DDMRP in retail and new product launching

• First DDMRP implementation in Latin America
• First in the world including retail and fashion industry
• DDW, Houston, 2015
What will be covered

• The company
• What we found
• What we did
• What we achieved
• What we learned
Maquila Internacional de Confecciones MIC (International apparel Maquila)

• Founded in 1992
• 850 employees in 2013, 1,000+ today.
• Colombian leader in licenses production and distribution (Disney, Mattel, etc.)
• 2014 sales: USD25.0+ MM
• Production, distribution and retail
• Production: cutting, printing, sewing
• Two production sites
Maquila Internacional de Confecciones MIC

- Purchase yarns, outsource fabrics production and finishing.
- Used to outsource around 40% of sewing (none in 2014-2015)
- Sales channels: large and medium size retailers and own retail chain.
- 80 stores in Colombia, 3 in Venezuela and 7 in Mexico in 2013. 95 today.
- Some are company owned, some are franchises
- Full package for direct sales companies
Retail stores
What we found

• Project started in February 2013
• Profound intensification of the usual symptoms of the traditional "Push and Promote"
  (forecast) - Push and Promote or:
  (gamble) - Push and Pray mode.
What we found

Every thing was produced to forecast at the SKU level
What we found

.... and pushed to the stores –

No central buffer
What we found

• Unit cost was the main KPI in operations
• Maximized local efficiencies
• MIC was reporting profits in the P&L and paid real income taxes on those “profits”.

CRAZY PEOPLE
CRAZY PEOPLE EVERYWHERE
What we found

Piles of inventory every where in the plants
What we found

No priority system in the shop floor
What we found

Huge inventories in central warehouse and retail points.
What we found

Scarcity sensation in the shop managers (shops full of slow moving items):

“We have nothing to sale”
What we found

Lots of items sold at high discounts in outlet stores
What we found

- Total disconnection between areas
- Conflicts everywhere, finger pointing, lack of understanding, etc.
What we found - Results

• Very low service levels (under 60%)
• High stock outs of high movers in retail
• Very low inventory turns
• Inventories growing faster than sales
• Extremely long production lead times (45 days)

And therefore.........
What we found - Results

Negative cash flow
What we found
They declared themselves in
CRISIS
S.O.S.
What we did

BASIC KNOWLEDGE TRANSFER:

• Goal: Increase FLOW of relevant materials and information.
• Focus on reducing TIME not unit costs
• Impact of variability in Flow: Dice game
• Remove old cost system and local efficiencies
• TOC Five focusing steps
What we did

BASIC KNOWLEDGE TRANSFER:

• Forecasts create the bi-modal distribution so they must be eliminated at the SKU level.
• Move from Push to Pull.
• Aggregation principle for distribution: Hub at source DDMRP distribution model
• Five components of DDMRP
What we did

• There is no possible way that a company in fashion achieves decent results with a 45 days lead time.

• First goal: significantly decreasing lead times

   Little´s Law: WIP = LT * TP
   
   then,

   \[ LT = \frac{WIP}{TP} \]
What we did

• A very “primitive” DBR implementation using Excel
• We set a 3 days buffer in sewing (control point) and released “only what was produced yesterday” for each sewing module family.
• Results: lead time was reduced to 15 days in few weeks.
What we did

The Five Components of DDMRP

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<th>Demand Driven Material Requirements Planning</th>
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<td>Strategic Inventory Positioning</td>
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1. Modeling/Re-modeling the Environment
2. Plan
3. Execute
1. Strategic inventory positioning

- Yarn Supplier
- Fabric Supplier
- Knitted
- Dyeing
- Fabric warehouse
- Washing
- Cutting
- Fabric Printing
- Embroidery
- Special Process
- Sewing
- Washing
- Garments warehouse
- Store 1
- Store 2
- Store 80

- Suppliers
- Wharehouse
- Outsourcing
- Own production
- Retail
1. Strategic inventory positioning
1. Strategic inventory positioning

- The “I found it call”.
- Buffering intermediate components: decreasing ASRLT (decoupled lead time).
- Used to cut-print and sew t-shirts
- Changed to cut-sew in basic color and print on demand.
- Decreased lead time
- Improve service levels
- Decrease inventories
2. Buffer Profiles

- 17 buffer profiles for purchased, made and distributed parts.
- 4 profiles for retail buffers
2. Individual Part Traits

- Around 63,000 buffers in retail: 80 stores, 700+ SKU’s per store.
- Managed with only 2 buffer profiles
- 2 profiles for bags
- The power of buffer profiles
3. Dynamic adjustments

- Recalculated adjustments
- 90 days horizon and 7 days frequency for regular SKU’s
- 15 days horizon and 3 days frequency in new products, during first 2 weeks.
- PAF: learning! Key for seasonality. Simulation tool.
4. Planning: Order Recommendation

- Based on the Available Stock Equation – Net Flow Equation
- Includes spikes
- MPS: replenishment orders plus MTO’s (new collections launching)
5. Execution: Alerts

- Only using on hand alerts at this time (out of 4 DDMRP alerts).
- Really important in this environment: decide what to stop replenishing: minimum display alert and non-replenish alert based on cpd or sales frequency: 1/cpd.
Reporting - Analityycs

• Based on predesigned reports: quality of the inventory, stock outs, OTOG, etc.

• A full report generator: practically any report can be generated.

• High-slow movers (key in retail)
What we achieved

• Overall stock outs at the store level reduced to 2% (less in high movers).
• Sales in 2013-2015 increased 60%
• Inventory in the retail chain decreased around 40%
• Sales of high movers in Christmas 2013 increased 800% compared to 2012. Replenished within the season.
• Less product sent to Outlets.
• “Scarcity sensation” of the stores managers eliminated. Motivated sales force.
What we achieved

• Speed of flow is the goal throughout all the organization and key decision maker (including fashion designers!)

• A redefinition of the strategy of the company based on new operational capabilities (focus on brands and retail)

• Positive, “nice” cash flow.

• Over all: working environment unthinkably improved.
What we achieved

• El Exito: largest retailer of Colombia: around USD4.0 billions annual sales, 400+ stores, belongs to the French group Casino.

• Awarded MIC “Best supplier of the year” in textile and apparel category in 2014, amongst 600 suppliers. (remember Crisis 18 months before).

• VMI model in 58 stores (expanding to 200 now). Doubled sales.
“Why we won”:

- The Innovation in products.
- The development of a supply chain model that has allowed growth levels up to 100%.
- Source: www.grupoexito.com.co
Fashion and Retail environment

A new challenge for DDMRP:

Very special particularities

• Extreme complexity, uncertainty and variability
  • Buffer sizing
“According to a study commissioned by his company and conducted by IHL Group, "out-of-stocks" accounted for $634.1 billion in lost retail sales for the year ended in the spring — 39 percent higher than in 2012. Likewise, overstocks contributed $471.9 billion in lost revenues, up 30 percent from three years prior. When a retailer has too much merchandise, it cuts into its margins”.

Fashion and Retail environment

On the flip side, a separate study by the GT Nexus, a supply chain platform, found that 75 percent of U.S. adults have come across an unavailable product in stores over the past year, with 63 percent encountering that issue online. As a result, the majority of these frustrated shoppers decided to shop at another retailer or buy nothing at all.

Challenge 1: The retail environment

- Extremely concentrated sales distribution
- Required minimum display quantities

Sales vs. SKUs chart showing a very long tail.
Typical sales configuration:

Less than 10 SKU’s have ADU > 1

440 SKU’s did not sell at all
The retail buffer

• Very low ADU´s: 95+% of SKU´s under 0.5, typically below 0.1. Sales frequency,
• All zones would be equal to zero according to the DDMRP buffer calculations, for 99% of the parts: 0.1 ADU * 1 day lead time.
• Buffers should be able to flex to one, two, three or more units… but regular buffers have three zones
• Wrong rounding policies might double or triple the total inventory in the stores.
The retail buffer

- Not always a general DDMRP buffer: 1 unit?
- Not always a min/max system: max=1, min=0?
- What if we needed 2 units?
- Highly weekend seasonality
- We developed a general DDMRP buffer that would automatically take any value: 0, 1, 2, 3 or more units, as required.
The retail buffer

- For large ADU´s/long LT, regular DDMRP buffer
- As they decrease, green zone=0, then TOG=TOY, forcing immediate replenishment. Two units buffer... Watch rounding policies.
- Even smaller: yellow zone also 0, then TOG=TOY=TOR, one unit buffer
- Display amount should be maintained, but the buffers suggests to stop replenishing for a predefined ADU threshold (sales frequency)
# Retail buffers

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Colors: Red, Yellow, Green
Challenge 2: New collections launching strategy/process

• There will always be a risk
• NO ONE knows in advance which products will become high movers and which will be sold with high discounts in outlets one year after
New collections – Traditional strategy

The traditional push model with large quantities and long lead times:

• Large amounts for all SKU’s: several times the required display
• Everything pushed to stores
• No buffers in fabrics and trims
• No buffers of FP at the CDC
And after 3 weeks:
• Stock outs of high movers. Many lost sales.
• No focus in finding high movers
• Long lead times for purchased parts and production make impossible to replenish high movers. Transfers between shops until is over.
A new approach to collections launching Production strategy

- Lead time < 7 days (capacity buffer needed)
- Push only visual display to stores plus 15%-30% buffer in CDC: Hub at source. Fast logistics direct to stores, no RDC’s.
- Buffer in fabrics and trims – lower risk, fast replenishment
And:

- High/slow movers tendency detected
- Replenish from the CDC buffer
- Issue early production order
- Focus on availability of high movers – KEY (segmentation)
After 1 week:

- High/slow movers tendency detected
- Replenish from the CDC buffer
- Issue early production order?
- Focus on availability of high movers – KEY (segmentation)
High movers – High visibility – High availability – High sales
New collections launching strategy/process

• A “stabilization period” defined: all new products in all stores, awareness of the market: two weeks.
• No downward buffer adjustment during this period
• Replenish only what is sold, except if there is a stock out.
• Increase buffer for stock outs: real sales potential.
How the buffers structures should look like
Lessons Learned

• Do not expect that every thing will be EASY
• Sometimes is two steps forward, one step back. Do not panic.
• Absolute support from top management and a champion: MUST have
• Remember: stocks go down and “profit” go down in the P&L. BEWARE.
• DDMRP opened many new avenues for improvement. A long journey ahead.
• New advancements: DBR+, robust S&OP, integration with suppliers (VMI).
Thanks!