

TOYOTA AND ITS COMPONENT SUPPLIERS – CASE STUDY

Automobiles, which make full use of the technology for the day are necessities of life in the world. Even in the Antarctica or in the deserts of the Middle East people go around on wheels. Japanese automobile manufacturers apply the principle of “Quality First” so as to respond to the expectations of users. Users expect manufacturers to build in quality to the wide range of components and for any condition of use. To meet this demand auto manufacturers must advance the quality control activities in every field including component suppliers.

OUTLINE OF COMPONENT SUPPLIERS SURROUNDING TOYOTA

Like a pyramid in Egypt, the automotive industry is established on the basis of many component industries. Toyota buys directly from two hundred component suppliers as shown in Table – 1.

But the automotive industry in Japan is somewhat different from that in Europe with respect to the way the pyramid has been constructed. Let us understand this aspect. In Europe Industrial revolution occurred in eighteenth century and the auto Industry has spring up after basic and applied industries have been established. On the other hand, Japanese auto industry was founded during the 1930s at the same time as industrialization has made a sudden development. Consequently, the component industries, which had little experience and no stable basis, had to be brought up by the auto industry itself.

Toyota was not an exception and had to develop the component industries. For example, two of the largest component suppliers, Nippon Denso Co. Ltd., and Aisin Seiki Co. Ltd., were at first developed in Toyota and became independent later on.

TABLE – 1
 OUTLINE OF TOYOTA’S COMPONENT SUPPLIERS

ITEM		CONTENTS
Number of Suppliers		200
Number of the Components		About 2 Billion Units
Purchased Monthly		150 Thousand Kinds
Values of Purchased Component		300 Million Dollars a Month
Distribution of Suppliers	Domestic	Toyota District 119 Tokyo District 66 Osaka District 25
	Overseas	U.S., Canada, France, U.K. Sweden etc.

BASIC CONCEPT OF QUALITY ASSURANCE

Because Toyota purchases components from as many as two hundred suppliers it is very difficult to conduct detailed acceptance inspection. Therefore, in order to secure quality of the components it relies on the manufacturing and assembling process of these components for excellent process capability. In other words, Toyota expects the component suppliers for their excellent planning and maintenance of the process capability. Quality audit on in-coming components means little unless it implies the examination of process capability of suppliers and execution of necessary actions to help suppliers maintain excellent process capability.

TOYOTA'S BASIC POLICY OF PURCHASING

Based on the above concept, Toyota has the following expectations for the component suppliers.

1. Toyota does not easily accept an offer of an inexpensive component unless it confirms that such price is based on the actual cost. If the price is not based on the actual cost, the initial low price cannot last long and little attention will be paid to the maintenance of quality.
2. The management itself of the supplier must be excellent for improving the quality and maintaining the low cost of its products. Therefore, the excellency of the company as well as of the products are required.

TOYOTA'S BASIC POLICY OF PURCHASING

3. Toyota always demands stronger and better administrative systems of the suppliers from whom components are purchased.
4. To demand the suppliers such things as above, long lasting transactions are absolutely desirable and necessary.
5. Thus, Toyota attaches utmost importance to long-term business relationship with mutual trust, and does not easily establish a new transaction with vendors presenting temporarily attractive offer. This is sometimes spoken of as "Toyota Monroe Doctrine". Still, Toyota looks for a mutually beneficial transaction with any vendor whose technology and management are excellent regardless of its nationality. Actually Toyota Motor transacts directly with about ten overseas suppliers and indirectly with nearly one hundred foreign companies.

CONTRACT BETWEEN TOYOTA AND COMPONENT SUPPLIERS

Based on the principle of “long-term stable transaction”, Toyota makes an unique “basic control of component transaction” with a component supplier. On this contract Toyota confirms to promote long lasting prosperity for both parties and an ideal quality assurance for customers. Hoping that, perfect quality control is carried out by every component manufacturer, Toyota includes in the contract the basic rules of quality control, the steps to be followed when defective goods come out and etc.

UPBRINGING OF COMPONENT SUPPLIERS

In order to develop the component suppliers Toyota assists them in improving management as well as quality control.

Various means are available for assisting suppliers in improving systems of management such as:

Toyota quality Control Reward

Guidance of Toyota Production system (Kanban System)

Mutual development by suppliers organisation and etc.

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As for the means of assistance in improving quality control, there are the guidance of technique of quality control, arrangement of educational courses and the guidance of thorough going target control for decreasing defectives.

Let us take up these means in detail.

Toyota Quality Control Reward

Toyota Quality Control Reward established in 1969 to strengthen the management control system of component suppliers by letting them review their in-plant systems, make up shortcomings, develop good points further and improve management system.

There are two kinds of reward, Excellence Reward which evaluates control improvement activities in workshops, and Superiority Reward which examines total managerial system including long-range management plan and policy administration.

Component suppliers can decide which reward they challenge, but as a rule they try the Superiority Reward after winning the Excellence Reward.

When the suppliers challenge the Toyota Quality Control Reward, Toyota by the request from them, in improvement from the following points of view:

Is everything put in order in workshop? Are the ideal intermediate stocks of half a day kept properly? Are the necessary actions for these taken?

Are the rules such as operation standard or condition control observed?

Are the activities for maintaining and improving quality and cost done actively in the shops? In other words through the Q.C circle or the idea proposal system attended by the entire members, do the resultant values from improvements account for one percent of the annual sales?

Seventeen suppliers won the Reward by today and some are challenging now. These suppliers are expected to play active roles as leaders among 200 suppliers in supplying the products of excellent quality.

And these companies point out the following merits resulting from the reward:

- 1) Company policies or ideas have come to be diffused right through everyone on the bench.
- 2) Smoothness has been grown in the communication with top management, in cooperation with top management, in cooperation with the union and the human relation.
- 3) Such self confidence has been grown that great achievement can be done if all the members of a company work together aiming at one target.
- 4) Short comings of suppliers own companies have been clearly identified and it has come possible to take counter measures more quickly than before.

The rewarded suppliers pointed out that they can improve the managerial system by challenging Toyota Quality Control Reward which is supported by participants of all members to Q.C circle and idea proposal system. More over, the suppliers obtained the valuable results in realizing the participation of all members in management through communication between employees and management.

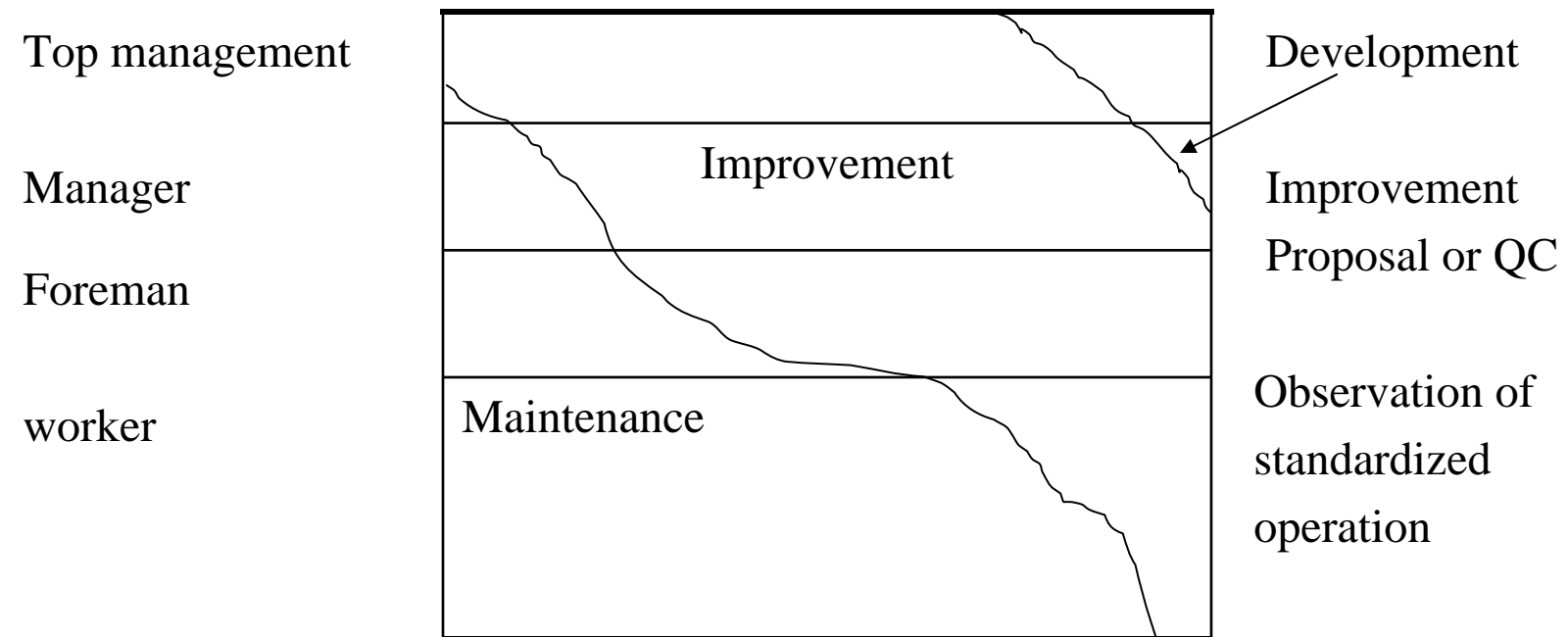


Fig. 1 – Allocation of Maintenance and Improvement work

Fig. 1. Shows how functions are allocated according to the ranks of company organization to ranks of company organization at Toyota Motor. Even a general worker is engaged in improvement work, which correspond to the Idea Proposal System and Q.C circle.

As a matter of course managers devote themselves mainly in improvement activities

MUTUAL DEVELOPMENT AMONG COMPONENT SUPPLIERS

Besides receiving assistance's directly from Toyota, 200 component suppliers form the co-operative organization which is shown in Fig.2

This organization carries out the following activities

- 1) Request to Toyota for informing and explaining the policies of the company and of its purchasing departments.
- 2) Holding a meeting for mutual presentation of activities in defective reduction or quality improvement.
- 3) Lectures and contests on proper techniques (measuring techniques, selection method by spark, I.e. igniting spirit of enthusiasm).

PRESENTATION OF INTRODUCTORY & PRACTICAL COURSES OF S.Q.C.

Toyota arranges lectures and introduce to the suppliers new practical techniques of quality control and reliability so that these techniques can be used by the suppliers. Moreover, twelve Toyota group companies have set up seven educational courses in co-operation of J.U.S.E and central – Japan Quality Control Association, and encourages the suppliers attend the course.

TABLE 2
EXAMPLE OF COURSES

ATTENDANT	TITLE	
MANAGER	1	Q.C MANAGER COURSE
	2	RELIABILITY MANAGER COURSE
STAFF	3	QC BASIC COURSE
	4	RELIABILITY BASIC COURSE
	5	DESIGN OF EXPERIMENT COURSE
FOREMAN	6	QC CIRCLE PROMOTER COURSE
	7	PROBLEM SOLVING COURSE FOR FOREMAN

COMMENDATION SYSTEM

Besides the Toyota Quality Reward which has already been explained, there are two other rewards to command the component suppliers, quality control excellence reward and cost improvement excellence reward. These rewards are presented to the companies which have performed market achievements with respect to quality and cost during a year. Quality Control Excellent Reward is given to the supplier who has shown ;

- 1) Good claim rate
- 2) Successive effort in improving the rates

- 3) Prompt preventive measures for preventing recurrence of defectives.

And cost improvement Excellence Reward is granted to a company which has made many number of proposals or adopted proposals of V.A and has shown big resultant values. The purpose of these rewards is not to commend suppliers but to create the circumstance where the suppliers develop themselves or are guided to become worthy of being commanded. For this reason attention is paid to the following points:

- 1) Evaluation standards should be fair and objective.

In order to make it to understood that any suppliers can be highly evaluated and could be commended it if makes its best possible effort, fair evaluation must be released and the evaluation should not be made only by the purchasing departments but the opinions of the inspection departments of Toyota Motors should be considered.

- 2) Check points of evaluation should be announced beforehand. Items in commendation and evaluation standards are announced a year before so that suppliers can develop on announced points systematically in the company policies.

ISSUES FOR DISCUSSION

- 1) What are the salient points I in the approach adopted by Toyota to develop its component suppliers?
- 2) Looking back into the India scene of sub-contractor relationship and development, what are the issues which need attention in our industry to make a journey? What will be your proposed action plan?

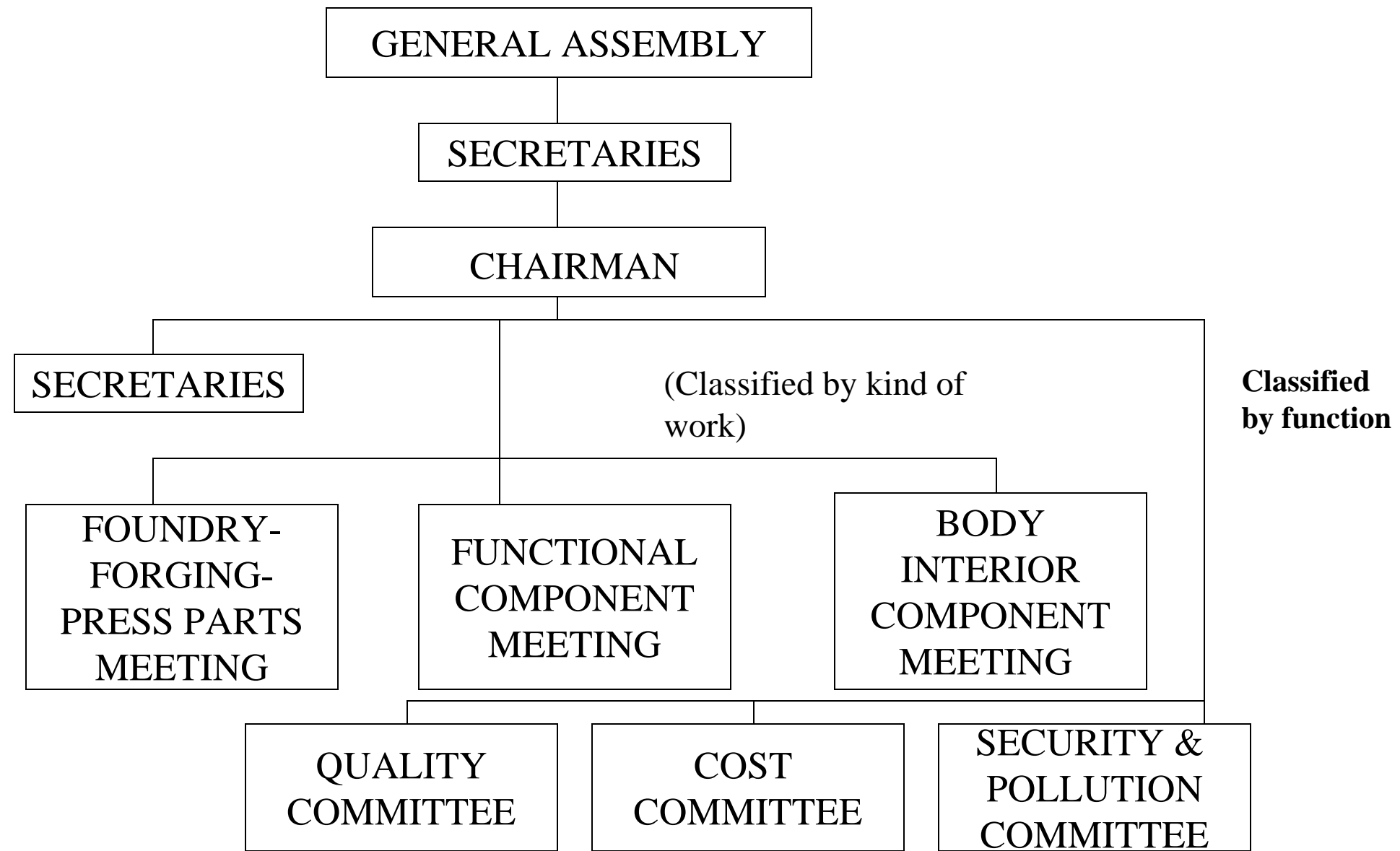


Fig-2. Co-operative Organization