How Strategic Shifts within the Pharmaceutical Sector will Transform Supply Chain and Distribution Models

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BCI Introduction

Boutique consulting and implementation firm with areas of activity for:

Corporate clients

- Supply chain strategy development
- Supply chain network optimization/modeling
- Inventory analysis and optimization
- Transport & carrier optimization
- Logistic outsourcing
- Location and Site selection
- Real estate investment strategies

Profile

- Headquartered in the Netherlands
- Founded in 1985
- Employs 70 full-time professionals
- Global network partnership with St. Onge (US based) and OLE (China based)
- Partnership with 175 professionals
- Global presence based upon local know how and expertise
- Focus industries: Pharma, Medtech, FMCG, Industrial, Lifestyle/Fashion, Food

Understanding…

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Partners</th>
<th>Network</th>
<th>Organization</th>
<th>People</th>
<th>Change</th>
<th>Implementation</th>
</tr>
</thead>
</table>
Linking strategy to execution

Project Management

Consulting
Strategy, Network Inventory Optimization & Transportation S&OP planning

Engineering
High Performance Manufacturing, Packaging, Distribution Facilities

Operations
Planning, Management & Training

Implementation
- Planning
- Execution
- Change mngt

Supply Chain Information Systems
A unique base of experience of healthcare logistics projects around the globe

<table>
<thead>
<tr>
<th>EMEA</th>
<th>North-America</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Johnson &amp; Johnson</td>
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<td>CareFusion</td>
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<table>
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<tr>
<th>Latin-America</th>
<th>China/Asia-Pacific</th>
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<td>Raia</td>
<td>999</td>
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<td>Cardinal Health</td>
<td>Cardinal Health</td>
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<td>CareFusion</td>
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<td>Shaphar</td>
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</table>

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Agenda

1. Changing Operating Landscape
2. Results APAC Survey
3. Distribution Optimisation – Business Case
4. Step changes ahead
Business Strategy

The commercial model is changing and will continue to change, having an impact on the supply chain set-up of the future

Source: arvato services, adjusted by BCI
## A. Changing Landscape

### Trends in the healthcare market and impact on supply chains

#### Market/business environment
- Ending patents
- Generic entries
- Cost-cutting in healthcare systems
- QA / RA (e.g. new GDP)
- More direct sales
- eCommerce?

#### Business strategy
- Mergers/acquisitions
- New product launches
- Customer segmentation
- Centralization management
- Emerging markets
- Overall focus on cost reduction

#### Supply chain
- Central management
- Consolidated distribution
- Supply chain integration & differentiation
- Visibility
- Collaboration
- Direct models
Main Pharma SC Trends and Developments
The Brand Owner’s Perspective

Centralization of Supply Chain Control
- Strengthening of Corporate SC Organizations
- Investments in SC Talent
- Corporate SC taking ownership of the downstream supply chain

Network Redesign
- Consolidation of Distribution Networks
- Mix of full centralization, regionalization and hub-spoke models
- Scope: downstream, still lack of full chain scope

Visibility
- Control Tower / Transport Management concepts
- Linking inbound, intercompany and secondary distribution
- Information is Key

Outsourcing & Partner Portfolio Reduction
- 3PL landscape in pharma has improved highly
- Towards LLP/4PL models
- Strong reduction of number of partners used
- Towards harmonized (global) contracts
Main Pharma SC Trends and Developments
The Brand Owner’s Perspective

Customer Service / Order to Cash process harmonization
- CS and O2C activities closely linked to physical supply chains
- Harmonization & centralization of CS and O2C organizations

Supply Chain Differentiation
- From one size fits all to differentiated supply chains per product/market combination
- SC becoming a stronger counterpart for the commercial team, challenging service requirements

Supply Chain Collaboration
- Logistics not a key differentiator, therefore the industry is recognizing the opportunities of collaboration
- How to break through from pilots to full realization?
We asked Pharma Executives how they view their key challenges in APAC
Company Characteristics

Corporation Type

- Pharmaceutical/bio-pharma company: 64%
- Medical Device company: 20%
- Other: 16%

Sales Model Type

- Distributor model per country, all channels: 62%
- Distributor model per country, hospitals direct: 24%
- Direct sales all channels: 7%
- Hybrid, mix of all before mentioned models: 7%
- Other: 7%
# Key Business Challenges in APAC

## Types of Business Challenges

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Weight</th>
</tr>
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<tbody>
<tr>
<td>Revenue growth across the region</td>
<td>40</td>
</tr>
<tr>
<td>Increasing Operating Costs and reduced margins</td>
<td>24</td>
</tr>
<tr>
<td>Regulatory, Import licenses, customs</td>
<td>21</td>
</tr>
<tr>
<td>Maintaining current levels of sales</td>
<td>18</td>
</tr>
<tr>
<td>China as a market</td>
<td>18</td>
</tr>
<tr>
<td>Integration as result of a company Merger/acquisition</td>
<td>10</td>
</tr>
<tr>
<td>India as a market</td>
<td>6</td>
</tr>
<tr>
<td>Patent expiries</td>
<td>2</td>
</tr>
<tr>
<td>Bribery and corruption</td>
<td>2</td>
</tr>
<tr>
<td>Japan as a market</td>
<td>1</td>
</tr>
<tr>
<td>SEA as a set of markets</td>
<td>1</td>
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</tbody>
</table>
### Key Supply Chain Challenges in APAC

#### Supply Chain Challenges

Types of Challenges weighted by importance:

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mitigating supply chain risks across region</td>
<td>22</td>
</tr>
<tr>
<td>Supporting sales growth new markets</td>
<td>21</td>
</tr>
<tr>
<td>Shift from distributor to go direct business model in certain geographies</td>
<td>16</td>
</tr>
<tr>
<td>Regulatory environment (import licences and duties)</td>
<td>15</td>
</tr>
<tr>
<td>Increasing warehousing and transportation costs</td>
<td>15</td>
</tr>
<tr>
<td>Fragmented local for local country set up in place</td>
<td>12</td>
</tr>
<tr>
<td>Managing LSP contracts and performance metrics across region</td>
<td>10</td>
</tr>
<tr>
<td>Integrating supply chain's due to merger/acquisition</td>
<td>10</td>
</tr>
<tr>
<td>Not scalable for future growth</td>
<td>6</td>
</tr>
<tr>
<td>Complexity in # languages, # regulations and # packaging</td>
<td>6</td>
</tr>
<tr>
<td>No APAC Supply chain strategy in place</td>
<td>5</td>
</tr>
</tbody>
</table>
Supply Chain Configuration

Supply Chain Network Design

- Country for Country distribution centres replenished from global plants
- Regional distribution centre - combined with direct distribution to APAC customers
- Regional distribution centre - replenishing country distribution centres
- Global distribution centre
- Central distribution with postponement / re-labelling capabilities
- Other

Number ofFinished Goods DCs operating across APAC

<table>
<thead>
<tr>
<th># of DC's</th>
<th>1</th>
<th>2 to 5</th>
<th>5- to 10</th>
<th>&gt;10</th>
</tr>
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<tbody>
<tr>
<td>0</td>
<td>4</td>
<td>3</td>
<td>16</td>
<td></td>
</tr>
</tbody>
</table>

Distribution Network Approach

- Outsourcing: 13
- Mixed Model: 11
- Own Account: 0
Supply Chain Configuration (2)

# Logistics Providers

<table>
<thead>
<tr>
<th># Logistics Providers</th>
<th>1</th>
<th>2 to 5</th>
<th>5 to 10</th>
<th>&gt;10</th>
</tr>
</thead>
<tbody>
<tr>
<td># Logistics Providers</td>
<td>0</td>
<td>8</td>
<td>8</td>
<td>16</td>
</tr>
</tbody>
</table>

Approach towards order to cash

- Outsourcing: 13%
- Own Account: 17%
- Mixed Model: 70%
Regionalization (1)

# of companies having explored the option to regionalize their distribution network in APAC

Benefits of regionalization

- Reduced time to market (27%)
- Increased availability of materials (9%)
- Lower corporate tax rate (20%)
- Reduced supply chain costs (23%)
- Scalable platform for growth (19%)
- Other (51%)

32% Yes
17% No
51% N/A
80% of pharma companies are currently reviewing their supply chain in the APAC region.
Supply Chain Strategy is more than meets the eye

It’s about securing optimal value from your supply chain network and from your service providers

... at lowest possible total cost

Transport and Warehouse costs

Network optimisation
Inventory management
IT & Technologies
Visibility and Control Towers
Collaboration
Relationship Management
End-to-end lead time optimisation
Cost to Serve diversification
The majority of a supply chain’s lifecycle costs are locked-in at the start
- Manufacturing/supplier network
- Distribution network
- Inventory Locations
- Inventory Levels
- Service policies

Also the supply chain puts boundaries on/creates opportunities for flexibility and differentiation in terms of service levels, speed to market, etc.
Case 1 - Opportunity Assessment for a global Pharma Company

**Savings exclude inventory costs**

Identified potential: **15%** savings on total AS-IS spend in scope.

Inventory was a separate opportunity and not part of the 15%.

**Example opportunity areas:**
- Expansion of regional hub structures
- “Economization” of wholesale deliveries
- Consolidation in inbound and primary transport
- Rationalization of LSP portfolio
- From % based to activity-based contracts
Case 2 – Cost To Serve Analyses Global Pharma Company

Company profile
- Global Pharma company
- Top management driving towards step-changes
- BCI challenged to go beyond the basic network optimization

Solutions identified and proposed to management

- **“economic wholesale model”** → changing order behavior of wholesalers throughout Europe, moving to a general policy of: max 1 order/delivery frequency per week, shipped with a lead-time of 48-72 hours → **savings: 25+%**

- **“Differentiated supply chain”** → creating basically three supply chains, managed centrally:
  - Centralized: high value bio products
  - Regionalized: 6 hubs throughout Europe shipping to wholesalers and hospitals/pharmacies
  - Localized: narcotics products and products that are time critical
  
  → **savings: ~12.5%**
Case 3 – Network Optimization of Diversified Pharma Company

Company profile
- Global Pharma company
- Need to rationalize the supply chain from a cost, compliance and “fit for future” perspective

From Local for Local network
- No harmonization
- Relatively high costs
- Limited visibility
- Compliance?

To regional DC networks
- Harmonization / Differentiation
- Lower costs 15%
- Improved visibility
- Compliance!

2012-2015

To 1, 2, 3 RDCs?
- Harmonization!
- Lower costs! 25+%!
- Full Visibility!
- Compliance!

2015-2018
Case Study APAC
Network Optimization Study
Supply Chain Configurations - Scenarios

- (1) Country Level Distribution Network replenished from global production sources.

- (2) RDC in APAC in combination with direct ship program to country level market channels.

- (3) RDC in APAC with Country Level Satellites for Distribution.
(4) Combination of scenarios 2 and 3.
- Scenario 3 replenishment is applied to NEA,
- Scenario 2 direct ship from RDC is applied to SEA.

(5) Combination of scenarios 1 and 2.
- Scenario 1 country for country distribution is applied to NEA,
- Scenario 2 direct ship from RDC is applied to SEA
Results with Inventory Scenarios (in Million USD)

<table>
<thead>
<tr>
<th></th>
<th>1. Country level</th>
<th>2. RDC</th>
<th>3. RDC with satellites</th>
<th>4. Combi of 2 (SEA) and 3 (NEA)</th>
<th>5. Combi of 1 (NEA) and 2 (SEA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>total costs</td>
<td>39,7</td>
<td>43,1</td>
<td>47,5</td>
<td>46,4</td>
<td>41,2</td>
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<tr>
<td>cost index incl inventory</td>
<td>100</td>
<td>109</td>
<td>120</td>
<td>117</td>
<td>104</td>
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<tr>
<td>inventory</td>
<td>20,0</td>
<td>20,0</td>
<td>20,0</td>
<td>20,0</td>
<td>20,0</td>
</tr>
<tr>
<td>outbound transportation</td>
<td>6,0</td>
<td>9,9</td>
<td>6,0</td>
<td>7,2</td>
<td>7,2</td>
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<tr>
<td>replenishment</td>
<td>6,3</td>
<td>6,3</td>
<td>4,4</td>
<td>1,5</td>
<td>1,7</td>
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<tr>
<td>labour</td>
<td>1,4</td>
<td>1,2</td>
<td>1,7</td>
<td>1,5</td>
<td>1,7</td>
</tr>
<tr>
<td>space</td>
<td>6,0</td>
<td>6,5</td>
<td>8,1</td>
<td>7,8</td>
<td>6,3</td>
</tr>
<tr>
<td>inbound transportation</td>
<td>6,3</td>
<td>5,6</td>
<td>5,6</td>
<td>5,6</td>
<td>6,1</td>
</tr>
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</table>
Introducing the Postponement Concept

By applying **postponement**, the moment of product labelling can be delayed, which effectively enables companies to reduce their inventory levels, due to the advantages of inventory pooling.
Let’s apply the postponement strategy to scenarios 2,3 and 4 which have a RDC to enable postponement.

![Diagram](chart.png)

Instead of shipping products directly to consumer markets, one can delay the labelling phase until products reach the postponement centre. By doing so, one can benefit from inventory pooling.

In the example above, we have assumed that the inventory costs for the NEA markets were diminished by 40%. However, we have also experienced higher possible inventory savings. Therefore, in the “before” scenario 15 products we needed, whereas in the “after” scenario 9 products were required to fulfil consumer markets in NEA.
## Results with Inventory and with Postponement (in Million USD)

<table>
<thead>
<tr>
<th>1. Country level (no postponement)</th>
<th>2. RDC + postponement</th>
<th>3. RDC with satellites + postponement</th>
<th>4. Combi of 2 (SEA) and 3 (NEA) + postponement</th>
</tr>
</thead>
<tbody>
<tr>
<td>total costs</td>
<td>39.7</td>
<td>35.1</td>
<td>39.6</td>
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<tr>
<td>cost index incl inventory</td>
<td>113</td>
<td>100</td>
<td>113</td>
</tr>
<tr>
<td>inventory index</td>
<td>100</td>
<td>60</td>
<td>60</td>
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<tr>
<td>inventory</td>
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<td>12.0</td>
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<tr>
<td>outbound transportation</td>
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<td>9.9</td>
<td>6.0</td>
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<td>6.3</td>
<td>6.3</td>
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<tr>
<td>labour</td>
<td>1.4</td>
<td>1.2</td>
<td>1.7</td>
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<tr>
<td>space</td>
<td>6.0</td>
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<tr>
<td>inbound transportation</td>
<td>6.3</td>
<td>5.6</td>
<td>5.6</td>
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</table>
## Overview Customer Flows & Summary

### Scenarios: Costs (in millions)

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Total Cost</th>
<th>Cost with Inventory</th>
<th>Inventory Index</th>
<th>Lead Times</th>
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</thead>
<tbody>
<tr>
<td>Country Level</td>
<td>$39.7M</td>
<td>$39.7M</td>
<td>100</td>
<td>1-2 Days</td>
</tr>
<tr>
<td>RDC</td>
<td>$43.1M</td>
<td>$35.1M</td>
<td>60</td>
<td>2-4 Days</td>
</tr>
<tr>
<td>RDC &amp; Satellites</td>
<td>$47.5M</td>
<td>$39.6M</td>
<td>60</td>
<td>1-2 Days</td>
</tr>
<tr>
<td>Combi of scenario’s 2 (SEA) and 3 (NEA)</td>
<td>$46.4M</td>
<td>$38.4M</td>
<td>60</td>
<td>1-4 Days</td>
</tr>
<tr>
<td>Combi of scenario’s 1 (NEA) and 2 (SEA)</td>
<td>$41.2M</td>
<td>-</td>
<td>-</td>
<td>1-4 Days</td>
</tr>
</tbody>
</table>
More Responsive Supply Chain Model

- One size for sure doesn’t fit all!
- Many variables: Market volumes, product value, product sources, regulatory environment
- **Cost to serve model** provides ability to differentiate per product, market and customer type
Opportunity Potential Depends Heavily on Supply Chain Scope Under Review

Widening the scope of a supply chain review increases the number of alternative solutions and therefore the potential savings. But there is more. **Complexity and risks are factors that increase** as well when widening the scope.
Concluding:
The Industry is going through a Period of Change… An Excellent Opportunity for Supply Chain to Move up the Value Chain
How Does this Translate to you?

- Drive real change within your company
- Take the current momentum to position supply chain as a strategic asset towards Executive Management
- Everything starts with data & information

- Although cost is not always the driver: on average our clients saved 10 – 18% through “basic” network redesign projects

Clear upside potential when broadening the scope to inventory management and business model changes supported by supply chain
Q&A

eelco.dijkstra@bciglobal.com