AIRBUS Case Study

Paris
5 May 2010
2007 Constraints...

- Scope of work = 2 final assembly lines, 11 design & manufacturing facilities in Europe
- 80 warehouses & +/- 20 major suppliers (>1mio €)
- Out of scope
Key Value Drivers of the Kuehne + Nagel Solution

- Consolidation of Logistics Operations into 6 Regional Hubs in D, F, ES, UK
- Deployment of a single WMS system to reduce complexity, cost and enable standardization of processes
- Consolidation of Service Providers / Implementation of a single Lead Logistics Provider
- Introduction of standardized processes based on best practices
- Leverage outsourcing opportunities for non-core services in a standard blueprint across all sites
Integrated Project Team taken from existing KN organization

- Local teams
  - Local surveys
  - As is flow design
  - Local scenario costing
  - Etc..

- Re-engineering teams
  - Scenario build-up
  - To be scenario costing
  - Value proposal design
  - Road mapping

Central team (plateau)
...Kuehne + Nagel transformation vision

- 6 Regional hubs in Europe
  - 120,000 sqm / 1500 FTEs
- X Out of scope

Map of Europe with markers for different regions and a list of parts:
- Wings
- Horizental Tailplane
- Belly fairing
- Forward Fuselage Vertical Tailplane
- Aft Fuselage Vertical Tailplane
- Nose fuselage
- Centre fuselage
- Pylon
Kuehne + Nagel scope of work for AIRBUS

- H&F Ordering + Stock management
- Reception & Quality control
- Storage
- Kitting & Order Preparation
- Cut to Size & Sealant mixing
- Delivery Center
- Delivery to FAL
- Delivery to Point Of Use
- Section Handling
Kuehne + Nagel mirror AIRBUS supply chain organization

- Central Team
- LLP Control Tower

Central Level:
- Direction
- Monitoring
- Decisions

Local Level:
- Requirements
- Execution

Stakeholders:
- Broughton
- Nantes
- St. Nazaire
- Toulouse FAL
- St. Eloi
- Getafe
- Illescas
- Puerto Real
- Bremen
- Hamburg
- Hamburg FAL

Operations:
- UK Hub
- Northern France Hub
- Southern France Hub
- Madrid Hub
- Southern Spain Hub
- German Hub

Steering Committee
AIRBUS / Kuehne + Nagel Governance Model

Steering Committee

Operational Steering Committee
Engineering / IT / Method

Local Steering Committees
South France, West France, Broughton, Hamburg/Bremen, Central Spain, South Spain

Individual Implementation & Re-engineering Projects
Transition phase from project team to operational team with a single target: Secure the operation

**Transition Phase**
- Gradual Transition from Commercial team to Go-Live
- Commercial team still in charge of AIRBUS Key Account Management & Operational steering
Transformation Plan during implementation (i.e Toulouse)

<table>
<thead>
<tr>
<th>September 2008</th>
<th>December 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>BLAGNAC</td>
<td>BLAGNAC</td>
</tr>
<tr>
<td>JLL</td>
<td>JLL</td>
</tr>
<tr>
<td>ST ELOI</td>
<td>ST ELOI</td>
</tr>
<tr>
<td>SEOR</td>
<td>SEOR</td>
</tr>
<tr>
<td>TIT</td>
<td>TIT</td>
</tr>
<tr>
<td>CLEMENT ADER</td>
<td>CLEMENT ADER</td>
</tr>
<tr>
<td>L. BREGUET ATHOS</td>
<td>L. BREGUET ATHOS</td>
</tr>
<tr>
<td>HARDWARE &amp; FASTENERS</td>
<td>HARDWARE &amp; FASTENERS</td>
</tr>
<tr>
<td>7P2 BOOKING</td>
<td>7P2 BOOKING</td>
</tr>
<tr>
<td>EUROCENTRE</td>
<td>EUROCENTRE</td>
</tr>
</tbody>
</table>

- Take over of over 360 employees (providers & AIRBUS) in one year with 4 different collectives agreement and 5 different HR policies
- Smooth transition with 0 day of work stoppage
Transformation Plan during implementation (i.e Nantes & St Nazaire)

- Sharing best in class processes & reapplying projects
- Strategies and Processes are standardized
- Quick Return On Investment is proven
- Centralization allows to create a central know-how repository (best practices, methodologies, statistics, KPIs..)
Logistics Hub construction for line feeding in Nantes & St Nazaire: 18,000 sqm

Final Project

<table>
<thead>
<tr>
<th>Total surface</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>18,000 sqm</td>
<td>(3 x 6,000 sqm)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total surface</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ground</td>
<td>Mezzanine</td>
</tr>
<tr>
<td>18,000 sqm</td>
<td>1,800 sqm</td>
</tr>
</tbody>
</table>
Lean Logistics Projects Central Coordination, supported by KN and Freelog

Steering committee management:
- Planning validation
- Cross fertilization
- Savings tracking set up

Lean Day within Logistics organisation with 2 workshops:
- Bypass flew management
- Hub project impact

Agenda

1. Presentations: 8h00-9h00
   - A320 POLARIS
   - Equipment changes: 8h30-9h00
2. Planning coordination: 9h00-10h30
   - A320 POLARIS
3. Break: 10h30-11h00
4. Workshop: 11h00-12h00
   - A340 POLARIS
5. Equipment changes: 12h30-13h00
6. Break: 13h30-14h00

On-going weekly flash report follow up

Tableau de bord Lean Logistique 6 JUILLET 2009

Macro-planning

<table>
<thead>
<tr>
<th>Thème</th>
<th>Gains</th>
<th>Coûts</th>
<th>Planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mat. en KB pièces</td>
<td>58 k€/m</td>
<td>25 k€/m</td>
<td></td>
</tr>
<tr>
<td>Reorganisation KB CMS</td>
<td>15 k€/m</td>
<td>10 k€/m</td>
<td></td>
</tr>
</tbody>
</table>

Divers

Nouveaux besoins?

Agenda

1. Presentations: 8h00-9h00
   - A320 POLARIS: Equipment changes: 8h30-9h00
2. Planning coordination: 9h00-10h30
   - A320 POLARIS
3. Break: 10h30-11h00
4. Workshop: 11h00-12h00
   - A340 POLARIS
5. Equipment changes: 12h30-13h00
6. Break: 13h30-14h00

On-going weekly flash report follow up

Tableau de bord Lean Logistique 6 JUILLET 2009

Macro-planning

<table>
<thead>
<tr>
<th>Thème</th>
<th>Gains</th>
<th>Coûts</th>
<th>Planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mat. en KB pièces</td>
<td>58 k€/m</td>
<td>25 k€/m</td>
<td></td>
</tr>
<tr>
<td>Reorganisation KB CMS</td>
<td>15 k€/m</td>
<td>10 k€/m</td>
<td></td>
</tr>
</tbody>
</table>

Divers

Nouveaux besoins?

Agenda

1. Presentations: 8h00-9h00
   - A320 POLARIS: Equipment changes: 8h30-9h00
2. Planning coordination: 9h00-10h30
   - A320 POLARIS
3. Break: 10h30-11h00
4. Workshop: 11h00-12h00
   - A340 POLARIS
5. Equipment changes: 12h30-13h00
6. Break: 13h30-14h00

On-going weekly flash report follow up

Tableau de bord Lean Logistique 6 JUILLET 2009

Macro-planning

<table>
<thead>
<tr>
<th>Thème</th>
<th>Gains</th>
<th>Coûts</th>
<th>Planning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mat. en KB pièces</td>
<td>58 k€/m</td>
<td>25 k€/m</td>
<td></td>
</tr>
<tr>
<td>Reorganisation KB CMS</td>
<td>15 k€/m</td>
<td>10 k€/m</td>
<td></td>
</tr>
</tbody>
</table>

Divers

Nouveaux besoins?
AIRBUS & KN joined work to set-up the MOVING LINE project for pylons

- Optimization of logistics flow:
- From 11 static lines to 1 moving line
- MDUs optimizations
- Replenishment process based on tact times
- Reduction of missed item at line level
- Optimization of workers productivity – Bring correct parts at correct place and correct time -
Merci beaucoup – Thank you – Vielen Dank – Muchas Gracias – спасибо – 谢谢