SGV & Co
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Business Consulting **Supply Chain Management**

Improving supply chain operations

Supply Chain Management refers to the application of a total systems approach to optimizing and managing the entire flow of information, materials, and services from point of origin to point of consumption.

Did you know that in the Philippines...

- Damaged items account for an average of 2% of sales, or 20% of net income assuming an average net income of 10% on sales
- About 90% of companies encounter problems with product returns
- The typical cycle count is only 92% accurate?

These are some of the findings from the series of surveys on Supply Chain Management conducted by SGV & Co./Andersen's Business Consulting Group. Supply Chain Management can be defined as an integrating function that involves planning what is to be sold, sourcing and acquiring the specified inputs, and monitoring movement of such inputs through the conversion and delivery process. It encompasses the relationships between all links in the supply chain, from the supplier's supplier to the customer's customer, and includes multiple functions and processes, such as purchasing, forecasting, manufacturing, inventory management, distribution, delivery, and even returns.

SGV & Co./Andersen's surveys on Supply Chain Management provide information and insights on important performance indicators and best practices in the Philippine context.

The surveys covered three areas: Inbound Logistics, Manufacturing, and Outbound Logistics. The information and insights on important performance indicators and best practices in Supply Chain Management revealed in survey results are meant to guide companies in identifying action steps to improve their logistics and manufacturing operations.

We have included commentaries on the survey results, incorporating industry obervations and client experiences.

	SURVEYS		
	Inbound Logistics*	**Manufacturing**	**Outbound Logistics**
Respondents	76	168	60
Companies	33	34	27
Topics surveyed	• Purchasing • Inventory management • Raw materials warehousing	• Product research and development • Process design • Production • Production support	• Finished goods warehousing • Transportation • Distribution • Customer service
Industries	• Food and beverage • Consumer goods/ personal and health care • Telecommunications/ electronics • Hospitals • Real estate • Others	• Semiconductors/ electronics/electrical equipment • Food and beverage • Pharmaceuticals/cosmetics • Chemicals/adhesives/paint • Glass/metals/building materials • Others	• Food and beverage • Consumer and packaged goods • Logistics • Others

*Co-sponsored with Purchasing and Materials Management Association of the Philippines

The surveys have two outputs: the General Report and the Customized Report. The General Report puts together all the participating companies' answers to the survey questions. The Customized Report, on the other hand, compares the practices of a specific company and companies in the same revenue group and industry. Copies of the reports can be obtained at a nominal price.

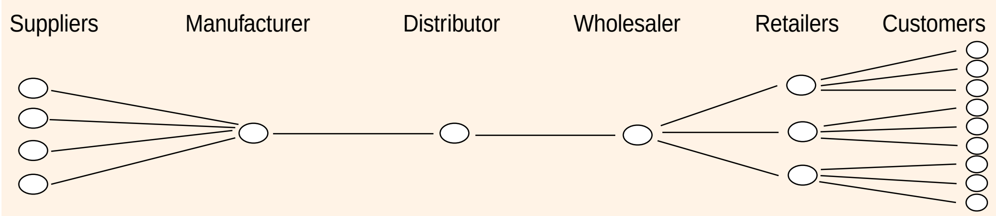
Supply chain — an overview

The supply chain is not linear; it is more like a complex web. Supply Web Management will require a new set of skills and tools, and numerous working partnerships.

As the world is made smaller by the unimpeded flow of information through the Internet and as business transactions are carried out electronically, efficient movement of goods has become more of a challenge. Time is of the essence, more so for build-to-order products.

The information age is also changing the nature of the supply chain: it is not a linear chain anymore but a web. Supply web management will create more challenges, as players push to bring costs down and shorten the time between sourcing of raw materials and actual consumption by the end-consumers. Compare Figures 1 and 2.

Figure 1 - **Traditional Supply Chain**

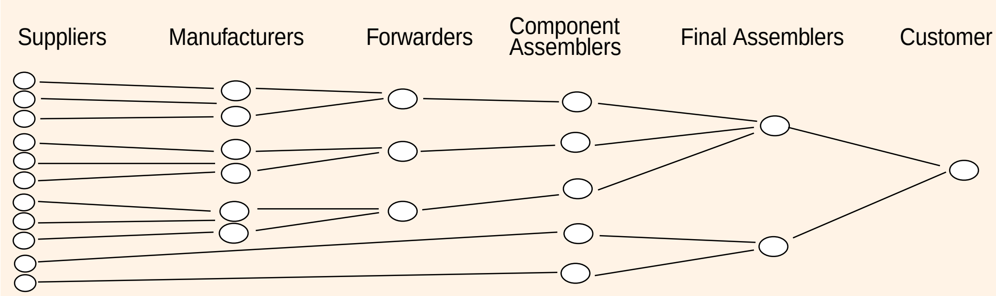


This chain is quite simple. The key role is played by the manufacturer, whose task is to understand point-of-sale data and translate them to procurement orders.

In the Philippines, leading consumer goods companies have successfully adopted efficient consumer response (ECR) techniques to shorten the supply chain and to eliminate excess trade inventories.

Some Philippine companies are now participating in this web model. As transactions globalize, other companies have to follow suit.

Figure 2 - **Supply Web**



This web is definitely more complex, yet some leading-edge companies like Dell Computers are able to operate it, enabled by sound inter-enterprise alliances and partnerships. Some Philippine companies are now participating in this web model. As transactions globalize, other companies in the country have to follow suit. They can start by making sure that their traditional model is as efficient as possible, and then begin seeking out partnerships and alliances, which means sharing gains and pains.

Inbound logistics — a commentary

The net local value-added of major export winners can be as low as 10%.

Purchased materials account for as much as 90% of a manufacturing company's cost of goods sold. For instance, Philippine export winners like semiconductors and apparel have a net local value-added (difference between value of imports and invoiced production) of between 10%–18% only. If several materials are locally sourced, a company's net local value-added might be in the 20–40% range. Efforts to improve profits must therefore be focused on reducing the cost of purchases. Reducing non-value-adding activities like ordering and holding materials and products is another rich source of savings.

The "just in case" mentality drives up costs and promotes inefficiency.

The inbound logistics survey results indicate that managing input inventories poses a big challenge to Philippine companies. Majority of companies incur high costs because they do not treat their suppliers as business partners. Only a few exploit electronic commerce to improve procurement. Discrepancies between book and count balances are still prevalent, pushing up holding costs. Many companies still use their warehouses as storage points, not as processing centers. Many hold significant inventories to respond to unplanned demands (the "just in case" mentality), instead of implementing a replenishment system or enforcing stricter planning routines. On their part, many suppliers do not perform as committed, with untimely/incomplete deliveries and quality problems.

Companies should follow the example of semiconductor companies which have cut airport-to-airport turnaround time to less than 7 days (i.e., raw materials planed in today are shipped back as finished products within a week, sometimes in just 4 days) to reduce cost of goods sold. To improve profitability, companies must introduce radical changes in the way they manage input inventories. They need to adopt a low-cost purchasing process; negotiate prices better; use the warehouse as a processing center and not as a storage area; and make their planning sensitive to actual demand.

Results of inbound logistics survey

General information

- Purchased materials account for as much as 70%–85% of cost of goods sold.
- Value-adding activities comprise mainly conversion and delivery.

Purchasing

Multi-sourcing is the most popular strategy used for all items. The average number of suppliers is 259, with 58 contributing 80% of value.

- The number of personnel in the purchasing organization is proportional to the revenues of the respondent companies. Companies with revenues below PhP2 billion have almost half the number of personnel of companies with revenues greater PhP2 billion.
- Multi-sourcing is the most popular strategy used for all items. The average number of suppliers is 259, with 58 contributing 80% of the total purchases. Purchases of raw materials and intermediate goods are considered critical to product survival.
- Only 31% of respondent companies have partnership relationships with their suppliers. The most common factors considered when analyzing and evaluating vendor quotations are market price/published price list, purchase history, supplier's discounts, and competitive factors.

Not many companies make use of electronic procurement at this time; they use the Internet for data gathering only.

- 72% of suppliers comply with the respondent companies' quality program standards, while 51% use the vendor's own quality system standards, and only 26% are certified by a third party such as ISO 9000 systems.
- 75% of companies conduct quality assurance system surveys, periodically for raw materials and intermediate goods and only as needed for the rest of the items.
- Respondents are exploring the use of electronic procurement. At this time, the Internet is used mainly for data gathering.

Inventory management

Accuracy of receiving (94.7%) and cycle counts (92.3%) indicate system discrepancies which create additional work in pick-and-pack operations and in reconciliation.

- Of the total annual cost of the inventory management function, 56% is attributed to direct labor cost, 16% to operating expenses, and 11% to cost of information support.
- 64% of respondents have already established a service level of more than 95% for raw materials and intermediate goods.
- The most prevalent cost-flow method used is the first in, first out (FIFO) method, which is used by 88% for operations, 57% for financial purposes, and 71% for tax purposes.
- Stock items are the most common items reordered by the inventory management and control organization. The most prevalent techniques used to manage inventories of raw materials and intermediate goods are the reorder point and ABC classification.

Respondents, as the customer, cite noncomforming deliveries (delayed, incomplete, with quality defects) as major problems.

Warehousing

- The foremost criteria used by the companies to measure warehousing performance are good records management and stock control, responsive and accurate reports, and no stockouts.
- On the average, receiving documentation discrepancies were recorded at 5.3%. The average accuracy level for a typical cycle count is 92.3%.
- It takes companies an average of 20.5 days to compile the year-end finalized inventory values, indicating poor recording practices.
- The common causes of nonconforming deliveries are untimely deliveries, quality defects, and incomplete deliveries.
- The average inventory turnover figure is 4.5, representing approximately 2.7 months' inventory.
- The most commonly utilized warehousing strategies are centralized warehousing, decentralized/multi-site warehousing, and leased warehouse spaces.
- 59% of respondents use the nature or characteristics of the item as their storage basis. A few use velocity basis (i.e., storing fast-moving materials together).
- Warehouse problems most frequently cited are lack of storage space, long incoming quality inspection process, and discrepancies in documentation.
- The most commonly used racks are flexible racking systems, followed by selective racks. The most highly utilized materials handling equipment are forklifts, manual hand pallets, and reach lift trucks.
- 59% of respondents monitor the value of damaged items, estimated at an average of 2% of purchases.

Manufacturing — a commentary

Many companies still depend on forecasts for planning.

This conversion part of the supply chain is a labor- and/or equipment-intensive operation where significant costs are incurred. Universal goals include time, quality and cost improvements. In many cases though, these efforts are stymied because of deficient forecast-based plans, material shortages, equipment obsolescence, and shortages in maintenance parts. Quality management continues to be an important activity, but tools used are very basic (pareto, fishbone, brainstorming), and lead only to first-aid, nonsustainable solutions.

T-Q-C: The name of the game in manufacturing is still time, quality, and cost.

It is notable that among manufacturers, exporting factories are generally more efficient than the rest. These factories compete head-on with world-class plants, and know from experience that customers are unforgiving. Turnaround times, quality, costs, and reliability (good performance sustained rather than one-shot) are critical success factors.

Product research and development take quite some time, say, one to three years for new products. At this pace, companies cannot expect to be first in the market, an important advantage in a fast-moving world where customers are always looking for something new. The use of computerized process controls is not yet pervasive; more factories rely on visual, operator-reliant processes.

Results of manufacturing survey

General information

Key manufacturing costs are outside the control of Production.

- The customers' most prevalent demands are lower prices, on-time delivery, and better quality.
- Market/environmental/internal factors affecting operations are high input cost, cheap imports of competing finished goods, and high energy cost.

Product research and development

Only a few companies have defined R&D performance metrics. Benchmarking is the most commonly adopted best practice.

- Companies with revenues greater that PhP1.5 billion have three times as many personnel as those with revenues of less than PhP1.5 billion.
- 85% provide training to their R&D personnel, with managers/executives getting the highest number of training hours.
- In-house researches are undertaken four times as often as external researches. Most of the researches fall under the areas of raw materials and manufacturing systems and methods. The leading source of information for researchers is vendor catalogs/brochures, but the Internet is gaining popularity.
- Most companies introduce new products to the market within one to three years.
- Budget-wise, almost all of the respondent companies invest 1% to 5% of their revenue in product R&D. However, only a few have defined metrics to measure R&D performance.
- Benchmarking is the most commonly adopted best practice, followed by design for manufacture, conduct of customer trend research, and access to new technology.

Process design

The three aspects considered in process design are cost, quality, and availability of equipment and facilities.

- Staffing varies inversely with revenue: companies with revenues of less than PhP1.5 billion have almost twice the average total number of personnel as companies with revenues greater than PhP 1.5 billion.
- Training is provided by almost all respondent companies and is not limited to the process design function. Personnel at the staff level get the highest number of training hours.
- The first three aspects considered in process design are cost, quality, and availability of equipment and facilities. The most commonly used tools and techniques are computer-aided design and requirements planning.
- The top measures used to assess process design performance are processing cost and labor productivity.

Production

Staffing varies proportionately with revenue, as low demand volumes cannot justify large-scale automation.

- Staffing varies proportionately with revenue: companies with revenues greater than PhP1.5 billion have six times the number of production personnel than companies with revenues of less than PhP1.5 billion.
- The most common goal is improvement of the production facility in terms of increase in capacity or in the speedy flow of materials.
- Process controls and best practices related to the use of computer systems and information technology are in place only to a medium extent.
- With respect to best practices, monitoring, evaluation, and control of production output are practiced by only a third of the respondent companies.
- Most of the raw materials and intermediate goods, and maintenance and repair items are obtained from foreign suppliers.
- Best practices in the area of materials management include conduct of regular review, analysis and control of inventory, and establishment of a good partnership program with suppliers.

Production support

Condition-based preventive maintenance is the most prevalent maintenance strategy used by the respondents.

- The most prevalent maintenance strategy utilized by the respondents is preventive maintenance. More companies use condition-based rather than time-based preventive maintenance techniques to generate cost savings.
- The two most prevalent performance indicators in maintenance are machine downtime and cost of repair and maintenance, used by 94% and 87% of the respondents, respectively. The common cause of machine downtime is lack of parts.
- The most common strategy in quality assurance is random sampling plans, used by 81% of the respondents. The most prevalent cause of quality problems is

Since unreliable sales forecasts cause planning problems, companies need to gather point-of-sale data and plan on a replenishment basis.

obsolescence of machines and equipment. The most used quality management tools are brainstorming, Pareto, and cause and effect diagrams.
- The most prevalent measurement technique applied by industrial engineers for setting production standards is time studies. The most common performance measure used to evaluate the Industrial Engineering function is total cost saved.
- In scheduling manufacturing orders, the customer due date is given the highest priority, while the first come, first served policy is given the lowest ranking.
- Production planning problems are mainly caused by unreliable sales forecasts, cited by 84% of respondents. Actual production as a percentage of planned production is most often used to measure performance of the production planning function.
- The most prominent hardware system used by respondents are numerically controlled (NC) machines. Networked computer systems are the most common software system used in factories.
- The most common performance measure for IT is accuracy of information.
- The most prevalent type of medical health aid available to respondents is an on-site medical/dental clinic.

Outbound logistics — a commentary

On-time, in-full deliveries at the lowest cost serve as the overall goal of outbound logistics.

The function of moving products from the factory to retailers is a major challenge, inasmuch as on-time, in-full deliveries are key performance factors. Outbound logistics adds considerable costs to end users. The trade pipeline from the factory warehouse to the retailer's shelves can be as long as 6 months, even for fast-moving food products. There seems to be a built-in, systemic reason for this, as majority of companies (63%) have a process-based rather than a demand-based strategy (19%). The demand-based approach is the just-in-time mode, where customer orders — not forecasts — trigger the supply chain.

An Andersen survey of the U.S. wholesale distributor industry indicates that 25% of costs are redundant. In the Philippines, redundant costs could be as high as 50%.

To reduce costs, companies outsource distribution functions to third-party logistics (TPL) providers. On the average, 67% have TPLs. These TPLs continuously improve their processes, especially when their principals are multinationals which provide assistance such as systems linkages. On the other hand, only 25% of Filipino companies outsource their outbound logistics, since they operate their own distribution networks or rent warehouses but man them with their own employees.

Aside from high warehousing and transport costs, costs of product returns also bloat supply chain costs significantly, as cited by majority (90%) of respondents. What happens in many cases is that goods are returned or are not received, not due to poor product quality or order accuracy issues, but because the retailers have excess stocks. And for several reasons, manufacturers are forced to accept these returns to ensure good relationships with trade players, leading to a vicious circle.

Results of outbound logistics survey

General information

63% of companies use process-based logistics (PUSH) strategy, while only 19% use demand-based (PULL) strategy.

- Products warehousing and inventory control link the organization to its channels and customers. These are the main activities of the person in-charge of a company's outbound logistics operations.
- The most prevalent logistics strategy, used by 63% of the sample, is process-based, meaning that the Logistics executive integrates and ensures that all internal logistics units and external service providers involved perform their respective roles efficiently. A market-based strategy, which is a demand-replenishment mode, is used by 19%. A channel-based strategy, used by 15%, relies heavily on the distributors' decisions.
- To achieve the twin goals of satisfying customers and earning profit at the same time, the companies employ continuous improvement techniques to improve delivery performance.

- The respondent companies use a variety of Enterprise Resource Planning (ERP) software.
- Majority of the companies believe that their supply chain partners' strategic involvement is critical to their business success. They have plans to establish alliances with service providers.
- They are willing to share data on best practices in the industry with their customers and suppliers. They expressed openness to benchmarking with other companies in the same line of business.

Company-owned warehouse operations

Warehousing is the most resource-intensive aspect of outbound logistics in number of personnel and volume of operations. Yet, product damage in the warehouse reaches 2% of net sales, opening a great opportunity for savings.

- Warehousing is the most resource-intensive aspect of outbound logistics in number of personnel and volume of operations. Overtime is incurred due to difficulty in assessing product demand.
- In general, product characteristics and similarity are the guiding principles used in arranging the layout of products. 62% reported that the layout of their warehouse supports future expansion, and that they are optimizing warehouse space.
- With respect to materials-handling equipment, the forklift is the most commonly used equipment, mainly because the companies use pallets extensively.
- Third-party warehousing is popular among the companies surveyed. 50% of the warehouses belong to a third party or are leased/managed.
- FIFO is popularly used in distributing products to customers.
- Warehouse operations are continuously improved through the use of key performance indicators with process analysis. Warehouse personnel also obtain new knowledge from training programs which are mostly sponsored by associations or offered by affiliate companies.
- To monitor inventory inside the warehouse, companies usually conduct cycle counts daily. However, only items that contribute significantly to sales or fast-moving items are included in the cycle count.
- 50% of the companies gather information on products damaged in the warehouse, which on the average represent 2% of net sales.
- The most commonly used information system tools are stock locator system, used by 50% of respondents, and warehouse management system, used by 36%.

Transportation operations

The prevalent trend is to hire third-party transport providers because of the lower total cost of product movement.

- Transport operations include fleet management, carrier management, rate negotiation, dispatching, transportation, and route optimization.
- The prevalent trend among the respondent companies is to hire third-party transport providers because cost of labor is lower, and asset investment is minimal.
- The mode of transport most commonly used for product delivery is the truck, specifically the 10-wheeler flatbed truck. Delivery trucks have high utilization rates: 92% for company-owned trucks, and 94% for leased vehicles.
- For total outbound shipments, modes of transport are as follows: by truck, used by 58%; by sea, 30%; and by air, 12%.
- The major criteria used for choosing a transport provider are cost, on-time delivery, and transit time.
- Frequency radios are used by 38.1% of respondent companies to help improve delivery turnaround time. The most commonly cited reason for delay is land traffic and natural calamities.

Distribution channel management

While the multinationals are served by third-party distribution and processing depots, and key account retailers, only 25% of Filipino companies use third-party providers.

- The most prevalent distribution channel is third-party distribution and processing depot, accounted for by 27% of the sample. This is followed by major or key account retailers, 24%, and third-party warehouse providers, 16%. Third-party warehouse service providers are usually evaluated by the cost of service they provide.
- Logistics operations are outsourced by 25% of the Filipino companies surveyed, especially in the area of warehouse operations and distribution. Companies that have not outsourced this function consider implementing it in the near future.

90% of companies have to contend with product returns, which adversely affect supply chain efficiency and costs.

- 90% encounter problems with product returns, largely attributed to discrepancies between actual deliveries and orders, and changes in order information specifications. To minimize product returns, companies generally implement a strict policy on product returns.

Customer service operations

Most companies state that their logistics capabilities are driven by their customer segmentation strategy.

- Being customer-focused, 76% of respondent companies state that their logistics capabilities are driven by their customer segmentation strategy.
- For 45% of respondents, the order processing staff is the person usually in-charge of customer service since he is the first point of contact after the salesman. For some companies, such as 40% of the companies in the food and beverage industry, a separate customer service department takes charge of this function.
- Fill rate on first shipment and lead-time are considered very important customer satisfaction factors, mirroring the most common customer complaints on delivery delay or incomplete delivery of products. Most companies also confirm receipt of orders. 55% provide immediate assistance to customers in case of complaints or emergency.
- To entice customers to increase order volumes, companies offer price discounts and promotional gifts. They also offer improved delivery turnaround time to encourage customers to order products on a full-pallet basis.
- 60% also measure customer service cycle times such as order-to-invoice, invoice-to-loading, and loading-to-delivery. The average cycle time is 3.23 days.
- Respondent companies prefer to be paid in cash and offer 30-day terms as a fallback.

In summary

These surveys on current supply chain practices of companies in the Philippines show that much still needs to be done to improve this function in terms of lowering intermediation costs and shortening the supply pipeline. It is not too soon for Philippine companies to begin upgrading their practices so that they can compete with global suppliers under the supply web model. Even now trade barriers are disappearing. Parallel imports are permitted, enabling hospitals to order directly from manufacturers anywhere in the world and to leapfrog local drug distributors. The time to act is now!

Contact Persons:

Medel T. Nera
Email: medel.t.nera@ph.andersen.com

Washington A. Roqueza
Email:
washington.a.roqueza@ph.andersen.com

Alfonso A. Aliga Jr.
Email:
alfonso.a.aliga.jr@ph.andersen.com

Jeff De Leon
jeff.de.leon.@ph.andersen.com

SGV & Co
A member firm of Andersen Worldwide

SGV & Co.
6760 Ayala Avenue, Makati City, Philippines
Telephone: 891-0307
Fax: 819-0872

SGV & Co. maintains offices in Makati, Cebu, Davao, Bacolod, Bataan/Subic, Cagayan de Oro, Baguio, General Santos, Kalookan/Clark, Cavite, and Mactan.

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