1. ANTECEDENTS AND ENVIRONMENT OF THE STUDY

Globalization and Best Practices have been keywords of the managerial world for the past several years. In Argentina, global competition, liberalization of the economy, and “dollarization” of the currency have increased pressure on local businesses to perform at world-class levels. Argentine logistics managers have responded to this challenge enthusiastically. Sanchez and Herrero (1997) present some of the results that have occurred in the food industry. This paper emphasizes evidence of a clear trend toward the transference of Best Practices from World Class companies in the most developed countries to leading Argentine concerns.

The results presented are based on a study done in a leading Argentine university, where four major companies based in Latin America participated in a multicompany-benchmarking consortium. From a list of 20 issues (see Appendix A, Key Subjects), the following subjects were chosen by the companies for intercompany comparison and benchmarking.

- **Company 1**: Organization; inventory management
- **Company 2**: Organization, internal integration, supply chain integration and Mercosur
- **Company 3**: Organization; logistics service provider (LSP) relationships and realities

*The research reported in this paper was done with funds provided by PIALOG (Research Program in applied Logistics)
To whom correspondence should be sent (ocarranz@udesa.edu.ar).
Company 4: Organization; logistics service provider relationships and realities

The selection was made and agreed to by the individual firms, but the subjects were covered in the context of operational issues that crossed company boundaries.

Company 1: Petrol distribution to points of sale
Company 2: Supply Chain management of materials in Mercosur
Company 3: Logistics of direct sales and Distributor management
Company 4: Physical distribution practices in the Greater Buenos Aires market (where 30% of Argentina’s population resides)

2. CHARACTERIZATION OF PARTICIPANT COMPANIES: FOUR DIFFERENT HISTORIES

Company 1

This company produces and distributes hydrocarbon derivatives, mainly petrol and oil. The production cycle begins with the extraction of crude from the well, continues with transportation to the refinery, and ends with the distribution of the oil to gas stations throughout Argentina. For this company, “logistics” means moving crude oil to and through the refinery, while “Customer Service,” a Marketing group, is responsible for distribution of finished product. Although Customer Service/physical distribution practices were the focus of this investigation, there was an awareness of the importance of the upstream (“logistics”) processes.

Company 2

This company is a major fast food provider. Materials management, which is responsible for supplying all the needs of the individual restaurants (from hamburgers to plastic glasses, from toys for promotions to condiments) is the core of this company, because profit margins of each restaurant are very low.

Company 3
This beer producer has reacted to increased competition by reengineering several logistical processes. Key initiatives include implementing direct distribution for strategically important markets, improving distributor support, and redesigning the actual delivery trucks. The company continues to innovate as a response to competitive challenges, such as the recent introduction of plastic containers into the market.

*Company 4*

This cigarette manufacturer manages the entire distribution channel from the plant to the independent distributors and small retailers (kiosks). High availability is extremely important in this industry because customers will change retailers and even brands if the first choice product is not available. Demand patterns are very stable. Thus, production planning is relatively simple, but daily execution of the delivery function is critical.

Each of these companies is a major force in its sector of the Argentine economy. All of them indicated that designing and improving their logistics functions is a foundation for continuing success.

3. LOGISTICS AND ITS DETERMINANTS: DISTRIBUTION STRATEGIES AS A DYNAMIC RESPONSE TO A COMPETITIVE ENVIRONMENT

*Determinants*

Argentina is a moderately sophisticated logistics marketplace where companies actively strive to bring in World Class Best Practices. For these companies, competitive pressures have mandated continual reexamination and change in their logistics processes. One company is working to upgrade the capabilities of the third party transportation community and thus the delivery performance of the Argentine petrol industry. Another company has brought world class practices from sister subsidiaries around the world. Still another company is working at all points in the supply chain to
optimize total channel performance. The fourth company is aggressively developing and upgrading key logistics suppliers to attain international levels of efficiency and effectiveness.

Exhibit 1 presents a classification of the companies based on the different characteristics that determine logistics strategies. The growth potential of the market is one determinant of these strategies. Company 1 (oil and gas) markets what is essentially a “commodity” product, so logistics has to support a cost leadership strategy. In contrast, Company 2 has to support growth even though each additional location has relatively low profit margins. Company 3 is the clear market leader in its sector of the beverage market. Logistics supports a strategy designed to deny competitors a foothold in the most easily served areas. Company 4 is also a market leader. The demand for cigarettes is such that stockouts translate to lost sales, either for the distribution outlet, the manufacturer, or both. Availability is of paramount importance in preserving market share and brand loyalty.

*Exhibit 1-Characterization of logistics channels by company*

<table>
<thead>
<tr>
<th>Company</th>
<th>1 /Petrol</th>
<th>2 /Fast Food</th>
<th>3 /Beer</th>
<th>4 /Cigarettes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company</td>
<td>Market Position</td>
<td>Market Position</td>
<td>Market Position</td>
<td>Market Position</td>
</tr>
<tr>
<td>Position</td>
<td>Strong #2 in relatively stable market</td>
<td>Pioneer in high potential market</td>
<td>Leader in relatively stable market</td>
<td>Leader in relatively stable market</td>
</tr>
<tr>
<td>Profit drivers</td>
<td>Commodity prices vs. Operating costs</td>
<td>Location level margins</td>
<td>Extent of distribution</td>
<td>Retail Availability</td>
</tr>
<tr>
<td>Strategic priority</td>
<td>Physical distribution Costs</td>
<td>Flexibility-Costs</td>
<td>Market Presence/Costs</td>
<td>Speed of reaction (retailer financial costs)</td>
</tr>
<tr>
<td>Critical factors in logistics system design</td>
<td>Transportation safety issues</td>
<td>Quantity of items/ POS localization</td>
<td>Weight/Cost relationship of the product</td>
<td>Volume/price relationship</td>
</tr>
<tr>
<td>Embedded time lags in the company supply chain and their solutions</td>
<td>Sourcing and distribution delays are dealt with through World-Class practices</td>
<td>Centralized distribution synchronizes overall flows</td>
<td>Physical delay of 20 days in the beer production process mandates sophisticated</td>
<td>Demand stability results in minimal disruption</td>
</tr>
<tr>
<td>Vulnerability to theft</td>
<td>Médium</td>
<td>Medium</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>------------------------</td>
<td>--------</td>
<td>--------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>How logistics is viewed in each company</td>
<td>Opportunity for cost reduction</td>
<td>Core competence</td>
<td>Core competence</td>
<td>Core competence</td>
</tr>
<tr>
<td>Innovative logistics practices</td>
<td>Channel coordination/road safety/Logistics operators management</td>
<td>-The Warehouse as a platform that integrates value</td>
<td>-Postponement -Distributor development</td>
<td>-Product security -Contractual, but market-oriented delivery services</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-Sourcing’s main job is supplier development, not transaction execution</td>
<td>-Dual distribution as competitive weapon</td>
<td>-Commitment to continuous logistics improvement</td>
</tr>
</tbody>
</table>

Market conditions and the specifics of the production process result in differing logistics priorities by company. Company 1 distributes to a slow growth, mature market. The priority is to reduce costs and free up cash for product diversification. In contrast, Company 2 is relatively new to Argentina. They are developing suppliers and systems which can support a long period of sustained growth. Company 3’s priority is to maintain its long time position as the market leader. A selective distribution strategy and continuous reengineering of logistics processes, has resulted in quantum improvements in customer service. Like Company 1, company 4 faces a mature market. Once again the strategy is to minimize costs for direct and indirect customers, while guaranteeing high levels of product availability.

The physical characteristics of the products also constrain the logistics systems designs. Company 1 handles a highly flammable, dangerous product. The transportation system must be robust and virtually error free. Since company 2 must support geographically dispersed operations with a large variety of supply items, it has pursued a sophisticated strategy of supplier development and operational coordination. Interestingly, this company achieves synchronization without high levels of information...
technology. Company 3’s product is bulky and vulnerable to spoilage. Hence it is inherently expensive to transport. In response the company has worked to minimize inventory and maximize the efficiency of the nationwide transportation network. Company 4’s light, bulky product is high value and easily resold. Product security is the overriding design consideration in this company’s distribution operation. Third parties logistics providers must have satellite tracking and other sophisticated antitheft technologies.

The actions

Logistics systems can potentially involve hundreds of variables. We highlight the logistics design decisions that appear to contribute to each company’s overall competitive advantage.

Company 1 has instituted three notable innovations in response to its parent company’s challenge to be “World Class.”

-Working with transportation providers to improve performance, especially driver professionalism

-Implementing technology that allows unattended replenishment 24 hours per day/365 days per year controlled by the delivery driver and gives customers continuous, online access to information about orders and remaining credit

-Setting up automatic invoicing and electronic funds transfer for payment for each delivery

Upgrading the Transportation Supply Base

The acceptance of the latter two changes – unattended delivery and electronic financial transactions – necessarily had to be based on absolute trust in the transportation/delivery operation. Delivery drivers were being entrusted with considerable responsibility and access to customer sites. Just as important, customer finances were to be automatically impacted by driver actions, i.e. delivery notification.
Company 1 uses third parties for its deliveries but remains actively involved in the management of the transportation operation. Company 1’s corporate parent encourages this behavior by sharing best practices from other subsidiaries all over the world. For example, the carrier instruction book is influenced by parent company standards, and route optimization software is supplied by the parent company. As a result, Company 1 has a template for organizing its transportation suppliers and expecting continuous improvement based on internationally validated performance standards.

Company 1’s efforts to improve supplier performance have especially borne fruit in the highway safety area. Through a specific program, it analyzed causes of possible accidents –incidents- in all the facets of driving mechanical equipment. Implementing and enforcing this program has resulted in the Argentine subsidiary having one of the lowest accident levels among the parent company’s many subsidiaries.

**Company 2** bases its logistics network and operations on strong supplier partnerships. Company 2 is relatively new to Argentina, so it does not enjoy a huge power advantage over its indigenous supply base. Therefore, Company 2 bases its channel leadership on trust. Company 2 has also encouraged one key foreign supplier to open operations in Argentina based on expectations of market growth. The main strategic supplier provides the three highest volume materials, as well as managing the warehouse and the transportation to the restaurants. This supplier responds to Company 2’s needs for innovation and new locations while operating under an “open accounts” policy for revenue purposes. This key supplier relationship is seen as a template for developing relationships with all the other suppliers in Company 2’s network.

Company 2 has also defined a very clear value proposition – “to be a single source for lunch or dinner.” uses the warehouse as its “value integrating platform”. In
this “conceptual space” all materials are integrated to supply its restaurants. The
diversity of materials that are required to support this market offer results in a
warehouse that is very different from the traditional notion of warehouses. Instead,
Company 2 conceptualizes its warehouse as a “value integrating platform” where every
component of a customer’s meal must be brought together and sent on to the individual
restaurants. Under this regime, one missing material ruins the product, e.g. the lack of
mustard spoils the “nature” of a Hot-dog. The warehouse is the platform for
coordination with suppliers using the latest Point of Sale data from the restaurants.

**Company 3** has a very different logistical reality. With only one basic product
and one of the biggest distribution networks of the country, it has chosen to defend its
market leadership by continuously reengineering its logistic system. The company has
successfully undertaken reorganization of its warehouse management structure and
network, redesign of specialized delivery equipment, and major improvements in
information systems, among other projects.

Company 3’s unique competencies can be seen in three areas that are
fundamental to channel leadership and logistics execution:

1) Tailored distribution strategies by geographical area. The company mixes its
use of third party operators and independent distributors, depending on the
specific requirements of the customer base and the density of customer
demand.

2) Support of distributors’ logistics capabilities. The company first determined
which geographical areas should be assigned to existing distributors, based
on cost-to-serve retail customers and the financial capabilities of the
independent distributors. Then Company 3 provided specialized support and
training so that each distributor could attain maximum efficiency in its logistics operations.

3) Logistics Postponement. Argentina is a relatively lightly populated country, and nationwide coverage requires serving distant customers. In the far northwest, Company 3 installed filling and packaging equipment close to the final demand site, effectively “postponing” finished goods production to better match actual demand. Special trucks were designed and used to transport intermediate material to this new finishing operation. This postponement strategy has resulted in a decrease in inventory and finished goods spoilage.

Company 3 is a “home-grown” company which has systematically looked for and instituted logistics innovations from all over the world.

Company 4 has taken several steps to insure high levels of product availability. First, it invested in its distributors to implement sophisticated and extremely effective antitheft strategies. Both procedural and physical improvements were made to minimize the shrinkage associated with this company’s high value product. Company 4 also made sure that it had maximum flexibility in its delivery operations. In contrast to Company 1, which organizes deliveries based on fixed areas, Company 4 does not assign fixed delivery areas or guarantee a minimum number of daily deliveries to its third party services. Instead it uses the results of a highly sophisticated routing algorithm to optimize delivery performance to thousands of very small kiosks that serve final consumers. The flexible use of third parties combined with advanced security procedures results in very high availability in spite of the diffuse distribution network and high value nature of the product.
5. EXPLORING A BENCHMARK-ARE THESE COMPANIES “WORLD CLASS”?

To test how these companies compare to global competitors, a survey was done employing the “Supply Chain Management 2000” model. This model was developed by Michigan State University to rate capabilities in relation to company performance for various supply chain competencies. Data is gathered using a questionnaire with 106 items that have common 5 point Likert scales. Responses are elicited from logistics executives, hence the data can be categorized as perceptual.

The capabilities rated are Customer Integration, Technology and Planning, Material and Service Supplier Integration, Relationship Integration (understood as intercompany behavioural relationships) and Internal Integration (referring to coordination of different functional areas of the company). The validity of the model was tested by computing the statistical correlation of the analyzed variables with others that measure company performance. The performance measures are subsumed in 5 main variables - Customer service, Cost Management, Quality, Productivity, Asset management - and an overall performance item. Performance results are based on executive ratings of their own company’s performance vs. their competitors’ perceived performance.

The authors of the model (Bowersox et al., 1999) recognize the possibly subjective nature of the above performance ratings. They cite the great difficulties that have been encountered in relating the economic and financial ratios of public companies to underlying nonfinancial operating factors. They suggest that multiple environmental factors and one-time incidents make it virtually impossible to use pure financial results as an objective measure of performance. Therefore the Michigan State group assumes that the performance ratings supplied by executives have reasonable validity. Using these baseline performance ratings they identify superior companies as those whose
ratings significantly exceed the mean values of the overall group in any particular competence area.

Three of the four participant companies in this project, completed the Benchmarking Questionnaire designed by Michigan State University. The performance level of these companies was compared with the performance of the best companies presented in the original study.

Typically, one might expect that company performance in emergent countries would be lower than similar company performance in developed countries. Possible causes could be cultural differences, since emergent countries may expect and accept lower performance standards throughout the supply chain. The results for these three Argentine companies were consistent with this expectation. Overall performance ratings were approximately 40% lower than the “best” company average recorded by North American companies. By individual capability, Supplier Integration and Internal Integration were 5% and 8%, respectively, worse than the best North American companies. The gap between Argentine and North American companies was widest in the area of Customer Integration. Since this is the area that North American companies believe is the most related to overall performance, the size of this gap merits discussion.

In the opinion of U.S. executives, the main capacity—the one that best explains difference in performance—is Customer Integration. The low ratings from the Argentine executives may partly result from these companies’ low expectations of their own customers. All the companies that participated in the project had an international flavour (they were in one way or another related to international companies, and/or participated in foreign markets). They were probably well aware of possibilities in other countries and fully realized that their level of integration was not comparable to
well-known cases such as Procter & Gamble/Walmart. More importantly, they almost certainly realized that most of their customers were not ready for that kind of tightly integrated collaboration.

Supplier integration was the second factor addressed as relevant by North American executives. In one of the local cases, supplier integration received the highest of all ratings for performance. This company’s strength in the supply chain allows it to impose conditions that would be otherwise in one way or another rejected by other members. But this cannot be assumed to work in most channel systems. Again the issue may be the sophistication and capabilities of the available supply chain partners. Argentina, in particular, seems to suffer some cultural and economic disadvantages as well as a smaller economy overall. Consequently the operations expectations established in developed countries may not be immediately reasonable. Lower volumes per customer will naturally translate into somewhat higher unit resource requirements, while less sophisticated suppliers with lower levels of capitalization are unlikely to be able to provide the same partnership benefits that might be available in countries with more developed infrastructures.

6. BENEFITS OF THE BENCHMARKING EXPERIENCE

The benchmarking seminar will continue because of the following benefits indicated by both the organizers and the participants.

i- The opportunity for high ranking executives to exchange experiences, best practices, and problem solutions in a confidential, secure, neutral setting.

ii- The possibility of transferring operational practices between leading logistics practitioners, especially in light of the opportunities and difficulties raised by the MERCOSUR trade agreement
iii- The opportunity to continue gathering information on performance, process, and problems as the second round of companies joins the group. This group can serve as an “early warning” network for its various members, all of who run substantial logistics operations in Argentina, and most of whom operate in surrounding countries.

AGKNOWLEDGEMENTS

This project has been supported and executed thanks to the trust and enthusiasm of 4 companies and the capabilities of the top executives that participated in the project, to whom the authors and Universidad de San Andres want to express their sincere thanks.

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Appendix A

RESEARCH PROTOCOL:
BEST LOGISTICS PRACTICES IN LEADER COMPANIES IN ARGENTINA

Key Subjects:

(1) Corporative organization: functional structure and logistic processes
(2) Logistic processes characterization in supply, integration of delocalized production and product distribution
(3) Integration of supply chains and origin rules in MERCOSUR
(4) Strategic alliances with logistics operators: structure of the alliance, eventual “joint ventures”, contract characteristics, formal cost procedures and “pricing”, operative indicators, technological innovation aspects, information flow management associated with flowing goods (from the market to production to suppliers, in the management and processing of distribution orders, etc.)
(5) Inventory management experiences in owned facilities and 3rd parties facilities
(6) EDI experiences
(7) Integrated logistics experiences with software (MRP, DRP, SAP, etc)
(8) Information exploitation in POS for in-house logistics management and 3rd parties logistics operators
(9) Logistics postponement strategies
(10) Strategies in localization of owned logistics platforms (in-house operated and by 3rd parties) and of 3rd parties, as innovative aspects in infrastructure technology as in management
(11) Transportation management strategies (owned and from 3rd parties)
(12) Analytical accounting systems in logistics
(13) Marketing-logistics interaction
(14) Product engineering and logistics interaction
(15) Customer service as an integrative logistics perspective
(16) Innovative design of logistics products (logistics operators core business)