

## Supply Networks for Luxury items –A study of the Alcoholic Beverage Sector

Jean Noël Dollet, Angel Díaz\*, Luis Solís,  
IE Business School  
María de Molina 12, bajo, Madrid 28006, Spain.  
\*EMAIL: angel.diaz@ie.edu

**Abstract:** This paper aims to propose a framework for choosing appropriate network strategies corresponding to the luxury good market in general, and more specifically to the premium alcoholic beverage sector. This paper, focused on network orchestration models, is an extension of previous work of Dollet and Díaz [7], and is organized as follows: we first consider the existing literature on luxury items and network orchestration. We then develop in-depth case studies of Heineken, Bacardi-Martini, Diageo and Moët Hennessy. Finally, we induce from these a framework to help companies determine and implement their supply network orchestration strategy.

**Keywords:** Network orchestration, luxury items, alcoholic beverage

### I. Introduction

We explore the suitability of the Supply Chain Network Orchestration model for given market profiles, based on an analysis of the literature on supply chain and network orchestration, and on in-depth secondary data analysis of cases from the alcohol industry (Heineken, Baccardi-Martini, Diageo and Moët Hennessy). Although frameworks for finding appropriate supply chains to a given market profile have been proposed before, this research contributes to this body of knowledge by being specifically focused in the luxury alcoholic beverage market, and by relying on the recent theory of network orchestration. Given the recent evolution of the network orchestration model, the outstanding questions addressed in this paper are: (i) Is the supply chain network orchestration model a good fit for the premium alcoholic beverage market?; and (ii) What should be the main considerations and issues when designing such a supply chain network?

### II. Luxury markets

The world luxury is derived from *luxus*, meaning sensuality, splendour, pomp, and its derivate *luxuria*, means extravagance, riot. With the creation and development of Luxury Groups like Louis Vuitton Moët Hennessy (LVMH, 1987), Richemont (1988), and Gucci (2000), and shareholders expectations of double-digit profits, we assist to the democratization of Luxury brands, where lower entry price products are created in order to attract more end-

consumers. Also, because of the aspirational effect of luxury goods, new customers were recruited during this period [18]. The main drivers of this growth are youth and associated individualist values. These new customers are younger, more fashion oriented, internet savvy with less brand loyalty. As stated by Chadha and Husband [3], the luxury goods market was worth US\$80 billion in 2006. Expectations of luxury goods consumers have shifted towards products personalization; luxury consumers want to feel more connected to their brands and expect increased customization. In 2001, 63% of European population had access to luxury brands [23], and the gap between mass products/brands and luxury goods/brands diminished because of marketing and distribution approaches developed by luxury groups. The increase of luxury goods consumption worldwide, resulting from an increase of the high net-wealth population worldwide, will push luxury brands to develop constantly more customized products. All this forces luxury brands to reconsider their global supply networks.

### III. Network structures

Consumers and retailers have become more knowledgeable on the products they intend to buy, demanding high quality, personalized goods at affordable prices [24] [25]. The response to this requirement has been the development of a body of theory and practices on mass customization, defined as ‘mass production with variety’ [34]. Fisher [10] first introduced the idea of matching supply-chain strategies to market profiles according to demand uncertainties, and defined two main categories, functional products for stable markets, requiring efficiency and lean supply chains to minimize physical costs; and innovative products for volatile ones, requiring responsive and agile supply chains to minimize market mediation. Lee [17] extended Fisher’s work by including the element of supply uncertainty. Lee used the ideas of stable (low uncertainty) and evolving processes (high uncertainty) to determine supply uncertainty level, and proposes four basic strategies: (1) Efficient supply chains for low uncertainty demand goods that require an efficient supply chain strategy; (2) Risk-hedging supply chains in environments of low uncertainty demand but high supply uncertainty, where costs can be reduced by following risk-hedging strategies (e.g., sharing safety stocks.); (3) Responsive supply chains, adopting mass customization processes to postpone the final assembly of end-products as far as possible in the process downstream; and (4) Agile supply chains, a combination of risk hedging and responsive

supply chains strategies (e.g., using pooled inventories, postponing the assembly of the final good.) One important strategy in this process is the positioning of the Customer Order Decoupling Point (CODP), also referred to as the Demand Penetration Point [5]: the point that separates the organization managed by customer orders (pull process), from the part managed by customer demand forecasts upstream in the chain (push process). Five possible decoupling points have been distinguished [15]. Figure 1 presents an example of chain designs in the alcoholic beverage sector. In supply chain designs one and two, there is no customization; products are delivered directly from regional or local stocks. In design three, customization is done at manufacturer's plant, or using Third-Fourth Party Logistic providers. Finally, in design four, personalization is made in-house to satisfy a specific end-customer's request.

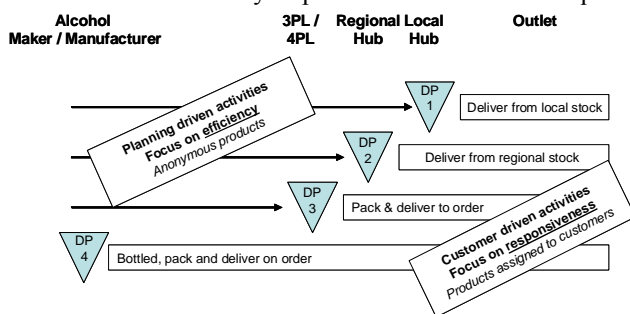


Figure 1 Different Decoupling Points (DP)

Many factors influence the position of the CODP. This is a balancing process between [22] market related factors (delivery time, demand uncertainty, product range, customization requirements); product related factors (modular product possibilities, customization opportunities); and production and distribution related factors (production and distribution lead time, and delivery process flexibility.) The objective is to shift the CODP upstream of the supply chain in order to be more responsive to market demands, and to limit the number of non-value adding activities. Nevertheless, if the customer requests very short lead-times, and distances to markets are large, the stock point should be closer to the markets. Associated to network design are collaborative business processes. Through them companies can derive more value and tailor-made products or services [13]. We can associate the first stages of collaborative businesses to outsourcing (where relations are tightly coupled, requiring lengthy negotiations and detailed contracts), while collaborative businesses create more flexible relations. Within collaborative business, there is the concept of process networks, where companies are orchestrators or service providers. The concept has existed for a long time in industries like construction. More recently, companies like Li & Fung and Nike have reinforced and modernized the concept. Network orchestration [11] is a particular type of coordination that takes a broader view of the entire supply chain. The network orchestrator designs the overall supply chain by bringing together multiple factories

from different regions to collaborate together on a single product, optimizing global networks collaboration. Engelbart [8] distinguish three types of orchestration: Commercial orchestration (deal-making and commercial transactions between actors in the chain); logistics orchestration (delivery of the goods following the commercial deal); and product-passport orchestration (managing product characteristics -food safety, and tracking and tracing systems are familiar product-passport orchestration aspects [30]).

According to the literature [1], three levels of network orchestration need to be considered: Horizontal orchestration, when 'all' logistics activities from, or to a company, are orchestrated; Vertical orchestration, when 'all' logistics activities in multiple stages in the supply chain are orchestrated (e.g., product flows from alcohol producer to end customer, including in-between stages); and finally Network orchestration, when the orchestration of logistics activities happens over a larger network, including multiple suppliers, customers and thus multiple supply chains.

Differences in the approaches are so great that companies are likely to experience significant delays in mastering the techniques required to design and manage loosely coupled business processes. Executive can move along a three stage development process [13]: Stage one companies are developing the basic skills required to orchestrate a limited set of loosely coupled business processes with a handful of their partners; Stage two companies are learning to apply these skills to specific business processes required to more effectively support own products and customers; finally Stage three where they shed their traditional business and become pure process network orchestrators (as in Li & Fung, where its employees may never actually touch the product.) Another option is to use Logistics Service Providers (LSP), who perform activities normally done in-house [2]. LSPs can be classified according to the degree of customization [6], or by their ability at problem solving and customer adaptation [14]. For van der Vorst et al. [30], there are three main types of LSPs: (1) Standard, or second party logistic, that provide traditional services like warehousing and transportation [19] without taking over coordination or administrative functions for their customers; (2) Integrated, or third party logistic, that provide value-adding and standard services without becoming owners of the goods [6]; and (3) Logistics network orchestrator, or fourth party logistics. According to Consulting Company Accenture, "A 4PL provider is a supply chain integrator that assembles and manages the resources, capabilities and technology of its organization with those of complementary service providers to deliver a comprehensive supply chain solution" [14]. A network orchestrator takes over coordinative and administrative responsibilities plus the responsibility for the effectiveness and efficiency of logistics system of its customer [6]. Koppius and Van Heck [16] state that "a network orchestrator has an overview of the resources and capabilities of the network members on one hand and the

demands of the end-customer on the other hand...” Collaborating with their customers they plan how capacity should be created throughout the system, and decide jointly where and in what quantities inventories should exist [27]. Thus strategic and tactical plans must be created collaboratively to achieve maximum system effectiveness. These plans describe how the supply chain will respond to variations and uncertainty [21].

Hagel et al. [13] propose seven roles for network orchestrators: 1-Recruit participants into the network; 2-Structure incentives for participation; 3-Define standards for communication and coordination; 4-Involve multiple service providers to meet customer needs; 5-Assume responsibility for end product; 6-Develop and manage performance feedback loops to facilitate learning; and, 7-Cultivate a deep understanding of processes and practices to continually improve the quality.

Several researches have analyzed the reasons of the increased use of 3PL’s in supply chains [26] [2] [32], from these, service turned out to be more important than cost reduction. Furthermore, Shanahan [26] noted that 3PLs start to focus more on the quality of their accounts instead of the quantity, by dropping unprofitable accounts, renegotiating contracts, and upgrading the quality of services delivered, to get stronger relations. Of the many challenges facing organizations as they make the transition to this new competitive environment, the following are perhaps most significant: (1) Collective strategy development, network members must collectively agree on strategic goals for the network and the means of attaining them; (2) Win-win thinking: breaking free from the often adversarial nature of buyer/supplier relationships, all partners should benefit as a result of co-operation; and (3) Open communication: A powerful driver of change in marketing networks is information technology, facilitating the exchange of information between supply chain partners [5].

IV. Methodology and case studies

The research methodology followed is that of theory generation from case study evidence. The aim is to generate a descriptive and explanatory theory of good practices in network design. Glaser and Strauss [12] developed the comparative method for developing grounded theory. Yin [33] has described the replication logic that supports the multiple-case analysis. Miles and Huberman [20] described specific theory generation from case study evidence, approach useful here as according to Eisenhardt [9] it is appropriate to study procedural issues and the action of players; to understand a phenomenon in its early stages of research; and to use a new perspective that allows achieving a better understanding of a specific phenomenon. The selection process considers Glaser and Strauss’ [12] technique of theoretical sampling, which goal is to choose cases that are likely to replicate or extend the emergent theory [33] [9]. This research took the Yin’s [33] suggestion

of following literal replications, selecting cases so that they predict similar results. This strategy allows developing a theoretical framework of a particular phenomenon under specific conditions. The main issue was to choose organizations that have redesign their supply chain networks. Due to the recent evolution of the sector, different supply chain network approaches used, and one author sector knowledge, the analysis focuses on alcoholic beverages. In addition, another research purpose was to generate theory applicable to different contexts. Thus, differences between the sites were also sought, as indicated below. Multiple case studies analyses [28] are used to support our analysis. For such leading companies in this sector as Heineken (beer industry), Baccardi-Martini (B-M), Diageo and Moët Hennessy (Wines & Spirits industry), developing their business worldwide requires collaboration with suppliers, 3PLs or 4PLs specialized in packaging and promotional items. Because of their particularities, each of these companies has developed different models with different partners.

Table1 Case background

Company	Focus	Turnover (2008)	Network orchestrator
Heineken	Beer	€ 14.3 billion	Promocean
Baccardi-Martini	Wines-Spirits	€ 3.85 billion	Promocean
Diageo	Wines-Spirits	€ 10 billion	4CX→ ADM
Moët-Hennessy	Wines-Spirits	€ 3.1 billion	Internal

Cases Heineken and Baccardi-Martini: Heineken is the world leader premium beer company with 11.8% market share, 115 breweries in more than 65 countries, and 170 international, regional, local and specialty beers. Baccardi, a producer of spirits acquired Martini & Rossi in 1992. We look jointly at these cases as both uses Promocean as their logistic network orchestrator. A subsidiary of Li & Fung (a company with a € 9.8 billion turnover), it specializes in Wines & Spirits packaging and promotional items, reported a € 100 million turnover in 2008 from operations in six European countries, and has developed specific on-demand value chain models for promotional and packaging items for Heineken and Baccardi-Martini in the roles of (1) Logistics network orchestrator (4PL): Promocean acts as supply chain integrator, assembling and managing resources, capabilities and technology with those of complementary service providers to deliver a comprehensive supply chain solution to Heineken [14]; (2) Integrated LSP: Promocean acts as a Logistics Service Provider for Heineken for external categories such as textile or glassware items; and (3) Procurement Management Company: acts on behalf of its customer like a dedicated procurement department, operating a transparent system with fixed margins to ensure competitive prices and fast response; and protecting its customers against quality and social issues, providing links

to production facilities in Low Cost Countries. Heineken uses Promocean like a 4PL, while Baccardi-Martini uses it like a 3PL. Heineken, a Beer Company is more mass market oriented than Wines & Spirits Companies and needs less product customization, with an easier to delegate supply chain, to focus on their core business, producing beers; while premium and super-premium Wines and Spirits brands need to develop innovation in term of promotional items and packaging, to trade up their cash-making products. A mean to this is to use a 3PL, plus internal resources to control it.

*Case Diageo:* Diageo, a global leader in wines and spirits, used 4CX (€ 95 millions turnover in 2008, a subsidiary of 4C Associates, owned in turn partly by DHL) until December 12<sup>th</sup> 2008, when the service contract expired. Diageo then switched to ADM (€ 73 million turnover), a subsidiary of Polyconcept (€ 1,200 million turnover). ADM's role is to create and design new products for their clients, capturing the essence of the brands' promise. Johan Denekamp, 4CX's chief executive declared [29]: "We were going through a re-tender of our contract with Diageo, a main 4CX client (representing more than 75% of its turnover). On December 12, 2008 we were told this contract had been given to another supplier. Given the economic climate at the time, we decided in January 2009 to focus on our core business of consultancy and outsourcing services in 4C Associates and close 4CX". He mentioned "difficult discussions" about fees with Diageo, but claimed that Diageo had not conducted a "formal" retendering process. "They had obviously decided they want a different service", he said. However, Diageo claimed that it had re-tendered for the contract, that 4CX had been included, and that its procurement team had been talking to 4CX about a new contract "for some time". It seems that after three years Diageo lost their trust in 4CX. Therefore, it was predictable that to apply a network orchestration model, they had to look for a supplier with which to develop trust in order to build strong and long term relations, not an easy achievement, especially on promotional and packaging items. Many questions may be asked: Was Diageo ready for such partnership three years ago? Did 4CX have a complete understanding of his customer needs? Were both organizations (4CX and Diageo) organized properly to work together? How was the communication between 4CX and Diageo? Was 4CX flexible and delivered sufficient cost savings in response to Diageo's requests? Based on the literature review and the analysis of the situation, we can conclude that both companies were not compatible. If Diageo succeeds in the subsequent three year contract with ADM, it will show that 4CX failed because it did not regard Diageo sufficiently as a real partner; otherwise Diageo will have to rethink its position with regards to the network orchestration model.

Dollet and Díaz [7] propose a multi-level network orchestration that could apply to Diageo, as it tries to increase the perceived value for money of its products by using packaging and promotional items, especially premium

and super-premium tiers, and because Moët Hennessy and Diageo have joint ventures for distribution in Asia and France and Diageo owns 34% of Moët Hennessy shares.

#### *Case Moët Hennessy*

Finally, we focus on Moët Hennessy (MH), a global leader in premium and super-premium wines and spirits with a turnover of € 3,126 millions in 2008. MH uses a different strategy based on their luxury goods culture as part of LVMH Group (€ 17,193 million turnover in 2008). MH develops all processes internally, especially creation, innovation and design for promotional items, and uses regionally-based procurement teams to support development with outsourced partners. Their regional 3PL also postpone the customization of the product. In this way, it can achieve better product personalization and save costs by moving as far upstream as possible the CODP. Maintaining direct relationship with suppliers allows MH to keep open communications, which helps creation, development, and lead time to leverage market effectiveness. For this reason it was critical for MH to use the same ERP platform worldwide (SAP). At the same time MH decided to change their distribution networks by setting up regional hubs to give more reactivity to markets deliveries, switching from a push to pull mode from market side. Using the 80-20 principle [4], the company can centralize the majority of the slow-moving and less predictable lines, achieving considerable reductions in inventory. Due to strong product seasonality and product innovation, it was critical for Moët Hennessy to devise a solution offering flexibility (through postponement) and increased margins (through cost savings, goods management, stock strategies and price increase) to benefit from the Luxury market trend pyramid [7]. In order to address their market specificities, MH have decided to implement a Multi-Level Network Orchestration model, similar to the one proposed by Dollet and Diaz [7]: a decentralized network orchestration based on central recommendations and with Headquarters defining the global sourcing strategy.

## V. Discussion

Through the use of multiple case studies, we have seen how, in the alcoholic beverage sector, there may be more than one Supply Chain model. Based on literature review and the case analyses, we intend to provide a global picture of the different existing models. We observe that seasonality, creativity, innovation and complexity of the item, Customer Order Decoupling Points, and the internal organization all have an impact on supplier choices and on the organization. Once an agreement is reached between a company and an external party, reliability and open communications will be the main success factors for the deal. Figure 2 provides a synopsis of the case analysis performed.

Heineken	Baccardi-Martini (B-M)
Low seasonality products	Medium seasonality products

Masstige products	Masstige & innovative products
Effective supply chain	Risk hedging supply chain
CODP at 4PL	CODP at manufacturing plants, 4PL
Logistics network orchestration strategy	Integration LSP strategy
Network orchestration delegated to 4PL	Partly vertical orchestration, partly delegated network orchestration to 4PL
ERP system (SAP)	ERP system
Uses Promocéan (Li & Fung Group) as 4PL service provider, who managed € 42 million worldwide in packaging & promotional items for Heineken with 7% fees (2008)	4PL service provider Promocéan managed €7 million in packaging & promotional items for B-M with 7% fees (2008)
Sourced directly from LCC supplier	Sourced directly from LCC supplier
<b>Diageo</b>	<b>Moët Hennessy (MH)</b>
Medium seasonality products	High seasonality products
Masstige & innovative products	Luxury innovative products
Agile supply chain	Responsive supply chain
CODP at manufacturing plants & market level	CODP at regional hub
Integration LSP strategy	Between stages 2-3: self-orchestration and standard LSP strategy
Vertical orchestration	Internal network orchestration
ERP system (SAP)	ERP system (SAP)
4CX was promotional & packaging service provider in 2008, managed € 59 million with 12% fees for Diageo. Then shift in 2009 to supplier ADM with €25 million target on promotional items, 19.6% mark-up plus 2% management fee plus 7.5% on COGS for Asia-made items	Integrated network orchestration, using MH Asia Pacific (MHAP) to develop promotional items & packaging worldwide. In 2008 MHAP managed € 35 for MH with 2.5% management fees.
ADM uses 4CX and Diageo panel to source items, usually traders and multi-intermediaries	Work both directly with certain end-suppliers and sometimes through trading companies

Figure 2 Cases study synopsis analysis

We now induce, from the network structure and coordination literature review, and the case analysis, supply network characteristics that companies producing premium or super premium goods need to succeed. Firstly, we consider that, in this sector, companies must be creative and innovative if they want to survive. We take this argument for granted. Secondly, we posit a set of distinctive characteristics required by these companies to succeed in this market: (1) An agile supply chain (combination of risk hedging and responsive supply chains strategies); (2) Use of Customer Order Decoupling Points (CODP), as close as possible to the end-consumer, in order to allow a high degree of customization, in a minimum delivery lead time, with the best quality. CODPs should be controlled internally, but 3PL or 4PL can be used as required, always under tight control. For this reason it becomes critical to develop an internal network orchestration strategy; (3) As luxury business prefer to focus on the internal processes and activities of design, creativity, innovation, marketing, and finance, the sector is not orchestrated in an integrated way: using internal logistics orchestration secures confidentiality and control on execution (quality, costs & delivery lead time). Although product-passport orchestration can be used, it is a risky option due to potential counterfeiting. For these reasons, apart from companies specialized in trading like Li & Fung; it is difficult to reach the stage of process network

orchestrator; (4) ERP systems are critical to manage demand. Most companies in the wines & spirits industry use ERPs from vendor SAP; (5) Finally, the best way to manage all the constraints is to develop an internal multi-level orchestration. This will provide the required functional and geographical flexibilities, facilitating reactivity and flexibility. Multi-levels network orchestration not being in silo will support reactivity toward the markets. For this reason, Diageo is currently facing costs, innovation, creativity, and time to market issues. Of the analyzed sample, Moët Hennessy is probably the company closest to a network orchestration model. It has understood best these aspects, facilitating the market-leader positions of such brands as Moët & Chandon, Veuve Clicquot Ponsardin or Hennessy. Veuve Clicquot Ponsardin in particular has seen a 20% increase in volumes during the last decades, as is regarded by its peers as the most wine and spirits creative and innovative company today. Although we are cognizant that the validity of these insights is not set a priori and must be further strengthened through subsequent scientific inquiry [31], we posit the following logistic orchestration framework, which can help companies and manager to make the right decision:

Orchestration criteria	Operationalization	Typical questions
Product/market characteristics	Product, supply, market characteristics that support choice of specific supply chain	Main product, market characteristics? Demand/ supply uncertainty?
Supply Chain Strategy	SC strategies based on demand/supply uncertainties: efficient, responsive, risk-hedging, agile	Which strategy characterized the most our supply chain?
Network structure	Logistics network design Depending on network boundaries, actors, roles and processes define	Is there a line, hub, spoke or collection and distribution network design?
Process management	Push or pull supply chain? This can be determined by the CODP position.	Where is the CODP? Where should it be in order to succeed in our business?
Information management	Automated information collection and dissemination	What kind of information is mandatory to use?
Network organization	Stages to orchestrator: orchestration skill-building, self orchestration and process network orchestration.	In which stage you are? Is there a 4PL in place?
KPIs	KPIs: quantitative (e.g. savings); qualitative (e.g. service).	What KPIs to use?
Performance	Internal/ external audit of network/organization. Use KPIs to support the audit.	Performance of the current orchestration network?

Figure 3 Network orchestration decision framework

Even leading network orchestrators like Li & Fung are expanding its horizons in order to include labor-intensive, high volume consumer goods, as well as high luxury

products like fragrances and cosmetics (e.g., through the acquisition of CGroup in 2007, now renamed LF Beauty).

The fit of the Multi-level Network Orchestration model to the premium alcoholic beverages market depend on the number of innovative and creative products introduced every year. We have seen this in the cases of Heineken (more off-trade and mass market oriented); and of Moët Hennessy (more on-trade and selective distribution oriented). Where customers have expectations for tailor-made products there is a certain legitimacy to develop an integrated multi-level network orchestration.

Another aspect is the approach of a brand or Group towards their consumers. Diageo has a more quantitative and analytical approach to consumers, while Moët Hennessy has a more qualitative and emotional approach, which could play a role at the moment of choice of their supply chain strategy. Pernod Ricard, a main competitor, tries to play both quantitative and qualitative approaches, especially since integrating Absolute Vodka to its brand portfolio, as Vodka and premium brands are Pernod Ricard key factors for growth, and it is critical to adopt the right supply chain strategy for super premium products sales around the world, focusing on major brands (Johnnie Walker, Hennessy or Dom Pérignon). Thus multi-level network orchestration, fully integrated to marketing and sales strategy will probably be the right model.

The alcoholic beverage industry is living a transition period where large volume brands are being traded down by price and market-share war; while premium and super-premium brands are trading up value and volumes, and the market in between tends to disappear. For this reason, companies which goal is to develop simultaneous qualitative (high quality, premium, super-premium, luxury goods) and quantitative (large scale and volume around the world) strategies, should adopt multi-level network management as main principle to drive their business. It will be interesting to conduct a similar research study when the markets are stabilized and companies' positions have been established, to see if companies have followed our proposed framework, and what their results are at the end. We acknowledge the limitations of this study and recommend conducting further research on the same topic focusing in other sectors.

## References

**Please contact the author to get the reference lists.**

## Background of Authors

**Jean Noel Dollet**, an expert in the luxury sector, received his DBA from IE Business School, Madrid

**Angel Díaz is**, a Professor of Operations and Director of the PhD Program, IE Business School, Madrid

**Luis Solís** is a Professor of Operations and Associate Dean of external faculty, IE Business School, Madrid