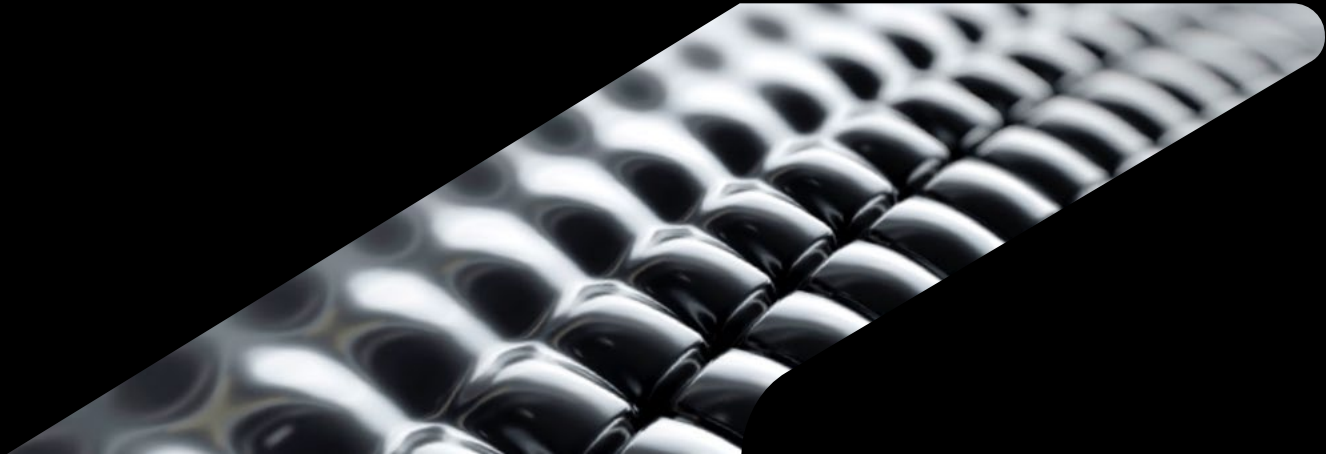




The Single Source of Truth: Autodesk Fusion 360 Manage Implementation

MFG502574

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Technical Manager | ME Global



Description

Cheaper? Faster? Better? Pick two? Why, when you can have all three?! When planning to tie processes and data sources together, there's no better option than using Autodesk Fusion 360 Manage software and Vault Pro software to put them all in one place. This class will showcase the journey of a mid-size company that had the audacity to create a global solution to unite resources and projects in that one instance on a global scale. We'll walk through the steps and missteps along the way, and cover what to look out for on your journey.

Speaker

Michael Best is the Engineering Technical Manager at ME Global in Tempe, Arizona. He is responsible for mechanical design groups, coordinating support for high profile projects, Fusion 360 Manage support/implementations as well as, ensuring design goals and objectives are robust and accomplished accurately globally. Michael has attended AU 13 times out of the last 27 years while also sitting on discussion panels and focus groups as well as presenting 6 classes and assisting in other classes as an aid. He has over 30 years' experience using AutoCAD and its many renditions. He has been using Inventor since it was codenamed "Rubicon". Michael can be reached at: mbest@meglobal.com, MikeBest05@comcast.net

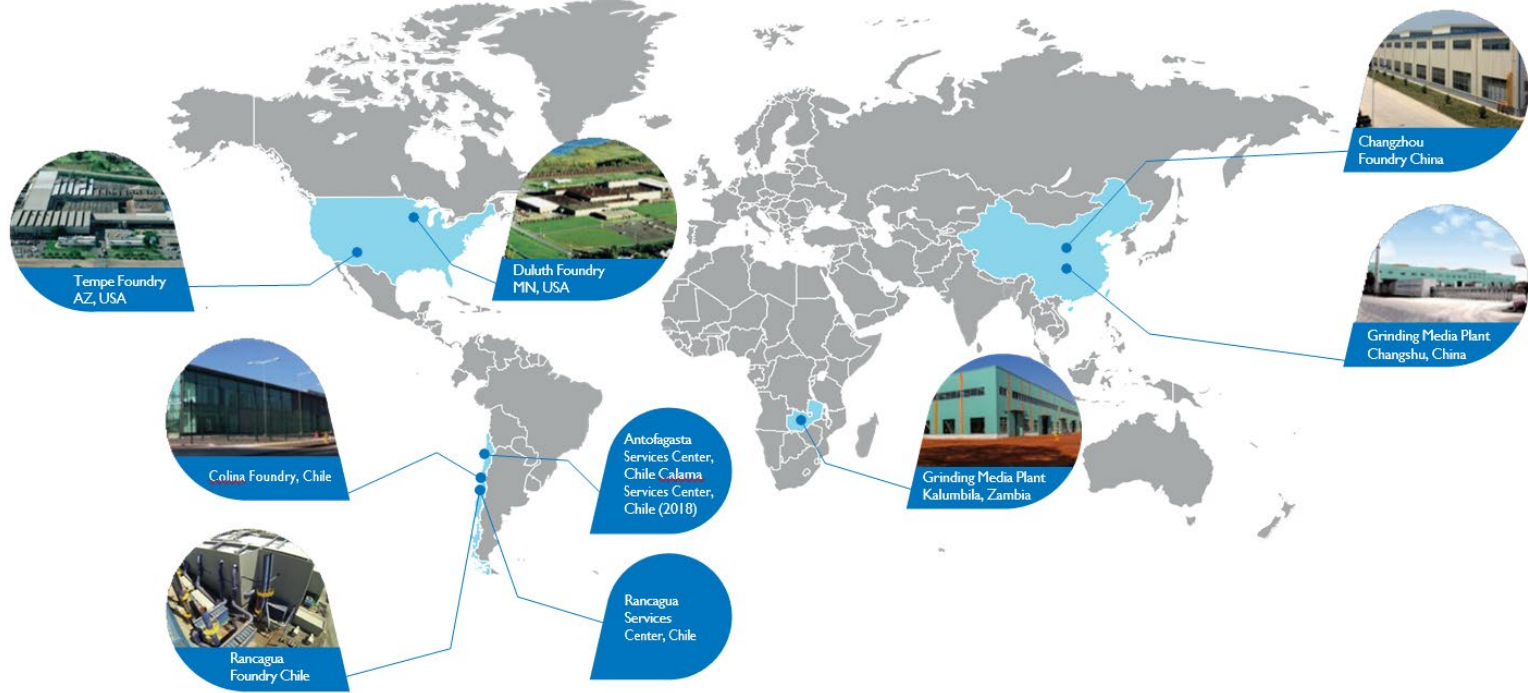


ME Global At a Glance



- ME Global is part of [The Elecmetal group](#) with over one billion USD in revenues
- Range of products: Mill liners, crusher concaves and mantels, grinding media and ground engagement tools
- Range of services: Service centers, engineering and design
- 1,000+ employees worldwide
- Customers in 40+ countries around the world
- Manufacturing capacity of 134,500+ tons in 5 foundry facilities
- Manufacturing capacity of 550,000+ tons of grind media

We are Global



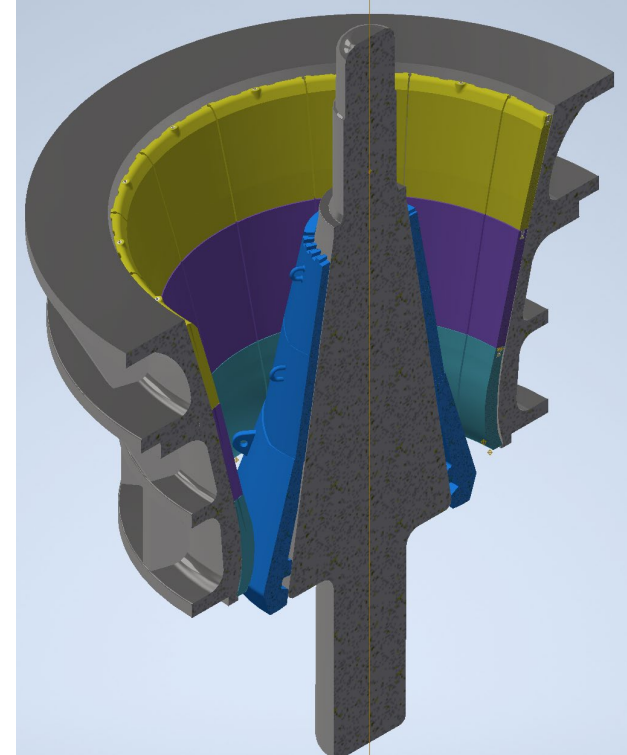
Plants and Service Centers

What We Do



Rock crusher pit

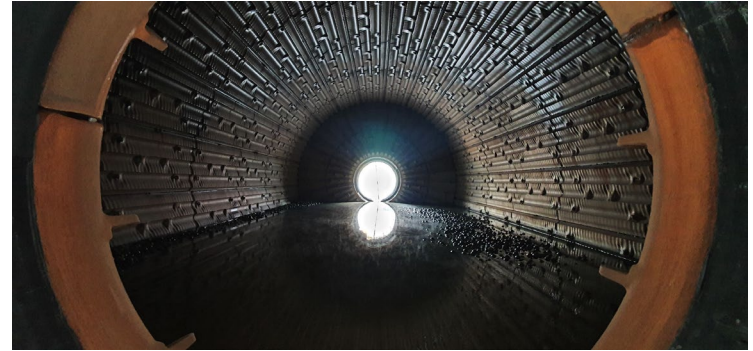
- Rock gets dumped or pushed in to reduce the size so it manageable in the downstream systems
- Crushers series:
 - Refrigerator size to mini fridge size
 - Mini fridge size to basketball size
 - Basketball size to softball size
- Reduced size material transfers to the Mills



What We Do



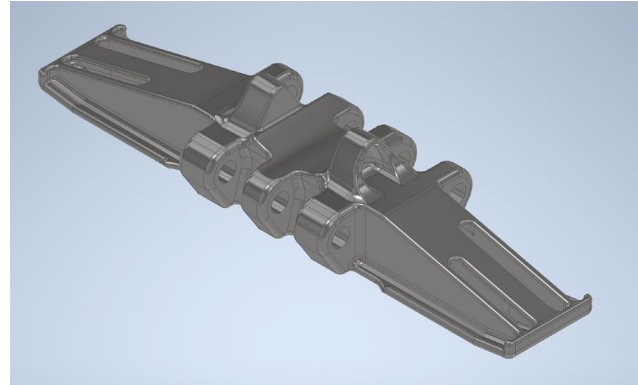
- Many of us grew up breaking rocks with a hammer on the sidewalk
- This isn't "Gold Rush"
- It takes large mills to break down rocks and material to retrieve the ore
- These mills can be longer than 28 feet and larger than 34 feet in diameter
- The replacement liners can be as short as 3 feet long up to 12 feet long and weigh as much as 11,000 pounds.



Exploded view drawing of a SAG Mill Assembly. The drawing shows various components including the mill shell, grinding balls, and internal liners, all numbered for identification. A detailed parts list table is provided at the bottom, listing item numbers, descriptions, quantities, and units. The drawing is oriented with a coordinate system (A-D, 1-8) and includes a note: "IF IN DOUBT ASK !". A note at the bottom right states: "SAG MILL ASSY".

What We Do

- NASA crawler pads
- Crawler speed – 1 mph
- Distance of travel – 4.2 miles

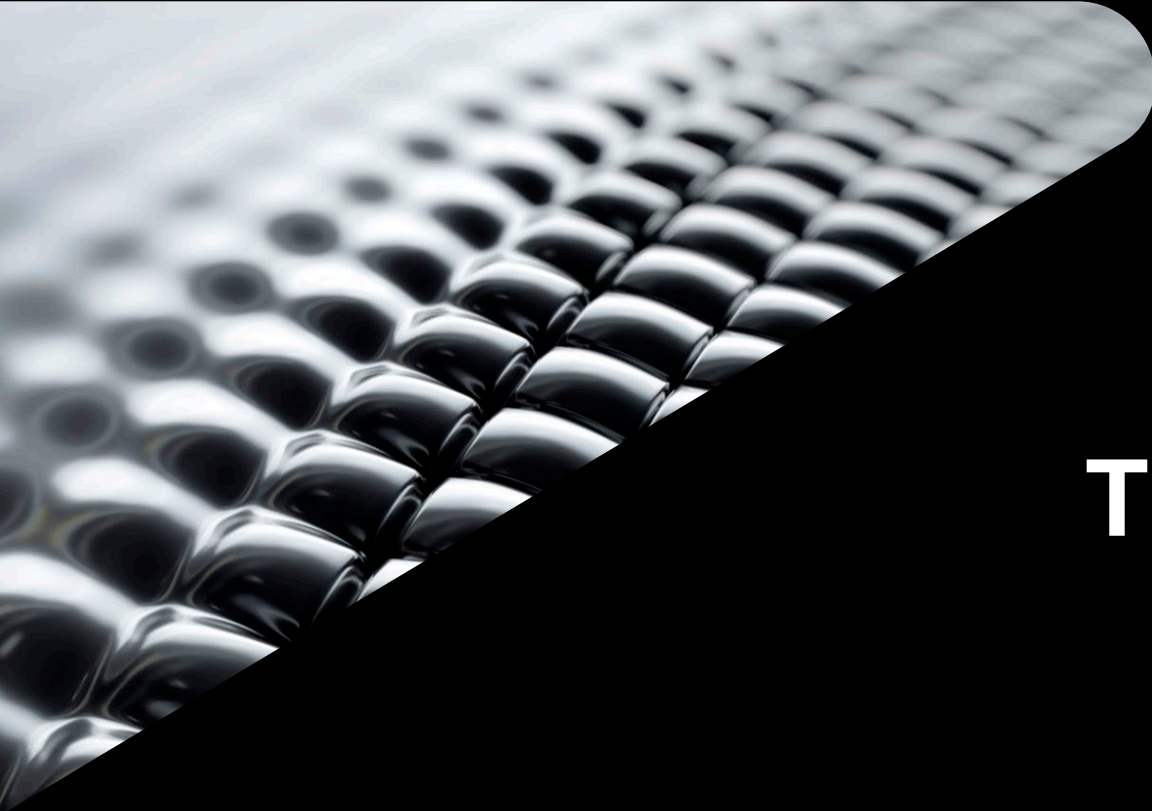


Learning Objectives

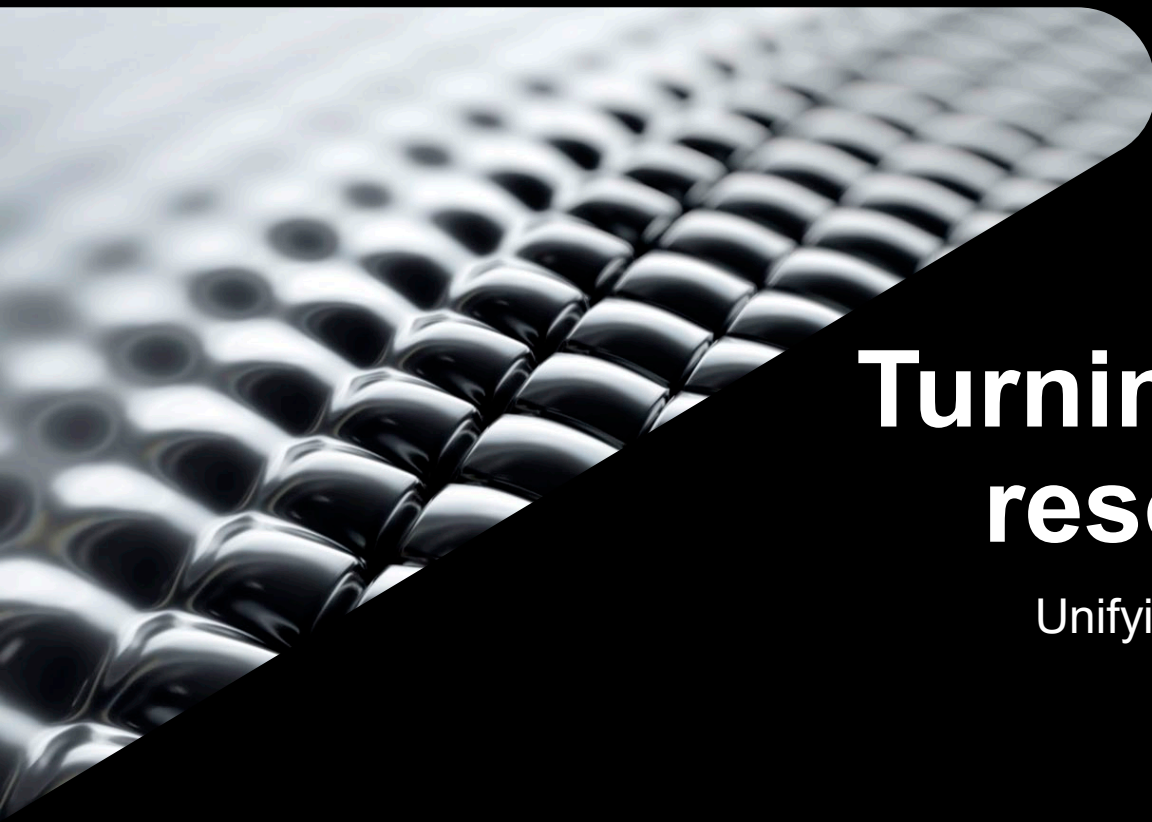
- Learn about unifying multiple sources into a cloud-based implementation.
- Learn how to manage projects, ECOs, Vault, and other resources in one location.
- Learn about connecting all aspects of business in real time on a single platform.
- Learn about multiple options to grow the business, the company, and the employees with 24/7 access to all information in a few clicks

PLM/Fusion 360 Manage Introduction

- A little history on PLM as a whole.
- PLM was first developed as a manufacturing tool to bring new products to market. The idea was to streamline processes to manufacture products faster
 - Reduce costs
 - Faster concept to sales
 - Manage/improve quality and cost
 - American Motors first implemented it in 1985
 - Cut development time from 36 months to 18 months
 - Jeep Grand Cherokee
 - NASA even tried using PLM



The Objectives

A close-up, black and white photograph of a woven mesh or fabric texture, showing a grid of small, rounded, interlocking shapes. The texture is diagonal and fills the left side of the slide.

Turning clouds into resource centers

Unifying multiple sources into a cloud-
based implementation

Unification and Clouds

“Clouds? Will the cloud bring me free tacos on Taco Tuesday?”

Initial thinking



Unification and Clouds

New Reality



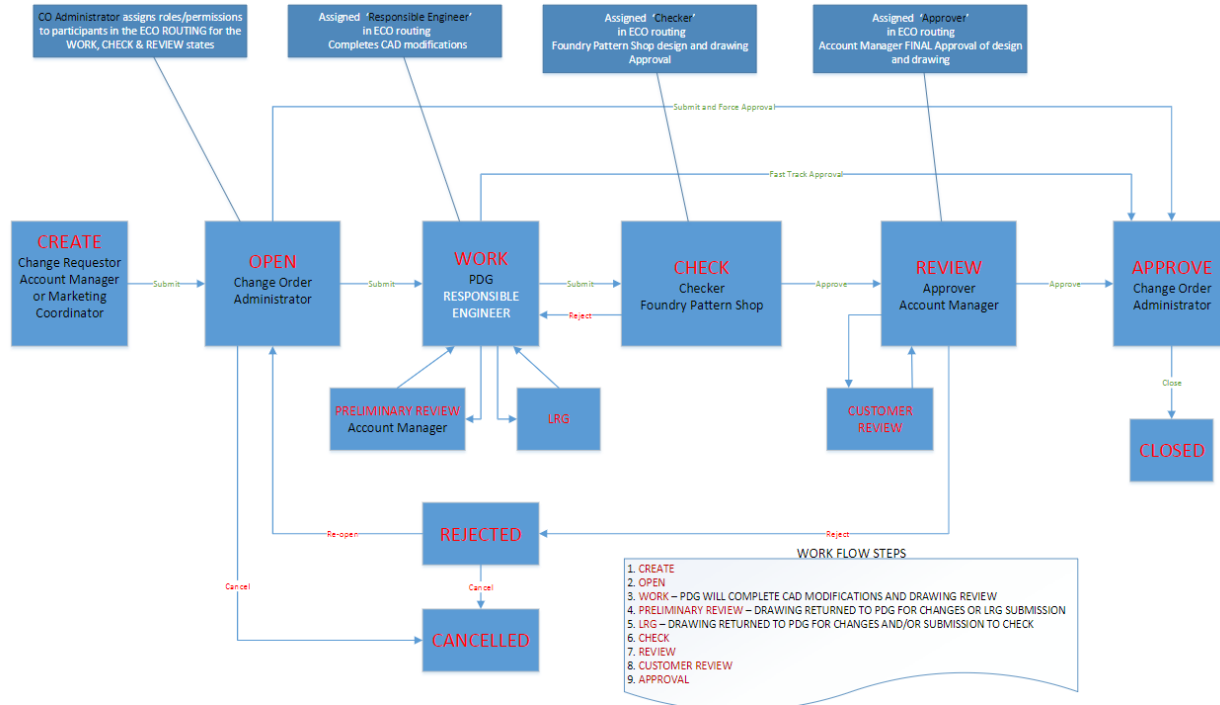
Typical Mantra

Various sayings and musings when it comes to evolving your business to keep moving forward

- “Evolve or Die”
- “Embrace the Chaos”
- “Adapt, Evolve, Compete or Die”
- “Innovate or Fail”
- “Keep moving or risk getting Caught”
- “Lead, Follow or get out of the way”

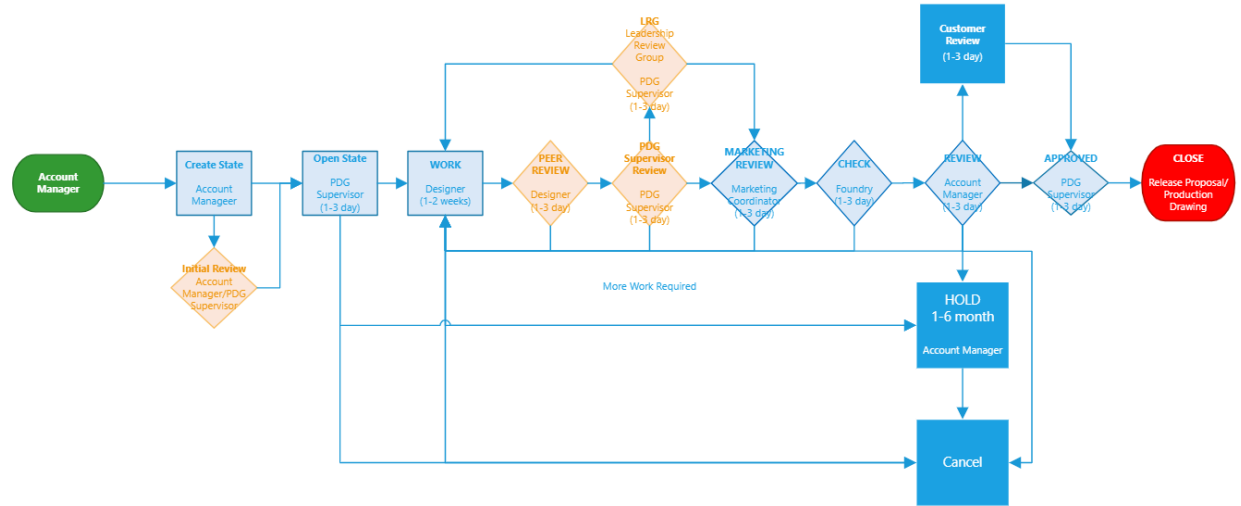
The Beginning

Below is the current ECO workflow we have in Vault Pro



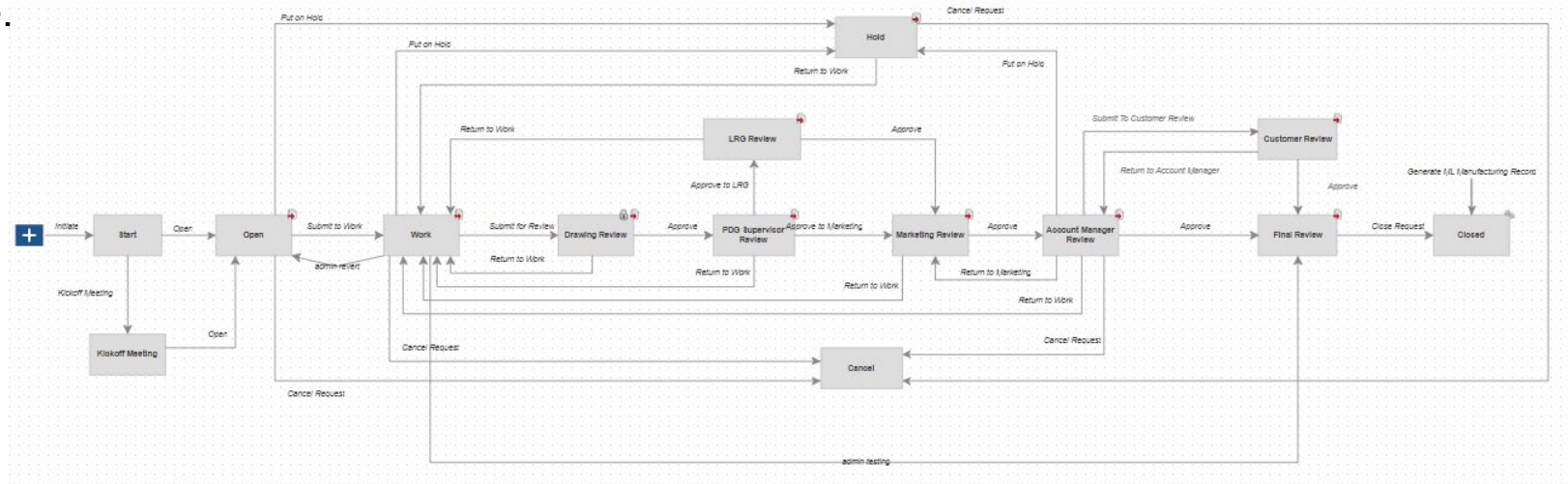
The Middle

After many meetings and discussions, this is what the proposed workflow to build in Fusion 360 Manage.



The Present

This is the workflow that has gone through many iterations now in place in Fusion 360 Manage.

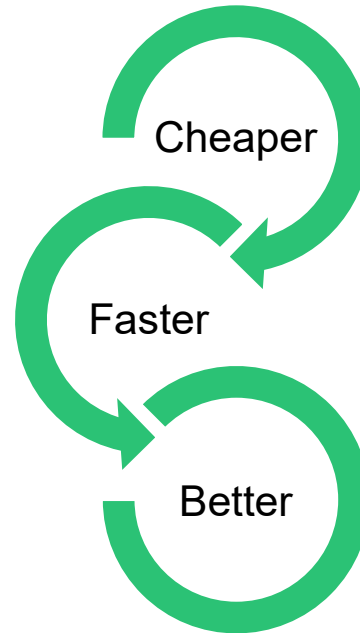


The Blend

“You’re going to connect this to that! Good luck!”

This, in today’s world of manufacturing, “Cheaper, Faster, Better, you can only choose 2”, is still very much prevalent.

- **Faster** – Reduce our overall workflows to improve the engineering to release files sooner to manufacturing.
- **Better** – Utilize the workflows in Fusion 360 Manage to improve the efficiency of drawing design checking, reviews, and releases. And always keeping the account managers up to date on their projects.
- **Cheaper** – This can be tricky to define, but when your work product is improved and released to manufacturing, the overhead cost is reduced and can be extended to the customer.



Hoarding

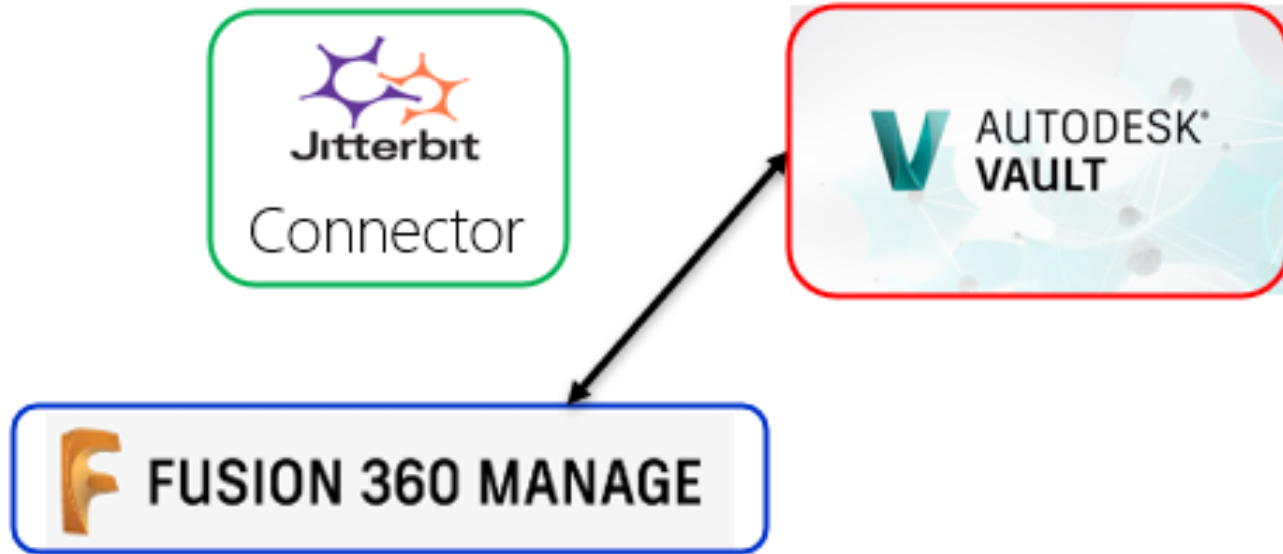
Unification is hard. People inherently are hoarders when it comes to technology no matter the scale. Notepads, Post-it Notes, Microsoft Notepad, Word, Excel, Emails, etc.....all used to gather information to track projects, processes, sales and shipping. But what if it could all be connected and located in one place? Or input into one location for access to all who are part of the project. Blasphemy, right?

First Steps

- Clean up our Autodesk Vault
- Evaluation PLM systems
 - Flexible
 - Accessible
 - Simplicity
 - Connectable to multiple sources
- Connections
 - Jitterbit



Connections



A close-up, black and white photograph of a woven mesh texture, likely a car seat or a similar material, showing a grid of raised, rounded squares. The texture is slightly out of focus in the background, creating a sense of depth.

**“I like having my
information in
several locations so
I don’t lose it”**

Learn how to manage projects, ECOs,
Vault, and other resources in one location

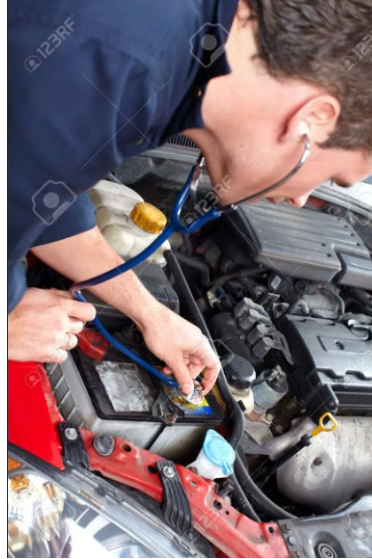
The Tool Box

“Everything in 1 location? Really? That’ll never work! You’re just asking for trouble.”

Tools! We need more tools!

A mechanic needs more tools. In an ever-changing world as in automotive getting more tools is the norm to work on the newer cars each year.

Like most companies we have tools. Plenty of tools. But do we really need them all when most don’t connect to other sources? With Fusion 360 Manage, the idea is to reduce all the noise from so many other tools and place them all in one location for the company to use anywhere.



Simple Starts

Insanity abounds!

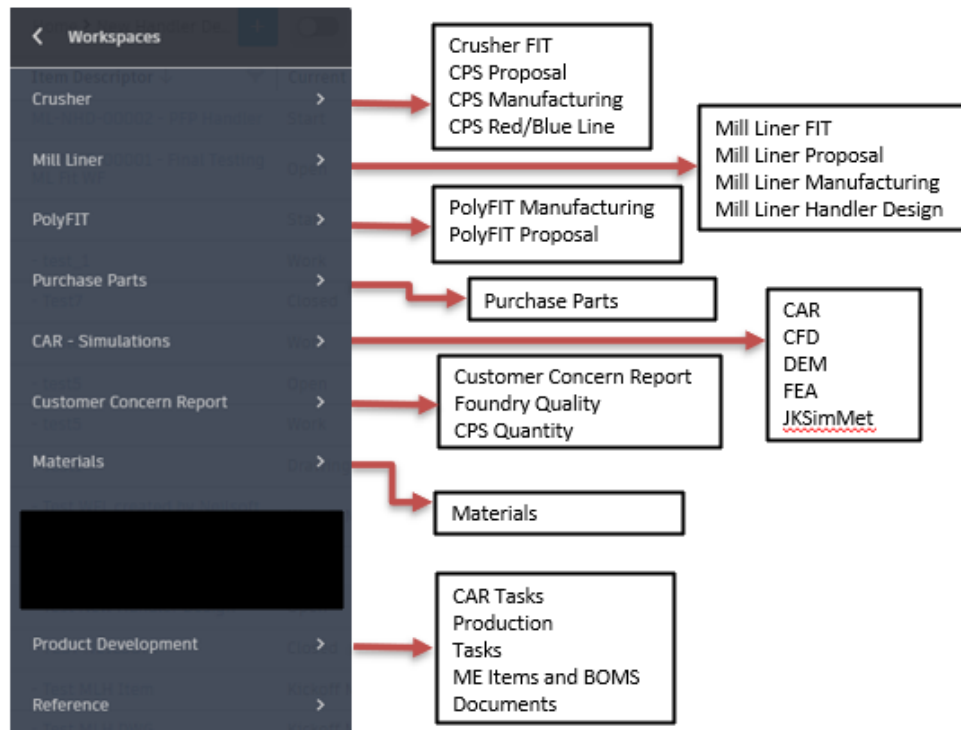
Starting a new project, company wide, there are always each departments needs to be considered.

Everyone wants their pet spreadsheet, work format and everything they use today the same in the new project.

Fusion 360 Manage is our clean slate project to streamline what everyone is comfortable with in a simplified way. We are still bold in our approach.

- 8 Workspaces
 - 21 sub workspaces
- Released incrementally with training staggered to bring groups up slowly in the new system
- *Supply Chain and Quality will be out of the box and brought online in another release phase

Clearly Simple Starts.....



- 8 Workspaces
 - 21 sub workspaces
- Released incrementally with training
- *Supply Chain and Quality are out of the box installations not used at this time.

And They're Off!!

- Additional workspaces to be released in phases
- The first 3 workspaces and sub workspaces are all connected to Autodesk Vault Pro
- Creating ECO's and connecting files from Vault Pro for reference
- And additional files
 - Pictures
 - Sketches
 - Scans
 - Rough quotes
- Remove pain and suffering
 - Sales guys can be delicate
- Additional processes to be added after initial release in phases

KISS (Keep It Short and Simple)

- Simple form for the Account Managers
- Asterisks (*) to indicate properties required
- Future connection to Salesforce
- ECO's created “on the fly” in Vault
- Notification to others responsible on the team of work coming
- Engineering notification for early planning

The screenshot shows a web-based form for a new record in Autodesk Vault. The title bar at the top reads "ML-DUL-00011 - testing". Below the title bar, there are tabs for "Details", "Managed Items (0)", "Attachments (0)", "Tasks (0)", and "Associated Workflows (0)". The "Details" tab is active, showing a form with two main sections: "Properties (1 of 8)" and "Customer Information (2 of 8)".

Properties (1 of 8)

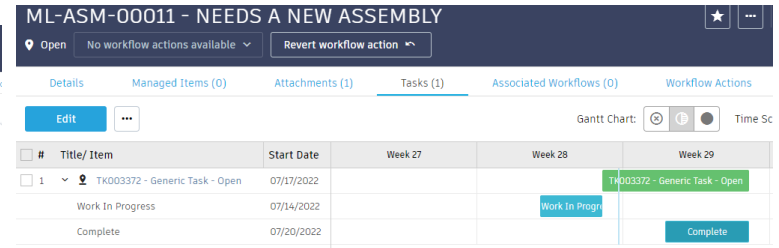
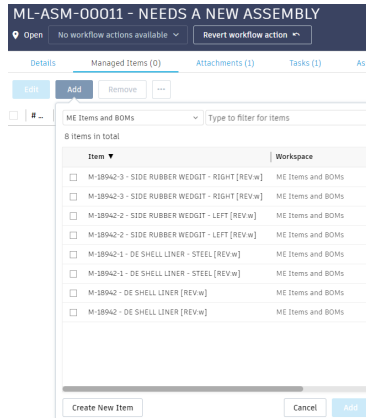
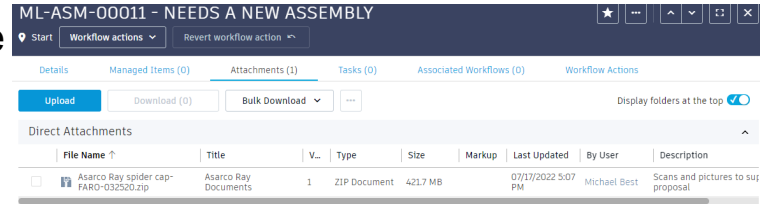
Record Number	ML-DUL-00011
* Title	testing
* Request Description	test
* Production Facility	Duluth
* Region	US
* Due Date	07/01/2022
Priority Level	1

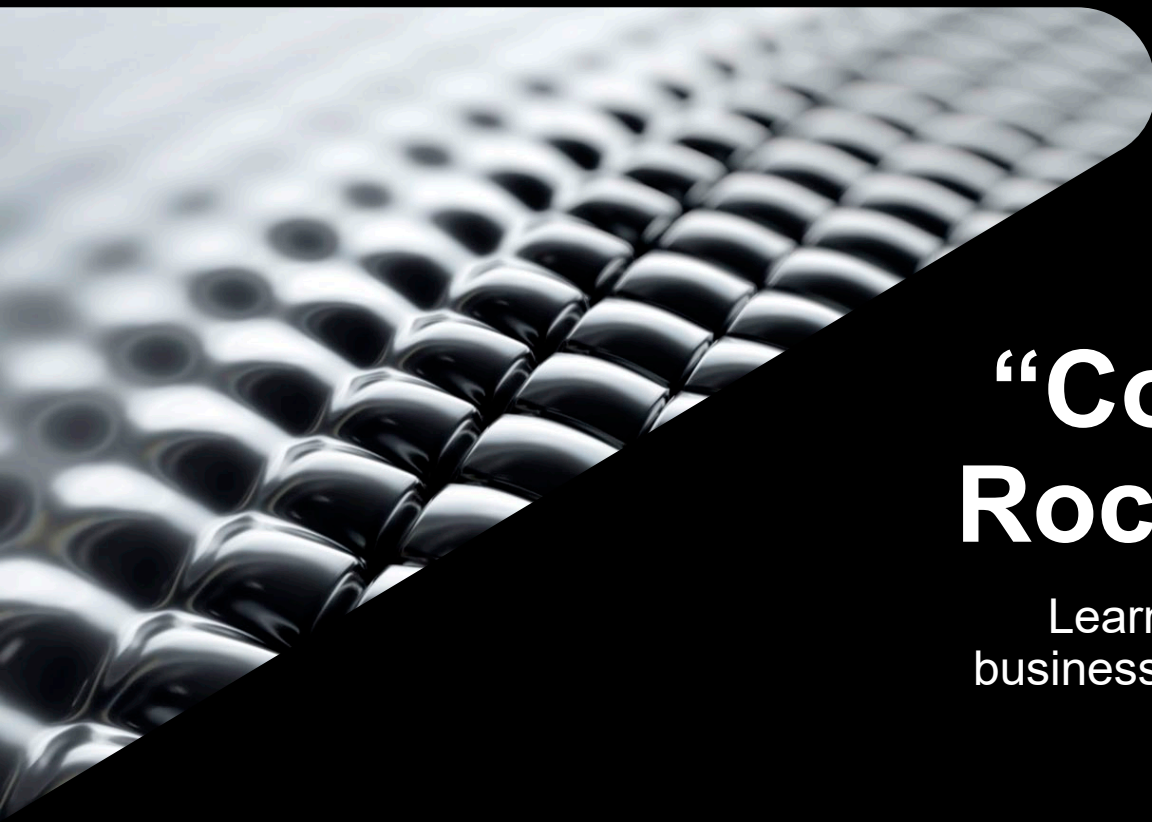
Customer Information (2 of 8)

* Customer	AFFCO 3000
* Part Description	test
* Product Line	Milling
* Equipment Type	Not Applicable
* Size	Not Applicable
* Alloy Type	302
* BHN	150-180
* Rubber Backing Required	Not Applicable
* Vulcanizing Required	Not Applicable
* Ship Date	06/30/2022
* New Pattern	Not Applicable
* Dual Source Pattern	Not Applicable
* Physical Change to Pattern	Not Applicable
* Pattern Transfer	Not Applicable
Transfer Pat Equip - From	Not Applicable
Transfer Pat Equip - To	Not Applicable
Transfer Pat Equip - Cost	Not Applicable

Additional Options

- Also, the Account Manager will have the opportunity to:
- Add additional information
- Review the project from start to finish
- Attach site pictures
- Scans
- Notes
- Add additional tasks
- Just to name a few things



A close-up, black and white photograph of a woven mesh texture, possibly a metal screen or a fine fabric, showing a grid of small, rounded openings. The texture is diagonal and occupies the left half of the image.

“Copy and Paste Rocks my World”

Learn about connecting all aspects of
business in real time on a single platform

Simple Connections

“So, I’ll need to copy and paste everything from one application to another? How does that save time?”

As technology increases, so does the opportunity for more applications to use. Our focus, is to reduce the application and standardize the information we use.

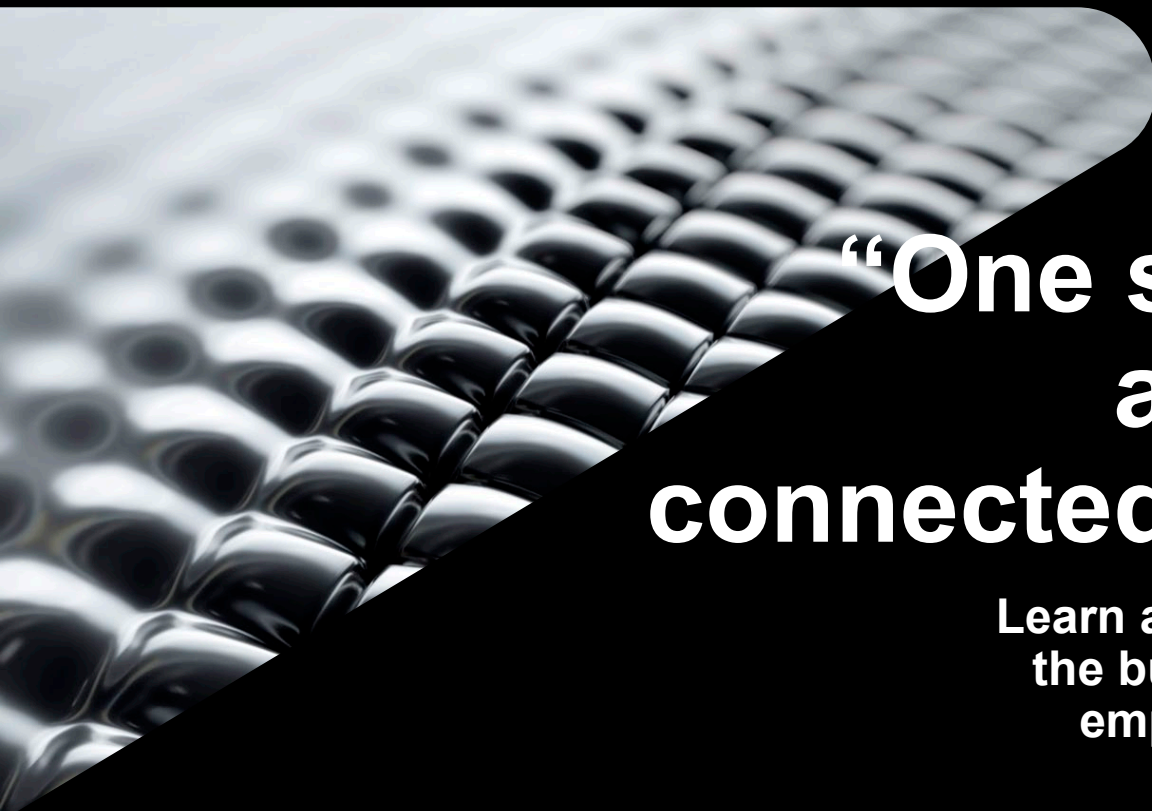
Next, the question was, “What else can we connect or put into Fusion 360 Manage?”



What Else Can We Add?

Additional workspaces in the future. These are just a few identified.

- Items and BOM's (In current release)
- Project management
- Custom KPI charts for all projects
- R & D
- Foundry workspaces
 - Sampling
 - Material
 - Quality
 - Molds/Patterns
 - Reviews
- Shipping
- Maintenance
- Automation projects
- Vendor access for quoting
- Customer access to view anticipated delivery dates
- Standards
- Training Records & Documents
- Time Keeping on projects



**“One single source,
available to all
connected, worldwide.”**

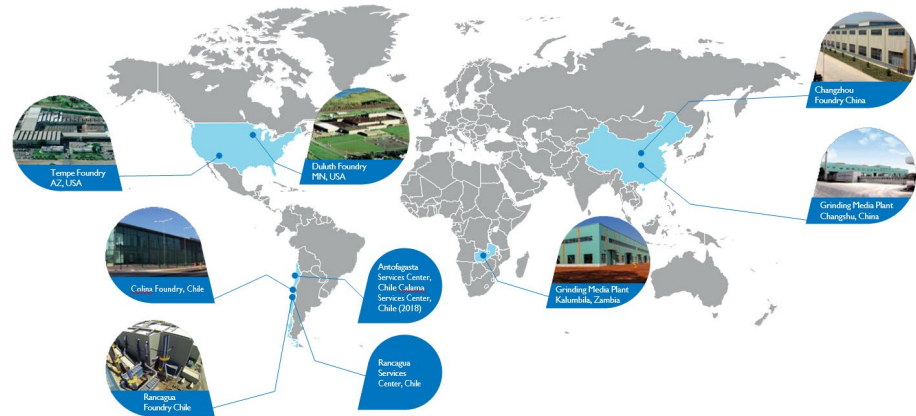
**Learn about multiple options to grow
the business, the company, and the
employees with 24/7 access to all
information in a few clicks**

Connections

“Fusion 360 Manage is a product lifecycle management platform that connects your people, processes, and data across departments and geographies. It gives you the flexibility to start today and expand tomorrow with PLM that adapts to your business.”

Autodesk Website

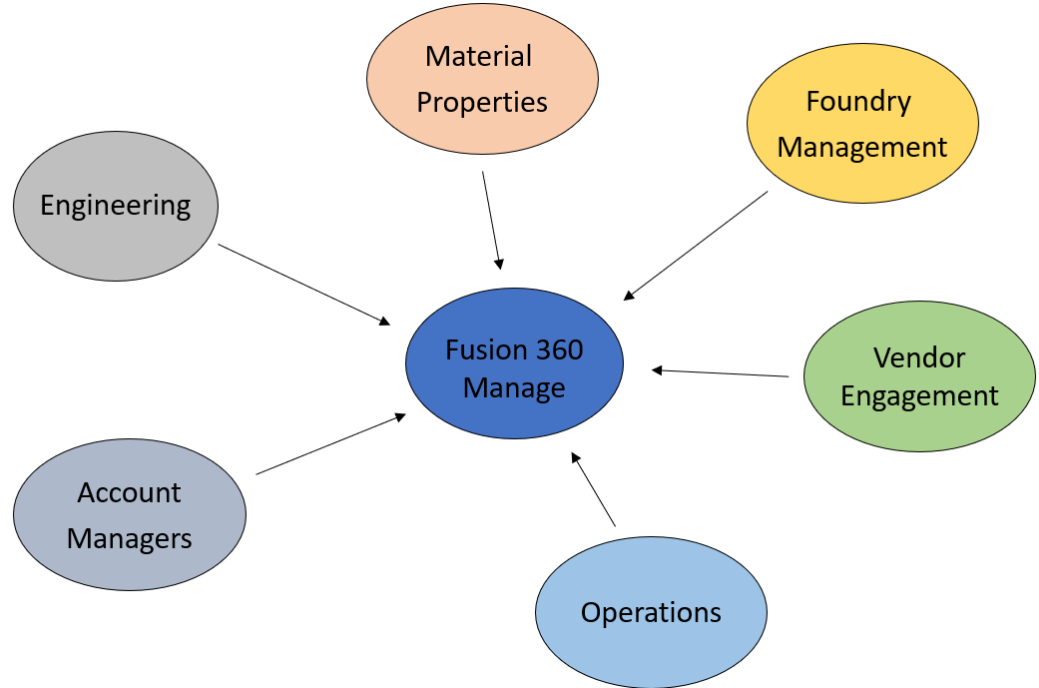
- Overcoming boundaries and borders
- VPN is questionable sometimes
- Different languages
- Different time zones
- Various communication options
- One Cloud



Plants and Service Centers

Sharing is Caring

- Most companies have many groups or sub businesses within them
- Most of these business units create their own silos and maintain their own information
- ME Global is no different
- With Fusion 360 Manage, all these units have the opportunity to share across the board



More Access

- Fusion 360 Manage will allow us to connect everyone everywhere to the same information around the world at any time.
- With a laptop and Wi-Fi, connection to Fusion 360 Manage is easy. We can connect from the customers site to place orders or from the car with a cell phone used as a “hotspot”; there no longer any need to travel back to the office to put information into the system.



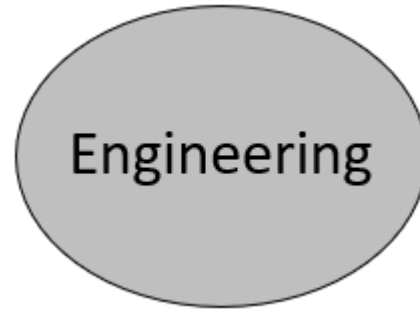
Account Managers

- Account managers, domestic and globally, will put in the proposal or the actual order into Fusion 360 Manage
- They can do it anywhere there is WIFI
- From the customers site, pull up previous designs
- Per current designs discuss possible changes
- Check on delivery dates



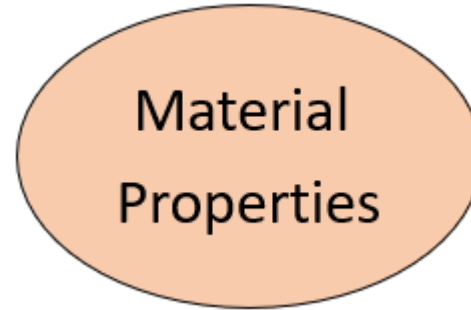
Engineering

- Get an early notification on a proposal, design change, new design or new customer
- Preplan and schedule work and staffing a head of time
- Identify potential design issues early on
- Coordinate with foundry lead time



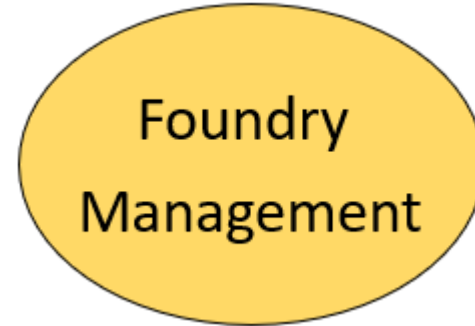
Material Properties

- Managing materials, alloys and various uses
- How they are used
- What type of aggregate it is used for
- Average longevity of life in customer production
- Proper mix to ensure stability
- Sampling



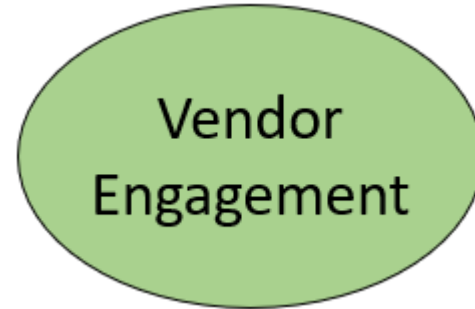
Foundry Management

- Production schedules
- Personal rotations
- Project management of material flow
- Casting pattern repairs
- Pattern shop workflows
- Maintenance schedules
- Foundry supplies



Vendor Engagement

- Bolt suppliers
- Rubber supplier
- Material suppliers
- Wear part suppliers
- Shop suppliers
- Recycle suppliers



Operations

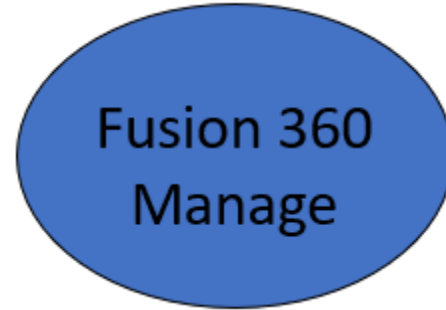
- This encompasses all the previous areas listed above
- Workflow processes
- KPI's
- Customer deliveries



The Source at the Center

Fusion 360 manage will be crucial to our company growth and streamlining our processes. As the central core of our engineering and operational structure we hope to:

- Decrease costs
- Reduce waste
- Reduce overhead
- Increase production



Single Source of Truth

This project is far from over. We have 4 more phases to integrate in the next 18 months. Not only did we release into the wild a whole set of tools to begin transforming our business, we did it in such a way most companies would shudder at the thought of cutting loose so many workspaces all at once. But the difference is we have held informational meetings to show the benefits and ease of use for all responsible parties and users to lessen the hurt of a new software. Sales guys usually dance to a different beat and will either need hand holding or be retrained again each month. Those results will vary.

By standardizing our processes and integrating them into one location we start removing the silos of business to reduce the burden of unnecessary work that had become the excepted norm in those silos.

The “M” for “Manage” in PLM should be changed to “Musketees”; All for One and One for all!
Or to paraphrase “Lord of the Rings” by J.R. Tolkien

*“One Source to rule them all, One Source to find them,
One Source to bring them all, and in the Cloud bind them.....”*



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