

MASTER

Redesign of the distribution and reverse logistic structures of Nike promotional products and samples : taking into account service excellence and logistic costs

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Redesign of the Distribution and Reverse Logistic Structures of Nike Promotional Product and Samples

- Taking into account Service Excellence and Logistic Costs -

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**NIET
UITLEENBAAR**

Abstract

This report deals with the redesign of the distribution and reverse logistic structures on the most fundamental side of the company: Nike's Promo and Samples businesses.

The recommended Promo distribution structure centers around centralized warehousing, which combines potential service excellence with significant cost reduction compared with the current two tier centralized structure. The recommendations on the Samples' delivery process cover elements in the current distribution structure that are potential leverage areas in terms of service performance. By means of a cost/benefit optimization exercise a combination of local sales with centralized recovery of residuals is recommended in the Samples' reverse logistic process.

Executive summary

Nike is a sport inspired company and provides performance enhancing apparel, footwear and equipment for a broad range of sports categories. The company has successfully distinguished itself as the World's leading Sports and fitness company through a strong innovation in design, a marquis product and aggressive marketing. Nike has differentiated from the pure concept of the virtual enterprise by acknowledging the importance of in-house logistic operations at the front-end of the supply chain, in order to establish and maintain a high level of service performance.

Promo

The most valuable demand creators to Nike are Nike sponsored athletes. Athletes support the brand image characterized by innovative design and authenticity. Every year a very large amount of capital (\$ 140 Mio) is invested in Europe to ensure that athletes become or remain part of the extended Nike team. Although volume-wise Promo represents only a small part of the business, establishing and maintaining Service excellence to Nike's sponsored athletes, teams and events is fundamental to the success of Nike.

Samples

Over 90% of all bookings are Futures and up to 100% of all Futures bookings are generated through Samples. Consequently, Samples are amongst the most strategic tools to the business. Over 500 Sales representatives, showrooms and key-accounts are Nike's customer in this fundamental business. As Samples are critical in generating sales, service excellence to sales representatives, showrooms and key-accounts is a key requirement.

Key issues with the Promo and Samples Logistics

The distribution and reverse logistics of Promo and Samples involve various departments. This has resulted in a lack of coordination, communication, responsibility and visibility over all processes which in turn has lead to a constraint on the logistic performance: service performance is perceived as unsatisfying while logistic costs have increased over the years.

Pegasus' Role in the Strategic Intent

The Pegasus project, kicked off in June 1999 has as its objective the development of future in-country warehousing and logistics processes taking into account service excellence for PROMO, POP, Samples and Defective returns. Re-design of in-country logistic structure and hereby eliminating in-country warehousing operations are expected to improve service performance and reduce overall logistic costs by \$ 5,5 Mio annually. However, biggest leverage must be seen in the light of three re-organization processes taking place within Nike:

1. Nike Supply Chain and the implementation of ERP systems.
2. The introduction of the Agent structure to Nike's European country organizations.
3. Centralization of country organizations' functionalities.

The graduation assignment centers around the redesign of the Distribution and Reverse Logistic Structures of Nike Promotional Product and Samples. After deliberations with Nike and the academic advisors from Eindhoven University of Technology the project assignment has been defined as follows.

... Re-design the European physical distribution & returns networks of Promo and Samples such that service excellence can be established. Address synergies in their logistical profiles in such a way that overall logistical costs can be controlled.

Promo Physical distribution redesign

In order to redesign Promo's physical distribution process, alternative structures have been developed. Besides clear service and business requirements to the future process, overall logistic costs need to be controlled. Alternative structures have been developed that ought to support the establishment of service excellence. In reference to the logistic cost analysis, the following total logistic costs have been measured for each alternative structure.

	<i>Decentralized structure using 9 country warehouses</i>	<i>Centralized structure</i>	<i>Decentralized structure using 4 regional warehouses</i>
Warehousing	3,6 Mio	2,0 Mio	2,0 - 3,6 Mio
Inventory	7,2 Mio	1,7 Mio	2,0 - 7,2 Mio
Transportation	1,0 Mio	1,0 Mio	< 1,0 Mio
It-systems	4.5 Mio	3.0 Mio	3,0 - 4,5 Mio
Total	15,3 Mio	7,7, Mio	6,7 - 15,3 Mio

Although the logistic cost analysis is based on various assumptions the large difference between total distribution network costs show some insensitivity to inaccuracy in these assumptions. The alternative characterized by centralized warehousing, results in a cost structure which is half the cost related to the current, two-tier decentralized structure. Expressed in cost per unit the centralized structure realized an average logistic cost per unit of \$ 6.4. The recommended process is in agreement with the decision of the Meeting of the European Leadership Team of December 1999.

Note that the relatively low logistic costs related to the centralized structure can only be realized by substantial improvement of Promo Supply Chain Management systems: from order management tools to Warehouse management system and Delivery management tools. The single investment in a combined order management tool for Promo Only and Promo Inline will not exceed \$ 0,5 Mio. The cost of the Promo warehouse management system is already included in the logistic cost build-up of Centralized warehousing. Furthermore, the centralized structure moves logistic activities in general higher up in the supply chain. This requires a total review of responsibilities and budgets of involved Departments.

Samples Physical Distribution Optimization

An analysis of the logistic activities and related logistic performance has ascertained that logistic performance improvement can result in potential leverage in the area of service performance. Although delivery performance to a large extent is determined by factors in design and manufacturing, tactical and operational adjustments can improve delivery performance significantly. Three elements of the distribution network have been selected as potential leverage areas:

- Production/distribution control.
- Customer service level.
- Outsourcing.

Production/distribution control can be improved by sharing of information on delivery performances at an earlier stage of the supply/delivery. To adjust warehousing capacities Airborne should be informed on factory performances earlier and more frequently. Accounts need to be able to on-line track and trace their sets to improve delivery reliability.

The customer sets program needs to be limited to strategic and key accounts. However with a select group of accounts the program will expand significantly. Nevertheless, the customer sets program will require limited in-country availability of Samples to support EKIN's in their unpredictable quick turn demand for Samples. The analysis of the delivery performance has shown that Airborne has shown continuous struggles in expanding the range of services in Samples and establishing a high level of service excellence in warehousing and distribution. Seamless integration of warehousing and distribution will potentially leverage in both areas. Therefore, the role and responsibility of Airborne ought to be reviewed.

Samples Reverse Logistics Optimization

Cost-awareness and a tendency towards more centralized control over in-country logistic flows have resulted in the desire to eliminate/avoid logistic activities that do not add value or have no business-necessity. Country warehousing is the largest cost center in the current Samples reverse logistics process. The objective in the Samples reverse logistics network design has been the development of a process that:

- Controls the placement over Samples sets during the period prior to the actual selling season.
- Minimizes logistic costs.
- Maximizes the recovery & liquidation of Samples of Apparel, Footwear and Equipment.

A Samples reverse logistic process has been developed on the basis of a cost/benefit analysis of different alternative structures. The table below provides with the outcome of the analysis.

<i>Likelihood</i>	<i>Reps through Nike Retail</i>	<i>Reps through Retailers</i>	<i>Centrally through NR</i>	<i>Centrally through Close-out</i>	<i>Gross Profit in US \$</i>
Best case scenario	100%	0%	0%	0%	11,8 Mio
Likely scenario	70%	10%	15%	5%	11,0 Mio
	40%	20%	30%	10%	10,2 Mio
Worst case scenario	20%	10%	15%	55%	8,6 Mio
	0%	0%	0%	100%	7,1 Mio
Current process	0%	70%	0%	0%	3,3 Mio

On the basis of business requirements and the cost/benefit analysis, it is recommended to establish a two-tier reverse logistic network in which the following algorithm for sales of Samples returns needs to be applied:

1. Reps sell Samples to local Nike Retail outlets.
2. Reps sell Samples to local retailers.
Remaining Samples are centrally recovered.
3. Samples are sold from central stock to Nike Retail.
4. Any residual is sold through close out channels.

The recommended process is in agreement with the decision of the Meeting of the European Leadership Team of December 1999.

The estimated costs related to the design of the reverse logistic structure are relatively low. Investments in racking, material handling equipment, software and pallets will not exceed \$ 1 Mio according to Pegasus budgeting. Payback time for implementation of the reverse logistic structure in the most likely scenario is less than 2 months. Nike CSC is the preferred location for central recovery of Samples returns.

Collectively Exhaustive Network Redesign

In reference to the conceptual framework on collectively exhaustive network design, potential leverage lies in further reduction of logistic costs in Samples and Promo distribution. To achieve further cost reduction integrating both distribution networks would be based on the synergies that exist between logistic profiles.

The objective of the collectively exhaustive network design is:

By addressing synergies between Promo and Samples logistic profiles in a collectively exhaustive network design service performance of each process can be maintained at the required level while overall logistic costs can be reduced.

The collectively exhaustive network has the following key elements:

- Supply chain visibility through the means of sophisticated supply chain management tools. Accessibility of Airport (inbound & outbound transportation profile).
- Centralized warehousing (no overlap in account base, warehousing costs are dominant in the supply chain, low country specificity of product).
- Low level of mechanization of warehousing operations (Quick processing of small orders, low SKU count, wide range of stock keeping units).
- Flexible workforce and warehousing space (lumpy demand pattern);
- Parcel carrying as standard delivery service (fast delivery of small size shipments).

As the collectively exhaustive network design does not deviate from the mutual exclusive network designs, service levels can be maintained. Cost efficiencies in the collectively exhaustive network can be achieved in the following areas:

- External Transportation.
- Warehousing and Materials Management.

The Internet strategy of Nike Europe is still under construction. The design of a E-commerce customized physical distribution structure, potentially integrated with the Promo distribution network, is vital in the development of any “E-marketing”-strategy. The logistic profile of E-commerce has similarities with Promo as presented in the table below.

Market Characteristics	Process Characteristics	Product Characteristics
Lead-times are expected to be short Intricate network In principal Small orders	X-GPC packing, Split pre-packs At once order processing	Preferably the hottest products, strong seasonality. Carry-overs difficult to forecast Low country specificity

Based on the synergies between the logistic profiles, Collectively Exhaustive network design for Promo and Samples incorporates potential leverage in logistic costs while service levels can be maintained. However, the similar demand patterns put a potential constraint on the cost-efficiency of integrated warehousing.

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