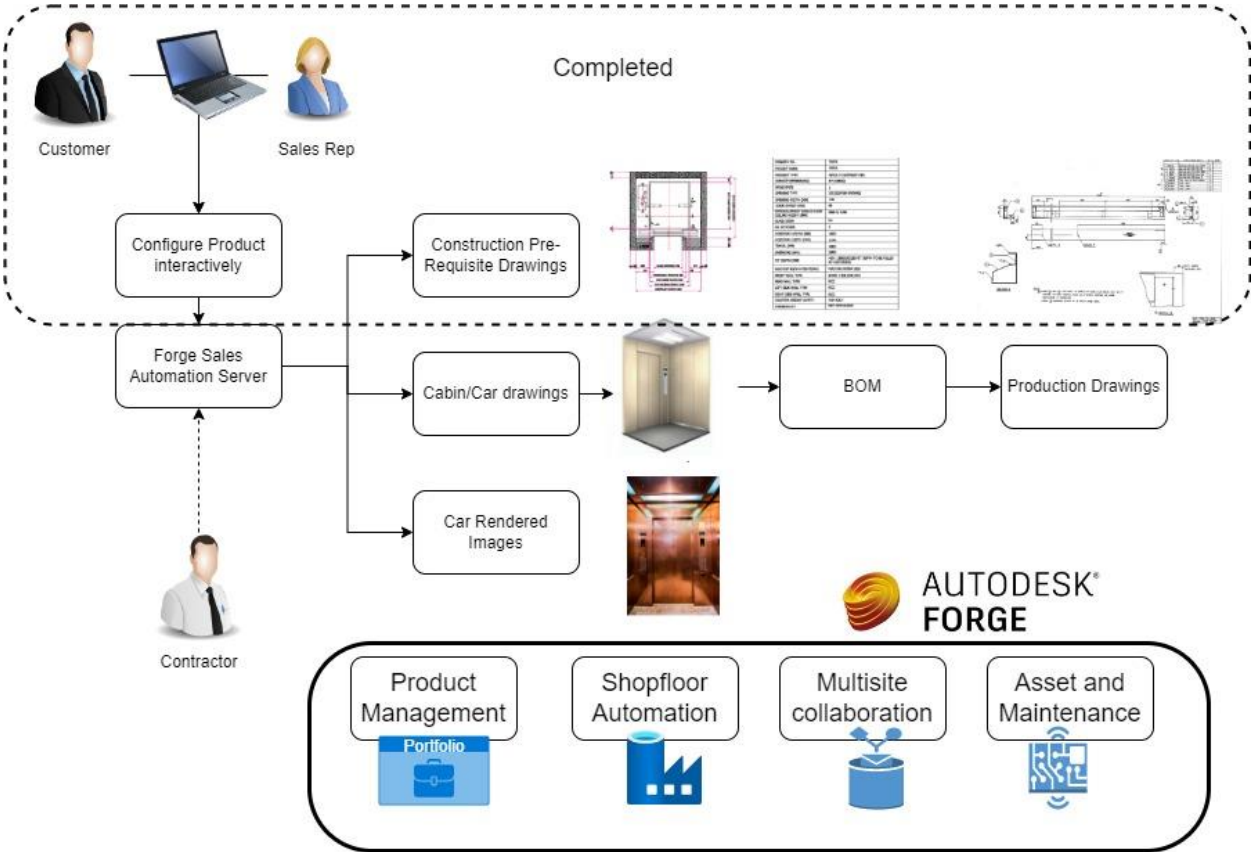
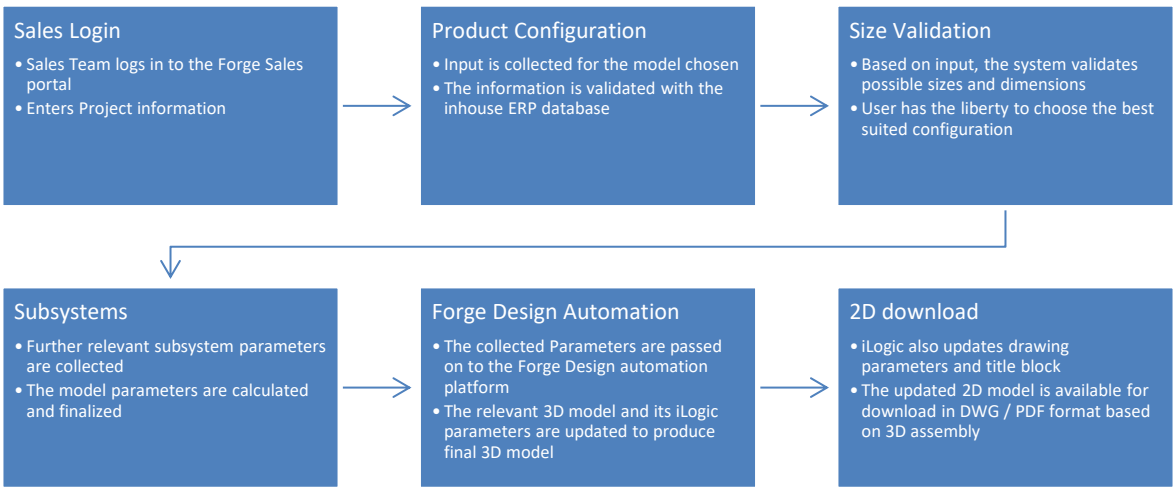
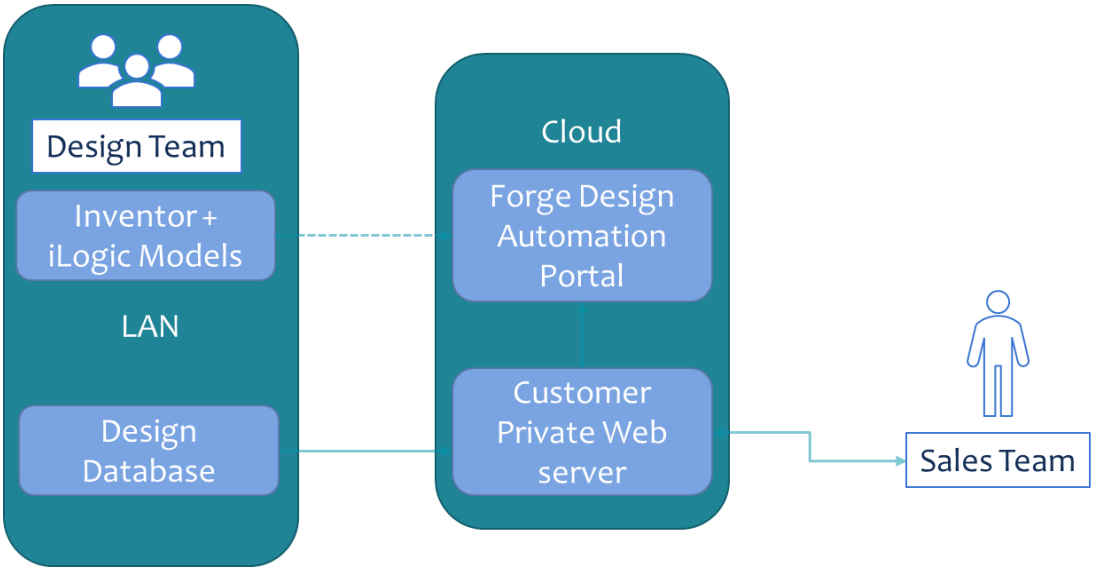


Process Flow



System setup



Benefits to the customer

- The iLogic based design enables the Design team to quickly edit and update design calculations and changes that require minimal turnaround time. The updated designs are used as template for downstream Sales automation module without dependence on Software developers or service provider
- This Autodesk Forge based solution reduces the drawing response time by 95%, while increasing customer RFP responses by 5X times.

Useful links

About Forge:
https://forge.autodesk.com

Forge API used in this project:
https://forge.autodesk.com/design-automation-cover-page

Forge Design Automation API help:
https://forge.autodesk.com/en/docs/design-automation/v3/developers_guide/#design-automation-api-for-inventor

Article on Inventor iLogic:
https://www.autodesk.com/autodesk-university/article/iLogic-Best-Practices-and-Fundamentals-for-Success

Moving from iLogic to Forge Design Automation:
https://forge.autodesk.com/blog/prepare-ilogic-rules-design-automation

a sample of iLogic driven Forge design automation:
https://forge-showroom.autodesk.io/post/configurator-inventor