bioMérieux at a glance

Sales amounting to €2.288 billion in 2017

90% of international sales

1,600 people dedicated to R&D

More than 10,000 employees worldwide

A large installed base of 92,800 systems

+ 50 YEARS OF EXPERTISE IN IN VITRO DIAGNOSTICS

+ 20 YEARS OF EXPERTISE IN INDUSTRIAL MICROBIOLOGY CONTROL

2 LEADERSHIP POSITIONS IN MICROBIOLOGY GENERATE 2/3 OF SALES
BIOMERIEUX EQUIPMENT & SPARES
SUPPLY CHAIN AS A STAKE

59% of active references
45% of inventory (€)
20% of bioMérieux turnover
BIOMERIEUX E&S
SUPPLY CHAIN FOOTPRINT

4 production sites
2 (soon 3) international DCs
42 subsidiaries
149 countries
450 FSEs
FOCUS ON CHANGE
THE TRUE STORY

- Nov. 2015: Demand Driven Planner trainings

- Oct. 2017: Project launch, 1rst DDOM workshop, tool selection, DDBrix, DDMRP

- Nov. 2017: Positioning & sizing simulations, 2nd DDOM workshop, factory adjustments


- Jan. 2018: Kick-off

- Feb. 2018: Audit of practices

- Apr. 2018: Implement first change during 1rst scope

- May. 2018: Sustain change after

- Aug. 2018: Implement first change during 1rst scope

- Nov. 2018: Close-up

Choose to change before the launch

Prepare to change until go live
CITWELL MANAGEMENT CONSULTING, OPERATIONAL & INNOVATIVE

Our key figures

- 40 People
- 500+ Projects
- 200 Clients
- 50 Conferences
- 5 Offices
- 14 Years of expertise

Our DDAE expertise

1. Define the pertinent scope and build the pilot
2. Accompany change, with the IMCM approach
3. Support the first implementation and the roll-out
4. Raise awareness and train on Demand Driven thoughtware, before software

20+ DDAE implementation projects
WHY DEMAND DRIVEN FOR E&S ?

**Equipments**
- 51% Regions Forecast accuracy Equipment for 6 months (75 to 83% reagents)
- **Low & erratic** volumes of Sales/Placement at local level

**Spare parts**
- **No forecast** or with a very high error.
- 11% of IDC SKUs have an ADU > 1 unit / day
- 53% of SKUs have an ADU < 1 unit / week
- **Shortages** are quite common

**Inefficient collaboration**
- **S&OP** process managed by global Supply Chain
- But plant KPIs mainly focused on costs -> 2 months firm horizon, 12 months **leveled budget**
- Little to no agility
AFTER THE S&OP… DEMAND DRIVEN

- Nov. 2015: Transformation workshops, Demand Driven Planner trainings
- Nov. 2017: Positioning & sizing simulations, 2nd DDOM workshop adjustments
- Feb. 2018: DDBrix & DDMRP Implementation workshop in all factory
- Apr. 2018: Audit of practices
- Jun. 2018: Closing pilot & go for roll-out
- Oct. 2017: Project launch, 1rst DDOM workshop, tool selection
DEMAND DRIVEN 1RST SCOPE – 2 MAJOR RANGES
WENT VERY MUCH INTO THE GEMBA

SUPPLIER
Raw Material, Electronic Boards, SubAssy, etc.

Manufacturing

Before pilot
- Receiving
- Quality Control
- MFG Lines Replenishment
- Sub Assy Assembling
- Instrument Assembling
- Test / Burn-in / Safety test
- Parking & Packaging
- Quality Release
- Transportation
- DC receiving

DDMRP pilot
- MRP – SAP safety Stock
- Kanban bins
- Kanban bins
- Kanban shelf
- MRP – SAP safety Stock

Max order qty
Spare parts manuf
DEMAND DRIVEN PILOT QUANTITATIVE RESULTS
JUST AS EVERYONE

OTIF stable
At a very high level

-2 to 5 months cash to cash cycle

Lead-time reduction: 70 to 18 days on instru.

-25% inventory overall (plant+DC)
DEMAND DRIVEN 1RST IMPLEMENTATION
KEY QUALITATIVE RESULTS

Same language
Used by plant SC & IDC SC
And by all impacted services

Same customer
Objectives aligned all along the SC,
based on customer demand

Same way of working
through the sites
(incoming control, quality,
Sales Admin, …)

→ A lot more reactivity & relevancy on information & physical flows
→ A lot more understanding between parties
SUCH GOOD RESULTS…

... necessitate stamina!
FOCUS ON CHANGE
THE TRUE STORY

Nov. 2015
Demand Driven Planner trainings

Dec. 2017
Tool prep.

Jan. 2018
Kick-off

Feb. 2018
Audit of practices

Apr. 2018

Mar. 2018

Apr. 2018

May 2018

Jun. 2018
Closing

Prepare to change until go live

Positioning & sizing simulations
2nd DDOM workshop adjustments

Project launch,
1rst DDOM workshop,
tool selection,

Choose to change before the launch

Implement first change during 1rst scope

DDBrix & DDMRP Implementation workshop in all factory

Choose to change before the launch

Support

DDMRP Implementation

DDBrix Implementation

Demand Driven Planner

Demand Driven Planner FACTORY
CHOOSE TO CHANGE BEFORE THE LAUNCH

• A bit of schizophrenia…
• how to overcome that?

• Passion and experience!

Demand Driven World 2017™
position, protect, pull, adapt
Lyon, France July 6-7

Conference Videos
Attention points

• **Very long decision time** (convince, investigate, budgets...)
• **Consultants key to « shakras »** opening at all levels and steering into the demand driven market

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**Our +**

- with top management --> great sponsoring
  - Demand Driven World 2017, case studies

**Our -**

- A big ongoing APS project on reagents
PREPARE TO CHANGE

- Training & certification for everyone

- Impactful scope
  
  Major product line
  2 Main instruments & associated spare parts
  
  - Highest runners
  - Strong seasonality
  - 536 raw materials
  - 8 BOM levels
  - 142 spare parts

- Get to know
PREPARE TO CHANGE

Attention points

• DDP training for all
• Impactful scope, incl. critical cases
• Make your life easier:
  • Robust SC skills in production site
  • Good relationship with pilot site(s)

Our +
• Common culture with manufacturing site

Our -
• Better communicate on side effects of pilot start
IMPLEMENT CHANGE

OUR WORST ENEMY AT PLANNING LEVEL

- Constantly monitor, reassure, answer....
## ON-BOARD WIDELY AND PROVIDE SOLUTIONS

<table>
<thead>
<tr>
<th>Process</th>
<th>Usual position BEFORE</th>
<th>What we did</th>
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| Manufacturing    | My OEE! My standard cost! | • No pressure on standard costs for 6 months  
• Precise monitoring & explanations |
| Purchasing       | What are these peak orders??! Smaller MOQs?!       | • Communication & DDBrix  
• Constant routine on buffer management |
| Quality          | I’m not impacted       | • Communication & DDBrix  
• Prioritization through buffer statuses |
| Controlling      | OEE! Inventory increase? What is the ROI?          | • Communication & DDBrix  
• Demonstrate cash velocity increase / business case |
| Physical logistics | More shipments          | • Communication & DDBrix  
• Prioritization through buffer statuses |
IMPLEMENT CHANGE
ANTICIPATE YOUR LEARNING CURVE

Kick-off Consultant dynamics

Positioning & sizing workshop

Extractions & precise data management building

Distribution inventory steep decrease

Pilot Running Works but I don’t really get how

May crisis action plan

We made it pretty fast

Autonomy improving

DDS&OP strengthening

You WILL get through these...

May crisis “I know nothing”

Understanding & trust

Team DDP training

Go Live

And these!
Attention points

- **Strong project lead** (results AND problem-solving oriented)
- **Mindset change** → prepare for shocks, consultants help.
- **Constant, unaltering sponsorship**
- **DDI compliant tool** → great enabler, evolving with the Body of Knowledge

**Our +**

- Quality, purchasing, engineering very well on-boarded (serious gaming)
- **2 FTE for project mgt**– 1 per site
- Audit of practices by consultants after 3 months

**Our -**

- Better prepare common language & translation of new KPIs in our words
- Mindset change is **more important for manufacturing, gemba support is prevalent**
SUSTAIN CHANGE
IT IS JUST THE BEGINNING

- Find your tireless leader
- Learn to sell to indomitable people
- Be prepared
SUSTAIN CHANGE
IT IS JUST THE BEGINNING

Attention points

• A transformation leader needed in the long run, with a rallying & promoting personality
• Learn to sell the concept
• Use your change allies in each function
• Measure impact & magnitude of change for next steps

Our +

• Keep project resources to anticipate roll-outs
• Regular communication aroused keen interest → build on success

Our -

• Develop skills for buffer positioning
• Prepare for widening: internal training documents, project steps, pre-simulations…
NEXT STEPS
GO FULL DEMAND DRIVEN FOR EQUIPMENTS & SPARES

**2019**
- Complete necessary IT interfaces
- Complete DDS&OP maturity
- Deploy DDOM in Firenze – focus on velocity
- All common refs in DDMRP between DCs

**2020**
- Switch 2nd & 3rd plant to DDOM
- All spares in DDOM in international DCs
- Integrate Adaptive S&OP

**2021**
- Manage subsidiaries DCs & VMI with DDMRP
- Investigate for reagents, review potential software
THANKS FOR YOUR ATTENTION