

Competition May be Global, But All Quality is Local: How the Center for Continuous Improvement in Athens, GA Guides Area Companies Through One-of-a-Kind Journeys to “World-Class” Performance

Home-grown excellence: a pattern for other regions?

Sherrie Ford

Along about 1989, a few plant managers in the Athens, GA area discovered in a breakfast forum that they shared a common theme: how to achieve remarkable business results from using the techniques of world-class manufacturing (WCM). The strength of their interest led them to say yes to an offer by a local technical institute in 1990 to start a center that might help them further pursue these results. In June, 1991, the Center for Continuous Improvement was dedicated, with ten charter members each contributing \$10,000 and a promise to live up to its mission statement: “... to heighten ... global competitiveness by promoting within the organizational structure a culture for developing leadership and vision.”

In its mission statement were the terms of a major conflict that took nearly five years to reconcile: How do you relate your own organizational structure — with a local life all its own — not only to the demands of global competition but also to the compelling tenets of WCM?¹ Within the first year, the center nearly failed its mission, for the parties involved shared the illusion that WCM is made up of universally applicable ideas and techniques that can be learned by reading books or in sending supervisors to seminars or going to four-day workshops on demand-flow technology.

Today, five years of learning how to get the whole factory to high performance has enabled the center to discover the missing link: Plant management must lead unique, one-of-

“All quality is local” is a theme heard often at the Center for Continuous Improvement in Athens, GA. It refers to the insight that the quality movement may be a globally valid paradigm for manufacturing renaissance or survival, but that the incarnation of that movement differs from region to region and even plant to plant.

Members of the Center for Continuous Improvement

Manufacturing: ABBPower T&D, Alcan Rolled Products, Carrier Transicold, CertainTeed, Coats & Clark, Denon Digital Industries, DuPont, Edison Plastics, Fowler Products, Georgia-Pacific, General Time, Johnson & Johnson, Levolor Home Fashions, McNeil Specialty Products, Noramco, Rockwell Automation: Reliance Electric, and Seaboard Farms of Athens

Health care: Athens Regional Medical Center, St. Mary's Health Care System

Information management: Exploration Resources

Government: U.S. Army Corps of Engineers

Utility: Walton EMC

Hotel: Holiday Inn.

Figure 1.

a-kind episodes of breakthrough thinking as they adapt, rather than copy, world-class techniques. The whole plant, and not tactical parts

Plant management must lead unique, one-of-a-kind episodes of breakthrough thinking as they adapt, rather than copy, world-class techniques.

of it, must engage in driving business results — engage in a way that probably will result in

effective strategies only for that plant and not for any other. Finally, plant management must come to terms with what might be called “legacy systems,” the invisible but controlling influences in a work culture that govern success when implementing change.

Two Aspects of “Local:” The Community and the Plant

The Community Aspect: Managers in many plants discover the power of one another

Athens Area Technical Institute's Center for Continuous Improvement, as part of Georgia's system of tech schools, must by law focus

on its 12-county service area, which happens to have a diverse manufacturing base: industrial motors and controls, fiberglass insulation, compact discs, panelboard, electric and keywound clocks, poultry processing, aluminum recycling, pharmaceuticals, sweeteners, baby powder, refrigeration units for the transport industry, superchargers, industrial plastic piping, plastic film, and high-speed capping equipment, to name a few. Figure 1 shows the current membership, which includes not only manufacturers but also both hospitals, a hotel, an information management company, an electric utility, and the U.S. Army Corp of Engineers.

Perhaps because of this diversity, competing only for the labor pool and not technology, managers have been more willing to let outsiders come through their plants and share stories about managing change. Perhaps this feature in the industrial community made it easy to say yes to starting a center in the first

place, with many now willing to spend up to 100 percent of their training and development budgets there annually. Figure 2 shows fundamental services that support local, change-oriented plant managers — services that the members have developed with the assistance, and willingness to experiment, of the tech school administrators and a “tag team” of local independent consultants.²

In this sense the center fosters quality concepts and the world-class agenda at the local level by forging a community of like-minded managers, teaching one another what works and what fails. Center staff (a vice president and two specialists) shepherds these teachings, and adapts services accordingly. The monthly and sometimes weekly fraternizing — on site-CEO meetings, quality manager networks, and networks for purchasing, planning, materials, human resources, safety/environment, maintenance, supervisors and customer service — creates an intensity of local focus on quality.

When the center staff discovers unmistakably urgent and shared needs, they bring to town whatever talent and expertise is missing: former Motorola quality leader, Keki Bhote, for non-SPC-based design of experiments; J_C-I-T Institute’s founder John Costanza, for a pull manufacturing demonstration; Indiana University’s Robert Hall, to share his insights regarding vision and anti-vision. On a more local focus, attorney A. MacArthur Irvin, well-known in Georgia for his understanding and teaching of labor law, clarified harassment issues and how to manage violence in the workplace. While one can easily imagine tech

schools anywhere offering such seminars, the center has shown that training programs divorced from a community’s unique context will not lead to true learning nor transfer of new skills to the shop floor.

In this enriched local scene, managers-teaching-managers has emerged as whole new strategy of moving toward world-class performance. Figure 3 shows examples of local dialog and collaboration. Preparing to teach others, in turn, reinforces the skills of this role as teacher and coach of peers.

The closeness and mutual support of these companies contributed to two annual awards named in honor of two center partici-

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pants: the Rockwell Automation Award for Continuous Improvement, given to Georgia-Pacific-Panelboard this year; and the Georgia Power Industry Training Award, received for the third time, given to Rockwell Automation: Reliance Electric, also in 1996.

The plant aspect: discover the power of legacy systems

It took three years to unravel the mysteries of why implementing world-class methods defied the leadership of even the brightest plant managers, despite their willingness to help each other; continued experiments eventually led to some elemental discoveries. Without exception, every center client reported frustrations with strong resistance to change from the middle managers and with the workforce at large. In retrospect, plant managers were not asking each other or the center tag team how to implement change, but rather only what the results of change should look like, and what technical steps should be taken.

Leading others through the process, at the time, was assumed to be a matter of sending people to classroom training. Managers believed that getting world-class results would come from the plant manager’s personal

Services Available through the Center

- Consulting
- Training
- Benchmarking tours
- Annual conference to showcase achievements
- Annual best practice awards
- Job bank and placement
- Newsletter highlighting islands of excellence

Figure 2.

Examples of Expertise Right There in Town

- Electrical engineers from Reliance assist engineers at General Time
- 360-degree feedback skills from Fowler’s vice president of sales applied to Rhone Merieux’s new management
- Effective interviewing from McLane Southeast manager for McCord-Winn Textron staff
- TPM matrix for cross-training shared with Georgia-Pacific operations manager and those of Conwed Plastics, DuPont, Rheem, and Trus Joist McMillan
- Quality manager at Carrier Transicold, ISO certified, coaches ISO applicants.

Figure 3.

endeavor, with standard project management criteria, standard budgeting criteria in a standard, no-questions-asked-just-do-it climate, with an engineering mindset and its Gantt-chart symmetry.

But the harder plant managers tried to lead change, the more entrenched the workforce became, resistance taking creative outlets, with some cases that remind one of those in *The Rivethead*.³

A turning point occurred with Reliance Electric. In the early 90s, the plant manager emphasized change, introducing an aggressive SPC program, circulating texts on teams, and calling teams into place by fiat. But significant business results eluded him. Not until the spring of 1993, when the plant was faced with ISO 9000 registration, did the opportunity arise to fully consider a plant-wide project, which incidentally had a comprehensive training plan requirement. Knowing that no one had the heart for more workshops, and that the training had to be relevant to business needs, the plant manager convened a planning session with the center founder and his management staff.

This session with management and the five sessions that it prompted with all levels in the plant, in retrospect, prototyped the assessment process for which the center has attracted some renown (see Figure 4). Reliance plant personnel offered answers to questions that had not been asked openly before: What changes do you expect in the next three years regarding customers, competitors, the market, technology, product, cost of doing business and the organization? In light of these changes, what kind of work culture would it take to survive and thrive with all these changes? Does Reliance have this culture already? If not, what would need to be different?

With every level in the plant participating, and seeing the startling matrix of issues, it was as if the whole organization had a simultaneous awakening: The diagnosis was parallel throughout. The plant manager now had a sense of how systems over 25 years' time had become overloaded with institutionalized, wasteful practices, and workforce attitudes of

blame and entitlement. Unconsciously held anti-business attitudes, combined with unexamined systems, created a fatal climate for change. Every conscious attempt to improve the business by introducing a world-class technique was killed by what the center's founder has come to call "legacy systems" (see Figure 5).

Encouraged by the pride expressed in assessment responses and a consistent mes-

sage regarding what should happen if the plant were to survive change, the Reliance plant manager signed off on a 12-month plan to address each key behavioral issue and system dysfunction which had been identified; it was becoming a value to come forward with "what goes wrong with my job." He was the first in the center to have a strategically combined business, systems, and human resources development plan, and the first to have —

Breakthrough Process to Assess and Change Plant Culture

- Half-day sessions, interactive, maximum of 15 employees
- Segregated by level (management, supervisors, operators, maintenance, indirect)
- Structured brainstorming, flip chart responses to, "What changes do you expect in the next three years for market, customers, competition, technology, product, cost of doing business, organization?"
- Structured brainstorming, 3x5 cards, response to, "What kind of work culture will it take to handle these changes?"
- Silent affinity mapping of over 100 3x5 cards, up to seven affinities
- Relations diagramming, "What is the relationship of influence among these seven affinities?"
- Compare the top three affinities of each session (reveal a plant's legacy systems)
- Build turn-around strategy from these top affinities
- Introduce world-class concepts only after legacy systems have been addressed
- Train on a JIT basis, right people, right time, right topic
- Follow up at least twice monthly with tag team consultant for the first year, to sharpen skills and to keep strategies relevant
- *Do not abandon the process when results don't show up immediately!*

Figure 4. The center's breakthrough process to assess and change plant culture, developed during the past several years.

Legacy Systems

- "... the combined state of mind of all employees that determines how people will support a company, whether or not they will volunteer extra effort." James Warren, Rockwell International, "How to Change a Company's Culture," presentation notes, SAE offprint #900767.
- "... the organizational culture that drives the flow of work, including the attitudes, situations, and frustrations that go unspoken in the average work day." Art Kleiner, "The Battle for the Soul of America," *Wired*, 1995.
- Neither good nor bad, legacy systems simply are. For the most part they are invisible, powerful influences on employees' behavior and work practice
- Legacy systems are unique to the plant, and they do not, plant to plant, respond to change in the same way.

Figure 5.

less than three years later — the most significant business results, exceeding what anyone imagined they could be.

The first legacy systems to become visible related to parts availability. “I cain’t give what I ain’t got!” was the exasperated cry of the first shift storekeeper, accused of hoarding selected, popular parts in short supply. The more hourly personnel were asked, “What goes wrong with your job?” the more problems were described, including turf battles, resentment of engineers, unreadable blueprints, impossibly out-of-synch computer screens, and endless “hot” orders.

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plant manager thus saw that he must temporarily defer further attempts to use WCM methods and concentrate on the immediate interpersonal fundamentals first. He did so for *one full year*.

For each aspect of improvement, based on assessment results, a tag team consultant was enlisted: an expert in team development and executive coaching, in process mapping, in customer service, in ergonomics, and in constraint management. Figure 6 shows the chronology of strategies that unfolded over three years, post-assessment, moving only at the speed the work force (including managers) could assimilate change, then drive it.

The experience at Reliance shows that this speed accelerates if managed “organically,” in tune with legacy systems, rather than by fiat, fear, and frustration. Employees now have computer screens in synch with inventory reality, bespeaking a triumph over the habits of the old culture.

The plant manager estimates that the cost for these business results shown in Figure 7 was about \$28.00 per month per employee, and he said that despite the unforeseen merger half-way through the project, morale remains high. Employees continue to post record gains on key measures established in 1994 as part of the “BLAST” event: Building Lasting Achievement and Success Together. On August 13, all 350 employees celebrated the first year of 40 hours in worker-mandated training for work-style and team skills, interspersed with “break-through thinking” episodes in the twice-monthly check-ins with the appropriate tag team consultant. For the BLAST event, management had completed internal benchmarks on quality, waste, cycle time, and customer service, and announced goals to improve within a year by a modest 50 percent — ridiculously low, as it turned out, for many goals.

While Reliance Electric is the most experienced plant with prototyping the assessment process and sticking to its resulting plant strategy, other companies, now post-assessment, can point to major strategy implementations that are unique to their culture, as Figure 8 shows. Each plant assessment revealed highly

Evolving Work Culture Strategies Post-Assessment at Reliance Electric

- 1993: plant-wide workstyle and communications skills, basic concepts of teams, and productive meetings
- 1994: BLAST vision and strategies that focus on inventory, quality, scrap, customer service; climate survey establishes baseline
- 1995: reorganized into nine process/product teams, each with top management staff liaison, supervisor, cross-functional operators; major project on cycle time reduction which leads to ergonomics projects; customer service project brings corporate staff to town every two months; purchasing and planning begin major inventory reduction and material availability project; climate survey shows two-digit gains
- 1996: constraint management project focuses on final assembly bottleneck; climate survey continues to show improvements.

Figure 6.

Bottom Line at Rockwell Automation: Reliance Electric

Over a three-year period, at an investment of about \$28.00 per employee per month, business results include the following, with the most increases appearing in the fourth quarter of the third year:

- 57 percent productivity improvement
- 75 percent WIP inventory
- 80 percent manufacturing cycle reduction
- 38 percent reduction in head count
- 1.5 percent compounded reduction in raw material cost
- 11 point test yield gain
- 22 percent reduction in the total cost of quality
- From “good” to “excellent” as measured by customers with third party, four-quarters survey.

All of these changes result in substantial bottom line improvements.

Figure 7.

localized legacy systems that blocked change. Examples include resentment toward the "white hats" (management), lack of family atmosphere, unfair promotional practices ("Go fishing with Dave, you can get on first shift"), double standards for management and hourly employees, a red tape mentality, the priesthood of maintenance, and the plant manager as a stranger to the shop floor.

Conclusion

When plant business and culture issues become visible and therefore highly personal, a plant manager can be empowered to create the right strategies for the plant to change — a visibility critical to the future of a plant and all of the stakeholders. The idea of a local center for continuous, collaborative improvement is one whose time has come. Strategic alliances abound in the ever-extending supply

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chain. Why not consider how a whole town, with its hospitals, hotels, utilities, tech school and factories, determines its own destiny by collectively freeing themselves of the old order? Can't you imagine how the greenfields would stampede to such a town?

Post-script: The legacy of the Center for Continuous Improvement lives on in a spin-off, the Shock Wave Riders. Taking the mutual teaching and learning to a higher level, six site leaders and others have dinner once a month and focus on solving one serious problem at a time, applying lessons from the apparent truth

Members and Non-Members Leap Frog Unique Plant Business and Culture Issues, Post-Plant Assessment

- Alcan Rolled Products — new business units implement plant vision, communication plan
- Edison Plastics — updates a 30-year-old culture as it moves to a global marketing plan
- Georgia Pacific — radically improves machine efficiency and grade-out performance despite union coming in the previous year
- Fowler Products — privately-owned company prepares to lead with a five-member executive team, a radical shift from control by one CEO
- J.M. Huber, Inc. — put Total Productive Maintenance systems in place
- Noramco — positioned to launch 40 new products with assessment-based strategy
- Walton EMC — new departure in defining customer service beyond rural residential power

Also:

- Area industries — pre-hire certification program to recruit the best worker in a tight labor market, a common hurdle for all clients.

Figure 8.

that all quality is local.

Further information about Athens Tech's Center for Continuous Improvement, call Gary Garrett at 706/369-5869; and for more on Shock Wave Riders, Sherrie Ford with Change Partners, L.L.C. at 706/546-4045.

1. Tenets as shown in Deming's *Out of the Crisis* (1982), Schonberger's *World Class Manufacturing* (1986), Hall's *Attaining Manufacturing Excellence* (1987) and Juran's *Leadership for Quality* (1989).
2. Nine independently successful practitioners in corporate and plant consulting are willing to let the center study their approaches to improving an organization's business results. The center matches these approaches, and combines them, to meet a member's change strategy more effectively and efficiently than the consultants typically do on their own. The roster for this tag team changes over time according to demand. Tag team expertise areas range from cycle time/speed to market and gainsharing to team skills/empowerment leadership, performance appraisal, customer service, workstyle analysis, quality tools/problem solving,

kaizen, creative thinking, ISO 9000, etc.

3. Ben Hamper's *The Rivethead: Tales From the Assembly Line at General Motors* (1991) best illustrates how resistance of this kind takes creative turns and how, if better understood, could have brought demand flow cellular manufacturing concepts to GM from the workers such as the rivetheads themselves, bypassing expensive consultants.

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