Camelot Management Consultants

SCM TRANSFORMATION & ACCELERATION IN OPERATIONS

Based on a paradigm change to master the pharmaceutical VUCA world

Mannheim, June 2016

COMPANY IDENTIFIED THE NEED TO TRANSFORM THEIR SUPPLY CHAIN TO DRIVE BEST-IN-CLASS CUSTOMER SERVICE LEVELS

Underlying SCM issues

Lack of supply chain segmentation, "one-size-fits-all" approach

- **Undifferentiated safety stocks** (3-4 weeks) independent from margin or substitutability
- **Undifferentiated lead times** (~3-4 months) independent from market requirements
- **Too long FG delivery lead times** of ~4 months

Lack of supply reliability and flexibility

- **No systematic use of decoupling at bulk stage**
- **Lack of flexibility** between production lines
- **Effectively no frozen horizon** for production plans

Limited mid-to-long-term capacity planning

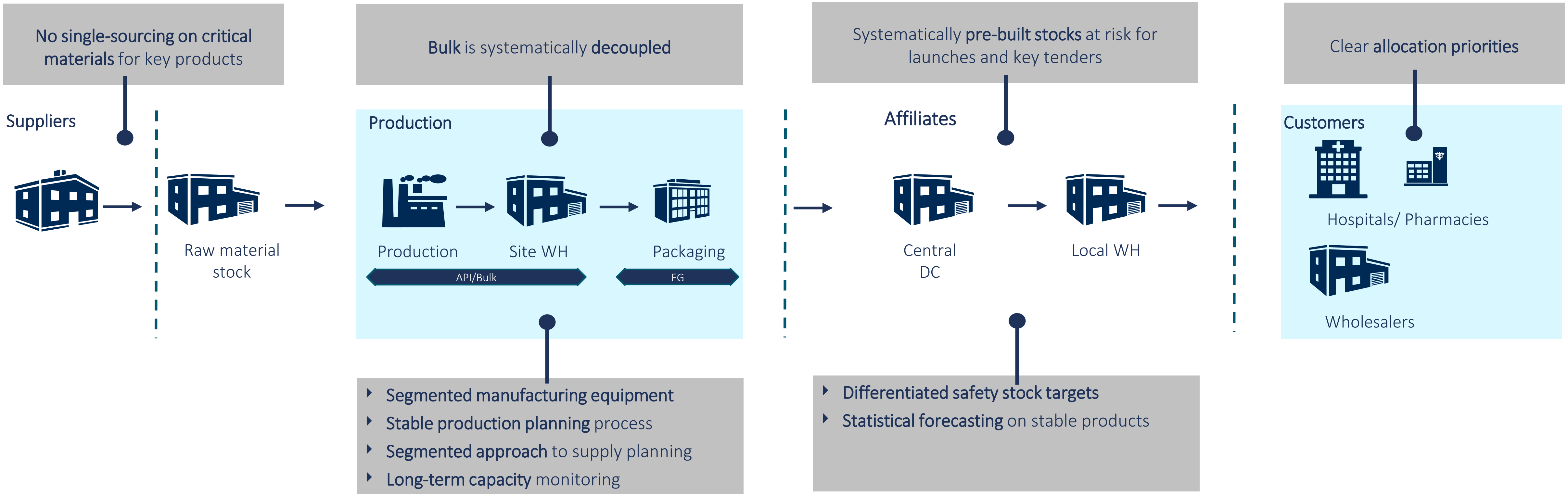
- **All major global production sites suffer from capacity bottlenecks** (volume growth and transfers not supported by corresponding investment)
- **Launches and tenders are not reflected in capacity plans**
- **Demand plans linked too tightly to financial targets,** leading to underestimated capacity

No clear rules or governance that allow taking end-to-end trade-off decisions

- **Suboptimal allocation decisions** based on who shouts loudest
- **Inventory not optimized along the value chain** (too low bulk, too high API)
- **No function in organization to configure the SC end-to-end** and set global standards, current SC is in local market/site siloes

OBJECTIVE WAS TO TRANSFORM THE COMPANIES SUPPLY CHAIN BEING A TRUE COMPETITIVE ADVANTAGE AND AN ENABLER TO EXCEED CUSTOMER EXPECTATIONS AND BE WORLD CLASS

Chosen Supply Chain Solutions



Customer Service Level: >95%
Production Service Level: >85%
FG lead time: <90 days for all products, 20-40 days for selected segments

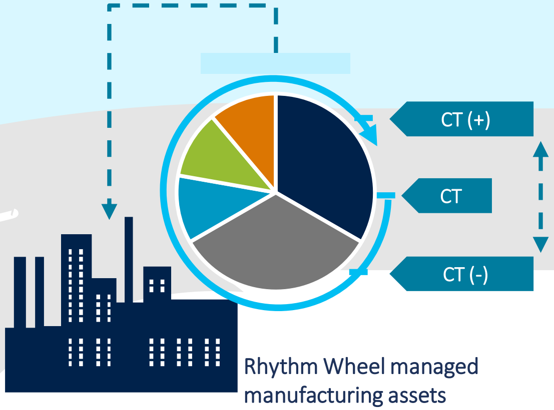
APPLYING CAMELOT'S INNOVATIVE **DEMAND DRIVEN LEAN SUPPLY CHAIN PLANNING** APPROACH: MASTERING SUPPLY CHAIN VOLATILITY ACTIVELY ON CAPACITIES AND INVENTORIES

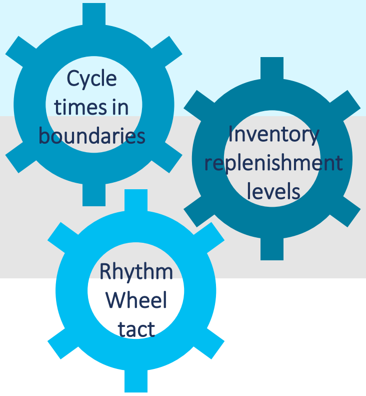
Master the VUCA challenges with the new supply chain planning roadmap and the 3 major building blocks …

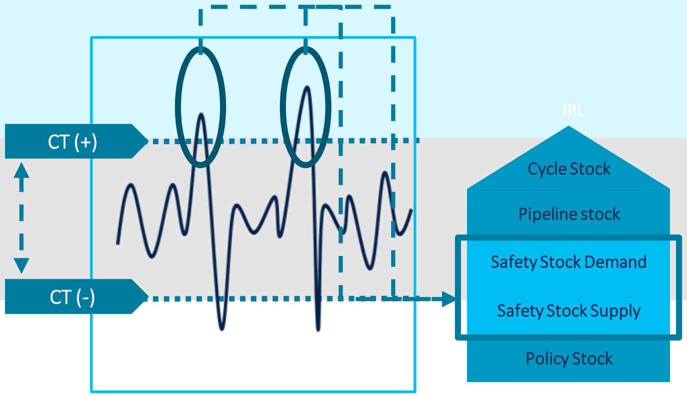
(1) Demand Driven RHYTHM WHEEL Planning

(2) FLOW through Parameter driven E2E Synchronization

(3) Demand Driven Supply and Inventory Planning (DDMRP for SAP)







Inventory stock keeping units (SKU)

Cyclic planning with Rhythm Wheels

- Level capacity utilization and dampen variability propagation upstream in the supply chain through newly introduced variability control parameters (CT±).
- Simplify operations and planning through optimal repetitive schedules to improve asset utilization (OEE) and reduce lead times.
- Adopt cyclic scheduling and reduce planning complexity in your process, organization and systems through the new concept of the **"Breathing-High-Mix-Rhythm Wheel"**.

Parameter driven synchronization

- For targeting end-to-end **leveled flow in operations and supply chain** it is necessary to formalize and manage a "global tact" and to balance the cycle time differences of the interlinked product flows with right-sized inventory level.
- Parameter driven supply chain coordination requires a leveled synchronization approach and dynamic adaption of the parameters to reflect demand trends.
- Embedded tactical parameter renewal as decision support process in your **"Sales & Operations Planning"**

Dynamic variability buffering with continuously adapted safety stocks

- Variability buffers have been calculated into safety stocks but not used in planning in the past. Now **dynamic buffers will be actively used in replenishment planning** to reduce the variability propagation into production and supply chain.
- Demand variability is now managed with a two-sided approach: With manufacturing capacities as in the past and the inventory side today creating a paradigm change in the ways of working.
- Adopting consumption based pull-principles and tactical supply chain pre-parameterization reduces the need for an exact SKU-forecast and enable more **"Robust Demand Planning"**

CAMELOT LEAN SUITE

DEMAND DRIVEN LEAN SUPPLY CHAIN PLANNING - VARIABILITY AND UNCERTAINTY IS SET PIVOTAL IN PLANNING AND IS NOW BUFFERED WITH A TWO-SIDED APPROACH:

Demand Driven Supply and Inventory Planning
...for inventory position, target setting and demand driven replenishment
... enabling organizations to decouple forecast errors and variability from supply order generation

CAMELOT LEAN SUITE
DEMAND DRIVEN SUPPLY & INVENTORY PLANNING
DDMRP for SAP

1

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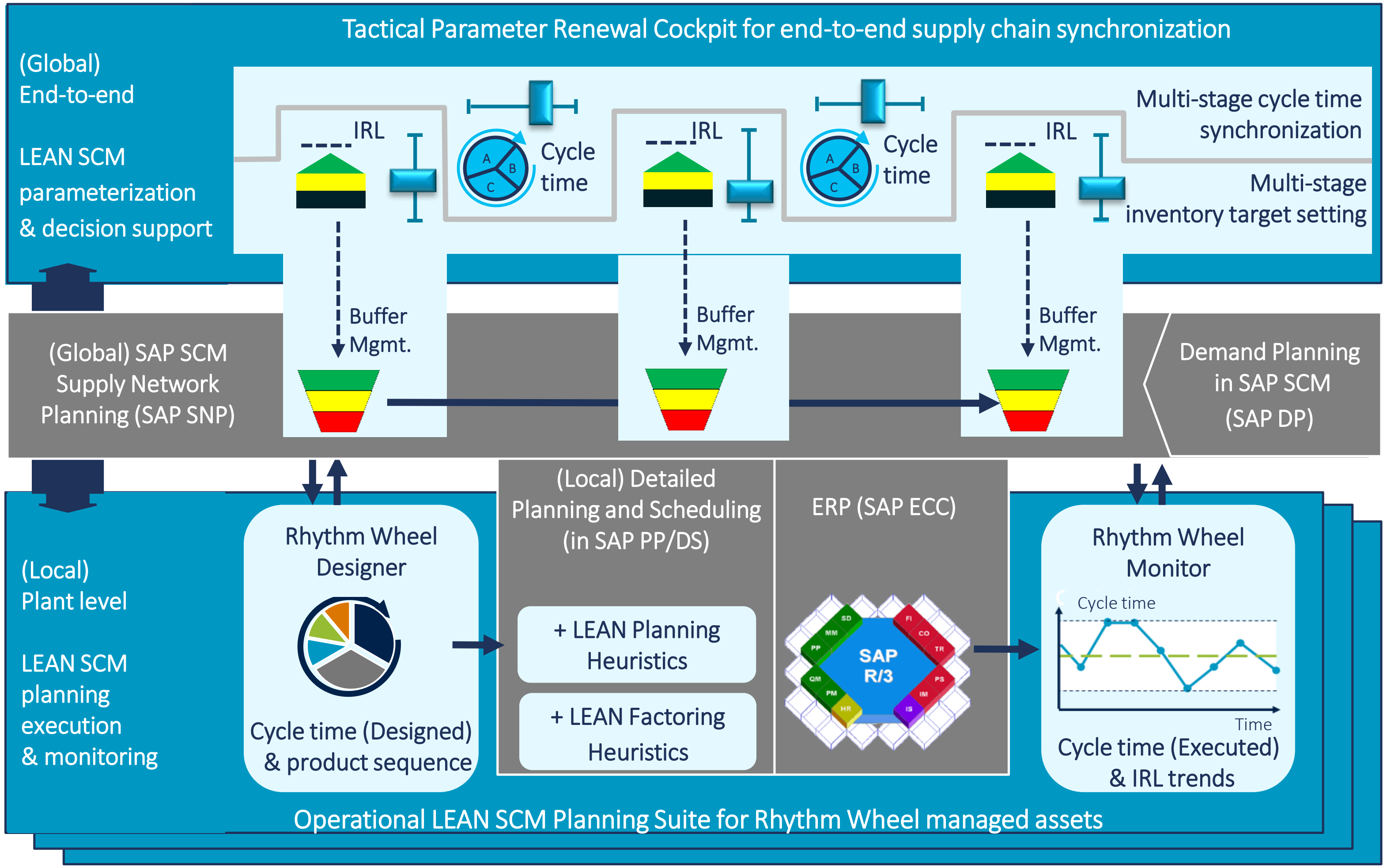
DEMAND DRIVEN RHYTHM WHEEL PLANNING
DDRWP for SAP

Demand Driven Rhythm Wheel Planning
... for cyclic scheduling and effective levelling with High-Mixed Rhythm Wheel concept
... creating leveled flow and effective use of available capacities in production.

2



IRL = Inventory Replenishment Levels

Camelot LEAN Suite
SAP SCM Add-ons for Demand Driven LEAN Planning

SAP SE Standard Applications in SAP SCM and ERP / ECC

DEMAND DRIVEN MRP (DDMRP)

CAMELOT LEAN SUITE
DEMAND DRIVEN SUPPLY & INVENTORY PLANNING
DDMRP for SAP

Camelot LEAN Suite helps you with the **DDMRP for SAP component** to actively buffer planning uncertainty in inventory and create only demand pull replenishment signals to reduce variability propagation into supply chain and production.

Key Benefits:

- Optimized stock buffer placement
- Decoupled lead times for demand driven planning
- Precisely calculated DDMRP buffers and zone values
- Dynamically altering buffers for planned or anticipated events
- DDMRP Net Flow equation including qualification of sales order demand
- Easy prioritization and supply order generation based on Net Flow status

DEMAND DRIVEN RHYTHM WHEEL PLANNING (DDRWP)

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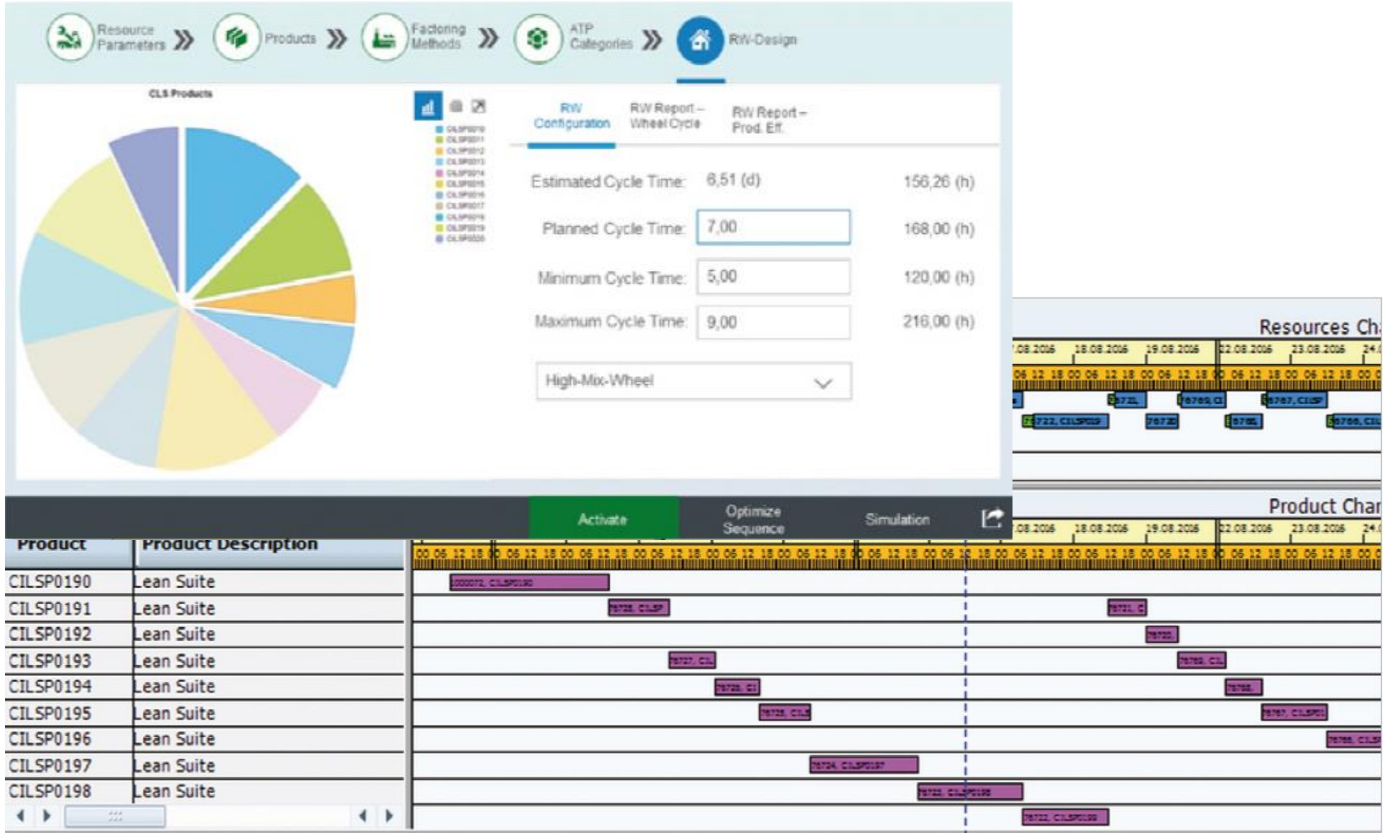
DEMAND DRIVEN RHYTHM WHEEL PLANNING
DDRWP for SAP



Camelot LEAN Suite will enable you with the **DDRWP for SAP component** to adopt cyclic scheduling and reduce planning complexity in your processes, organization and systems though a patented new concept of the "Breathing-High-Mix Rhythm Wheel".

Key Benefits:

- Optimized production sequences and cycle times
- Reduced lead time fluctuations
- Funneled variability
- Minimized bull-whip effect
- Balanced inventory, service levels and leveled capacity

ONLY THE FIRST 16 PILOT RHYTHM WHEEL LINES WILL ENABLE 103 USDM ADDITIONAL TURNOVER IN 2016 – POTENTIAL TURNOVER VALUE OF IDLE CAPACITY YTD 50 USDM

Total expected impact after SC Transformation (Business case)

Operational improvement

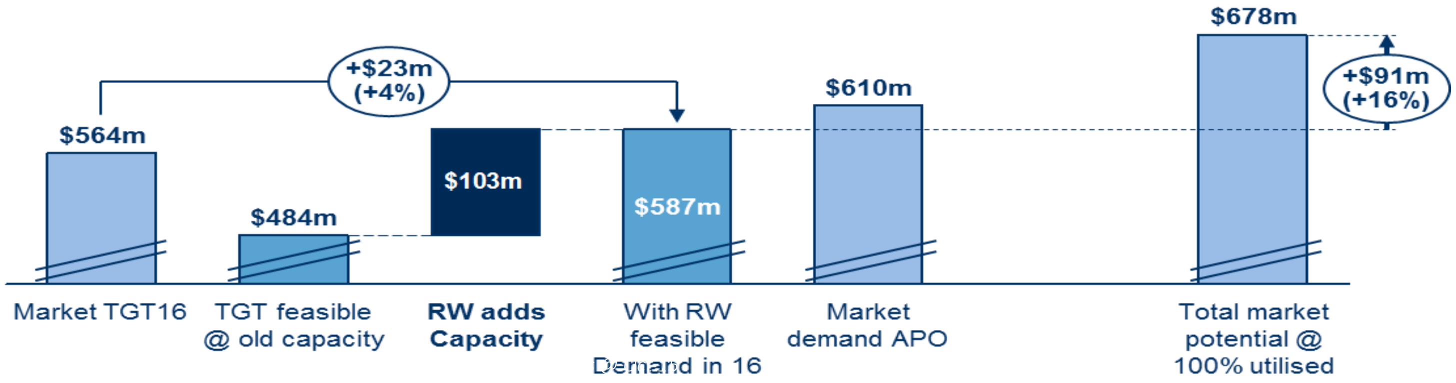
- Customer Service Level increase for key products (A and B segments)
- Production Service Level increase and better alignment with customer SL
- Lead Time reduction
- Production Schedule Adherence improvement

Financial impact, USDm

Gross Margin upside	~100-125
Write-offs reduction	~55
Penalties reduction	~20

175 - 200+ USDm
Gross margin impact, run rate by 2018

Already reported 2016 impact of 16 Rhythm Wheel lines (Benefits tracked YTD)



Benefits already tracked and reported for the 16 pilot lines during the first 9 months:

27 USDm

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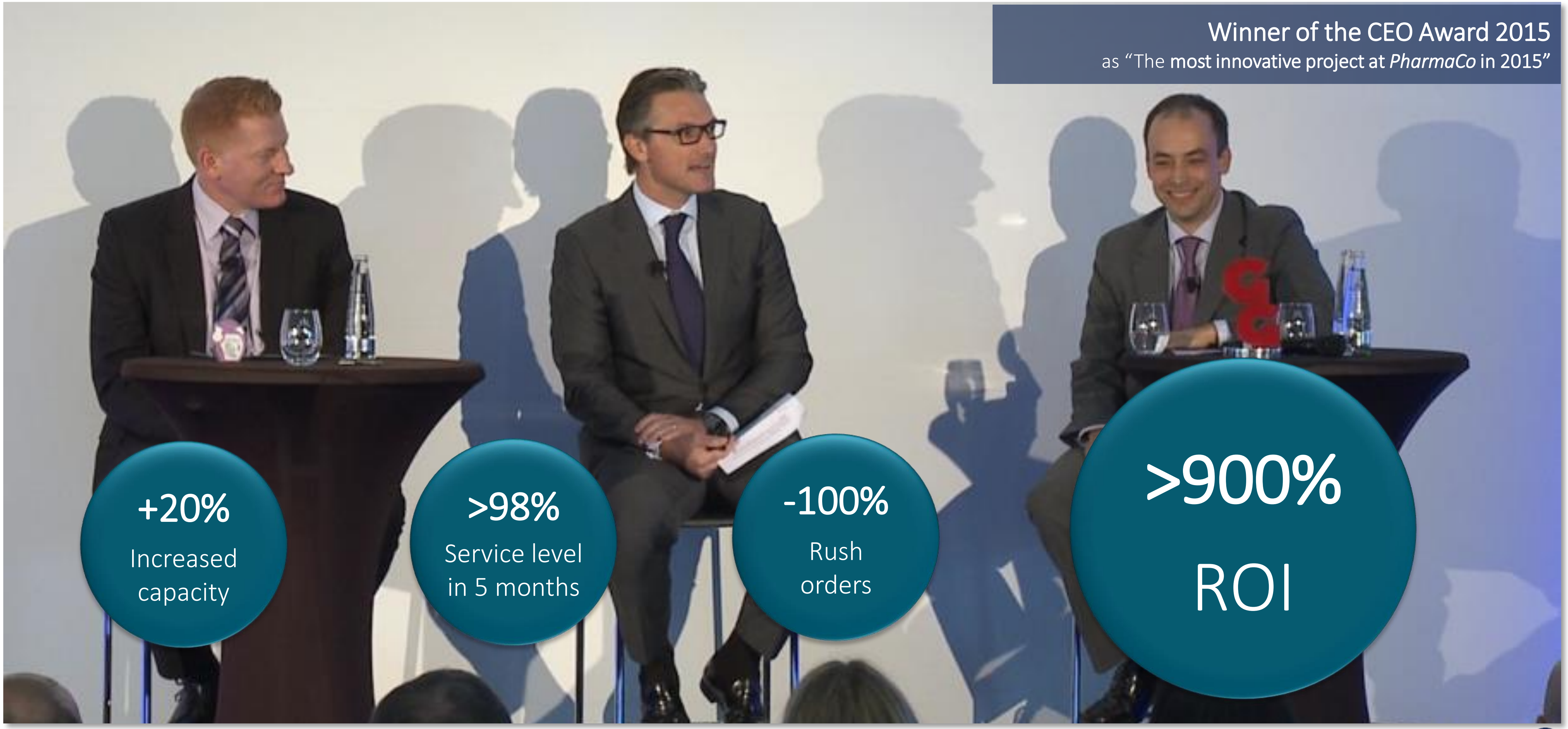

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