DESIGN SUPPLIER EVALUATION SYSTEM AT
RUNGARUNE MACHINERY (1989) CO.,LTD

by

Mr.Attachai Lawkittiwong

A Final Report of the Six-Credit Course
SCM 2202 Graduate Project

Submitted in Partial Fulfillment
of the Requirements for the Degree of Master of Science
in Supply Chain Management
Assumption University

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ABAC School of Management
Recommendations of the Graduate Project Examining Committee

Student Name _____Mr. Attachai Lawkittiwong_____

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Graduate Project: Design Supplier Evaluation System at Rungarune Machinery (1989) Co., Ltd._____

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Overall Result: Y I Pass   ☐ Not Pass

Comments Tentative _____ encev needs.

Show the _____ ○ comparison results.

Graduate Project Examining Committee Member:

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         Advisor   **Committee Member**

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Committee Member

December 1, 2006

Executive Summary

RungArune Machinery is a company providing machine parts to factories in all Industries in Thailand. The organization covers a wide area of machinery parts which are needed in the production process and the maintenance process of all Industries. With many product suppliers in the market, there are many suppliers to the company itself. The focus of this project lies in the coordination of the existing suppliers who are the key in the supply chain. Providing the commodity products, their competitive position is primarily achieved through cost leadership with excellent quality in product and service.

Without an existing implementation of performance evaluation, the company has always been faced with many problems from existing suppliers. The company encounters problems in correctly aligning its supply chain through:

- o Lack of performance evaluation
- o Lack of analysis and a system to evaluate performance
- o Lack of improvement in supplier performance
- o Late in delivery, un-match quality, misunderstanding in communication, etc.

This leads to the statement that "We cannot improve what we cannot measure". So, the project contains an evaluation system and focuses on a way to:

- o Develop a supplier evaluation system
- o Analyze the existing supplier performance, then make a supplier selection
- o Develop a strategy to improve the weakness and continuously improve on strength
- o Provide details of an evaluation system and mathematical evaluation insight

The evaluation system will not to be suitable for easy and quick manual evaluation of performance due to the inevitable bias of personnel involved. The existing evaluation uses the past experience of executives, but for the new system the company will need to keep records in a form which captures real data. In order to support the success of the supplier evaluation system, a plan for collaboration with the suppliers is an important strategy for the company.
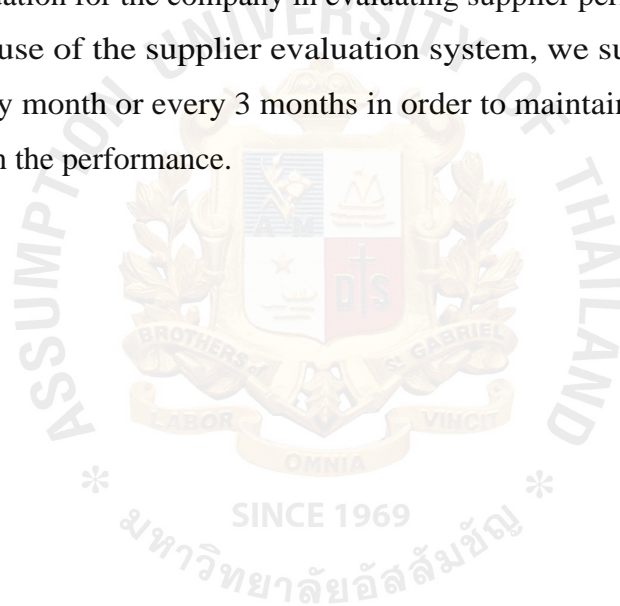
We conclude that:

- o In order to achieve the overall strategy and tactical supply chain objective, a supplier evaluation system should be matched with the right criteria to use in the system.
- o In order to achieve the supplier evaluation system, this system should be supported from the top level of the company.

o Aligning the supply chain to be appropriate for competitive advantage, the right evaluation of the supplier's performance and the right decision to select the best supplier in each product categories are required.

Several recommendations have been given for the company which focuses on practical usage of our design. We suggest that, as the performance evaluation system is able to perform an integrated analysis on the supplier performance, it should be used for maintaining the strengths in performance and analysis to identify improvements to weaknesses. Moreover we suggest looking for potential suppliers and comparing them with our existing suppliers' performance. With the current project, the suppliers' evaluation score is scored using the experience of the executives, but for the future the company must have true tabular records of performance. The score with the record from the table will generate a real situation for the company in evaluating supplier performance.

Regarding the use of the supplier evaluation system, we suggest re-evaluation of performance every month or every 3 months in order to maintain good performance and avoid reductions in the performance.

Acknowledgement

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List of Tables and Figures

1. RUNGARUNE MACHINERY (1989) CO., LTD

This first chapter provides an introduction to the business of RungArune Machinery (1989) Co. Ltd. It will briefly address the external business environment by focusing on products, the market situation and the supply chain in section 1.1 and 1.2. Furthermore, in section 1.3 the internal environment is presented by means of company history. Finally the competitive position is discussed in section 1.4 and 1.5, and 1.6 is problem analysis.

1.1 Products and Market

Products in the company list are mostly related to machinery parts for repair, maintenance, and building new machines. With the variety of products which the company supplies to the markets, there are big markets or industries that the company is involved in. Each product category has its own specific market. The category of some customers and the use of products are listed below for a clear picture of understanding of the company's type of business.

The company's products cover a wide range of purposes and are used extensively around the world_ The products of the company separate in two types of purpose_ Examples of the first product group are Bearings, Belts, Sprockets, Chains, Pulleys, etc.: these are uses for repair and maintenance of the machinery. This group of customers contains all sorts of factories in any kind of industry. All factories in Thailand have machines as part of production, so when the component part in their machine has been damaged or is out of date, they have to change that part to keep their production processes going. The second group of the company customers consists of construction and decoration industries. These groups of customers use products such as expanded metal and perforated sheet as part of the construction buildings or use in decoration in new modern buildings_ Table 1.1 below shows some examples of the company's customers in many kinds of industries and it will describe the purpose of use for each product category.

EX. Customer name	Industrials	Products in use	Purpose of use
Somboon Group	Automotive	Bearings	repair and maintenance
Arrk corporation		Belts	repair and maintenance
Thai Induction		Sprockets	repair and maintenance
		Chains	repair and maintenance
		Wiremesh	part of their product
CP group	Animal feeds	Wiremesh	sort for the size
Sahafarm		Perforated sheet	sort for the size
Betagrow		Pulleys	repair and maintenance
Cargill		Belts	repair and maintenance

SATAKE (Thailand)	Agriculture	Wiremesh	sort for the size
		Bearings	repair and maintenance
Panasonic	Air & Liquid Filter	Expanded Metal	part of filter
Banpu	Mineral &Mining	Wiremesh	sort for the size
Silica Sand		Conveyor Belts	part in their production

Table 1.1 Examples of Existing Customers

   Of the many types of products, some are made in Thailand and some are imported from other countries, but all of them cover all types of industry in Thailand. RungArune Machinery is the main supplier in Thailand of these products to help them to run their business with quality products at appropriate prices. Table 1.2 shows the portfolio of each product categories the company spent for last year.
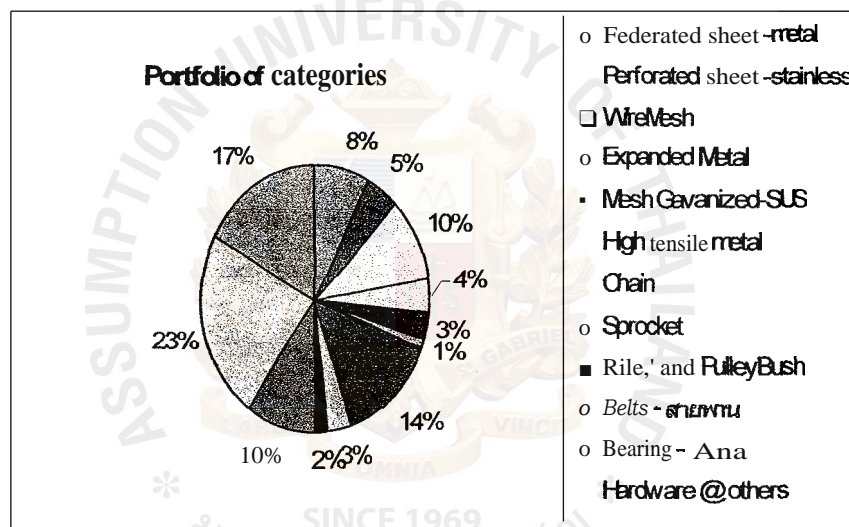
Table1.2 Portfolio of product categories last year

1.2 Supply Chain

   This section is an outline of the RungArune Machinery (1989) Co., Ltd of which the structure is shown in Figure 1.1.

   RungArune Machinery Supply chain (1989-Present), From the supply chain structure (Figure1.1) downside, RungArune has about 12 categories of products which come into our company for stock and distributes them directly to factories that we classify as end users, and also we distribute those products to our distributors which mean indirect sales. Then those distributors will distribute to factories in their own way. For many **W** downsides, it shows that there are still many sub-wholesalers who buy from our distributors and serve to their customers in the same way.
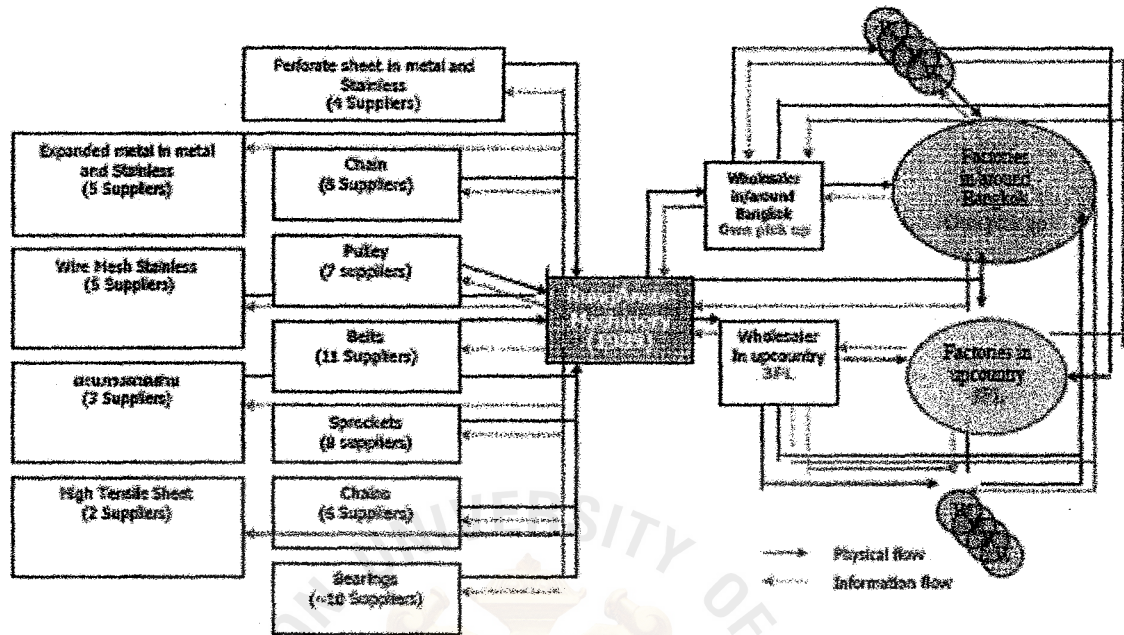
SCOR level1

For the SCOR Model, RungArune Machinery has to be classified into two models, to separate the strategy that we provide for products directly to the end users and indirectly through the distributors.

I.   Products that use the **Indirect** approach (Figure1.2)
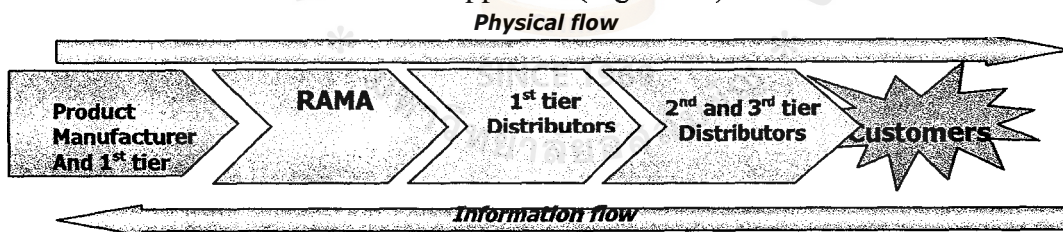
II.   Products that use the **Direct** approach (Figure1.3)
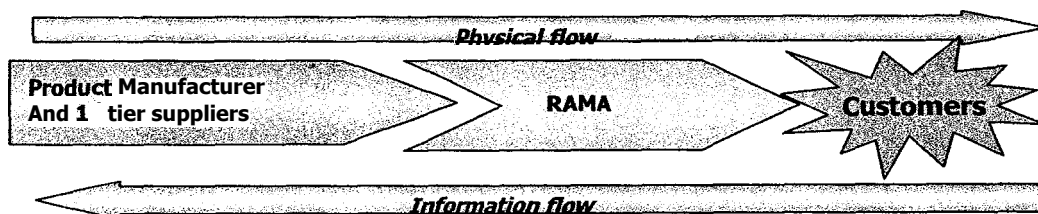
Although these two models are different in term of SCOR model level 1, there is not much conflict because of good management, so we can deal with the problem itself. The problem that some suppliers get is competition with their own distributors for the same

customers. But for us, we do not operate like that, because we want to generate trust and confidence in our distributors to get the highest benefit.

SCOR level2 (Table1.3)
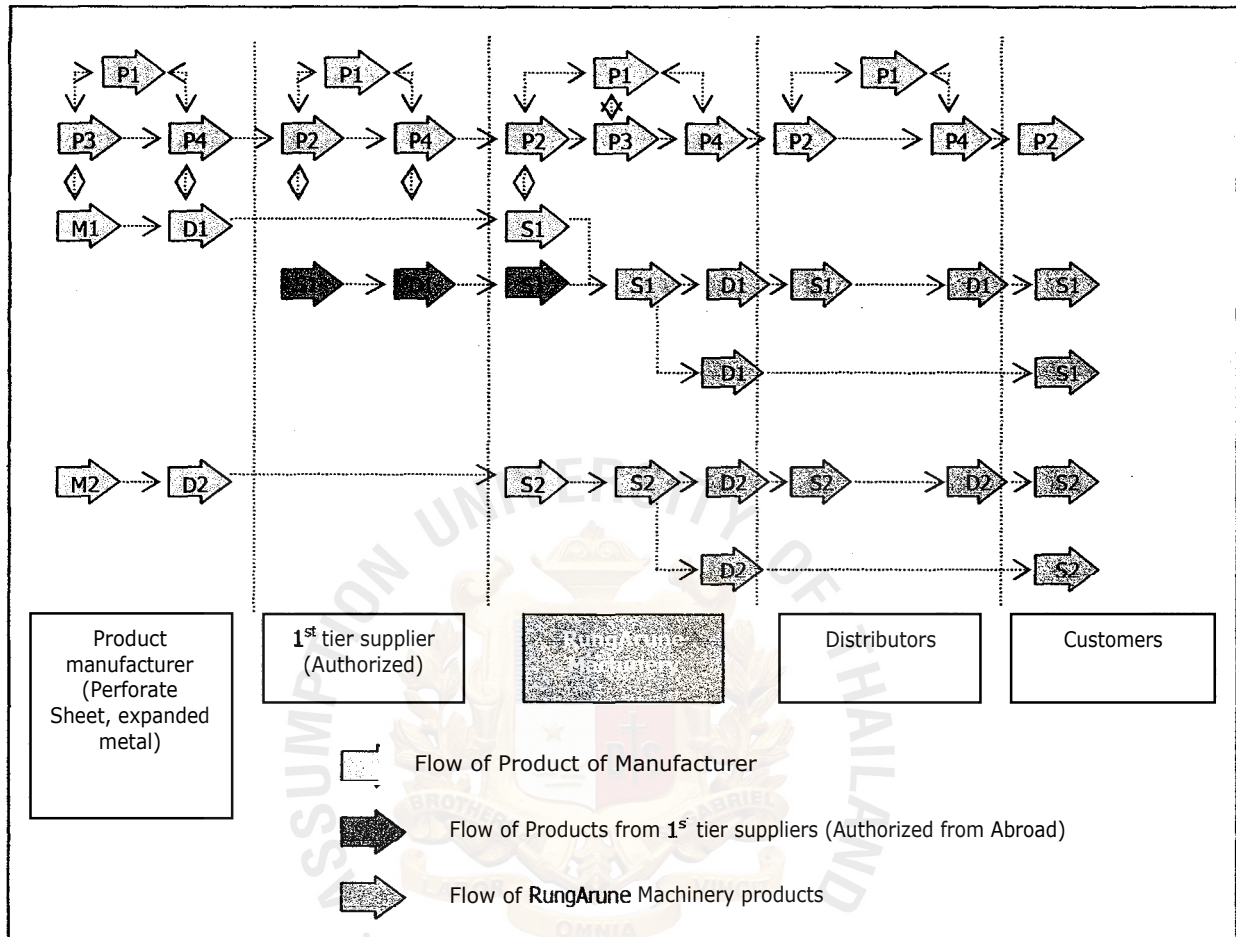
After we know the process from **SCOR level1**, we move into more detail for **SCOR level2 (Table1.3)**. We separate this into five parts **(Except** the 1st part which provide materials to manufacturers). Starting from the manufacturers of perforate sheet and expanded metal, the second part is the 1st tier suppliers of products which are imported from other countries; these classify themselves as authorized distributors in Thailand for each type of product. Both of them are classified as M1 and Si respectively. But for the part of manufacturer, they also provide us with make-to-order products where we get the design from our customers. We classify this part as M2. The SCOR process as Si products that manufacturers produce to stock, and products that are authorized orders from abroad to stock, and M2 for the product the manufacturer makes to order.

Their products move to the next part. **RungArune** Machinery classify themselves as a 2nd tier supplier, providing products from the manufacturers of perforated sheet and expanded metal and products from authorized suppliers to the customers. In this part, **RungArune**

Machinery is classified as S 1, stock products have an accuracy number for future use by accuracy forecasting. And again from make to order from manufacturer, we also classify ourselves as S2. So Si and S2 are in this part due to the type of products

On the part of customers, we separate them into indirect approach (which is a distributor classified as Si), and also by direct approach (end-users, factories) which are also classified as S1. But for some product design from metal manufacturers, its order is classified as S2 which is a source of make to order.

1.3 Corporate History

1989 Established by **Mr.Kamthon Lawkittiwong**

1994 Invested in first IT to implement data of customers

2000 Improve on IT by using CD organizer program, Build up a new branch in **Teeparak** Road, **Samuthprakarn** to serve customers in **Bangplee, Bangpu** and **Puchao** districts.

2006 **RungArune** Machinery (1989) Co., Ltd are the suppliers of machinery parts in Thailand:

Main office: 73/24-25 **Bantadthong** road **Petchaburi Rajthavee** Bangkok 10400

Branch Office: **Teeparak** Road **Samrong Nua Maung Samuthprakarn** 10270

1.4 Organization Structure

For the Organization Structure, the company divides in to two parts: an internal process and an external process.

Internal Process (**Figure1.4**)

RungArune Machinery achieves internal collaboration by good and close relationships between each function. An effective data transmission is used, data transparency which enables visibility. The decision making can be made immediately responsive to market change.

Managing Director-CEO

| Marketing & Sale | Supply Chain Department | Finance | Accounting |
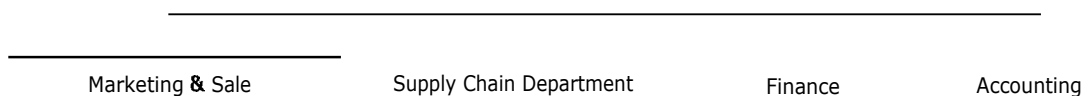
Figure1.4 Organization structure

Responsibility

From Figure 1.4 the marketing and sale responsibility is for all activities in market; study the needs of customers, product technology to classify the right product, launch the new product with new technology to market, and use marketing strategy and promotion strategy to get the awareness of customers. Then the purchase order is made and sent to the marketing and sales department. The information on purchase orders moves efficiently to

the supply chain department to check for product availability, check for the quantities and quality of products, and make a distribution plan. We have to plan for the day of delivery which is specified in the in PO of customers, make the schedule of delivery so we will not miss the schedule. The right products will be delivered to our distributors by selected **3PL** and our own pick up car. In planning stocked products, we expect to deliver products to our customers within 2 days, and plans for make to order products should not be more than 10 days, from our past historical data. We are looking for a plan to serve customers better than in the actual activities today.
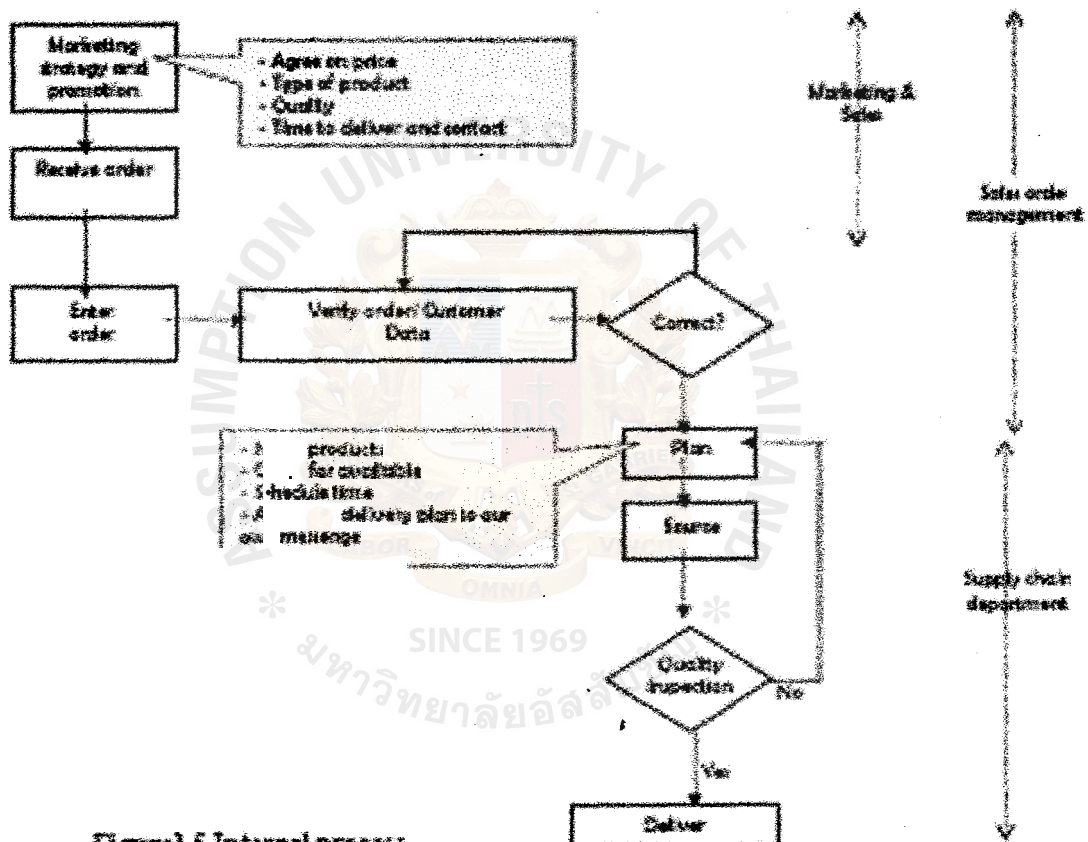
Figure1.5 Internal process

External Process

RungArune Machinery emphasizes our 1st tier suppliers, manufacturer, and treats our distributors and end customers as the best.

For the supplier side: **RungArune** Machinery plan to implement **SRM** to manage and contact suppliers. Because of the importance nowadays, the quality availability of products are most important to our business, so the company expects **SRM** and Partnership management can help the company provide the best services to our customers. The customers always require that the products they order urgently have to be available and

delivered to them as soon as possible or at their specific time, so we need stock checks from our 1st tier suppliers and manufacturer for stock every month, which makes us confident when bidding for price. And with the close relationship management, we also get the know-how of products from tier suppliers to allow us to make the best suggestion to our customers. Problems may happen anytime but with good supplier relationships with suppliers we can return the products with defects to 1st tier suppliers and also the manufacturer, which earns us goodwill. Also we inform our customers that we still allow them to turn back defective products or wrong orders.

For the customer side (distributor and end users / factories): RungArune Machinery plan to implement CRM as its future plan; to manage the specific product needs from end users, meeting with distributors to specify the problems that happenned in the past and may happen in the future, then looking for ways to solve them. CRM can support us to get deep contact with the end users, that we expect them to give us PO in advance so we can plan to source and stock products for them. Both partners can share information for the product available when it is needed, and this decreases stock-outs and cost of over stock or cost of lost sales. And with sharing of information we can know the potential need for products before they are ordered.

1.5 Strategy and Competitive Position

Environmental Analysis (Five Force Analyze segment rivalry)

For environmental Analysis RungArune Machinery will be concerned not only with one product but with all of them because the products themselves are related with each other because although a competitor comes into this market with only one product, that competitor can extend the line of products provided to their customers also.

1. Threat of intense

Rivalry emerges because one or more competitors see an opportunity to better meet the customer needs. The rivals are adding new wrinkles to their product offering to enhance buyer appeal. For the threat of intense segment rivalry, RungArune is concerned with many factors which give them the guidelines to deal with the rivalry:

a) Fixed cost for investment in this market is high due to there being so many products for customers and meaning that the newcomer has to have a high number of stocks.

(b)   It is an aggressive market due to the price competition, also the because of new competitors from China with lower price and lower quality.

(c)   There is a low exit barrier: any newcomer can come in but that affects the quality of the product provided and also that there has to be new technology that is better than the old product in the current market.

(d)   The price war is high because of the competition, with the substitution of low quality products.

(e)   With the support of the government, there are more than five exhibitions in a year so **RungArune** Machinery and its competitors participate in those exhibitions to gain customer's awareness.

(f)   For the new product introduction, there is competition in the quality of product, and most importantly with products from China with lower price and lower quality.

2.   Threat of new entrants

New entrants to a market bring new production capacity, the desire to establish a secure place in the market and sometimes substantial resources with which to compete. **RungArune** Machinery is concerned with factors which are bathers to entrants and the technology and specialized know how.

The Bather to entrants is high due to high fixed cost for the stock. The new entrants have to be concerned about the number of stock if they want to compete/ move in but their problem is about confusion over their ability to know which type or which part of a product should be in stock in each time period. And another reason is their know how on each product that may generate a problem if they fix it or advise in the wrong way.

3.   Threat of substitute product

A company in any industry is often in close competition with the company in another industry because their respective products are good substitutes_ But **RungArune** Machinery has low competition from substitute products. For each type of product we provide to the market we compete with brands of the same product. The competition relies on price, when the same product in other brand name is cheaper than our product. **RungArune** comes under heavy competitive pressure to reduce prices and find ways to absorb price cuts with cost reduction.

4.   Threat of buyers' growing bargaining power.

The buyers have substantial bargaining leverage in a number of situations, when the buyers are large and purchase a sizable percentage of the industry's output. If the buyers have large quantities to purchase, the more clout they have in negotiating with sellers.

In the type of business we are in, the power of buyers is high because of the high number of distributors competing. The customers (most of whom are the factories) can select the cheapest price from any distributor.

5.   Threat of suppliers' growing bargaining power.

The power of suppliers is high when suppliers become tight and users are so anxious to secure business that they agree to terms from a more favorite supplier, but it can be low power if there are good substitute inputs and switching is either costly or difficult.

For this type of business, the power of our tier supplier is low because many products with other brand names are always trying to increase their share of the market. And also we can move to other suppliers who quote us the cheapest price for the same quality of product and also better service.

Internal Audit (SWOT Analysis)

Strength

o **RungArune** Machinery provides only better materials or products to the customers to get better result in the customer's production process, when other competitors may not be so concerned.

o **RungArune** Machinery has the know-how in the product we serve to all customers and has the responsibility if any material or product we serve the customer is defective.

o Position ourselves as a perfect supplier who is concerned with quality of material of products to customers, not concerned with low price.

o With the long term relationship with the supplier, it generates a competitive advantage to the company.

Weakness

o **RungArune** Machinery *lacks activities to evaluate supplier performance* so the company can not measure the performance of the company itself.

o Price is the most important factor to make decision for our customers so some of our products with the better quality but higher price cannot compete in the market.

Opportunity

o The overall market and the need of products are still high because all factories in Thailand still need the suppliers to provide them these types of products.

o The quality of products the company provides is still needed by customers.

Threat

o Most of the customer concern is over price rather than quality (they know low price = low quality but they accept that to buy).

o It is easy for any new competitor to come in and compete on price, which generates a price war in this market.

1.6 Problem Analysis

1.6.1 Background

In today's highly competitive environment, it is finding the competitive edge that is a critical success factor not only to expand business but also to survive in business. Some companies tend to work on price, some on quality and some on service but at the end all concentrate on increasing their profit by acquiring, converting and retaining the most valuable assets which is 'Customers'.

To achieve the objective, the management of Supplier and Customer are involved. Actually the categories of both are different but their main goal is to increase customer satisfaction with better support for the targeted product and to reduce cost by collaboration from the whole supply chain.

In a well-connected firm, "Relationship Management" is about much more than just customer relationships, it is about suppliers too. Well managed supplier relationships can be powerful leverages to improve a company's value chain and overall profitability.

Focusing on supplier relationship management is the most powerful business tools, and SRM has proved to be an organized way for firms to keep in touch with key business partners. The best systems are also a way to track correspondence history, leverage previous agreements and integrate key supplier product data.

As businesses are starting to realize, suppliers are an essential part of success. Without the right materials being delivered on time, it causes problems for the manufacturer (customer). With a reliable supplier, it will create goods to reach their destination on time and in good condition. As all businesses are recognizing the importance of the suppliers as contributors to success, the strategies which emerge with producing good relationship will guarantee benefits to both partners.

In any organization, for an effective supply chain management to operate, the purchasing function is very essential to perform effectively. It is the responsibility of the purchasing manager to choose suppliers to purchase the required products for the company. Thus, it is very common for purchasing manager to conduct supplier evaluation techniques effectively to choose the best supplier amongst all suppliers.

Supplier evaluation can become an important tool in determining the long-term success of the company. For supplier evaluation to be successful, the process must have the backing and support of top management, and a cross functional team plays a large role in

making sure that all aspects of the relationship are considered in the evaluation process. The criteria that were mentioned on supplier selection have a focus on quantifiable measures such as: cost, quality, delivery, and service are the core criteria that should be evaluated.

Rungarune Machinery has many suppliers to contact with; more than 50 suppliers are involved in the company business. Some serve us the best performance, delivery on time with the acceptable price and quality product but some serve us not good enough performance. The performance of the existing suppliers is not sustainable: sometimes all business processes move smoothly but sometime the business processes get stuck with the problem of communication, products problem, and/or the problem of suppliers themselves. With the fluctuation in the business process, the company realizes that it happens because of lack of performance evaluation, and with many of suppliers the company cannot manage well so the problems cannot be eliminated.

From the project related to Supplier evaluation, the company realizes the benefit that the company will get from implementing this evaluation. *This is a new thing that the company has not implemented before, and this evaluation will improve the performance of company related to both sides; supplier and customer.*

Without supplier evaluation no company will know their existing performance so the importance of operating a supplier evaluation system is for all companies which want to survive in the business world and improve their performance to make the customers delighted. The performance that is important to the company to classify includes price, quality, delivery and service.

1.6.2 Scope

For this project we will study the benefit of supplier evaluation, "why do we have to do evaluation?" and then *design the supplier evaluation system* for the company. The report will classify the important factors of each product. Each factor such as price/cost, quality, delivery and service will have an effect on the performance of the company. Then implementing evaluation can help the company improve the performance and profit in the long term. After the evaluation system that is designed in the report, the company plans to implement supplier evaluation by starting with evaluating the existing performance of the Suppliers side. The supplier evaluation system will help the company get the benefits on the side of supplier such as improving the criteria for better delivery on time from suppliers, delivery in the right quantity with the right quality and delivery with the right price on invoice. At the same time when the supplier's performance has been improved, the

customer side of the company will get the benefit also. The other benefit that the company will get is the smooth flow of the information and product, as in Figure 1. There are many 1st tier suppliers relating to the company that also results in the problem of complexity in communication, so after implementing the supplier evaluation, the best suppliers will be selected and it will reduce the number of suppliers which means a reduction in the complexity in communication also.

1.6.3 Problems

Problems from Suppliers	EFFECTS to the Company (RungArune Machinery(1989)) /1st Tier
Late delivery	Not deliver products in appointment time, the company have to wait for deliver to customers
Wrong product delivery	Long waiting time to change for right products
Not in full products quantity	Waiting time to get product in full
Stock out	Can not serve products to the customers, have to wait for imports
Rush order (missed)	Can not serve on appointment time
Paper(invoice) loss	Missed to deliver products to the company then can not deliver to customers
Duplicate task	Such as Inspection, or duplicate paper of loss from their employees
Wrong Invoice	Mistake in price code or product code, wait time for correct it
Large supply base	Spent more time to communication, customers also wait for information
Misunderstand of information	Products delivered not match with needed spec.
	Waiting time to get the right products
Response time for Quotation	Long waiting time to get the quotation, the company can not answer the quotation to customers
Problem solving	Late for answer or correct the problem that happen from their products

Table 1.4 problem effect to the company

Problems from Suppliers	EFFECTS to the company's Customers	Related CRITERIA
Late delivery	Can not get products on time	Delivery
Wrong product delivery	Can not get products on time	Delivery
Not in full products quantity	Can not get products on time if the supplier deliver late	Delivery
Stock out	Can not get products on time	Delivery
Rush order (missed)	Can not get products on time	Delivery
Paper(invoice) loss	Can not get products on time	Delivery
Duplicate task	Can not get products on time or late delivery	Cost/Delivery
Wrong Invoice	Can not get products on time	Cost/Delivery
Large supply base	Spent time to wait for information, cost of waiting time	Cost
Misunderstand of information	Wait for recheck the correct product	Quality

	Effect to their production process if **un-spec** products delivered	Quality
Response time for Quotation	Loss time for waiting the quotation Effect to their production process, waiting for material or part come in	Service
Problem solving	Waiting time to correct the problems	Service

Table 1.5 problem effect on the company's customer

The problems listed in Table 1.4 and 1.5 are the current problems that the company has always faced. Normally the problems start with the suppliers then the problems link up to affect the company's customers. With those problems, the company recognizes the way to solve them that is why the way to evaluate the supplier performance has emerged: the company will know the strength and weakness of each supplier for each product categories and find out the way to improve and solve the problems. From the above table, the problem of late delivery, large supply base, high cost from wrong supplier selection etc. is expected to solve or reduce due to a *supplier evaluation system.*

1.6.4 Assignment

Despite the problems listed in Tables 1.4 and 1.5, the company does provide an initial request for a project to evaluate the performance of existing suppliers related to criteria such as price, availability, delivery, etc. to clearly understand the cause of the problems and look for the strategy to improve the performance and eliminate problems.

As the scope of the project cover is in the area of suppliers, the project will be constructed for the following reasons:

1.6.4.1   Related to its strategy the company aims at improving its competitive advantage through better communication and relationships with the high performance suppliers.

1.6.4.2   The supplier evaluation system is adopted to evaluate the performance of the existing suppliers to measure their existing performance as suppliers who work with the company.

1.6.4.3   The supplier evaluation system is adopted to organize the supply base with limitations on the high performance supplier

2 LITERATURE REVIEW

2.1 Basic Supply Chain

Supply chain management (Rolf G. **Poluha)** is the process of planning, implementing, and controlling the operations of the supply chain with the purpose to satisfy customer requirements as efficiently as possible. Supply chain management spans all movement and storage of raw materials, work-in-process inventory, and finished goods from point-of-origin to point-of-consumption.

Activities and functions

(http://en.wikipedia.org/wiki/Supply_chain *event management)*

Supply chain management is a cross-functional approach to managing the movement of raw materials into an organization and the movement of finished goods out of the organization toward the end-consumer. As corporations strive to focus on core competencies and become more flexible, they have reduced their ownership of raw materials sources and distribution channels. These functions are increasingly being **outsourced** to other corporations that can perform the activities better or more cost effectively. The effect has been to increase the number of companies involved in satisfying consumer demand, while reducing management control of daily logistics operations. Less control and more supply chain partners led to the creation of supply chain management concepts. The purpose of supply chain management is to improve trust and collaboration among supply chain partners, thus improving inventory visibility and improving inventory velocity.

Several models have been proposed for understanding the activities required to manage material movements across organizational and functional boundaries. **SCOR** is a supply chain management model promoted by the Supply-Chain Council. Another model is the **SCM** model proposed by the Global Supply Chain Forum **(GSCF).** Supply chain activities can be grouped into strategic, tactical and operational levels of activities.

Strategic

• Strategic network optimization, including the number, location, and size of warehouses, distribution centers and facilities.

• Strategic partnership with suppliers, distributors, and customers, creating communication channels for critical information and operational improvements such as cross-docking, direct-shipping, and third party logistics.

- Product design coordination, so that new and existing products can be optimally integrated into the supply chain, load management

- Information technology infrastructure, to support supply chain operations

- Where to make and what to make or buy decisions

- Align overall organizational strategy with supply strategy

Tactical

- Sourcing contracts and other purchasing decisions

- Production decisions, including contracting locations, scheduling, and planning process definition

- Inventory decisions, including quantity, location. And quality of inventory

- Transportation strategy, including frequency, routes, and contracting

- **Benchmarking** of all operations against competitors and implementation of best practices throughout the enterprise

- Milestone payments

Operational

- Daily production and distribution planning, including all nodes in the supply chain

- Production scheduling for each manufacturing facility in the supply chain (minute by minute)

- Demand planning and forecasting, coordinating the demand forecast of all customers and sharing the forecast with all suppliers

- Sourcing planning, including current inventory and forecast demand, in collaboration with all suppliers

- Inbound operations, including transportation from suppliers and receiving inventory

- Production operations, including the consumption of materials and flow of finished goods

- Outbound operations, including all fulfillment activities and transportation to customers

- Order promising, accounting for all constraints in the supply chain, including all suppliers, manufacturing facilities, distribution centers, and other customers

- Performance tracking of all activities

Supply Chain Business Process Integration

Successful **SCM** requires a change from managing individual functions to integrating activities into key supply chain processes. An example scenario: the purchasing department places orders as requirements become appropriate. Marketing, responding to customer demand, communicates with several distributors and retailers, and attempts to satisfy this demand. Shared information between supply chain partners can only be fully leveraged through process integration.

Supply chain business process integration involves collaborative work between buyers and suppliers, joint product development, common systems and shared information. According to Lambert and Cooper (2000) operating an integrated supply chain requires continuous information flows, which in turn assist to achieve the best product flows. However, in many companies, management has reached the conclusion that optimizing the product flows cannot be accomplished without implementing a process approach to the business. The key supply chain processes stated by **Lambert (2004)** are:

- Customer relationship management
- Customer service management
- Demand management
- Order fulfillment
- Manufacturing flow management

- Supplier relationship management
- Product development and commercialization
- Returns management

One could suggest other key critical supply business processes combining these processes stated by **Lambert** such as:

a. Customer service Management
b. Procurement
c. Product development and Commercialization

d. Manufacturing flow management/support
e. Physical Distribution
f. Outsourcing/ Partnerships
g. Performance Measurement

With the Performance Measurement:

Experts found a strong relationship from the largest arcs of supplier and customer integration to market share and profitability. By taking advantage of supplier capabilities

and emphasizing a long-term supply chain perspective in customer relationships can be both correlated with firm performance. As logistics competency becomes a more critical factor in creating and maintaining competitive advantage, logistics measurement becomes increasingly important because the difference between profitable and unprofitable operations becomes narrower. A.T. Kearney Consultants (1985) noted that firms engaging in comprehensive performance measurement realized improvements in overall productivity. According to experts internal measures are generally collected and analyzed by the firm including

1. Cost
2. Customer Service
3. Productivity measures

4. Asset measurement, and
5. Quality

External performance measurement is examined through customer perception measures and "best practice" benchmarking, and includes 1) Customer perception measurement, and 2) Best practice benchmarking.

2.2 Supplier Evaluation

The use of supplier performance evaluation systems is on the rise. A majority of manufacturing firm, as well as increasing number of service firm, either have established formal supplier evaluation program or are in process of doing it. From the company which already implemented the supplier evaluation program, after major supplier has been selected and the buyer-supplier relationship has begun to develop, it is important to monitor and assess the supplier's overall performance. The purpose is to enhance the relationship and control the performance.

Key Fact

Globalization, low-cost country sourcing;.continuous pressures outsourcin an forces combined to make supply.: value.; more important 'than ever fore -t business success. New Aberdeen research provides indisputable evidence that formal programs for measuring • and improving supplier performance increase supply value; recent interviews with advanced end users provide a framework of what's required for effective SPM.

It is no surprise that measuring supplier performance and feeding performance information back to suppliers can produce improved performance. Recent Aberdeen research shows that enterprises with formal supplier performance measurement (SPM) programs enjoy improved supplier performance levels in various performance categories, compared to enterprises with no formal SPM program. Table 2.1 details improved levels of performance in the four most-measured performance categories reported by enterprises with and without formal SPM programs.

Table 2.1: Average Supplier Performance Improvement

	Price	On-Time Delivery	Quality	Service
SPM Program	23%	23%	21%	21%
No SPM Program	13%	11%	5%	17%

However, despite the clear value of SPM programs, adoption by enterprises continues to hover around 50%, approximately the same level shown in Aberdeen benchmark research from 2002. It's perplexing that SPM has not penetrated the market to a greater degree, but one of the barriers to adoption clearly is enterprise size. According to our research, the larger the enterprise (based on annual revenue), the more likely it is to have a formal SPM program (Table 2.2).

Table 2.2: Percentage of Enterprises That Use a Supplier Performance Management System
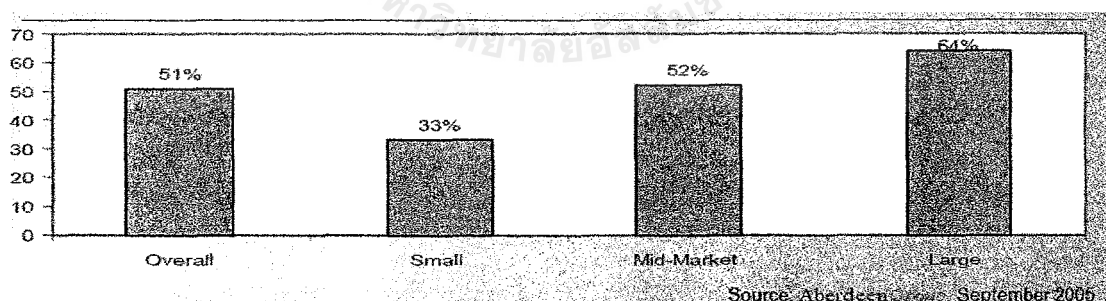
Additional research results provide strong evidence of the value of SPM. Supply executives at enterprises with no formal SPM program reported various reasons for not adopting SPM programs — including lack of resources, lack of technology, and that SPM was just not a high priority. No executives we interviewed reported that they had implemented an SPM program and abandoned it.

Installed Base: Big Plans for Expansion, Improvement

Enterprises that use SPM programs have aggressive expansion plans for their systems, including the addition of suppliers and performance categories, along with supplier development capabilities (Table 2.3).

Table 2.3: SPM Users' Expansion Plans

Add pew performance metrics
Include more suppliers — 59%
Add supplier development/improvement
Add corrective action plan and monitoring
Include more spend categories
Add dispute resolution — 30%
Include more internal business units — 24%
No plans — 14%

Source' AberdeenGr   September 2005
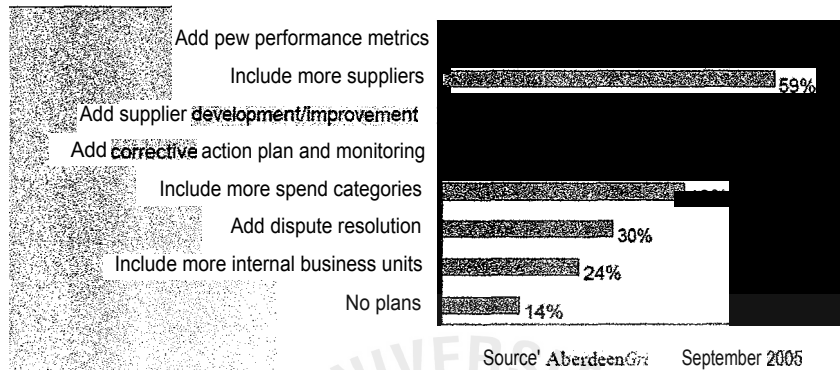
Advanced SPM users want to use supplier performance information for a lot more than improved performance and supplier selection, including dispute resolution and supplier development.

Functionality Needed for Most-Effective SPM

Interviews with advanced SPM end users reveal that the most effective SPM solutions include the following functionality:

• **Collaborative scoring** — including qualitative surveys, viewpoints from various corporate roles, and weighted scoring.

• **Supplier self-service** — self-registration, self-scoring, dispute resolution, and supplier input of key performance indicators (KPIs).

• **Score carding & reporting** — role-based scoring, analytical capability to drill down into detailed performance data and analysis.

• **Integration** — with other supply management applications.

• **Improvement capabilities** — including supplier suggestions, scenario ("what if') analysis, project management/execution, value calculation, and auditing.

Advanced SPM solutions provide a closed-loop process in which supply managers can easily access supplier performance data and take needed action. Advanced SPM end users leverage this information to improve supplier performance and supplier selection, as well as segment the supply base for improved supplier management and identify key suppliers for improvement and development initiatives.

Extent of Improvement Depends on Program Deployment. Aberdeen's research results also show that the degree of supplier performance improvement resulting from a formal SPM program varies depending on how the SPM program is deployed. The following factors have significant impact on the levels of performance improvement:

• **Length of time the program has been in place.** Enterprises that have had a program in place for more than 18 months generally outperformed enterprises with programs less than 18 months old.

• **Program scope.** Enterprises that have standardized their SPM programs at the divisional level outperformed those that have standardized their programs across the enterprise. This research result is likely due to the fact that divisions are more likely to have common operating goals and requirements, and common supply bases. It is much more difficult to develop standard metrics and processes for measuring supplier performance at the enterprise level.

• **Percentage of supply base measured.** Enterprises that measure more than 255 of their total supply base achieved higher levels of performance improvement than those that measured 25% or less of their supply base.

For the key supplier characteristics (Paul R Niven):

Product Quality: The extent to which the supplier's product meets the customer's specifications. Key aspects of product quality are performance, reliability, and consistency over time. Typical measures of product quality are 'Returns' or 'Parts per Million' (PPM).

Service Support: In addition to tangible products, a supplier provides a range of accompanying services. These services can be: services directly related to the product (i.e., warranty, spare parts, or product adaptations), appropriate customer information (i.e. providing the 'right information' at the 'right time'), and outsourcing a number of tasks to the supplier (i.e., sub-assembly, design, or testing).

Delivery Performance: The capability to consistently meet delivery schedules (on-time delivery), to adjust to changes in delivery schedules (flexibility), and to consistently deliver the right parts (accuracy).

Time-to-Market: The supplier's capability to reduce the customer's cycle time and bring products to market at a faster pace. For example, a supplier can reduce time-to-market for a

customer through accelerating design work, developing prototypes faster than competitors, and speeding up the product testing and validation process.

Supplier Know-How: Manufacturers benefit from a supplier's expertise in several ways. First, the supplier's knowledge of the supply market may provide an opportunity to present the customer with new sourcing solutions. Second, a thorough understanding of the customer's operations creates an opportunity for the supplier to assist the customer in improving existing products – both in terms of functionality and costs. Third, a supplier may assist the customer in developing new products.

Personal Interaction: Though business relationships exist between firms, they are actually managed by individuals. Personal interaction in a manufacturer-supplier relationship may create value in different ways such as improved communication between parties, more effective and efficient problem resolution, and a better understanding of each partner's objectives in the relationship.

Price: Direct product costs, i.e. the actual price charged by the supplier for the main product sold. A supplier's product may be priced higher than the product of an average supplier (i.e. the company would obtain a 'low' score on this criterion from a customer perspective). Also, the supplier may align his prices with an average market price (score `same level as average supplier'). Finally, a supplier's product may be priced lower than the product of an average supplier.

Process Costs: All costs associated with obtaining and using a product in the manufacturing process (excluding the actual price paid for the product). Process costs include acquisition costs (i.e. inventory costs, order-handling costs, and costs for incoming inspections) and operation costs (i.e. costs for using the product in the production process such as downtime costs or costs for tooling). A supplier may have higher process costs than an average supplier (i.e. the company would score 'low' from a customer perspective). A supplier may just be average (score 'same level as average supplier'). Finally, a supplier may be very successful at keeping process costs lower than an average supplier (score `high' from a customer perspective).

2.3 Performance Measurement

Performance Measurement (from **www.icfi.com)** is the process of developing performance measures allows and organization to determine its objective, set goals for desired results, and identify method of measuring how well the results are achieved. As it is important for all organizations, using Scorecard concept to align with their business measure their performance with **KPI's** monitoring.

Why measure supplier performance? (Cherry R. Gordon, VP supplier performance evaluation)

1. Increase performance visibility. Companies cannot manage what they cannot measure. If they do not know the facts about how their suppliers are performing, supplier management will be based on guesses about supplier performance. With enterprises managing hundreds and even thousands of suppliers, the supplier management process can be hectic and difficult to handle and many suppliers may remain untouched. To better manage the multitude of suppliers, it is critical to establish consistent benchmarks and goals to which suppliers can adhere. Moreover, when companies measure suppliers, the simple act of monitoring them can drive performance improvement. By asking suppliers to meet specific performance goals, they not only will rise to the challenge, but often will aspire to surpass them—resulting in supplier improvement. This improvement can be even more dramatic when companies award additional business on the basis of suppliers meeting performance goals.

2. Uncover and remove hidden waste and cost drivers in the supply chain. The enterprise supply chain is full of inefficiencies. Some of these inefficiencies lie in the "white spaces" between organizations and can be improved by better communications between customers and suppliers. Others are a result of poor business practices at the supplier that can result in increased inventory, quality problems, higher costs, and slow deliveries. By more closely managing and measuring supplier performance, the enterprise can find more ways to help suppliers drive waste and inefficiency out of the business, resulting in higher-quality suppliers and lower costs. For example, rigorous measurement and verification of supplier quality can help companies eliminate incoming inspection, reduce supplier non-conformances, and remove the associated costs.

3. Increase competitive advantage by shrinking order cycle times and reducing inventory. Time is money, and by measuring and improving supplier performance and by reducing supplier quality problems, for example, a company eliminates wasteful steps in its

own processes. For example, supplier materials can go straight to the point of use without incoming inspection because it is of the highest quality to begin with. Companies can reduce such wasteful costs and activities, typically caused by supplier glitches, as: additional inspections, extra freight charges, overtime (to catch up), safety stocks, obsolete inventory, buying from multiple sources (which reduce price leveraging), etc. When supplier performance gets to the level where materials are shipped more frequently and in smaller quantities straight to where they will be used, instead of stockpiled in a warehouse or on the floor "just in case," order velocity increases and inventory is reduced as a result. The same goes for office supplies and **MRO** products. In fact, cycle time is a key indicator of business health. When the velocity of cycle times is high, then other aspects of a business are running smoothly.[2] However, the underlying components of cycle time must be understood and addressed in order to make a positive impact on the metric.

4. Gain insight on how best to leverage the supply base. The better the quality of the supplier, the better the product or service the enterprise produces. By measuring supplier performance, an enterprise can set a certain threshold for its suppliers, thus leading to higher-quality results. When a company understands its suppliers' capabilities and their levels of performance, it can better plan new products and services. The capabilities of its supply chain are, in fact, a large part of its own capabilities as a company. An example of when this knowledge is important is a make-versus-buy decision. If a company does not understand its suppliers, it may not know whether or not buying a product or service is better than producing it internally. As another example take deciding whether or not to **outsource** offshore. Understanding one's local suppliers can help a company decide if they are capable of reducing total costs enough to outperform offshore suppliers. Also, suppliers can provide technologies to their customers that help customers develop new products and services that add revenue to the customer's bottom line and enhance their position in the marketplace. Thus suppliers can help their customers add value to the top line in addition to helping remove cost from the bottom line.

5. Align customer and supplier business practices. Ideally, suppliers should run their business in alignment with their customers. They should share the same business ethics, expect similar standards of excellence, show commitment to continuous improvement, and be a cultural match. Take the lean enterprise or any high performance system for example, and consider how requirements of those for shorter delivery times, lower prices, and higher

quality could actually have an adverse impact on a supplier who is not aligned with the customer. For example: 1) in response to a requirement for just-in-time (JIT) delivery, a supplier might actually increase its cost structure by building up an inventory to meet the requirement rather than by making to order. 2) If the supplier starts inspecting quality into the product instead of building quality in, more resources are required, impacting the company's cost structure. Quality could actually deteriorate in response to a requirement to improve it. And costs will rise, as more steps and resources are required to inspect and fix problems after the fact. Another need for alignment is around having a culture of continuous improvement. A supplier who does not try to improve or for whom continuous improvement is not a way of life will not be able to keep up with its customers' increasing requirements for better, cheaper, faster goods and services.

6. Improve Supplier Performance.   The goal of supplier evaluation is supplier performance improvement. There is the positive effect on performance of simply measuring it. But supplier evaluation is most effective when it leads to continuous improvement activities and actual supplier performance improvement. This is where the return on investment can benefit both the supplier and the customer. The customer and supplier need to identify areas of opportunity for improvement that can positively impact the supplier's business in the areas of cost, quality, responsiveness, etc and provide the customer with the benefits that improved supplier performance can offer. Supplier evaluation systems need to address both the traditional quantitative indicators such as quality, on-time delivery, and cost management as well as the underlying qualitative factors. The root causes of performance difficulties can be hard to uncover and require understanding the underlying business practices, cultural factors and even the leadership at the supplier. Follow-up activities, such as supplier training and development, and corrective actions to address supplier evaluation findings are the best ways to obtain measurable and positive results_

The best practice from Aberdeen shows in the improvement of the performance after doing the measurement. Enterprises measuring performance of more than half their total supply base were generating more than double the improvements in supplier performance than those enterprises that measured less than half their supplier rolls (Table 2.4).

Table 2.4 Overall supplier performance improvement

Overall Supplier Performance Improvement (a)
Based on Supply Base Coverage

	50% or less	More than 50%
	17.4	38.5

of Supply Soso Tracked
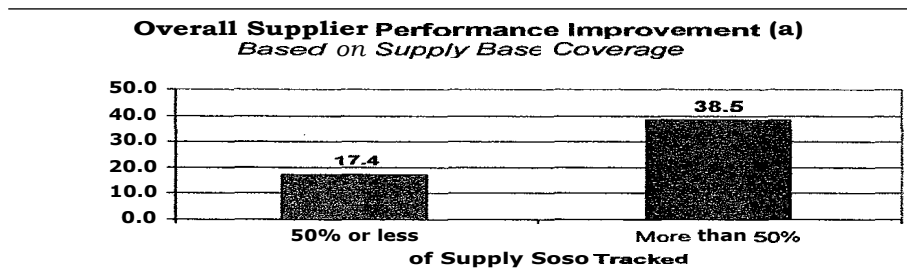
From the review of the book, Keeping Score; measuring the business value of logistics in the supply chain, they analyze the characteristics of good measures. The good criteria/metric in measurement should follow the table 2.5:

Characteristics of good Measures	
A Good Measures	**Description**
is quantitative	the measure can be expressed as an objective value
is easy to understand	the measure conveys at a glance what it is measuring, and how it is derived
encourages appropriate	the measure is balanced to reward productive behavior and discourage "game playing"
is visible	the effect of the measure are readily apparent to all involved in the process being measured
is defined and mutually	the measure has been defined by/and or agreed to by all key process participants (internally and externally)
encompasses both outputs	the measure integrates factors from all aspects of the process measured
measures only what is	the measure focuses on a key performance indicator that is of real value to managing the process
is multi-dimensional	the measure is properly balanced between utilization ,productivity, and performance, and show the trade-offs
uses economies of effort	the benefit of the measure out weight the costs of collection and analysis
Facilitates trust	the measure validates the participation among the various parties

usiness value o logistics in the SC,James S. feebler, P.8

Table 2.5 Characteristics of Good measures

The Role of Performance Measurement

On the review of system and metric design issues, from the marketing perspective, organizations achieve their goals, i.e. they perform by satisfying their customers with greater efficiency and effectiveness than their competitors. Efficiency is a measure of how economically the supplier's resources are used when delivering a given product or service; effectiveness refers to the extent to which customers' expectations are met. This is key in that it reveals the multi-dimensional nature of performance - in this instance that both internal and external factors influence a (product or service) provider's actions. The level of performance an organization attains is a function of the efficiency and effectiveness of such actions. Thus:

- Performance measurement can be defined as the process of quantifying the efficiency and effectiveness of action.

- A performance measure can be defined as a metric used to quantify the efficiency and/or effectiveness of an action.

- A performance measurement system can be defined as the set of metrics used to quantify both the efficiency and effectiveness of actions.

The above suggests that a performance measurement system can be examined at three different levels:

- The individual performance measures

- The set of performance measures

- The relationship between the performance measurement system and the organizational environment within which it operates

Further, it has been suggested that there are two types of performance measures used in any organization - those that relate to results, and those that relate to the determinants of results. This, in turn, suggests that it should be possible to build the framework of a system of performance measurement and evaluation around the concepts of results and determinants.

Any initiative to construct such a framework would lead, sooner or later, to the work of Robert Kaplan and David Norton, among the most prominent of the figures in the current debate. They have translated the definition of a performance measurement system given above into just such a framework - for which Norton coined the term 'Balanced Scorecard'. The Kaplan and Norton framework is based on the principle that a performance measurement system should provide business managers with information sufficient to respond to four basic questions:

- How do we look to our shareholders (what they term the **financial** perspective)?

- How do we look to our customers (the external perspective)?

- At what must we excel (the internal perspective, viewed in terms of core competencies)?

- How can we maintain continuous performance improvement, and create added value (what they term the innovation & learning perspective)?

2.4 SCOR Model

Supply chain Operations Reference-Model (SCOR), the SCOR model provides a framework and standardized terminology to help organizations integrate a number of

management tools, such as business process **reengineering, benchmarking,** and best practice analysis.

Using the **SCOR** model's top-down design method, an organization can quickly gain an understanding of its current supply chain performance and architecture. It also can compare its own architecture with that of other organization, identify improvements based on best practices, and design its future supply chain architecture.

The **SCOR** model has four levels of detail, the first three of which processes, sub processes and activities are described in the model operable processes, or level 4 are detailed workflow-level tasks and are always customized to an organization's specific strategy and requirements.

SCOR1, the business process will align with the high level business structure (business unit, regions, etc) and supply chain partners and refines the supply chain's strategic objectives. Level 1 focuses on the five major supply chain processes (plan, source, make, delivery and return). Using these processes, the alignment between process and organizational domains can be established to describe where processes must be standardized across entities. Level 1 decision also will determine whether an organization will be able to implement certain business practices.

SCOR 2 refines the choice of supply chain processes and confirms how supply chain processes align with the infrastructure (physical locations and information technology). Also called the configuration level, level 2 involves developing and evaluating high level options for the supply chain process architecture by choosing the "flavor" of plan, source, make, deliver and return. This is done by selecting the relevant sub-processes or process categories based on the supply chain strategy, the selection of process categories will drive level 3 designs because each category requires very different detailed activities.
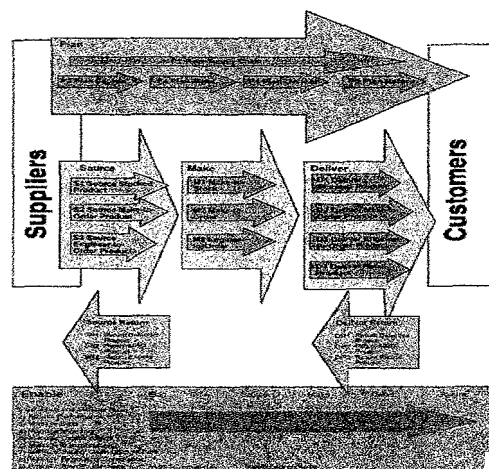
]Table 2.6 Supply Chain **toolkits**

2.5 Supplier Relationship Management-SRM (Patrick M. Byrne)

Conventional wisdom states that about 80 percent of a typical company's revenue comes from 20 percent of its customers. A similar mantra exists in procurement: In many organizations, 20 percent of the vendor base supplies up to 80 percent of the purchased parts, materials, and products. But both of these perspectives may soon be out of vogue. After all, they were coined before the existence of e-procurement, global operations, and "low-cost country sourcing." Nowadays, leveraging the most cost-effective resources regardless of the supplier's size or location has become a performance cornerstone for retailers and manufacturers everywhere. However, actually moving beyond "80-20" procurement will require companies to adopt even more sophisticated sourcing practices in order to build more relationships with precisely the right suppliers.

To discover just how well-prepared the top companies are to move beyond "80-20" procurement, **Accenture** launched an in-depth research initiative regarding supplier relationship management **(SRM)**. The survey responses of 229 senior procurement executives in Europe and the United States were collected and analyzed to determine: 1) how companies can manage supplier relationships to achieve greater, more sustainable benefits; and 2) the characteristics of supplier relationship management leaders. The responses revealed many insights about the growing significance and substance of both current and future supplier relationships.

They think of **SRM** as the systematic management of supplier relationships to optimize the value delivered through those relationships over the course of their life cycles. **SRM** focuses on post-contract activities such as:

- Increasing the accuracy and availability of contract information
- Monitoring, measuring, managing, and reporting on supplier performance
- Improving internal users' compliance (i.e., minimizing "rogue buying")
- Designing and implementing process improvements jointly with suppliers, such as new logistics solutions and quality-assurance programs
- Working with suppliers to reduce costs on both sides
- Launching joint product-development projects with suppliers.

Successfully performing the above tasks is tricky yet rewarding. **SRM** leaders—the 18 percent of surveyed companies that derive more than half of their procurement benefits from activities occurring after the contract award—reported procurement economies that

were three times higher than the survey average. In addition, every survey respondent stated that improved SRM practices would enhance their procurement effectiveness, sometimes by as much as 20 percent.

When the **SRM** has taken in action, what are the habits of highly *effective* supplier relationship management leaders? Survey results show that **SRM** leaders put greater emphasis on procurement strategy and governance. They also work continuously to improve the structure of the procurement organization and to develop metrics for guiding and measuring procurement-related improvements. **SRM** leaders are big on cross-enterprise integration, thus ensuring that the entire extended enterprise is using the same **playbook**. They frequently work harder to develop their human resources and define and optimize relationships with internal stakeholders. **SRM** leaders also:

*Use technology to enable **SRM** processes and performance management.* **SRM** leaders realize the above objectives by leveraging state-of-the-art technology, particularly tools that enhance requisition-to-pay and **e-procurement/e-sourcing** processes. **SRM** leaders were twice as likely as the aggregate respondent population to implement technologies that support contract management and business-to-business integration and supplier collaboration.

Segment their supplier base and develop specific strategies for each segment. **SRM** leaders are prone to segment their suppliers, most often by size of spend but also by market, quality of relationship, quality of products and services, degree of integration into the supply chain, and even by cultural/strategic alignment with the business's core goals. Conceptually, it is quite similar to activity-based management: **SRM** leaders create specific groupings and then formulate customized strategies for balancing procurement considerations against total cost of ownership, cost-to-serve, and other customer-valuation criteria.

*Adopt a holistic approach to **SRM** and work collaboratively with those outside of the procurement department.* As shown in the graphic **(figure1.1)**, the ability to work cross-functionally is paramount among **SRM** leaders. This skill is critical to successful inter-company activities, such as joint product-development and process-improvement projects, and the removal of costs from the supply chain. Toward this end, **SRM** leaders regularly discuss topics such as pricing challenges, cost-reduction opportunities, and options for

problem resolution with their suppliers. Furthermore, at many SRM leaders, production and design departments work with suppliers to identify the right sourcing approach for a product or service.
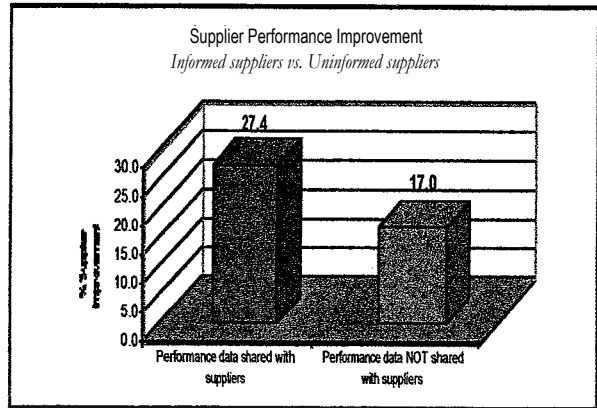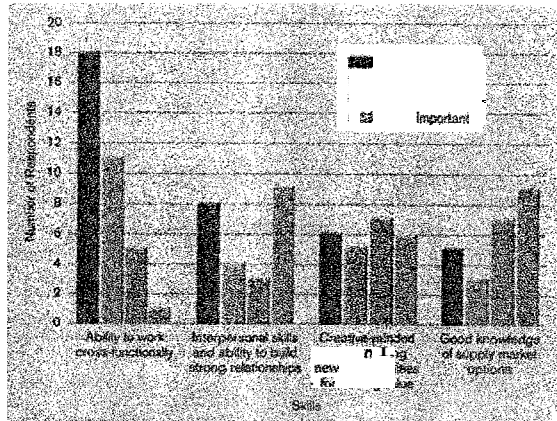
Table 2.7 Management of Supplier relationship management (left)

Table 2.8 Supplier Performance improvement from Aberdeen research (right)

Although the path to partnership is rarely easy, companies that have embraced SRM are clearly winning in the marketplace—and not just through cost reductions. SRM leaders are able to realize other benefits beyond savings, including reduced risk, increased speed-to-market, and access to new technology and innovative solutions. In fact, 76 percent of SRM leaders stated that they would view SRM as having even greater importance in the near future. As supplier relationships become more global and complex and the rule of 80-20 becomes less fashionable, SRM will be even more integral to helping companies realize value and achieve high performance.

With implementing SRM and performance measurement, the benefit the company will get in on the improvement of the supplier performance. The Table 2.8 will show the improvement after the research of Aberdeen on best practice about collaborates with supplier.

Collaborate with suppliers

Enterprises that shared performance data with suppliers were able to generate 61% greater improvements in supplier performance than enterprises that only used this information internally (Table 2.8). A chief reason for such gains is that enterprises sharing performance data with suppliers generally used this information to identify opportunities for *improving* supplier performance.

3. METHODOLOGY

3.1 Supplier Evaluation system

Module Summary

Supplier measurement systems can be used to manage and control a supplier's contract performance, and may also be used during source selection for future contracts. You need to continuously monitor measure and analyze supplier performance, and then share the results with suppliers.

To decide how and what to measure, you can use a four-step supplier measurement system process.

Supplier Measurement System *Process*
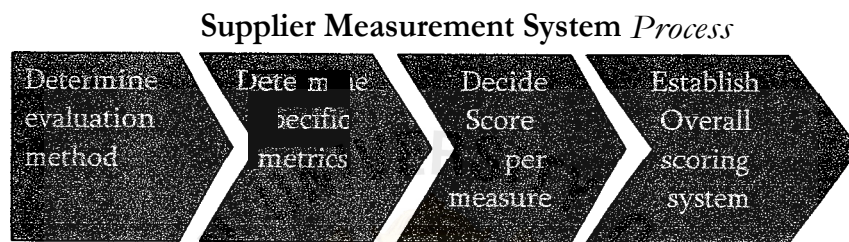
- **Determine evaluation method** by comparing the pros and cons of each method to defined program goals, and then weighing the use of each against internal capabilities, available resources, and projected value of measuring supplier performance.

- **Determine specific metrics** by identifying the performance factors to be measured based on those factors most critical for satisfactory contract results.

- **Decide scores per measure** by establishing a series of scoring mechanisms for each measure.

- **Establish overall scoring system** by identifying how to summarize individual scores into an overall score and also set specific standards that define an overall score.

3.2 Evaluation Method – Weighted-Point Method

Overview

The weighted-point method is a *quantitative* rating system for measuring supplier performance. It allows the buying organization to *take all factors into account,* yet gives it the *flexibility to stress the importance of one factor over another.* While the weighted-point method provides information for feedback to suppliers and for continuous improvement efforts, there is a possibility that suppliers will dismiss the system as "picking favorites." These are but two of the strengths and detractors a buying organization should consider in judging the use and value of a weighted-point system. Because it is a

quantitative system, the weighted-point method often sells better internally than the qualitative categorical method.

Once an organization has decided to use the weighted-point method, it must identify and define the performance factors on which suppliers will be measured. It must assign weights to these factors relative to one another and develop a measurement formula for each. The organization also must set standards for acceptable, marginal and unacceptable supplier performance.

Because the weighted-point method provides specific feedback on the identified performance factors, an organization is able to readily identify targets for improvement. It also can use past performance ratings during the bid evaluation process to help it decide which supplier to select.

Definition of Weighted-Point

The weighted-point method is a **quantitative measurement that allows supply managers to put different levels of importance (weights) on various factors.** In this type of supplier evaluation system, an individual or team of evaluators selects specific areas for evaluation. A weighting factor is established for each of the areas which indicate the value of that particular area in relation to each of the other factors. A score is then assigned to each factor that indicates the supplier's performance. The score is multiplied by the weight and then averaged.

The weighted average subsequently may be used to compare the performance of two suppliers, or to compare the performance of one or more suppliers against acceptable standards determined by the buying organization.

Developing a weighted-point rating system requires:

• Establishing a list of performance factors

• Weighting the factors according to relative importance (1.00 or 100 percent = total performance)

• Determining the procedure for measuring actual supplier performance on each factor

Weighted-point systems are used as a long-term tool for the rating of suppliers and as a means of evaluating suppliers' bids and proposals. Often times, this type of system is found where there is a business requirement to have some type of system in place. Many organizations feel that this method is more objective than the categorical system since it is quantitatively oriented.

Table 3.1 Pros and Cons for weighted point method

Pros and Cons for Weighted-Point Method

	• Pros	Cons
	Relatively easy to develop. Only technology requirement is development of simple database. Relatively quick system to develop. Relatively low development costs involved.	Database must be developed and continuously maintained. Labor intensive. Data entry becomes excessively time Maintenance costs increase significantly with the number of suppliers being evaluated.
Use Objectivity	Evaluators can take all factors into account. Allows flexibility in rating the importance of It computes a quantitative score which may sell better internally. Excellent tool for bid evaluation.	Evaluators fail to return the forms without a great deal of No objective basis for evaluation information. Rating are based on short-term memory and can easily be modified to send a message to the supplier
Impact	Provides suppliers with performance feedback and information for continuous Improvement efforts.	Possibility that suppliers will dismiss the system as "picking favorites"

Step *1* — Determine Evaluation Method

The company wants some way to continuously track supplier performance. Currently, it has no system and knows it could improve both supplier performance and the department's value if it could implement a system.

The responsibility should start at the senior management and then transfer the information/suggestion to the department that it will support a system if it is a quantitative system that can be used both for bid evaluation and for improving supplier performance.

The senior management defines system goals as:

• Quantitative performance tracking system

• Support bid evaluation process

• Support improvement of supplier performance

• Enable department to increase its value

After reviewing the pros and cons (Table 3.1) of the various evaluation methods, the Senior Management selects the ***weighted-point method as the most appropriate.***

Step 2 — Determine Specific Metrics

To take the necessary steps to implement the weighted-point method, the Management Department of the company assembles a team. It knows it will need support from

throughout the organization for the system to succeed. Therefore, the company selects several key internal customer representatives.

After review the research from the Aberdeen, it show on the metrics or criteria that has an effect to the performance of the company, the chart below will explain on the important of each criteria. The majority of respondents measure supplier performance in the following areas (Table 3.2):

- Quality
- On-time delivery
- Service
- Price
- Total cost
- Contract compliance
- Lead times
- Responsiveness

Supplier Performance Measurement Criteria

Criterion	% of Respondents who use criterion
Quality	93.4%
On-time delivery	89.5%
Service	65.8%
Price	63.2%
Total cost	60.5%
Contract compliance	60.5%
Lead time	60.5%
Responsiveness	60.5%
Accuracy or quotes/promises	48.7%
Technical support	48.7%
Price variance	46.1%
Technical capabilities	40.8%

% of Respondents who use criterion
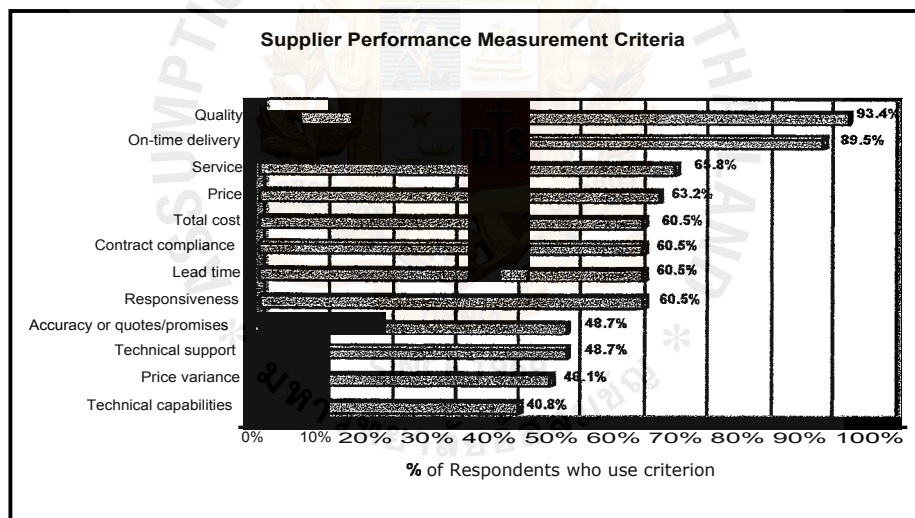
Table 3.2 Supplier Performance measurement criteria

The company must determine the specific metrics it will use to measure supplier performance. Quality and timing of deliveries from suppliers have a direct effect to the company on how well the company can service to its own customers, the company decides that two of the performance factors will be quality and delivery. Further, the entire company is looking to contain costs, so the company selects price as another performance factor.

At least initially, the company wants to evaluate supplier performance frequently, so it can quickly judge the effectiveness of having a supplier measurement system in place.

Therefore, it decides ratings will be done on a monthly basis using three performance factors defined as follows:

• **Quality:** Delivery complies with contractual requirements

• **Delivery:** Delivers at exact time specified

• **Price:** Invoices at lowest price offered

Time: time has been a major competitive weapon in today's competition. Being able to response rapidly and reliability to a customer's request is often the critical skill for obtaining and retaining valuable customers' business. Other customers may be more concerned with the reliability of lead times than with just obtaining the shortest lead times. For some customer, lead time is important not only for existing products and services. Several customers value suppliers that can offer a continual stream of new products and services. For such market segments, a short lead time for introducing new products and services could be a valued performance driver for customer satisfaction.

Quality: quality was a critical competitive dimension during the 1980s and remaining important to this day. Quality can also refer to performance along the time dimension. The on-time delivery measure, previously discussed, is actually a measure of the quality of the company's performance to its promised delivery date. Quality here also relies on the right product deliver to the right customer at the right place and on the right time. Quality also mean to delivery complies with contractual requirements in perfect condition and correct quantity.

Price: with all the emphasis on time, responsiveness and quality, one might wonder whether customers still care about price. One can be assured that whether a business unit is following a low cost or a differentiated strategy, customers will always be concerned with the price they pay for the products or services.

From the review of the book, Strategic supply chain management: The five disciplines for top performance, the company recognize in the definition of the criteria and how important on each criteria in using for evaluation (Table 3.3). Form the book analyze that **PMG's** Supply chain management **benchmarking** study, an ongoing survey of supply chain practices and performances, is based on the same work that led to creation of the **SCOR** model and uses the same hierarchical construct. At the highest level, the **SCOR** model provides quantitative measures of performance under 5 key attributes and 13 specific measures. With the **SCOR** level 1 metrics typically are associated with executive level concern which the project is related to this level 1.

Table 3.3 World class performance measure

World class **Performan**

Capability Areas	Criteria description: performance		SCOR Level I Metric
Delivery	Definition	Supply chain performance in delivering: - the correct product - to the correct place and the correct customer - at the correct time - in perfect condition and packaging - in the correct quantity - with the correct documentation	delivery performance fill rate perfect order fulfillment
	Comment	-Delivery the product on the right time can improve	
Responsiveness	*Definition* Comment	-How quickly a supply chain *delivers* products to the -The suppliers need to improve reaction time for inside of lead time.	order *fulfillment* lead
Flexibility	Definition Comment	-How quickly a supply chain response to market place ;agility in gaining or maintaining a competitive edge. -Flexibility can response to the change of market so because of the change. It means to the flexibility in production flexibility can not serve the customers in	supply chain response production flexibility
Cost	Definition Comment	-The cost associated with operating the supply chain -Price has a direct effect on cost. Together with the criteria included in supplier profile tool, the profile indication of the total cost of using the supplier. Other to have in mind are the development of price/cost ,and the transparency of the supplier's cost structure.	cost of goods sold total supply chain value-added productivity warranty-returns
Innovation	Definition Comment	-Change that creates a new dimension of performance (Hesselbein, 2002) -The successful exploitation of new ideas (Dept of -Good suppliers should be in the continuous From Strategic supply chain (P.206)	*new* product revenue time to market customer and employee &satisfaction

Moreover after review on another book, *In Keeping Score,* some topic is emerged for use in designing the metric for the company (Table 3.4). How can the company measure the supply chain to provide a competitive advantage? In Keeping Score: Measuring the business value of Logistics in supply chain, the authors suggest a number of lessons for effective supply chain measurement:

•	Ensure consistency with strategy and value proposition. Ensure that the metrics you use mirror your strategy and customer value proposition as each with entail a different supply chain measurement focus. While this section focus on the operationally excellent organization, as mention earlier, those pursuing customer-intimate or product leadership strategies must maintain threshold standards of supply chain performance.

•	Truly understand customer needs. Do not assume that you know what customers expect of you. As well, you must recognize that their needs will undoubtedly change overtime.

•	Know your costs. Decide how much customer service to offer require detailed cost information. Use the data to perform cost-benefit analyses.

•	Take a process view. Define your measures at the process (procurement, fulfillment, scheduling), not functional, level.

• Focus on key measures. You could generate hundreds of measures for the various supply chain activities. Focus on key process measures. Functional and activity-relates metrics can be derived directly from these.

Table 3.4 Criteria for selecting performance measures

Supply chain process measurement	

Time
-on-time delivery receipt
-order cycle time
-order cycle time variability
-response time
-forecasting/planning cycle time
-planning cycle time variability
 	
Quality
-overall customer satisfaction
-processing accuracy
-perfect order fulfillment
   -on time delivery
   -complete order
   -accurate product selection
   -damage free
   -accurate invoice
-forecast accuracy
-planning accuracy
-schedule adherence
	Cost
	-finished good inventory turn
	-day sole outstanding
	-cost to serve
	-cash to cash cycle time
	-total delivered cost
	   -costs of goods
	   -transportation cost
	   -inventory carrying cost
	   -material handling cost
	   -all other cost
	     -information system
	     -administrative
	-cost of excess capacity
	-cost of capital shortfall
	
	Others and Supporting
	-approval exception to standard
	-minimize order quantity
	-change order timing
	-availability of information

Source:James Keebler. Karl Manrodt. David Dutsche. and 'Michael Ledvard
Keening Score: measuring. the business value of logistics in the supply chain

And for the third book, the review of the management of business logistics book, it shows the various service metrics and indicates whether others use measure and how important they think it is (Table 3.5).

Measure	Percent of metrics using to measure	Percent of people say important or very important
on time delivery	86%	**91%**
order fill	75%	**88%**
invoice accuracy	69%	77%
performance to request date	66%	**82%**
order cycle time	63%	78%
customer service performance	63%	79%
Stock out/back order	62%	**84%**
over/short/damaged	61%	73%
performance to commit date	55%	**84%**
line item fill	55%	**84%**
return and allowance handling	44%	63%
freight cost	44%	68%
inquiry response time	36%	63%
case fill	32%	77%
forecast accuracy	16%	55%

Table 3.5 Metrics and the percentage of importance form logistics book

From the review of above three tables, they show the selected criteria that have an effect to the company's performance performing to the customers. But with the criteria above, it need the support from the suppliers to improve the performance of the company because with those criteria, the suppliers are the party who involve in those criteria directly. Their performance has a direct effect to the company's performance to the customers such as an analysis on the problem that the company faced with, many problems are start with the

mistake or misunderstanding from the company's suppliers. ***The company will list out on each criteria and design the weighted-point rating (Table 3.6) form and adds the performance factors and definition to the form for each product categories.*** For the example of Quality, does the supplier always deliver complies with contractual requirement?

Table 3.6 Weighted-Point Rating

Total Performance = 100%	Imaortant	SUPPLIER I		SUPPLIER 2	
Peru iance actor:		Actual	Score	Actual	Score
-Invoices at lowest price offered	0%	0	0	0	0
-Has competitive price	0%	0	0	0	0
-Invoices correctly	0%	0	0	0	0
TOTAL	100%		0		0
cc Fact quali eri		Actual	Score	Actual	Score
-Delivery complies with contractual	0%	0	0	0	0
-Delivers quality materials	0%	0	0	0	0
-Is experienced in our standards	0%	0	0	0	0
-Maintain good records	0%	0	0	0	0
-Anticipates our requirements	0%	0	0	0	0
TOTAL	100%		0		0
e fa N 4 DEIM r lal t		Actual	Score	Actual	Score
-Delivers in Full	0%	0	0	0	0
-Delivers on Schedule/at exactly time	0%	0	0	0	0
-Closes order quantities accurately	0%	0	0	0	0
-Delivers per instructions/keep	0%	0	0	0	0
-Has adequate delivery service	0%	0	0	0	0
-Packages properly	0%	0	0	0	0
TOTAL	100%		0		0
erf eigh		Actual	Score	Actual	*Score*
-Lead time	0%	0	0	0	0
-Is helpful in emergency	0%	0	0	0	0
-Will stock special items	0%	0	0	0	0
-Supplies catalogs/Technique Data	0%	0	0	0	0
-Supplies quotations promptly	0%	0	0	0	0
TOTAL	100%		0		0
ac		Actual	Score	Actual	Score
-Response time in case of Wrong	0%	0	0	0	0
(not match quality and un-spec)					
-Easy for Changeover	0%	0	0	0	0
TOTAL	50%		0		0
Per or e a ovation		Actual	Score	Actual	Score
-Continuous Improvement	0%	0	0	0	0
-New Product/New technology	0%	0	0	0	0
TOTAL	50%		0		0

Step 3 le Scores

Once it has determined the performance factors, the company must decide the scores per measure for each product categories. The company decides to evaluate for the most spending products in the last year after review from the Aberdeen research. It shows that the company should evaluate for the high spending (Table 3.7). Certainly, even limited

measurement of supplier performance is a step in the right direction. Focusing on critical suppliers or suppliers that constitute the largest portion of spending enables the company to identify and manage those performance issues that could have the most immediate and greatest impact on the company and perception in the market. However, this narrow focus overlooks lower tier suppliers or suppliers of seemingly non-critical goods and services that can impact an enterprise's cost structure, performance, or customer service.
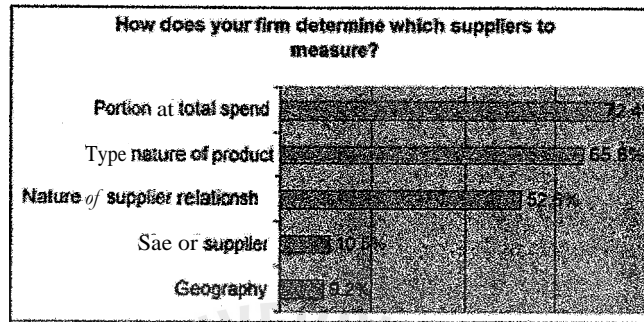
Table 3.7 How does the firm determine which supplier to measure?

5 Products categories are decided for evaluation; Bearing, Perforated sheet, Chain, Belts and Wire mesh are decided. After discussion Bearing is the first product to decide the score and evaluated, for bearing the company agrees that the most important performance factor is price due to the *same product brand name* so the different in price from each supplier has a direct effect to the company. The company can make up for deliveries that are not quite on time and even pay a little more if necessary, but it cannot compromise on quality. Therefore, the company decides to weight delivery and quality equally and to weight price as twice as important as the other two factors. For perforated sheet, the company also concern on price more than quality and delivery because most of our suppliers already implement for ISO9000 so the different in price is more effect to the company. The company decides to weight in the same evaluation system with Bearing.

For chain and belts product, the company also weighted the price performance twice from delivery performance and quality performance equally because of the brand of the product is the same and the quality of the product is also the same but with the different of the supplier then the price is the only one factor that will effect directly to the company performance. The company weighted the price performance for 40%, quality performance for 20% and delivery performance for 20% (Table 3.8).

It also develops a measurement formula for each performance factor. In working out the formulae, the company puts great effort into making them as objective as possible. The company adds the weight and measurement formula for each performance factor to the

rating form. The total of the weights must equal 1.00 or 100 percent. Then how to calculate with the number in the Weighted-point rated is decided below:

EVALUATION:

1.   (Weight x actual) = score

2.   (score/total score) * (% of weight) = Performance

Table 3.8 Weighted-Point rating for the 4 Product categories

Total Performance= 100%

Performance Factor: Price 40%	Weight	Actual	Score	Score	c al	Sco	Score
-Invoices at lowest price offered	40%	0	0		0	0	
-Has competitive price	35%	0	0		0	0	
-Invoices correctly	25%	0	0		0	0	
TOTAL	100%			0		0	
Performance Factor: **Quality** 20%	Weight	Actual	Score				
-Delivery complies with contractual	25%	0	0		0	0	
-Delivers quality materials	25%	0	0		0	0	
-Is experienced in our standards	20%	0	0		0	0	
-Maintain good records	20%	0	0		0	0	
-Anticipates our requirements	10%	0	0		0	0	
TOTAL	100%		0		0		0
Performance Factor: **Delivery** 20%	Weight	Actual	Score				
-Delivers in Full	30%	0	0		0	0	
-Delivers on Schedule/at exactly time	25%	0	0		0	0	
-Closes order quantities accurately	15%	0	0		0	0	
-Delivers per instructions/keep promises	15%	0	0		0	0	
-Has adequate delivery service	10%	0	0		0	0	
-Packages properly	5%	0	0		0		
TOTAL	100%			0%			0%
Performance Factor: Responsiveness	Weight	Actual	Score			core	
-Lead time	35%	0	0		0	0	
-Is helpful in emergency	25%	0	0		0	0	
-Will stock special items	20%	0	0		0	0	
-Supplies catalogs/Technique Data	10%	0	0		0	0	
-Supplies quotations promptly	10%	0	0		0	0	
Performance Factor: Flexibility 5%	Weight	Actual	Score		Actual	Score	
-Response time in case of Wrong Product (not match quality and un-spec)	30%	0	0		0		
-Easy for Changeover	20%	0	0		0	0	
TOTAL	5 0		0				
Performance Factor: innovation 5%	Weight		Score			core	
-Continuous Improvement	30%	0	0		0	0	
-New Product/New technology	20%	0	0		0	0	
Overall Sc	500%						

But for the last product category, wire mesh product, the company focuses most on quality because it has a great effect on the production process especially for the food and agriculture industry as they cannot compromise on low wire mesh quality. It will effect a bad result in the process or for the end product before supply to the consumers. So quality is the most important factor (40%) for wire mesh product and next the company weight

price performance is the second important factor (25%) and the third is delivery performance (15%) because with good quality the customers are also concerned more with the cost what they will spend for this product. For this product category, the brand of product has not been shown from the suppliers then the company has to review this from the experience of the company's executive and the company's sales persons from their past experience. (Table 3.9)

Table 3.9 Weighted-Point Rating for Wire mesh Product

Total Performance = 100%

Performance Factor: Price 25%	Weight	Actual.	Score	Score			Score
-Invoices at lowest price offered	40%	0	0		0		
-Has competitive price	35%	0	0		0	0	
-Invoices correctly	25%	0	0		0	0	
TOTAL	100%		0	0%			0%
Performance Factor: Quality	Weight	Actual	Score				
-Delivery complies with contractual	25%	0	0		0	0	
-Delivers quality materials	25%	0	0		0	0	
-Is experienced in our standards	20%	0	0		0	0	
-Maintain good records	20%	0	0		0	0	
-Anticipates our requirements	10%	0	0		0	0	
TOTAL	100%			0%			0%
Performance Factor: Delivery	eight	Actual					
-Delivers in Full	30%	0	0		0	0	
-Delivers on Schedule/at exactly	25%	0	0		0	0	
-Closes order quantities accurately	15%	0	0		0	0	
-Delivers per instructions/keep	15%	0	0		0	0	
-Has adequate delivery service	10%	0	0		0	0	
-Packages properly	5%	0	0		0	0	
TOTAL	100%						
Performance Factor	Weight	Actual	Score			Score	
-Lead time	35%	0	0		0	0	
-Is helpful in emergency	25%	0	0		0	0	
-Will stock special items	20%	0	0		0	0	
-Supplies catalogs/Technique Data	10%	0	0		0	0	
-Supplies quotations promptly	10%	0	0		0	0	
TOTAL	100%			0%			%
Performance Factor: Flexibility	Weight	Actual	Score				
-Response time in case of Wrong (not match quality and un-spec)	30%	0	0		0	0	
-Easy lot Changeover	20%	0	0		0	0	
TOTAL	50%						%
Performance Factor: innovation	Weight	Actual	Score		Actual	Score	
-Continuous Improvement	30%	0	0		0	0	
-New Product/New techn		0	0		0	0	
TOTAL							

* Actual performance (rating scale
   Full Score = 5

The company designed two tables (Table 3.8 and 3.9) to use in evaluating the performance of the suppliers with five product categories. The percentage of each factor will be different depending on the characteristic of each product category.

The company also determines the person who has responsibility to put the score to each supplier (Table 3.10). The company will compute the rating, list out the best performance of suppliers and then compare this to the percentage of spending that the company spent on them last year, with the score used to measure the suppliers based on the experience of each person because this is a new system the company has not implemented before. The best performance supplier for each product categories should be matched with the existing supplier that the company has spent for the last year to guarantee the right supplier being selected for the company.

Table 3.10 Name of person doing score rating	
Name	Function
Mr.Kamthorn Lawkittiwong	CEO
Mr.Attachai Lawkittiwong	Marketing Manager
Mr.Tossapol Lawkittiwong	Financial Manager
Mrs.Natcha Wongtawornchat	Purchase Officer

Ste 4 — Establish Overall Scoring System

The final step in setting up the weighted-point rating systems is to establish the overall scoring system. Long-term the Supply Management Department wants to set supplier performance standards quite high with nothing below 90% being acceptable, however, it realizes this will take time and work to achieve. It shares this concern with the company and points out that the system being implemented is the first time the company will be able to track supplier performance in a meaningful way. The company shares the concern and wants to be able to work with suppliers to gradually improve performance.

Therefore, it agrees to establish the following scoring system for now and to review it after a year's experience:

• 90% or higher as acceptable

• 75%-90% as **marginal**

• Less than 75% as **unacceptable**

The score has been weighted from the executives of the company, and then the supplier's performance is listed as acceptable, marginal or unacceptable, recognizing on the score the improvement strategies to implement after that.

4 EVALUATION RESULTS

4.1 Results

After putting scores in the evaluation form for each product category, the result of the performance is listed in the table below:

Bearing:

Summary result Supplier Selection(Best performance)

	Supplier1	Supplier2	Supplier3	Supplier4
Product **Bearing_from** CEO	92%	71%	72%	x
Product_Bearing_from Marketing	91%	76%	79%	x
Product_Bearing_from Finances	92%	69%	80%	x
Product **Bearing_from** Purchaser	93%	72%	76%	x

Table 4.1 Result for Bearing supplier's performance

Table 4.2 Last Year spending for Bearing

o Supplier1
Supplier2
ọ Supplier3
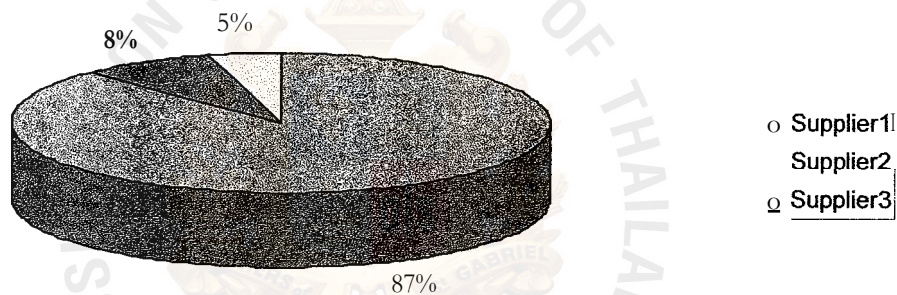
For bearing product: select **Supplier1** *as the key supplier*
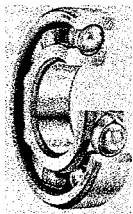
Bearing is the product used in a wide range of industries. It is the material part for all machinery in all industries that use it in their production line. With this evaluation the same brand of product from different suppliers appear in the evaluation method. After evaluating the performance of the suppliers (Table 4.1); the **supplier1** shows the best performance, and with the percentage of the last year spending (Table 4.2) it shows that the company selected the right supplier for this product category. The supplier 1 has the best performance in all criteria, the main criteria of price, quality and delivery are better than **supplier2** and **supplier3,** and the executives all agree to select the **supplier1** to be the main supplier for this product category. But with the score, the company also sees that it should have some criteria to improve the supplier 1 's performance even thought the **supplier1** has reached an acceptable supplier (90%) already. From the evaluation form, the company sees their *weakness* in delivery and responsiveness, so the company should discuss with them ways to improve both. With the evaluation

system, the company can recognize each factor that can improve the performance from each supplier. For the supplier1, the company will ask for improvement of delivery on schedule/at exactly time specified, lead time and helpfulness in emergencies. The executives weighted this factor in the lower performance rating score, so the better benefit to the company is to improve on this factor by closely working with supplier 1 as the key supplier.

Perforated Sheet:

Summary result_Supplier Selection(Best performance)

	Supplier1	Supplier2	Supplier3	Supplier4
Product Perforated Sheet from CEO	87%	78%	69%	57%
Product_Perforated_from Marketing	86%	76%	71%	56%
Product_Perforated_from Finances	95%	74%	66%	55%
Product_Perforated_from Purchaser	96%	86%	76%	58%

Table 4.3 Result for Perforated sheet supplier's performance

Table 4.4 Last Year spending for Perforated sheet
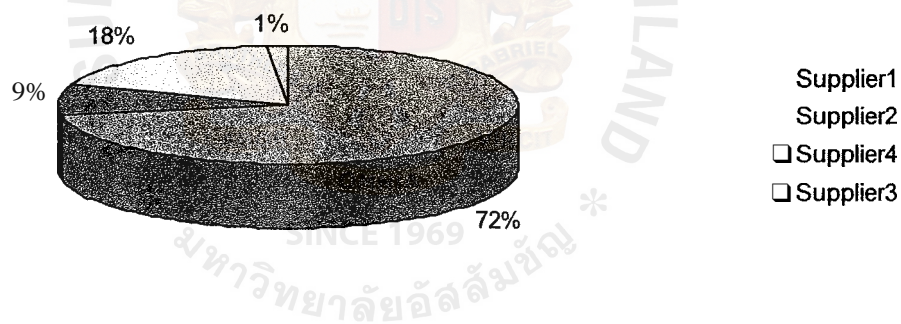
For Perforated Sheet product: select Supplier1 as the key supplier
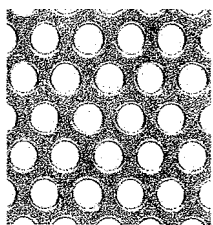
With this product category, we call **Perforated sheet.** The material can be steel, stainless, and aluminum. The standard material the company has in stock is perforated sheet made of steel and stainless with standard size 4'x8'. Most of the customers are the agricultural industry, automotive industry, mining industry, furniture industry, etc. After evaluating the performance of the suppliers (Table 4.3); the supplier1 is the best performer and with the percentage of the last year spending (Table 4.4), it shows that the company selected the right supplier for this product category again. The supplier1 has the better in price, quality and delivery which are the main criteria in evaluation. The supplier1 has the best

performance in all criteria and executives all agree to select the supplier 1 to be the main supplier for this product category. But with the score from CEO and Marketing manager, they see that it should have some criteria to improve on the **supplier1**'s performance if the company wants them to become an acceptable supplier (90%). From the evaluation form, the company sees their weakness is responsiveness so the company should have a discussion with them on ways to improve it. The *weakness* on responsiveness criteria is about "helpful in emergency and supplier quotation promptly", the response for the answer is that an emergency order is always missed. With that weak point, the company lose the chance to get the purchasing order from customers. The supplier relationship management might be involved to solve and/or improve on those criteria and on the future plan to guarantee benefits for both parties.

Chain:

Summary result_Supplier Selection(Best performance)

	Supplier1	Supplier2	Supplier3	Supplier4
Product_Chain_from CEO	85%	78%	76%	89%
Product_Chain_from Marketing	84%	79%	70%	88%
Product_Chain_from Finances	84%	77%	70%	89%
Product_Chain_from Purchaser	85%	77%	76%	89%

Table 4.5 Result for Chain supplier's performance

Table 4.6 Last Year spending for Chain

28%   25%
9%
38%

o Supplier1
o Supplier4
o Supplier3
o Supplier2
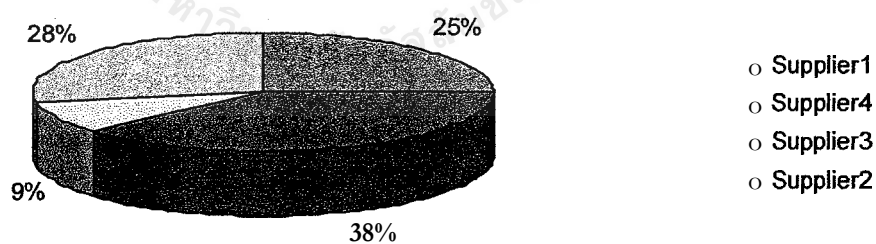
For Chain product: select Supplier 4 as the key supplier
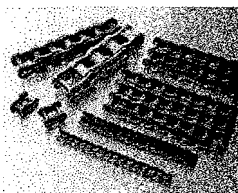
Chain for the picture here, the customers for this product are wide-ranging because all industries need this material to support their business as part of maintenance.

After evaluating the performance of the suppliers; the best supplier's performance is supplier 4, and with the percentage of the last year spending, it shows that

the company selected supplier 4 as the right supplier for this product category. Supplier 4 has been selected by 4 executives to be the key supplier after getting the best performance in this product category, but the difference between the performance for supplier 4 and supplier 1 is not too large so the company can review the performance of both suppliers to clearly identify the criteria that both can improve. So finally, the supplier which can improve its performance and reach the acceptable rate can be selected by the company as the key supplier for this product. The *weak* points of supplier 1 that give them less points than supplier 4 are about delivery and responsiveness criteria, so if supplier 1 can improve those criteria, it will benefit the company which will have 2 best performance suppliers for this product.

Belts:

Summary **result_Supplier Selection(Best** performance)

	Supplier!	Supplier2	Supplier3	Supplier4
Product Belts from CEO	86%	84%	76%	70%
Product_Belts_from Marketing	78%	77%	72%	66%
Product_Belts_from Finances	91%	89%	83%	69%
Product Belts from Purchaser	91%	89%	80%	68%

Table 4.7 Result for Belts supplier's performance

Table 4.8 Last year spending for Belts
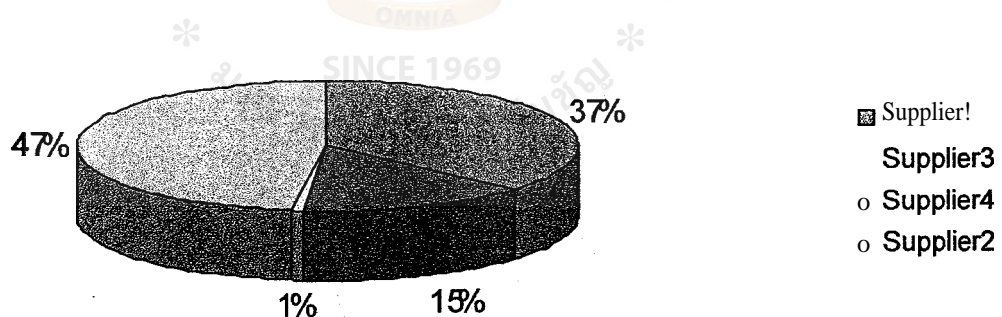
For Belts product: select Supplier] as the key supplier
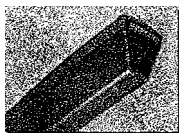
Belt is used in transmission in the manufacturing process; it is a part of maintenance for all industries. After evaluating the performance of Belt suppliers (Table 4.7); the **supplier1** has the best performance score from 4 executives but when compared to the spending last year (Table 4.8) it seems that the most spending is from **supplier2.** The company looked back for the reason and found that the company has to buy the material from supplier 1 in lot size as **10pcs** or

20pcs but with **supplier2,** the company can buy just only in **1pc.** With the small difference in the result, if the company wants to select the supplier with the best performance for this product, the company should select supplier 1 as the key supplier. But after looking at the evaluation result, supplier 2 has high enough performance to be the key supplier for the company also. The performance score of supplier 2 is close and over to 80% from three executives but there are some criteria that the supplier 2 should improve if they want to be the key supplier to the company for this product. The performance of the supplier 1 and the supplier 2 are not too different, only 1% or 2% different from the executives. With this small conflict, the company needs to review carefully this product category. From the evaluation; the difference from **supplier1** and **supplier2** is price performance and a small portion on delivery performance, but supplier 2 has got a better performance score for price performance. From the evaluation form; **supplier1** has 3 weakness criteria, not delivering on schedule, and does not have an adequate delivery service, and missed delivery in emergency cases, so the negotiations after the meeting should concentrate on these first.

Wire meshes (sus):

Summary result_Supplier Selection(Best performance)

	Supplier1	Supplier2	Supplier3	Supplier4
Product **Wiremesh** from CEO	79%	80%	90%	77%
Product_Wiremesh_from Marketing	79%	75%	**81%**	77%
Product_Wiremesh_from Finances	85%	85%	95%	85%
Product_Wiremesh_from Purchaser	85%	86%	96%	82%

Table 4.9 Result for Wiremesh supplier's performance

Table 4.10 Last Year spending for Wire mesh
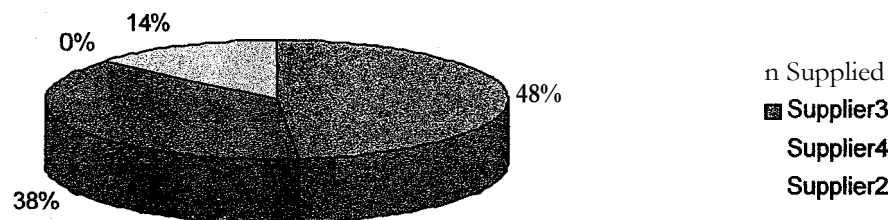
For Wire mesh product: select **Supplier3** *as the key supplier*

Wire mesh stainless, this product category has many sources. The main source for us is from Japan. The main purpose of using this product is to sort the size of rice, powder, and any kind of seed. The

main criteria for this product category are the quality of the product due to the effect of the production process and will directly affect the end consumers because this product is still in use for rice production. After evaluating the performance of the wire mesh supplier (Table 4.9); the supplier3 has the best performance for this product category but there is a conflict with the company spending most on the supplier1 (Table 4.10). The company has high spending on the supplier1 while the performance on the evaluation form shows that the supplier1's performance is the 2nd. The company makes an analysis to find the cause why the company spends most on the supplier1 with the 2nd performance supplier. The variety of products that the supplier1 has is the factor which makes the company spends on them more than spent for the supplier3. So the way to solve this is to classify the standard products the company can buy from the supplier3 and buy them, but for the product that is not on the list of the supplier3, the company has the choice to buy from another supplier who will offer the best quotation on quality, price and delivery.

5 CONCLUSIONS AND RECOMMENDATIONS

This report has described the design for a supplier evaluation system for the company, which has not been implemented before. Furthermore, more information from many printed sources has been reviewed to produce a conclusion for designing the criteria of supplier evaluation performance which is best suitable for the company and for each company's product category. This final chapter presents the conclusion of the project based on the results obtained from the previous chapter. Additionally, this chapter will give recommendations for the company that should focus on the real record of data and compute the data to use in score evaluation, it will better than evaluating from the past experience.

5.1 Conclusions

One of the reasons the company has adopted the supplier evaluation system is to realize the existing performance of the company's existing supplier performance. With the statement "you can not manage what you cannot measure" the company recognizes the importance of evaluating the performance of the company's existing suppliers, then look for the strengths to maintain and the weaknesses to improve. The company will recognize the existing supplier performance and select the supplier who has the best performance for each product category.

The company has adopted the supplier evaluation system to improve the company performance which will effect the customers. With the good or best performance from the company's suppliers, it will have a direct effect on the company if the company can provide good performance through the company's customers.

In order to successfully design the supplier evaluation system, the support of top level management is required. Moreover the metric or criteria is used for each product category of the company is different due to the characteristics of each product. With the emergence of a supplier evaluation system, the review of supplier performance has been clearly monitored and then each criteria for the weak point will show how improve.

In order to achieve the overall strategic and tactical supply chain objectives, decision making should be supported by integral evaluation of all suppliers from the company executives. The most efficient way to achieve high level target is to make sure that decisions made on supplier evaluation system are consistent with the overall goal. This can be done by appropriately setting the right metrics for the performance evaluation system.

With the supplier evaluation system, the company will recognize the supplier's performance visibility through monitoring the suppliers, and it is a simple act for them to drive performance improvement. With the evaluation system, the company can ask the

suppliers to meet the specific performance goal, not only achieve the specific goal, but can also go beyond, resulting in supplier improvement

Poor supplier performance will result in increased inventory, quality problem, high cost and slow deliveries. But with the supplier performance evaluation system, there is more closely managing and measuring of the supplier performance, and this will drive waste and inefficiency out of the business. And it will result in higher-quality suppliers and lower cost.

With the supplier performance evaluation system, the company can leverage its supply base. As usual there are more than 50 suppliers working with the company but with the supplier evaluation system the company will identify only the specific number of supplier that the company should work closely with. With the evaluation system the company will rely exactly on the 12 key suppliers for the main company product categories.

The exact goal of supplier evaluation system is supplier performance improvement. There is a positive effect on performance of simply measuring it. With the supplier evaluation, it leads to continuous improvement activities and actual supplier performance improvement. Both parties, supplier and the company, can identify areas of opportunity for improvement that can positively impact in the area of cost, quality, delivery, responsiveness, etc.

5.2 Recommendation

The conclusion drawn in previous section lead to the following recommendations:

• The supplier evaluation system should be used for monitoring the performance of the existing and potential suppliers to maintain the benefits to the company. The tool, based on the company's developed performance system, provides the ability to acknowledge the strength and weakness of the performance of the suppliers which the company has contacts with. The supplier's performance evaluation system should be use to evaluate monthly or quarterly, which will generate benefit to the company through maintaining good performance and identify problems which emerge from the supplier.

• Future Plan

From the evaluation results, the company will know who had the best performance from the past and then the company can select who should be the key suppliers to the company from each product category. The company will also be looking to improve the company performance through the improvement of supplier performance, and moreover the company is *looking for the new supplier (potential supplier)* to guarantee that the company has the right supplier for each product category. Moreover after reviewing the book, Keeping

Score, the company should plan to record the supplier performance by using Table 5.1 to assess the real situation, not only from past experience which the company use in this evaluation.

To record the existing measure, fill in the weighted-point rating: the company review the Keeping Score book, and then revise the chart for recording current measures for use appropriate with the characteristic of each product category of the company:

Table 5.1 Table to record the performance

	Measure				
	Name/ Description of Measure	Dated require for Calculation	Frequency of Measure	Responsibility for Measure	Purpose of the
TI w					
COST					
QUALITY					
OTHERS					

➢ *Name and Description of measure:* record a descriptive name and a short explanation of what is being measured.

➢ *Data required for calculation:* list the data elements that will be required as numerators and dominators to calculate the value of the measure.

➢ *Frequency of the measure:* list the minimum time frame for which the data will be accumulated and the calculation made. It is easy to add time periods together. However resist gathering data too frequently, which increases costs.

➢ *Responsibility for measuring:* list the individual (by position) responsible for recording the data, making the calculation, and either publishing or forwarding the results.

➢ *Purpose of the measure:* this is a concept, not the value. It should express why the information has been collected, in a way that lead to action and can be measured. For example, "to improve on-time delivery performance".

If the steps above are not enough to improve the performance of the suppliers, then the company will recognize that **collaboration** is another key for success. World class supplier

development requires a commitment to collaboration between customer and supplier. The commitment must be approached with mutual benefit in mind Effective supplier development is more than getting cost reductions for a particular part, because it means helping suppliers removes wasteful cost from their processes. The strategy should be win-win opportunities for both the buyer and supplier.

• Collaboration requires Commitment. With effective supplier development, the company looks at all of a supplier's process with the objective of eliminating waste and gaining improvement in quality, delivery, cycle time, and costs. Such action requires: share information, resources, and saving; and provide resources dedicated to identifying and closing **performance** gaps. The company will treat suppliers as if they were a department within the company.

• Collaboration requires Communication. It is one thing to have a well designed supplier development program; it is another thing to make sure that the program is well communicated and understood by the suppliers.

• Collaboration requires Measurement. The company wants all members in the supply chain to be strong and profitable, so the company must be sure that the suppliers are charging the right fees for their purchasing, processing, and conversion work. For the success in collaboration, sharing accurate costs is a policy, and cultural change that must occur.

• Collaboration requires Trust. Trust between the members in the supply chain and the involved personnel must be present before the necessary information sharing can and will take place.

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APPENDIX

		SUPPLIER 1		SUPPLIER 2			SUPPLIER 3			SUPPLIER 4		
Performance Factor: Price 40%	**Weight**	Actual	Score	Score	Actual	Score	Score	Actual	Score	Score	Actual	Score
-Invoices at lowest price	40%	5	2		3	1.2		3	1.2		0	0
-Has competitive price	35%	5	1.75		3	1.05		3	1.05		0	0
-Invoices correctly	%	5			4	1		4	1		0	0
	100%			40%	10	3.25	26%	10	3.25	26%	0	0	0%
Performance Factor: Quality 20%	**Weight**		Score		Actual	Score		Actual	Score		Actual	Score
-Delivery complies with contractual requirements	25%	5	1.25		5	1.25		4	1		0	0
-er al	25%	5	1.25		5	1.25		3	0.75		0	0
-Is experienced in our standards	20%	5	1		5	1		5	1		0	0
-Maintain good records	20%	5	1		4	0.8		4	0.8		0	0
-Anticipates our requirements	10	5			4	0.4		4	0.4		0	0
				20%	23	4.7	19%	20	3.95	16%	0	0	0%
Performance Factor: Delivery	**Weight**		Score		Actual	Score		Actual	Score		Actual	Score
-Delivers in Full	30%	5	1.5		3	0.9		4	1.2		0	0
-Delivers on Schedule/at. exactly time specified	25%		0.75		3	0.75		4	1		0	0
-es ies a ra	5		0.6		3	0.45		4	0.6		0	0
-Delivers per instructions/keep promises	5	4	0.6		4	0.6		4	0.6		0	0
-Has adequate delivery service	0%	3	0.3		1	0.1		1	0.1		0	0
-Packages properly	5%				2	0.1		2	0.1		0	0
	100%			16%	16	2.9	12%	19	3.6	14%	0	0	0%
Performance Factor: Responsiveness 10%	**Weight**				Actual	Score		Actual	Score		Actual	Score
-Lead time	35%		1.05		3	1.05		3	1.05		0	0
plu en e c	25%		0.75		2	0.5		3	0.75		0	0
stock special items	0%	5	1		3	0.6		5	1		0	0
-Supplies catalogs/Technic Data	0	5	0.5		5	0.5		4	0.4		0	0
	0				3	0.3		3	0.3		0	0
	100%			7%	16	2.95	6%	18	3.5	7%	0	0	0%
Performance Factor: Flexibility 5%	**Weight**	Actual	Score		Actual	Score		Actual	Score		Actual	Score
	30%		1		3	0.9		3	0.9		0	0
(not match quality and un-spec)												
-Easy for Changeover	%				5	1		4	0.8		0	0
	5			4%	8	1.9	4%	7	1.7	3%	0	0	0%
					Actual	Score		Actual	Score		Actual	Score
-Continuous Improvement	%				5	1.5		5	1.5		0	0
-New Product/New technology	%				5	1		5	1		0	0
				5%	10	2.5	5%	10	2.5	5%	0	0	0%
						71%			72%			0%

		SUPPLIER 1					SUPPLIER 2				

Performance Factor 40%	Weig	Ac	S			Actual		ore	Actual	Score	co
a o d	40%		1.		1	4			2	0.8	
pt.	35%	<		4	1.4	3	1)5				
-Invoices correctly	2			4		3	0 5		3	075.	0
					%		27			
Performance Factor:Qualtiy 20%		Actual						q	tu		
-Delivery complies with contractual requirements	25"	5	.25	4			1	4		
-Delivers quality materials	25"	5	z5	4			1	4		
-Is experienced in our standards	20"	5	1	5			1	4	08	
=Maintain good records	20%	5	4	08		4	08	7	08	
-Anticipates our requirements	10"	4	4	4	3	03		03		
	1			3.2	20				n
Performance Factor **Delivery**	W	a	c				Actual		
-Delivers in Full	30"	5	1.5		1.2	4		4	12	
-Delivers or Schedule/at exactly time **specified**	25%	5	1.25	3	0.75	2	0.5	2	0.5	
-Closes order quantities accurately	15%	5	0.75	3	045	3		4	0.6	
-Delivers per instructions/keep promises	15%	4	.6	4	.6	3	0.45	3	-	
-I-las adequate delivery service	10%		0..	3	.3	1		1		
-Packages properly	%		02		0	3	5			1
	00				3		3		
Performance Factor Responsiveness 10%	Weight	Actual							Actual	Score.
	5"	7		mm	1 05	3	1.	3	1.05	
-Is h ur o e	25"	3	5		0.7	2	3	1	025	
Wil s er	20"	5		m	.6	7	0.8	1	0	
-Supplies catalogs/Technic Data	10%	5	05	m	.5	5	0.5		0.4	
-Supplies quotations promptly	10%		0.3		0.4	3				
TOTAL	00%		3		%	8	6 ¼		
Performance Factor: Flexibility 5%	Weight	Actual	SC						Actual	Score
-Response time reason **Wrong Product**	30"		1		12	4	2			CA
(not-match quality and un-spec)									
-Easy for Changeover	20%					4			
TOTAL			25		3		4%	-	3%
Performance Factor: Innovation 5%								
-Continuous **improvement**	%			4				
-New Product/New technology	20%	3		4			
	50%						

Total Performance = 100%

Performance Factor: Price 40%	Weight	SUPPLIER 1			SUPPLIER 2			SUPPLIER 3			SUPPLIER 4		
		Actual	Score	Score	Actual	Score	Score	Actual	Score	Score	Actual	Score	Score
-Invoices at lowest price offerd	40%	5	2		4	1.6		4	1.6		5	2	
-Has competitive price	35%	5	1.75		4	1.4		4	1.4		5	1.75	
-Invoices correctly	25%	5	1.25		4	1		4	1		5	1.25	
TOTAL	100%	15	5	40%	12	4	32%	12	4	32%	15	5	40%
Performance Factor: Qualtiy 20%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Delivery complies with contractual requirements	25%	4	1		4	1		4	1		4	1	
-Delivers quality materials	25%	4	1		4	1		4	1		4	1	
-Is experienced in our standards	20%	4	0.8		4	0.8		4	0.8		4	0.8	
-Maintain good records	20%	4	0.8		4	0.8		4	0.8		4	0.8	
-Anticipates our requirements	10%	4	0.4		3	0.3		4	0.4		4	0.4	
TOTAL	100%	20	4	16%	19	3.9	16%	20	4	16%	20	4	16%
Performance Factor: Delivery 20%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Delivers in Full	30%	4	1.2		4	1.2		3	0.9		4	1.2	
-Delivers on Schedule/at exactly time specified	25%	4	1		4	1		3	0.75		4	1	
-Closes order quantities accurately	15%	4	0.6		4	0.6		4	0.6		4	0.6	
-Delivers per instructions/keep promises	15%	4	0.6		3	0.45		4	0.6		4	0.6	
-Has adequate delivery service	10%	4	0.4		3	0.3		4	0.4		4	0.4	
-Packages properly	5%	4	0.2		3	0.15		4	0.2		4	0.2	
TOTAL	100%	24	4	16%	21	3.7	15%	22	3.45	14%	24	4	16%
Performance Factor: Responsiveness 10%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Lead time	35%	4	1.4		3	1.05		3	1.05		4	1.4	
-Is helpful in emergency	25%	3	0.75		3	0.75		3	0.75		4	1	
-Will stock special items	20%	4	0.8		4	0.8		3	0.6		4	0.8	
-Supplies catalogs/Technic Data	10%	4	0.4		4	0.4		4	0.4		4	0.4	
-Supplies quotations promptly	10%	5	0.5		4	0.4		4	0.4		4	0.4	
TOTAL	100%	20	3.85	8%	18	3.4	7%	17	3.2	6%	20	4	8%
Performance Factor: Flexibility 5%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Response time in case of Wrong Product (not match quality and un-spec)	30%	2	0.6		4	1.2		3	0.9		4	1.2	
-Easy for Changeover	20%	2	0.4		4	0.8		4	0.8		4	0.8	
TOTAL	50%	4	1	2%	8	2	4%	7	1.7	3%	8	2	4%
Performance Factor: Innovation 5%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Continuous Improvement	30%	3	0.9		5	1.5		5	1.5		5	1.5	
-New Product/New technology	20%	3	0.6		5	1		4	0.8		5	1	
TOTAL	50%	6	1.5	3%	10	2.5	5%	9	2.3	5%	10	2.5	5%
Overall Score	500%		85%			78%			76%			89%	

* Actual performance (rating scale 1-5)

Full Score = 5

ก. ฉ ๕๗

Total Performance = 100%

Performance Factor: Price 40%	Weight	Actual	Score	Score	Actual	Score	Score	Actual	Score	Score	Actual	Score	Score
		SUPPLIER L			SUPPLIER 2			SUPPLIER 3			SUPPLIER 4		
-Invoices at lowest price offerd	40%	5	2		5	2		3	1.2		3	1.2	
-Has competitive price	35%	4	1.4		4	1.4		3	1.05		3	1.05	
-Invoices correctly	25%	4	1		5	1.25		4	1		3	0.75	
TOTAL	100%	13	4.4	35%	14	4.65	37%	10	3.25	26%	9	3	24%
Performance Factor: Qualtiy 20%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Delivery complies with contractual requirements	25%	5	1.25		5	1.25		5	1.25		5	1.25	
-Delivers quality materials	25%	5	1.25		5	1.25		5	1.25		5	1.25	
-Is experienced in our standards	20%	5	1		5	1		5	1		5	1	
-Maintain good records	20%	4	0.8		4	0.8		4	0.8		4	0.8	
-Anticipates our requirements	10%	4	0.4		3	0.3		4	0.4		4	0.4	
TOTAL	100%	23	4.7	19%	22	4.6	18%	23	4.7	19%	23	4.7	19%
Performance Factor: Delivery 20%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Delivers in Full	30%	4	1.2		4	1.2		4	1.2		4	1.2	
-Delivers on Schedule/at exactly time specified	25%	3	0.75		4	1		4	1		3	0.75	
-Closes order quantities accurately	15%	5	0.75		4	0.6		4	0.6		3	0.45	
-Delivers per instructions/keep promises	15%	5	0.75		4	0.6		4	0.6		3	0.45	
-Has adequate delivery service	10%	2	0.2		2	0.2		4	0.4		3	0.3	
-Packages properly	5%	4	0.2		4	0.2		4	0.2		3	0.15	
TOTAL	100%	23	3.85	15%	22	3.8	15%	24	4	16%	19	3.3	13%
Performance Factor: Responsiveness 10%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Lead time	35%	3	1.05		3	1.05		3	1.05		3	1.05	
-Is helpful in emergency	25%	3	0.75		2	0.5		3	0.75		3	0.75	
-Will stock special items	20%	5	1		3	0.6		5	1		3	0.6	
-Supplies catalogs/Technic Data	10%	5	0.5		4	0.4		5	0.5		4	0.4	
-Supplies quotations promptly	10%	5	0.5		4	0.4		5	0.5		4	0.4	
TOTAL	100%	21	3.8	8%	16	2.95	6%	21	3.8	8%	17	3.2	6%
Performance Factor: Flexibility 5%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Response time in case of Wrong Product (not match quality and un-spec)	30%	4	1.2		3	0.9		4	1.2		4	1.2	
-Easy for Changeover	20%	4	0.8		4	0.8		4	0.8		3	0.6	
TOTAL	50%	8	2	4%	7	1.7	3%	8	2	4%	7	1.8	4%
Performance Factor: Innovation 5%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Continuous Improvement	30%	5	1.5		4	1.2		4	1.2		4	1.2	
-New Product/New technology	20%	5	1		4	0.8		4	0.8		4	0.8	
TOTAL	50%	10	2.5	5%	8	2	4%	8	2	4%	8	2	4%
Overall Score	500%		86%			84%			76%			70%	

* Actual performance (rating scale 1-5)

Full Score = 5

Total Performance = 100%

Performance Factor: Price 25%	Weight	SUPPLIER 1			SUPPLIER 2			SUPPLIER 3			SUPPLIER 4		
		Actual	Score	Score	Actual	Score	Score	Actual	Score	Score	Actual	Score	Score
-Invoices at lowest price offerd	40%	5	2		4	1.6		5	2		4	1.6	
-Has competitive price	35%	5	1.75		3	1.05		4	1.4		4	1.4	
-Invoices correctly	25%	5	1.25		4	1		4	1		4	1	
TOTAL	100%	15	5	25%	11	3.65	18%	13	4.4	22%	12	4	20%
Performance Factor: Qualtiy 40%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Delivery complies with contractual requirements	25%	3	0.75		5	1.25		5	1.25		4	1	
-Delivers quality materials	25%	3	0.75		5	1.25		5	1.25		4	1	
-Is experienced in our standards	20%	3	0.6		5	1		5	1		4	0.8	
-Maintain good records	20%	5	1		4	0.8		5	1		4	0.8	
-Anticipates our requirements	10%	5	0.5		3	0.3		4	0.4		3	0.3	
TOTAL	100%	19	3.6	29%	22	4.6	37%	24	4.9	39%	19	3.9	31%
Performance Factor: Delivery 15%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Delivers in Full	30%	4	1.2		4	1.2		5	1.5		4	1.2	
-Delivers on Schedule/at exactly time specified	25%	4	1		4	1		4	1		3	0.75	
-Closes order quantities accurately	15%	4	0.6		4	0.6		4	0.6		4	0.6	
-Delivers per instructions/keep promises	15%	4	0.6		4	0.6		4	0.6		4	0.6	
-Has adequate delivery service	10%	3	0.3		3	0.3		4	0.4		3	0.3	
-Packages properly	5%	3	0.15		4	0.2		4	0.2		4	0.2	
TOTAL	100%	22	3.85	12%	23	3.9	12%	25	4.3	13%	22	3.65	11%
Performance Factor: Responsiveness 10%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Lead time	35%	3	1.05		3	1.05		4	1.4		3	1.05	
-Is helpful in emergency	25%	3	0.75		3	0.75		3	0.75		3	0.75	
-Will stock special items	20%	4	0.8		3	0.6		5	1		3	0.6	
-Supplies catalogs/Technic Data	10%	4	0.4		4	0.4		5	0.5		4	0.4	
-Supplies quotations promptly	10%	3	0.3		3	0.3		5	0.5		4	0.4	
TOTAL	100%	17	3.3	7%	16	3.1	6%	22	4.15	8%	17	3.2	6%
Performance Factor: Flexibility 5%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Response time in case of Wrong Product (not match quality and un-spec)	30%	3	0.9		3	0.9		3	0.9		4	1.2	
-Easy for Changeover	20%	4	0.8		4	0.8		4	0.8		4	0.8	
TOTAL	50%	7	1.7	3%	7	1.7	3%	7	1.7	3%	8	2	4%
Performance Factor: Innovation 5%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Continuous Improvement	30%	4	1.2		4	1.2		4	1.2		4	1.2	
-New Product/New technology	20%	4	0.8		4	0.8		4	0.8		4	0.8	
TOTAL	50%	8	2	4%	8	2	4%	8	2	4%	8	2	4%
Overall Score	500%		79%			80%			90%			77%	

* Actual performance (rating scale 1-5)
Full Score = 5

Performance Factor: Price		Actual	Sco					Actual	Score	e
			s							
SUPPLIER 1										
-Invoices at lowest price Weal	40%	s	2		1 6	3	1.2	0	0	
-I las competitive price	35%	5	75	4		4	1.7	O	0	
-Invoices correctly	5%	5	1.25	4		4			0	
		0			3				0	
Performance Factor Qualtiy 20%		Veigl						Ts		
	5%	5	1.25	5	1 25	5	1Z	O	O	
-Delivers quality materials	25%	5	5	5	1	5	1 5	O	O	
-is experienced in our standards	0%	5	1	5	1	5	1	O	O	
-Maintain good records	0%	5	1	4	0	4	0	O	0	
-Anticipates our requirements	10%	5			0.5	4			0	
TOT	100%					9				
Performance Factor: Delivery 20%		Weight						Actual		
-Delivers in	30%	4	1 2	3		4	1.2	O	0	
-Delivers on Schedule/at exactly time specified	5%	3	0.75	3	0.5	4		0	0	
-loses order quantities accurately	15%	4	0.6	3	0.45	4	0.6	0	0	
-Delivers per instructions/keep promises	15%	4	0.6	4		4	0.6	0	0	
-Has adequate delivery service	10		0.2		0.1	1	O	0	0	
-Packages properly	5%	5	5		0	2		0	0	
TOTAL	100%					19		0		
Performance Factor: Responsiveness 10%					8			AV	0	
-Lead time	35		1.0	Z	0.7		1 0	0	O	
	5%		1	Z	0	4	1	0	O	
-I es cal e	%	5	1	Z	04	5	1	0	O	
-Supplies catalogs/Technic Data	1	5	05	5	05	5	0.5	0	O	
-Supplies quotations promptly	10%	5	5		03	3	03		0	
TOTAL	100%				5				0	
Performance Factor: Flexibility 5%		WGi ht	al					Actual	Sc	
-Response time in case of Wrong Product	40%				0		1		0	
(not match quality and un-spec)										
-Easy for Changeover	20%									
						Z		Actual		
Performance Factor: Innovation 5%										
-Continuous improvement	%									
-New Product/New technology										

Actual performance (rating scale 1-5)

Full Score = 5

Total Performance = 100%		SUPPLIER 1			SUPPLIER 2			SUPPLIER 3			SUPPLIER 4		
Performance Factor: Price 40%	Weight	Actual	Score	Score	Actual	Score	Score	Actual	Score	Score	Actual	Score	Score
-Invoices at lowest price offerd	40%	4	1.6		4	1.6		4	1.6		2	0.8	
-Has competitive price	35%	4	1.4		4	1.4		3	1.05		2	0.7	
-Invoices correctly	25%	4	1		3	0.75		3	0.75		3	0.75	
TOTAL	100%	12	4	32%	11	3.75	30%	10	3.4	27%	7	2.25	18%
Performance Factor: Qualtiy 20%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Delivery complies with contractual requirements	25%	5	1.25		4	1		5	1.25		4	1	
-Delivers quality materials	25%	5	1.25		4	1		4	1		4	1	
-Is experienced in our standards	20%	5	1		5	1		5	1		4	0.8	
-Maintain good records	20%	5	1		4	0.8		4	0.8		4	0.8	
-Anticipates our requirements	10%	4	0.4		4	0.4		3	0.3		3	0.3	
TOTAL	100%	24	4.9	20%	21	4.2	17%	21	4.35	17%	19	3.9	16%
Performance Factor: Delivery 20%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Delivers in Full	30%	5	1.5		4	1.2		4	1.2		4	1.2	
-Delivers on Schedule/at exactly time specified	25%	5	1.25		3	0.75		2	0.5		2	0.5	
-Closes order quantities accurately	15%	5	0.75		4	0.6		3	0.45		4	0.6	
-Delivers per instructions/keep promises	15%	4	0.6		4	0.6		3	0.45		3	0.45	
-Has adequate delivery service	10%	4	0.4		3	0.3		1	0.1		1	0.1	
-Packages properly	5%	4	0.2		3	0.15		3	0.15		3	0.15	
TOTAL	100%	27	4.7	19%	21	3.6	14%	16	2.85	11%	17	3	12%
Performance Factor: Responsiveness 10%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Lead time	35%	4	1.4		3	1.05		3	1.05		3	1.05	
-Is helpful in emergency	25%	3	0.75		3	0.75		2	0.5		1	0.25	
-Will stock special items	20%	5	1		3	0.6		4	0.8		1	0.2	
-Supplies catalogs/Technic Data	10%	5	0.5		5	0.5		5	0.5		4	0.4	
-Supplies quotations promptly	10%	3	0.3		4	0.4		3	0.3		3	0.3	
TOTAL	100%	20	3.95	8%	18	3.3	7%	17	3.15	6%	12	2.2	4%
Performance Factor: Flexibility 5%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Response time in case of Wrong Product (not match quality and un-spec)	30%	4	1.2		4	1.2		4	1.2		3	0.9	
-Easy for Changeover	20%	5	1		5	1		5	1		2	0.4	
TOTAL	50%	9	2.2	4%	9	2.2	4%	9	2.2	4%	5	1.3	3%
Performance Factor: Innovation 5%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Continuous Improvement	30%	3	0.9		4	1.2		4	1.2		4	1.2	
-New Product/New technology	20%	3	0.6		4	0.8		4	0.8		3	0.6	
TOTAL	50%	6	1.5	3%	8	2	4%	8	2	4%	7	1.8	4%
Overall Score	100%		86%			76%			71%			56%	

* Actual performance (rating scale 1-5)

Full Score = 5

		SUPPLIER 1			SUPPLIER 2			SUPPLIER 3			SUPPLIER 4		
Performance Factor: Price 40%	Weight	t	Score	Score	Actual	Score	Score	Actual	Score	Score	Actual	Score	Score
	40%	5			4	1.6		3	1.2		5	2	
-Has competitive price	35	5	5		4	1.4		3	1.05		5	1.75	
-Invoices correctly	25%		5		4	1		4	1		5	1.25	
TOTAL		0		40%	12	4	32%	10	3.25	26%	15	5	40%
Performance Factor: Quality 20%	Weight				Actual	Score		Actual	Score		Actual	Score	
-Delivery complies with contractual requirements	25%				4	1		4	1		4	1	
-Delivers quality materials	25%	4			4	1		4	1		4	1	
-Is experienced in our standards	20%	4	8		4	0.8		4	0.8		4	0.8	
-Maintain good records	20	4	8		4	0.8		4	0.8		4	0.8	
-Anticipates our requirements	10%	5			4	0.4		4	0.4		4	0.4	
TOTAL				16%	20	4	16%	20	4	16%	20	4	16%
Performance Factor: Delivery 20%	Weight		Score		Actual	Score		Actual	Score		Actual	Score	
	50%	5	5		5	1.5		4	1.2		4	1.2	
-Delivers on Schedule/at exactly time specified	25		0.75		4	1		3	0.75		4	1	
-Closes order quantities accurately	15	5	5		4	0.6		4	0.6		4	0.6	
-Delivers per instructions/keep promises	15%	4	6		4	0.6		4	0.6		4	0.6	
-Has adequate delivery service	10%	3			4	0.4		3	0.3		4	0.4	
-Packages properly	5%	3			4	0.2		4	0.2		4	0.2	
TOTAL	100%	21	3.75	15%	25	4.3	17%	22	3.65	15%	24	4	16%
Performance Factor: Responsiveness 10%	Weight	Actual			Actual	Score		Actual	Score		Actual	Score	
-Lead	35%	3			3	1.05		3	1.05		4	1.4	
-Response time urgent	25%		0.75		2	0.5		3	0.75		4	1	
-Stock ready in store	20%	3			3	0.6		3	0.6		4	0.8	
-Supplies catalogs/Technic Data	10%	4	0.4		4	0.4		4	0.4		4	0.4	
-Supplies quotations promptly	10%				4	0.4		4	0.4		4	0.4	
TOTAL			*	6%	16	3.95	6%	17	3.2	6%	20	4	8%
Performance Factor: Flexibility 5%					Actual	Score		Actual	Score		Actual	Score	
-Response time in case of Wrong Product	%	4			3	0.9		3	0.9		4	1.2	
(not match quality and un-spec)													
-Easy for Changeover		3			4	0.8		4	0.8		4	0.8	
TOTAL		Actual		4%	7	1.7	3%	7	1.7	3%	8	2	4%
Performance Factor: Innovation 5%		Actual			Actual	Score		Actual	Score		Actual	Score	
-Continuous Improvement	%				4	1.2		4	1.2		4	1.2	
-New Product/New technology	%				4	0.8		4	0.8		4	0.8	
			-	3%	8	2	4%	8	2	4%	8	2	4%
Overall Score	500%		84%			79%			70%			88%	

* Ac___ nce (rating scale 1-5)

_core = 5

Belts_Mr.Attachai

Performance Factor: Price 40%	Weight	SUPPLIER 1 Actual	Score	Score	SUPPLIER 2 Actual	Score	Score	SUPPLIER 3 Actual	Score	Score	SUPPLIER 4 Actual	Score	Score
-Invoices at lowest price offerd	40%	4	1.6		4	1.6		3	1.2		3	1.2	
-Has competitive price	35%	4	1.4		4	1.4		3	1.05		3	1.05	
-Invoices correctly	25%	4	1		5	1.25		4	1		3	0.75	
TOTAL	100%	12	4	32%	13	4.25	34%	10	3.25	26%	9	3	24%
Performance Factor: Qualtiy 20%	**Weight**	**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**	
-Delivery complies with contractual requirements	25%	4	1		4	1		4	1		4	1	
-Delivers quality materials	25%	4	1		4	1		4	1		4	1	
-Is experienced in our standards	20%	4	0.8		4	0.8		4	0.8		4	0.8	
-Maintain good records	20%	4	0.8		4	0.8		4	0.8		4	0.8	
-Anticipates our requirements	10%	3	0.3		3	0.3		4	0.4		3	0.3	
TOTAL	100%	19	3.9	16%	19	3.9	16%	20	4	16%	19	3.9	16%
Performance Factor: Delivery 20%	**Weight**	**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**	
-Delivers in Full	30%	4	1.2		4	1.2		4	1.2		4	1.2	
-Delivers on Schedule/at exactly time specified	25%	3	0.75		3	0.75		4	1		3	0.75	
-Closes order quantities accurately	15%	5	0.75		4	0.6		4	0.6		3	0.45	
-Delivers per instructions/keep promises	15%	5	0.75		4	0.6		4	0.6		3	0.45	
-Has adequate delivery service	10%	2	0.2		2	0.2		3	0.3		3	0.3	
-Packages properly	5%	4	0.2		4	0.2		4	0.2		3	0.15	
TOTAL	100%	23	3.85	15%	21	3.55	14%	23	3.9	16%	19	3.3	13%
Performance Factor: Responsiveness 10%	**Weight**	**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**	
-Lead time	35%	3	1.05		3	1.05		3	1.05		3	1.05	
-Is helpful in emergency	25%	2	0.5		2	0.5		3	0.75		3	0.75	
-Will stock special items	20%	4	0.8		3	0.6		3	0.6		3	0.6	
-Supplies catalogs/Technic Data	10%	4	0.4		4	0.4		4	0.4		4	0.4	
-Supplies quotations promptly	10%	4	0.4		4	0.4		4	0.4		4	0.4	
TOTAL	100%	17	3.15	6%	16	2.95	6%	17	3.2	6%	17	3.2	6%
Performance Factor: Flexibility 5%	**Weight**	**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**	
-Response time in case of Wrong Product (not match quality and un-spec)	30%	4	1.2		3	0.9		4	1.2		3	0.9	
-Easy for Changeover	20%	4	0.8		4	0.8		4	0.8		3	0.6	
TOTAL	50%	8	2	4%	7	1.7	3%	8	2	4%	6	1.5	3%
Performance Factor: Innovation 5%	**Weight**	**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**	
-Continuous Improvement	30%	5	1.5		4	1.2		4	1.2		4	1.2	
-New Product/New technology	20%	5	1		4	0.8		4	0.8		4	0.8	
TOTAL	50%	10	2.5	5%	8	2	4%	8	2	4%	8	2	4%
Overall Score	500%		78%			77%			72%			66%	

* Actual performance (rating scale 1-5)

Full Score = 5

Wiremesh_Mr.Attachai

SUPPLIER 1   SUPPLIER 2

Performance Factor: Price 25%	Weight	Actual	Score		S	c			Actual	Score	
	40%	S	2	4	16				4	1.6	
-Has competitive price				3	1				4	1.4	
correctly				4	1					1	
				50	11						
Performance Factor: Qualtiy 40%		A					L		Actual		
-Delivery complies with contractual requirements				4	4				4		
-Deliver quality materials				4	à				4		
-Is experienced in our standards			0.6	4	0	a	0		4	0.8	
-Maintain good records			0.8	4	0	4	0		4	0.8	
-Anticipates our requirements				3	0	4					
						20	2				
Performance Factor: Delivery 15%		Actual	e							Score	
-Delivers				4	5				4	1.2	
-Delivers on Schedule/at exactly time specified			0.75	4	4				3	0.75	
-Closes order quantities accurately			0.6	4	0	4	0.		4	0.6	
-Delivers per instructions/keep promises				4	0	a	0.		4	0.	
adequate delivery service				3	0	a	0.4		3	0.	
					0	à	0.2			0.2	
			Score	3		25			Actual	Score	
				3	4				3	1.05	
-Is helpful in emergency			0.75	3	0.	3	0.		3	0.75	
-Will stock special items			0.8	3	0.	5			3	0.6	
-Supplies catalogs/Technic Data			0.4	4	0.	5	0.		4	0.4	
-Supplies quotations promptly				en	0.	5	0				
Performance Factor: Flexibility 504)		t							Actual	Score I	
-Response time in case of Wrong Product					0		0		4	1.2 1	
(not match quality and un-spec)									4		
-Easy for Changeover **101 d**						4	0		4		
					%		1				
Performance Factor: Innovation 5%									Actual	Score	
-Continuous improvement									4	1.2	
-New Product/New technology	20%	4							<		

core
* Actual performance (rating scale
Full Score = 5

Total Performance= 100%

Performance Factor: Price 40%	Weight	SUPPLIER 1 Actual	Score	Score	SUPPLIER 2 Actual	Score	Score	R 3 Actual	Score	Score	SUPPLIER 4 Actual	Score	Score
		5	2		5	1.2		4	1.6		0	0	
–Has competitive price	35%	5	75		5	1.05		4	1.4		0	0	
–Invoices correctly	25%		5		4	1		4	1		0	0	
	100% m			40%	10	3.25	26%	12	4	32%	0	0	0%
Performance Factor: Qualtiy 2p%	**Weight**		Actual Score		Actual	Score		Actual	Score		Actual	Score	
		5	1.25		5	1.5		5	1.25		0	0	
-Delivers quality materials	25	5	25		5	1.25		4	1		0	0	
-Is experienced in our standards	20%	5	1		4	0.8		3	0.6		0	0	
-Maintain good records	20%	5	1		4	0.8		4	0.8		0	0	
-Anticipates our requirements	10%	5			4	0.4		4	0.4		0	0	
TOTAL				20%	22	4.5	18%	20	4.05	16%	0	0	0%
Performance Factor: Delivery 20%	**W h**		Actual Score		Actual	Score		Actual	Score		Actual	Score	
-Delivers in	30%	4	2		3	0.9		4	1.2		0	0	
-Delivers on Schedule/at exactly time specified	25%	3	75		3	0.5		4	1		0	0	
-Closes order quantities accurately	5%	4	6		3	0.45		4	0.6		0	0	
-Delivers per instructions/keep promises	5	0	6		4	0.6		4	0.6		0	0	
-Has adequate delivery service	10%	3	3		1	0.1		2	0.2		0	0	
-Packages properly	5		1		2	0.1		2	0.1		0	0	
TOTAL	10			14%	16	2.9	12%	20	3.7	15%	0	0	0%
Performance Factor: Responsiveness 10%	e ht	Actual	5		Actual	Score		Actual	Score		Actual	Score	
-Lead time	35%	1	05		2	0.7		3	1.05		0	0	
-Is helpful in emergency	25%	4	1		2	0.5		3	0.75		0	0	
-Will stock special items	20%	5	1		2	0.4		5	1		0	0	
-Supplies catalogs/Technic Data	10%	5	5		5	0.5		5	0.5		0	0	
-Supplies quotations promptly	10%				3	0.3		3	0.3		0	0	
TOTAL	100%	2		8%	14	2.4	5%	19	3.6	7%	0	0	0%
Performance Factor: Flexibility 5%	**Weight**		Actual Score		Actual	Score		Actual	Score		Actual	Score	
-Response time in case of Wrong Product (not match quality and un-spec)	50%		1		3	0.9		4	1.2		0	0	
-Easy for Changeover	%				5	1		5	1		0	0	
TOTAL	An % gh	Actual		4%	8	1.9	4%	9	2.2	4%	0	0	0%
Performance Factor: Innovation 5%		Actual			Actual	Score		Actual	Score		Actual	Score	
-Continuous improvement					5	1.5		5	1.5		0	0	
-New Product/New technology	20%	5			5	1		5	1		0	0	
		10	2,S	5%	10	2.5	5%	10	2.5	5%	0	0	0%
Score	100%					69%			80%			0%	

* Actual performance (rating scale 1-5)

Full Score = 5

Total Performance = 100%

Performance Factor: Price 40%	Weight	SUPPLIER 1			SUPPLIER 2			SUPPLIER 3			SUPPLIER 4		
		Actual	Score	Score	Actual	Score	Score	Actual	Score	Score	Actual	Score	Score
-Invoices at lowest price offerd	40%	5	2		4	1.6		3	1.2		2	0.8	
-Has competitive price	35%	5	1.75		4	1.4		3	1.05		2	0.7	
-Invoices correctly	25%	5	1.25		3	0.75		3	0.75		3	0.75	
TOTAL	100%	15	5	40%	11	3.75	30%	9	3	24%	7	2.25	18%
Performance Factor: Qualtiy 20%	**Weight**	**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**	
-Delivery complies with contractual requirements	25%	5	1.25		4	1		4	1		4	1	
-Delivers quality materials	25%	5	1.25		4	1		4	1		4	1	
-Is experienced in our standards	20%	5	1		4	0.8		4	0.8		4	0.8	
-Maintain good records	20%	5	1		4	0.8		4	0.8		4	0.8	
-Anticipates our requirements	10%	4	0.4		4	0.4		3	0.3		3	0.3	
TOTAL	100%	24	4.9	20%	20	4	16%	19	3.9	16%	19	3.9	16%
Performance Factor: Delivery 20%	**Weight**	**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**	
-Delivers in Full	30%	5	1.5		4	1.2		4	1.2		3	0.9	
-Delivers on Schedule/at exactly time specified	25%	5	1.25		3	0.75		2	0.5		2	0.5	
-Closes order quantities accurately	15%	5	0.75		3	0.45		3	0.45		3	0.45	
-Delivers per instructions/keep promises	15%	5	0.75		3	0.45		3	0.45		3	0.45	
-Has adequate delivery service	10%	5	0.5		3	0.3		1	0.1		1	0.1	
-Packages properly	5%	4	0.2		3	0.15		3	0.15		3	0.15	
TOTAL	100%	29	4.95	20%	19	3.3	13%	16	2.85	11%	15	2.55	10%
Performance Factor: Responsiveness 10%	**Weight**	**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**	
-Lead time	35%	4	1.4		3	1.05		3	1.05		3	1.05	
-Is helpful in emergency	25%	3	0.75		3	0.75		2	0.5		1	0.25	
-Will stock special items	20%	5	1		3	0.6		4	0.8		1	0.2	
-Supplies catalogs/Technic Data	10%	5	0.5		5	0.5		5	0.5		4	0.4	
-Supplies quotations promptly	10%	3	0.3		4	0.4		3	0.3		3	0.3	
TOTAL	100%	20	3.95	8%	18	3.3	7%	17	3.15	6%	12	2.2	4%
Performance Factor: Flexibility 5%	**Weight**	**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**	
-Response time in case of Wrong Product (not match quality and un-spec)	30%	4	1.2		4	1.2		4	1.2		3	0.9	
-Easy for Changeover	20%	5	1		5	1		5	1		2	0.4	
TOTAL	50%	9	2.2	4%	9	2.2	4%	9	2.2	4%	5	1.3	3%
Performance Factor: Innovation 5%	**Weight**	**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**	
-Continuous Improvement	30%	4	1.2		4	1.2		4	1.2		4	1.2	
-New Product/New technology	20%	3	0.6		4	0.8		4	0.8		4	0.8	
TOTAL	50%	7	1.8	4%	8	2	4%	8	2	4%	8	2	4%
Overall Score	100%		95%			74%			66%			55%	

* Actual performance (rating scale 1-5)

Full Score = 5

mance= 100%

SUPPLIER 1   SUPPLIER 2

en	1 z		5	z
en en	.5			5
et	3.25	%	.25	%
et			Actual	
et er	4		4	
er er	4		4	
4	0.8		4	8
et	0.8		4	8
4		%	4	
			ctu	
et			4	
3	0.75		4	
en	0.45		4	6
en	0.45		4	6
en	0.3		4	
4			4	

Packages properly   5%

Performance Factor: Responsiveness 10%   Weight

Lead   35%

			Actual	Score
3	1.05		4	
en	0.75		4	
3	0.6		4	0.8
4	0.4		4	4
et	0.4		4	
			Actual	Store
3	0			
7	8			
				Score
			5	1.5
		%		5

* Actual performance (rating scale 1-5)

Full Score = 5

Performance =100%

Belt
SUPPLIER 1

S e		S	S e	Actual	Score	S re
4	1.			3	1.2	
4	1.				1.	
	4				0	
	2.					2. %
					1	
5	1		5		1	
5						
4	0		4		0.8	
4	0.					
				22		
					Score	
4	1		3		0	
4			3		0.75	
4	0.		3		0	
4	0.		4		0	
	0		3		0.3	
4	0				02	

Packages properly 5%

Performance Factor: Responsiveness 10%

Weight: 35%

		Actual	
3	1 0	3	1 0
3	07		0
5			0.
5			0.5
5		4	0.4
		18	33

Actual I Score

	Actual	
	4	1.2
	5	

I performance (rating scale 1-5)
Full Score = 5

Total Performance= 100%

SUPPLIER 1   SUPPLIER 2

							Score	
				5				
				5	1.75		4	
				4	1		1	
				5	.5	Actual 5	1 5	
				5	1.25		1.25	
				5	1		1	
				5				
				5				

			Actual j	Score
			4	1.2

						Actual j	Score
-Delivers on Schedule/at exactly time specified	25%	4		5	1.	4	1.2
-Closes order quantities accurately	15%	4	0.6	5	1.25		0 5
-Delivers per instructions/keep promises	15%	4	0.6	5	0.75		6
-Has adequate delivery service	10%	4	0.4	5	075		6
-Packages properly	5%	4	0.2	4	0.4		0.3
				4	02		0.2

%	X	4.8	15

			Actual	Score
	3	1 4	3	1.05
	3	0.75		75
	5	1		6
	5	0 5		4
	5	0 5		0.4

	Actual	Score
M	08	
	08	

		Actual	
		4	2

Actual performance (rating scale 1-5)

Full Score = 5

Bearing_Mrs.Natcha

Total Performance = 100%

		SUPPLIER 1			SUPPLIER 2			SUPPLIER 3			SUPPLIER 4		
Performance Factor: Price 40%	Weight	Actual	Score	Score	Actual	Score	Score	Actual	Score	Score	Actual	Score	Score
-Invoices at lowest price offerd	40%	5	2		3	1.2		3	1.2		0	0	
-Has competitive price	35%	5	1.75		3	1.05		3	1.05		0	0	
-Invoices correctly	25%	5	1.25		4	1		4	1		0	0	
TOTAL	100%	15	5	40%	10	3.25	26%	10	3.25	26%	0	0	0%
Performance Factor: Qualtiy 20%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Sco e	
-Delivery complies with contractual requirements	25%	5	1.25		5	1.25		5	1.25		0	0	
-Delivers quality materials	25%	5	1.25		5	1.25		5	1.25		0	0	
-Is experienced in our standards	20%	5	1		5	1		5	1		0	0	
-Maintain good records	20%	5	1		4	0.8		4	0.8		0	0	
-Anticipates our requirements	10%	5	0.5		4	0.4		4	0.4		0	0	
TOTAL	100%	25	5	20%	23	4.7	19%	23	4.7	19%	0	0	0%
Performance Factor: Delivery 20%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Delivers in Full	30%	4	1.2		5	1.5		4	1.2		0	0	
-Delivers on Schedule/at exactly time specified	25%	3	0.75		2	0.5		4	1		0	0	
-Closes order quantities accurately	15%	4	0.6		3	0.45		4	0.6		0	0	
-Delivers per instructions/keep promises	15%	5	0.75		4	0.6		4	0.6		0	0	
-Has adequate delivery service	10%	3	0.3		1	0.1		1	0.1		0	0	
-Packages properly	5%	5	0.25		2	0.1		2	0.1		0	0	
TOTAL	100%	24	3.85	15%	17	3.25	13%	19	3.6	14%	0	0	0%
Performance Factor: Responsiveness 10%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Lead time	35%	4	1.4		3	1.05		3	1.05		0	0	
-Is helpful in emergency	25%	4	1		2	0.5		4	1		0	0	
-Will stock special items	20%	5	1		3	0.6		5	1		0	0	
-Supplies catalogs/Technic Data	10%	5	0.5		5	0.5		5	0.5		0	0	
-Supplies quotations promptly	10%	4	0.4		3	0.3		3	0.3		0	0	
TOTAL	100%	22	4.3	9%	16	2.95	6%	20	3.85	8%	0	0	0%
Performance Factor: Flexibility 5%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Response time in case of Wrong Product (not match quality and un-spec)	30%	4	1.2		3	0.9		4	1.2		0	0	
-Easy for Changeover	20%	5	1		4	0.8		4	0.8		0	0	
TOTAL	50%	9	2.2	4%	7	1.7	3%	8	2	4%	0	0	0%
Performance Factor: Innovation 5%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Continuous Improvement	30%	5	1.5		5	1.5		5	1.5		0	0	
-New Product/New technology	20%	5	1		5	1		5	1		0	0	
TOTAL	50%	10	2.5	5%	10	2.5	5%	10	2.5	5%	0	0	0%
Overall Score	100%		93%			72%			76%			0%	

* Actual performance (rating scale 1-5)

Full Score = 5

Total Performance = 100%

Performance Factor: Price 40%	Weight	SUPPLIER 1 Actual	Score	Score	SUPPLIER 2 Actual	Score	Score	SUPPLIER 3 Actual	Score	Score	SUPPLIER 4 Actual	Score	Score
-Invoices at lowest price offerd	40%	5	2		5	2		4	1.6		2	0.8	
-Has competitive price	35%	5	1.75		5	1.75		3	1.05		2	0.7	
-Invoices correctly	25%	5	1.25		5	1.25		5	1.25		4	1	
TOTAL	100%	15	5	40%	15	5	40%	12	3.9	31%	8	2.5	20%
Performance Factor: Qualtiy 20%	**Weight**	**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**	
-Delivery complies with contractual requirements	25%	5	1.25		4	1		5	1.25		4	1	
-Delivers quality a` `ls	25%	5	1.25		4	1		4	1		4	1	
-Is exp` `ed` `o` `rds	20%	5	1		4	0.8		5	1		4	08	
-Maintain good records	20%	5	1		4	0.8		4	0.8		4	0.8	
-Anticipates our requirements	10%	4	0.4		4	0.4		3	0.3		3	0.3	
TOTAL	100%	24	4.9	20%	20	4	16%	21	4.35	17%	19	3.9	16%
Performance Factor: Delivery 20%	**Weight**	**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**	
-Delivers in Full	30%	5	1.5		4	1.2		4	1.2		4	1.2	
-Delive` ` ` ` ` `ecified	25%	5	1.25		3	0.75		2	0.5		2	0.5	
-Closes order quantities accurately	15%	5	0.75		4	0.6		3	0.45		3	0.45	
-Delivers per instructions/keep promises	15%	5	0.75		4	0.6		3	0.45		3	0.45	
-Has ade` ` ` ` `rvice	10%	4	0.4		3	0.3		1	0.1		1	0.1	
-Packages properly	5%	4	0.2		3	0.15		3	0.15		3	0.15	
TOTAL	100%	28	4.85	19%	21	3.6	14%	16	2.85	11%	16	2.85	11%
Performance Factor: Responsiveness 10%	**Weight**	**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**	
-Lead time	35%	4	1.4		3	1.05		3	1.05		3	1.05	
-Is hel`` ` ` `gncy	25%	3	0.75		2	0.5		2	0.5		1	0.25	
-Will sto` `ecial items	20%	5	1		4	0.8		5	1		1	0.2	
-S` ` ` ` h` ` `a	10%	5	0.5		5	0.5		5	0.5		4	0.4	
-S` `q` `` `o` `ptly	10%	3	0.3		5	0.5		3	0.3		3	0.3	
TOTAL	100%	20	3.95	8%	19	3.35	7%	18	3.35	7%	12	2.2	4%
Performance Factor: Flexibility 5%	**Weight**	**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**	
-Res` ` ` ` `o` `o g` `ct (no` `cn` `` `` `` `)	30%	4	1.2		4	1.2		4	1.2		3	0.9	
-Easy for Changeover	20%	5	1		4	0.8		5	1		2	0.4	
TOTAL	50%	9	2.2	4%	8	2	4%	9	2.2	4%	5	1.3	3%
Performance Factor: Innovation 5%	**Weight**	**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**		**Actual**	**Score**	
-Continuous Impr` `ment	30%	5	1.5		5	1.5		5	1.5		5	1.5	
-New Product/New technology	20%	3	0.6		4	0.8		4	0.8		3	0.6	
TOTAL	50%	8	2.1	4%	9	2.3	5%	9	2.3	5%	8	2.1	4%
Overall Score	100%		96%			86%			76%			58%	

* Actual performance (rating scale 1-5)
Full Score = 5

Performance Factor: Price 0%	Weight	Actual	Score			Actual	Score		Actual	Score
-Invoices at lowest price offered	40%	5	1 2	4	6	4		5	2	
-Has ... tive	35%		75	4		2			1.75	
-Invoices correctly	25%									

Performance Factor: Quality 20%	Weight	Actual	Score					Actual	Score
-Delivery complies with contractual requirements	2X%	4	1		4	4		4	1
-Delivers quality materials	25%	4	1		4	4		4	
-Is experienced in our standards	20%		0.8	4	8	4		4	0.8
-Maintain good records	20%		0.8	4	08	4	08	4	8
-Anticipates our requirements	10%			4	04	4	04	4	

Performance Factor: Delivery 20%	Weight	Actual	Score					Actual	Score
-Delivers in Full	30%		1 Z	3	0.9	3		4	1.2
-Delivers on Schedule/at exactly time specified	25%	3	0.75		0.75	3	0.5		
-Closes order quantities accurately	5%		0.6		0.45	3	0.45		0.6
-Delivers per instructions/keep promises	5%		0.6		04	3	0.45		0.6
-Has adequate delivery service	0%	5	0.5			4	3		0.4
-Packages properly		4	0 Z	5			2		

Performance Factor: Responsiveness 10%	Weight	Actual	Score					Actual	Score
-Lead time	35%	3	1.05	4	4		1 05	4	1
-Is helpful in emergency	25%		0.75		5		075		
-Will stock special items	2.%		0.6	5		4	0.8	4	
-Supplies catalogs/Technic Data	10%	3			4	4	0.4		0.4
-Supplies quotations promptly	%							4	

Performance Factor: Flexibility 5%	Weight		Score					Actual	Score
-Response time in case of Wrong Product (not match quality and un-spec)	30%			4	2	1 2		4	
-Easy for Changeover	20%					8			

Performance Factor: Innovation 5%	Weight		Score					Actual	Score
-Continuous Improvement	3%	4				5	1 5	5	
-New Product/New technology	2%					4	0.8	5	

ual performance (rating scale 1
Full Score = 5

Performance =100%

				Actual	S	coi
	3	2		3		
	3			3	5	
	4	ii	x		75	¼
					Score	
	5	25		5	.25	
	5	1 25		5	.25	
	5	1		5	1	
	4	0.8		4	0.8	
	2	0.4		2	03	
	5			3	)	
	4			3	0. 5	
	5	0.75 1		3	0. 5	
	5	0.7		3	0.45	
	5	0.3		3	.3	
	4	0		3		
	6	4	¼			

Packages properly   5%

Performance Factor: **Responsiveness** 10%   **Weight**

= Lead time   5%

					Score	
	9	1.05		3	1.05	
	4	i		3	0.75	
	5			3	0.6	
	5	0.5		4	0.4	
	5				0.4	
		1				
%		03	4%			

				Actual		
	5			4	.2	
	6	03		4	3	
					2	

ct   performance (rating scale 1-5)
        Full Score = 5

Gabriel's

A

Total Performance = 100%		SUPPLIER 1			SUPPLIER 2			SUPPLIER 3			SUPPLIER 4		
Performance Factor: Price 25%	Weight	Actual	Score	Score	Actual	Score	Score	Actual	Score	Score	Actual	Score	Score
-Invoices at lowest price offerd	40%	5	2		4	1.6		5	2		4	1.6	
-Has competitive price	35%	5	1.75		3	1.05		5	1.75		4	1.4	
-Invoices correctly	25%	5	1.25		4	1		5	1.25		4	1	
TOTAL	100%	15	5	25%	11	3.65	18%	15	5	25%	12	4	20%
Performance Factor: Qualtiy 40%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Delivery complies with contractual requirements	25%	4	1		5	1.25		5	1.25		5	1.25	
-Delivers quality materials	25%	4	1		5	1.25		5	1.25		5	1.25	
-Is experienced in our standards	20%	4	0.8		5	1		5	1		5	1	
-Maintain good records	20%	5	1		5	1		5	1		4	0.8	
-Anticipates our requirements	10%	5	0.5		4	0.4		4	0.4		3	0.3	
TOTAL	100%	22	4.3	34%	24	4.9	39%	24	4.9	39%	22	4.6	37%
Performance Factor: Delivery 15%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Delivers in Full	30%	4	1.2		5	1.5		5	1.5		4	1.2	
-Delivers on Schedule/at exactly time specified	25%	3	0.75		4	1		5	1.25		3	0.75	
-Closes order quantities accurately	15%	4	0.6		5	0.75		5	0.75		4	0.6	
-Delivers per instructions/keep promises	15%	4	0.6		5	0.75		5	0.75		4	0.6	
-Has adequate delivery service	10%	3	0.3		3	0.3		4	0.4		3	0.3	
-Packages properly	5%	3	0.15		4	0.2		5	0.25		4	0.2	
TOTAL	100%	21	3.6	11%	26	4.5	14%	29	4.9	15%	22	3.65	11%
Performance Factor: Responsiveness 10%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Lead time	35%	3	1.05		3	1.05		4	1.4		3	1.05	
-Is helpful in emergency	25%	3	0.75		3	0.75		3	0.75		3	0.75	
-Will stock special items	20%	5	1		4	0.8		5	1		3	0.6	
-Supplies catalogs/Technic Data	10%	4	0.4		5	0.5		5	0.5		5	0.5	
-Supplies quotations promptly	10%	4	0.4		5	0.5		5	0.5		4	0.4	
TOTAL	100%	19	3.6	7%	20	3.6	7%	22	4.15	8%	18	3.3	7%
Performance Factor: Flexibility 5%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Response time in case of Wrong Product (not match quality and un-spec)	30%	4	1.2		4	1.2		4	1.2		4	1.2	
-Easy for Changeover	20%	4	0.8		4	0.8		4	0.8		4	0.8	
TOTAL	50%	8	2	4%	8	2	4%	8	2	4%	8	2	4%
Performance Factor: Innovation 5%	Weight	Actual	Score		Actual	Score		Actual	Score		Actual	Score	
-Continuous Improvement	30%	4	1.2		4	1.2		5	1.5		4	1.2	
-New Product/New technology	20%	4	0.8		4	0.8		4	0.8		4	0.8	
TOTAL	50%	8	2	4%	8	2	4%	9	2.3	5%	8	2	4%
Overall Score	500%		85%			86%			96%			82%	

* Actual performance (rating scale 1-5)

Full Score = 5