

Connecting the Value Chain with Upchain

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Stephen Trochimchuk is a Customer & Technical Training Manager at Autodesk, Inc., in the PDMS division. Stephen is responsible for developing and delivering the Upchain PLM/PDM curriculum, live webinars, and learning assets leveraged by customers every day.

With 10+ years of experience as an educator and customer training leader, Stephen is dedicated to creating PLM/PDM learning experiences that are accessible and engaging for all. Stephen collaborates closely with internal and external stakeholders as well as customers to identify new opportunities to enhance training outcomes and drive adoption of Upchain across the value chain.



Learning objectives

This session is an introduction to Upchain PDM and PLM, with a focus on how Upchain enables a connected value chain.

- ✓ Understand how a decentralized product stakeholder network poses challenges to collaboration
- ✓ Discover how Upchain helps separate, siloed systems
- ✓ Discover how a unified, user-centric PLM solution helps to reduce complexity
- ✓ Discover how Upchain supports rapid implementation and onboarding to drive adoption across the value chain

Collaboration is increasingly difficult



**Distributed
Workforce**



**Information
Overload**



**Speed of
Change**



**Multi Data
Source**

I think Josie
is on that

Is this
thing done?

I sent that to
you last week!

Which
email?

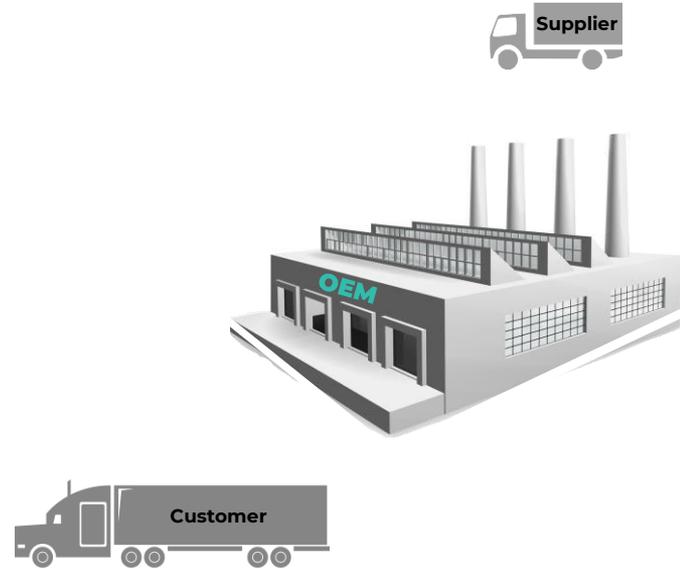
Who has
that file?

Huh?!

PLM solutions have not kept pace

Many PLM solutions have been architected for large, highly integrated organizations

- High level of customization
- High complexity
- Built for engineers, by engineers
- Closed systems, deep integration with specific set of (mostly engineering) tools
- Optimally suited for a homogenous value chain



Homogenous value chain

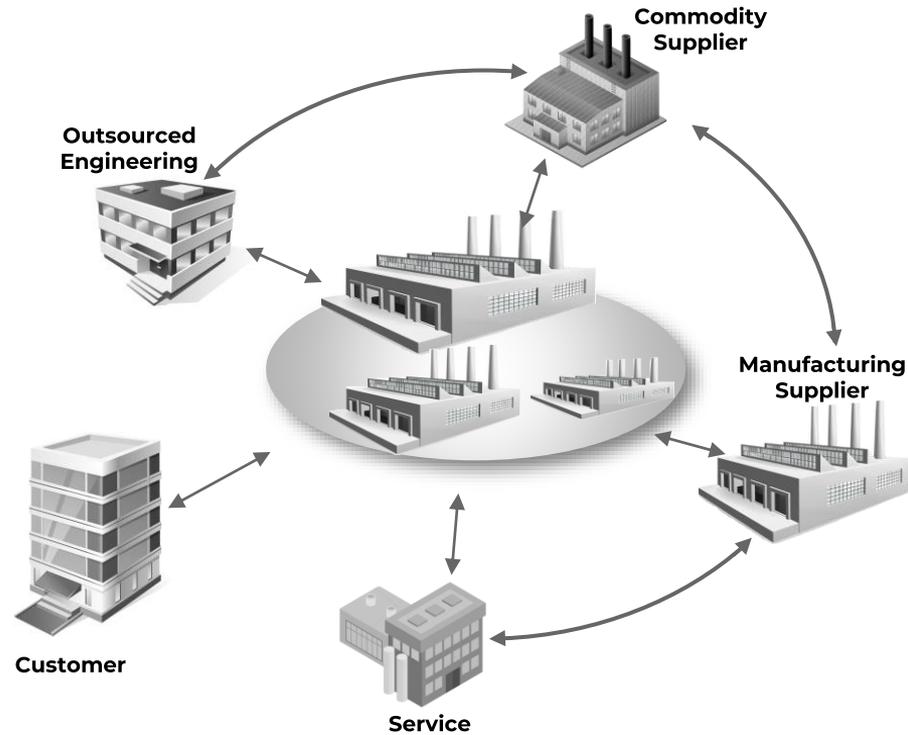
PLM solutions have not kept pace

Most companies today are part of an increasingly decentralized & dynamic value chains

- 40%-70% procured in components, submodules, systems
- Multi-discipline: mechanical, electrical, software
- Broad product stakeholder network in/out company
- Heterogeneous data sources: CAD, CAE, PLM, ERP
- Peer to peer collaboration: email, chat, phone, web conference

Flexibility & agility is key to product innovation

The PLM solution that supports product innovation must also be flexible and agile



Heterogenous value chain

PLM and underwhelming ROI

Common causes

Prolonged, costly deployment

- Less flexible solutions require a disruptive 'rip and replace' approach
- High customization, over-engineered for every corner case instead of adding value
- High level of specialized knowledge and training

PLM and underwhelming ROI

Common causes

Prolonged, costly deployment

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Difficult to collaborate with external teams, 3rd parties, suppliers

- Lack of multi-CAD support create barriers between engineering teams
- Challenges with sharing up-to-date data with external stakeholders

PLM and underwhelming ROI

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Poor user adoption

- Unintuitive interfaces, disconnected user flows – PLM tools feel alien and external
- Workarounds undermine product record keeping and enterprise governance



The diagram features a central black rounded rectangle with the text 'Autodesk Cloud PDM-PLM Platform powered by Upchain'. Six lines radiate from this central box to six circular icons, each with a corresponding label. The icons are: a gear (CAD Data & Document Management), a rocket (New Product Introduction), a list of documents (Bill of Materials Management), a network diagram (Change Management), a group of people (Supplier Management), and a cube (Project Management). The bottom three icons also have labels: a circular arrow (Workflow & Business Process Management) and a star in a circle (Quality Management).

Autodesk Cloud PDM-PLM Platform powered by Upchain

CAD Data & Document
Management

New Product
Introduction

Bill of Materials
Management

Change
Management

Supplier
Management

Project Management

Workflow & Business
Process Management

Quality
Management

A man and a woman in business attire are looking at a tablet together in an industrial setting. The man is wearing a blue suit jacket over a light blue checkered shirt. The woman is wearing a white and black patterned blouse. They are standing on a metal walkway with a red railing. The background shows industrial structures and windows.

Democratizing data

Upchain: Democratizing data

Product data must be *available* to those who need it, in the *way* they need it.

Reduce barriers to entry

- Minimal technological infrastructure costs
- Instant-on PLM accessible anywhere, at any time, with an internet connection

Upchain: Democratizing data

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Enable multi-disciplinary, cross-organizational collaboration

- CAD agnostic file management with integrated BOM
- Automated CAD and drawing translations
- Browser-based 3D model visualization, markup and communication tools
- Workflows automate and streamline processes

Upchain: Democratizing data

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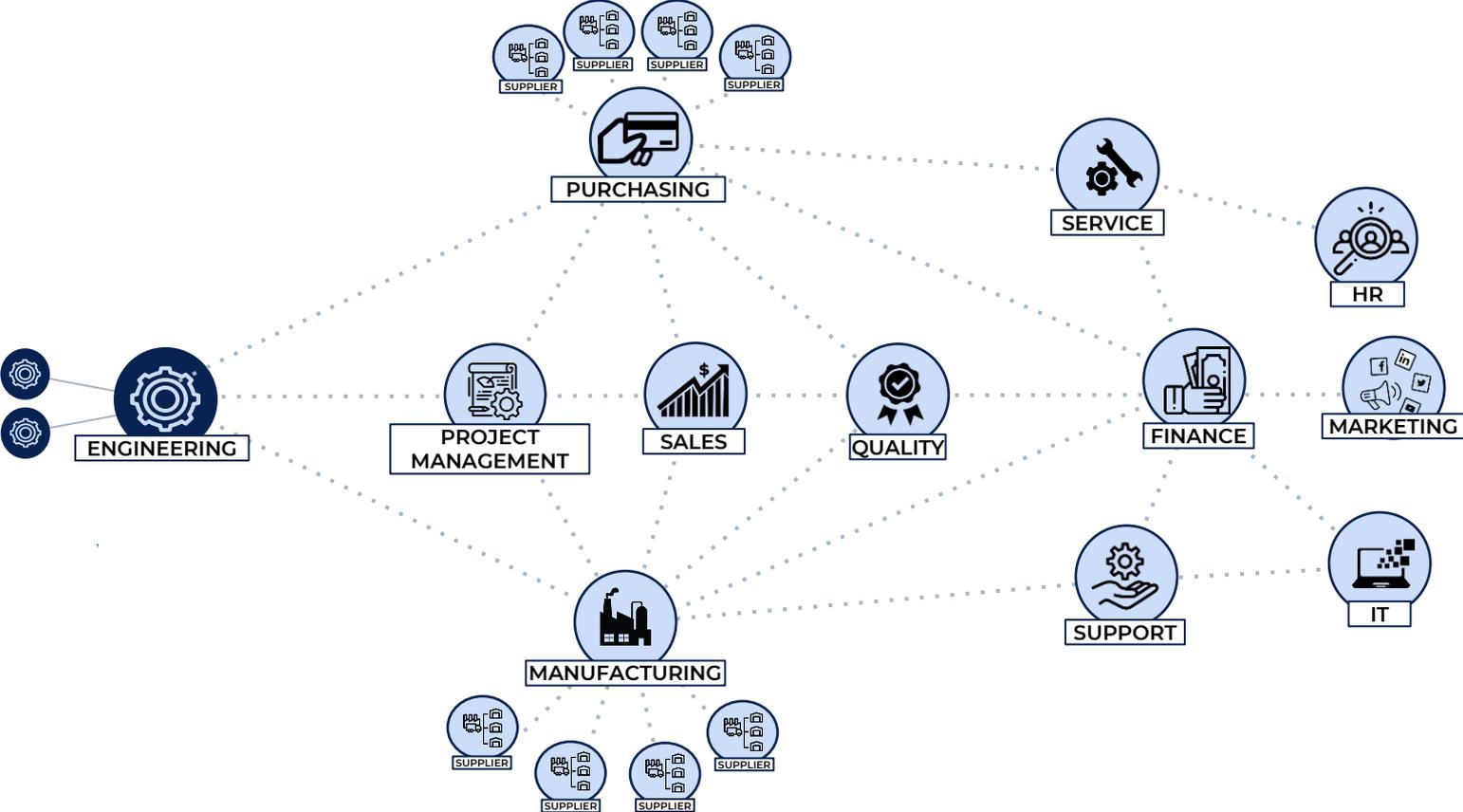
Enable multi-disciplinary, cross-organizational collaboration

- CAD agnostic file management with integrated BOM
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- Workflows automate and streamline processes

Facilitate rapid adoption

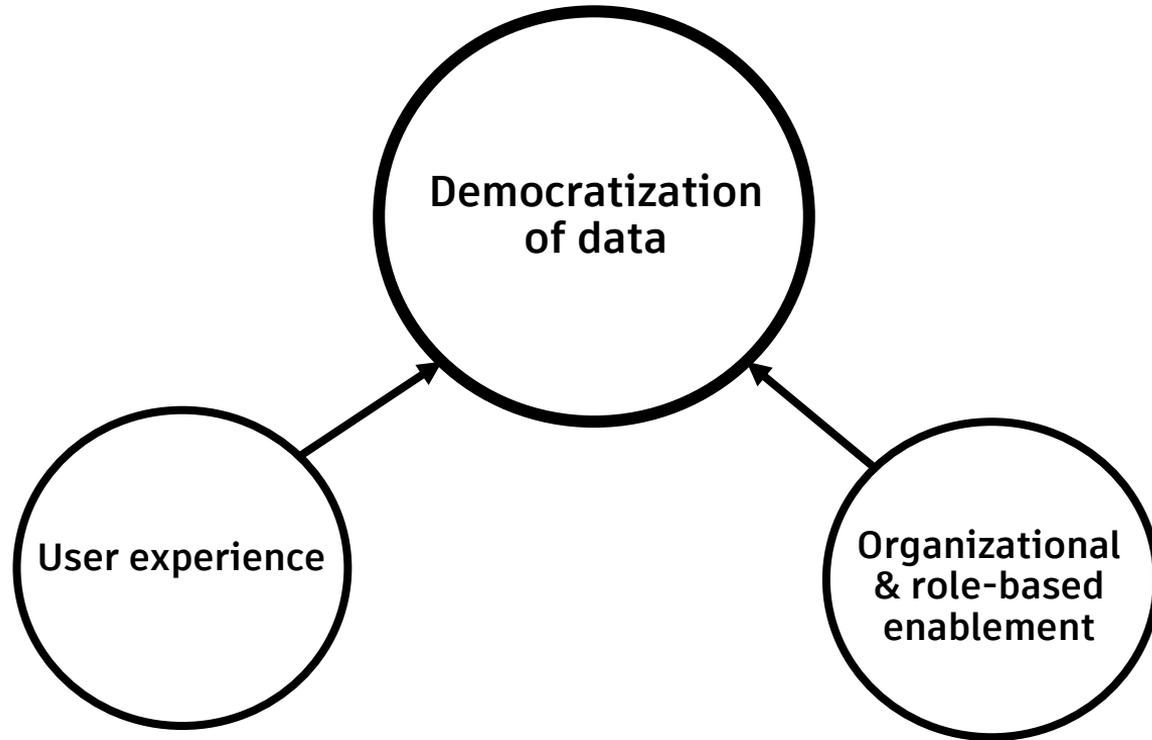
- Easy to use, easy to learn

Upchain: Connecting the value chain



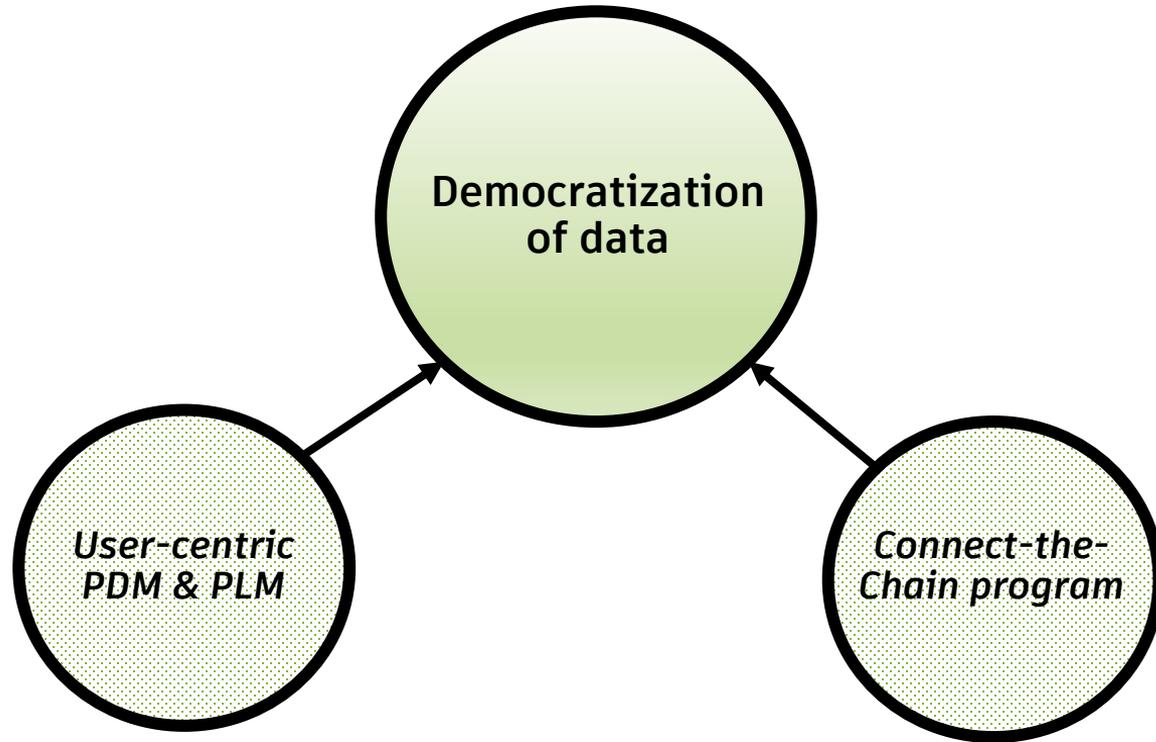
Upchain: Democratizing data

A holistic goal supported along two axes



Upchain: Democratizing data

A holistic goal supported along two axes





User-centric PDM and PLM

Upchain: User-centric PDM and PLM

As complex as necessary, as simple as possible



Integration with the
engineering and productivity
applications stakeholders
know and love



Modern, intuitive user
experience that enables end
user efficiency & drives
collaboration



Automated task
management & notification
of data change keep
everyone in sync

Modern user interface

13943 - Fishing reel 2022 - John Smith | Low | ENGINEERING | ACTIVE

eBOM | sBOM

Item Name	Item Number	Status	Majo..	Mino..	Item Version	Thumbnail	Visualization	Files	Qty	Creator	T
∞ FISHING REEL ASSEMBLY	ADSK-103334	DEVELOPMENT	XX	XX	V1				1	JS	
∞ BACK DRIVE TRANSFER GEAR	ADSK-103250	RELEASED	AA	00	V0				1.0000	JS	
∞ BACK SIDE COVER ASSEMBLY	ADSK-103254	RELEASED	AA	00	V0				1.0000	JS	
∞ BEARING1	ADSK-103257	RELEASED	AA	00	V0				2.0000	JS	
∞ CRANKSHAFT ASSEMBLY	ADSK-103259	RELEASED	AA	00	V0				1.0000	JS	
∞ MAIN DRIVE GEAR	ADSK-103260	RELEASED	AA	00	V0				1.0000	JS	
∞ DRAG SPROCKET PIN	ADSK-103264	RELEASED	AA	00	V0				2.0000	JS	
∞ DRAG SPROCKET	ADSK-103265	RELEASED	AA	00	V0				1.0000	JS	
∞ DRIVE GEAR OFFSET SPACER A	ADSK-103266	RELEASED	AA	00	V0				1.0000	JS	
∞ DRIVE GEAR OFFSET SPACER B	ADSK-103267	RELEASED	AA	00	V0				1.0000	JS	
∞ FRONT DRIVE TRANSFER GEAR	ADSK-103268	RELEASED	AA	00	V0				1.0000	JS	
∞ HANDLE SIDE COVER ASSEMBLY	ADSK-103272	RELEASED	AA	00	V0				1.0000	JS	
∞ REEL CAGE ASSEMBLY	ADSK-103275	RELEASED	AA	00	V0				1.0000	JS	
∞ SPOOL ASSEMBLY	ADSK-103283	RELEASED	AA	00	V0				1.0000	JS	
∞ WINDER TRANSFER GEAR	ADSK-103289	RELEASED	AA	00	V0				1.0000	JS	
∞ WINDING ASSEMBLY	ADSK-103294	RELEASED	AA	00	V0				1.0000	JS	
∞ WINDING HANDLE	ADSK-103311	RELEASED	AA	00	V0				1.0000	JS	
∞ ANSI B18.6 7M - M2X0.4 X 6(3)	ADSK-103315	RELEASED	AA	00	V0				3.0000	JS	
∞ BS 4183 - M3 X 5(2) I	ADSK-103316	RELEASED	AA	00	V0				1.0000	JS	

eBOM Ver

CRANKSHAFT ASSEMBLY ADSK-103259 AA



Details

Item Number: ADSK-103259

Item Name: CRANKSHAFT ASSEMBLY

Item description: Assembly

Item type: Assembly

Notes:

Status: RELEASED

Item maturity:

Creator: JS John Smith

Responsible designer: John Smith

Locked: None

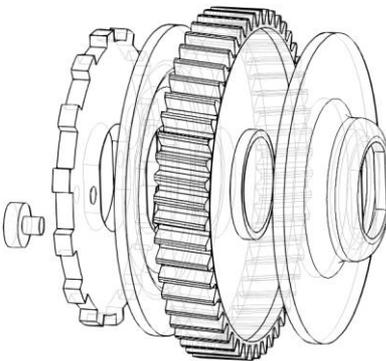
Revision: AA-00

Revised by: JS John Smith

Release type:

Revision Note: Initial Release

Common attributes



Back

Modern user interface

CR13943-10001 Medium IN PROGRESS Description: Initial release of fishing reel design (2022)

Workflow: ECR Workflow(195) Release Items Reject Edit

Release Items

Items Paste Item Remove Item

Item Name	Status	Release type	Revision Note	Item Number	Thumbnail	Major Revision	Item Version
48 _FISHING REEL ASSEMBLY	PENDING	Major	Initial Release	ADSK-103334		XX	V1
48 BACK DRIVE TRANSFER GEAR	RELEASED			ADSK-103250		AA	V0
48 BACK DRIVE TRANSFER SHAFT2	RELEASED			ADSK-103251		AA	V0
48 BACK DRIVE TRANSFER SHAFT2	RELEASED			ADSK-103252		AA	V0
48 BACK DRIVE TRANSFER SPUR2	RELEASED			ADSK-103253		AA	V0
48 BACK SIDE COVER ASSEMBLY	RELEASED			ADSK-103254		AA	V0
48 BACK SIDE COVER	RELEASED			ADSK-103255		AA	V0
48 BEARING HOUSING	RELEASED			ADSK-103256		AA	V0
48 BEARING1	RELEASED			ADSK-103257		AA	V0
48 ROLLING BEARING 700008 S723 GB_T 292-94	RELEASED			ADSK-103258			
48 CRANKSHAFT ASSEMBLY	RELEASED			ADSK-103259			
48 MAIN DRIVE GEAR	RELEASED			ADSK-103260			
48 SHAFT1	RELEASED			ADSK-103261			
48 SHAFT1	RELEASED			ADSK-103262			
48 SPUR GEARS1	RELEASED			ADSK-103263			
48 DRAG SPROCKET PIN	RELEASED			ADSK-103264			
48 DRAG SPROCKET	RELEASED			ADSK-103265			
48 DRIVE GEAR OFFSET SPACER A	RELEASED			ADSK-103266			
48 DRIVE GEAR OFFSET SPACER B	RELEASED			ADSK-103267			

BOM Compare revisions

Upchain administration - Upchain Demo Tenant

Workflows Task types Business process types Document categories

Tenant workflows System workflows Create workflow

CR Detailed ECR Workflow 000 Published version 000 Creator Matthew van Marken Status Active

User Privileges Clone Delete

System Privileges

- Start
- Object Decision Report
- System Decision Print
- Notification Update System
- Stop

Flowchart details: The diagram shows a sequence of nodes. It starts with a 'Start' node (blue circle with '1'), followed by an 'Update' node (green triangle). A decision node (orange diamond with '2') branches into 'Technical L1' and 'Technical L2'. 'Technical L1' leads to a 'Task' node (purple square with '11'). 'Technical L2' leads to a 'Task' node (purple square with '12'). From 'Task 11', the flow goes to a 'Stop' node (red circle with '3'). From 'Task 12', it goes to a 'Task' node (purple square with '13'). A 'Change Task' node (orange diamond with '14') also branches into 'Task 11' and 'Task 13'. The flowchart includes various other nodes like 'Object Decision Report', 'System Decision Print', and 'Notification Update System'.

Properties:

- ID: 2
- Process: Decision
- Name*: Technical Lead Rev
- From: 3.5
- Approved: 4
- Rejected: 14
- Notes: Technical Lead Review
- Type*: Generic Decision
- Approved Comment Required:
- Rejected Comment Required:
- Assignee cannot be Creator:

Streamlining task and file management

Why *should* it be difficult to create, find, and reuse product data?

“Day in the life” use case: New product design based on standard, released data

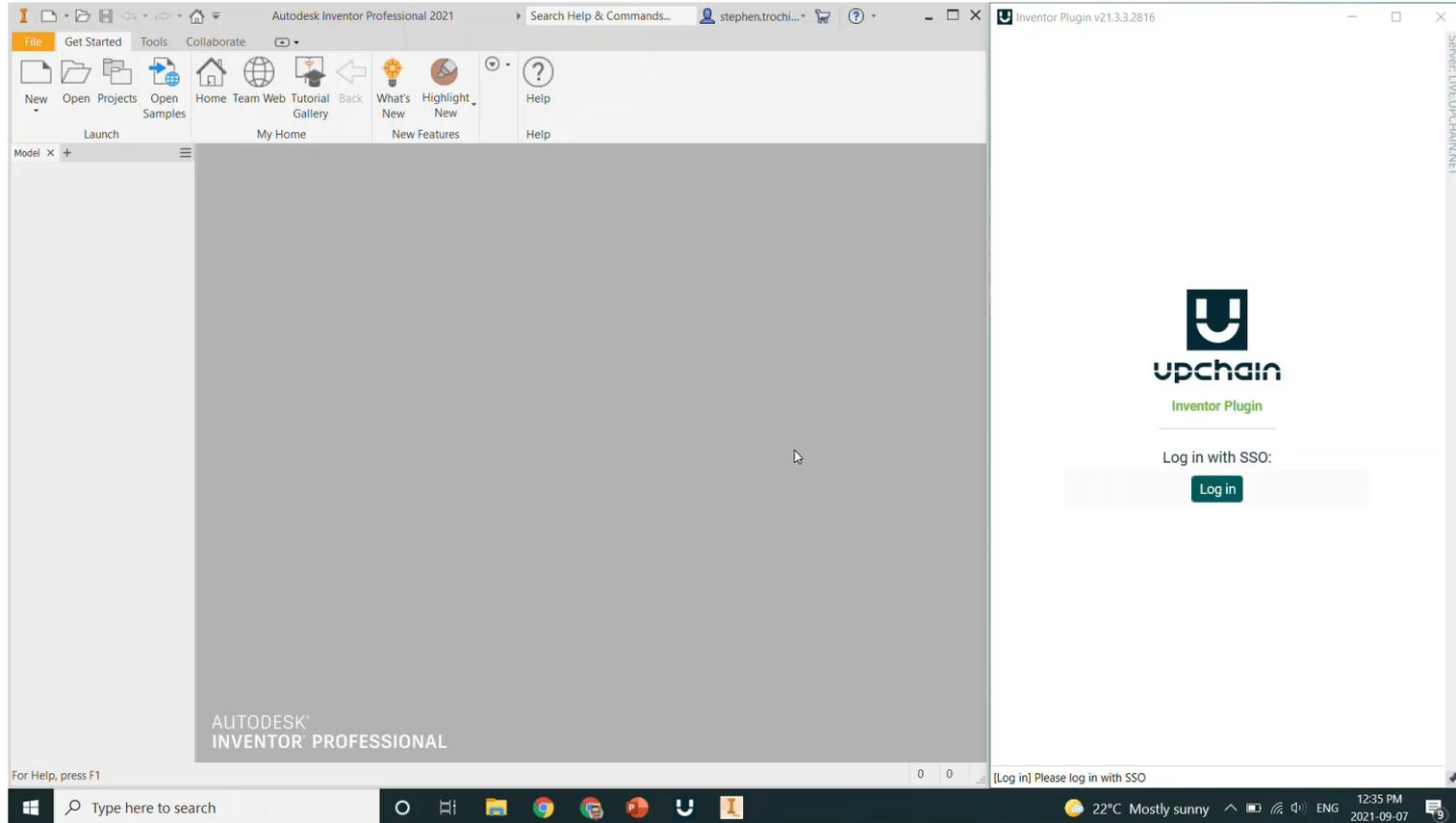
CAD power user opens the Upchain CAD Plugin, and receives an assignment

The assignment is for a new project which requires a new design based on a standard, released design

The assignment requires that the standard design be cloned as a new design so that the rest of the project team can begin working with it.

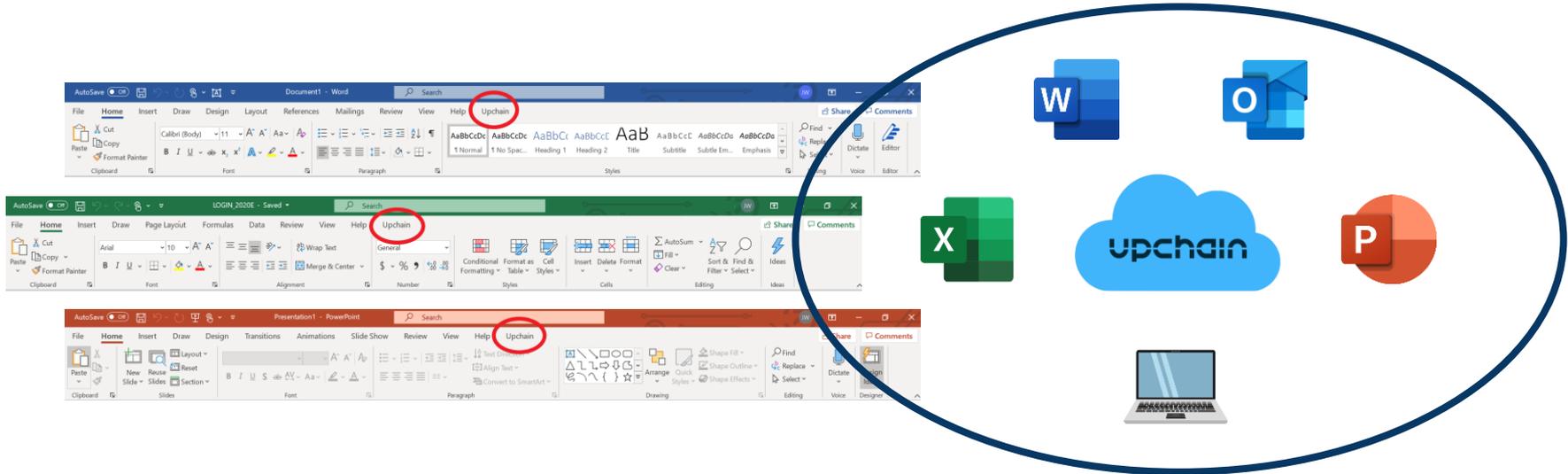
Streamlining task and file management

Why *should* it be difficult to create, find, and reuse product data?



Enterprise PLM enabled in Office

Project leads and downstream stakeholders perform routine tasks facilitated by Upchain tools embedded in everyday productivity applications.



Enterprise PLM enabled in Office

Why *should* it be difficult to find and consume up-to-date product information?

“Day in the life” use case: Project Manager prepares a project report

A Project Manager working on a PowerPoint project report managed in Upchain.

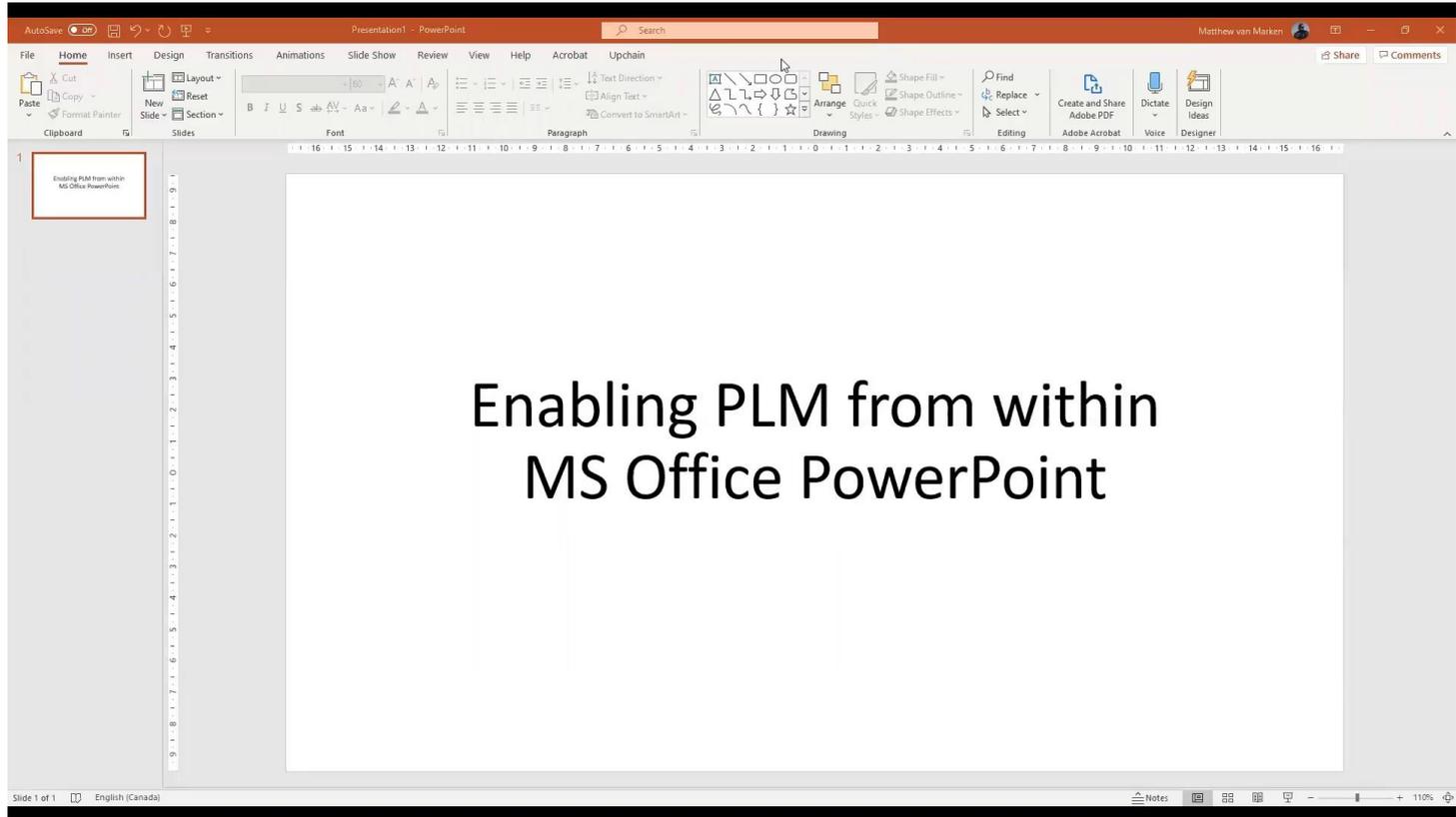
Project is tasked with adding the following data to the presentation:

- (1) an updated image of the assembly model
- (2) technical drawing
- (3) basic bill of materials

Finally, the Project Lead checks in the updated presentation to Upchain.

Enterprise PLM enabled in Office

Why *should* it be difficult to find and consume up-to-date product information?



Onboarding and Training

Connect-the-Chain program



Align

Work in tandem with your account rep to define and complete technical requirements and success plan.

Configure

Set up your Upchain environment to map to your business rules and processes.

Migrate

Import and work with your own CAD and BOM data.

Train

Learn how to collaborate in real time across a variety of user roles and disciplines.

Support

Access resources for expert assistance.

Benefits



Reduce implementation time and risk



Drive positive user adoption - users are trained in the systems they know



Faster ROI - teams can start using Upchain immediately, "out of the box"



Predictable and repeatable results

PLM user experience and enablement

	Traditional PLM	Upchain
User experience	<ul style="list-style-type: none">• Unintuitive UI• Complexity• Designed for engineers	<ul style="list-style-type: none">• Intuitive UI• Simplicity• Designed for the extended enterprise
Enablement	<ul style="list-style-type: none">• High learning curve• Costly, time-intensive training• Tribal knowledge• 'Serve the system' training	<ul style="list-style-type: none">• Minimal learning curve• Scalable training• Shared knowledge• Role-based enablement

Connect-the-Chain training

Role-based product stakeholder enablement

Role-specific learning

Unique learning paths tailored for key product stakeholder roles, including CAD power users, engineers, project managers and team leads, Upchain administrators, and procurement specialists.

Self-paced, on-demand online learning

Learn at your own pace with interactive, video-based courses. Bite-sized learning experiences focus on performing everyday routine tasks – learn what you need, when you need.

Regularly recurring, live instructional webinars

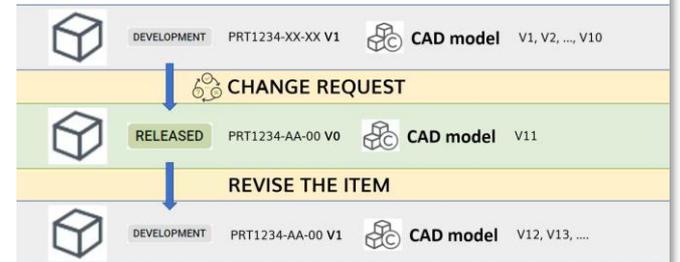
Engage with Upchain experts via live, regularly scheduled virtual webinars. Instructors provide demonstrations of common use cases and best practices, and respond to trainee questions in a live forum.



What is the Mechanical CAD plugin?



The item's lifecycle



Concluding remarks

Conclusion

Today's decentralized product stakeholder network requires an agile and flexible PDM and PLM solution.

A connected value chain depends on a democratization of data.

Upchain's user-centric product design promotes seamless integration between people, data and processes.

Connect-the-Chain program supports rapid deployment and adoption across the value chain.

The background features a dark, almost black, space with several large, metallic, angular shapes that resemble parts of a mechanical assembly or a futuristic architectural structure. These shapes are rendered with soft highlights and shadows, giving them a three-dimensional appearance. The central focus is the text 'AUTODESK UNIVERSITY' in a bold, white, sans-serif font.

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