

# A Successful Plant Shares Its Lessons Learned From Whole System Architecture and Implementation of Teams

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Many organizations have tried to improve performance, quality, or profits using a variety of total quality management or continuous improvement techniques. Some failed, some quit, and some succeeded. This is the story of one plant that succeeded. In spite of continuously rising costs and increasingly greater customer quality requirements, this plant produces its product at the same cost as it did twenty-three years ago. Over these twenty-odd years, wages have increased, raw materials have increased 35%, and the cost of utilities has sky-rocketed. Despite fewer people and less management, productivity and quality have remained high. This plant produces the best quality product of its type with the highest productivity other than a sister plant in Japan. How did they do it, and what did they learn in the process? To understand how this happened, it is important to go back to the beginning.

## History and Background

Clark-Schwebel Fiber Glass is a producer of woven industrial fiber glass and high performance fabrics. Their products are used in circuit boards, other electronic applications, airplanes, boats, and personal defense and safety equipment. There are four American plants: two in Georgia, one in South Carolina, and one in North Carolina. In 1986, when the first steps were taken in the transformation process, the organization had twenty-eight years of steady business growth and profitability.

Clark-Schwebel began with quality circles in 1986 just like many other organizations. These early efforts produced some successes and convinced managers and employees of the desirability of employee involvement. In spite of these successes, people sensed that quality circles would not be enough to sustain and maintain competitive advantage over the coming years. A visionary and insightful manufacturing vice president spearheaded the effort to find, foster, and institutionalize a more systemic approach to continuous improvement, quality, and customer satisfaction.

The vice president and his division leadership team wrote the initial vision and mission statements and the original charter for the plants' redesign. This team chose a change philosophy and process for designing and implementing high performance plants based on the following assumptions:

1. Organizational change must be addressed from a total system viewpoint. The work and the human systems need to be analyzed and redesigned to align with each other as well as business strategy and

customer needs. External influences such as global markets, technology, and economics need to be considered too.

2. Everyone must be involved in the change process. Management teams need to practice what they preach, all employees should be on teams, and the redesign needs to be done by the people who will work in the new system.

3. Training and coaching are necessary for success. External and internal coaches and consultants are needed to help teams and individuals make the transition. People need team skills as well as technical and job related skills.

4. The change process is not a one time event. It is a way of life and a culture change.

In 1989, the first of the four plants began its redesign process. By 1990, this plant began implementation, and by 1991 was demonstrating positive results in quality, costs, and productivity. In mid-1989, plant number two began the redesign process. This story is about this second plant. Things did not always go smoothly and many lessons were learned. As the plant manager recently said, "I thought it (Whole System Architecture and teams) was the stupidest thing I've ever heard. However, without team management or TQM, whatever you want to call it, we would be out of business."

## Washington, Georgia: Initial Design

Clark-Schwebel opened its Washington, Georgia, plant in 1973. This plant was the most modern and technologically advanced of the plants at the time. In 1988, the culture and structure was fairly traditional: hierarchical, command, and directive. There were multiple layers of supervision and management, work was organized into functional departments with thick "walls" between departments, and jobs were narrowly defined. Other than a few P.R.I.D.E. teams (quality circles) that were allowed to make recommendations, there was no real employee involvement. The twenty-eight managers and salaried employees made all of the decisions with the plant manager maintaining tight control.

In 1989, the plant manager and his management team agreed to go through a Whole System Architecture process. This team, which became the steering team, wrote a charter for Washington that was based on the corporate charter. Guidelines, principles, and boundaries were created that formed the basis of the design process. All aspects of the work processes, technology, and human resource systems were included. The recommendations had to align with the company's vision and values, reduce layers, empower teams, improve quality and productivity, and meet

present and future customers' needs. Work processes were to be streamlined and non-value-adding work eliminated.

An important part of the charter was a statement that "no one's employment will be eliminated because of the redesign." There was concern that without this clause, design team members would not make the hard decisions they had to make for the future. (Over the years, positions were eliminated and the number of people in the plant diminished. This was accomplished through retirement and attrition.)

#### The Human or Social System

- Structure: team and organization
- Skills: business, work, and human
- Human resource systems: hiring, training, development, decision-making, information and communication, performance feedback, recognition, compensation, discipline, etc.
- Style: organization, leadership, and individual
- Symbols: of power, importance, and value

#### The Work or Technical System

- How the organization transforms inputs to outputs
- Core and enabling processes
- Tasks and activities
- The organization and flow of work
- Technology and equipment
- Physical layout
- Work policies and procedures

A design team made up of sixteen people (mostly hourly employees) worked for almost a year analyzing and designing the work and human systems changes for the ideal state plant. The areas covered included the above: 1) the human or social systems and 2) the work or technical system. The redesigned plant resulted in an organization in which every employee, hourly or salaried, was on a team that was focused on customers, critical measures of performance, and ownership of its processes. There were reductions in levels of management (at least two) and responsibilities for decision-making were moved to process-level teams.

A phased approach to implementing the ideal state plant was recommended. All teams, including the management team, had to develop new skills and competencies. New equipment had to be designed, purchased, and installed. The implementation planning team developed a plan for moving from functional teams to multifunctional teams. The plan included ways to transition supervisors into other roles such as coaches, technical support, and process coordinators (shift coordinators). Team

coordinators (team leaders) had to be selected, trained, and coached. A gainsharing plan and process had to be developed. Systems for team performance appraisal, hiring, and discipline had to be defined. The initial implementation plan had a two-year timeline for reaching the ideal state.

### **Example: How Structure Would Change**

- Phase I (1991): From traditional hierarchical to functional teams. Hourly employees became team leaders. Less supervisors over teams. Everyone began working on a team.
- Phase II (1992): Began to combine some functional areas into cross-functional. Supervisors were in new roles. Create technical services team and human resource teams. Process coordinators on three shifts.
- Phase III (1993): Began multifunctional teams with people developing broader jobs and responsibilities. Support teams in place to support process level teams.

Structure changes were not the only things that had to be implemented. The combined implementation plan included technical changes in equipment such as buying new slashers, motorized doff trucks, and new tack-ups. Other plans included changing the finishing process and the water purification process. Human system changes included team performance appraisal, broadened roles and responsibilities for team members, and gainsharing. All of these recommendations had to be coordinated and implemented in the right order. Initially, an implementation team made up of hourly associates monitored the plan.

### **The Real Implementation Story**

As Washington began to implement its redesign, reality hit. Things did not go exactly as planned. Some of the main issues were:

1. The plant manager and some of the management team did not fully buy-in to the team process or the redesign recommendations. They gave lip service to the ideas and continued to manage in their old style.
2. Teams did not have the right information, knowledge, and skills to take over decision-making and managing performance. Certain basic education skills such as reading and math were not at the level necessary for teams to understand and manage their new responsibilities.
3. Information systems were not designed to capture and display team-based information on critical indices.

4. In a swing away from command and control, some managers abdicated responsibility and accountability by taking a laissez-faire attitude.

5. Clearly stated standard operating procedures had not been established for work processes and jobs.

6. In an effort to become teams, individual accountability was lost.

7. The role of team coordinator began to look like the old role of supervisor, and no one wanted the job. The \$.50 more an hour the team coordinator received was not enough to motivate people to take the job. Team members felt the team coordinator should take all responsibilities for the team because they were getting paid for it.

8. Teams were not able to use the team performance appraisal system in a positive way. People were not comfortable evaluating each other, and some people did not give honest information.

9. The support teams, such as the technical team, became isolated from the teams working on projects rather than responding to the needs of the process teams.

10. The gainsharing plan did not produce any rewards for people and became a demotivating source.

By 1993, it was obvious something needed to change. Many people were frustrated, and some really wanted the Whole System Architecture and team process to work. Here are some of the actions taken to correct the problems Washington experienced.

1. The senior vice president had a long talk with the plant manager about the importance of the culture change. He made it very clear to the plant manager what the expectations were and who was to be held accountable. The plant manager became more open to accepting feedback and changing his own behavior. Some changes were made on the leadership team to bring in more talent and expertise.

2. Basic education and skill development was offered to team members. Education and training in numbers, measures, problem solving, providing feedback, and discipline were given to leaders and employees.

3. Changes to the information system and the addition of a position for cost/information systems improved the capabilities of the plant. Efforts were made to explain all cost numbers to the entire plant.

4. In addition to training on the importance of feedback and accountability, leaders began to hold teams accountable for their numbers.

Teams were assessed on a team effectiveness measurement instrument. Leaders reviewed this information and shared it with the teams. This practice is continuing.

5. All leaders became clearer on the role of leadership and management and how it changes as the team develops. They became more competent at using multiple styles of leadership through the work of the internal coaches, who observed them and gave them feedback. The old team coaches who initially helped get teams in place are now development coordinators. They are on the human resources team, but are assigned to a specific process coordinator. Their job is to help coach, develop, train, and give feedback to teams and the process coordinator.

6. Because the organization was getting ready for ISO certification clear, standard procedures had to be defined. These helped the teams become more aware of how things were supposed to be done. Multiple systems are in place to reinforce the importance of following correct procedures and processes in everything the plant does.

7. The team coordinator's role was modified, and everyone on the team has to be a team coordinator at some point. The role is rotated every six months. In addition, each team has a variety of subject matter experts (SMEs) who are responsible for a certain content area for their team. These are things like safety, cost, quality, human resources, and technical issues. These roles also rotate every six months. These people are formally trained in an area and meet with other teams' SMEs and the plant expert.

8. Individual and team accountability has been reestablished. Not only do teams review the team's numbers, they know how other team members are doing. On a regular basis, teams are discussing how to help each other improve the team's performance and each other's performance. Because the gainsharing plan has a direct line of site to performance, everyone cares how everyone else is doing. The leadership team also set minimum individual expectations for performance. Employees asked for this so they would know for what to hold each other accountable.

9. The people on the support teams are directly tied to team performance through the plant's gainsharing plan. This has helped motivate support teams to meet the needs of teams, so they can meet the needs of the customers. The plant has more engineering expertise to share with the teams, and there are higher requirements for new people being hired into management positions. Because the team system is how work gets done, new people must be able to support and work in a team system.

10. The gainsharing process is working. Because teams are problem solving dollars, have a clearer understanding of how their performance impacts those dollars, and have a better education of numbers and graphs, the plant has had pay-outs for the last few years. Everyone except the

plant manager is eligible, and everyone gets the same amount. Quality is a driving factor in the formula along with waste, labor, and variable spending. Team measures align with these numbers, so teams know exactly how they are doing.

## Results and Lessons Learned

- The plant now has 265 hourly (down from 320 in 1989) and 18 salaried employees.
- Between the plant manager and the person on the floor, there are two levels including the team coordinator.
- In 1997, the percentage of people who do not buy in to the culture has dropped to less than 8%.
- On a team development scale of one to four, with one being teams just starting out and four being teams being responsible for most of their work, decisions, discipline, etc., the average team is at a stage three. Some teams are at stage four.
- The plant downtime goal is 3%, and the teams are at 2.7%.
- Job classifications in the weave room have gone from more than ten to three with the hope of going to two.
- In 1994, the plant was ISO certified.
- In 1996, every person got an extra \$1,000 from gainsharing.
- A suggestion system is in place where employees get a response from leadership in ten days or less.
- The peer appraisal system is now the employee development process.
- By the year 2000, the hope is to move from process coordinators writing people up to people writing up themselves.
- Absenteeism has dropped from 18 to 9 days a year.

The hourly employees find the jobs are more fulfilling. They asked for many of the changes that have taken place over the last two years.

One process coordinator, who used to be a shift supervisor and was on the design team, said, "I'd never go back to the old way. What is amazing is that we are implementing the original design almost like we imagined it in 1990. People like using their brains."

The plant manager offers some advice to others who undertake this type of change: "It takes time; we've been at this for eight years. There are some things I wish we had not done, like pay team leaders the extra fifty cents. It was not enough to make a difference and put the leader in the wrong position. We should have put in individual accountability sooner, and we should have set minimum expectations for individuals and teams. My advice is to eliminate non-performers. Address those 'don't cares.' Do the training and documentation first. Do not ask people to do things they

cannot comprehend. People asked for the leadership, boundaries, guidelines, and expectations. We should have done it sooner.ö

You cannot help but notice the pride people take in what they have accomplished. They will tell you they are not through. People still struggle with accountability. As customer requirements change, the demands on the systems and people will necessitate more changes. But, given what this plant has been through, the odds for continued success are in its favor.