



**MERCURY**

# **DATA MANAGEMENT IN A WORLD OF M&A**

# Agenda

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- PLM in the world of Mergers, Acquisitions, Divestitures
- Processes Data and Systems
- PLM Architecture
- Realign Process and Technology
- Manage the complexity, efficiently

# Mercury Marine

**Founded in 1939**

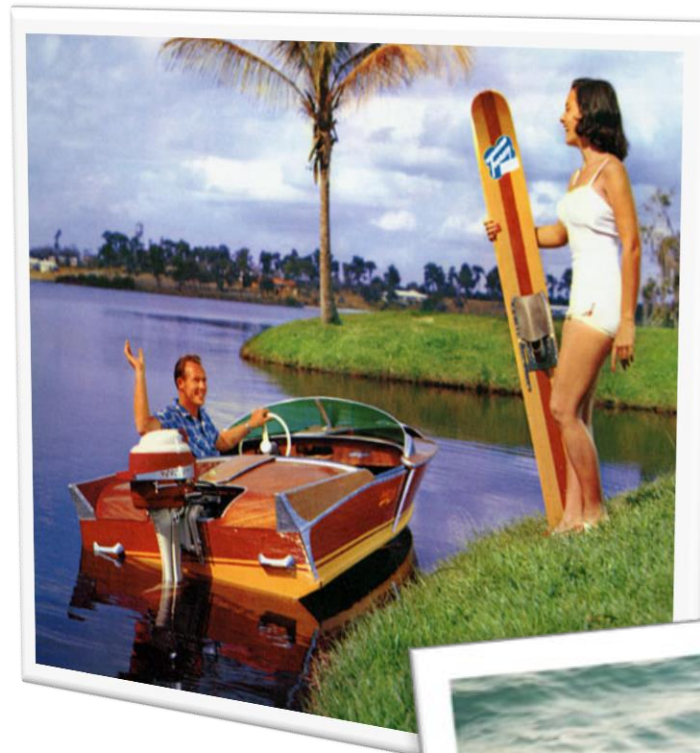
**Our product brands include:**

- Mercury and Mariner outboard engines
- Mercury MerCruiser sterndrives and inboard engines
- Mercury Racing high-performance outboards and sterndrives
- Mercury inflatable boats
- Mercury SmartCraft electronics
- Mercury and Quicksilver parts
- Mercury PLM Services

**Teamcenter implemented in 2005**

**Our PLM implementation includes:**

- Several additional modules
- Support for 10 locations, 3 countries, over 600 users



# Mercury PLM Services

**Founded in 2009**

## **Our Services Include:**

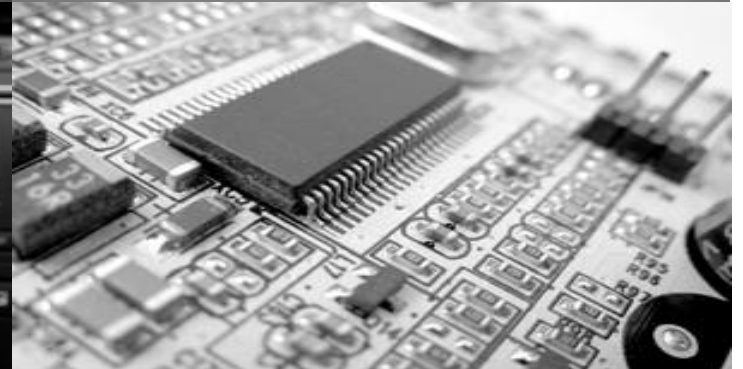
- PLM Assessments / Advisory Consulting
- Teamcenter Configuration / Customization
- Teamcenter Upgrades
- PLM to ERP Integrations
- Data Migration
- Training and Mentoring Solutions
- Digital Product Renders / Animations

## **Application Offerings**

- Parts Planning Application
- Test Request Application
- Problem Solver Utilities for Teamcenter

## **Industries Served Include:**

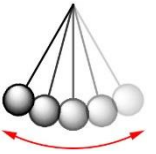
- Aerospace
- Automotive
- Consumer Durables
- Defense
- Diversified Industrial Manufacturing
- Medical Devices



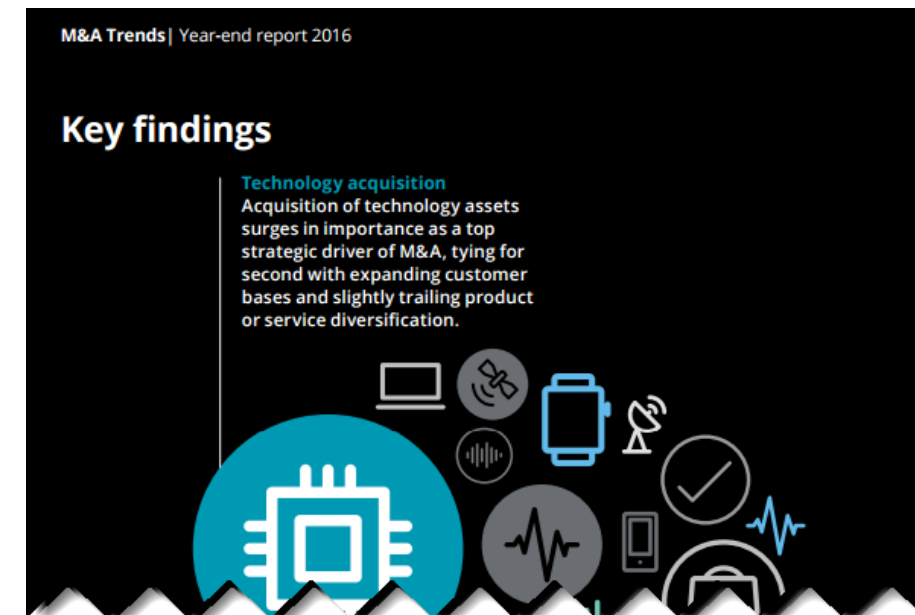
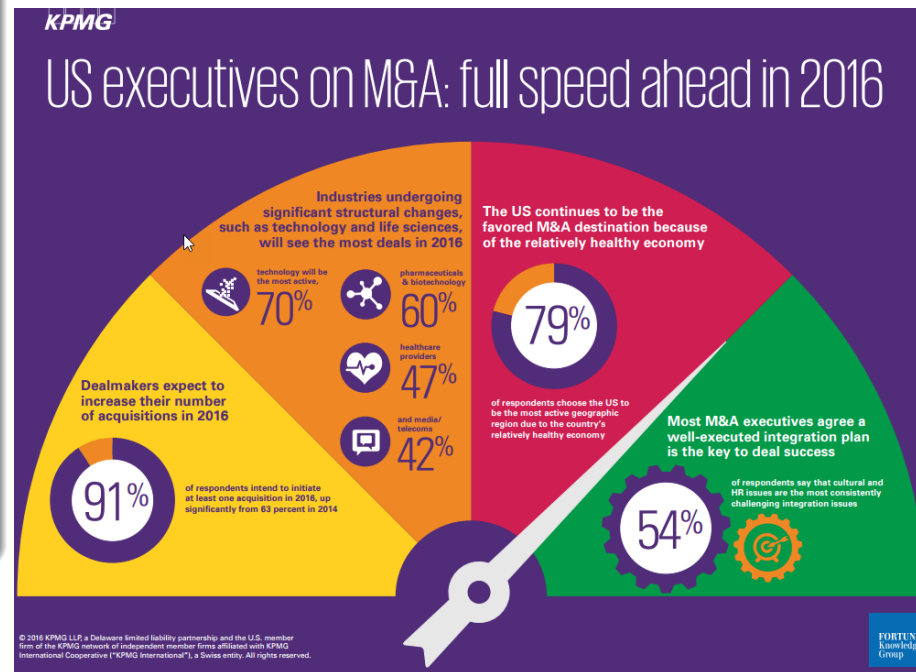
# Mergers & Acquisitions | Divestitures | Value

54% - Integration is key to success [Source: KPMG]

73% - Divestitures are expected to go up [Source: Deloitte]



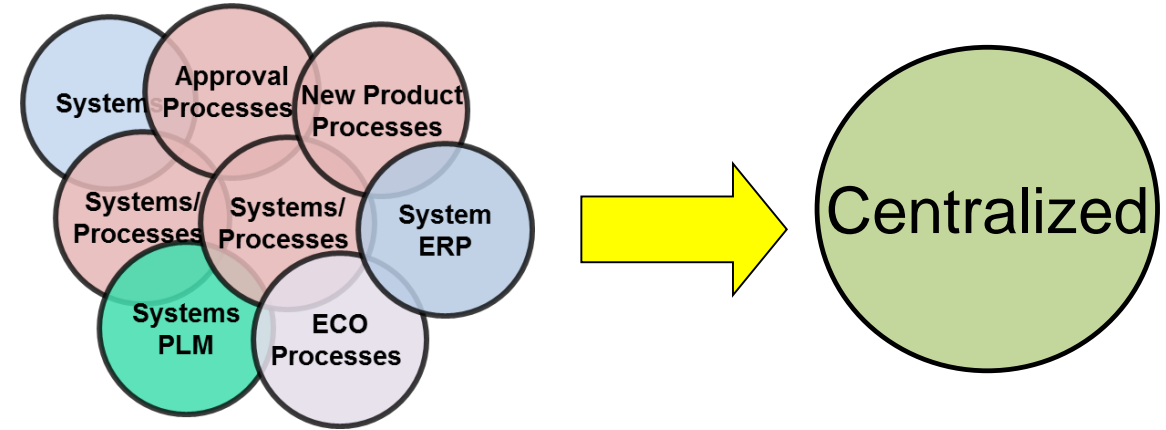
*Technology [Data] is critical and a strategic driver*



# Opportunities for Excellence

The business case for integration is based on many of the common themes of

- Platforming the product
- Multi-location manufacturing
- Leverage the best talent, built on common processes
- Stop divisions independently implementing processes that can inhibit collaboration and data sharing.



- Increase the need to share technical information across divisions to support development (Design/Source/Build Anywhere).

- **Consider lifecycle costs including future costs for upgrades**

**Common solution reduces long term IT support costs for you.**

- New product development saturated with multiple tool sets using independent processes.

- No structured process for sharing data efficiently, slowing down the new product development process.

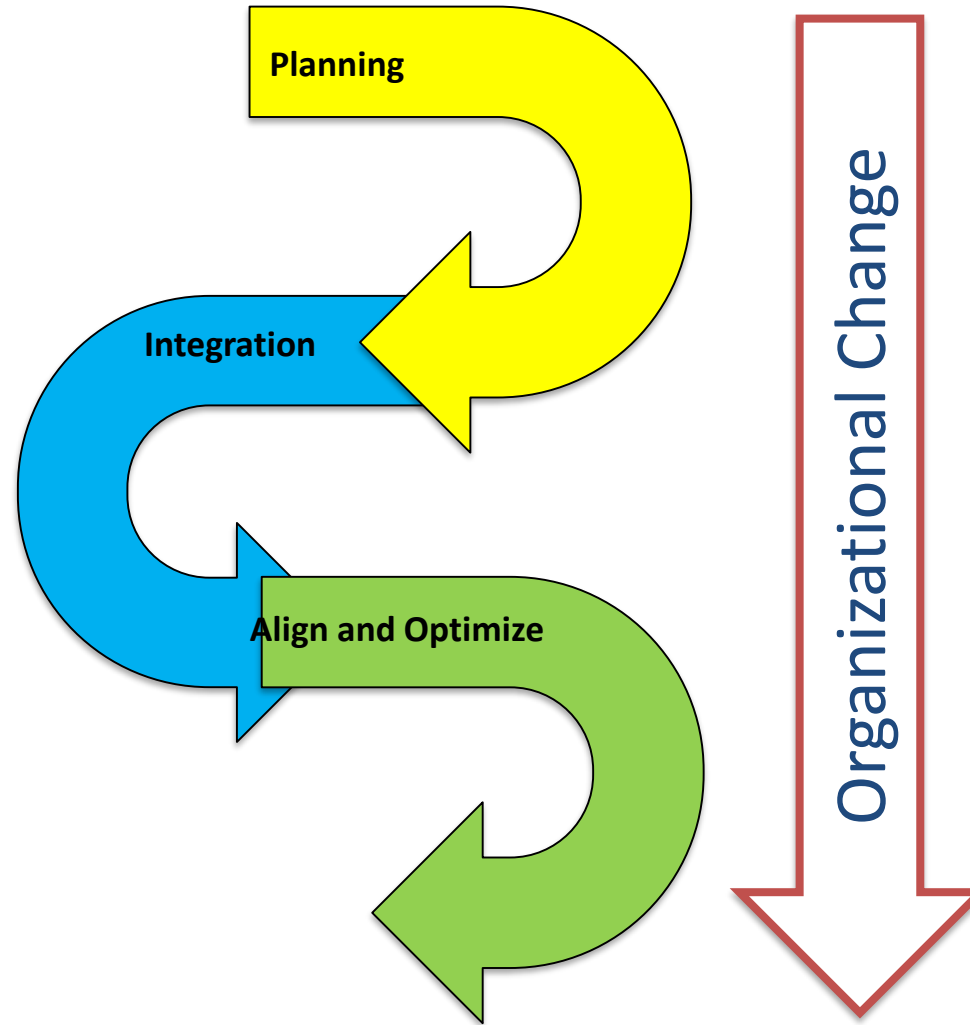


# Planning the Integration

## Planning

- Establish a PMO and Integration Teams
- Evaluate Processes, Systems, plans and commitments
- Evaluate resources and implement new organization
- Data migration plans
- Information technologies
- Implement product structures

CHANGE



## Develop the Plan

- Define and create task force
- Define the future state
- Keep/lose analysis process
- Define the org structure, skill sets and staffing requirements
- Communication Strategy
- Timeline and metrics to measure

## Implement the Plan

- Strategic plan re-alignment
- Alignment of objectives
- Optimization of critical business processes
- Data migration
- Process re-engineering
- Systems integration
- Cultural integration

# Implementing the Single Source of Truth

Product Structure & Accompanying Datasets

Customer Focused

	ITEM	BOM	CHANGE MANAGEMENT	PRODUCT DATA MANAGEMENT	PROCESS DATA MANAGEMENT	DOCUMENT MANAGEMENT	SUPPLIER COLLABORATION	PRODUCT COST	FORECASTING	PRODUCTION PLANNING	FINANCE	LOGISTICS	SALES LEAD MANAGEMENT	CUSTOMER MANAGEMENT	CUSTOMER INTERACTIONS
PLM	✓	✓	✓	✓	✓	✓	✓								
ERP							✓	✓	✓	✓	✓	✓			
CRM													✓	✓	✓

Business Transactions, Product Cost, Manufacturing and Logistics



# Re (*think*) Project Data Management



Data Type	Product/Process	Transient/Project	Transactional
Attributes	<ul style="list-style-type: none"> <li>• Weight</li> <li>• Material</li> <li>• Part ID</li> <li>• Part Description</li> </ul>	<ul style="list-style-type: none"> <li>• Prototype build tracking</li> <li>• Drawing release dates</li> <li>• Buyer</li> <li>• Quality Engineer</li> <li>• Target Cost</li> </ul>	<ul style="list-style-type: none"> <li>• PO Number</li> <li>• Final Product Cost</li> <li>• Export Data</li> <li>• Order Number</li> <li>• Job Number</li> </ul>
Files	<ul style="list-style-type: none"> <li>• CAD Models</li> <li>• Drawings</li> <li>• Specs</li> <li>• Mfg Work Instructions</li> <li>• Quality Plans</li> <li>• FMEA</li> </ul>	<ul style="list-style-type: none"> <li>• Milestone Chart</li> <li>• Meeting Minutes</li> <li>• Meeting Presentations</li> <li>• Release for Sale Plan</li> </ul>	<ul style="list-style-type: none"> <li>• Purchase Order</li> <li>• AR</li> <li>• Warranty Claim</li> <li>• Invoice</li> </ul>

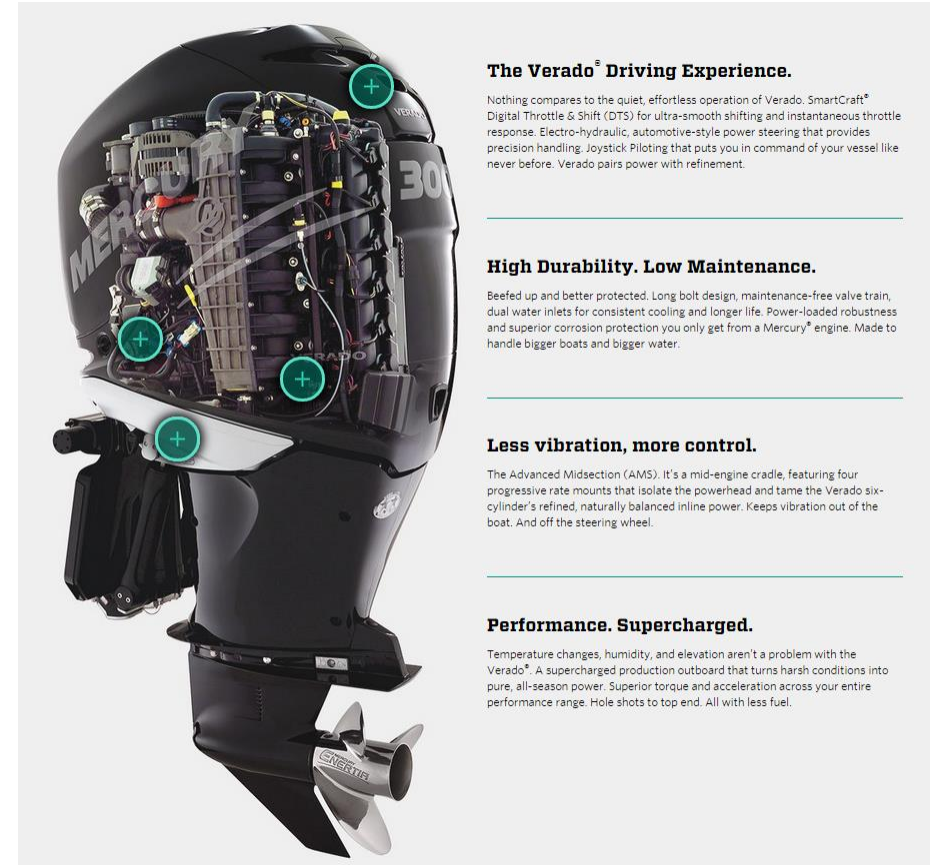
Acquirers' processes



Acquiree's processes

# Processes Data and Systems

- A derivative product based on a proven, existing engine platform
  - 2004, Mercury Marine launched *Verado 275 hp*
  - 2007, Mercury Marine launched *Verado 300 hp*
- The goal was to create the world's:
  - Fastest
  - Lightest
  - Most fuel efficient
  - Most durable **350 hp** outboard



## The Verado<sup>®</sup> Driving Experience.

Nothing compares to the quiet, effortless operation of Verado. SmartCraft<sup>®</sup> Digital Throttle & Shift (DTS) for ultra-smooth shifting and instantaneous throttle response. Electro-hydraulic, automotive-style power steering that provides precision handling. Joystick Piloting that puts you in command of your vessel like never before. Verado pairs power with refinement.

## High Durability. Low Maintenance.

Beefed up and better protected. Long bolt design, maintenance-free valve train, dual water inlets for consistent cooling and longer life. Power-loaded robustness and superior corrosion protection you only get from a Mercury<sup>®</sup> engine. Made to handle bigger boats and bigger water.

## Less vibration, more control.

The Advanced Midsection (AMS). It's a mid-engine cradle, featuring four progressive rate mounts that isolate the powerhead and tame the Verado six-cylinder's refined, naturally balanced inline power. Keeps vibration out of the boat. And off the steering wheel.

## Performance. Supercharged.

Temperature changes, humidity, and elevation aren't a problem with the Verado<sup>®</sup>. A supercharged production outboard that turns harsh conditions into pure, all-season power. Superior torque and acceleration across your entire performance range. Hole shots to top end. All with less fuel.

Legacy Verado 300

# Development Challenges

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- Creating a new product from legacy data. Since the original Verado program,
  - CAD standards have been refined
  - PLM configurations have been refined
  - Approach to large assembly management has changed
- Creating a new product with more options and therefore data to manage
  - More colors!
  - More power ratings and emissions calibrations
  - More vessel control options (joystick or standard)
  - More gearcases
  - More midsection lengths...
- Supporting decisions making for meeting tight cost and time targets
  - Lead coordination among creative, cross functional expert teams
  - Adapt to rapid change in the face of new information
  - Allocate resources efficiently

Starts with a Solid Data Foundation

# Common Data Structures

## Problem

- Integrating CAD data with PDM
- Assembly techniques vary program-to-program

## Solution

- Common template for quickly structuring products

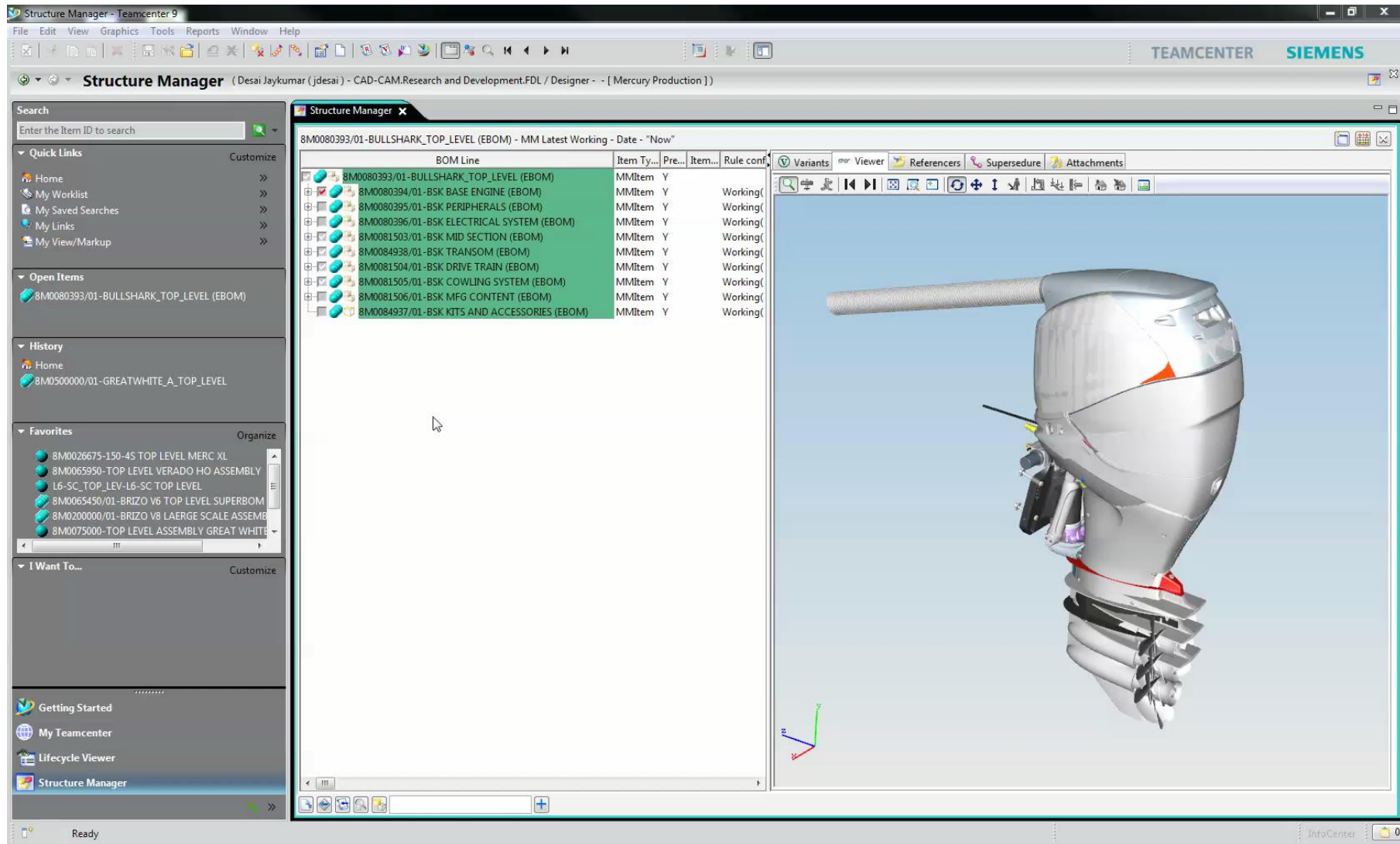
## Benefits

- Improves downstream ability to locate parts
- Consistent structure for user interaction

BM0026675/15-150-45 TOP LEVEL MERC XL (EBOM) - MM Latest Working - Date - "Now"

BOM Line	Item Id
BM0026675/15-150-45 TOP LEVEL MERC XL (EBOM)	BM0026675
BM0026676/06-BASE ENGINE (EBOM)	BM0026676
BM0026683/09-SHORT BLOCK STRUCTURE (EBOM)	BM0026683
BM0026684/08-CYLINDER HEAD SYSTEM (EBOM)	BM0026684
BM0026686/07-VALVE TRAIN DRIVE (EBOM)	BM0026686
BM0026687/05-LUBRICATION DELIVERY (EBOM)	BM0026687
BM0026685/07-CRANKTRAIN (EBOM)	BM0026685
BM0026677/05-PERIPHERALS (EBOM)	BM0026677
BM0026691/03-FLUID CONTAINMENT & ROUTING (EBOM)	BM0026691
BM0026688/05-FUEL SYSTEM (EBOM)	BM0026688
BM0026689/06-INTAKE SYSTEM ASSEMBLY (EBOM)	BM0026689
BM0026690/05-PERIPHERAL MOUNTING & DRIVE (EBOM)	BM0026690
BM0026678/03-ELECTRICAL SYSTEM ASSEMBLY (EBOM)	BM0026678
BM0032017/A-MID-SECTION - ASSEMBLY XLONG (EBOM)	BM0032017
BM0026699/12-ADAPTER PLATE ASSEMBLY (EBOM)	BM0026699
BM0032019/A-HOUSING DRIVESHAFT-ASSY XLONG (EBOM)	BM0032019
BM0031492/07-OIL SUMP - ASSEMBLY (EBOM)	BM0031492
BM0045240/01-ASSY, EXHAUST PIPE (EBOM)	BM0045240
BM0045292/01-MUFFLER ASSY, IDLE RELIEF (EBOM)	BM0045292
BM0031458/05-TRANSOM ASSEMBLY - MFG LEVEL (EBOM)	BM0031458
BM0026680/03-DRIVE TRAIN (EBOM)	BM0026680
BM0026701/08-GEARCASE SYSTEM (EBOM)	BM0026701
BM0026702/08-SHIFT MECHANISM (EBOM)	BM0026702
BM0026703/02-PROPELLER (EBOM)	BM0026703
BM0026681/07-COWLING AND INTERGRATION-MERCURY (EBOM)	BM0026681
BM0026682/02-MANUFACTURING CONTENT (EBOM)	BM0026682

# CAD Options and Variants



# Stopped Relying Exclusively on Spreadsheets

The screenshot displays a Microsoft Excel spreadsheet titled "DV2 Atlas PPW July 2009 [Compatibility Mode] - Microsoft Excel". The interface includes the standard Excel menu bar (Home, Insert, Page Layout, Formulas, Data, Review, View, Developer, Add-Ins) and a ribbon with various toolbars. A "Security Warning" bar is visible at the top, stating "Automatic update of links has been disabled".

The spreadsheet data is organized into columns labeled A through W. Key columns include:

- Column A:** Part Number (e.g., 278, 38, 34, 110, 30)
- Column B:** Description (e.g., "Engineering - Atlas Stage 1 / DV2 July 2009")
- Column C:** Quantity (e.g., 2, 14, 40, 24)
- Column D:** Unit of Measure (e.g., "216", "0", "157")
- Column E:** Date (e.g., "19-Jul-11")
- Column F:** Status/Notes (e.g., "Please Make Updates to the PPL in RED - Strikethrough, never delete")
- Column G:** Part Description (e.g., "SE2 HP1015 Drive")
- Column H:** Part Number (e.g., "2222")
- Column I:** Quantity (e.g., "1")
- Column J:** Unit of Measure (e.g., "MCH")
- Column K:** Material (e.g., "Steel")
- Column L:** Supplier (e.g., "R. Extralux")
- Column M:** Status (e.g., "N/A")
- Column N:** Date (e.g., "2-Mar-11")
- Column O:** Date (e.g., "2-Mar-11")
- Column P:** Date (e.g., "2-Mar-11")
- Column Q:** Date (e.g., "2-Mar-11")
- Column R:** Date (e.g., "2-Mar-11")
- Column S:** Date (e.g., "2-Mar-11")
- Column T:** Date (e.g., "2-Mar-11")
- Column U:** Date (e.g., "2-Mar-11")
- Column V:** Date (e.g., "2-Mar-11")
- Column W:** Date (e.g., "2-Mar-11")

The spreadsheet also features a "Purchasing / Manufacture" section on the right side, with columns for "Target Cost", "Standard Cost", and "Unit Price". The bottom of the screen shows the Windows taskbar with various open applications and the system clock displaying "5:45 AM".



# PARTS PLANNING APPLICATION (PPA)

- Automatic BOM management updates from ERP and PLM/PDM into single view
- *View, report and manage*
- Built-in **audit trail** for attribute and BOM changes
- Manage **user-created views**
- Quickly manage structure based on bill level
- Column filtering and sorting
- **Drawings Status**

Eng Attributes: 8M0028243\19 - TRANSOM ASSEMBLY 150-45

Status	Seq Nbr	Lev	Item ID	Item Revis	Item Name
	207	4	8M0030733	D	FUEL SUPPLY MODULE-DUAL PUM
	241	4	8M0028128 04		FUEL HOSE ASY-FSM TO RAIL
	242	5	88898801 T		CLAMP-OETIKER#16701005
NEW	243	5	877565 -		FUEL FILTER-INLINE
	244	5	8M00281 B		HOSE-FSM TO RAIL
	245	4	8M0028127 C		HOSE, FUEL- FILTER TO FSM
	246	4	8M0037098 B		CLIP, HOSE
	247	4	8M0037204 B		SCREW, NYLON - PUSH-IN
	207	4	8M0030733 D		FUEL SUPPLY MODULE-DUAL PUM
	241	4	8M0028128 04		FUEL HOSE ASY- FSM TO RAIL
NEW	242	5	88898801 T		CLAMP-OETIKER#16701005
	243	5	877565 -		FUEL FILTER-INLINE
	244	5	8M00281 B		HOSE-FSM TO RAIL
	245	4	8M0028127 C		HOSE, FUEL- FILTER TO FSM
	246	4	8M0037098 B		CLIP, HOSE

Click the arrow to view the form

Item ID	Rev	Item Name	Source	Release Status	Process Name	Process Owner	Process Start Date	Process Task Name	Process Task Responsible Party
8M0040539	C	MIDSECTION ASSY - 350 L	G-Group		MM Drawing Sign Off	Ekis Paul	13/Mar/2015	Cross Functional Si	Ekis Paul
8M0001735	C	OD#417666 WEAR PAD	RE-Refereno		MM Drawing Sign Off	Langlitz Tim	06/May/2015	R & D Engineer: Sig	Langlitz Tim
8M0085008	E	RAIL ASY-FUEL COMPLETE	RE-Refereno		MM Drawing Sign Off	Crane Paul	08/May/2015	BOM Verifier Signoff	Crane Paul
8M0903025	B	CAMSHAFT ASSEMBLY, EXHAU	P-Purchase		MM Drawing Sign Off	Kim Bo	29/Apr/2015	perform-signoffs	Kim Bo



# Parts Planning Application Demo

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# M&A Outcome

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## Creating the future vision

- Synchronized product and component data with uniform performance access across collaborating sites.
- Provide a efficient means for exchanging product and component data among divisions
- Defined a migration path for essential data and systems
- Defined the technology and support plan for strategic applications.

# Integrated PLM Strategy

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- Key Insights
  - Architected data model for the full life-cycle of the project
    - From concept to production and service...
    - From design to marketing and sales...
  - Enacted business processes in the data management systems
- Benefits
  - Improves communication and collaboration on program cost and schedule
  - Accurate because its tied to the enterprise databases
  - Flexible enough to consider BoM line, project, and global item attributes
- Value
  - Supports better, faster decision making
  - Reduces time spent in meetings aggregating information
  - Easier to manage than spreadsheets (faster, cheaper)



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# QUESTIONS & ANSWERS



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**THANK YOU**



**MERCURY**  
*PLM Services*

**An established  
PLM leader**

Business process development  
Full implementation services  
Multi-CAD installation and upgrade  
SharePoint integration

*MercuryPLM.com*



***PROCESS FOCUSED  
INNOVATION  
MANAGEMENT***

# Mercury PLM Services – Lines of Business

