Volkswagen Group

12 brands























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VOLKSWAGEN FINANCIAL SERVICES

AKTIENGESELLSCHAFT

Volkswagen Group

My company car





Agenda



- 1 Who is MAN Diesel & Turbo
- 2 My organization / responsibility
- The journey including transformation, strategy, culture and S&OP

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- 4 Why is S&OP critical for our business
- The S&OP journey through the value chain
- The S&OP & my advices

MAN Group



Key Figures 2016

MAN SE

Business areas

Commercial Vehicles

Power Engineering

Divisions



MAN **Latin America**

Revenue '16: € 0.7 bn



MAN **Diesel & Turbo**

Revenue '16: € 3.1 bn



Renk (76 %)

Revenue '16: € 0.5 bn



Investments

Sinotruk (25.0 % +1 share), **Scania** (17.4 %*)

* Voting rights

The MAN Group in 2016: €13.6 billion revenue, 53,824 employees

MAN | PrimeServ 30.11.2017 MAN Diesel & Turbo **PERR** Why S&OP is critical for our business

MAN Diesel & Turbo

Headquarters Augsburg, Germany





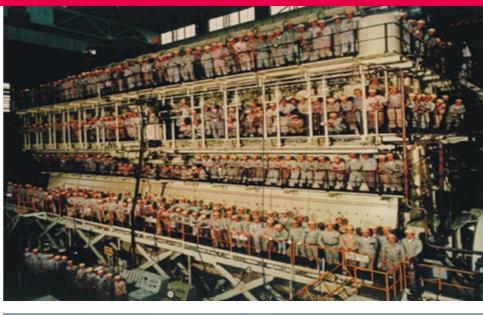
MAN PrimeServ **PERR** MAN Diesel & Turbo

Engines & Marine Systems











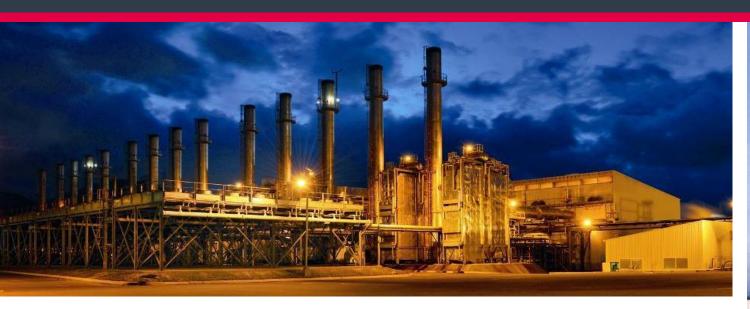
Why S&OP is critical for our business

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Power Plants

Broad portfolio for engine-based diesel and gas power plants





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MAN Diesel & Turbo

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Why S&OP is critical for our business

Turbomachinery

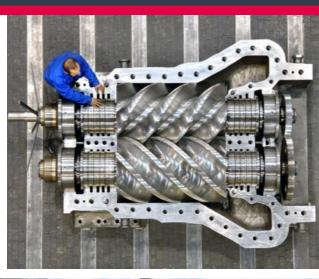
Wide-ranging product range for various industrial applications







Why S&OP is critical for our business





Worldwide location

Global Network of Service Hubs



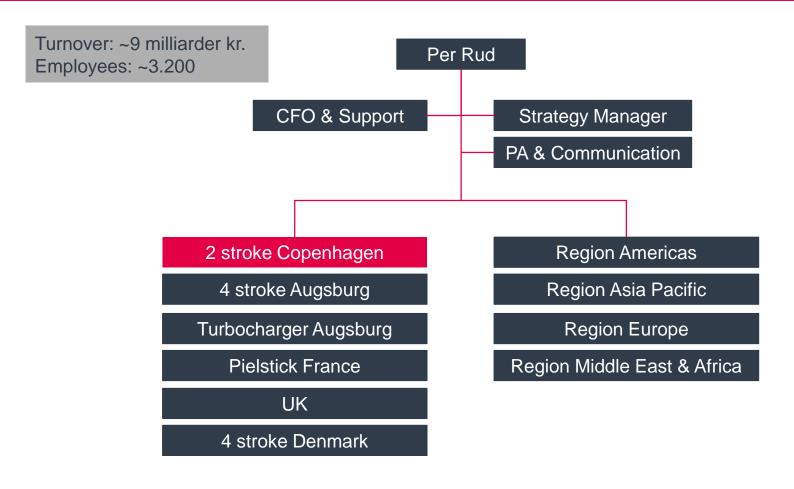


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After Sales Service Marine & Power Plants

My organization & responsibility





MAN Diesel & Turbo

Location Copenhagen





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Business Case



Base Camp 3000+

Reaching New Heights in MAN PrimeServ Diesel

Strategy 2011-2017

The business case involved approximately 600 people in Copenhagen

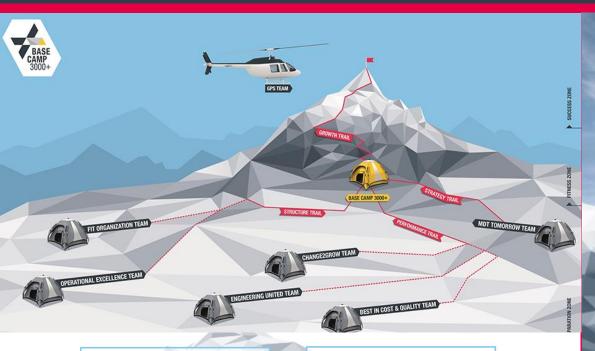
Sales, Supply Chain, Production, Sourcing and the International Group Companies (IGC)

The goal: to strengthen our customer satisfaction and to grow our business (top/bottom) by strengthening our competitiveness



Strategy





TOP EMPLOYER

- People Development
- Leadership Development
- PrimeServ Care

GROWTH ABOVE MARKET

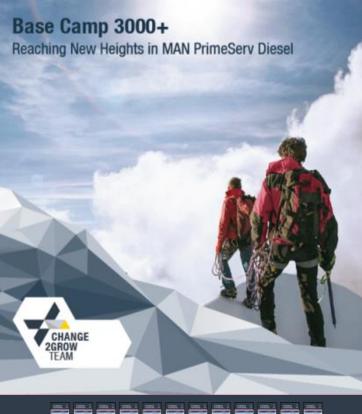
- Go-To-Market
- Digitalization
- New Retrofit Solutions
- Long-term Business Contracts

CUSTOMER SATISFACTION

- Customer Centricity
- Speed & Flexibility
- Co-operation (HQ/CoC/IGC)

INCREASING PROFITABILITY

- Quality (Products/Service)
- Supply Chain
- Bottom-line Growth Plan
- Licensee Strategy





MAN Diesel & Turbo MAN PrimeServ

Transformation 2011 - 2017



2011

v customer segmentation will a

allocation, IT, finance, e.e.

2012

2017

Results:

- Turnover: 150 MEUR
- EBIT: X MEUR

ons as well as

officiency. We w Results:

- Turnover: €190 MEUR
- rill continue to c • EBIT: +65% MEUR ing on the stock

focusing o **Results:** nt manage

rease our commercial mi

- Turnover: >240 MEUR
- n of costs b EBIT: > +100%MEUR nning and r

Focus:

- Top line growth
- Be global
- Product-oriented
- Value: nice-to activities
- Four silos
- All customers are equal

Supply Chain

- Non-transparent
- Silo planning
- Informal commitment
- Strong forecast initiated
- •TO: CPH/SIN: 81% / 19%

Old Mindset:

- Technically-oriented
- Four silos
- Sales
- My (G.O./HQ) customers
- · Expert (towards G.O.)

People & Organization:

- Headcount 177 CPH + 9 GO
- Individual/department mindset
- The right person / the right job
- Standard education

We will decentralize our organization to match the changes in our global market with increased focus on our worldwide customers. This will bring us closer to our customers generating more business as well as savings.

We will develop and strengthen our current market and develop new value creating products and services (solutions) with fast reactions on opportunities emerging in the market.

We will break down silos to create a new team platform with a strong and adaptable organization that will be competitive and ready to meet the given market demands. The foundation is our mapped processes (from A to Z)

We will ensure transparency throughout the organization by introducing service level agreements between the 4 musketeers. This will increase our competitiveness and the possibility to exceed the customers' expectations.

A new mindset will support our journey of change towards 2015. HR will assist in ensuring that we have the right people with the right competences, which will be maintained by continuous focus on training and education.

Focus:

- Profitable growth
- Be global but act local
- Market driven solutions
- Value: need-to activities
- Sales & Operation Planning
- Customer segmentation

Supply Chain

- Transparent
- Centralized planning (SCM)
- Formalized commitment(SLA)
- Strong forecast implemented
- TO: CPH/SIN: 60/40%

New Mindset:

- Commercially-oriented
- 1 Platform
- Pro-active sales
- Our customers MDT
- Coach (towards G.O.)

People & Organization:

- Headcount 200 CPH + 30 GO
- PrimeServ CPH mindset
- The right person/the right job
- Targeted education



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The culture journey & S&OP challenge



From a technical to a commercial/strategic oriented organization with the customer in focus

FROM (2011)



Driven by the S&OP process

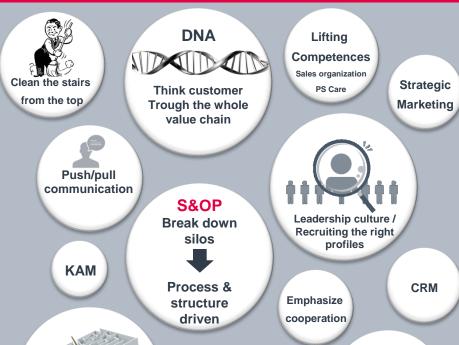


TO (2017)





Not hungry enough



Market

Intelligence





S&OP **Business driven** by structure & processes

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Easy to do

business with

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Why S&OP is critical for our business

Shifting competences to

IGCs //

Empowering

Regions by

giving ownership

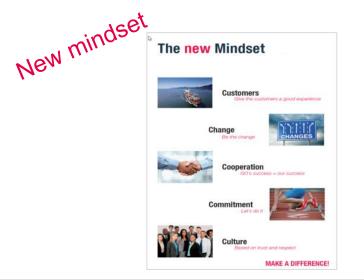
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Organization, culture and mindset



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Break down the silos by using S&OP but remember:

Culture eats strategy for breakfast!

Make the team strong (Everyone around the table are equally important)

MAN Diesel & Turbo MAN PrimeServ PERR Why S&OP is critical for our business 30.11.2017

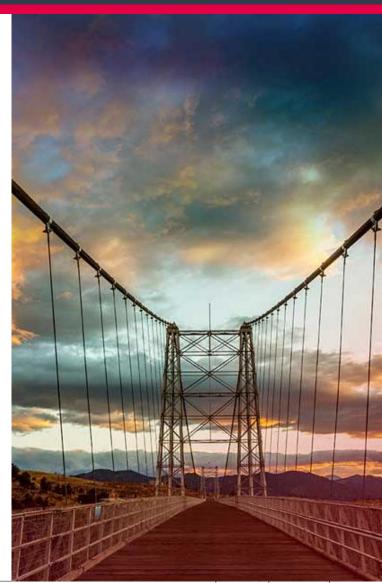
S&OP and the business



Why is S&OP critical for our business?

S&OP...

- ... bridges strategy & operation (long-term view)
- ... gives a common understanding of the value chain
- ... helps to balance demand and supply
- ... breaks down silos \rightarrow One company/ one team
- ... creates transparency
- ... makes decisions easier!



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7 important focus areas for the journey





TOP 7

- 1. Understand the customer
- 2. Pro-active sales
- 3. Selling solutions & E-commerce
- 4. Strategic marketing
- 5. Forecast
- 6. Easy to do business with
- 7. Segmentation & KAM
- 1. Delivery time
- 2. On time delivery (OTD)
- 3. Price
- 4. Quality
- 5. Forecast
- Easy to do business with
- 7. Segmentation

MAN PrimeServ MAN Diesel & Turbo **PERR** Why S&OP is critical for our business





Supply Chain



S&OP



MAN Sourcing & MAN sub suppliers



MAN **Production &** Quality









Spare Part Sales







Retrofit & **Upgrade**









Why S&OP is critical for our business



SCM Suppliers (Supply)

SCM Customers (Demand)



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Supply Chain



Sales & Operations Planning (S&OP)



Forecasting (Demand planning)

D	d					E												
Period	duct Group Forecas 1: Year 2014 Month 01 (Incl.	St MON .) to <u>Year</u>	2014 Mon	th Dei ith 04 (In	ivered	Figur	es	(MAN)										
Scc No	2 Stroke Description	Demand Planner	Average unit price	Scc#	Scc# Forecast	Sugg. Forecast	Sugg. Forecast	Sugg. Forecast Remarks	Sec#	Scc#	Sold Quant	Order	Forecast Error	Unit Error	Delivered Quant	Delivered amount	Forecast Error	t Unit
			EUR/Ace		SUR/Year	Pos/Year	EUR/Year	EUR/Year				EUR		Pos/Period				
Total					101.357.929	267.770	105.375.941	DIY. = 4.019.012 or 3,96%	97.956	22,789,946	97.045					30.005.965		
10	Main Bearing			700	1.774.799	700	1,774,799		232	589.216 764.741	235	636.917 341.778	-1%		223	592.224 375.399	4%	
	Crankpin / Connecting rod Bearing	JXT	1924															
16		RX		1,500	7,055,660	1,500	7,055,660		500	2.351.987	524 17 (50	2,150,793		-24	113	2.128.537	10%	200
29	Pleton Rings for Pleton Crown Cylinder Liner	38X	288 9413	55,000	9.413.245	000.22		Sales believe that scr's marked with oreen are a trend and	18.332	5.272.348 3.125.197	17.158	4.769.136 3.772.652		1174	15.529	3.323.662	15%	290
19	Cylinder Giver	500	13949	1.000	1 534 130	120	11,295,894	possible to increase in blanks with supplier?	112	512 (6)	51	542,062	-200	-97	277	490.430	-14%	-4
#	Eshaust Valve Bottom Piece			1.750	1,195,960	1.750	1.185.960	possible to increase in branks with supplier?	594	395,772	602		-2%	-15		434,054	-175	
	Eshaust Valve Housing	- Al	2240	1.00	233,770	1.70	1,185,96	improved design and selling less and less	24	80.150	407	19,306	-7%	-13	641	71.464	20%	_
卷	Exhaust Valve Spindle		3232	1,900	5,816,894	1,900	5,856,884	improved design and seeing seet and seet	600	1,930,961	594	1,699,167	25	15	600	1,999,711	20%	
*	Eshaust Valve Spindle Guide	- 60		700	190 137	200	190 333		232	63.063	756	20.236	-11%	- 8	765	67917	-14%	
-	Fuel Valve, Complete	10.0		950	932.607	951	932.607		294	211,600	507	541,997		-223	242	241.066	10%	
-	Fuel Valve Nuzzie	5781	197	20,000		20,000			6,668	1,710,989	7.490	1,459,954	-12%	-820	6365	1,178,258	6%	42
-		500	6716	70	\$75,000	70	575.00		24	192 (34	42	269.336		-18	11		54%	
40	Fuel Pump Plunger / Barnel	244	2303		4,835,961	2.500	\$,7\$7,090	could have sold if availability was there / identify which items	700	1.611.967	916		100	-116	627	1,545,492	2%	2
54	Roller Guide (FO & Exh)	DX	1560	600	936,070	600	936,070		200	312.023	144	191,221	28%	56	121	199,922	25%	0
71		DIX	2212	140	309,642	175	287,111	postponed	- 49	106,190	76	172,665	-9%	-28	40	92,035	10%	
72	HP Pipe for fuel Valve	DIX	1093	2.000	2.165.413	2.000	2.165.413		668	723.240	627	664.257		46	495	548.052	20%	17
72	Lamella for Picton Rod Stuffing Box	5290		65,000	617.442	65,000	607.462		21,668	205.027	19.492	179,359	10%	21%	19.372	164,068	15%	329
8	Pieton Skirt for Pieton Crown	DK.	911	900	729,972	1,000	911.213	postsoned overshaul	268	244.206	324	247,029	-21%	-56	260	215.525	2%	
75	Scraper Rings for Piston Rod Stuffing Box	5290				12,500	2,504,413		4,168	835.072	4.329	791.126		-161	2.504	659,000	14%	59-
X	Sealing Rings for Maton Red Stuffing Box	5270		15,000		15,000			2,000	851,200	4,833	779.442		107	1.792	607.341	24%	
126	Multi- Way Valve e.g. FEVA)	USSA		22	2.590.060	350	2.590.090		116	959.427		707.658			- 50	422.437	50%	. 9
127	Alpha Lubricator (one unit)	STO	1752	200	525,521	200	525.521		100		26		- 0%	Ω	29	45.422	70%	
	Fuel Valve Spindle Guide (with nozzle)			20.000	10.141.571	20,000	10.141.571		6.668	3.381.200	6.716	3.345.510	-1%	-40		2.719.496	12%	

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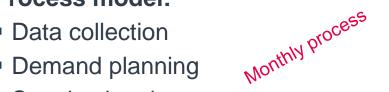
Common overview of the S&OP processes – cross functions





Process model:

- Data collection
- Demand planning
- Supply planning
- Alignment with Financial forecast
- Pre-S&OP meeting
- Executive S&OP meeting

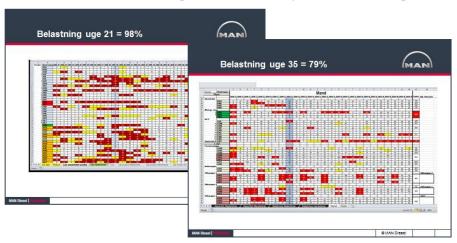


MAN PrimeServ MAN Diesel & Turbo

Supply Chain

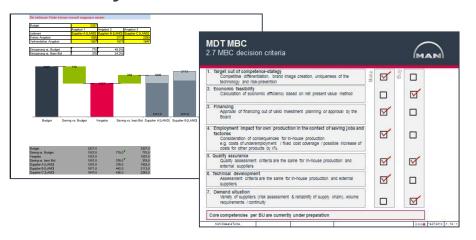


Master planning (Capacity planning)



- Balance of demand and supply
- Tactical planning (26 week view)
- Operational planning (8 week view)

Make/Buy



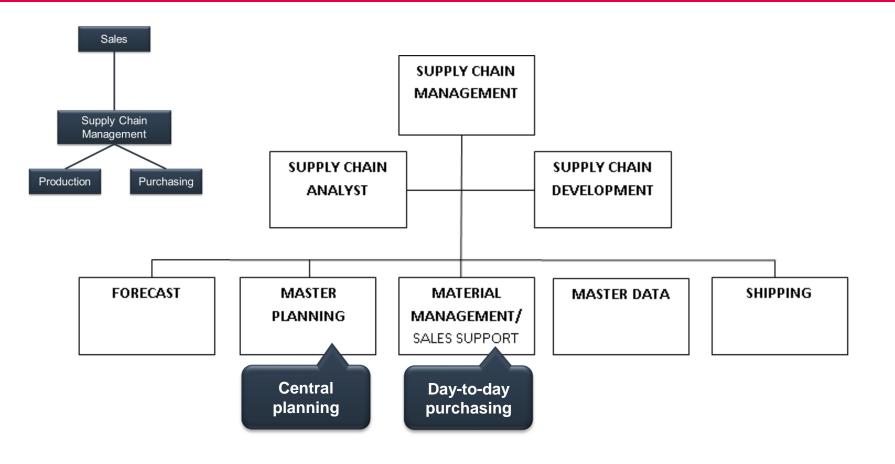
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- Full-cost comparison
- Bottom up decision process
- Benchmark of own produced products

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The new supply chain organization





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Sourcing



Supplier Development

Before

- We tell you what to do!
- Week by week no long term
- And if you don't do as we say, we have penalties
- We call it frame agreements
- But we can walk out from day to day



After

- We tell you what we know and when things change – and it goes both ways
- How can we help optimize your production to help ourselves
- How can we share data and communicate better to avoid problems
- We commit to a certain purchase on certain items within an agreed timeframe
- How does it influence our lead time, OTD and prices?

Sourcing



Supplier Development



- Stronger cooperation with suppliers
- Focus on OTD, lead time, price and quality
- Categorization of goods
- Commitments on solid goods to achieve price reductions



we have worked with our united Supply Chain solution. It has been some very informative days, where we have come closer to finding a common solution. We at Heco thanks MAN for some enriching days, and look forward to completing the project, show less









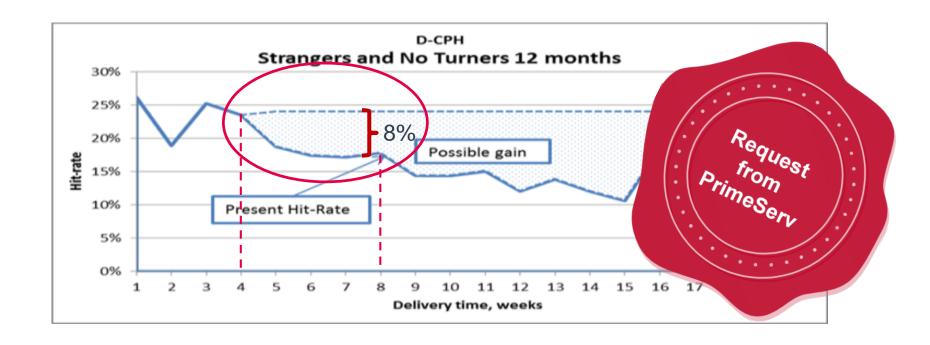
Workshops with the suppliers

Why S&OP is critical for our business

25 >

Lead time is crucial for revenue and stock value





8% increase in hit rate → €30 mio in revenue and €XX mio in profit

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50% lead time reduction → 25% stock reduction → €10 mio stock reduction

Production





Production began to consider itself as a supplier to the supply chain. This was possible due to:

- New ways of planning and integration of S&OP processes
- 2. Change in KPIs
- 3. Introduction of internal Service Level Agreements (SLAs)
- 4. More focused Lean approach
- 5. Focus on creating standardized processes (both in physical as well as administrative flow)
- 6. Stronger cooperation and processes resulted in less silos and more support for the value chain

Why S&OP is critical for our business

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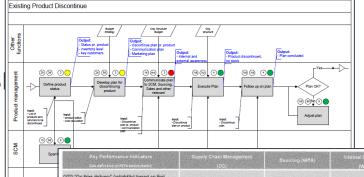
KPIs

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Processes and KPIs through the Value Chain



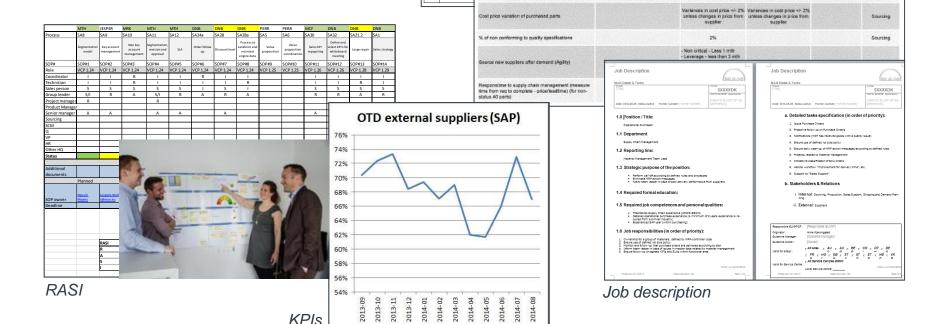
- **Process mapping**
- Preparation of S&OPs
- Roles and Responsibilities, RASI
- Definition of SLAs and KPIs
- Hearings and audits



Process mapping and work instruction

SLA's

Sourcing



MAN PrimeServ MAN Diesel & Turbo



30.11.2017

S&OP is easy to understand, but hard to implement - My advice



1. S&OP (process) – break down the silos → One team!



2. Stay hungry in paradise – hunger!



3. Clean the stairs from the top and set the right team



4. All changes require courage and a lot of energy



5. Understand your business and focus (strategy plan)



6. Focus on facts and not emotions (consultancy?)



7. Harvest the low hanging fruits (quick wins)

IMPLEMENT 8. Seek help if the transformation is big - consultancy

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Why S&OP is critical for our business