Value Driven Implementation



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DIGITALIZATION FOR SUSTAINABLE PRODUCT DEVELOPMENT AND MANUFACTURE

First: Focus on doing the right things

...then focus on doing things right











A brief history of PLM

ADDNODE GROUP

As technology evolves, we must adapt our approach

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SmarTeam MatrixOne	ENOVIA	3DEXPERIENCE
PDM System	PLM Platform	Business Platform
Native Applications Client/Server	Web Centric Multi-tier	Service Oriented Cloud/SaaS
Toolkit Approach Custom Development	OOTB applications Customization	Role-based Apps Configuration
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Innovation Forum

Flexibility has a cost

Expectations are closely connected to the approach



Toolkit



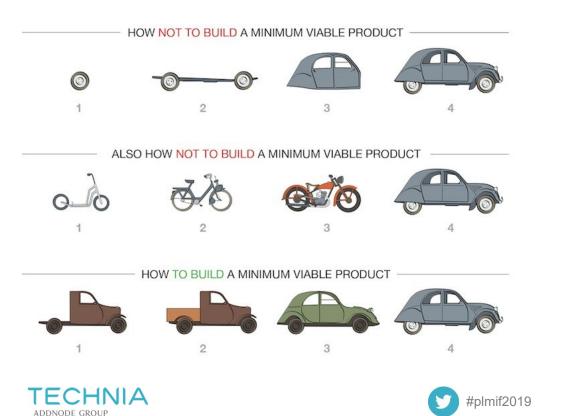
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Agile approach for Out-of-the-box solutions

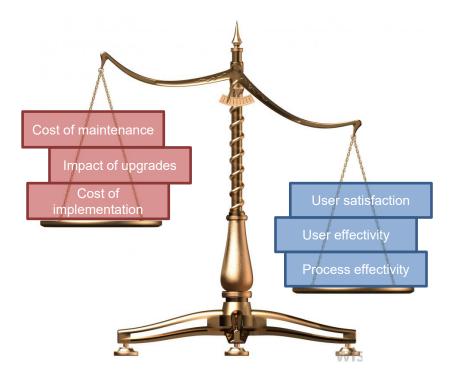








How to prioritize?



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PLM benefits for the company

The measurable benefits of PLM are focused around time, cost and quality:

Reduced cost finding product data faster and increasing reuse	Faster time-to- market	Improved cycle times	Fewer Errors		
Less scrap & rework Greater productivity		Better product quality	Improved design review and approval processes		
Improved communication	Reduced product cost and greater profitability	Better resource utilization	Improved integration and communication with extended supply chain		

PLM benefits for the user

Find it fast

• a single source of data

Trust it

• revision and security control

Comprehend it

• intuitive 2D/3D visualization

Understand context

• rich information relationships

Know when & what to do

schedule and workflow automation



Connecting the Dots: Business Driver to Enabler

,⊯≝ Business Drivers	🛪 Objectives	Benefits	[,] ⊯ Business Changes	,⊯ Enabling Changes	⊭ Enablers
Extended and complex organization worldwide	Promote concurrent work & communities	Lower R&D costs	Improve collaboration between Design, Sourcing, Production and Services	Provide a single collaboration platform across the company	Consolidated PLM Platform
Demand is highly customized	Protect Intellectual Property	Reduce quotation costs & time and increase hit ratio	Optimize the qualification process (simulation and test)	Ensure traceability from requirements to final product validation	CAD to PLM Integration
Growing amounts of regulations are challenging	Offer customized products while rationalizing product portfolio	Minimize validation costs and warranty issues, avoid costly last changes	Simulate and validate earlier the product behavior	Improve product validation process while ensuring its performance & reliability	Integrated Simulation and Analysis
Competitive demand for new products, and faster development and delivery cycle	Integrate smart components for providing more flexibility	Improve competitiveness / Technology leadership	Optimize configuration and quote of equipment tailored on customer need	Enable multi disciplines engineering in a single environment	Variant Managment
Services provides better margin than stand alone sales	Be compliant with the new standard and develop a new powertrain	Reduce time to market	Enable to manufacture any product efficiently anywhere	Implement Modular product architecture	
Product are no longer enough, customers buy experiences	Improve bidding process	Reduce production and installation lead-time and costs	Deliver a complete solution & maximize its "Overall Equipment Efficiency")		
	Produce / Supply where optimum are	Increase brand reputation, develop and maintain market share	Anticipate, capture needs and provide High Value Services		
	Transform toward Service Business Model and take advantage of IOT	Increase company revenue and margin			

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Quantifying the Benefits

Typical figures for an industrial company:

Time-to-manufacturing: 50% reduction	10% to
Engineering change process:	10% to 70% reduction
Design review process: 80% reduction	50% to
Increased productivity: 20% increase	10% to
Product development costs:	25% to 40% reduction
New part numbers:	5% to 15% reduction
Time to find information: 90% reduction	75% to
Design errors:	10% to 25% reduction
Time-to-design:	15% to 70% reduction
Travel cost for design: 35% reduction	20% to

Source: CIMdata

Customer Example (Legacy system to modern PLM):





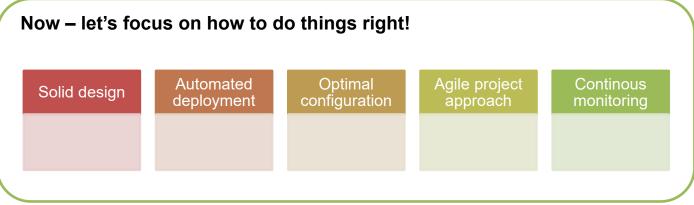
Total savings: 60.000 man hours pr. year!

Task #	Task Description	Legacy PDM (min.)	3DD - Ph2A (min.)	Target for 3DD Go-Live (min.)	Min SUS 3DD Score - Go-Live	Activities Per Year	Time Improve ment per activity	Total Time PDM (hrs)	Total Time 3DD Go- Live (hrs)	Total Time Saved (hrs)
1	Requestor to Create One New Part, Two Dash Numbers, Create Design Work Request, and Submit	7.5	10	5	75	10,000	3	1,250	833	417
2	Global Design Planner activity	1.5	5.5	0.5	70	10,000	1	250	83	167
3	Local Design Palnner activity	0.5	4.5	0.5	70	10,000	0	83	83	0
4	Designer Time to Route a Drawing & Model for Review	8	18	2	70	10,000	6	1,333	333	1,000
5	Requestor Drawing and Solid Model Review and Feedback (assumes 1 rework loop) Config Control Time to Release 3D and 2D Drawing	16 12	12 21	10	75 70	40,000	6	10,667	6,667 800	4,000
7	Requestor Create a Turbocharger Production Release Request	94	126	45	75	500	49	783	375	408
) 8 9	Configuration Control Time on Task to Review Turbocharger Production Release Request and Route for Approval Turbocharger Production Release Request Review Time (X-Func Team)	67	102	50	70	500	17	558	417	142
10	Config Control Time on Task to Implement Turbocharger Production Release Upon Approval	o 119	185	60	70	500	4 59	992	500	492
11	Stop Order Implementation (Creation + Effort to Implement)	76	119	60	70	25	16	32	25	7
12	Engineering Order Creation Time	129	170	60	75	25	69	54	25	29
13	Lab Test Request Creation Time on Task (TI-056 Gas Stand Performance Test)	54	N/A	20	80	3,000	34	2,700	1,000	1,700
14	Lab Test Request Creation Time on Task (TI-221 Turbine Housing Thermal Cycle Test)	74	N/A	20	80	200	54	247	67	180
15	Lab Test Request Creation Time on Task (TI-357 Wheel HCF Light Probe Test)	95	N/A	35	80	100	60	158	58	100
16	Search for an Existing Part and Access 2D Drawing	5.5	4.1	1.5	75	325,000	4	29,792	8,125	21,667
17	Search for an Existing Part and Access Solid Model (new functionality)	15	4.8	3.0	75	100,000	12	25,000	5,000	20,000
18	Search and Access an EDI / QCI / and Engineering Report (total time for all 3 tasks) Averages	6.3 43.8	3.8 52.8	1.5 21.2	75 73.9	100,000 TOTAL	5	10,500 86,865	2,500 26,925	8,000 59,940



Key Takeaways

- Only change if it adds value
- If you need to change do it in a smart way!
- Always consider the lifecycle cost for a change
- Measure before and after











Value driven implementation How to choose the right problems to solve



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