
Target Costing: An Integration of Strategic Efforts

Margaret Weber

EXECUTIVE SUMMARY

Target costing capitalizes on a company's strategic efforts by integrating those efforts into the product planning and design process. Key to its success includes:

- A market focus that directs attention to satisfying customer needs, thereby ensuring the revenue stream.
- Applying innovation to new designs, which leverages the company's core competencies to efficiently serve customers.
- Involving cross-functional internal and external resources to develop solutions that address all product-life-cycle considerations in the earliest stages of design.
- A discipline to rigorously measure and manage performance of new designs against cost, schedule, and functional targets.

Target costing is used as an umbrella term to describe a wide range of good business practices that are used to identify and match costs set by the marketplace. Among others, these business practices include:

- Competitive analyses of customers and competitors.
- Supply chain partnerships.
- Performance measurement.
- Activity-based costing.

But—as with other aspects of new product (or service) development—target costing has effects that extend across all business processes. Companies that fail to integrate their efforts are unlikely to realize the greatest benefit from target costing; thus, communication and knowledge management become critical.

Although many companies have undertaken target costing, few have described in full the strategies and alignment required to use

Target costing has effects that extend across all business processes. Companies that fail to integrate their efforts are unlikely to realize the greatest benefit from target costing.

Margaret Weber is a Senior Consultant with Ernst & Young LLP in Chicago.

CCC 1098-9382/99/040033-16
© 1999 John Wiley & Sons, Inc.

A target cost is the projected market price for a product minus the desired profit. The resulting target cost becomes a key goal for a new product development team before design ever begins.

Nearly half of all new product failures can be traced to inadequate market analysis. Understanding how many customers will pay a given amount for a given level of function provides companies a basis for projecting volume—and, thus, revenue and profit.

it effectively. Those that do adopt this strategy appreciate the depth of the undertaking, so they explain both the challenges they encountered and those they continue to face. As companies integrate their business methods and as corporate cultures change, target costing begins to take on its full potential. In particular, it addresses Deming's belief that efforts should be not simply to increase market share but to expand the market—with new innovations to enrich society. The extent of this change becomes clearer as different dimensions of target costing practices are explored.

MARKET FOCUS

Target costing requires a strong focus on the marketplace. It can be formally defined as follows: "A system of profit planning and cost management that is price led, customer focused, design centered, and cross-functional. Target costing initiates cost management at the earliest stages of product development and applies it throughout the product life cycle by actively involving the entire value chain" (Ansari, Bell and CAM-I Target Cost Core Team, 1997).

More simply, a target cost is the projected market price for a product minus the desired profit. The resulting target cost becomes a key goal for a new product development team before design ever begins. Achieving the target cost relies on linking high-level strategies and core competencies to profit planning and design efforts.

According to research, nearly half of all new product failures can be traced to inadequate market analysis (Wilsted, 1995). Understanding how many customers will pay a given amount for a given level of function provides companies a basis for projecting volume—and, thus, revenue and profit. This information is so vital that target costing generally employs formal mechanisms for purposes of gathering and documenting customers' needs and priorities.

Capturing Customers' Wants

Tools such as *quality function deployment* (QFD), surveys, focus groups, and complaint tracking can be used throughout a product's life cycle: from exploration of a concept to customer use and disposal of a product. These tools help companies elicit and document the needs and priorities of their customers. Both product teams and managers use this information to make—and reevaluate—decisions about products or services.

Kimberly Clark, for example, used QFD when developing a new mill to identify areas in which investments would be critical for achieving targeted capability. QFD helped the company identify unnecessary specifications and "nice to have" (as opposed to vital) functions. Such "bells and whistles" would have increased costs without bringing any appreciable increase in revenues. By using QFD, Kimberly Clark's product was preferred by a ratio of 4 to 1 over that of the leading competitor. The company also had 100% customer retention over a three-year period.

Understanding Customers' Choices

Revenues are often a function of understanding customers' current and future options, including who from the customer's perspective the competition will be—in other words, who will provide the capability that customers seek?

Generally companies evaluate competitors by assuming that they will use similar technologies and encounter similar problems. Today, however, a company's competition may be a world away. Cameras, for example, may compete with compact disc players for a family's discretionary income. Similarly, for national defense, the choice may exist between fighter planes and ships at sea. The strengths and weaknesses of each of the options—from both the customer's and provider's perspectives—determine the market opportunities.

Addressing Dynamic Markets

Because markets are dynamic, companies must continually seek new information. One major defense contractor, for example, seemed to have a superior product with their preliminary designs for a specific piece of combat equipment.

But reverse engineering of a competitor's product made it clear how far ahead the competition was in terms of cost. The contractor thus faced a tough decision: to continue development or risk being undercut by competitors with lower costs. Ultimately, they decided to revamp the design and risk success on adopting newer technologies, despite the formidable challenge posed by trying to introduce the redesign at a substantially lower cost. In the end it was the right choice; they were awarded the contract, which in turn led to significant other opportunities.

Collecting accurate market information up front often helps companies avoid costly redesign efforts. But if the market changes while a product is being developed, it usually makes sense to redesign a new product rather than risk introducing a product that customers do not want.

Balancing Customer and Company Needs

Customers almost invariably prefer better function (i.e., faster or better performance) at a lower price. But consider the loss customers realize when a company such as People's Express Airlines goes out of business. For loyal customers, the short-term benefits of the past are replaced by the aggravation and expense of having to identify new carriers and form new relationships.

To serve markets effectively over the long term, companies must explore opportunities that align with their own internal business strategies: It is nothing more or less than the economic realization of Darwin's survival of the fittest. Managers must define and communicate an approach to product development that exploits their organizations' core competencies so that they can satisfy customer needs and establish long-term relationships with customers. Doing so produces a win-win situation: Customers get the products (or ser-

Collecting accurate market information up front often helps companies avoid costly redesign efforts.

To serve markets effectively over the long term, companies must explore opportunities that align with their own internal business strategies . . .

The priority among customers needs, competitive threats, and opportunities must be made clear not only to those who develop new products or services, but also to operational managers, who have to set priorities for process improvements, forecast capacity requirements, and determine what to outsource.

Identifying a wide range of options early on can lead to dramatic differences in ultimate performance.

vices) they want at a reasonable price, and the company earns a profit while further developing its core resources.

The priority among customers needs, competitive threats, and opportunities must be made clear not only to those who develop new products or services, but also to operational managers, who have to set priorities for process improvements, forecast capacity requirements, and determine what to outsource. Every company must be able to choose from the many possible investment opportunities ideas it generates and focus on those that have the most promise. Alan Brache describes improvement efforts that are not tied to strategy as one of the “deadly sins of process improvement and management” (Maples, 1997). In short, all of the company’s efforts must be clearly linked to the market.

INNOVATION IN NEW PRODUCT DEVELOPMENT

Success often depends on meeting targets set for price, schedule, and function—and all at a cost low enough to allow the company to capture its desired market share and earn its targeted profit. For any given product or service line, these targets change over time. Indeed, they usually become ever more challenging because of technological developments, increasing competition, and greater customer sophistication.

Often the simple trade-off between cost and performance—once considered basic to cost reduction—does not apply. As Robin Cooper (1997) points out, “Cost reduction is easy. If you want to take \$5,000 out of a car, simply remove the engine.” He describes instead the “survival triplet” of price, quality, and function. In some industries, standard practice is to keep price constant but increase function over successive generations of a product. Prices of older technology models are lowered as the newer technology appears on the scene.

This strategy drives progress along all three dimensions of the triplet. For a short duration producers could charge a premium for advanced features and functions. Once novelties, automobile airbags and reinforced sides and autofocus camera zoom lenses and red-eye reduction have rapidly become expected or even standard features. To drive changes such as these—in a cost effective manner—generally requires a company to go back to the earliest stages of its product design.

Influencing the Design Early

A company’s best opportunity for considering alternative designs occurs during the product conceptual design stage—that is, before all end-product and interfacing components are completely defined. Changes made in this stage of development cause the least immediate (nonrecurring) cost in documentation and production investments, yet they also have by far the most significant impact on future costs (e.g., recurring product or service costs). Therefore, identifying a wide range of options early on can lead to dramatic differences in ultimate performance.

This realization drove Kodak not only back to the drawing board but to setting standards that would guide design efforts for an entire industry. In 1991, in an effort to drive growth in a flat industry, Kodak recognized that the functional improvements necessary to motivate camera owners to invest in new equipment would be best delivered through an entirely new system; incremental enhancements in cameras and film would not be enough.

Kodak also recognized the interdependence of competing manufacturers and developers of cameras and film: No single player in the marketplace could attract the market desired with a completely independent system. Later in 1991, therefore, Kodak approached a host of its traditional competitors with a proposal to operate as partners in the development of baseline technologies and standards for the "advanced photo system." An 85-page legal agreement filed in several nations by the five developing companies (Kodak, Canon, Minolta, Fuji, and Nikon) laid groundwork for sharing not only information but also a product-release start date that all the companies agreed on. By the following year, the introduction of roughly 100 new camera models and a dramatic increase in film usage reflected the result: They had expanded the market.

Exploring Alternatives

To identify options, companies need what Joel Barker calls "paradigm pliancy"—that is, the humility to consider what others are doing (whether other product teams, suppliers, customers, competitors, academics, or even other industries). This humility translates into a quest for innovation in recognition that a company's own practices can often be improved. The corporate culture must value exploring new ideas.

Where external exploration is not sufficient, Edward de Bono, author and authority on creative thinking, offers "lateral thinking techniques" on the premise that creativity is a teachable skill. Put into practice, some management consultants have even been quoted as saying that they consider at least five alternatives for any major decision before developing even one.

An exploration of alternatives may ultimately lead to significant investments in advanced technology where it is most needed, perhaps to complement current products and processes with ready-to-use and tested components. Automotive supplier Timkin, for example, invested 30 years in research about products and processes to improve the carrying capacity of the company's tapered roller bearing by an order of magnitude (Leibensperger, 1997). Goodyear spent 40 years developing "extended mobility" run-flat tires that can be mounted on conventional wheels. Both investments are clearly made with a long-term commitment to the industries in which they compete.

Investing Strategically

Companies have to understand the strategic value of investments. Caterpillar has learned the hard way to consider market

“Make sure if you are going to [make a significant investment] that you really do need it and your people will really use it.”

Executive management must carefully review potential investments against long-term business direction to ensure their strategic benefit.

needs before simply pursuing advanced technologies in either products or processes. As Frank Tidaback (1997), applications strategist at Caterpillar, reflected on Caterpillar’s “plant with a future” modernization program, he cautioned, “Modernization does not necessarily equal automation . . . Don’t allow the brains in the organization to hide behind technology magic bullets . . . The technology doesn’t have to be new or exotic—just effective.”

Caterpillar offers the following advice about technology: “Make sure if you are going to [make a significant investment] that you really do need it and your people will really use it.” Training and populating a system with relevant information about technologies, processes, and products on an ongoing basis must be part of the budgetary and staffing expectations established. This requires an awareness of the plans and timelines for using new technologies so that product teams and process experts can take full advantage of the innovations and avoid spending resources for areas that will soon be obsolete.

Caterpillar further points out the need to consider legacy data upon which new systems will have to draw: “It goes without saying that your systems will be incompatible with each other.” The cost of developing and integrating complex systems is clearly prohibitive unless the systems relate to a core strategy. Executive management must carefully review potential investments against long-term business direction to ensure their strategic benefit.

In product development, top managers have to make investments in advanced technology according to an overall business strategy, needs identified by product teams, and competitive opportunities identified by process experts. They often must reconsider whether there is any strategic motivation for keeping product and process resources in house. As Tidaback recalled, “We were doing some things superbly [that] we shouldn’t have been doing at all.” Boeing noted a similar paradigm shift for many involved the first time they outsourced design work. Where development efforts do not represent a company’s short or long-term competitive advantage, outsourcing must be considered.

Reusing Knowledge

Methods to solicit, analyze, prioritize, communicate, and reuse ideas must be developed and institutionalized throughout an organization. Paths pursued previously—successful or not—must be recognized so that time is not wasted reinventing the wheel. Sandia National Laboratories, for example, chose to develop its own systems to integrate design rules and criteria for modeling decisions for their key products and processes. These product definition packages used an extensive list of inputs, including:

- Customer trade-offs and requirements;
- Design and simulation tools;
- Previous designs;
- Building blocks;

- Business processes;
- Utility models;
- Cost models;
- Waste stream models; and
- Process and product models.

With these product definition packages, Sandia National Laboratories was able to define the “parameter space” relevant to an entire family of products.

CROSS-FUNCTIONAL INVOLVEMENT

As an organization considers design alternatives, it must evaluate them for their implications not only for the final product but also for all the processes involved in making the final product. People with a broad range of functional perspectives must evaluate the options concurrently to ensure that benefits in one area do not cause problems elsewhere. Getting a new aircraft design to market on time and within the development cost budget still does not fit the bill if production or quality or field support costs skyrocket.

Cross-functional resources must be dedicated to supporting the development of new products and processes. Employees and managers need experience to quickly identify challenges implied by the design as well as an open mind and a creative spirit so that they can suggest alternatives.

To develop the single-use camera, Kodak identified cross-functional team members who had both experience and open minds, but Kodak also appointed a leader who would be a “dynamic, young change agent.” Bringing together people with diverse backgrounds and talents can cause conflict. But, as managers at Kodak observed: “No disagreements, no progress; we fought and we resolved.”

A design that addresses the concerns of everyone on a cross-functional team is likely to be far better than a design that addresses the concerns of only one particular function. To achieve the communication this requires, a corporate culture must reinforce trust and respect among team members so that different viewpoints are *both offered and heard*.

Partnering With Suppliers

But target costing also requires support from outside the company’s walls—in particular, suppliers. Many misperceptions exist about target costing. One is that target costing is simply another way of squeezing suppliers for lower prices, even if it means lower profits for the suppliers.

Probably the most publicized turnaround regarding supplier relations has been at Chrysler. After years of adversarial relationships with suppliers that often involved challenging suppliers to provide lower prices, Chrysler introduced a new program, SCORE (“Supplier Cost Reduction Efforts”), to make suppliers partners in product and process design (and redesign) efforts. The SCORE program encourages suppliers to review their own or related Chrysler

People with a broad range of functional perspectives must evaluate the options concurrently to ensure that benefits in one area do not cause problems elsewhere.

processes for potential improvement. The program is backed by financial rewards for suppliers that identify cost-reduction ideas.

The proof is in the pudding: between \$259 million and \$1.2 billion of cost savings for five consecutive years directly related to supplier suggestions. One supplier in particular, Timkin, submitted 46 suggestions that led to savings of \$3 million a year (Maples, 1997). This reflected a major turnaround in the relationship that just a decade earlier was anything but a partnership. Suppliers walked away skeptical when, after sharing their technology with the original equipment manufacturers, the business was handed over to their direct competitors. Timkin endorsed Chrysler's more recent emphasis on improvement throughout the total enterprise. All tiers are encouraged to invest in R&D so that the entire enterprise may capitalize on each participant's strengths.

Kodak's experience reinforces the need to foster relationships with suppliers. Suppliers contended that they had always made suggestions but that Kodak's key design engineers were preoccupied with internal changes, so they never addressed the seemingly trivial modifications requested by suppliers. Only after Kodak assigned a manufacturing engineer to its purchasing department to understand, prioritize, and test supplier ideas—and, then, actually to make the required engineering changes—did results materialize for the suppliers and for Kodak.

But the issue is not cost reduction alone: It is also a matter of innovation. Great opportunities for innovation often exist at the boundaries between components. Consider the SENSOR-PAC smart bearing used in Dodge trucks. This component (which was codeveloped by Timkin, Dana, and Bosch), integrates the sensor and target wheel into the bearing, which means easier service, higher reliability, and an annual savings of \$2.6 million (or \$60 per application) without increasing the dimensions of the bearing.

A design team needs supplier's ideas for alternatives and also their feedback on how given alternatives play out in terms of cost, schedules, and technical performance. For this to happen, there has to be trust backed by a commitment of both the company and its suppliers to long-term relationships.

When Kodak began its efforts to improve relations with suppliers, some of the suppliers said bluntly, "We don't share that information." So Kodak put together mathematical models from its own information to estimate suppliers' costs. Kodak then used these estimates to focus discussions and to compare a supplier's bottom-line numbers against those of competitors (without revealing specifics about the other companies). Kodak could thus demonstrate the relevance of cost estimates to decisions Kodak had to make for its development plans.

Managing Supplier Bases

Kodak had an additional incentive for suppliers, because the modeling of suppliers' costs coincided with Kodak's efforts to reduce its supplier base from about 700 suppliers to only 160, which meant

But the issue is not cost reduction alone: It is also a matter of innovation.

that substantially more business would go to each remaining supplier. Kodak's cost models offered a basis for understanding each supplier's competitive niche—for instance, high material cost but low labor—so that Kodak could select the mix of suppliers that would match Kodak's needs for various projects.

This scenario exemplifies the effort that management must take to act strategically by identifying and developing both the internal and external resources needed to support current and future programs. In the *internal* supplier management process at Kodak, no modeling resources were ready to meet this challenge. Therefore, management had to seek out and build the cost-estimating abilities needed to support target costing.

Management had to seek out and build the cost-estimating abilities needed to support target costing.

In some Japanese businesses, a prime contractor has what is called a "family of suppliers" (i.e., several different suppliers of the same product or service). "Family members" are in competition with each other over short term, and the best performer gets a larger share of the next business deal. However, the members of the family are part of a long-term cooperative arrangement in which the best performer also shares information about products and processes with other members, which helps the entire industry get better in a relatively short time.

For both external and internal resources, top management must establish an organizational structure that coordinates between process and product management. Managers in product management must understand and communicate their needs for process support, while managers in process management must know their capabilities and balance their resources appropriately among product needs.

Managers in product management must understand and communicate their needs for process support, while managers in process management must know their capabilities and balance their resources appropriately among product needs.

Sharing Knowledge Across the Team

Another set of management responsibilities ties back to the information and knowledge management tools needed for concurrent engineering. Systems for computer-aided design and computer-aided manufacturing and for product data management can help disseminate design information to a large team efficiently so that everyone understands the many alternatives considered. Sophisticated analysis and prototyping tools can also aid in assessing alternative designs by eliminating the large expense of redesigns that are not identified until production begins.

On Boeing's 777 program, extensive use of computer modeled simulations along with a team integrating design and production perspectives was credited with reducing the number of engineering change requests by more than 75% from levels on previous programs. Moreover, these efforts completely eliminated the need to develop actual mockups of the hardware.

Boeing's Rocketdyne Division uses electronic design tools including rapid prototyping, a process by which a computer model can direct the production of very involved three-dimensional physical forms. The process has enabled Boeing to develop a complex turbo-pump component for a rocket engine in just seven weeks—from design through a finished piece of cast hardware. Combining elec-

... the study shows that organizations find themselves more challenged by new cost or time objectives than by new technical objectives ...

At the root of value management is performance measurement—that is, knowing what is important to ensure the long-term success of products, processes, and the business as a whole.

tronic designs with sophisticated analysis tools reduced the time for one analysis on another component from six months to one week.

At an individual project level, there may be no payback for these investments. A study of 125 product development projects from 60 different companies shows a positive correlation between the success of a project and tools that help integrate a team's development efforts. By contrast, there was no correlation between tools used only in design engineering. Moreover, the study shows that organizations find themselves more challenged by new cost or time objectives than by new technical objectives, which provides food for thought when investment priorities are being identified (Tatikonda, 1997).

VALUE MANAGEMENT DISCIPLINE

Everyone on product design team influences the decisions that drive product and process costs. The key is for everyone to realize the implications of his own decisions and to take ownership for the results.

A disciplined approach to *value management* can help bring about this culture change by empowering team members with the relevant focus and feedback information (see Exhibit 1). As Gary Toyama, previously of Boeing's Rocketdyne Division, points out, target costing is really a balance between:

- The "top down" allocation of targets and strategic inputs; and
- The "bottom up" detailed design work and feedback of how the current design compares to its targets.

Performance Measurement and Balanced Scorecards

This balance between top-down and bottom-up design must go well beyond costs. At the root of value management is performance measurement—that is, knowing what is important to ensure the long-term success of products, processes, and the business as a whole. Value must be aggressively measured and monitored. Cost, therefore, should rightly be considered "not as an entity to be minimized but as an investment to be optimized" (Shank, 1997).

Boeing uses a "business case analysis matrix" whose dimensions are cost, cycle time, defects, and customer satisfaction. This matrix replaces Boeing's traditional rate-of-return analysis as a measure of overall performance (Schwendeman, 1997). At a project level, a strong correlation exists between a project's ultimate success and having specific firm objectives in place at the start of its execution (Tatikonda, 1997).

But even a broader perspective is critical to support individual projects with the technology and other resources needed to develop new products and processes. Many companies have adopted a *balanced scorecard* approach to help leaders plan, communicate, and control the results sought throughout the organization.

A balanced scorecard uses a mix of financial and nonfinancial measures. These measures include both internally and externally focused measures. Some of the measures are oriented toward pro-

What gets measured gets done—but to improve the financials, more than just financials have to be measured.

In target costing, companies have to consider market information and the overall goals of the business as the basis for establishing top-level performance targets for cost, schedules, and technical output.

cess; others are oriented toward results. All the measures related directly to the company's strategies, goals, and objectives, which are identified and related to all the various product and process teams.

Caterpillar credits much of its turnaround in the past decade to the balanced scorecard. Pushing down top-tier measures of quality, customer satisfaction, human resources, growth, product cost, inventory, timeliness, productivity, and financial results helped managers at Caterpillar direct efforts that eventually led to record sales and profits. The company's efforts led to a 9% increase in market share, stock prices that more than doubled, lower costs, increased productivity, a strengthened and streamlined dealer-distribution network, and an energized work force. What gets measured gets done—but to improve the financials, more than just financials have to be measured.

Activity-Based Management

Managers at Allied Signal see the success of the balanced scorecard in large part due to its link with the work that people do. Activity-based costing (ABC) and activity-based management (ABM) further reinforce this link.

ABC provides a model of the activities that are performed in a business, the resources they consume (whether directly or indirectly), and the reason the activities are performed. By having this information, managers can make better decisions about the products they sell, the prices they charge, and who their customers should be.

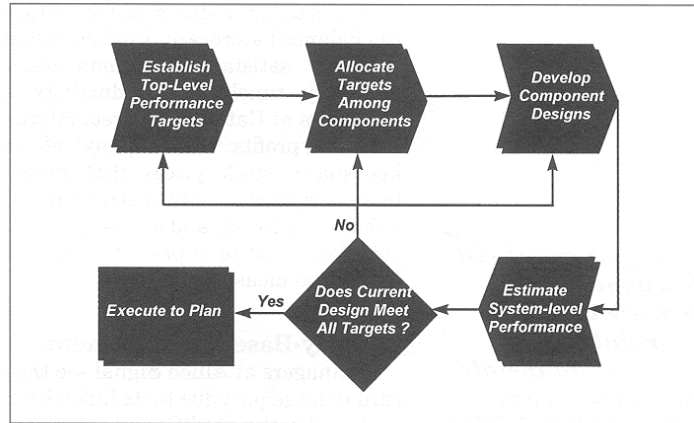
As one manager at Allied Signal states, "ABM cost drivers are the link to measurements on the balanced scorecard. Both begin with the value chain (core processes), identify key measures and drivers of cost, with an aim to take action and obtain profit improvement." In terms of cost, ABC integrates information to enhance the interface between strategy, process, and products. But similar measurement systems must be identified for scheduling and for technical performance.

Performance Targets

In target costing, companies have to consider market information and the overall goals of the business as the basis for establishing top-level performance targets for cost, schedules, and technical output. Although targets differ for each project, they must reflect the role the new product or service plays in the overall portfolio. Even profit targets are likely to be different between development efforts.

The core development team should be involved in setting the targets. At a minimum, they must fully understand the targets. This top-level emphasis must be constantly reinforced to maintain focus and avoid the tendency to overdesign or suboptimize for a single target at the expense of others. On Boeing's 777 program, for example, teams were regularly reminded to stop work on anything that did not relate to the vehicle's ability to fly from "Denver to Honolulu, on a hot day, full."

Exhibit 1. Value Management in Product Program Execution



Value Engineering

Translating top-level targets down to the component level requires a system perspective so that the relationships between components is understood. *Value engineering*, which explores the relative importance of components in light of their contributions to the functions customers want, can provide a strong basis for suggesting cost targets for components based on importance. For example, Siemens used this approach in developing a computer tomography (CT) scanner.

Usually, however, allocations are influenced by experience and by the areas under development. Chrysler distinguishes how targets are established for carryover parts, new components, high-technology proprietary components, and new technology. Kodak also notes the full spectrum of methods employed on different programs, “from a full-blown QFD analysis to a casual adjustment from a previous generation program.”

Regardless of how targets are derived, with component targets in front of them, design team members can begin the process of identifying and assessing alternatives. Those alternatives that look most promising in preliminary analysis are developed further and put through more rigorous bottom-up estimation of performance against the various targets.

This estimating is one of the key distinctions (and possibly one of the key challenges) in the cost domain. The estimating process is fundamentally unlike the analyses traditionally done by cost accounting professionals. Although information may be continually refined as a design solidifies—and may eventually use actual costs—much of the development process involves *feedforward* information. This effort has been described as the “business partner” role of cost

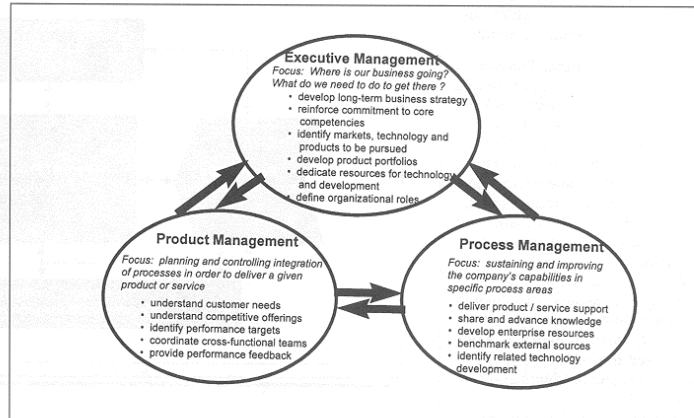
Executive management must lay the foundation for all endeavors by generating a product development strategy that defines markets, technology, and products the company will pursue. This strategy must both support the company's long-range business strategy and acknowledge the company's and competitors' core competencies. This strategy leads directly to the more specific task of portfolio planning—identifying within each family a favorable mix of products that apply the desired technologies to serve the desired range of customers. Finally, executive management must define and endorse the organizational roles to further carry out the process of target costing, including process and product management and cross-functional teams.

Product management tasks are the most common focus of target costing discussions. This is where the rubber meets the road for orchestrating the development of specific products and services. Product managers will coordinate the cross-functional efforts to first understand the market niche and then ensure the development of a response to serve that niche.

Finally, process management (be it of research and development, marketing, design, supplier management, production, field support or of the new product and service development process itself) has the role of supporting day-to-day operations in and between the different functional areas. But to aggressively pursue new markets, the ante for a continuous improvement posture is increased. They must lead the efforts to understand and benchmark the processes in their area and improve their organization's human, intellectual, and capital resources in order to support specific products and services.

Estimating targets is risky, just as encouraging innovation is risky. But these risks, like all other risks, must simply be managed.

Exhibit 2. Target Costing Demands Involvement and Integration Among Various Management Effort



management professionals, in which cost managers help top managers make better decisions. This role differs significantly from the traditional role of accountants as a corporation's "eyes and ears" to ensure accuracy and precision for purposes of internal and external reporting (Shank, 1997).

Estimating targets is risky, just as encouraging innovation is risky. But these risks, like all other risks, must simply be managed. Tracking specific risks (and opportunities), their potential impact, and when they will be resolved is part of business discipline.

Value is realized when action is taken, whether to alter the likelihood (or severity) of a potential event or to identify contingency plans in case the event actually happens. Kodak learned this firsthand in development of the single-use camera. Kodak concurrently developed design for the camera along with new lens technology, but a traditional lens design had to be used when the new technology failed.

Similarly, Rocketdyne engineers designed a stability aid for a new rocket engine that was built in modular fashion. If final development testing shows that the aid is unnecessary, it can easily be removed from the design—at a substantial savings per unit. A positive correlation exists between contingency planning and project success (Tatikonda, 1997).

Tracking Progress

Successful target costing requires regular tracking of performance estimates and comparison to targets. Control ultimately lies in taking action to explore different design alternatives when the two do not match. It will likely involve commitment to a "phase-gate"

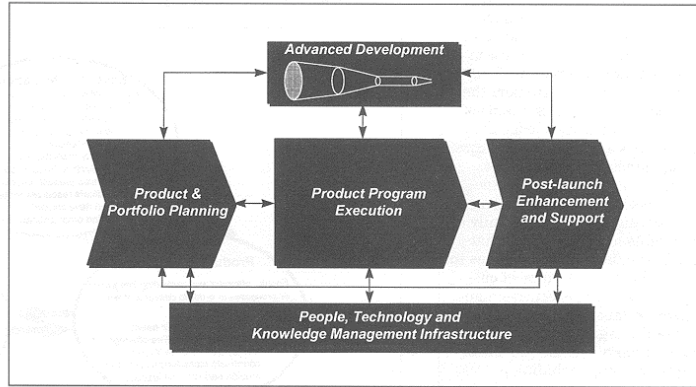
Target costing overlays the entire new product (or service) development process, which includes the following elements:

- *Portfolio Planning.* The process of defining and maintaining the portfolio of products and services the enterprise will use to implement its business strategy.
- *Advanced Development.* The development of new technologies and methods that reduces cost, cycle time and risk of mainstream product and service development programs.
- *Program Execution.* The system used to develop specific new products and services.
- *Post-Launch Support.* The process used to maintain and improve existing products and services.
- *Infrastructure.* The combination of organization, cultural, technology, and knowledge management structure and methods that facilitate the communication and coordination throughout all areas of new product and service development.

Successful target costing requires regular tracking of performance estimates and comparison to targets.

Information is a key enabler of target costing.

Exhibit 3. High-Performance Product Development



approach, which means that a team may not proceed to the next phase in development until performance targets are met.

Kodak saw the need to change by comparing the dramatic differences between preliminary estimates and final costs. Cost engineers at Kodak's competitors had absolute veto power over whether a program could advance to the next stage. A formal, disciplined review system allows a company to make corrections or cut its losses before too many resources are lavished on an unpromising design solution. Cross-functional development teams' involvement and learning from experience usually means that fewer iterations are required, because more promising alternatives are identified in the first place.

Research clearly shows the connection between formal means of project control and the ultimate success of the project (Tatikonda, 1997). The rewards of following a rigorous process can be substantial. Chrysler enjoyed dramatic differences in performance because of its target costing—from being over by as much as \$475 million in prior development efforts to being within \$100 million (and generally below the targets). The discipline leads to results.

INTEGRATION AND CULTURE CHANGE

Information is a key enabler of target costing. Whether it relates to the market, new technology, specific products or processes, or estimated value indicators, information drives the entire process. When relevant, accurate information is sought, shared, and used throughout an organization and the integration among functions, across product teams, and between product and process experts naturally follows.

Target costing clearly involves significant investments, including commitment from executives and from both product and process managers. It also requires dedication from employees. Finally, it

involves risk—the usual risks associated with innovation and feed-forward estimates, but also the risk posed by any substantial cultural change. As George M. Low, the former NASA program manager for the Apollo program said, “Without risk there can be no progress.” ♦

REFERENCES

- Ansari, S., Bell, J., and CAM-I Target Cost Core Team. *Target Costing: The Next Frontier in Strategic Cost Management*. Consortium for Advanced Manufacturing International, 1997, 11.
- Brache, A. “The Seven Deadly Sins of Process Redesign,” presentation at CAM-I’s 4th Quarter CMS Meeting, December 1995, New Orleans, LA.
- Cooper, R. “Supplier Costing: The Other Side of Target Costing,” presentation at the AICPA/CAM-I 25th Anniversary Celebration and Industry Symposium, June 1997, Chicago, IL.
- Leibeinsperger, R. “A Supplier’s View of Target Costing,” presentation at the First Annual International Congress on Target Costing, sponsored by CAM-I and The Institute of Global Business, College of Business, University of Akron. © CAM-I, October 1997, Akron, OH.
- Maples, J. “Supplier Cost Reduction Efforts at Chrysler,” presentation at the First Annual International Congress on Target Costing, sponsored by CAM-I and The Institute of Global Business, College of Business, University of Akron. © CAM-I, October 1997, Akron, OH.
- Schwendeman, D. “When Visions and Legacies Collide” presentation at the First Annual International Congress on Target Costing, sponsored by CAM-I and The Institute of Global Business, College of Business, The University of Akron, © CAM-I, October 1997, Akron, OH.
- Shank, J. “Cost Management Solutions: The Cost Revolution: Customer Value Enhancement Through Strategic Cost Management” presentation at CostCon® ’97: The 9th Annual Cost Management Solutions for the Productivity Paradox, May 1997, Orlando, FL.
- Tatikonda, M. “Successful Management of Product Development Projects” presentation to CAM-I’s Target Costing Interest Group at the AICPA/CAM-I 25th Anniversary Celebration and Industry Symposium, June 1997, Chicago, IL.
- Tidaback, F. “Factory Modernization,” presentation at the AICPA/CAM-I 25th Anniversary Celebration and Industry Symposium, June 1997, Chicago, IL.
- Wilsted, W. “Customer Value Strategies: World Class Best Practice Tools for Building High Value-Added/High Yield Relationships,” presentation at CAM-I’s 4th Quarter CMS Meeting, December 1995, New Orleans, LA.