Maximising the Potential of Systems Integration

David Smith
Macmillan Distribution (MDL)
Systems Integration
MDL’s profile

- 50% Macmillan, 50% Third Party
- 45000 ISBNs or editions in stock
- 6000 ISBNs – printed on demand
- 56 million books shipped
- 5.2 million order lines
Subsystems

MACMILLAN
Macmillan Distribution (MDL)

swisslog

PUBLISHING TECHNOLOGY

SCHAEFER
MDL’s Commercial System

Vista

- Royalties
- Order Fulfilment
- Credit Control
- Sales Data
- Inventory
Warehouse Management System
Order Forwarding Conveyor
Integrating Systems

MACMILLAN DISTRIBUTION (MDL) – Swansea Distribution Centre – Workflow For ‘Key Account’ ORDERS

1. ORDERS Transferred From VISTA Host System To MITRALS WMS
   - MITRALS WMS Generates Full Case Picking & Replenishment Tasks
   - Full Case Replenishment Tasks Are Directed Automatically To Drop Off To An In-feed To The PEEM Conveyor System Which Then Routes Them To The Appropriate Picking Zone, Ensuring Sufficient Loose Stock Is Held To Fulfill The Days Loose Picking Requirements

2. Full Case Picking & Replenishment: Tasks Fed To Fork Truck Operators Automatically via Radio Frequency Terminals
   - Fork Truck Operators Are Directed Automatically To Drop Off Full Case Picks For ORDERS < 300Kg To An In-feed To The PEEM Conveyor System
   - PEEM Conveyor System Performs A Volumetric Split Of Loose Lines By Order To Minimize The Number Of Cartons Required & Generates Picking Lists For The Loose Pick Cartons
   - If An Order Contains Full Case Picks, These Are Launched Into The PEEM Conveyor System First, Followed By The Loose Pick Cartons

3. Loose Cartons For ORDERS > 300Kg Are Consolidated By Order Ono Pallets. Once All Loose Cartons For The Order Are Assembled, A Fork Truck Operator Is Automatically Issued A Task To Transfer These Pallets To The Same Shipping Lane As The Full Case Picked For The ORDER
   - Each Loose Pick Carton Is Weigh Checked & Any Errors Corrected Prior To Leaving The Conveyor. Cartons Are Sorted By The Conveyor System Into Pre-Designated Shipping Lanes

4. ORDERS > 300Kg Are Assembled By Order & Shipped By Pallet Carrier CEVA. Shipping Time Is Dependant Upon Booking In Details Agreed With The Customer
   - ORDERS < 300Kg Are Packed Into Cartons (via PEEM Conveyor) & Shipped On Mixed ORDER Pallets via Parcel Carrier DPD
   - Single Line & Small Volume ORDERS Are Packed In Wraps And Shipped By Post, ROYAL MAIL

Mandy Williams – February 2010 (Updated February 2011)
Integrating Systems (Swisslog)

MACMILLAN DISTRIBUTION (MDL) – Swansea Distribution Centre – Workflow For ‘Key Account’ ORDERS

19:00 hrs  20:00 hrs  06:00 hrs  07:00 hrs  15:00 hrs  17:00 hrs

ORDERS Transferred From VISTA Host System To MITRALS WMS

MITRALS WMS Generates Full Case Picking & Replenishment Tasks

Full Case Replenishment Tasks Are Directed Automatically To Drop Off To An In-feed To The PEEM Conveyor System. Which Then Routes Them To The Appropriate Picking Zone, Ensuring Sufficient Loose Stock Is Held To Fulfill The Days Loose Picking Requirements

ORDERS Are Additionally Transferred From The VISTA Host System To PEEM Conveyor System

2

Full Case Picking & Replenishment: Tasks Fed To Fork Truck Operators Automatically via Radio Frequency Terminals

Fork Truck Operators Are Directed Automatically To Drop Off Full Case Picks For ORDERS >= 300Kg To A Specified Shipping Lane

OrdERS >= 300Kg Are Assembled By Order & Shipped By Pallet Carrier CEVA. Shipping Time Is Dependant Upon Booking In Details Agreed With The Customer

3

Loose Cartons For ORDERS >= 300Kg Are Consolidated By Order Onto Pallets. Once All Loose Cartons For The Order Are Assembled, A Fork Truck Operator Is Automatically Issued A Task To Transfer These Pallets To The Same Shipping Lane As The Full Case Picking For The ORDER

ORDERS < 300Kg Are Packed Into Cartons (via PEEM Conveyor) & Shipped On Mixed ORDER Pallets via Parcel Carrier DPD

4

PEEM Conveyor System Performs A Volumetric Split Of Loose Lines By Order To Minimize The Number Of Cartons Required & Generates Picking Lists For The Loose Picks By Carton

Each Loose Pick Carton Is Weight Checked & Any Errors Corrected Prior To Leaving The Conveyor. Cartons Are Sorted By The Conveyor System Into Pre-Designated Shipping Lanes

Single Line & Small Volume ORDERS Are Packed In Wraps And Shipped By Post, ROYAL MAIL

Packing List Per Order/Pallet/Carton & Invoice Included

Packing List Per Carton & Invoice Included

Invoice Included

Mandy Williams – February 2010 (Updated February 2011)
Where is My Order?
<table>
<thead>
<tr>
<th>Carton</th>
<th>Status</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>002</td>
<td></td>
<td></td>
</tr>
<tr>
<td>003</td>
<td></td>
<td></td>
</tr>
<tr>
<td>004</td>
<td></td>
<td></td>
</tr>
<tr>
<td>005</td>
<td></td>
<td></td>
</tr>
<tr>
<td>006</td>
<td></td>
<td></td>
</tr>
<tr>
<td>007</td>
<td></td>
<td></td>
</tr>
<tr>
<td>008</td>
<td></td>
<td></td>
</tr>
<tr>
<td>009</td>
<td></td>
<td></td>
</tr>
<tr>
<td>010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>011</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Fwd Ctns:** 10  **Ord Stat:** Complete  **Date:** 18-05-10  **Site:** Swansea

**Blk Ctns:** 1  **Ord Type:** Large

**Carton Data**

<table>
<thead>
<tr>
<th>Pick Lines</th>
<th>Inv Ctn</th>
<th>Misc Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>0024</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>0039</td>
<td>Run Mode: DAYEND</td>
<td></td>
</tr>
<tr>
<td>216448799767</td>
<td>Launch Zone: Order Launch</td>
<td>Trackback: 060457512N</td>
</tr>
</tbody>
</table>
Mark Walker’s Sales Data Warehouse
Customer Slicer

- Home by individual account, chain or market segment
- Export by individual account, country or region
- Customer type
- Discounts and discount breaks
- Pre-authorised and actual returns
Product Slicer

• By publisher, by imprint, by section
• By series or by author or by title
• Front list or back list
• Hardback or paperback
• Physical or digital
Time Slicer

• This year, last year, MAT or LMAT
• Last month, Last month last year
• This month,
• Last week
• Yesterday
• Any day of the week
Mix and Match

Customer
• Home by individual account, chain or market segment

Product
• By publisher, by imprint, by section

Time
• This year, last year, MAT or LMAT
Metamorphosis
Order Source

MACMILLAN

Order Source

EDI

Spreadsheets

Website

Phone

Fax
Picking Process

Loose copies

Packet quantity

BOTH
<table>
<thead>
<tr>
<th>Service Level Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Parcels</td>
</tr>
<tr>
<td>Number of Pallets</td>
</tr>
<tr>
<td>Cost of Parcel or Pallet by service level</td>
</tr>
</tbody>
</table>
Despatch Ratios

- Cost of freight as percentage of sales
- Cost per kilo
- Cost per unit
Credit Terms

Underlying DSOs

Actual achieved DSOs
Maximising the Potential of Systems Integration

- Discounts
- Customer Service costs
- Warehouse Processing
- Freight Costs
- Cash Cost of Payment Terms
- Sales
Maximising the Potential of Systems Integration

- Customer Service costs
- Warehouse Processing
- Freight Costs
- Cash Cost of Payment Terms
- Discounts
- Sales

Understanding
Maximising the Potential of Systems Integration

- Customer Service costs
- Warehouse Processing
- Discounts
- Freight Costs
- Sales
- Cash Cost of Payment Terms

Customer & Publisher Profitability
We can still dive deeper!

- Driver waiting time
- Pallet transfers
- Global Freight
- Marketing costs
- Unit costs
What’s the answer?