JAPANESE MANAGEMENT ACCOUNTING AND RECENT CHANGES OF TARGET COSTING AT TOYOTA

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1. Introduction
Since the Meiji Restoration in 1868, Japan has experienced significant “contact” with European and US systems on two occasions. The first was at the time of the Meiji Restoration, with the major influences coming from European countries such as the UK, Germany and France, while the second major influence was from the US, during its occupation of Japan in the aftermath of the Second World War.

It should be noted here that “contact” does not merely signify unilateral ‘introduction’ or ‘transplanting’ of ideas. That is to say, we should focus on the aspects relating to the positive, proactive ‘acceptance’ of those ideas by the country introducing them, and one could say that the unique facets of the ‘Japanese-style management system’ from this.

The ‘Japanese-style management system’ arose in a different form from the ‘US system’ outlined in the preceding section. One of the characteristics of the system is a focus on causal management that does not confine itself to the production site, but extends back to such processes as design and product development; in addition, features include the construction of a company-wide system to support this, which transcends individual departments, as well as the reintegration of implementation processes with the planning that makes this possible.

As has already been pointed out, in order to examine the characteristics of ‘Japanese-style management accounting’, it is necessary to analyze not only the ‘accounting system’, but also the ‘management system’ of the form of organization, including the relationship between power

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1 Even before the war, the influence of Europe and America could be seen in the Rules on Cost Accounting for Army Munitions Factories (1939), the Rules on Cost Accounting for Navy Munitions Factories (1940), and the Rules on Cost Accounting in Manufacturing Factories (1942) issued by the Planning Bureau, as well as in the Cost Accounting Standards (1962) issued after the war, and high-quality cost accounting standards were formulated. Following the unreleased first draft of the Cost Accounting Standards (1955), a draft version of the document was circulated unofficially among related bodies. This had a strong flavor of management accounting standards about it, but in the event, it was decided to “accept the imperatives of the aims of periodic profit and loss accounting” (Tsuji 1977), and use them as standards for financial accounting. However, it should perhaps be noted that, despite this, the elements relating to management accounting standards were not negated. Moreover, the rules regarding the army’s budget controls, standard cost accounting, inter-firm comparisons, financial comparisons and internal audits were issued in 1941 and 1942, but these were intended to transcend accounting frameworks and promote improvements in efficiency and other areas (Aoki 1976).

2 Okano (1995b) examined the relationship between organizational reforms and management accounting practices, taking the historical development process of cost controls at Toyota Motor Corporation as a case study and focusing in particular on its segmentation into cost maintaining, kaizen costing and target costing.
and responsibility, as well as the 'social system' that underpins these two systems (Okano 1995b, 1997). Furthermore, with regard to the connection between managerial accounting and the organization, it is necessary to examine America's comptroller system.

The comptroller system was introduced to Japan before the Second World War, but the announcement of About Internal Controls in Companies by the Industrial Rationalization Council in 1951 can be cited as having provided the momentum for its actual introduction in Japanese companies (Kato 1991). At NEC, which was an international joint venture with Western Electric, the founding company positioned the accounting staff as US-style comptrollers. At Matsushita Electric Industrial as well, which was the first Japanese company to implement a departmental system, the accounting staff were treated as 'staff in charge of management administration, accountable to the company president and head office', and the 'accounting staff system', working separately from the departmental director management system, is still in force even today (Sakurai, 1997).

In contrast, it should be noted that the function of accountants within Japanese companies was mainly a regulatory one and the substantive planning and control functions were delegated to the business divisions, factories and manufacturing subsidiaries, which were rather autonomous. As well as delegating the manufacture of its mass-produced goods to subsidiary production companies in each region in the mid-1960s, the aforementioned NEC has gradually separated its cost control activities, which focused on operating efficiency, from the core of the accounting division and entrusts them to the 'autonomous activities' of its business divisions (Koike 1993). This can be said to be a crucial point where the system differs from common practice in US companies, where management activities revolve around the controller or comptroller. In the following, let us examine the characteristics of the Japanese-style management system.

2. Characteristics of the Japanese-Style Management System


After the war, TQC (total quality control) was systemized by the US quality control scholar A.V. Feigenbaum. To be more specific, it can be described as a self-sustaining quality control system using specialist personnel, which took as its basis statistical methods that incorporated

3 Koike, who held such positions as comptroller and auditor at NEC, asserts that such 'independent activities' integrated ‘QC activities’, ‘ZD activities’, ‘VE activities’, ‘productivity improvement activities’ and ‘cost reduction activities’ as activities taking place within the departmental system and gradually came to shape small group activities on the part of employees themselves (Koike 1993, p.162).
4 “The reality was that these departments (comptrollers) did not have the strong powers that those in US companies did, nor did they themselves formulate the targets for profit planning and cost control that form the premise or guidelines for drafting budgets; they were run in the form of a Japanese-style modification body, deciding budgets based on drafts submitted by departments further down the hierarchy, under the system of requesting managerial decisions.” (Sunaga & Nonaka 1995, p.164) This is also pointed out in Miyajima (1996).
Shewhart’s ideas about quality management.

At the same time, in Japan, it was developed as CWQC (company-wide quality control)\(^5\) involving all employees, thanks mainly to the efforts of a variety of practitioners involved with such institutions as the Union of Japanese Scientists and Engineers and the Japanese Standards Association, who were assisted by Japanese academics and US quality control experts such as W.E. Deming and J.M. Juran.

One of the key concepts of this was ‘cross-functional management’, which is distinguished from ‘departmental/functional management’. What should be noted here is that the semantic content of ‘function’ is not the same ‘function’ as in Europe and America, which presupposes a ‘department’, but encompasses such critical factors in management as ‘quality’, ‘cost’, ‘reliability’, ‘delivery dates’ and ‘overseas’ (Ishikawa 1984, TQM Committee 1998, Udagawa et al. 1995).

This Japanese-style cross-functional management is a mechanism for promoting factors important to the management of a company, such as quality functions, cost functions and overseas functions, by means of their cross-sectional coordination with related organizations, and implies horizontal organizational management. Historically, it was formed amid the process of introducing Japanese-style TQC (total quality control). It is antithetical to the ‘functional management’ of Europe and America, which consists of departments’ systems of responsibility and authority.

In other words, it is closely linked to the characteristics of ‘Japanese-style quality control’, which creates an overlap between the functions of each organization and emphasizes cross-functional activities. There was a loose relationship between ‘business and people’ and, by overlapping ‘the work itself’ and getting all employees to commit themselves, the system induced them to take on ‘responsibility’.\(^6\)

Cross-functional management was introduced in the early 1960s, around the time when TQC was beginning to take place. At the time, there were strong vertical links in organizations, with hierarchical relationships, for example within the manufacturing division and the sales division, and there were barriers to horizontal relationships, due to sectionalism, so communication was difficult. Cross-functional management involves setting up cross-functional committees or conference structures relating to such issues as quality assurance or cost controls, and seeking to supervise and improve these functions by promoting them within each department, in order to deal with problems that are related to the horizontal organization, which cannot be solved by one department within the vertical organization (Kurogane 1988).

In contrast, policy management involves activities carried out by means of cooperation between all parts of the company, in order to determine medium- or long-term business plans and policy for short-term business plans, based on management policy, and carry them out

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\(^6\) Even with Honda’s ‘big room’, the aim can be described as the exchange of information both formally and informally in processes that result in decisions being made, rather than aiming to create an overlap between formal responsibilities.
efficiently. This is a vertical management mechanism that links improvement targets in the upper levels of management with individual management targets such as the improvement of plant processes, and is different from the ‘strategic management’ carried out in Europe and America.

This Japanese-style cross-functional management, which enhances ‘vertical’ and ‘horizontal’ relationships, suffers from a major problem in terms of the clarification of authority and responsibility and, even if it is appropriate for work that involves the entire company, it also carries the danger of becoming isolated from the workers on the ground and resulting in flawed decisions.

2. Gemba and Gembutsu Principles

Gemba (Genchi) principle is a concept under which specific, individual problems become clear for the first time by experiencing the phenomena that occur at each site (“Ba”), and can be seen uniformly in production and sales by Japanese companies. In particular, in plant management, it has come to be regarded as the cornerstone of efforts to eliminate ideas and management systems that have become isolated from a sense of the workplace.

This also corresponds to the fact that in-house training programs, focusing mainly on OJT (on-the-job training) is commonplace (Odaka 1993, Hisamoto 1998). The results that have emerged from ‘Japanese-style production systems’ such as the aforementioned CWQC and JIT (just in time) can be reduced to this gemba and gembutsu principles.

At the same time gemba and gembutsu principles are used in the logic used when eliminating cost accounting, which emphasizes basic unit management focusing on physical measurements and is a form of currency unit management. In other words, ‘accounting’ limited to monetary measures was eliminated in order to avoid accounting invisibility, and, although it seems paradoxical, ‘Japanese-style management accounting’ was created.

As a result, cost management techniques characteristic of each company are developed. Examples of this include NEC’s ‘two-stage standard cost accounting’ (Nakayama 1963) and Toyota’s ‘target costing’ and ‘kaizen costing’. As can be seen from the observations of Taiichi Ohno, who formulated Toyota’s production system, gemba and gembutsu principles were of great significance in the elimination of ‘accounting invisibility’ (Ohno 1971).

However, on the other hand, profit planning and kaizen costing linked to budget controls

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7 Along with ‘genjitsu principle (reality-orientism)’, gemba and gembutsu principles are also known as the ‘3-gen principles’.

8 Various groups and organizations were established in order to complement this, including the Union of Japanese Scientists and Engineers, the Japanese Standards Association, the Japan Management Association, the Japan Productivity Center (currently the Japan Productivity Center for Socio-Economic Development) and the Kansai Productivity Center, the Japan Chamber of Commerce and Industry and the Japan Industrial Management and Accounting Institute. In addition, various educational institutes, such as universities and technical colleges, have made a contribution either directly, or indirectly as members of the aforementioned bodies.

9 Okano (1995b) attempted to clarify the characteristics of ‘Japanese-style management accounting’ through the correlation between quantitative management and accounting management, using the concept of ‘accounting invisibility.’ See Kobayashi (1996) for more about the relationship between accounting invisibility and systematic inertia.

10 Here we refer to accounting not only at the monetary level but also at the quantitative level.

11 On the other hand, variation analysis by means of standard cost accounting was used as part of initial phase flow control.
existed in tandem, and one could even go so far as to say that, in that sense, there were two layers of site management. Cost accounting as financial accounting was standardised by means of the Cost Accounting Standards enacted in 1962, and it was certainly not the case that these merely reinforced cost accounting as management accounting that encompasses cost controls.  

Fujimoto (1997) stated that gemba principle possesses mechanisms in which new concepts arising in the domain of production are weeded out by means of the so-called ‘quasi-market’, which portrays the production site as customers; an example of this can be seen in the introduction of new automated equipment, where it is necessary for production engineers to ‘sell’ the new ideas embodied in that equipment to those on site. This can also be explained in terms of the necessity for cross-functional activities carried out by means of thorough cross-functional management, as mentioned previously, when making decisions about investing in equipment as well.

3. Emphasis on Voluntarism

Practices at companies such as NCR and Ford were used as the models for introducing suggestion schemes, bearing such names as small group and QC circle activities, to Japanese companies, but there were major differences. To be specific, while the main aim in US companies was to elicit ideas from employees that would lead to cost reductions or an increase in profits, with evaluations of those responsible for the implementation of the system being made according to the figures in the company’s books, the aim in Japanese companies was participation in the system by company employees, with evaluations of those in charge of the scheme being decided according to the degree of participation by employees (Robinson & Stern 1997). In other words, it was positioned as a voluntary management activity in which the group was organized by workers at the same workplace, voluntary targets were set in a ‘forum’ for discussion that had at its core a leader chosen from among that group, and efforts were made to achieve these.

Of course, this was promoted as part of the CWQC movement, and one could not really say that the workers organized themselves ‘voluntarily’. Nevertheless, one should take note of the fact that “the term ‘voluntary management activity’ indicates its origins in small group activities, which arose as a means of making use of employees’ voluntarism.” (Hyodo 1997) The fact that most QC circle activities initially took place outside working hours demonstrates this.

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12 Hioki (1998) states that Japan’s plants were the first to take the view that on-the-ground intelligence is superior to that of technicians.
13 According to Robinson & Stern (1997), the oldest recorded suggestion scheme was introduced in Scotland in 1880, at the shipbuilding firm William Denny and Brothers.
14 The steel industry promoted small group activities throughout the industry, but the term ‘autonomous management activities’ (UK activities) was used for quality control groups and ZD activities.
15 However, it should be borne in mind that, as small group activities have been positioned as part of top-down policy management since the oil crises of the 1970s, this voluntary nature has altered.
At the same time, with regard to relationships with suppliers, a voluntary forum for improvement activities that focuses on production processes can be created. Toyota’s ‘Jishuken voluntary study group’ and ‘Supplier Support Center’ are examples of this. At the Supplier Support Center in Kentucky, care is taken to ensure that individual information, such as which suppliers are conducting activities regarding what kind of themes, is not disclosed to Toyota via formal routes. Naturally, by emphasizing the fact that it is voluntary, they are ultimately trying to avoid lagging behind their competitors and are hoping that it will actually have the effect of increasing its coercive power, but it is first and foremost not compulsory and it is important to maintain its voluntary nature.\footnote{Nevertheless, with the spread of management by policy, this voluntary nature has been in retreat, particularly since the oil crises, and it is said to have become an activity led by those at the top of the company. We would like to examine this further in the future. See Kaneko et al. (1998) for more about the vast power of voluntarism in economic activities.}

4. Built-in Quality and Costs, and Causal management

Quality and cost control activities that take place in Japanese companies have been positioned as activities involving the entire company that are carried out by both staff and lines based on gemba and gembutsu principles. This is due to the thorough implementation of ‘causal management’, which takes the view that ‘quality and costs are built in on site’, based on awareness that ‘quality and costs are decided prior to the design stage’.

This point differs completely from practice in America, which is centered on staff (comptrollers, etc.) who are experts in quality control and cost control, and many methods of quality engineering, such as QFD (quality function deployment) have been devised. In VE (value engineering) as well, the intention is to implement not only ‘second-look VE’ at the production stage, but also ‘first-look VE’, which extends to the design stage, and even ‘zero-look VE’, which goes all the way back to the product planning stage (Shimizu 1995).

Moreover, the aim of the ‘guest engineer system’, which commonly takes place as part of the product design process, is not to reduce costs through negotiating prices, but to increase the effectiveness of VE and kaizen costing and build a long-term win-win relationship by ensuring that engineers working for the manufacturer and suppliers share a common ‘awareness’ of the link between costs (design costs) and specific individual improvement activities. This creates ‘trust’ between the manufacturer and suppliers and it can be said to be a device for communication about costs rather than prices, taking place on the basis of this trust (Sako 1992).

In other words, it is ‘target costing’ in the form of target costing with the aim of eliciting ideas from both sides, for instance, about improvement methods, which takes place through the medium of the common word ‘cost’; it is clearly distinct from ‘target pricing’, which focuses on negotiations and maneuvering relating to the retail price. The basis for this is the unique Japanese trading custom that involves a ‘basic commitment’ being concluded, but individual orders being made routinely by means of ‘Kanban’, with no ‘real’ contract involving price and
number of items, while price revisions are made regularly with the agreement of both sides.

In addition, although it is necessary to ‘observe prior processes from the next process perspective’ in order to ‘build in’ quality and costs, JIT, which is referred to as the ‘pull formula’, is generated by an awareness that ‘the next process is our customer’. It is well known that foundations of this concept originate in the ideas of Taiichi Ohno and others, who asked whether it would not be possible to use the supermarket formula, which many participants in a delegation visiting America after the war had admired, in factory management.

3. Theoretical Framework of Target Costing

Cost management, which is a strategic planning, has been interpreted in a variety of ways. Especially, interpretation varies in the West; some literature points out its similarity with standard cost, some emphasizes its aspect as a strategic tool.

This chapter describes the basic theory of target costing, including mechanism, process, three systems, and the basic implementation rule, by taking examples of Toyota Motor, Matsushita Electric Industrial, and Nissan Motor Co., Ltd. This paper then explores the direction where strategic accounting will go by referring to various theories concerning relations between the strategy and target costing.

1. Definition

There are a variety of definitions that have been made as to target costing. First of all, let us compare the following two definitions:

‘An activity that tracks the source where cost is incurred, and plans (builds in) a cost at the stage of designing, development, and product planning’ (Kobayashi, et al.).

‘An comprehensive profit management activity in which targets are set as to quality, prices, reliability, and delivery date at the time of product planning and development, to conform to the needs of customers, and respective targets are designed to attain simultaneously in all the processes from the start (upstream) to the end (downstream.) (Japan Accounting Association 1996)

The former definition is more ambiguous as it includes an expression used in business routine, such as “build in.” Whereas the latter definition is more specific, as shown in the expression: ‘targets are set as to quality, prices, reliability, and delivery date’, to conform to ‘the needs of customers.’ Especially, the description ‘a comprehensive profit management activity’ well illustrates the essence of target costing. This can be interpreted as a transition from a target costing to profit planning (Okano, 1995b).
2. The Mechanism and Process of Target Costing: Toyota's Case

(1) Mechanism

There are three characteristics of cost management practiced in Toyota: “vertical” and “horizontal” management, management by part/unit, chronological cost management system (target costing, cost maintenance, kaizen costing).

In this framework, target costing can be described as a profit and loss management by model. It is a ‘vertical’ management as well as a ‘profit and loss management by segment’. It is one of the cost management activities, incorporating management by part/unit, and carried out before the start of production.

The characteristics of this mechanism are: management by type of vehicle, management by objective, activities in the entire organization and the differential cost management system.

Toyota has been basically practicing management by type of vehicle, though there was a change in a system, from the project leader (shusa) to the chief engineer system (Okano 1995b, Fujimoto 1997). This management is based upon an understanding that aggregation of profit and loss by type of vehicle comprise the total profit and loss of the company. Here it is important to calculate the target profit by type of vehicle based upon the total profit goal of the company.

Distinct feature of target costing adopted in Toyota has been the differential cost management system between the current and new models. This method is also used for setting a sales price in addition to setting the target cost. The reasons for these are: to increase the accuracy of the estimate by estimating only the cost of the parts for which the engineering design change takes place, to ensure accuracy in determining prices of purchased parts, and to decrease the number of processes and time required for making an estimate by limiting items to be managed\(^\text{17}\).

Besides, this system is helpful in involving all the divisions and departments concerned. Though target costing is an activity lead by the designing and the production engineering divisions, it requires cooperation of all the divisions in the company from a development stage, in terms of the number of cars produced, prices, and the amount of investment, etc. Cooperation from the suppliers is also necessary. This is true of the quality control as well. Therefore, management by function and management by objective illustrated above can be described as a system to involve all the division concerned in the company.

(2) Target costing process

Examining the outline of the target profit

\(^{17}\) However, Toyota stopped the differential cost estimate system recently, and introduced the absolute cost estimate system. This means an important turnaround took place in target costing.
Target costing starts with the examination of the outline of target profits. It is calculated based upon the target profit guideline by the type of vehicle which is set following the mid- and long-term target profits, as well as considering the current status of the operating profit and marginal profit of the relevant model.

However, prior to that, it is necessary to decide the type of vehicle that is subject to target costing. In the past, the ‘basic type’, which is a standard type of the model, and the ‘representative type’, which is hot-selling line of the model, was chosen.

Setting postulates
At the stage of conceptualizing a product plan, many things are uncertain. Basic items that have not been decided are decided as ‘postulates’ of target costing, by getting approvals from respective sections involved. Such items include sales price, the number of cars subject to target costing, investment in plant and equipment, number of processes, and plants.

Estimating cost
After setting postulates, differential cost from the current cost is calculated based upon the specification assumed and the postulates set, and the estimate cost of a new model is quoted. Responsibilities for estimating the cost and following-up are shared among designing and production engineering divisions.

Roles of estimating cost are also divided: cost engineers are responsible for the design cost, in the first stage of the development (macro estimate, zero order estimate); in the following stages (primary, tertiary estimates, estimate for mass production trial), the accounting division is responsible for estimating cost of the internally produced products; the procurement division estimates that of purchased goods, and the accounting division estimates the processing cost and calculates the total cost per car.

Deciding target profit / target cost
After calculating the estimate cost of the new model, the cost that needs further reduction is calculated based upon the difference between the target profit and the target cost calculated. When the target cost of the vehicle as a whole is decided, targets are set by design cost and by processing cost. The design cost is further deployed into the calculation of target cost by the designing group and target cost by part.

Cost engineers are staff involving in cost management at a development center. They are engaged in (1) making a macro and zero order estimate, (2) making a target cost instruction by part, (3) grasping the progress of design cost achievement, and (4) supporting VE promotion. They are divided into persons in charge of products and those in charge of function.

18 It has become increasingly necessary to follow larger ranges in the model at target costing stage to respond to the rapid globalization of the market in recent years.
Cost reduction activities (VE activities)

When target cost is deployed, an improvement committee is formulated and cost reduction activities (VE) is promoted lead by chief engineers.

Follow-up of the target

The kaizen costing committee meeting by model is held after the primary trial production, mass production trial, and line-off, respectively, to support and follow-up the cost reduction activities.

(3) Organizational learning and inter-company organization

The system that provides learning opportunities at an organizational level in Toyota can be divided into three:

The first one is the “Toyota Production System Independent Study Meeting” (Jishuken). This study group was established in October 1976, for the purpose of spreading the ideas of Toyota Production System, TPS, in Toyota and suppliers’ plants (Nishiguchi 1994, Sako 1996, Dyer 2000). The members consist of keiretsu (suppliers under the industrial group) and independent suppliers. The meeting is held once a week for two months. It is aimed at sharing knowledge among suppliers and learning how to make a diagnosis for work improvement, and to carry out follow-up activities in specific work areas.

The second one is individual and group guidance given by the procurement (purchase) division to disseminate Total Quality Control, TQC, to suppliers. It is an integral part of management improvement scheme for respective suppliers, and guidance has been given on cost management and investment plan. It aimed at improving suppliers’ comprehensive management ability and abilities to synergize TPS and TQC.

The third one is the seminars and presentation meetings hosted by Kyohokai, which is an organization established to foster suppliers. In 1971 in order to improve the constitution of the member companies of Kyohokai, two committees, the quality committee and the cost committees, were established in Kyohokai. In 1976, to respond to the age of low growth, Kyohokai convened the Toyota Production System Workshops by inviting Taichi Ohno, then vice...
president of Toyota as a lecturer (Toyota Motor Corporation 1987.) What lie at the base of this is the long-term relative transactions with suppliers (Hashimoto 1996, Japan Society for Production Management 1996).

Table 1  Organizational Learning at an Organizational Level in Toyota Motor Co., Ltd.

<table>
<thead>
<tr>
<th>Organizational learning system</th>
<th>Division in charge</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent study</td>
<td>Production survey division</td>
<td>Activities are largely voluntary</td>
</tr>
<tr>
<td>Individual guidance·Group activities</td>
<td>Procurement division</td>
<td>Stationary improvement system</td>
</tr>
<tr>
<td>Activities among member organizations</td>
<td>Kyohokai</td>
<td>A system to share information</td>
</tr>
</tbody>
</table>

(Source) Okano (2003)

3. Characteristics of target costing

Target costing makes a clear distinction with an ordinary accounting both in terms of accounting structure and the way the system is managed. The features can be summarized as follows:

(1) Basic unit and rate: separation between target costing and capital investment planning

The first characteristic is that cost subject to the target accounting is the basic unit (physical unit) multiplied by a rate in its accounting logic. Especially, target costing is considered as an activity lead by design engineers to reduce the basic unit itself through the design drawing improvement. Take spot welding, for example, efforts are made to reduce the number of shots from 3 to 2.

On the other hand, the capital investment planning is an activity to reduce the cost of a basic unit by cutting the rate through the efficient use of the facility. Here production engineers play a leading role. For example, the cost per shot is cut by sharing equipment or by effectively using the existing facilities (Table 2).

Movement to separate target costing and capital investment planning accelerated in 1980s, as capital investment increased sharply with the rapid introduction of FA and CIM. However, recent globalization and intensified competition started to make the company to review this separation again, as described in chapter 7 of this book. In other words, it has become increasingly necessary to carry out target costing as an integral part of the product development in the entire organization.

Table 2  Target Costing and Capital Investment Planning
### Table

<table>
<thead>
<tr>
<th>Division in charge</th>
<th>Purpose</th>
</tr>
</thead>
</table>
| **Target costing** | Engineering div.  
(Design engineers) | Reducing the physical scale  
(basic unit = not a financial scale) |
| **Capital investment planning** | Production engineering div.  
(Product engineers) | Reducing cost per physical scale |

(Source) Okano (2002b), p. 99

(2) Two dimensions of cost: ‘incurred cost’ and ‘committed cost’

The second characteristic is that target costing focuses upon ‘committed cost’ instead of ‘incurred cost’, which used to be the focus of calculation in the existing cost accounting. Cost management at a committed level is conducted, prior to the production. It is a ‘fictitious calculation’ that adopts a ‘special cost concept’ or ‘design cost,’ and the basis of calculation has been shifted from the calculation of ‘place’ to that of ‘goods’.

Specifically, target costing allows calculation to be ‘finalized’ at the designing stage, by aligning designing postulates between the new and existing products, and by eliminating uncertain elements relevant to production and suppliers in the calculation. On the other side, a huge separation between calculations at a production stage and that at a designing stage can be avoided by making an alignment between the two after the start of production.

Beneath this lies recognition to control a process in which cost is ‘committed’ instead of the process in which cost is ‘incurred.’ In other words, it is an idea to try to project a target cost at a sketch level before design drawings of a part is finalized and to try to make a balance between the cost of a product as a whole and cost at a part level, under the framework of making a profit.

In the same way, suppliers are expected to follow the similar process. This method was meaningful for both the assembly manufacturer and suppliers. It is because that in a Japanese business practice suppliers often undertake major designing and seek approval from the manufacturer. The assembly manufacturer can enjoy a certain cost reduction through a proposal made by the supplier, even if the assembly manufacturer does not have data relevant to cost. On the part of the supplier, working and studying together with engineers of the assembly maker makes it much easier for them to sell their products to other assembly manufacturer. The approved drawing and the drawing for loan have different cost structure, and it is safe to say that such a difference was brought by the unique relationship between manufacturers and suppliers in Japan.

In the example of target costing cited above, different concept on cost was created before the mass production (design cost) and after the mass production (real cost/standard cost). Even prior to the mass production, difference in cost concept could occur in various processes.

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22 In this ‘fictitious calculation’ ‘incurred cost’ is regarded as a ‘real’ cost. Refer to Kato (1993) for target costing.
including preparation for production and product design, product design and process design, and quality control and production control.

Occurrence of such a gap is inevitable in some sense. The more the company is oriented to the source management, the more often gap arises, it is, therefore, necessary to establish an accounting method that suits respective purposes. Accounting made before the mass production, for instance, at the development stage, and accounting made after the mass production become self-contained, and each process rotates the PDCA (plan-do-check-action) cycle without relating to each other from a calculation point of view.

Take an example of target costing and kaizen costing. They are not related to each other in terms of calculation; target costing is a ‘calculation by product’ using a technical and cost engineering approach, or design cost, whereas kaizen costing is a calculation by segment that uses a accounting (financial) approach which mainly consists of a period profit and loss calculation. The difference exists not only from a computation system viewpoint, but also at organizational activity level. It well illustrates that various relationships prescribe the calculation structure, and the calculation structure prescribes various relationships. It is a challenge to figure out how and which theory can link them.

(3) The company-wide activities built in the organization: distributed accounting system

The third feature of target costing is that it simultaneously manages quality, cost, delivery date, and efficiency (ex. environmental conservation) as well as cost. A system is established in each process of target costing, where relevant organizations make commitment by function, such as quality and cost, in the Japanese-style ‘functional management structure’. This caused a conflict/interrelation between ‘engineering’ and ‘accounting’ divisions, as asserted in the study of the history of management accounting (Tsuji [1971], [1988]). In addition to this, the function of management accounting (accounting function) was distributed among designing, production engineering, purchase, and sales and marketing divisions. Especially, it is distinctive that purchase, accounting, production engineering, sales divisions also make a commitment at an early stage, besides designing and development departments. It is important to notice that a rugby style is emphasized in stead of the relay race style in the development method (Nonaka, 1990). It gives greater importance on a process than a result. It is built in accordance with a specific issue in the process management, such as design development and preparation for production.

Target costing is also characterized by a long-term budget management and budget

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23 With the rapid introduction of CIM in 1980s, many companies made a division of work between ‘design engineers’ and ‘production engineering engineers,’ and separated target costing and capital investment planning. While target costing is an activity for person in charge of designing to reduce the basic unit itself (number of shots for spot welding), capital investment planning is an activity for production engineers to reduce a cost per basic unit (cost of spot welding).

24 Okano(1995b) asserted that respective accounting function, such as engineering, purchase (procurement), production engineering, maintenance, and quality assurance, should be examined, besides the separation of cost engineering and cost accounting, which has been already cited.
management by product. Clark (1923) asserted, “Different cost for different purpose.” It has an important implication in the history of management accounting. However, the concept of target costing of Toyota far exceeds Clark’s idea. Cost is not regarded as a cost that is subject to objective calculation of the results of activities. Toyota regards cost is something to be created to conform to specific purposes.

Especially, target costing in Toyota emphasizes calculation of technical cost according to the purpose, using the differential cost estimate method. Important points in comparing cost are: (1) alignment of postulates and calculation methods so that the cost calculation method meets the purpose, (2) adjustment of classification method, the account headings, depreciation and calculation methods, in comparing cost between companies, (3) comparison of the cost under the standard load.

From the observations given above, it can be understood that target costing up to now carried an essential quality of the Japanese management system. The cross-functional organization system, which is a postulate for target costing system, is the deployment of the management by function. It is an idea from a work place and an idea based upon a principle making much of actual goods that focuses on cost at a committed level in order to avoid accounting visibility, and mainly uses cost at a technical level. Learning opportunities provided in (among) organizations postulated emphasis on the voluntary activities. Here we can find ideas of source management and ideas that quality/cost must be built-in through their focus on the relationship between incurred cost and committed cost.

3. Three aspects

Target costing can be analyzed from the three perspectives: ‘calculation system,’ ‘management system’ and ‘social system (Okano 1996c, 1997)(Table 1).

<table>
<thead>
<tr>
<th>System</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculation system</td>
<td>Cost that is subject to target costing (design cost, actual cost, direct/indirect cost)</td>
</tr>
<tr>
<td></td>
<td>Differential cost among products or total cost of a single product</td>
</tr>
<tr>
<td></td>
<td>Basis of target profit calculation (ROI/ROA/ROE)</td>
</tr>
<tr>
<td></td>
<td>Basis of target cost calculation</td>
</tr>
<tr>
<td></td>
<td>With/without reserve fund of product manager and utilization</td>
</tr>
<tr>
<td></td>
<td>Setting target cost by part</td>
</tr>
<tr>
<td>Management system</td>
<td>Development organization (Chief engineer system)</td>
</tr>
<tr>
<td></td>
<td>Coordinating target costing scheme (Target costing secretariat)</td>
</tr>
<tr>
<td></td>
<td>Coordination among organization (Responsibility/delegation,</td>
</tr>
</tbody>
</table>

Table 1  Three Aspects of Target Costing
principle/detailed rules)
  Target costing secretariat (serving as a hinge)
  The performance evaluation system relating to the personal rating system
  Partnerships with suppliers (guest engineer system)

<table>
<thead>
<tr>
<th>Social system</th>
<th>Procurement (contract form, relationships and business practice with suppliers)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Education and training systems</td>
</tr>
<tr>
<td></td>
<td>Awareness in environment (customer cost, social cost)</td>
</tr>
<tr>
<td></td>
<td>Corporate governance</td>
</tr>
</tbody>
</table>

(Source) Okano (2002a), p.163

(1) Calculation system

The calculation system means an aspect of computation technology. The administrative accounting in the past focused mainly upon this aspect. The target cost, in some case, includes only design cost. In some case, however, full cost is used. Some use several cost concepts, such as design cost and full cost, according to the stage. Design cost is a special cost concept at the designing stage. For the internally produced parts, only direct material cost and processing cost are subject to the accounting. For outsourcing parts, full cost and profit of suppliers (die cost is borne by assembly manufacturer) are subject to accounting.

Generally ‘the sum total method’ is adopted as the aggregation unit of the target cost, in which design cost of a new product becomes a target cost. However, some companies use the ‘differential cost method’ as is the case of Toyota Motor Co., Ltd.. In this method, only the balance between the actual (partial) cost and design cost of a new product is set as a target cost. Nissan Motor Corporation has been using the full cost method, and has placed an importance on contribution profit.

Matsushita Electric Industrial, Co., Ltd., on the other hand, uses the combination of these methods. The company regards a cost that is considered acceptable in the market at the stage of product planning, as cost E, a cost at the product planning stage as cost D, a cost that aggregates costs for parts at an early stage of designing as cost C, a cost that includes a processing cost substantiated at a production preparation stage as cost B, and a cost that is an actual cost at production stage as cost A.

The deployment level of the target cost includes: by product, by component/part, by individuals such as designer, and person in charge of purchasing. Though the deployment works in some cases, it is sometimes inappropriate to deploy the cost, especially, at an individual level. Since it could become a factor to hinder the collaboration, it should be dealt with a special care. It is necessary to think about the meaning of the deployment itself. It is also necessary to consider exercising power to suppliers and other divisions. The deployment method includes
top-down method, and the bottom-up (participatory) method.

In setting target cost, it is important to confirm the conditions such as sales price, production quantity (sales planning), capital investment, the number of processes (production engineering management), and production plants (production control).

The reserve cost allocated to the product manager is an allowance officially given to the manager in charge of the product, and it can be also interpreted as a difference between the committed cost and incurred cost.

The reserved cost for the product manager is often set at around 1% of the total cost. However, when it comes to entirely a new product, a large amount of reserve money is sometimes allocated to the manager. For example, it is reported that 10% was allocated when Daihatsu Charade was launched for the first time (Nishida 1995.) It is also reported that the reserve cost plays an important role when product development is done in overseas facilities (Kajita, 1994.)

In relation to this, Ricoh is carrying out cost fluctuation risk management. They regard the difference between the estimate cost at the development stage and the actual cost at the production stage as a risk, and classify the risk into: (1) design change risk, (2) composition change risk, (3) procurement change risk, and (4) cost estimate fluctuation risk. It is a management system to strike a balance between the attempt to ensure the cost and that to ensure the profit (Kato, 1993).

(2) Management system

The management system is a system relevant to management as a whole, and includes a target costing promotion system: the responsibility and authorities of development organization, the organizational structure of a secretariat, the roles of leadership, and the coordination of management control methods (target costing, kaizen costing, capital investment planning, budget control, etc.,) and the relationships between the performance evaluation system and the personal merit system.

It is necessary to make clear: whether or not the secretariat of the promotion team should be in the head office, or delegated to the operation division; whether the system should be concentrated, or distributed; to which function it should be attached (technical/material/accounting divisions); which function should play as a coordinator (to play a role as a hinge); the division of work among target costing section in the accounting division, cost engineers in the engineering division, and purchase staff; change in the organization; interrelationships among different divisions.

In Nissan Motor Co., Ltd., target costing is carried out in the product profit management section (which is under the accounting division and located in the development center.) In Toyota Motor Co., Ltd., the development center, production engineering, accounting, purchase, and sales planning divisions have a section that deals with promoting target costing and has
established a system to divide work for target costing. This can be described as an example that management by function is adopted for target costing.

In Matsushita Electric, the cost promotion staff was allocated under the direct control of the technical division manager in the Video Division in 1979. In 1981, cost promotion staff was transferred to the product engineering division, and then was graded up as the cost promotion section. Their main roles varied greatly from making a long-term management plan and profit plans by product, coordinating cost reduction activities, carrying out cost management of a new project and VE activities, deciding prices, making a cost analysis of competitors, collecting information, to communicating with other companies.

(3) Social system

The social system means a system where distinct feature can be observed in a certain society, in terms of form of contract, relationships and business practices with suppliers, the education system and the interest in global environment issues. The ‘social system’ is especially important in making an international comparison in terms of target costing. To promote a design-in practice with local suppliers, there are many issues to be examined, including business practices and labor union issues. Environment issues and impact to the life cycle cost due to product liability (PL) should not be overlooked.

In making an international comparison in target costing system, this aspect should always to be kept in mind. It is because there are lot of similarities between target costing system in Japan and that in foreign countries, from a viewpoint of a calculation system, and is not easy to find the difference

The social system will give a huge influence on the computing system and the management system. As a result, it could substantially influence the Supporting Module (Kato 1993, p.29.) that supports target costing.

The different social system can influence the computing system and the management system. Conversely, new ‘computing system’ and ‘management system’ could impact the ‘social system.” This could happen due to difference in responsibilities and power of members within the product development team and target costing staff, a gap in awareness among members, difference in recognition in relationship between management through figures and real management.

4. Basic rules in implementing target costing

“For effective implementation of target costing, it is necessary to start the activities when the cost is committed instead of the time when cost is incurred. “ The basic idea of target costing in this statement is clear. However, many problems emerge when it comes to specific methods and effective implementation measures while trying to foster cooperation among different organizations. The important point is how to solve this issue within the organization. Here it
becomes necessary to establish rules of target costing. This aspect will be delved into from the three perspectives: 'philosophy and fundamental principles', 'operating standards,' and 'evaluation rules.'

(1) Philosophy/ Fundamental principles
Philosophy/fundamental principles are the fundamental/universal ideas of the company relevant to target costing: how the company thinks about the cost management, its relations with respective subsystems (budget, kaizen costing, and capital investment plan) including target costing, the purpose and the ultimate goal of target costing.

Specifically, a following idea: that ensuring the target profit is the most important to ensure the profit plan, should be shared. This includes information about the target profit, target cost, and calculation basis, and their postulates.

(2) Operating standards
Operating standards are often the standard of the calculation system, including timing to measure cost, rules of making an estimate, rules to change premises, rules to setting target profit. They also include the items that may change depending the corporate strategies, such as items subject to target costing, organizational structure, meetings with division members mainly in charge of target costing, and deciding the tools to achieve the target.

As to the timing for measuring cost, if differential cost between the current and the new models is adopted, the base cost is the latest cost at the time of trial and follow-up time, and the differential cost uses the cost when target cost is set. It is because that if the timing for setting cost is different between the target and estimated cost, elements other than the designing difference come in, and adequate judgment cannot be rendered.

The feature of the differential cost system is that cost is divided into the cost that is incorporated into target costing and the cost that is not incorporated into target costing. In other words, cost relevant to the design and the production engineering activities are included in target costing, but cost fluctuations due to the change in the production location, change in management environment such as inflation and deflation, and the purchase policy are not reflected in target costing.

Rules for the change in the postulates are rules for specifications, the number of cars planned, the foreign exchange rate, and the internal and external production.

Rules for setting the target profit emphasize the alignment with the mid- and long-term profit goals, and rules are decided, following the guideline of the target profit by the type of the vehicle, which conform to the mid-and long-term profits.

(3) Evaluation rules
The evaluation rules are designed to deal with specific problems that may arise in operating
a project. They include rules in setting targets, rules of calculation, efforts to divert use of equipment, effects of reducing the types of components, sharing dies during trial production, responses to dealers, measures against emission gas, safety and noise. Without this, a gap will occur between target costing activities and calculation systems, and does not lead to the achievement of target profit even if target costing activities are carried out, then target costing will become a dead system. Among the evaluation rules, the range of the necessary cost reduction from the estimate cost, the range of VE, and the range of the reserve cost for chief engineers are important.

(4) Imprinting rules

The above rules are not necessarily shown explicitly to all the member of the organization at the time of introduction of target costing. Very often they are embedded into the organization, and nurtured implicitly through the trials and errors. As the paradigm of the competition within the organization changes, it is inevitable for these philosophy/principles and evaluation rules to be changed. However, it is also possible to happen that only rules continue to exist as if they follow the law of inertia (Itami & Kagono 2003).

When target costing is carried out an overseas subsidiary and Japanese head office, it should be made it clear what kind of change must be made in the rules, and what is the element that hinders the change.

The supplier convention held with the participation of top management of the suppliers is the place to explain the purchase policy of the assembly manufacturer, as well as the place to 'imprint' the development strategy, including target costing to suppliers. It is also transferred implicitly and explicitly to the supplier in the daily designing routine through various programs, including 'the guest engineer system' that allows the supplier’s engineers to take part in the development team of the assembly manufacturer.

4. Accounting Change in a Global Situation: Recent Change of Target Costing at Toyota

1. CCC21 and EQ Committee

In 2000, Toyota launched a cost-reduction initiative designed to improve the cost-competitiveness of its new products. This initiative was called Construction of Cost Competitiveness for 21st century, or CCC21. Its goal was to carry out a radical review of the target costing which had hitherto revolved around “VA/VE” (value analysis and value engineering), by making it an essential requirement to reduce costs by 30%. By abandoning all current assumptions and starting from scratch, it set out to “strip costs completely naked.”

Previously, each production division’s costs at the factory level had been generally based on the number of labor hours for the company as a whole: costs were apportioned according to the size of the car, the number of units, and other factors, and in the case of maintenance costs and
so forth, apportionment was carried out in the same way for each model. This allocation procedure was rejected on the grounds that it led to slipshod accounting.

This technique is now applied by Toyota’s suppliers, too. Under the slogan “halve materials costs and processing costs,” teams have been formed, their members drawn from Toyota’s purchasing, engineering and production divisions, and dispatched to work with the suppliers, providing guidance through multiple channels (see Figure 1).

The development project for the new Corolla, launched in 2002, features a 10-member “EQ Committee” (EQ being the Corolla’s manufacturing code) comprised of an operational unit consisting of deputy directors of all the departments involved, plus key executives from purchasing, manufacturing, engineering and accounts: this committee implemented an “abandon-all-current-assumption drive,” rethinking costs from scratch. CCC21 was designed to take the cost-cutting initiative that had been so successful with the Corolla, and push it even further.

The procurement division, parts procurement division and materials and equipment procurement division were unified with regard to the 173 individual parts that made up 90% of the procurement cost. These departments were reorganized, changing over from a horizontal division into model, parts and engineering phases, to a vertical division into production process phases. Furthermore, the selection of construction methods and equipment tailored to the parts and materials, and the procurement of the materials, molds and production equipment, was entrusted to a single buyer. This initiative attained an average cost reduction of 30% (50% in the case of some parts) over a 3-year period. When the savings were calculated, based on the procurement cost for the accounting year to March 2000, which was 4.7489 trillion yen, they worked out at 1.34 trillion yen (Figure 2).

2. The Transformation of Target Costing: The Shift Away From the Differential System and Towards the Absolute-Value System

Okano(2003) shows how target costing marks a clear departure from traditional management accounting. We also looked at a number of characteristics of target costing, including the way it combines market-oriented calculation (reverse calculation) with technology-oriented calculation, the way it shifts the focus away from incurred cost toward committed cost, the fact that its calculation and management systems are not location-specific or department-specific (i.e. person-specific), but “thing-specific,” and the fact that it facilitates the simultaneous attainment of targets on multiple fronts, including price, quality, delivery dates, efficiency, environmental soundness, and so forth.

In recent years, companies are increasingly transferring their production bases overseas. Besides increasing the need to procure parts locally, this also means that manufacturers are obliged to achieve even greater cost reductions on their domestically-produced parts, making it
essential to create a global costing system. Let us consider how the characteristics of target costing are likely to change in response to the globalization of corporate activities. We shall focus mainly on changes to calculation systems.25

First, it is possible that there will be a shift away from “virtual calculation,” transcending location, towards “substantive calculation,” in which the “location” and “people” dimensions are bonded together. This is because, since the range of products made at overseas bases is restricted, the profitability of the products is directly linked to the continued existence of the local business entity itself. In other words, the difference between the cost concept before mass-production (i.e. at the target-costing stage) and the cost concept after mass-production (i.e. at the cost-maintaining and cost-kaizen stages) will become critical. The calculation process at the development stage and other pre-mass-production stages and the calculation process after mass-production will become separate self-contained processes, and the PDCA (plan-do-check-act) cycles will end up being implemented separately, instead of being linked in terms of calculation (Okano 2002a) (see Figures 3, 4).

In order to surmount these challenges, companies will have to switch from the differential system to the absolute-value system. In traditional target costing, as has already been pointed out, the emphasis has been placed on cost-unit management, with everything revolving around how much the cost has fallen on the graph, while the improvement of new parts, the costs and rates for carryover parts and other conditions have been fixed. The differential cost management system was aimed at motivating the designers, and evaluating their efforts properly, by eliminating external factors beyond their control.

However, it became difficult to attain challenging goals solely by means of graph-oriented efforts, and the other fixed parameters consequently had an increasing effect on profitability. This prompted a shift towards the absolute-value system—which uses absolute values instead of the traditional differentials—when setting the target cost of a new product. As a result, target costing has broadened its scope to include areas hitherto ignored, such as kaizen activities targeting purchased parts—which are the responsibility of the procurement department—along with improving production efficiency and reducing marketing costs and general administrative costs.

Another consequence of this change is that, as shown in Figure 5, it is now possible to make provision cost data comparisons at the design, production preparation and production stages, so it can be clearly shown how much each stage contributes to the total cost. As a result, rough cost comparisons between facilities in Japan and production bases overseas are now possible (see Figure 6).

The return to a “location-specific” approach to calculation, however, will obscure the extent of

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25 Globalization is likely to affect management systems through trends in development organization, performance evaluation systems, systems for promoting organizational learning in cooperation with suppliers, and even policy management. Social systems will be affected by globalization in terms of contracts, employment practices, education systems and other matters relating to the application of local systems.
the negative impact on the precision of estimated costs and the relationship with VE, attained by
target costing using the technology-oriented approach previously established. This issue will be
addressed in future, including trends in the handling of accounting “opacity” considered in
Okano (1995c).

As target costing systems move further towards becoming directly linked with human
resources evaluation system, engineers and purchasing staff move further apart in terms of
target cost. Conversely, companies could decide not to set individual-specific targets, in order to
promote cross-functional activities.

However, this is not to say that the transition from the differential system to the absolute-value
system will eliminate all problems. One problem that remains concerns the relationship between
the head office in Japan and the business entity overseas. In other words, despite the fact that
an overseas production base is in fact an investment center, in its relationship with the head
office in Japan, it will be treated as a cost center, and suppliers will also be seen as cost centers.
In other words, the perceptual gulf regarding the nature of the organizational structure will have
a strong influence on the separate specific activities involved in target costing, and this must be
considered.

At this point, bearing in mind the relationship between organizational change and accounting
change, we need to consider how culture will influence these changes. Demystifying
differences in accounting and management behavior could be said to produce a strong trend
towards convergence at points of cultural difference. However, as has been pointed out in the
foregoing consideration of cosmopolitanism, rather than merely “interpreting” organizational
behavior caused by a “single” cultural difference (like the one existing between Japan and
America) in stereotypical terms, we need to lay bare the issues hitherto overlooked in the name
of “cultural differences.” As well as understanding cultures in a multicultural situation, we need to
do away with the word “culture” as far as possible, and re-interpret those problems from a
different perspective, bringing to light the aspects of culture that were formerly buried (see
Figure 7).

In 1999, Toyota set up a Committee for the promotion of Local Procurement, and local
procurement of parts has since been carried out in five phases--by task forces for the “project
phase,” the “parts & components phase,” the “supplier phase” and the “material phase,” plus the
“management system phase” whose function is to ensure that the other phases become firmly
established. In other words, this can be seen as an attempt to implement the kind of
cross-functional management system we studied in Chapter 1, which is not confined to the

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26 The word “culture” is used here to indicate the composite aggregation of those capacities and manners acquired by a
human being as a member of a society, such as knowledge, beliefs, art, religion, morality, law, customs and so forth.
27 Toyota has created offices for the promotion of localized procurement in the form of the Global Procurement Planning
Department, Planning Department No.1, (in Development Center No.1), Planning Department No.2 (Development Center
No.2), the Overseas Engineering Department and the Global Production Planning Department. The membership of the
Committee consists of representatives of the regional business entity for each project (in Europe, North America, Asia &
Oceania, the Middle East, South Africa and South America), plus “functional” representatives (for design, materials
technology, logistics and so forth).
“project-specific” approach of traditional target costing, which is spearheaded by the design team and staff at overseas business departments, but instead takes the form of various phases. The new system starts with the “parts & components phase” spearheaded by the technical research staff, and passes through the “supplier phase” spearheaded by procurement staff, the “material phase” spearheaded by engineering (or design) staff, and the “management system phase” spearheaded by production and logistics staff.²⁸

5. Conclusion

As apparent from the above discussions, target costing has changed from a means or technique for VA or VE oriented cost reduction activity to a total cost management oriented conceptual device to simultaneously achieve cost, quality, delivery term, and reliability requirements as the interrelation between the environment and the organization changed. Through this evolutionary process, target costing has reached today’s stage where it is accepted as one of the important product development management process by making inter-company relations centered around Keiretsu affiliation closer and undergoing a series of developmental reorganization. While the specific styles differ from one company to another, “dispersion and integration of accounting functions” were undertaken in parallel and concurrent manners in this process. The next step for us is to examine the process of transferring of target costing to China through China-Japan collaborative research.

REFERENCES


²⁸ Moreover, in Okano 1996 and 2002a, three approaches to strategic target costing are presented. These are (1) target costing as a comprehensive product strategy management system (target costing by product group), (2) target costing as an engineering strategy management system (technology-oriented target costing), and (3) target costing as a production engineering management system (factory target costing, an organic bonding of cost maintaining and kaizen costing).
Keizaisha.


Figure 1 丰田的21世纪开发革新计划

- C21：Century 21
- NBC：New Basic Car
- NBC-Y：NBC-Yokotenkai
- Vitz的派生
- EQ：Corolla的开发准则
- EQ-Y：Corolla(EQ)的派生车
- AD21：Advanced Development 21
- Eco：Ecology(地球环境保护)
- CD：Customer Delight(消费者满意度)
- CCC21：Construction of Cost Competitiveness 21

按不同车种类别进行活动

C21(平台式的统合化・派生车型的扩大)

NBC

NBC-Y

EQ corolla

EQ-Y

横向扩展

AD21(开发期间缩短)

Eco技术，CD质量，等

CCC21(制造成本・零部件成本的削减)

（出典）日野（2002）308页
图 Figure 2 向现地供应化的挑战

◆课题与切断面的明确化

按照主要零部件目录确认现地供应活动
已全部零部件作为供应对象的推进活动

（出典）丰田汽车（2001）6-7页
● **Figure 3** 成本企划的差额研究（至20世纪90年代后期为止）

![成本企划的差额研究图](image1)

（出典）Sasaki[2002]

● **Figure 4** 成本企划的绝对值研究（从20世纪90年代后期开始）

![成本企划的绝对值研究图](image2)

（出典）Sasaki[2002]
Figure 5 在设计·生产准备·生产各个阶段的成本比较

![成本比较图](image)

（出典）笔者作成

Figure 6 设计成本与实际成本的全球范围的一致性

（现行产品）
- 目标成本（设计阶段）（决定水平）
- 目标成本的估计成本（试做成本）（生产准备阶段）
- 生产阶段的实际成本
  - A 国工厂：成本数据
  - B 国工厂：成本数据

全球性成本比较→数据库化

（新产品） 设计阶段的目标成本→生产准备阶段的估计成本→生产阶段的实际成本
（决定水平） （发生水平）
Figure 7 现地供应化与世界最适宜生产的关联

国际竞争的 No.1 实力 → 向不易受汇率变动影响的收益构造转换

现地供应化 100%

世界最适当生产（总成本的最低限度化）

现地国产化 = 分散生产

（出典） Toyota Motor Corporation [2001] p.3.