SAMES KREMLIN
Demand Driven Journey
Demand Driven Supply Chain Professional
November 2020

Apply your skills
1. Sames Kremlin organization

2. Initial implementation
   1. Stains Factory Pilot
   2. Meylan Factory Pilot

3. Sustain, expand and overcome
   1. Stains Factory deployment
   2. Meylan Factory deployment
   3. Distribution deployment: USA and China

4. Improvement once the implementation was stabilized

5. Biggest lessons learned
Sames Kremlin organization

Apply your skills
EXEL Industries

A WORLD LEADER IN PRECISION SPRAYING SOLUTIONS

"Spray the right dose in the right place at the right time"
SAMES KREMLIN provides industrial solutions for production increase, quality improvement, material & cost savings

Supporting the industrial process from assembly, protection against the environment to finish by beautifying manufactured products

SAMES KREMLIN has 6 ranges of products (manual guns, automatic and robotic applicators, a wide range of pumps & machines for fluid handling, dosing, mixing & dispensing)
AIRSPRAY and AIRMIX range: highest spraying quality

 Painter gun manufacturer since 1925, we produce the best paint finishes

- **Airspray**
  - FPro
    - Manual Pistol
    - MTS + spare – high runner
  - A35
    - Automatic Pistol
    - ATO + spare – med runner
  - CYCLOMIX™ Micro
    - Mixing System
    - MTO – low runner
  - Airspray pump
    - Pump System
    - MTS – high runner

Airmix® creator in 1975, the perfect equilibrium between quality of finishing and productivity

- **Airmix®**
  - Xcite™
    - Manual Pistol
    - MTS + spare – high runner
  - AVX
    - Automatic Pistol
    - MTS + spare – high runner
  - AIRMIX® pump
    - Pump system
    - MTS – high runner
  - PU 3000
    - Electromechanical mixing system
    - ATO – low runner

Apply your Skills
AIRLESS and REXSON range: spraying high viscosity

Airless premium for demanding painters in difficult applications

- **SFlow**
  - Manual Pistol
  - MTS + spare – high runner

- **ASI24 & ASI40**
  - ASI 40GT & ASI40GTV
  - Automatic Pistol
  - ATO + spare – med runner

- **Airless Gun**
  - Automatic Pistol
  - ATO + spare – med runner

- **Airless pump**
  - Pump system
  - ATO – med runner

Extrude beyond what is possible, deposit with pinpoint precision

- **Heated / Cold**
  - Manual Extruder
  - MTO – low runner

- **Heated / Cold**
  - Automatic Extruder

- **Volurex**
  - Automatic doser

- **Quattro**
  - Pump System

- **REXSON pump**
  - Pump Systems

- **BOOSTER**
  - System 2K

Apply your Skills
ELECTROSTATIQUE LIQUID and POWDER range: spraying with better performance

The control of electrostatics for quality and performance extreme precision

NANOGUN
Manual Pistol

PPH 308
Automatic Sprayer

PPH 707 EXT

PPH 707 SB

ACCUBELL 709 EVO

Creator of high productivity in powder coating since 1960

Auto Mach-Jet
Automatic Projector

e-Jet2
Manual Equipment

INOBELL
Robotic Projector

RFV2000
Assembly

FCR/SLR
Control Cabinet

MTO/ATO – low runner

MTO/ATO – low runner

Apply your Skills
e.g. in automotive industry: customers paint lines shutdown specifically for the project installation. The new painting line must be running on time after shutdown (high penalties if delay).

Project LT is ~4 months from order entry to installation on site: studies (mechanical, electrical), specific procurements, manufacturing, tests as real at SK and onsite implementation.

Up to 5000 hours, 10 levels of BOM, 5000 SKU, 10 weeks supply lead time

Material synchronization is a prerequisite to deliver projects on time
Our main markets

- Automotive
- Industry
- Agriculture
- Consumer Goods
- Wood
- Transport
- Construction

Apply your Skills
SK manage very diverse SC environments

- Worldwide suppliers: Lead Time up to 1 year
- Manufacturing: 2 plants in France (Stains and Meylan)
- From ETO to MTS environments
- MLT: from 2 days to 3 months
- BOM: from 1 to 10 levels
- Customer LT: less than 1w for 80% of the orders
- Worldwide distribution: air freight & sea freight
Initial implementation
SAMES KREMLIN symptoms before DDMRP

Less than 60% OTIF!

Too much stress for the team for low customer service…

… too many stockouts for MTS despite too much inventory (…obsolescence)…

… too much WIP : production started an assembly but couldn’t complete it due to shortages on components…

… extra time (...costs) for ETO to deliver on time despite project delays…

… loss of confidence from our customers
Before DDMRP pilot, planning and execution on that scope were done with a mix of MRP (80% forecast accuracy) and Kanban. Still service level was low. After DDP training and lectures, DDMRP was considered as a potential solution.

DDMRP pilot: OTIF as a primary objective for MTS

Selection of the pilot based on Stains objectives:
- increase MTS availability
- decrease stock value
- include all areas of the plant (machining + assembly) and main constraint (sub-contracting)

Pilot: Automatic pistol
- 2 MTS finished goods
- 1 spare part
- all the SKUs from their BOMs

Pilot 75 SKU 1.5% stock

2014 June 2015 November 2015

STAINS
Secure availability for customers (internal and external)

**STRATEGIC POSITIONING**

- 10-40d
  - Raw material
  - Sub-contracting
  - Machining
  - Components

**PROTECT**

- 5d + 30d
  - Assembly

**PULL**

- 3d
  - Customer
  - 10-40d
  - OTIF 40%

- Raw material
  - Machining
  - Assembly
  - Customer
  - Sub-contracting
  - Components

Apply your Skills
Buffer levels and adjustments: go live with “as is” data

Initial parameters were used to make DDMRP simulations.
- MOQ, LT: from ERP
- ADU:
  - Components: 12 months history (stable)
  - Assemblies: 2 months history (more reactive)

DAF: suppliers’ summer shutdowns

Based on these initial simulations, the pilot go-live was validated.
Apply your Skills

Net flow and execution: priority based on color

Multi-skilling and flexibility → Customer Lead Time

Daily planning based on Netflow equation

Daily priority for the workshop → replenishment of FG buffers and maximize availability
Pilot: results after 6 months → let’s deploy in Stains!

Apply your Skills

10-40d

Raw material

Machining → Assembly

Sub-contracting

Components → Customer

5d + 30d

Stock

Stock: -27%

Raw material

Machining → Assembly

Sub-contracting

Components

OTIF 40%

OTIF 80%

STAINS

OTIF 40%

Other improvements
Revenue: +~2%
Purchasing price: -~2%
Quality loss: -~25%
Before DDMRP pilot, Meylan was facing low OTD. As Stains and Meylan former companies merged, DDMRP was considered as a potential solution for Meylan.

Selection of the pilot based on Meylan objectives:
- increase On Time Delivery (common parts for spare and ETO)
- decrease stock value
- protect availability of high runners and mitigate risks (business is secured during pilot as workers are highly skilled and dedicated)

Pilot: valves
- finished goods from one production cell (~10 FG)
- all the SKUs from their BOM
Secure availability for both spare parts and MTO/ETO

**STRATEGIC POSITIONING**

28-77d

**PROTECT**

5d

**PULL**

1d

- Suppliers
- QC at entrance
- Components
- Assembly
- Sub-contracting
- Non-packaged Valves *15
- Packaged Valves *1
- Internal customers
- External customers

Apply your Skills
Initial parameters (3 months historical consumption for ADU, lead time and MOQ from ERP) were used to make DDMRP simulations.

→ One big issue raised: the theoretical average stock on hand was 30% higher than actual stock. **Simulations were not acceptable** as, even to secure service level, stocks couldn’t increase.

→ Before go-live of the pilot, the parameters had to be changed so that simulations could be validated.
Involvement of the suppliers to negotiate new lead time and MOQ

Some suppliers could reduce both MOQ and lead time

- Eg. They had implemented Kanban loops (MOQ reduced to Kanban quantity and products were available)
- Eg. MOQ was reduced to packaging size (117 pces!) which helped to smooth the supplier production

Some suppliers couldn’t reduce MOQ (set up constrains) but could reduced lead time

Some suppliers didn’t want to change MOQ and LT (fear of change)

Internally, MOQ was drastically reduced from a week to a half day, or a maximum of a day
Every morning, a 5 minutes meeting was organized with the planners to look at netflow and to launch purchase order and manufacturing orders.

Execution for the plant was done on a daily basis according to the stock on hand buffer penetration.
KPIs on the 01/10/16:

- 81% OTD* (spare parts shipped at D+1)
- Average work order MOQ: 260pcs
- Actual lead Time: 14d

KPIs on the 01/02/17:

- 100% OTD* (spare parts shipped at D+1)
- Average work order MOQ: 130 pcs
- Actual lead Time: 6d

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OTD: 100%
Stock -20%

*OTD = On Time Delivery, based on customer requested date

Other improvements:
- No more manual priorities due to emergencies
- Improved product mix due to low MOQ
Sustain, expand and overcome

Apply your skills
DDMRP deployment started in November 2015

Objective of the deployment: to be secured but fast to get global similar results for end of fiscal year (sept. 2016)

2014  June 2015  Nov. 2015  January 2016  ...  January 2017

Pilot 75 SKU 1.5% stock
1 500 SKU 15% stock
18 000 SKU 100% stock
Deployment strategy to have the biggest impact on OTIF and stock:

- Our worst supplier
- 2 main product families (highest runner gun + pump)

Components for MTO

Machining area: adapt buffer sizing to consider production constraints and define execution rules to have the best compromise between productivity and customer service

Can I group production of work orders with ‘tip format’ = #40 to reduce setup time?

All other skus
Objective of the deployment: to be secured but fast to get global similar results for end of fiscal year (sept. 2017).
Deployment strategy: secure procurement and management of ETO

Components with long lead time and/or high variability

All purchased items

Sub-assemblies

ETO

‘Complete Kit’: improving lead time by reducing WIP

Engineering develops projects by manufacturing grouping (sub-assemblies). They start to work on it when they have all the input data.

Purchasers chase suppliers per sub-assembly (specific parts – non-buffered - are chased base on due date)

Production of standard parts are prioritized per sub-assembly

Producers start and complete production of the sub-assembly only when the component kit is complete (no missing parts)
Strategic positioning: buffer or non-buffered based on final customer lead time
- Critical spare parts → as the transport lead time is more than a day.
- MTS – high runner →
- ATO - MTO → non buffered
- ETO – Projects → non buffered

Adjustments: No DAF as factories (Stains and Meylan) don’t shutdown

Execution: in case of capacity issues at the factories, priority share is managed to replenished distribution buffers based on final customer demand, and not internal SK demand from transfer orders
- This allowed us to maintain a high service level for final customer demand.

**US**
- 10,000 SKU
- 95% availability
- -20% backorder rate

**China**
- 2,000 SKU
- 95% availability
- -40% backorder rate
Expand and overcome of the deployment: intensive training

To secure deployment, training was intensive for all planners, purchasers, producers and buyers. The training also include people from support departments (quality, engineering...)

Job function of planners and purchasers changed as they switched from analyzing MRP message as ‘experts’ to chasing suppliers and producers in execution to protect material flow.
Expand and overcome of the deployment: adapt the KPI to become flow centric

- Even if DDMRP was sustainable for the pilot, at a larger scale, some major changes had to occur not to treat the implementation and its sustainability: e.g. workers’ bonus
  - Before DDMRP, the bonus was based on individual productivity (cost centric)
  - After implementation, the bonus had to be changed to be aligned with flow based on “work order color” (linked with customer demand)

Tool: Excel vs DDMRP compliant tool
- Few DDMRP tools available in 2015 for SK pilot → pilot in Excel
- Even if it was very risky and people dependent, Stains had to do the deployment in Excel to validate the ROI for a DDMRP tool
- Even if netflow and execution is possible in Excel, visibility (relevant information) is not accessible for everyone and no tactical analysis is possible (e.g. no KPIs to monitor buffers, no projections)
Improvement once the implementation was stabilized

Apply your skills
Sept. 2020:

- **Stains**: 18,000 active SKU – non-stocked and buffers (MTS to MTO production and distribution)
- **Meylan**: 13,000 active SKU – non-stocked and buffers (MTS to ETO production and distribution)
- **US**: 10,000 active SKU – non-stocked and buffers (distribution)
- **China**: 25,000 active SKU – non-stocked and buffers (distribution)

15,000 stock buffers

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Sames Kremlin has now visible management by ‘colors’
“Workers are proud to work for customer satisfaction”

End of FY2020 include Covid19 pandemic
DDMRP: more visibility for better decision making

Gain of visibility for level of activity, prioritization and monitoring

Examples of metrics
- Count of order to place (netflow)
- Hours of production per WO color

All prioritization for all departments based on color
- Quality control
- Better prioritization for our suppliers
- Production: a single prioritization for non-buffer/buffer, internal/external customer
- Colors are meaningful for all the workers and they know they are related to the customers
- Colors are meaningful for senior managers: they can challenge operations during Gemba walk

Visibility of projections
- Forecasts for suppliers
- End of fiscal year inventory

Apply your Skills
DDMRP: impacts on all SAMES KREMLIN

Testimonial for « King of Supply Chain » reward

**Planner MTS-ATO** : “DDMRP enabled me to prioritize all the production orders within the assembly workshop with B2Wise. Now the assembly workshop has a clear vision of what to be done to satisfy the customer”

**Planner MTO-ETO** : “One of the biggest benefit of DDMRP is that it has enabled us to plan better and to avoid producing orders too early and to avoid delays on other orders”

**Machining workshop manager** : “For us, DDMRP is the implementation of a color code. My favorite color is green because it means that the customer is 100% satisfied, and yellow because it means that I am on time”

**Assembly workshop manager** : “Thanks to DDMRP I pilot the workshops with the real needs of the customer. No more contradictory information, things are clear, the message is accurate… Go ahead!”

**Operator** : “Today in the workshop everything is easier and better organized… Now we know what is a priority and that is thanks to DDMRP”

**Industrial director** : “The benefit of the application of the method in the workshops was for the customers a significant improvement of the service rate and for the collaborators, more sense, more solidarity and more serenity in their daily work”

**HR director** : “First, DDMRP has an impact at the production level… immediate… more autonomy… by little it has spread to all the departments of the company… From a HR perspective, DDMRP is really a structuring project”

**CEO** : “DDMRP for us is a real human adventure… It enables us to improve working capital, to make logistics flow better and, most important, to increase customer satisfaction”

**Supply chain manager** : “The implementation of DDMRP has brought us a lot of serenity… few customers call me now”

https://vimeo.com/user80997951  20180107 Les Jedi De La Supply – subtitles GB

Apply your Skills
Weekly DDS&OP meeting to check capacity for medium-term to manage multi-skilling and temporary workers to remain flexible

Monthly DDS&OP meeting for continuous improvement

- Negotiation with suppliers are prioritized based on the analysis of the average theoretical stock value and the simulation of the main improvement impact (MOQ, lead time)
- Buffer levels are reviewed based on KPIs (buffer stock status too red / too blue)

Covid19 management

- From March 2020, based on Sales and Marketing forecasts, DAF was applied to reduce buffers
- During Covid19, parts where available in the factory from supplier. However, internal service level at the factories dropped due to capacity issues (absenteeism)
**Major issues encountered : change**

**Change management**

**Planners** were 'experts' and tried to plan ‘Just In Time’. They needed daily coaching to ‘trust’ the buffers (net flow and execution) and to understand that protection of flow will stop emergencies. This will have an overall benefit for Sames Kremlin.

**Productivity in production** as main objective for machining area → adapt KPIs to flow improvement, not local optimization of unit cost.

- Deep truth : reducing MOQ will drastically increase production costs
  
  ...but reality : if buffers are sized according to production constraints, customer service level is improved, and production costs are be under control

**Quality entrance check** : priority based on production needs (color), not date. New KPI for quality check service level:

- # of DR validated VS #DR to be checked
Major issues encountered: data

Change management

 Lowest purchasing price as main objective for buyers

 → include a max stock coverage in negotiation

 Deep truth: reducing lot size will drastically increase purchasing costs but in reality

 ...but in reality: “I was able to reduce frequency of delivery form 3 months to 3 weeks, reduce supplier LT from 2 months to 10 days, and unit price was ‘only’ reduced by 3%“, buyer at SK

 Involvement of the suppliers for Meylan pilot: The discussions with suppliers show that, for a same consumption, according to the organization of the supplier, different improvements could be made without impacting the unit price

Irrelevant data from ERP

 As operational staff were ‘experts’ and had developed their own Excel spreadsheets, data had not been updated on the ERP (ex. MOQ, LT…).

 With a prioritized approach (eg. inconsistency in buffer sizing), data in the ERP was updated.
Involvement of support departments

- Senior management sponsor: implement S&OP to align Sames Kremlin strategies of all departments
- DDMRP implementation is not only a supply chain project (planning, purchasing)
- Never-ending project as we need and will always need to adapt

Marketing: define the customer tolerance time

Engineering: Critical chain implementation and complete kit

- Deep truth: if you start producing the project as soon as possible, material will be allocated, and we have greater change to be on time
  ...but in reality: if you start producing at the right time (material and capacity) based on priority flow and OTD will are improved

DDMRP is not only for MTS → methodology can be applied from ETO to MTS, from suppliers to distributors
SAMÈS KREMLIN

DDMRP’s journey still go on!

Apply your skills