INTEGRATED SUPPLY CHAIN PLANNING IN NETWORK OPTIMISATION

NEXT GENERATION, NETWORK OPTIMISATION

FRASER IRONSIDE – HEAD OF STRATEGIC MODELLING
SMART SUPPLY
CHAIN SOFTWARE
SOLUTIONS

Barloworld SCS provides smart solutions to enable

Integrated Supply Chain Planning that optimises our
client’s Network, Transport & Inventory performance.
With more than 600 international clients, offices in the **UK, France, South Africa, Dubai, China** and **US**, plus a complement of agents and partners around the world, Barloworld Supply Chain Software develops smart solutions that maximize the efficiency and agility of global and local supply chains.
BLUE CHIP BACKING

Backed by the Barloworld Group, one of South Africa’s largest companies with a turnover of $7.3bn, operations in 42 countries around the world and a listing on the London and Johannesburg Stock Exchange.

The Barloworld Group is a distributor of leading international brands, providing integrated rental, fleet management, product support and logistics solutions.
# Sample Customers

<table>
<thead>
<tr>
<th>CPG</th>
<th>Retail</th>
<th>Retail (non-food)</th>
<th>Food</th>
<th>Beverage</th>
<th>Consultancy</th>
<th>3PL’s</th>
<th>Building Trade</th>
<th>Hi-Tech</th>
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<tbody>
<tr>
<td>Nestlé</td>
<td>TESCO</td>
<td>Harveys</td>
<td>Arla</td>
<td>SAB Miller</td>
<td>Deloitte</td>
<td>DHL</td>
<td>SIG</td>
<td>NOKIA</td>
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<td>LEGO</td>
<td>coles</td>
<td>PACIFIC BRANDS</td>
<td>Heinz</td>
<td>Carlsberg</td>
<td>accenture</td>
<td>CEVA</td>
<td>Sylvania</td>
<td>Telstra</td>
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<td>British American Tobacco</td>
<td>Sainsbury’s</td>
<td>GAP</td>
<td>parmalat</td>
<td>KUEHNE + NAGEL</td>
<td>Capgemini</td>
<td>UNIPART GROUP</td>
<td>THORN</td>
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<td>Unilever</td>
<td>ASDA</td>
<td>GrandOptical</td>
<td>McDonald’s</td>
<td>Hellenic</td>
<td>KPMG</td>
<td>DB SCHENKER</td>
<td>Avocet</td>
<td>HP</td>
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<td>P&amp;G</td>
<td>Loblaw</td>
<td>Edcon</td>
<td>Premier Foods</td>
<td>Coca-Cola</td>
<td>LCP</td>
<td>CAT Logistics</td>
<td>Travis Perkins</td>
<td>ICON</td>
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<td>Colgate</td>
<td>H&amp;AVI</td>
<td>axiom telecom</td>
<td>ELEON</td>
<td>DGB</td>
<td>Ernst &amp; Young</td>
<td>FM LOGISTIC</td>
<td>LAIRD Security Hardware</td>
<td>UPC</td>
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</tbody>
</table>

*Note: The image contains logos of various companies and brands.*
SMART SUPPLY CHAIN PLANNING SOLUTIONS

Network optimisation
Warehouse positioning
Production optimisation
Capacity planning
Mode selection
Migration planning
Tax optimisation

Optimal sourcing
Inventory deployment
Postponement strategies
Risk pooling
Constraint management
S&OP

‘Bottom Up’ ABC Costing
SKU costing by channel
SKU costing by format
CO2 calculation by SKU
‘What If?’ route & channel analysis

Transport optimisation
Routing & Scheduling
Territory planning
Fleet sizing
Transport budgeting

Inventory visibility
Order recommendations
Demand planning
Inventory policy
Constraint planning
MRP

Supply Chain Consulting / Outsourced Planning / Hosted Solutions
SUPPLY CHAIN PLANNING MATRIX

Strategic Network Planning

Master Planning

Purchasing & Material Requirements Planning

Production Planning

Distribution Planning

Transport Planning

Scheduling

Demand Planning

Demand Fulfilment

Procurement

Production

Distribution

Sales & Marketing

Finance

BUSINESS FUNCTION

PLANNING HORIZON

Strategic

Tactical

Operational
Strategic Alignment
Operational Inefficiency

Silo Based Planning

Operational Excellence
Strategic ‘Misalignment’

COMPANIES WHO BUILD WORLD CLASS INTEGRATED PLANNING:

4x more likely to achieve top 1/3 inventory results
3x more likely to achieve top logistics cost results
2x more likely to achieve top service results

PLANNING HORIZON INTEGRATION

FUNCTIONAL INTEGRATION
Companies that integrate supply chain planning across their functional divisions and planning time horizons will realise better logistics, inventory & service performance than companies planning their supply chain in traditional ‘silos’.

What does this mean for Strategic Network Planning?
Traditional Network Design shows **WHAT** to change in the network and what the cost saving is.....typically 5-15%
‘BLUE SKY’ WAREHOUSE CENTER OF GRAVITY DEMO:

Optimal warehouse configuration for target service lead times
EVOLUTION OF NETWORK DESIGN

TRADITIONAL APPROACH

- Strategic review of logistics infrastructure every 3-5 years
- Single time period – 1 year
- Logistics focussed - warehousing & transport
- Regionally or country Focussed
- Consulting led

EVOLVED APPROACH

- On-going network optimisation of fixed network with multi-time periods:
  - Weekly, Monthly & Quarterly planning horizons
- Strategic review of **integrated production & logistics footprints**
- **Integrated** optimisation of inventory, carbon, tax & profit
- Global End-to-End SC Optimisation: Sourcing, Import/consolidation, production & DC footprint, route to market
- Segmentation of products & channels & customised service levels
- Globally architected & Regional deployed in-house modelling capability
INTEGRATED SUPPLY CHAIN PLANNING

Network Design software can be used to optimise both Production & Logistics networks whilst considering carbon, tax & inventory to support integrated supply chain planning within an organisation.
A SMART APPROACH

CAST AURORA 2.0 DEMO

AN INTEGRATED MODEL

Country of Consumption

Country of Origin

Import Duty (Tax)
Port operations
DC Infrastructure
Transport (Trunking & Distribution)
Carbon emissions (DC and Transportation)
DC Inventory requirements at SKU level

Raw materials sourcing
Production (BOM)
Finished product procurement
Freight consolidation optimisation:
  Single consignment
  Multi consignment (CFS)
INTEGRATED SUPPLY CHAIN PLANNING DEMO
INTEGRATED MODEL RESULTS

Base Line Network:

4 DCs
$19.3M Operating Costs
$13.9M Inventory Value
5.6k Carbon Tonnes

Cost Optimal Network:

1 DC
$14.3M Operating Costs
$11.6M Inventory Value
4.6k Carbon Tonnes

Carbon Optimal Network:

2 DCs
$15.5M Operating Costs
$12.7M Inventory Value
4.4k Carbon Tonnes
Carlsberg, Poland

Integrated Production & Logistics Network

Carlsberg Polska is 100% owned by Carlsberg Group and is #3 player in the Polish beer market, which is one of the world’s top 10 by volume.

Objective: Identify optimum network, from Production to primary DC to Customer, and most cost effective direct supply opportunities, considering Euro 2012 market growth projections.

Savings Identified

€10+ million cost saving identified from: expansion of in-country manufacturing to reduce imports & the cost of stock holding driven by long lead time of import.

Carlsberg Polska have internalised the modelling capability with the acquisition of CAST licensing & the training of internal resources.

Example Outputs

Optimised Network Allocation per Scenario

Optimised network of 22 DC's
• Need for 6 new DCs
• Savings of RMB 24 Mill

Line Capacity Utilisation by Plant by Month

Component Cost Breakdown by Scenario

Barloworld
Supply Chain Software

© Barloworld Supply Chain Software
Colgate Palmolive is a global leader in the consumer products industry with products covering Oral Care, Personal Care, Home Care and Pet Nutrition.

- Annual sales of US$15 billion.
- Operations in over 200 countries and territories globally.

Colgate Palmolive is modelled using a Pan European Distribution Network.

Example Cost Savings & Carbon Emissions Reductions Identified

- Identified multi-millions € savings
- Relocated production from Western Europe to Eastern Europe
- Identified carbon emissions reductions of 15%
- The main factors for the savings were:
  - Distribution Boundary optimisation
  - Modal changes from truck to intermodal
  - Shipment consolidation
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THE SMART WAY FORWARD

Questions....
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