Policy Deployment Through Catchball

How to get everybody pulling in the right direction.

Bill Baker and Ford Hawkins

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W hat are the biggest problems in industry today? Time to market, quality, teams, enterprise integration, knowledge transfer, customer alignment, and supply chain management top the list.[1] They are all important, and companies must develop competence in each one to successfully compete. Organizational alignment to your company's strategy insures that people's energy is focused on overall goals. Yet many managers get bogged down when they try to help employees understand the "big picture," so to speak, and how their day-to-day activities contribute to company success. We'll describe how the "Catchball" process enhanced our company's competitiveness.

Texas Instruments' (TI) Defense Systems and Electronics (DS&E)[2] business found itself in a dilemma in the early 1990s. Faced with an increasingly competitive market tied to a declining defense budget, DS&E management saw the need for rapid change to remain a premier supplier of electronics to the defense electronics market. Targeting higher customer satisfaction, better quality levels, and people involvement as the keys to future success, they selected the Malcolm Baldrige National Quality Award criteria as the blueprint to achieve business excellence.

This focus and active benchmarking with world-class processes in other organizations helped DS&E identify performance gaps, areas for improvement, and best practices that could be incorporated into our culture. Adapting the Xerox benchmarking process and the Motorola Six Sigma™ philosophy instilled a need for continuous improvement tied to world-class stretch goals. We trained everyone — technical as well as administrative — in Six Sigma™ concepts. We also created a multi-functional cadre of "Six Sigma™ blackbelts" who offered specialized support throughout the organization, a program benchmarked by other companies. We had taken our first step toward management by process instead of using the old hierarchical process.

TI employees were always committed to achieving goals. The problem for management was picking the right goals. It had not been a coordinated, strategic process.

Continuous improvement had always been an internal norm, but we needed a leapfrog approach to accelerate change. How could we focus *all* employees on the case for action? We sought to renew motivation, set stretch goals, and realign/focus employees on a common target. "Originally, we were tracking over 70 metrics that we were all managing," said Phil Roether, vice president, DS&E. "Reducing the number of metrics to five was part of the evolution of our strategic leadership team (the president and all reports), which made it easier for everyone to understand."

Developing Focus Areas, Metrics

DS&E leadership developed the overall business strategy and major enabling processes as shown in the Business Excellence Strategy chart (see Figure 1) centered on: 1) customer focus, 2) continuous improvement, and 3) people involvement. This one-page document reflecting our strategy and metrics started out as a chart

of at least ten pages. Getting it down to one page — something that everyone could look to and understand — was a milestone. Its continual use and repetition proved a key factor in creating understanding, communication, and involvement in the change process.

The question became, "How do we measure success in these areas, and how do we get our organization aligned to support this strategy?" Our leadership team selected five strategic metrics to drive and measure improvement, keeping in mind the saying, "Whatever gets measured, gets done." Our original metrics are shown in Figure 2. It happens that these strategic metrics and categories track with the "balanced scorecard" promoted by Kaplan and Norton in their *Harvard Business Review* articles and their book, *The Balanced Scorecard* (see "Additional Readings" at the end of the article).

Once we selected the metrics, the next step was benchmarking world-class operations so that "stretch goals" could be established for driving organizational change. Benchmarking the continuous improvement metrics of cycle time, defects, customer focus, etc. was tackled by sharing with a broad array of world-class companies and considering the advice of selected consultants. For example, we worked with a consultant to set stretch goals on cycle time and we discussed defects with Motorola and other companies. For on-time delivery, we eventually settled on the obvious stretch goal: 100 percent on-time delivery.

When we benchmarked the original training metric, we found that it varied all over the map, from one organization to the next. We also discovered that a minimum number of training hours per person was a much more accurate yardstick than an average number of hours per person because of the wide individual variations (some employees had little or no training while others had many hours). After this mindset change, we knew that we needed to correct this situation to support organizational learning.

We adopted overall stretch goals in 1991-1992 for 70 percent improvement in three non-financial metrics (on-time delivery, Six Sigma™ defects, and cycle time for a four-year period (1992-1995). Yearly milestones were sufficiently tough to drive major reevaluation and reengineering efforts in our processes and current organization. For instance, the annual training goal for 1992 was set at a minimum of 16 hours per person, moving to 24 hours in 1993, 32 hours in 1994, and 40 hours starting in 1995.
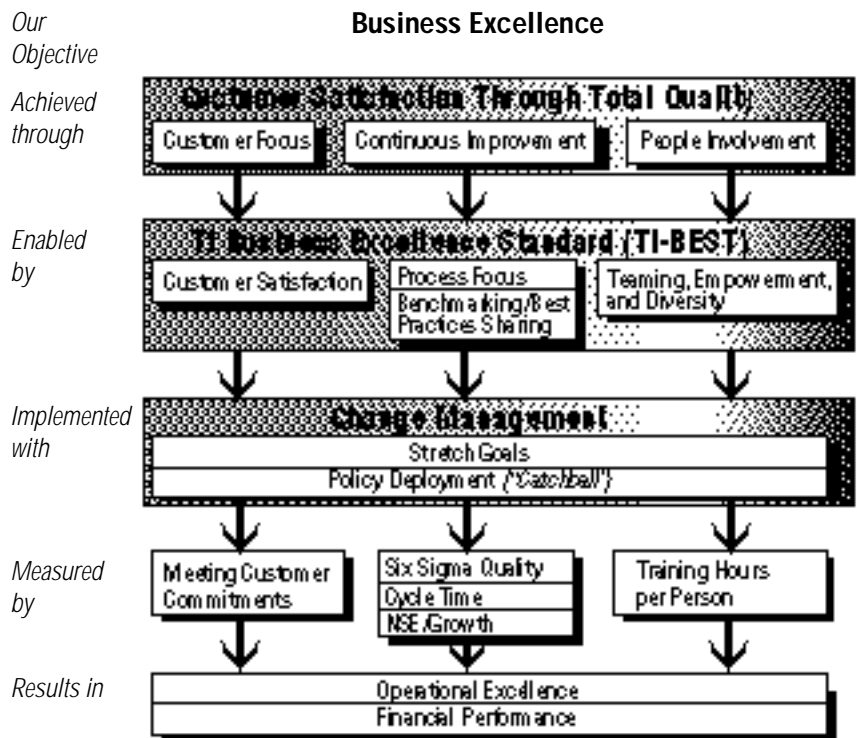
DS&E Total Quality Management Strategy

Figure 1. *The Business Excellence Strategy chart targets customer focus, continuous improvement, and people involvement strategies and the metrics to measure them by. It's an effective tool for creating understanding, communication, and involvement in the change process.*

Catchball Goes Into Gear

With all of this strategic planning, new metrics, and promising initial results in 1992 and 1993, we still didn't have employee buy-in everywhere. Things were happening, but much of it was top-down rather than supported throughout the organization. Meanwhile, Phil Roether, vice president of the product production process, was touring TI's Pacific Rim operations in 1993 and was captivated by something called "Catchball" by the plant manager at the TI-Malaysia Semiconductor facility. Catchball is an effective process to attain strategy alignment from the leadership all the way through organizational levels and involving individuals and teams. Noting that this process had helped the Malaysian plant to make major strides in communications and performance improvements, he brought the concept to DS&E by get-

DS&E Metrics

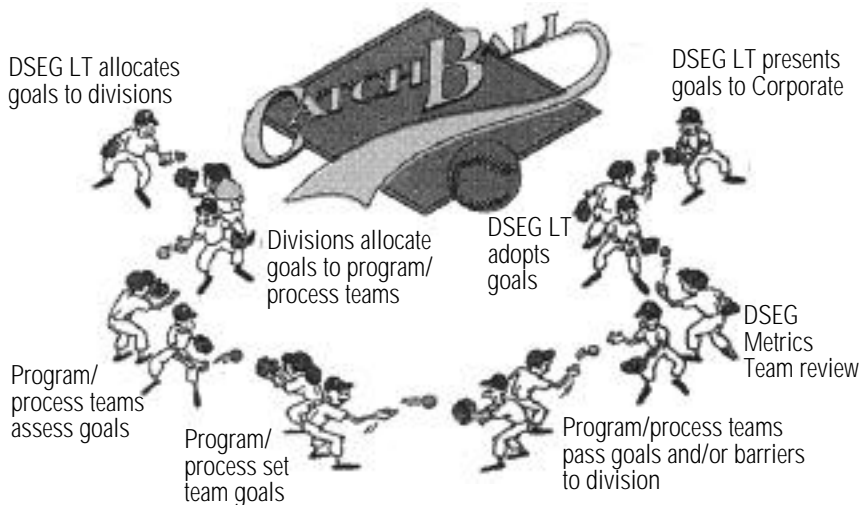| Focus Area	Metric
Customer focus	On-time delivery
Continuous improvement	Six Sigma,™ cycle time improvement, revenue growth (net sales entered — NSE)
People involvement	Training hours per person

Figure 2.

Figure 3. *Annual goals for each of the major metrics in (defects, cycle time, revenue growth, training, meeting customer commitments) are handed to division managers, who develop a set of goals handed to the next level, and so on in the Catchball process.*

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ting management buy-in and adapting it as an internal process to deploy our strategy.

The DS&E leadership team sets an annual goal for each of the major metrics (defects, cycle time, revenue growth, training, meeting customer commitments) and cascades these target goals through the operating divisions and support groups (what we call the Catchball process as shown in Figure 3). These goals are handed to division managers, who develop a set of goals handed to the next level, and so on. The goals may not be identical at each level but must mathematically roll up. Additional metrics such as safety may be added by lower levels to meet customer needs.

This sounds pretty normal and traditional, doesn't it? But now is when the real Catchball process goes into gear. After the teams evaluate their processes, goals, actions, and barriers to achieving their goals, they come back to the business unit leadership with their plan for the year.

Managers' and Work Teams' Responsibilities

Most important, work teams have the option of accepting the goal or not. If not, they identify areas where they need management's help (resources such as equipment, additional training, support people, design changes, facilities and layout changes, etc.). People at each level determine whether the goals are workable, and if they believe that the goals are out of reach, they are responsible to give management a list of what resources they need to meet the goals.

We've continually improved the Catchball process each year ...

When the goals are handed to a team working on sub-assemblies for an old product line, for example, they may be asked to achieve 5.0 sigma (equivalent to 233 defects per million); if this stretch goal is out of reach,

the team may come back to their manager and say, "We can achieve the 5.0 sigma level for defects if we can change the design of this subassembly and improve the flow solder process." If management counters that the company can't afford to completely redesign the system, a more realistic goal is negotiated. At the same time, they'll agree upon any acceptable action items (such as providing additional process engineering assistance to the team) that will eliminate barriers to needed performance improvements.

In turn, this "package" of goals is tied to an annual team performance bonus. The bonus hinges on achieving all elements of this package; performing well on one metric and stumbling on the others doesn't cut it. This approach contributes to peer pressure for top performance; for example, if a team member hasn't met the 40-hour annual training commitment and it's December, they'll hear from others on the team. The result is committed teams working in partnership with committed management ... all tied to the overall strategy. This negotiation of yearly goals at each level of the organization builds the all-important "personal ownership" of goals and a feeling of, "I can make a difference." The idea is to generate a spirit of continuous improvement, not simply aiming for a single set of goals.

From the hierarchical days of pass-down goals, the change to Catchball took a couple of iterations before the entire organization really developed trust that the negotiation process was open and expected by management (learning that it was OK to ask questions and negotiate goals as well as action items). Consistently using and communicating about the process helped build credibility and the realization that Catchball was not just the "flavor of the month."

From Trial Run to Today's Full Deployment

On our first pass in 1993, the Catchball process took four months to cascade throughout our 12,000-person organization — passing down stretch goals to each level and then negotiating realistic goals all the way back up. There were plenty of snags. For starters, our first Catchball trial run was actually our orientation and training on the process. It naturally took longer at first to achieve a full deployment that had meaning (personal, focused) in each work group of 20-25 people; we had open action items into 1994.

We've continually improved the Catchball process each year, and it's become a part of our culture. In 1996,

we began Catchball in mid-August and completed in the first week of November — a ten-week process.

Our Learning Continues

We've learned from our Catchball ventures that a massive cultural change requires good planning, communication, repetition, management support, and review — and then it still takes two to three years to achieve optimum performance. Like any process, Catchball has been improved with better definitions, and clearer instructions.

"Since we've used Catchball, I've seen our organization really become a team and understand our top-level strategy," Phil Roether said. "By integrating our strategic metrics and the Catchball process, we've gained significant leverage and have attained much higher performance levels than we would have thought possible."

We're in the middle of improving our automated reporting systems right now. For on-time delivery, the system is already in place. It's been more difficult in cycle time because there was no existing system. For training, we have a system that allows each individual team member, the team as a whole, and supervisors to verify training records in real time.

Despite continuing challenges, we believe that day-to-day improvements throughout the organization result from perhaps the most significant Catchball benefit: Our strategic metrics are vertically aligned with the factors essential to gaining competitive advantage. Now all of our employees are on the same page as management!

1. These "seven stepping stones to the 21st century" are the focus of the AME Annual Conference to be held September 30-October 3 in San Antonio, TX.

2. Formerly known as Defense Systems and Electronics Group before 1996 and in the process, as of this writing, of being purchased by Raytheon. Principal product lines include airborne radars, electro-optics, night vision equipment, missiles, and missile guidance systems.

Bill Baker, benchmarking/best practice champion for Texas Instruments Defense Systems & Electronics, Lewisville, TX is a member of TI's metrics team. He serves on AME's Southwestern Region board of directors; he's also program chair for this year's AME Annual Conference in San Antonio.

Ford Hawkins is the total quality metrics manager for TI's Defense Systems & Electronics; he is responsible for management of the Catchball process and metric reporting, and is a member of the TI metrics team.

Editor's note: More information about the TI Catchball process is featured in the article, "How to Measure Up, Down, and Around: Performance Measurement Strategies" in this issue of *Target*.

Texas Instruments Defense Systems and Electronics became Raytheon TI Systems on July 11, 1997.

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Additional Readings

Articles

Kaplan, Robert S. and David P. Norton, "The Balanced Scorecard — Measures That Drive Performance," *Harvard Business Review*, January-February 1992, pp 71-79.

Kaplan, Robert S. and David P. Norton, "Putting the Balanced Scorecard to Work," *Harvard Business Review*, September-October 1993, pp 134-147.

Kaplan, Robert S. and David P. Norton, "Using the Balanced Scorecard as a Strategic Management System," *Harvard Business Review*, January-February 1996, pp 75-85.

Books

Altizer, Pam, Bill Baker, Gloria Beduhn, Ron Buchanan, Tricia Dears, Leeann Enright, Bob Frost, Shailesh Hegde, Ian Macdonald, Dave Oxford, Emery Powell, and Isamu Tsunoda, *Metrics; A Management Guide for the Development and Deployment of Strategic Metrics*, Texas Instruments, 1997. ($5.25 plus shipping from Moore Business Forms, phone 972/776-1228, ask for TI-29820.)

Collins, Brendan and Ernest Huge, *Management by Policy — How Companies Focus Their Total Quality Efforts to Achieve Competitive Advantage*, ASQC Quality Press, 1993, ISBN 0-87389-241-0, 611 East Wisconsin Avenue, Milwaukee, WI 53202.

Kaplan, Robert S. and David P. Norton, *The Balanced Scorecard — Translating Strategy Into Action*, Harvard Business School Press, 1996, 1997, ISBN 0-87584-651-3, can be ordered through HBS Publishing, Corporate Customer Service, 60 Harvard Way, Box 230-5c, Boston, MA 02163.

NOTE: These publications are not available through AME.