

Building a Business with Forge



Ron Locklin

Director, Forge BSM

Stephen Preston

Senior Business Manager, Forge BSM



Class Abstract

Building a Business with Forge

Thinking of building a business on Forge—as a Systems Integrator, or a Consultant, or by creating a SaaS application for your customers? Then this is the class for you!

We'll walk you through the nuances of the Forge pricing model; then we'll discuss the most common business models that build on top of Forge; and we'll finish by presenting examples of the Forge-related businesses that have been created by our customers, resellers, and software development partners—to help kickstart your imagination for building on the Forge platform.



Agenda

- Who uses Forge and Why?
- The Forge Business Model Explained
- Business Opportunities and Examples
- Q&A



What is Forge?



SAAS DEV

Internal baseline for all
SaaS development
AND external SaaS
platform



API'S

Leverage powerful
API's to access data



DATA

Centered on
Forge Data



DEVELOPERS

Target audience

Who uses Forge?

INTERNAL
AUTODESK
DEVELOPERS

Identity

Forge data

Security

“NAMED”
ACCOUNTS

SKANSKA



Norconsult 
Informasjonssystemer

ISV'S



SYSTEMS
INTEGRATORS



Who interacts with Forge?



**“ECONOMIC
BUYER”**

VP of IT, CIO, CEO
of a small ISV



**DEVELOPER OF A
FORGE APP**

Web apps
developers



**USER OF THE
FORGE APP**

eg Marketing team using
dashboard app

Forge Certified Systems Integrators

We certify systems integrators so customers have access to trusted support resources that can help them build solutions with Forge.

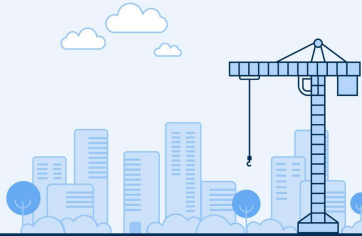


**The
Economist**

The world's most valuable resource
is no longer oil, but data

smartsheet

A Digital Transformation Report:
**5 Emerging Trends in the
Construction Industry**



Forbes
INSIGHTS

**DIGITAL
TRANSFORMATION**

USING DATA-DRIVEN INSIGHTS FOR
EXCEPTIONAL CUSTOMER ENGAGEMENT



Gartner

**Every Organization
Needs a Digital
Platform Strategy**

Forbes
INSIGHTS

**CIO's Guide to
Digital Transformation:**

WHY DATA HOLDS THE KEY TO SUCCESS



WORLD
ECONOMIC
FORUM

**Platforms and Ecosystems:
Enabling the Digital Economy**



“Digital Transformation”

HBR

Digital transformation is about **reconstruction the firm** around digital operating principle, integrating traditional assets to address new challenges and pursue new opportunities.

MIT SLOAN

The use of technology to **radically improve performance** or reach of enterprises

Forge Enables the Digital Transformation for your Design & Make



Your Digital Transformation



OFFICE



ERP



COLLABORATION

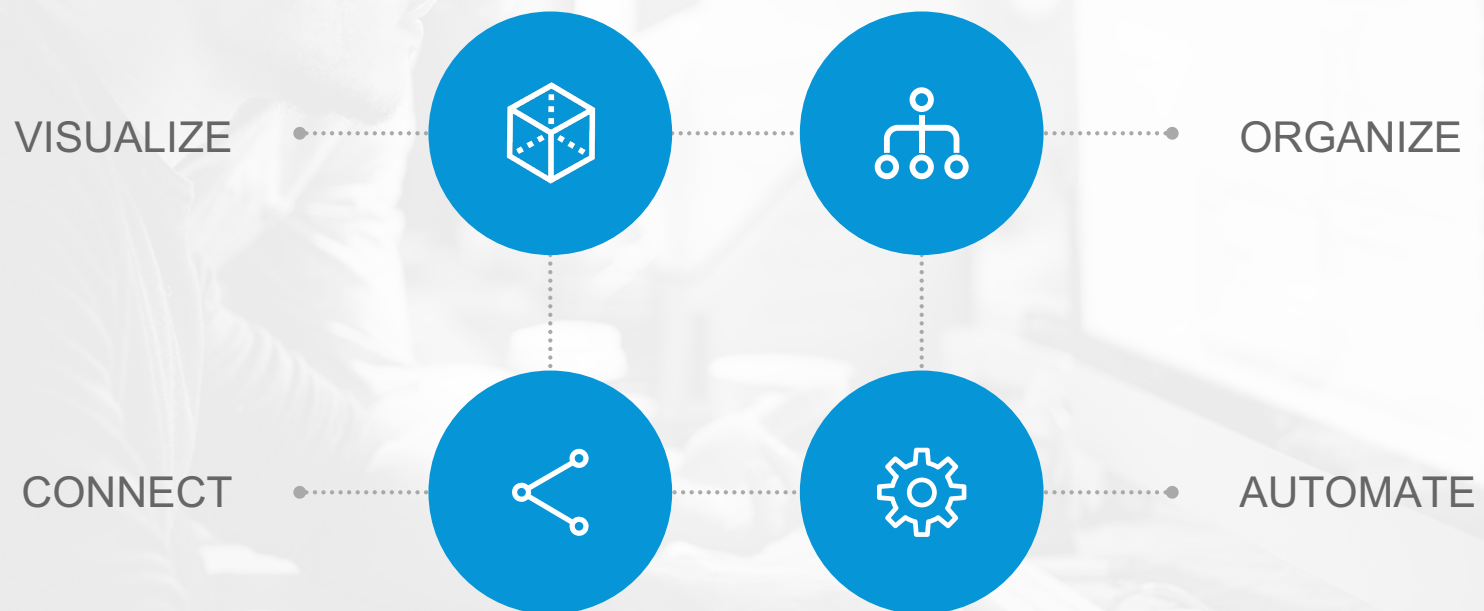


CRM



DESIGN
AND MAKE

How Can Forge Enable Your Digital Transformation?



What Customers and Partners Build with Forge

DATA VISUALIZATION
& ANALYSIS



DIGITAL
TWIN



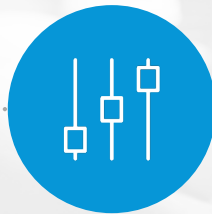
AUGMENTED &
VIRTUAL REALITY



SaaS
INTEGRATION



CATALOGS



CONFIGURATORS



DESIGN AUTOMATION



PHOTO TO 3D

The Forge Business Model Explained



Web Applications Cost Money to Run



Development And Maintenance



Compute Time



Storage Costs



Data Transport



Web API Vendor Costs



FORGE



HEROKU



Microsoft Azure

ORACLE®



PingIdentity®

PubNub

How to access Forge?

EBA CUSTOMERS

Ask your CSM to add a Forge entitlement to your EBA contract

Consumption is in Tokens
(1 Token = 1 Cloud Credit)

OTHER CUSTOMERS

Buy a Forge subscription via
forge.autodesk.com/pricing

100 USD per year –
Includes 100 Cloud Credits

Buy additional Cloud Credits
as needed

BIM 360 DOCS/FUSION 360/ FUSION TEAM CUSTOMERS

A subset of Forge APIs is
available for free

Enable access on
forge.autodesk.com/pricing

Forge API Availability

oAuth (Authentication) API
Data Management API
Webhooks API
All BIM 360 APIs‡
Model Derivative API
Design Automation API
Viewer API
Reality Capture API

Requires a Forge Account



Free with BIM 360* /
Fusion 360 / FusionTeam

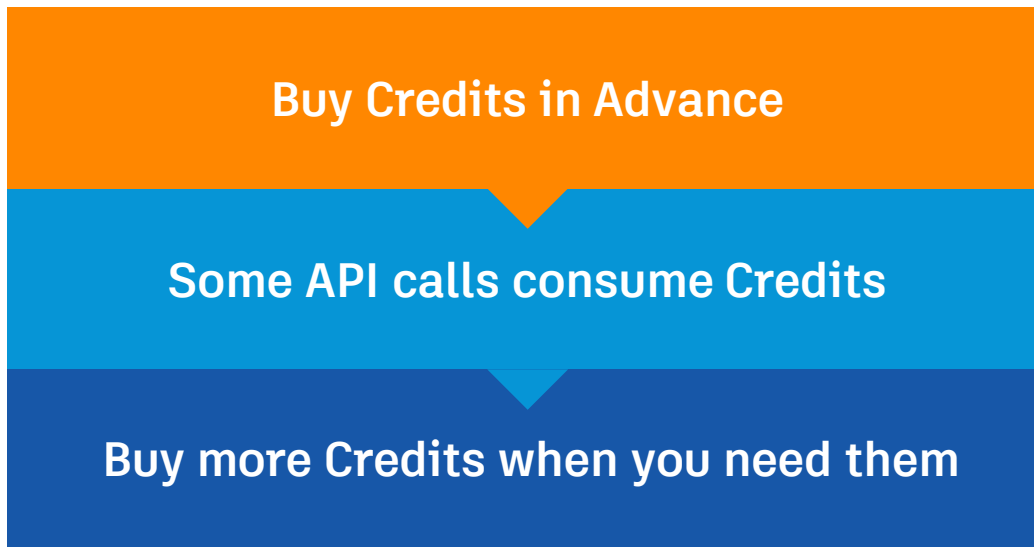


* Requires a BIM 360 Docs subscription of 100 seats or more or by request to bim360appsactivations@autodesk.com.

† Access to to Project Service and Data Service APIs only. Does not include Object Storage Service. See [here](#) for definitions.

‡ Only applicable to BIM 360 Docs subscriptions. All APIs documented under [BIM 360 API](#) at forge.autodesk.com.

Forge pricing is based on consumption



Other
consumption
models



Amazon Web Services
Microsoft Azure
Twilio



Generative Design
Rendering
ReCap Pro

Pro: Customer pays for exactly what they use – and no more.

Con: It takes time for a customer to be able to predict costs.

What Consumes Cloud Credits?



TRANSLATING A MODEL

Model Derivative API*

- 1.5 CCs for Revit and Navisworks
- 0.2 CCs for everything else
- (Not required to view models uploaded to BIM 360 Docs)



BATCH EDITING A DESIGN

Design Automation API

- 4 CCs per hour of processing time for AutoCAD
- 6 CCs per hour of processing time for everything else
- (Example – Typical time to create 2D drawings from an Inventor model is 1-2 minutes= 0.1-0.2 CCs)



CONVERTING PHOTOS INTO A 3D MESH

Reality Capture API

- 3.5 CCs per gigapixel processed

*Translation cost is 'per model', not 'per file'.



How do I estimate my costs

API

ESTIMATION MEASURE



Model Derivative

- How many models do I plan to translate?
- What format are they?



Design Automation

- How long does my addin run on the desktop?



Reality Capture

- How many photos am I processing?
- What is the photo size/resolution?



BIM 360

- Its free

Forge Cost Example – Model Viewing

An architect creates a Forge Viewer based application that allows stakeholders to view the BIM model under development. What is the cost for one year?

- One Revit model per customer
- Stakeholder portal model is updated once a week



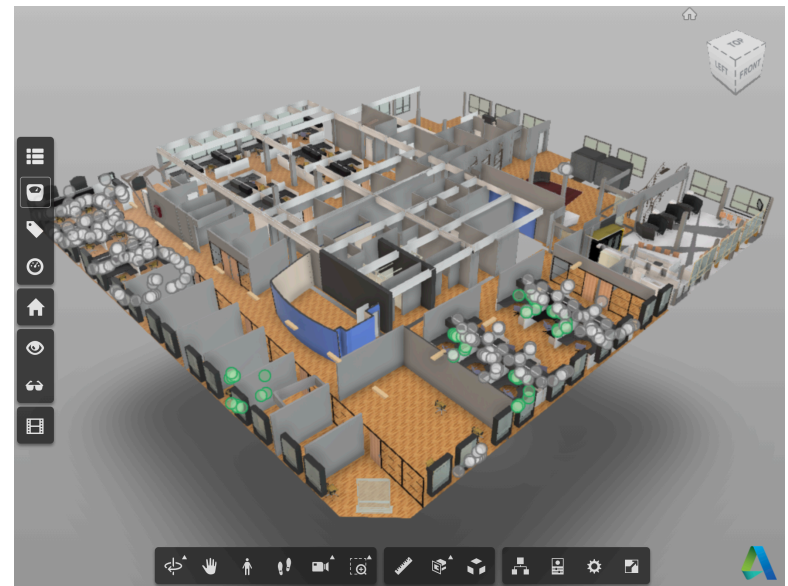
SCENARIO 1

Models stored in BIM 360 Docs

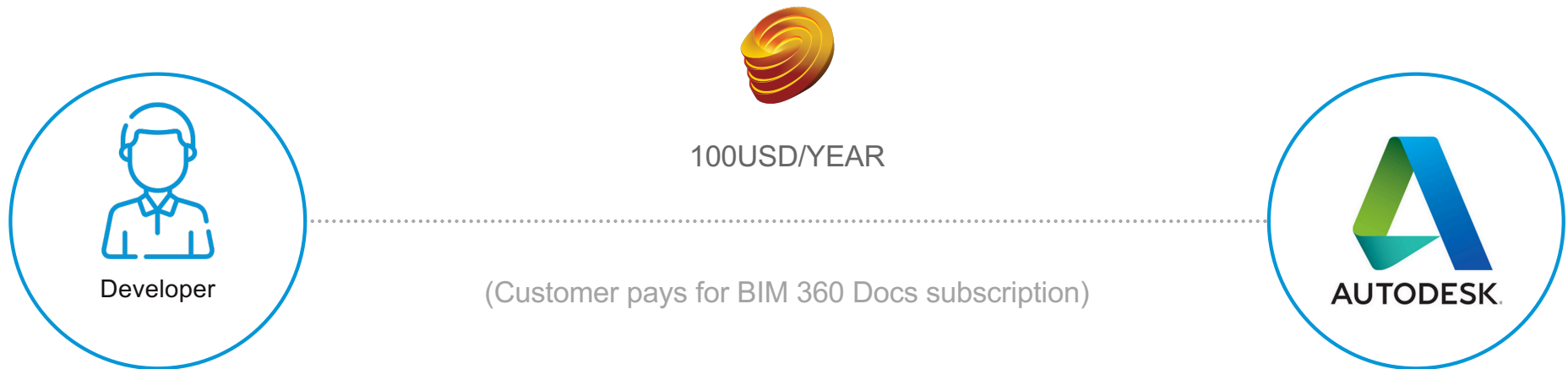


SCENARIO 2

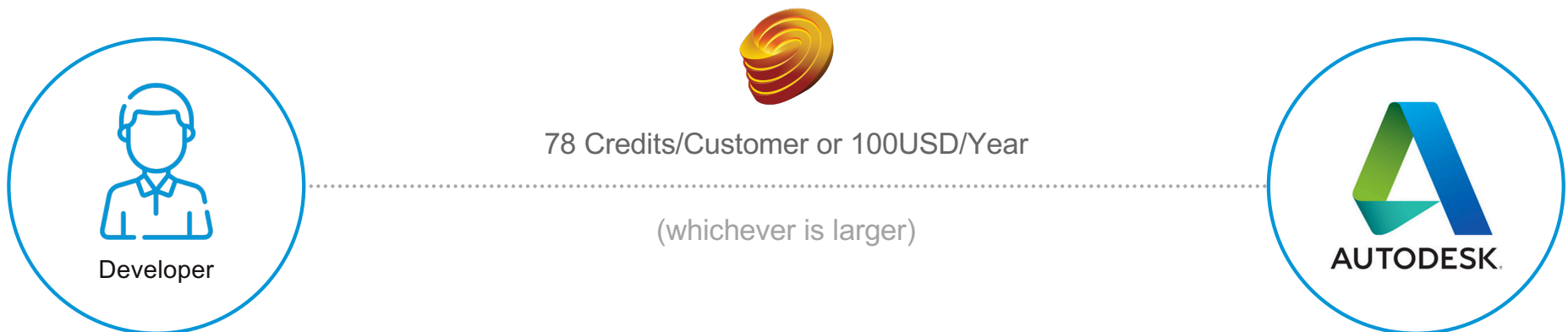
No BIM 360 Docs integration.



Cost Summary – Model Viewing (with BIM 360)



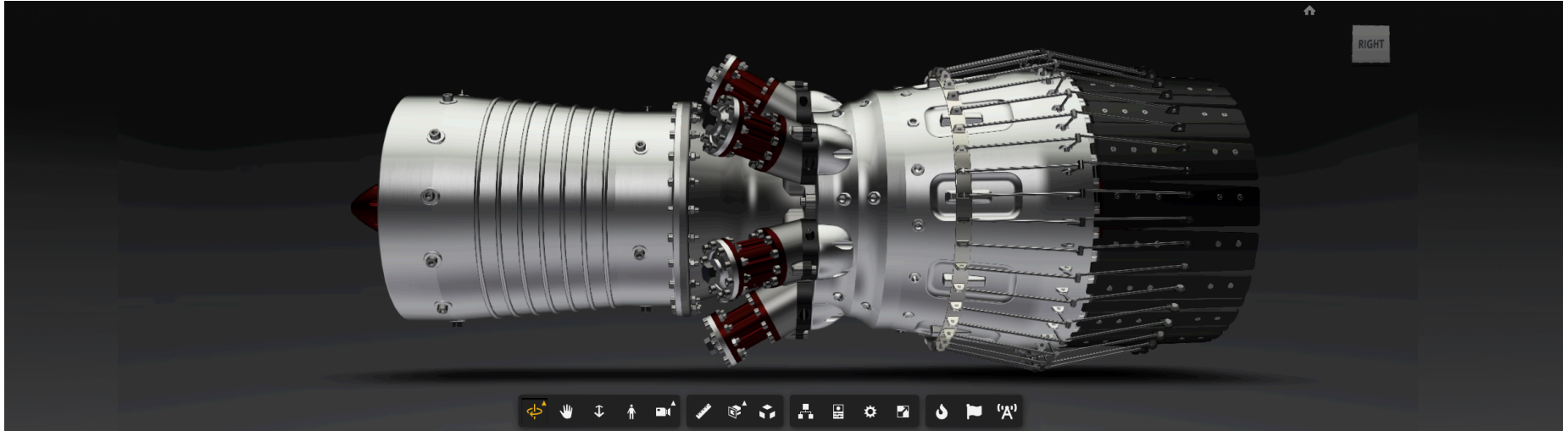
Cost Summary – Model Viewing (standalone)



Forge Cost in Year 1 = # Models in Year * Cost per Translation = (52) * 1.5 = **78 Credits per customer**

Forge Cost Example – Inventor Task Automation

An enterprise customer uses the Design Automation API for Inventor to automate 2D drawing production from 3D Inventor assemblies (and generate a viewable).



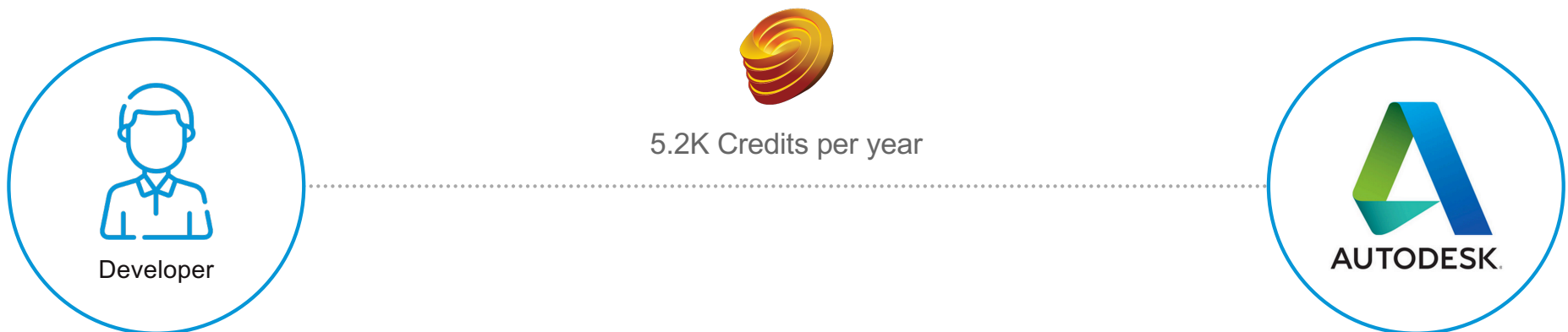
TYPICAL PROCESSING TIME

1-2 minutes

TYPICAL ENTERPRISE COMPANY WORKLOAD

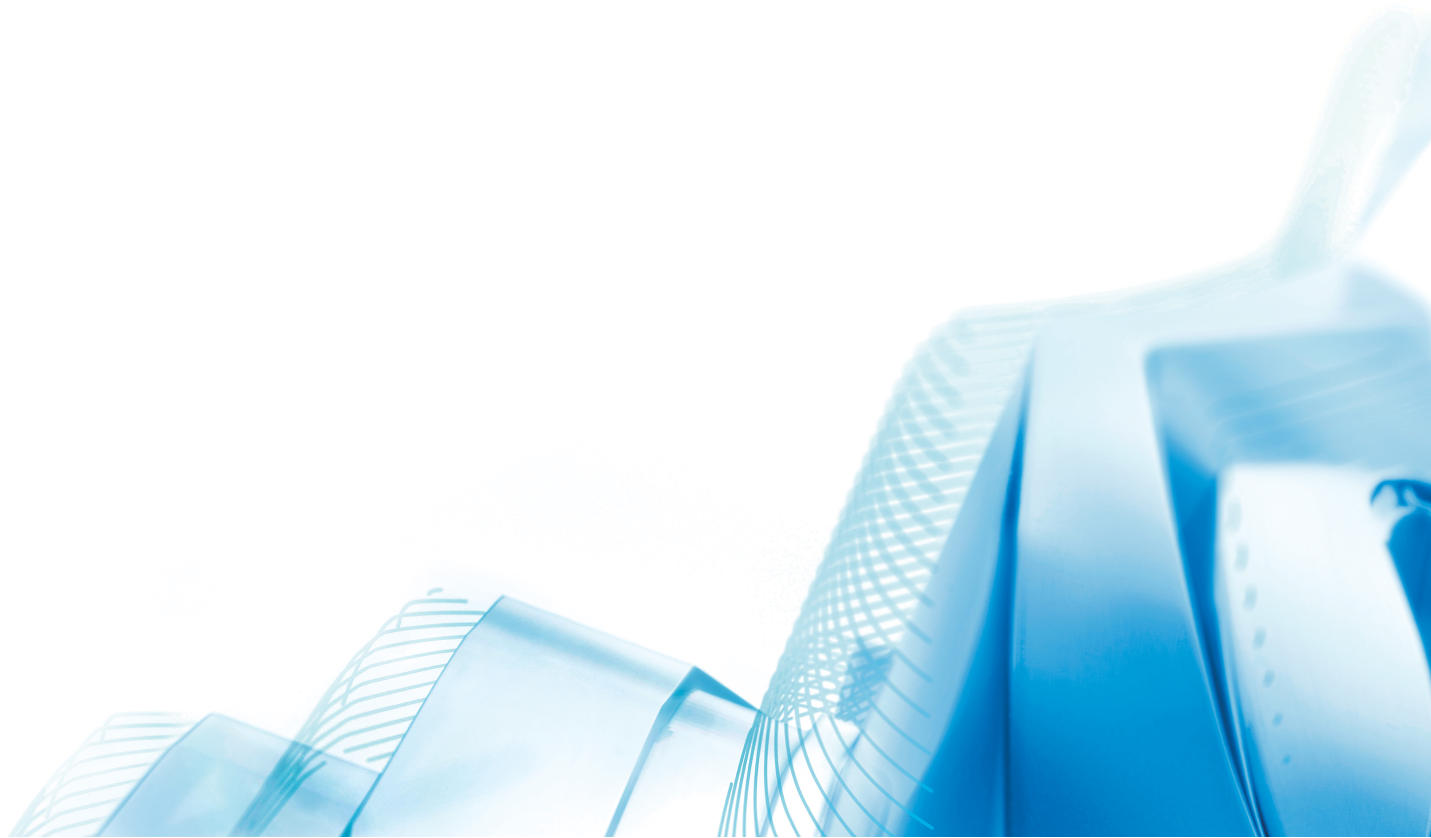
100 models/day

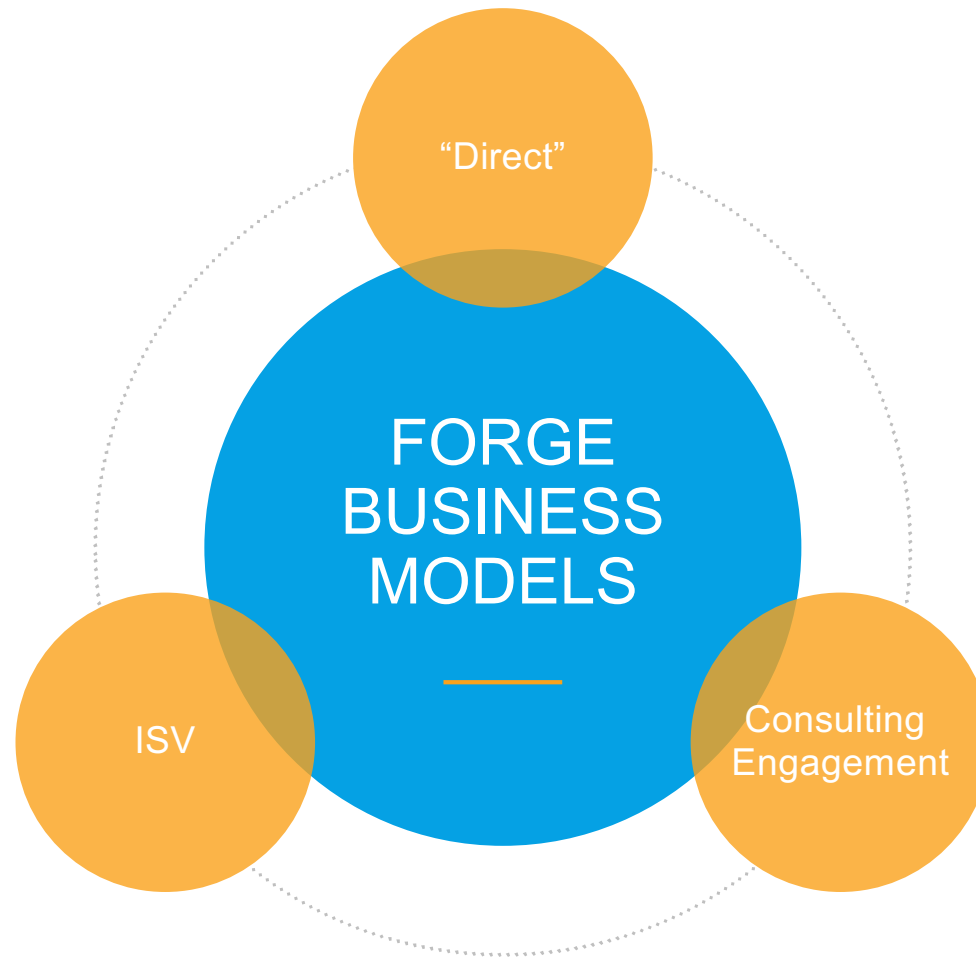
Cost Summary – Inventor Task Automation



Forge Cost in Year 1 = # Jobs/Year * Mins/Job * Cost/Min = (100*52*5) * 2 * 0.1 = 5.2K credits/yr.

Business Opportunities





Examples

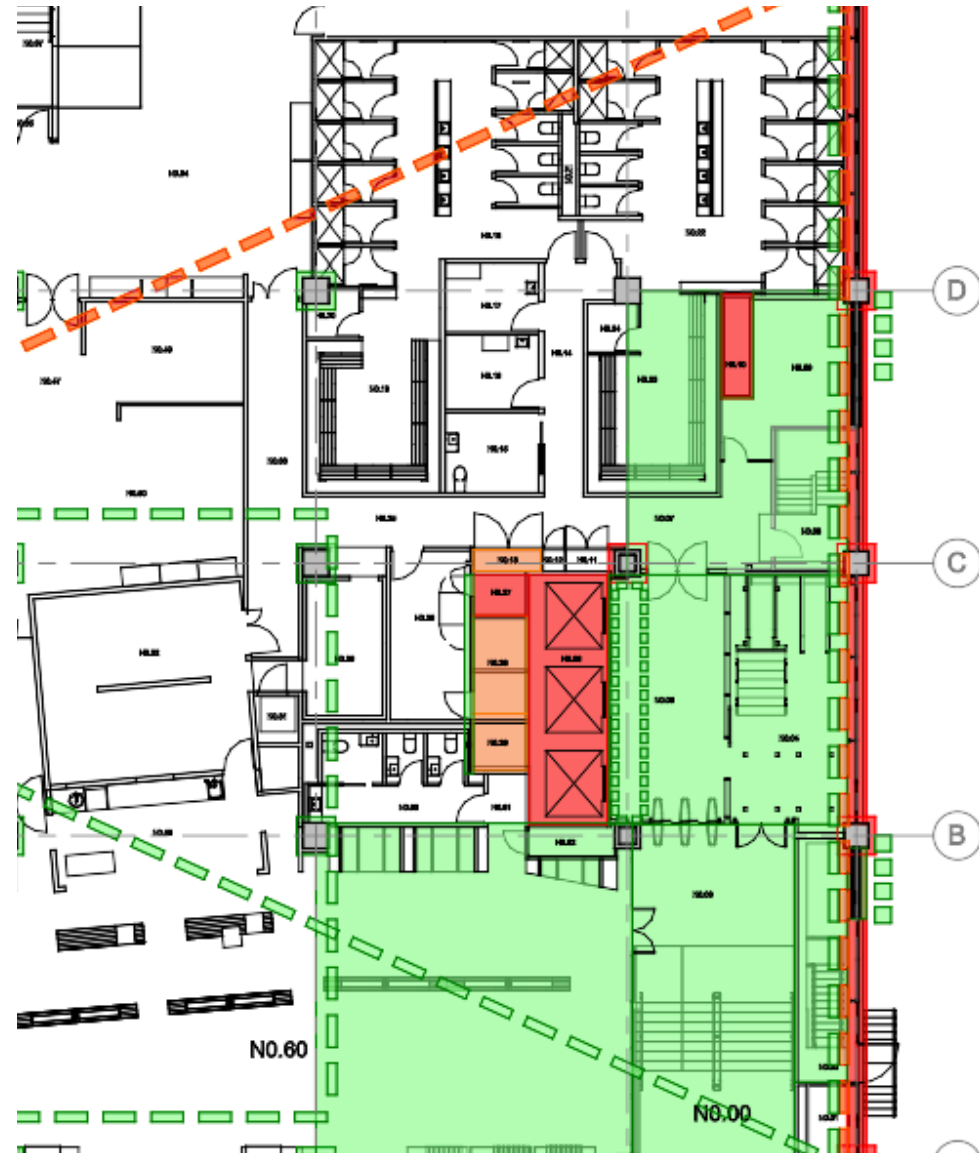


Systems Integration Example

caduceus | Technology
for your
business
landscape



DATA VISUALIZATION
& ANALYSIS



BENEFITS



Faster Issue Resolution

- Decreased building managers' issue resolution time from 60 minutes to 5 minutes



Shorter Delivery Time

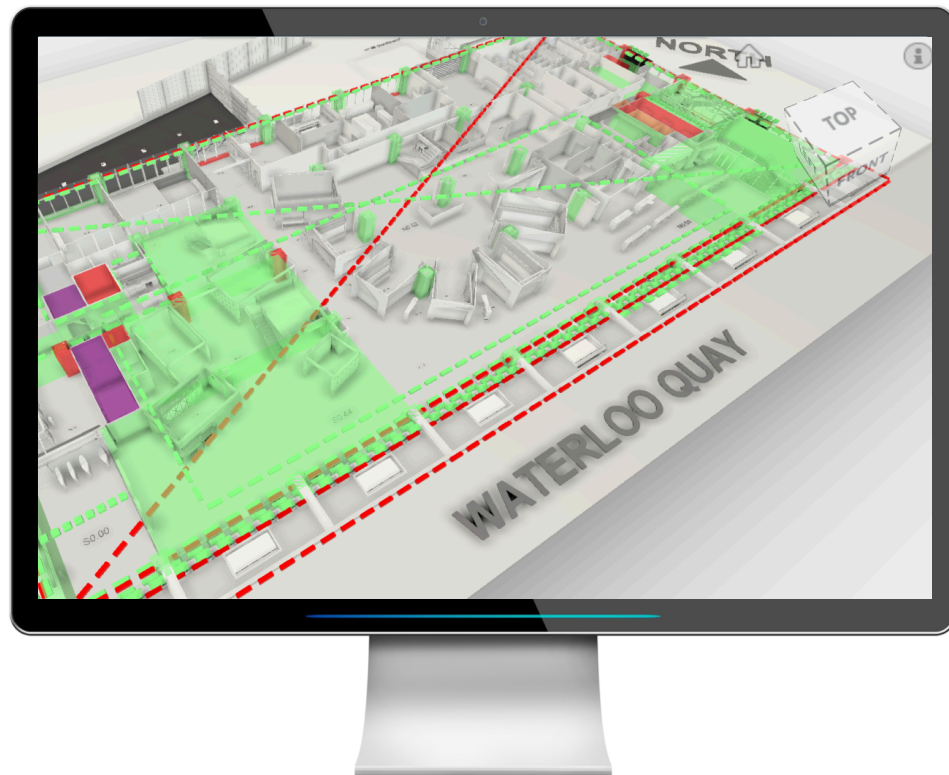
- Hazard management tool is both cost effective and easy to implement



Scalable and Transparent

- The platform-based solution is easily and rapidly scalable

Caduceus developed a hazard management tool that centralizes the storage of BIM documents and provides visibility of data via an interactive and easy-to-use interface



Viewer

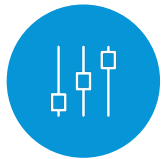


Model
Derivative
API



Data
Management
API

Systems Integration Example



CONFIGURATORS



BENEFITS



Optimized Performance

- 50% of all Engineering Service Requests go through Design Suite
- Upfront design time reduced by up to 70%



Lower Cost

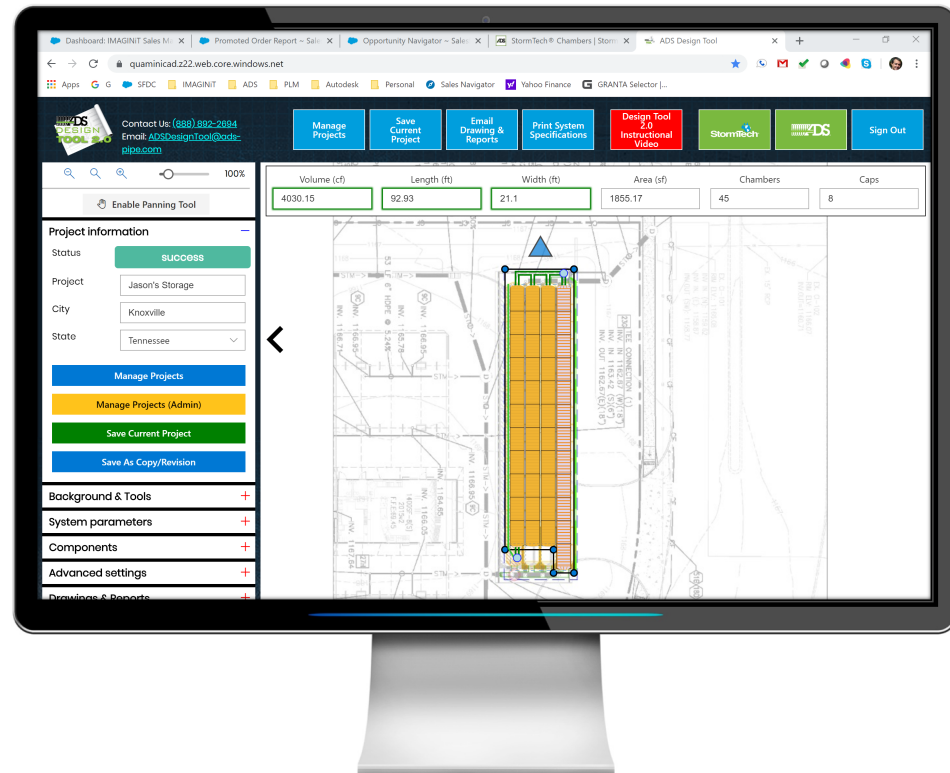
- Increased engineering efficiencies without needing to add (difficult to find) engineers



Enable Self-Service

- 24/7 access to web application for anyone to generate a design without Engineering interaction

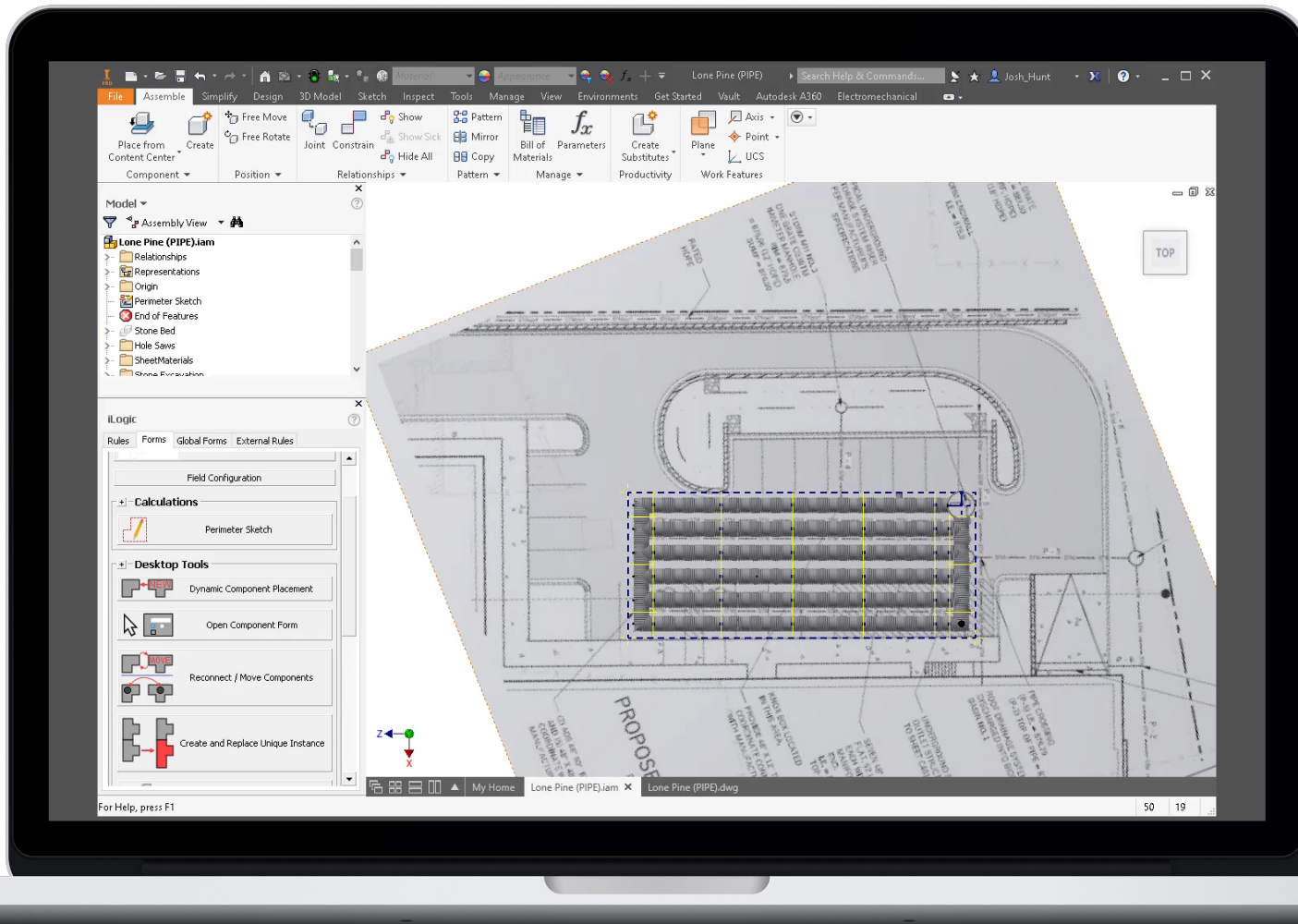
ADS decreased design time and enabled customers, dealers, civil engineers, and sales to self-serve site designs

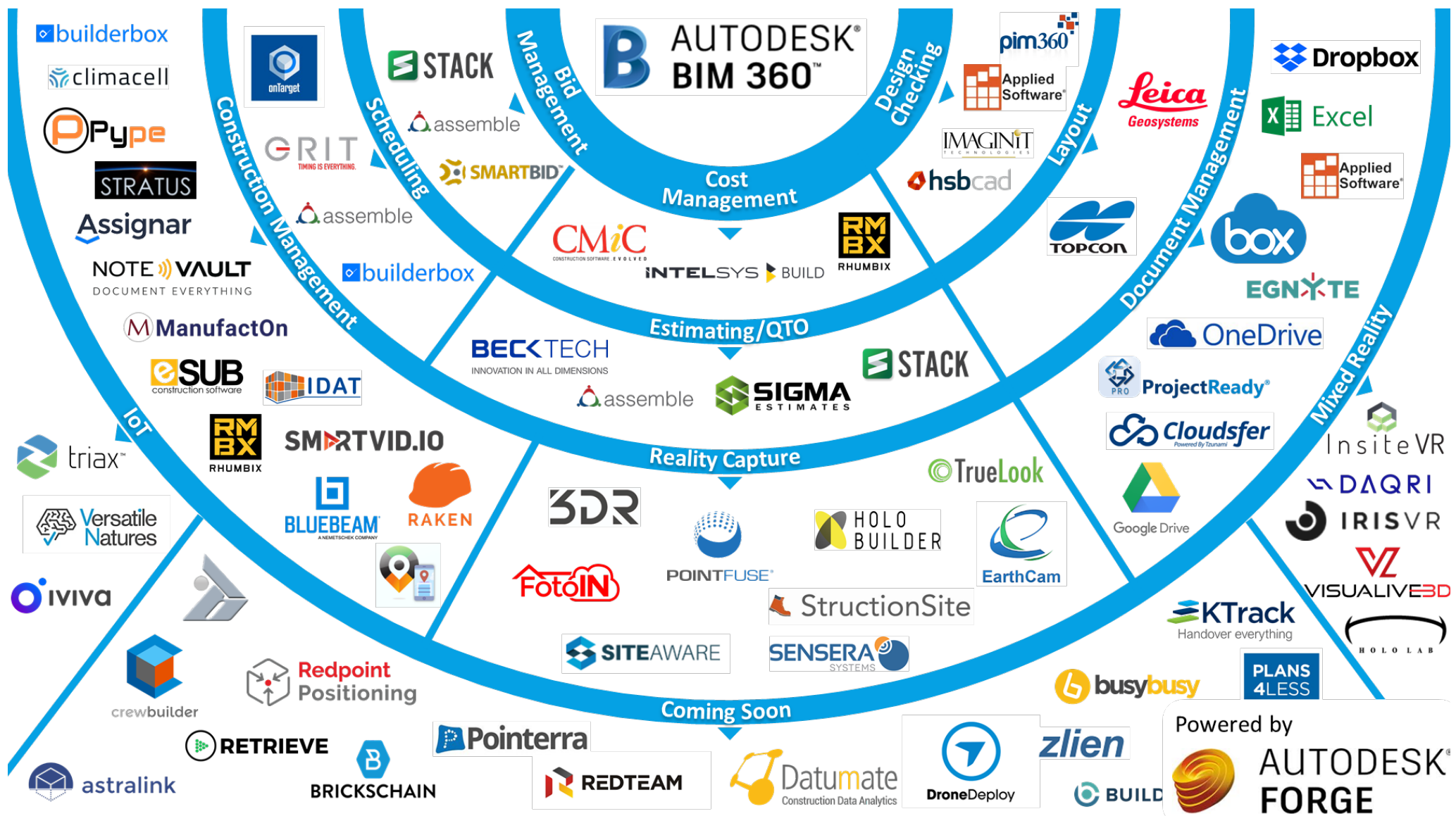


Data Management API



Design Automation API







SaaS Example



SaaS INTEGRATION

Virtual Reality Review Meetings

 AUTODESK[®] BIM 360[™] +  InsiteVR



In-House Development Example



JELD-WEN®
WINDOWS & DOORS



CATALOGS



BENEFITS



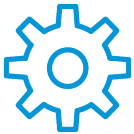
Shorter Delivery Time

- Cuts the time required to put product lines online from 3 months to a few days



Streamlined Workflows

- Helps consumers and architects select the door and window configurations for their needs



Increased Productivity

- Saves the digital marketing team more than 700 hours of work per product line

[Link to live](#)

JELD-WEN used Forge to provide accurate visualizations of hundreds of thousands of product options on their customer website



Viewer



Model
Derivative
API



Windows That Inspire

Set your home apart with brilliant design and powerful performance.

Find out more...

Website/Developer Portal

forge.autodesk.com

Customer Success Stories

forge.autodesk.com/customers

Sales Material

forge.autodesk.com/ots

Systems Integrators

forge.autodesk.com/systemsintegrators

Accelerators

forge.autodesk.com/accelerator

Forge DevCon

forge.autodesk.com/devcon-2019

Sales Questions

forge.sales@autodesk.com

Technical Questions

forge.help@autodesk.com

Systems Integrators Program questions

forge.si.program@autodesk.com