



PLM SEGMENT UPDATE AND ROADMAP

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AGENDA

- Industry Challenges and PLM Trends
- PTC Windchill 11 – *Smart Connected PLM™*
- PLM Roadmap
- Taking a Fresh look at PLM

INDUSTRY CHALLENGES

Leveraging the Internet of Things Requires a New Product Development Approach



Design for the Internet of Things

Design for the unique needs of IoT-enabled products



Differentiate Offerings

Deliver competitive capabilities and apps to customers



Leverage IoT Data Across Roles

Deliver the data returning from IoT-enabled products

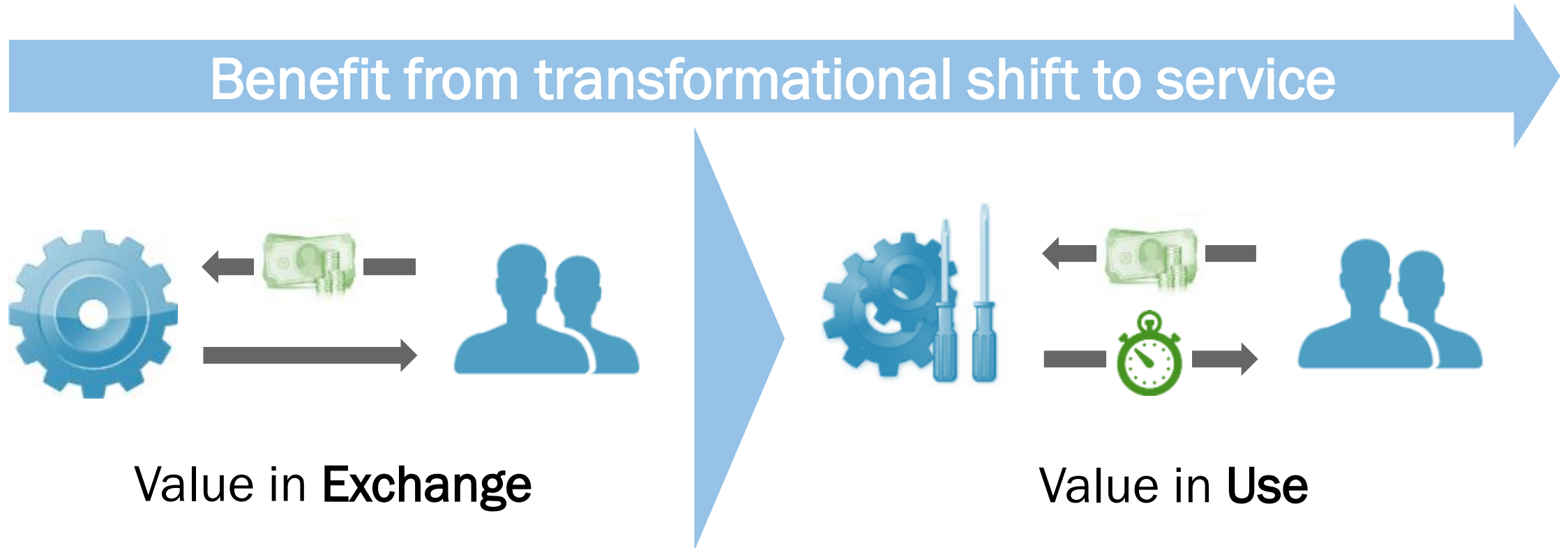


Improve Ability to Compete

Improve products and processes using IoT data

INDUSTRY SHIFT

By 2018, 40% of the top 100 discrete manufacturers and 20% of the top 100 process manufacturers will provide PaaS *platforms*.*



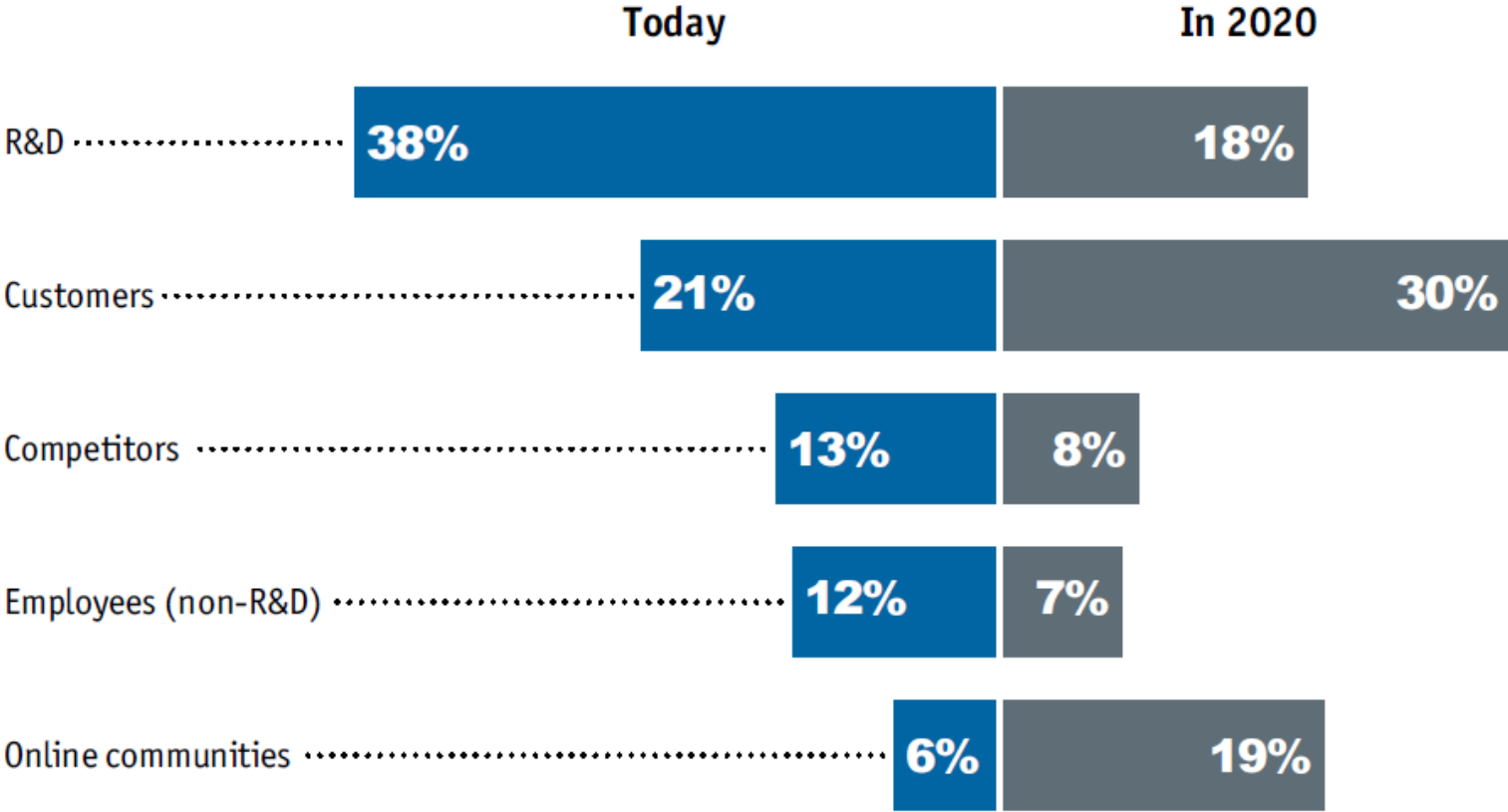
INNOVATION DRIVERS



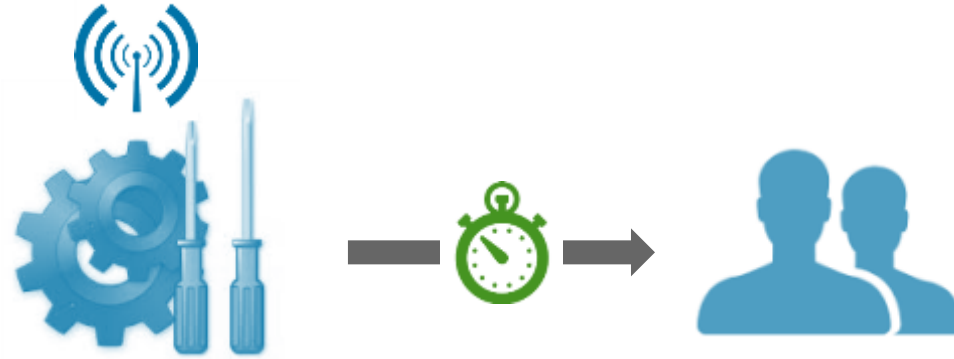
Chart 11



What is the main source of new product and service ideas today, and what will it be in 2020?
(top responses; % respondents)



Tap Customer Innovation Sources



Establish PTC PLM IoT Solution as the Best Platform

For designing, manufacturing & delivering smart, connected systems as a service

PTC WINDCHILL 11

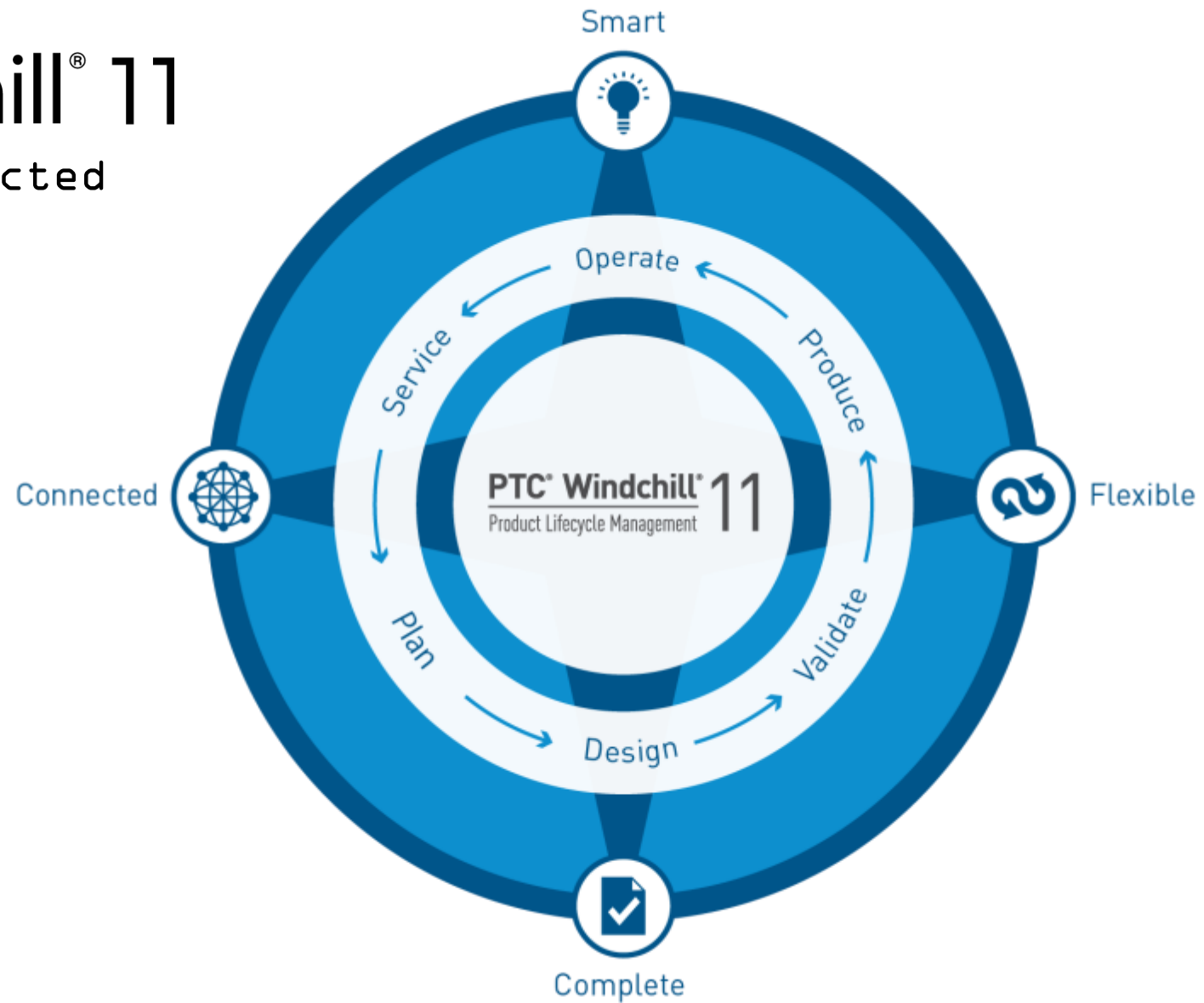
SMART CONNECTED PLM

THE EVOLUTION OF PLM:



windchill[®] 11

smart connected
PLM





SMART

Business Challenges

- Instant Skills
- Democratization of PLM
- Future IoT Strategy
- Collaboration with Security

70%

Of Windchill PLM users at *iROBOT* are outside of Engineering

PTC Windchill 11 Delivers...

Role-Based Apps

Windchill Search

IP Protection

PTC NAVIGATE: BETTER INSIGHTS, NEW CONNECTIONS



Dynamic, real-time connections to multiple systems of origin

Highest fidelity access to product data for confident decisions

Tailor and deploy apps quickly, leveraging Rapid Application Development

Upgrade, improve or replace backend systems without impact

PTC® Navigate View Part Structure

Welcome Administrator

Back To Search

PART DETAILS

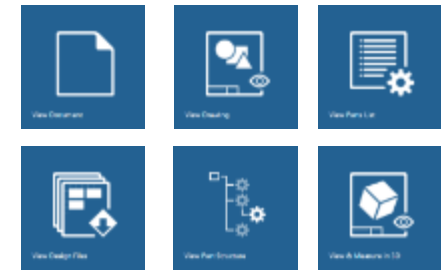
Number: 000000212
Name: SHOWER HEAD
Version: 1.1 (Design)
State: Design

SELECTED PART

Number: 000000249
Name: CONTROL KNOB - 2ND SHOT
Version: 1.1 (Design)
State: Design

PART STRUCTURE

Number	Name	Version	State	Last Modified
000000212	SHOWER HEAD	1.1 (Design)	Design	8/23/2015
000000214	CONTROL KNOB - LARGE	1.1 (Design)	Design	8/23/2015
000000230	CONTROL KNOB - 1ST SHOT	1.1 (Design)	Design	8/23/2015
000000249	CONTROL KNOB - 2ND SHOT	1.1 (Design)	Design	8/23/2015
000000311	ENGINE COUPLING	1.1 (Design)	Design	8/23/2015
000000292	LINKAGE KNOBE	1.1 (Design)	Design	8/23/2015
000000244	REAR HOUSING	1.1 (Design)	Design	8/23/2015
000000352	LINKAGE STEM	1.1 (Design)	Design	8/23/2015
000000254	ENGINE NUT	1.1 (Design)	Design	8/23/2015
000000249	SHOWER BALL	1.1 (Design)	Design	8/23/2015
000000290	FRONT HOUSING	1.1 (Design)	Design	8/23/2015
000000219	SHOWER FLOW CONTROL	1.1 (Design)	Design	8/23/2015
000000238	FLOW CONTROL VALVE	1.1 (Design)	Design	8/23/2015
000000308	FLOW CONTROL HOUSING	1.1 (Design)	Design	8/23/2015
000000352	O-RING	1.1 (Design)	Design	8/23/2015
000000271	BALL SEAL	1.1 (Design)	Design	8/23/2015
000000264	LINKAGE	1.1 (Design)	Design	8/23/2015



Pick component

→ Row in BOM Structure highlighted

→ Selected part properties displayed

Include columns from other systems (e.g., stock, cost...)

PTC WINDCHILL SEARCH: FIND & RE-USE PLM DATA FASTER



Find the right information faster with powerful new multifaceted search

Improve information reuse and spend less time searching

Seamlessly combine parts classification search & traditional PTC Windchill attributes search

Leverage keywords and filters to experience a familiar, Web-style search

Keyword

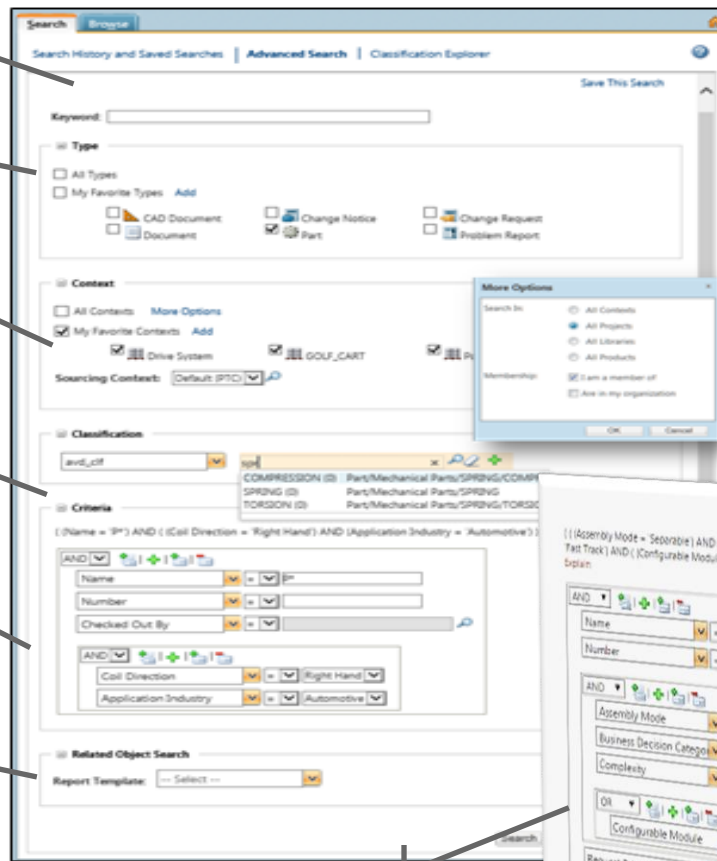
Type

Context

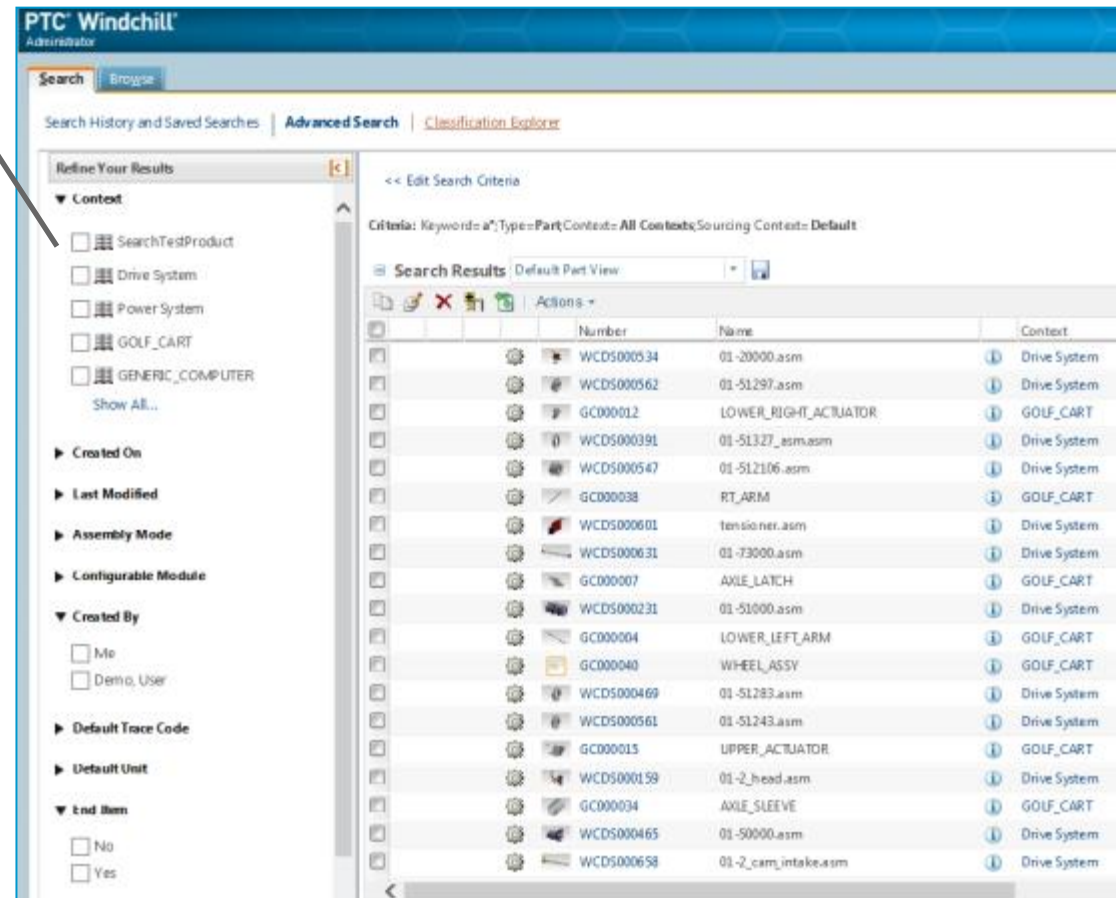
Classification

Criteria

Relationship



Facets



Nested Query



CONNECTED

Business Challenges

- Performance and operational data
- Closed-loop lifecycle management
- Integrated systems
- Optimized PLM performance

15-20%

Improvements in reliability with closed-loop methods in Windchill Quality – *HPE*

PTC Windchill 11 Delivers...

Connected Quality

Requirements Traceability

Performance Advisor

CONNECTED QUALITY : LEARN FROM THE PRODUCT'S OPERATIONAL BEHAVIOR

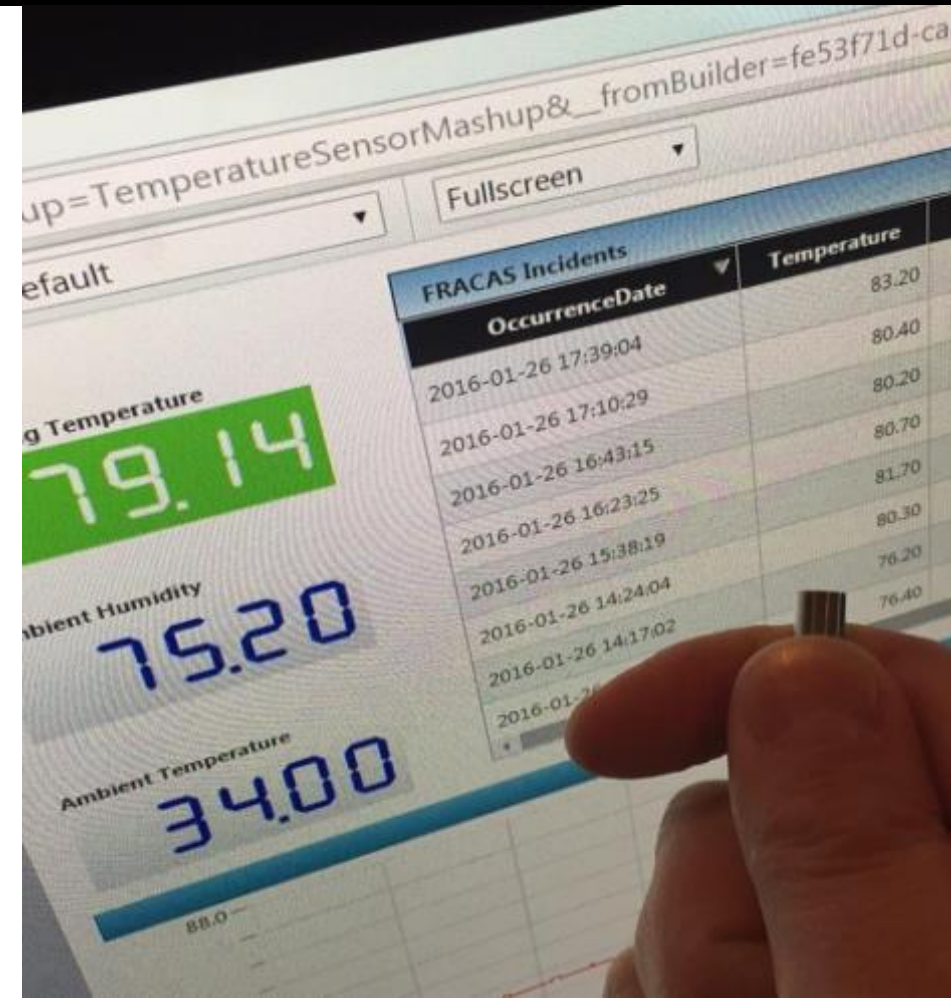
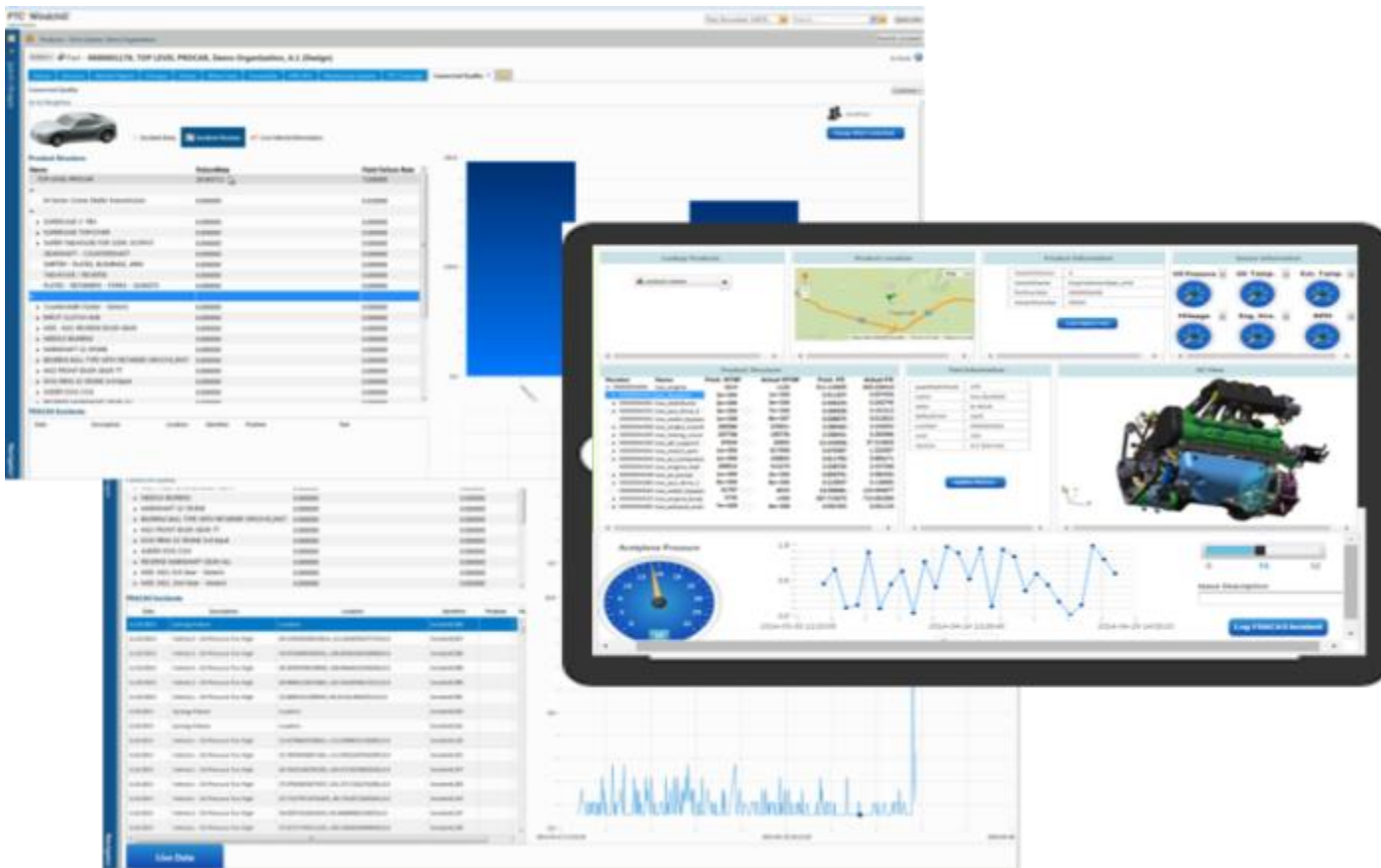


Improve quality by informing processes with smart, connected product data

Increase speed and accuracy of root cause analysis and CAPA, reducing CoPQ

Deliver quality data throughout more of the organization than ever before

Improve next-generation designs with visibility into fielded product performance



ALM – PLM INTEGRATION: REQUIREMENTS TRACEABILITY



Coordinate product changes across requirements, software, hardware

Understand the impact of a change in requirements on the product Bill of Materials

Track and manage requirements across the lifecycle, for end-to-end traceability

Links data for transparent access without duplication

PTC® Navigate® Manage Traces

Document: 1454

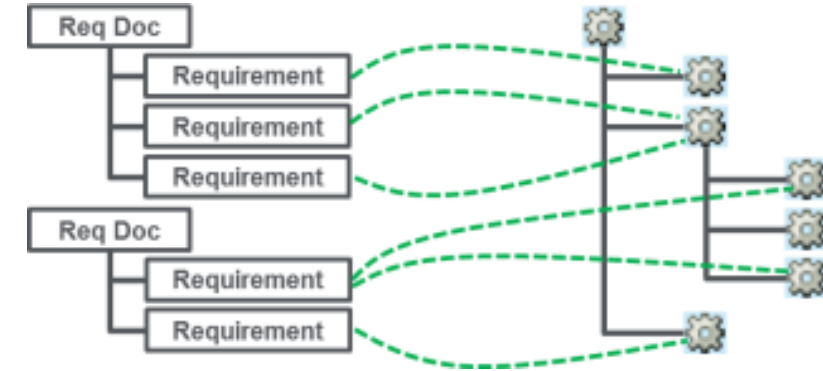
Trace

ID	Category	Description	Item ID	Name	Version
1455	Heading	Technical Specifications	0000000181	Drug_Sig	A.3 Design
1457	System Requirement	Pump flow rate range will be programmed to allow	0000000275	100K CamClamp	A.2 Design
1474	System Requirement	User will select flow set table when	0000000308	100_Desig	A.2 Design
1478	System Requirement	SAVE of last infusion rate will be automatic even an	0000000326	Drug_Arm2	A.2 Design
1479	System Requirement	Busus rate range will be programmed to allow any	0000000354	Clamp_Step	A.2 Design
1480	System Requirement	Reminder audio bell after every 0.5 ml delivered by	0000000348	POWER SUPPLY ASSE	A.20 Design
1482	System Requirement	SAV's last busus rate will be automatic event when th	0000000405	FLUID	A.3 Design
1484	System Requirement	Drug name will be displayed on the top line of the I	0000000288	330 SWITCH	A.3 Design
1486	System Requirement	Software control must allow the provision of main	0000000995	SCREWS	A.2 Design
1488	System Requirement	Breakable Occlusion pressure trigger levels must be	0000000995	SCREWS	A.2 Design
1488	System Requirement	Audio and visual alarms will be coded for Volume	0000000992	ON/OFF SWITCH	A.7 Design
1455	Heading	Power Supply Specifications	0000000126	EXTERNAL HOUSING	A.3 Design
1461	System Requirement	Power input to be 230-240VAC, 3PH.	0000000997	RAH2	A.4 Design
1472	System Requirement	Power fluctuations for the line wave must be tolera	0000000997	RAH2	A.4 Design
			0000000712	Block_Line	A.3 Design
			0000000711	Venous Pressure Monitor	A.4 Design
			0000000100	Arterial Pressure Monitor	A.4 Design
			0000000383	100_Housing	A.2 Design
			0000000989	ECOH C300	A.3 Design
			0000000082	Drug_Arm_Bracket	A.2 Design
			0000000082	Drug_Arm_Bracket	A.2 Design
			0000000327	Tube_Adapter	A.3 Design
			0000000327	Tube_Adapter	A.3 Design
			0000000327	Tube_Adapter	A.3 Design
			0000000327	Tube_Adapter	A.3 Design
			0000000384	Drug_Arm	A.2 Design

Power Supply Specifications

Item: 1455
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 Created By: administrator
 Created Date: 2016-04-04 16:25
 Modified By: tssadmir
 Modified Date: 2016-04-09 14:23
 Significant Date: 2016-04-09 14:23

Number: 0000000126
 Name: EXTERNAL HOUSING
 Version: A.3 Design
 State: In Work



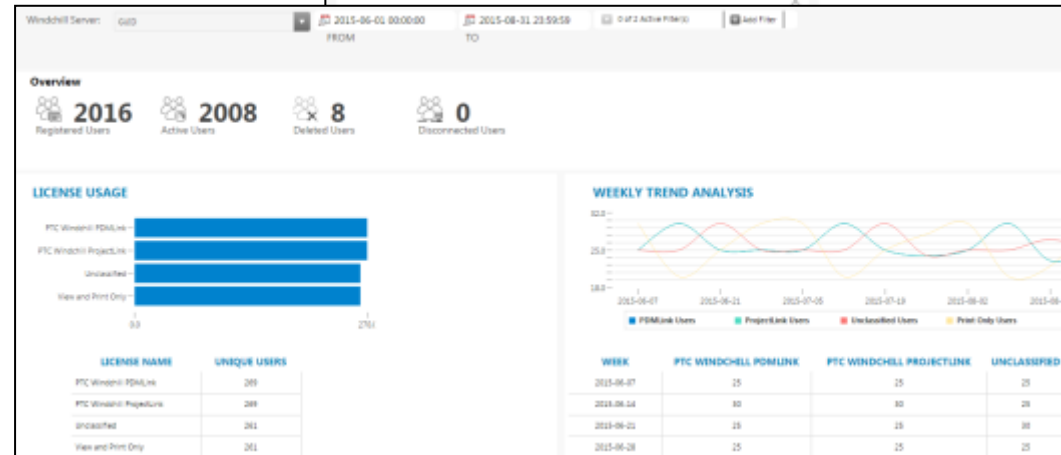
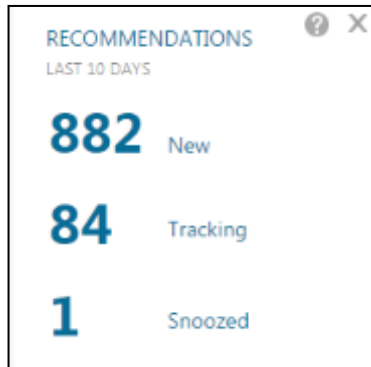
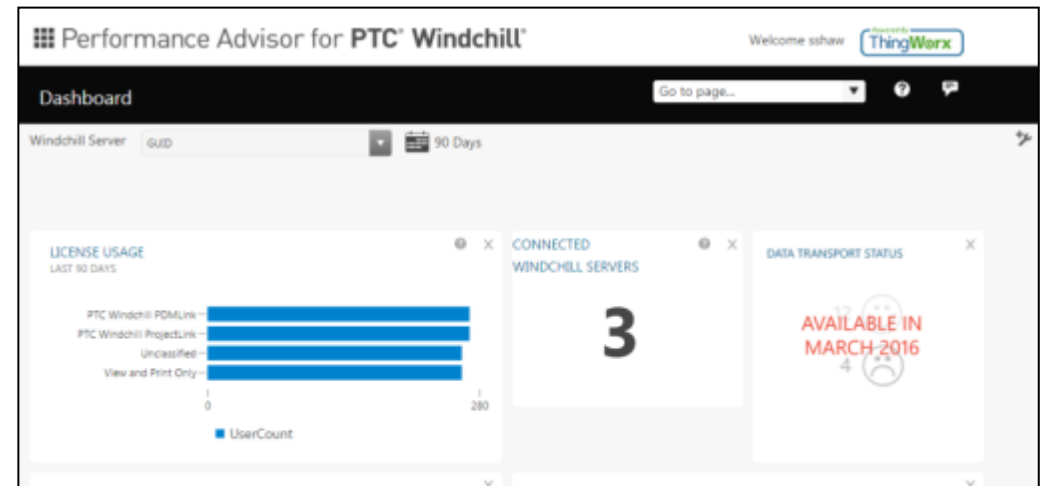
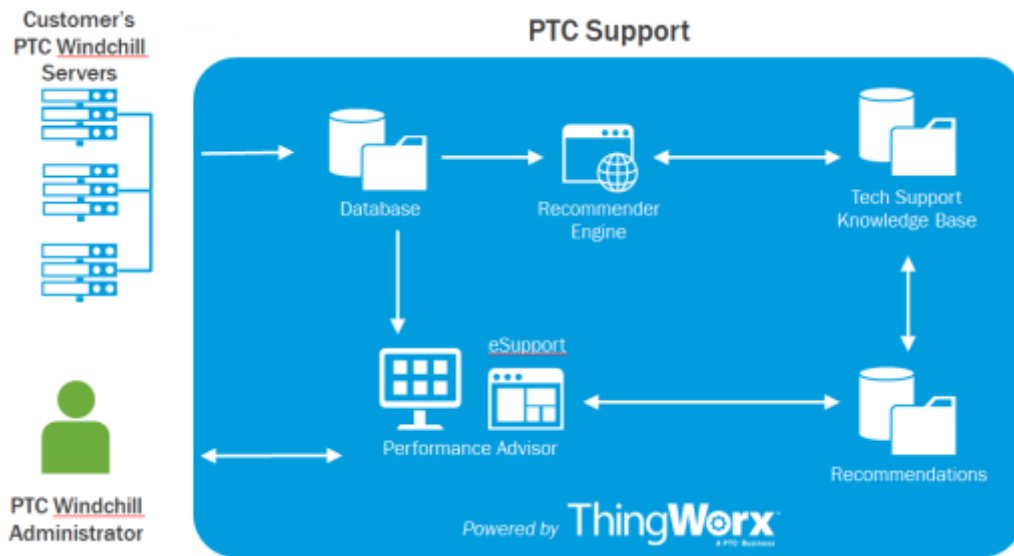
“Link, not synchrony”

Insight into feature usage, adoption, and system performance

License usage monitoring

Technical Support recommendations

SaaS delivery of new capabilities and reports



Business Challenges

- Unleash the value of PLM
- Move to parts-centric
- Complete product definition
- Streamline product development & TTM

75% Time-savings
in release mgt
process

30% Reduction in
parts library



COMPLETE

PTC Windchill 11 Delivers...

Multi-CAD Collaboration

BOM Management / Transformation

SMART MANUFACTURING : PARALLEL DESIGN AND MANUFACTURING



Enable engineering & manufacturing collaboration

Increase production quality and performance

Shorten time to production (and to market)

Reduce product development cost

Associative mBOM definition and restructuring

Validate Process Plan in 3D

Leverage 3D for mBOM DMU

Manufacturing change control and propagation to mBOM, process plans, resources, instructions and documents.

The diagram illustrates the integration of different data models in manufacturing:

- eBOM (Engineering Bill of Materials):** Shows a hierarchy of parts like Frame, Rear Frame, Part 3, Part 4, and Support. A 'NEW REVISION' callout points to a change in the Frame part.
- mBOM (Manufacturing Bill of Materials):** Shows a 'Sub-Assembly' that 'Builds' Part 1, Part 2, Part 5, and Part 9. It also includes 'Support' parts.
- Process Plan:** A sequence of operations (Op 010, Op 020, Op 030, Op 040, Op 025). Op 040 is highlighted as being 'Operated on' by Part 1 and Part 2.
- Resources:** Includes 'Plants', 'Lines', 'Tooling', 'Work Center', 'Skills', and 'Process Material'. Op 040 is shown to be 'Performed with' Tooling.
- Documents (NC):** Includes 'Illustrations', 'Textual Description', 'Time Breakdown', and 'Part List' associated with Op 040.



Business Challenges

- Reduce IT burden and costs
- Predictable budgeting
- Changing resource needs
- As-needed PLM, program or project-based

70-90%

Prefer subscription PLM
- PTC customers and prospects

Windchill 11 Delivers...

Subscription Pricing

Cloud Deployment

SAAS PLM

THE PTC DIFFERENCE: FLEXIBLE DEPLOYMENT OPTIONS



SUBSCRIPTION PRICING

Right-sized pricing based on users and features

- Scale software to **active users** based on program needs
- **Remix** functionality to meet business needs
- Low up-front costs, **predictable** budgeting: Op-ex vs. cap-ex



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CLOUD DEPLOYMENT

Outsource hardware, support, administration and expertise

- **Secure** hosting and IT administration
- Optimized systems and ongoing **support** reduce risk and costs
- Decrease IT burden, time to deploy; increase **productivity**



SAAS (software as a service)

Rapid deployment and expert management

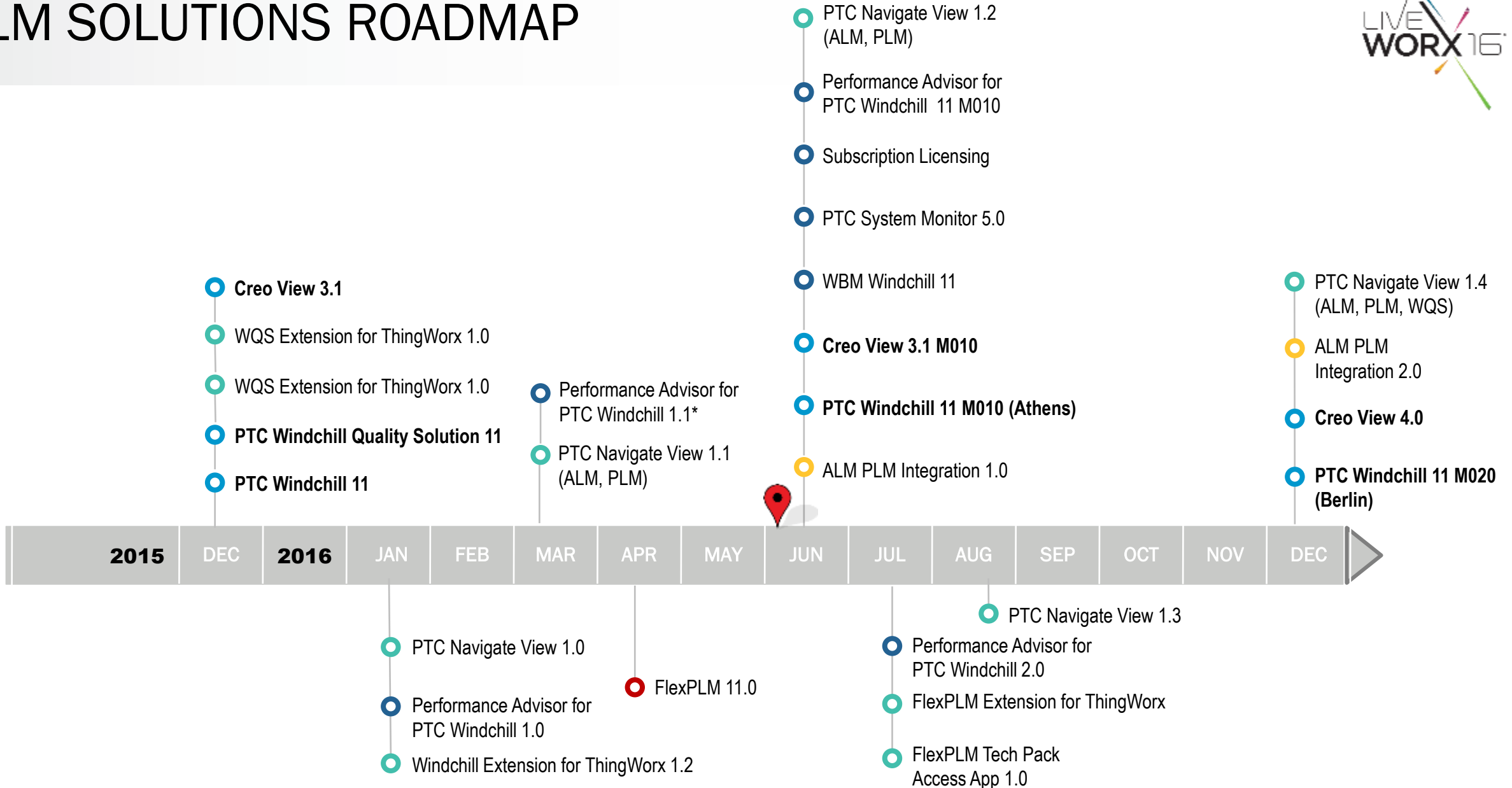
- Upgrades, migrations all handled: latest, **best features**
- **Assured** value and predictable cost
- **Flexible** cost model based on usage



PTC WINDCHILL PLM RELEASE ROADMAP

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PLM SOLUTIONS ROADMAP



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PTC WINDCHILL RELEASE STRATEGY



Industry Best Practices to Reduce Customer Effort & Risk

- Limited number of feature enhancement releases
- “CPS” releases
 - Delivered with a single patch installation
 - Include fixes only, no new features
 - Future CPS schedule published on PTC.com
- Improved Quality
- Improved Client Interoperability
 - Asynchronous WWGM client releases
 - Customers can stagger PTC Windchill client and server upgrades independently

PTC Windchill

Major Releases

- Every 12 to 24 Months

Maintenance Releases

- Two or Three
- Defect fixes
- Selected features - minimal user impact

Critical Patch Sets

- Cumulative, Issued On A Regular Schedule
- Contain only significant customer fixes
- No feature content

WINDCHILL UPGRADE PROCESS



Fully automated tooling & system properties gathering

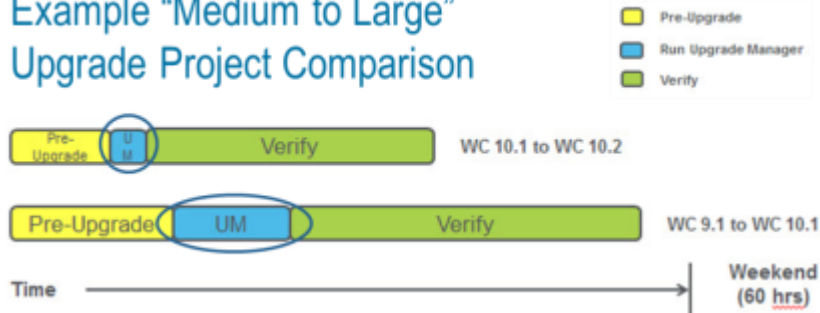
Guided step by step UI

Faster, shorter tool run time

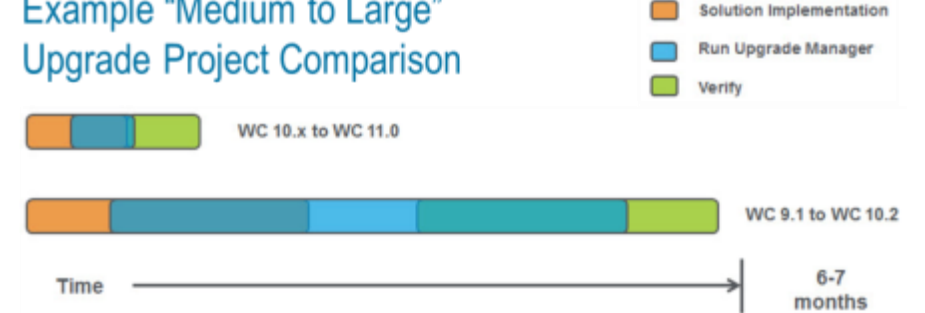
Proven on real customer data sets



Example "Medium to Large" Upgrade Project Comparison



Example "Medium to Large" Upgrade Project Comparison



ATHENS

PTC WINDCHILL 11.0 M010



BERLIN

PTC WINDCHILL 11.0 M020



TAKE A FRESH LOOK
AT THINGS



PTC®

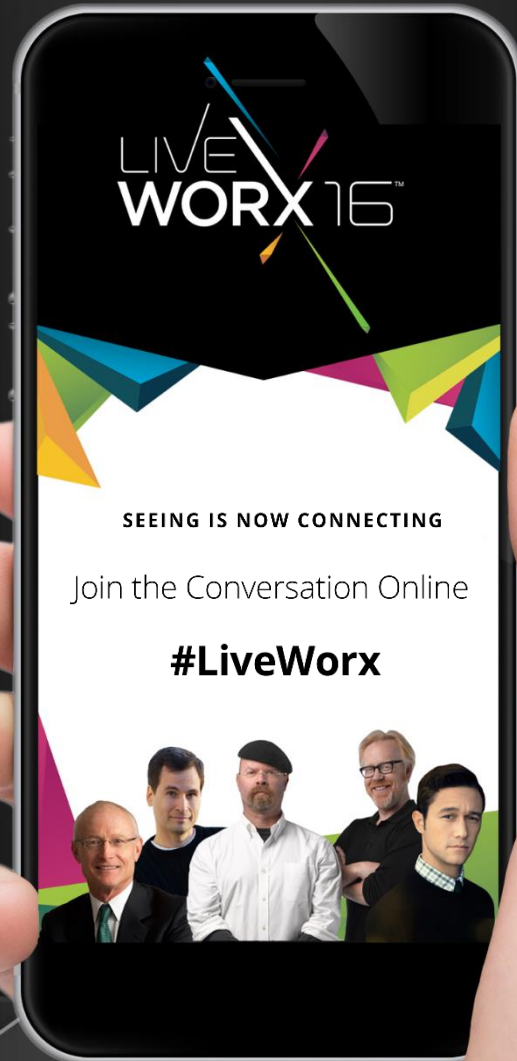
The image features several colorful geometric shapes, including triangles and lines in shades of blue, green, yellow, and purple, scattered across the background. A large, multi-colored geometric shape is prominent on the right side.

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TAKE A FRESH LOOK AT THINGS

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