

# Target Costing: Lessons from Japan

*Il-Woon Kim, Shahid Ansari, Jan E. Bell, and Dan Swenson*

## EXECUTIVE SUMMARY

- This article reports the findings of a recent field study about target costing in Japan, during which the authors visited five companies that use target costing extensively. Three of the companies make industrial products, and two make parts for automobile and electronic companies.
- Target costing has existed in Japan since the late 1960s. As competition has increased (and, thus, as profits were squeezed), the use of target costing has spread widely, and target costing methodologies have improved significantly.
- Although target costing originated in Japan and many companies there are well-known for their use of target costing, the use of target costing was limited until recently even in Japan.
- Target costing generally begins with *kaizen* (i.e., continuous improvement of the manufacturing process or supply chain), then moves to product design. Design people soon become intensely involved in target costing at the early stages of new product development.
- Design people in Japan have tended to overdo quality; often they failed to pay much attention to cost. One of the difficulties that companies face, therefore, is to teach designers to think about costs first. Designers have also tended to listen more to customers and marketing people than to suggestions about design that they receive from the factory.
- Cost engineering practices have been developed and widely used in Japan to help purchasing departments estimate costs. Combined with a good understanding of the manufacturing processes of suppliers, cost engineering practices can be an effective tool to convince suppliers of the accuracy of cost estimations.

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This research project was sponsored by CAM-I (Consortium for Advanced Manufacturing—

International), the American Institute of Certified Public Accountants, and the University of Akron.

To study target costing, we recently visited five companies in Japan that use target costing extensively; three make industrial products, while two make parts for automobile and electronic companies. These companies were selected by the Alpha Brain Corporation, a Japanese consulting firm that specializes in cost database management and target costing implementation (see Exhibit 1 for more information

CCC 1098-9382/99/02003-09

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### Exhibit 1. The Alpha Brain Corporation

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*As competition gradually became more fierce and profits were squeezed, the use of target costing intensified.*

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The Alpha Brain Corporation is a leader in developing and implementing leading-edge strategic cost management practices in Japan. As a guiding principle, Alpha Brain subscribes to the mantra that “costs are not managed, they are designed and controlled.” For almost 20 years, Alpha Brain has put those words into action by helping companies optimize supplier management practices, provide cost data warehousing, and implement target costing systems.

To provide superior cost management solutions, Alpha Brain has developed Alpha-7, which is software that provides empirical process engineering cost estimation, processing simulation, and cost data warehousing. For upstream product development, in particular, Alpha Brain provides Alpha Cost Design, software that combines a Cost Analysis Code search-and-retrieval engine. Together, Alpha-7 and Alpha Cost Design form a concurrent system designed for the needs of cross-functional teams in target costing.

For more detailed information about the company, please visit its website at <http://www.alphabrain.com>.

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about the Alpha Brain Corporation). In terms of their progress toward a perfect implementation of target costing (100 percent), these five companies are estimated to range from 50 percent to 90 percent.

At each company, senior managers or top executives who were familiar with the company’s target costing system gave us a detailed presentation about the system, which was followed by extensive discussions, questions and answers, and a plant tour. The discussions usually covered not only the company’s own target costing system but also more general issues about target costing practices in Japan. Consequently, the information about target costing provided in this article is not limited to what we learned about the five companies that we visited.

#### WHY IMPLEMENT TARGET COSTING

The basic concept of target costing has existed in Japan since the late 1960s. It evolved rather slowly, however, because many companies implemented target costing only in response to changes in the external environment. As competition gradually became more fierce and profits were squeezed, the use of target costing intensified, and as a result target costing methodologies have improved.

During our visit to Japan, we learned that, even though many companies in Japan have been known for using target costing effectively, the use of target costing was quite limited until recently in many other companies. For example, target costing may have been applied to only a limited number of products or parts within a company. The target-setting process depended largely on experience and intuition rather than on scientific and objective information. In other cases, target costing—which a company’s purchasing department may have initiated to manage suppliers—was

never used in other areas, such as design. Also, many companies had implemented only some components of target costing, so they lacked a fully integrated system.

#### **COLLAPSE OF THE BUBBLE ECONOMY**

Beginning in the early 1990s, three major events occurred in Japan that contributed to significant changes in target costing. The first and probably most significant event was the bursting of the economic “bubble” in 1990 and 1991. After the collapse of Japan’s bubble economy, many companies realized that it was increasingly difficult to meet customers’ expectations of lower prices. Existing target costing systems made it difficult for most companies to squeeze out extra cost.

At the same time, in an effort to survive, the strategic focus of many major Japanese companies shifted from increasing market share to securing profits. As a result, more integrated, companywide efforts to reduce costs began by extending the application of existing target costing systems. At one company that we visited, sales dropped by half after the bubble burst, so every department—particularly manufacturing—was overstaffed. Instead of laying off half of its employees, the company helped them increase their engineering and technical skills, then applied those skills to efforts to improve cost control. Because the employees knew that the only way they could keep their jobs was to reduce costs (thereby increasing sales and profit for the company), everybody worked hard to achieve success.

#### **EFFECT OF THE RISING YEN AND RECESSION**

The second event was the rise of the yen compared to the U.S. dollar, which started in 1993. By 1995, the Japanese yen had appreciated as much as 50 percent. It moved from stabilized exchange rates in 1992 of 130 yen to 140 yen per dollar to a record high of 84 yen to \$1. As a result, sales from overseas and profit margins of many Japanese companies plummeted. Consequently, the use of target costing increased significantly as companies fought to survive.

The current recession in Japan caused by the financial-sector crisis has also forced many Japanese companies to feel pressured to squeeze out more cost so that they can meet profitability requirements. Now, however, the improvement is focused largely on information processing and information-technology support. This has happened because as companies have upgraded their target costing systems since 1990, the amount of data needed to estimate costs more accurately has increased significantly. Manual databases, such as the traditional cost tables long used in many companies, are no longer suitable to handle all the data required for target costing. Computerized, scientific data processing and simulation systems, such as cost analysis codes, are becoming increasingly popular. Cost analysis codes (which are discussed near the end of this article) have not yet been used much in the United States.

#### **PRODUCT DESIGN**

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## COST ENGINEERING

Cost engineering practices have been developed and widely used in Japan for this purpose. Combined with a good understanding of the manufacturing process of the suppliers, cost engineering practices can be an effective tool to convince suppliers of the accuracy of cost estimations. In fact, one company that we visited can make all the parts it purchases from suppliers, so approaching the suppliers to talk about how to reduce costs is fairly easy—and the company's arguments are credible.

It is common in Japan for suppliers to follow an "open book" policy: Suppliers provide all cost information to their customers. If suppliers reduce cost below the target by exerting extra effort, they get to keep the extra profit. (Otherwise, suppliers would not disclose their true cost structures to customers.) Companies usually expect their suppliers to meet target costs. If they fail to meet the target, the suppliers have to explain what happened. If the resulting cost is reasonable, the company will accept it.

Many companies use multiple suppliers for the same parts in order to foster competition, encourage innovation, and thus reduce costs. Sometimes, however, the cost structures of these suppliers differ significantly because of differences in the manufacturing process. When this happens, making cost comparisons is difficult; thus, a company may enforce a standardized production process so that costs will be more easily comparable. Small companies have more difficulty in controlling their suppliers than do large companies. As a result, small companies sometimes purchase from overseas (even though the price and quality may not differ much) just to send a message to suppliers that alternative sources for the parts exist.

Our observations make it clear that the major expected contribution that Japanese purchasing departments are supposed to make is to reduce costs through effective supply chain management. This explains why target costing was initiated by purchasing in many companies. But purchasing people do a lot more than just purchasing parts and materials. They have to do all the normal purchasing activities (e.g., ordering, inspecting, setting up delivery schedules, and rating suppliers), but they also have to maintain good relationships with suppliers and actively participate in setting the prices to be paid.

## ORGANIZATIONAL STRUCTURE

Target costing teams in Japan are structured in various ways. The target costing function is usually housed in the purchasing or logistics department, mainly because the purchasing department usually initiated target costing. Sometimes implementation is delegated to purchasing, but the ultimate responsibility lies with other departments, such as design or manufacturing. In other cases, multiple departments (e.g., sales, process engineering, purchasing, and the technical center) share responsibility for target costing. Other companies have independent target costing departments.

Regardless of the structure of the target costing team, the following three things are important for successful implementation of target costing:

1. *Independence of the team.* Independence is necessary because a target costing team should not be subject to any political changes within a company. Because the target costing team deals with cross-functional issues all the

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- time, team members must remain objective.
2. *The team should be cross-functional.* The team should be able to draw together three groups that are involved in the entire product-development process: cost accounting, engineering, and design. These members of a target costing team are often rotated through the organization: After serving the cross-functional target costing team for many years, they often go back to the departments where they previously worked.
  3. *Empowerment of the team.* Traditionally, the purchasing department bought anything the designers requested. But after target costing is implemented, purchasing people make sure that the right suppliers are selected and that optimized purchasing occurs. There is no excuse for simply doing as instructed by designers: Purchasing can say no. In fact, they sometimes have to persuade the designers to change the design or materials to meet the cost target. In this regard, the purchasing (or target costing) department can be a good career path; it is not considered a second-level support function. In some companies, new employees who are initially assigned to the purchasing or target costing department often do not like it, but as they learn more about what they do and how they are perceived in the company, they often do not want to leave the department.

When the target costing function is housed in purchasing, another major responsibility of employees in purchasing is to work with other departments to reduce costs. Sometimes the purchasing department does not have any official ties with other departments, yet the department still coordinates cost-reduction activities throughout the company. Hence, in addition to having basic negotiation skills with suppliers, purchasing employees have to be familiar with the manufacturing process and they have to have coordination skills.

To introduce target costing, a company should start with a centralized team that is vested with recognized power and authority throughout the organization. Once the team is chosen, decentralization (or spreading out) of the target costing function should be conducted by rotating members of the target costing team throughout the company.

Rotations should not occur too often, however, so that a stable working environment can be maintained. In Japanese companies, members of the target costing team come from various departments, then they work for target costing for a long time (seven years, for example) before they go back to their own department.

#### **SETTING TARGETS**

Cost estimation and analysis have been practiced widely for a long time in Japan. Cost estimation was initially done so that the manufacturing process of a company could make various business decisions, including setting targets. As target costing was introduced and began to be applied to a company's supply chain, cost estimation of the suppliers became essential. Sophisticated techniques (such as cost tables) have been developed, so many companies can now estimate the costs of competitors' products quite accurately.

In general, there are two ways to set prices for suppliers, depending on the level of trust or familiarity that exists between the company and suppliers:

1. The company estimates the cost of the parts to be purchased and adds a profit margin for first-tier suppliers. This price, along with the cost data, is given to suppliers every year. The suppliers, in turn, accept the price unless they have strong reasons to believe that they cannot achieve the cost estimated by the company.
2. Suppliers initiate the price-setting process and provide their own cost data to the client company. If the cost is acceptable to the company, an agreed-on profit margin is added to get the price. If there is a discrepancy about the estimated cost, the company and supplier together review the manufacturing process, types of materials to be used, quality level, and the like, to find possible solutions.

Both of these approaches are popular in Japan, but they will work only under certain environments. Suppliers should place complete trust in the company. In addition, the company should possess detailed knowledge about the manufacturing process and cost structure of suppliers—and even the profit margin suppliers require to survive in the long run.

#### **“DECOMPOSITION” OF A COMPANY TARGET**

Once an overall cost target is set for a company (whether in terms of an absolute amount in yen or in terms of a cost-reduction percentage), the target is “decomposed” into the parts applicable to each division and—eventually—to each product or product line. A single, across-the-board target is rarely used.

Decomposition of the company’s overall target is done to provide an equal challenge for everyone in the company. Equal challenge means “ability to bear” or “equally difficult to achieve.” This decision is based on two factors:

1. The status of the target costing process; and
2. The nature of the manufacturing process.

Divisions that have an advanced target costing system do not have much room for future cost reduction, so they receive a smaller portion of the cost-reduction target. Also, some manufacturing process characteristics can bear more cost reduction than others.

The target, once determined, does not change under any circumstance. No subsidy of the target is given across the products or divisions. These are simply part of the target costing discipline. A cost reduction target is sometimes given by percentage, but, even so, the percentage is fixed regardless of changes in other elements, such as sales. If committed costs make a target difficult to achieve, future capital investment decisions will be linked to target costing systems. For customized products, delivery date is an important factor affecting the target cost. In this case, cost estimation begins after the delivery schedule is determined.

#### **COST ANALYSIS CODES**

It has been widely known that Japanese companies use cost tables in estimating costs. Cost tables are simply databases that contain detailed cost information about the following:

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*Cost analysis codes are used as the basis for time and cost studies and for kaizen (i.e., continuous improvement).*

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*Because target costing is cross-functional and companywide, having the support of all employees is a must.*

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- Raw materials;
- Purchased parts;
- Processing costs;
- Overhead; and
- Cost drivers (e.g., the size of the product, the number of features, and the types of materials used).

Increasingly, however, traditional cost tables have been replaced (or are rapidly being replaced) by cost analysis codes. As companies extend target costing, cost tables are becoming too complicated to handle the enormous amount of data required when they are updated and take into account new functions, new materials, new designs, and similar considerations.

Cost analysis codes, which were originally developed in the late 1960s and used to organize cost tables in Japan, are basically organized databases that enable a company to retrieve information about parts, units, and products according to the name, function, shape, size, weight, assembly method, and types of raw materials. Cost analysis codes are used as the basis for time and cost studies and for *kaizen* (i.e., continuous improvement), because they make it possible to search a database by assembly method, size, functions, processes, or similar criteria.

Software has become very important for accurate cost estimation. Companies can use either homegrown cost data systems or third-party computer software such as Alpha Brain. By using Alpha-7, a company can estimate costs even for parts the company has never made. One company that we visited had estimated the costs of nearly 2,000 parts using Alpha-7 to find that they were overpaying by 130 to 300 percent for the 70 percent of the parts it purchased. When the company presented this information to the supplier, the initial reaction was that it would require a sophisticated trick to slash the price. It took the company one and a half years to persuade the supplier, which it did by going through the entire manufacturing process, step by step, and demonstrating the use of Alpha-7 for cost estimation.

#### COMMUNICATION AND REWARDS

An effective communication system is another important element in target costing. Because target costing is cross-functional and companywide, having the support of all employees is a must. The predetermined targets for the company and for each department should be clearly communicated. This target is posted in every department. At one company we visited, each employee carries a badge with his or her target engraved on it.

Continuous feedback about progress toward targets should be communicated to employees. Constant monitoring and reporting of profit rates (i.e., the selling price divided by the actual cost) and progress toward achieving the target (i.e., target cost divided by the actual cost) should occur periodically (ideally, every month). *Kaizen* ideas should be prominently displayed and discussed at monthly meetings.

A reward system can be used to encourage individual employees as well as teams or divisions to work toward the goal of achieving the target. In general, employees are not penalized for missing a target as long as they can explain



why and persuade the top managers. Individuals and teams that do achieve a target get a bonus, usually in cash. Team members may also be rewarded through recognition, (e.g., dinner at an expensive restaurant with the company president). At these gatherings, the president of the company can talk to and hear from employees in a relaxed environment.

In target costing, suggestions from employees for cost reduction are encouraged and highly regarded. Suggestions (the voice of employees) are frequently posted on the wall and rewarded based on the number of proposals adopted for both the team and individuals. *Kaizen* ideas are scored on a point system for each individual and each team.

Designers are sometimes rewarded based on how many new ideas they have incorporated into the process of designing. Because some good ideas can come from other departments, designers become receptive to other departments. In some companies, all suggestions from individuals are awarded points that count for recognition and future awards, though cash bonuses are paid only for ideas that are accepted.

#### KEY SUCCESS ELEMENTS

This article describes what was learned about target costing from studies in Japan. Some of the discussions touch on business methods that may have a cultural aspect, which makes them difficult to apply in other organizations or in different environments. However, certain common elements of successful implementations of target costing are probably universal. Lacking any of these elements will probably jeopardize any target costing efforts.

The first is support and enforcement from top management. Target costing should be implemented from the top down, not from the bottom up. In two companies out of five that we visited, the chief executive office (CEO) himself made the presentation about target costing. Progress about the target costing program in these companies is reported directly to the CEO, who controls the program. In particular, the CEO gets a detailed report on target costing for unprofitable products.

The second element is employee "ownership" of target costing systems. For employees to "buy in," it is sometimes necessary to break old patterns and to change existing mind-sets in order to unleash people's creativity. For target costing to be institutionalized, a company's management has to recognize that people are the most important factor, not the system itself. Cost and quality are the manifestation of people's work, not of the manufacturing process or machines.

The third element is empowerment of employees by top management. Employees should feel free to speak out about new ideas or to make suggestions and, if they are feasible, to implement them. The target costing team, in particular, should be given the power to coordinate all of the company's target costing efforts.

The fourth element is a solid understanding of cost concepts by all employees. Most engineers and designers are not trained or educated in cost accounting. Therefore, education about cost accounting should be provided to designers and engineers (in particular) to enhance communication among the departments involved. ♦

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